Emily Burgess

From: Newton, Daniel (FHWA) <Daniel.Newton@dot.gov>
Sent: Friday, October 25, 2024 9:59 AM
To: Emily Burgess
Cc: James D. Kelley; Clayton Markham; Miller Bernhardt; Kimberly Welch; Shaun Armstrong; Jay Norris; Russell, Jacinda (FHWA); Nathan Vatter; Thompson, Brad; David A. Duncan; Andrew Barlow; Gregory Dyer; Eckel, Justin; Hinton, Daniel (FHWA); DeLeon, Gilberto (FHWA)
Subject: [EXTERNAL] RE: Request for FHWA TN Division Acknowledgment: Safety and Operational Analysis Report for Rutherford I-24 @ Epps Mill Rd.

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Emily,

Based on the SOAR developed by TDOT, the FHWA Tennessee Division acknowledges TDOT's determination that the proposed improvements to the interchange on I-24 @ Epps Mill Road have no significant negative impacts to safety and operations. TDOT may proceed or continue to the next stage of project development. If significant engineering and operational changes occur during the course of the NEPA process, then further review may be needed by FHWA.

Please let me know if you have any questions.

Thank you,

Daniel Newton
(615) 781-5761

From: Emily Burgess <Emily.Burgess@tn.gov>
Sent: Friday, October 18, 2024 12:27 PM
To: Newton, Daniel (FHWA) <Daniel.Newton@dot.gov>
Cc: James D. Kelley <James.D.Kelley@tn.gov>; Clayton Markham <Clayton.Markham@tn.gov>; Miller Bernhardt <Miller.Bernhardt@tn.gov>; Kimberly Welch <Kimberly.Welch@tn.gov>; Shaun Armstrong <Shaun.Armstrong@tn.gov>; Jay Norris <Jay.Norris@tn.gov>; Russell, Jacinda (FHWA) <Jacinda.Russell@dot.gov>; Nathan Vatter <Nathan.Vatter@tn.gov>; Thompson, Brad <Bradley.Thompson@stvinc.com>; David A. Duncan <David.A.Duncan@tn.gov>; Andrew Barlow <Andrew.Barlow@tn.gov>; Gregory Dyer <Greg.Dyer@tn.gov>; Eckel, Justin <justin.eckel@stvinc.com>; Hinton, Daniel (FHWA) <Daniel.Hinton@dot.gov>; DeLeon, Gilberto (FHWA) <gilberto.deleon@dot.gov>
Subject: Request for FHWA TN Division Acknowledgment: Safety and Operational Analysis Report for Rutherford I-24 @ Epps Mill Rd.

CAUTION: This email originated from outside of the Department of Transportation (DOT). Do not click on links or open attachments unless you recognize the sender and know the content is safe.

Daniel,

TDOT is requesting acknowledgment from the FHWA TN Division Office that the proposed improvements outlined in the Safety and Operational Analysis Report, submitted to FHWA on 9/23/2024 for the Rutherford I-24 @ Epps Mill Rd. interchange, have no significant impact on safety and operations.

Thanks,

Emily Burgess, PE | Manager
Engineering Concepts and Statewide Programs
Project Management Division
James K. Polk Building, 5th Floor
505 Deaderick St., Nashville, TN 37243
p. 615-253-4490 c. 615-621-9908
Emily.Burgess@tn.gov
tn.gov/tdot

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	Interchange at Epps Mill Road (Exit 89)								
PIN	124683.06								
Route Information	**Route**	**NHS (Y/N)**	**Functional Class**		**City**		**County**		
	I-24	Yes	Urban Interstate		Murfreesboro		Rutherford		
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**
	25.33	26.07	61,026	5,493	28.00	75	70	2028	2048
Project Description & Standard Drawings Used	The proposed project widens and re-aligns Epps Mill Road from State Route 2 (US-41) (L.M. 0.00) to just past Capital Way (L.M. 0.86) including ramp improvements at the interchange (Exit 89) with Interstate 24 (I-24) and bridge replacement. This area within the ramp terminals will be full-access control and partial access control outside of the ramp terminals. The proposed right-of-way (ROW) width of Epps Mill Road is a minimum of 100 feet. RD11-TS-7, RD11-TS-7B, RD11-TS-4								Project Details
Important Project History, Related Projects, or Commitments	This project is being slated for the Design-Build project delivery method for project letting in 2025. This project is part of the General Fund Transfer and has local participation.								
Project Purpose/Need	Rutherford County is experiencing continued high population growth within the surrounding area as well as planned commercial, residential, and school development within a 5 mile radius of the interchange. The existing interchange has deficient entry and exit accel/decel lengths as well as an existing bridge that does not support future Epps Mill widening without replacement.								
Major Environmental Considerations	There is a known cemetery within the project limits and two prehistoric sites adjacent to the project. Transportation Conformity for regulated criteria pollutants does not apply to this project. This project likely qualifies as a categorical exclusion and does not require an evaluation of MSATs. A cultural resource survey may be necessary if right-of-way is to be aquired. This project is likely to be a Type 3 project that would not require additional noise studies. There are 5 known UST sites within the project limits. The existing bridge will require an asbestos survey. Refer to Page 48 of this document for further detail.								

Multi-Modal Considerations	The proposed bridge will include sidewalks for future improvement to connect the Truck Stops on either side of I-24 at this Interchange.			
Major Project Risks	Large ROW Impacts to the Northwest quadrant of currently vacant land could slow down project delivery and be a risk item going forward for the design build teams. FHWA is currently willing to accept A Safety and Operational Analysis Report (SOAR) in lieu of an Interstate Access Request (IAR) report but this could change at any point during the project cycle including during the Design Build Procurement due to alternative technical concepts (ATC). This document is covered by 23 USC 407 and its production pursuant to fulfilling public planning requirements does not waive the provisions of 407.			
Concept Estimate and Timeline	**Total Current Project Cost**		**Construction Year Estimate**	Preliminary Estimates
	$ 57,300,000		$ 63,800,000	
	Proposed Construction Year		**Estimated Construction Duration**	
	2026		TBD	

[1] Traffic numbers reflect identified design year

Approvals

Executed for approval of this Concept Report

James D. Kelley — Aug 26, 2024

Project Management Director — Date

The following individuals to execute if a bridge concept report:

Structures Director — Date

Regional Project Development Director — Date

Bureau Chief of Engineering — Date

Bureau Chief of Environment and Planning — Date

Action Checklist			
0SD1 Initiate Concept Report and Request Funding			
Complete	**NA**		**Date Completed**
✓		Request and Finalize Safety Data	04/19/2023
✓		Request Project Number, PIN, and Task Profile Numbers	04/19/2023
✓		Coordinate with Long Range Planning	04/19/2023
✓		Request and Finalize Traffic Data	04/19/2023
		Request Preliminary Survey Data	
✓		Initiate Division Reviews	06/12/2023
✓		Schedule Site Review (with appropriate Divisions)	05/24/2023
0EN1 Conduct Environmental Desktop Review			
Complete	**NA**		**Date Completed**
✓		Confirm Environmental Desktop Review is Complete	04/19/2023
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	04/19/2023
		Request Concept Report Review	
0ST1 Develop Structures Recommendations			
Complete	**NA**		**Date Completed**
✓		Confirm Recommended Structure Type for Concept Report is Complete	05/05/2023
✓		Confirm Hydraulic Recommendations for Concept Report is Complete	05/05/2023
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			
0SD2 Develop Draft Concept Report			
Complete	**NA**		**Date Completed**
✓		Conduct Intersection and Interchange Evaluation (IIE)	07/15/2023
✓		Complete Conceptual Signal Warrants	07/01/2023
✓		Develop Draft Conceptual Layouts/Crash Figures for Site Visit	05/31/2023
✓		Compile Initial Divisional Reviews for Site Visit	05/31/2023
✓		Prepare & Send Site Visit Packet	05/31/2023
✓		Lead Site Visit	06/12/2023
	✓	Initiate Interstate Access Requests (IAR) Concept Coordination with FHWA (if applicable)	
✓		Develop, Compile, and Distribute the Draft Concept Report	07/24/2023
0TO2 Develop TSMO Scope Items *(include HQ Traffic Ops and Regional Traffic Office)*			
Complete	**NA**		**Date Completed**
✓		Confirm Signal Warrants Analysis is Complete	07/15/2023
		Confirm Lighting Warrants Analysis is Complete	
✓		Review and Confirm TSMO & ITS Scope and Budget	04/19/2023
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	03/28/2024
✓		Develop Environmental Technical Study Area (ETSA)	07/19/2023
✓		Address Comments and Finalize Concept Report	04/01/2024
		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

Document is anticipated to be a SOAR but not a full IAR.
Lighting warrant not needed for this type of report; high-mast interchange lighting will be used.
No railroad within the project limits.
Initial Risk Assessment form not needed for this type of concept report.
RSA No Plans document not needed for SOAR document.
0SY1 not needed for SOAR document.
0GT1 not needed for SOAR document.
0RW1 not needed for SOAR document.
0UT1 not needed for SOAR document.
Initiate Interstate Access Requests (IAR) Concept Coordination with FHWA not needed for SOAR 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

There are no streams within the project area. This project at this time does not require an IAR. This project is not an RSA. Project will utilize interchange lighting. Risk Assessment Form and ROW Form 44-A are not required for this type of Concept Report.

[1] External document to STID

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2048 Signal Warrants 340

Initial Risk Assessment 366

Location Summary

Widening Epps Mill Road from State Route 2 (US-41) (L.M. 0.00) to just past Capital Way (L.M. 0.86) including interchange ramp improvements and bridge replacement has been identified by TDOT to improve safety and traffic flow to accommodate rapid growth in southern Rutherford County. This site along I-24 is within 5 miles of Joe B Jackson Pkwy (Exit 84) the site of significant industrial/commercial warehouse development including Amazon's largest distribution center in the area. Right off I-24 in either direction are large truck stops with another proposed for the southeast quadrant of the interchange that will be constructing a realignment of Miller Lane.

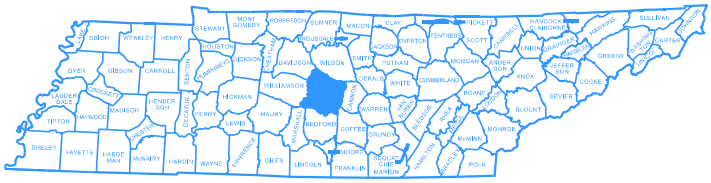
Existing Conditions

Epps Mill Road begins at State Route 2 (US-41) and the existing roadway is classified as a two (2) lane Urban Major Collector with a right-of-way width of sixty (60) feet. Epps Mill Road has lane widths of ten (10) to eleven (11) feet and shoulder widths of two (2) to four (4) feet. Epps Mill Road widens at some intersections throughout the segment to establish eleven (11) foot dedicated turn lanes. Epps Mill Road has a posted speed limit of thirty (30) mph from Log Mile 0.000 to Log Mile 0.86. As you approach I-24 from the east development density increases with multiple driveways per parcel located on Epps Mill Road. The existing interchange is a partial cloverleaf (parclo) configuration with stop signs for left turn movements and all right-turn movements are yield condition. There is a cemetery on the southwest quadrant of the interchange that necessitated the original partial cloverleaf (parclo) configuration. The existing bridge over I-24 is a two-span 300' long haunched steel welded plate girder bridge that is approaching 60 years of service life.

Design Summary

- Epps Mill Road
    - Widen and realign Epps Mill Road to three lanes from SR-2 to Capital Way with a center two-way left turn lane following TDOT Standard Drawing RD11-TS-7B. The intersection with SR-2 will be shifted south to improve intersection geometry. Forbus Drive and the ramp terminals will all be signalized with protected left turn lanes when needed due to traffic in the design year. The existing north edge-of-pavement will be held between Forbus Drive and SR-2 to reduce ROW impacts to commercial business along Epps Mill Road. From Forbus Drive to Miller Road the alignment will be shifted to be at a higher skew angle than the existing roadway as it crosses I-24. This aids in constructability allowing more of the proposed roadway to be built outside of the existing roadway as well as avoiding impacts to the cemetery on the southwest quadrant of the interchange. Miller Road and the I-24 eastbound (EB) ramp terminals will be combined into a single intersection to improve intersection spacing and reduce conflict points. The proposed design speed is 40 mph with a posted speed of 30 mph. All curves along Epps Mill Road will be flattened to increase stopping sight distance and minimize the need for superelevation that could increase ROW impacts.
    - Proposed bridge over I-24 will have an out-to-out width of 65' with three (3) twelve (12) foot travel lanes with eight (8) foot shoulders and five (5) foot sidewalks on either side. The structure will be a concrete two (2) span bridge 250 feet in length. Each span will be 125 feet long. The preliminary girder selection is a 72" Bulb Tee (BT-72) because it can accommodate span lengths of 120 to 155 feet without dense beam spacing per the PCI Bridge Design Manual and is a beam shape that is a standard TDOT approved beam type. Superstructure depth=89.8"=72" (beam)+10" (deck)+ 7.8" ((width in inches x 0.02)/2).

- I-24
    - I-24 eastbound (EB) ramps will see improved acceleration and deceleration lanes to meet required minimums. The I-24 EB on-ramp loop will be improved to a design speed of 35 mph from 25 mph and will also feature a combined intersection point with Epps Mill Road using newly adopted standards for parclo intersections to mirror traditional sideroad configurations more closely to reduce the potential wrong way driver probability at this style of interchange. The I-24 EB off-ramp will feature an improved departure speed of 40 mph up from 30 mph and be realigned around the new loop configuration to tie into the four-way intersection with Epps Mill Road and Miller Road.
    - I-24 westbound (WB) ramps will be straightened out and aligned to be perpendicular to Epps Mill Road. This has multiple benefits including increased constructability, higher speed ramp geometry, increased safety, and sight distance at the intersection with Epps Mill Road and improved intersection spacing with Forbus Drive. The WB on-ramp will have a design speed of 45 mph and the WB off-ramp will have a departure speed of 40 mph.
- SR-2
    - Widening for a dedicated left and right turn lane will accommodate design year traffic volumes with roughly 1100 feet of improvements to SR-2. The design speed is 60 mph and posted for 55 mph.
- Forbus Drive
    - The Love's truck stop will lose driveway access to Epps Mill Road in accordance with TDOT's Highway System Access Manual for intersection and driveway spacing. Due to this, a signal will be installed at Forbus Drive. The signal will feature a dedicated right turn lane onto Epps Mill Road due to the high volumes of traffic turning out of the truck stop and toward I-24. Due to limited ROW availability, thru and left movements will be combined into a thru-left lane with appropriate signal phasing. Signal warrants can be found on page 291 of this report.
- Miller Lane
    - Miller Lane will be realigned by others as a part of a proposed gas station and its connection with Epps Mill Road will be via a four-way intersection with Forbus Drive. A left-thru movement and signal phasing will mirror the Forbus Drive side of the intersection.
- Miller Road
    - Miller Road will be re-aligned to intersect Epps Mill Road perpendicular and across from the new I-24 EB ramp terminals. The design speed is 35 mph and posted for 30 mph.



LOCATION MAP

RUTHERFORD COUNTY

EPPS MILL ROAD (LR-01044)

L.M. 0.00 TO L.M. 0.86

SCALE: 1"=600'

SOURCE: BING MAPS

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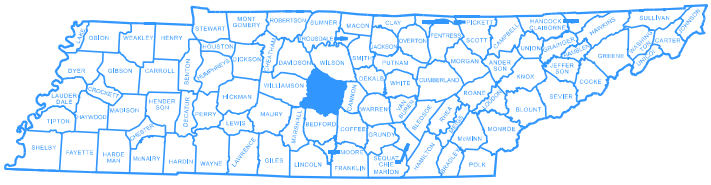

AREA MAP

RUTHERFORD COUNTY

EPPS MILL ROAD (LR-01044)

L.M. 0.00 TO L.M. 0.86

SCALE: 1"=600'

SOURCE: BING MAPS

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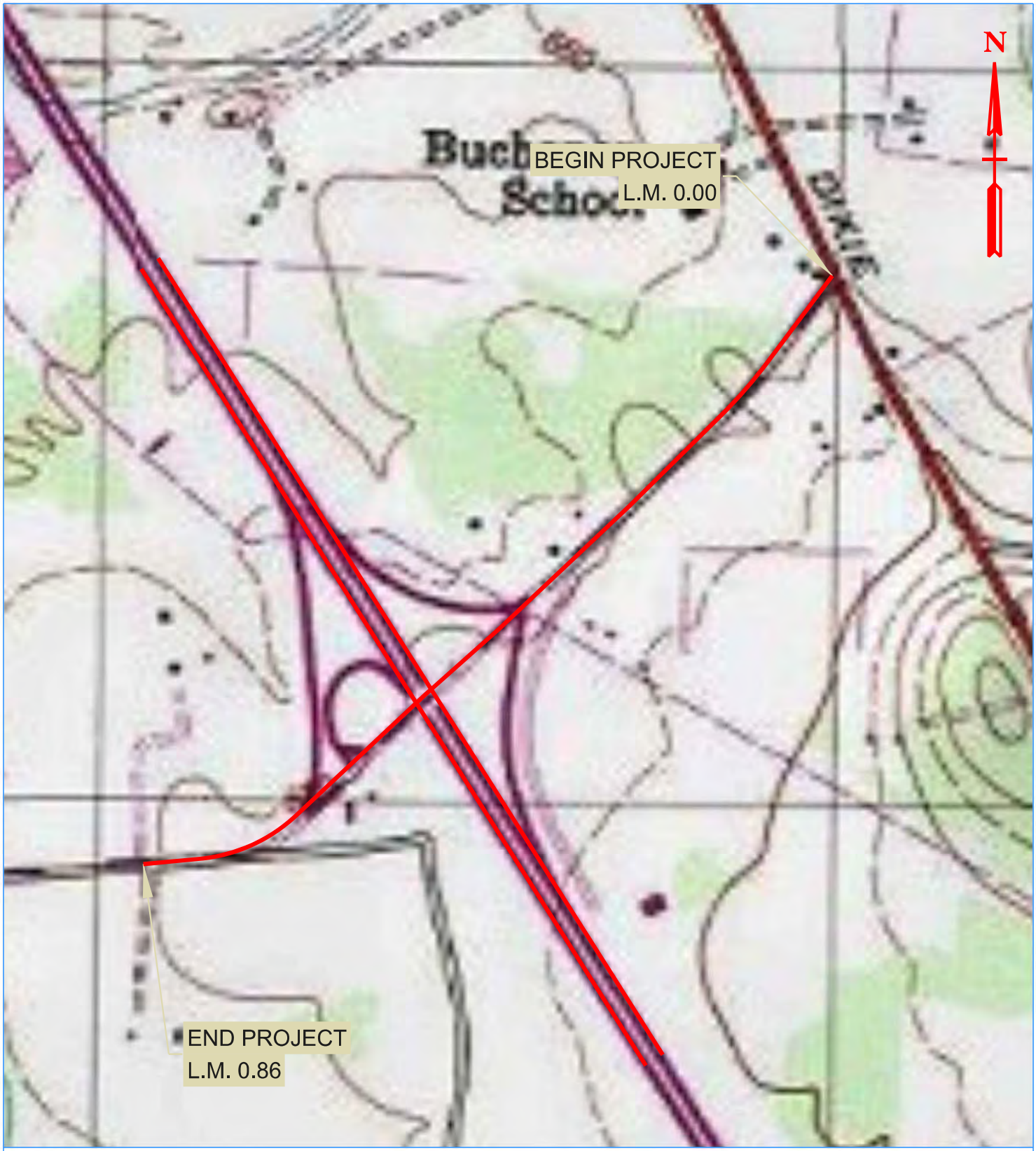
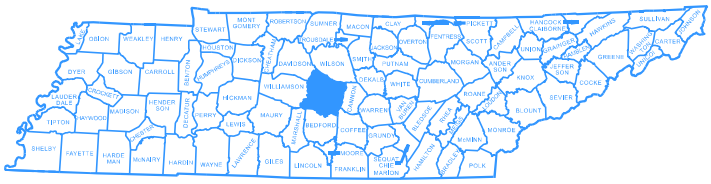
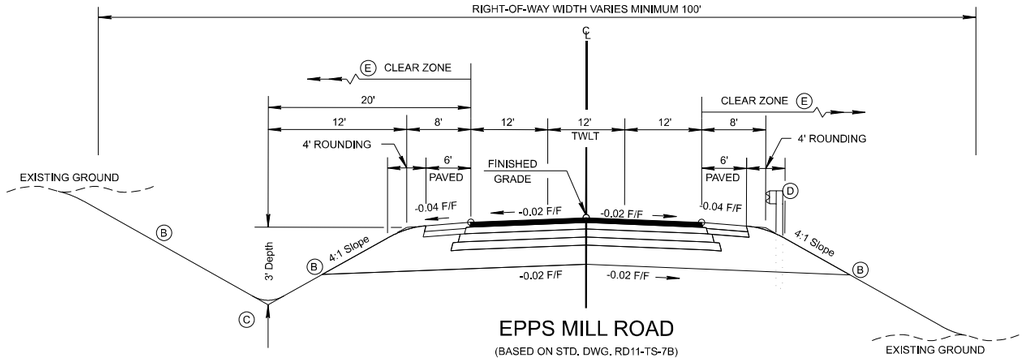




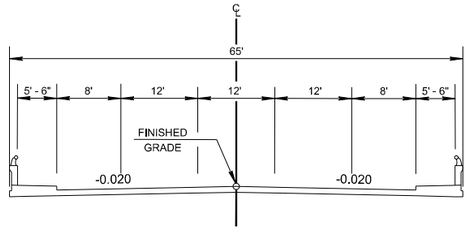
TOPOGRAPHIC MAP
RUTHERFORD COUNTY
EPPS MILL ROAD (LR-01044)
L.M. 0.00 TO L.M. 0.86
SCALE: 1"=600'
SOURCE: USGS

TYPE	YEAR	COUNTY	FIGURE NO.
CR	2023	RUTHERFORD	1



EPPS MILL ROAD

(BASED ON STD. DWG. RD11-TS-7B)

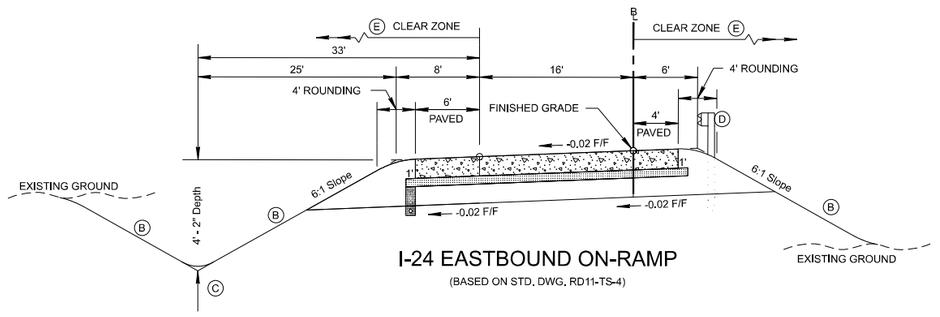


EPPS MILL ROAD BRIDGE OVER I-24

(BASED ON STD. DWG. RD11-TS-7)

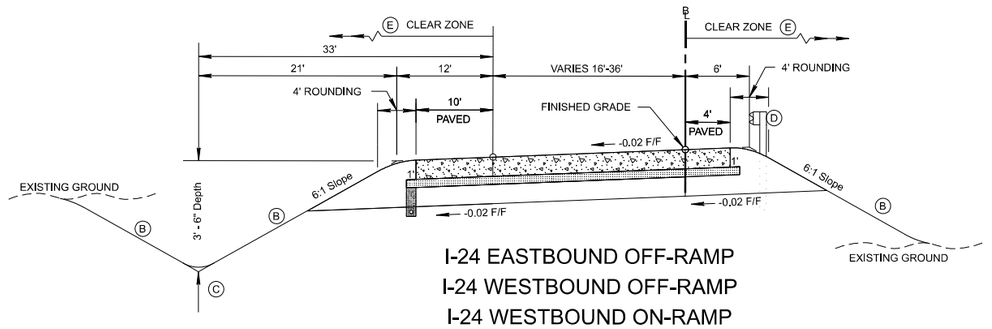
MILLER ROAD

(BASED ON STD. DWG. RD11-TS-1A)



I-24 EASTBOUND ON-RAMP

(BASED ON STD. DWG. RD11-TS-4)



I-24 EASTBOUND OFF-RAMP
I-24 WESTBOUND OFF-RAMP
I-24 WESTBOUND ON-RAMP

(BASED ON STD. DWG. RD11-TS-4)

(A) THE SLOPE OF THE SHOULDER AND THE ROADWAY PAVEMENT SHALL NOT EXCEED AN ALGEBRAIC DIFFERENCE OF 7%.

(B) SEE STANDARD DRAWINGS RD11-S-11 AND RD11-S-11B FOR FILL AND CUT SLOPE TABLES, ROUNDING ON TOP OF CUT SLOPES AND TOE OF FILL SLOPES, SPECIAL ROCK TREATMENT AND SUB GRADE ROUNDING IF APPLICABLE.

(C) SEE STANDARD DRAWING RD11-S-11A FOR ROUNDING OF ROADSIDE DITCH SLOPES.

(D) SEE STANDARD DRAWING S-PL-6 FOR TYPICAL GUARDRAIL PLACEMENT.

(E) SEE STANDARD DRAWING S-CZ-1 FOR CLEAR ZONE CRITERIA. SEE THE "ROADSIDE DESIGN GUIDE", AASHTO, 2011, FOR FURTHER INFORMATION REGARDING CLEAR ZONES.

(1) MEDIAN CURBS WILL BE SLOPING CURBS, VERTICAL CURBS WILL NOT BE PERMITTED.

(2) 3:1 SLOPES OR FLATTER ARE DESIRABLE AND ARE THE MAXIMUM IN REGION IV. 2:1 SLOPES ARE APPLICABLE IN AREAS WHERE RIGHT-OF-WAY RESTRICTIONS, ENVIRONMENTAL CONSIDERATIONS, OR COST WARRANTS A STEEPER THAN 3:1 SLOPE.

(3) ADTS OVER 400 AND DESIGN SPEEDS OF 50 MILES PER HOUR AND GREATER SHALL REQUIRE 6:1 SLOPES.
6:1 Slope Require A 21' Ditch Width And A Depth of 3'-6".
4:1 Slope Require A 12' Ditch Width And A Depth of 3'-0".

(4) WHEN THE PROPOSED SHOULDER WIDTH IS 2' OR 4' THE SHOULDER SLOPE CAN MATCH THE ROADWAY PAVEMENT CROSS SLOPE.

N.T.S.

CONCEPT REPORT

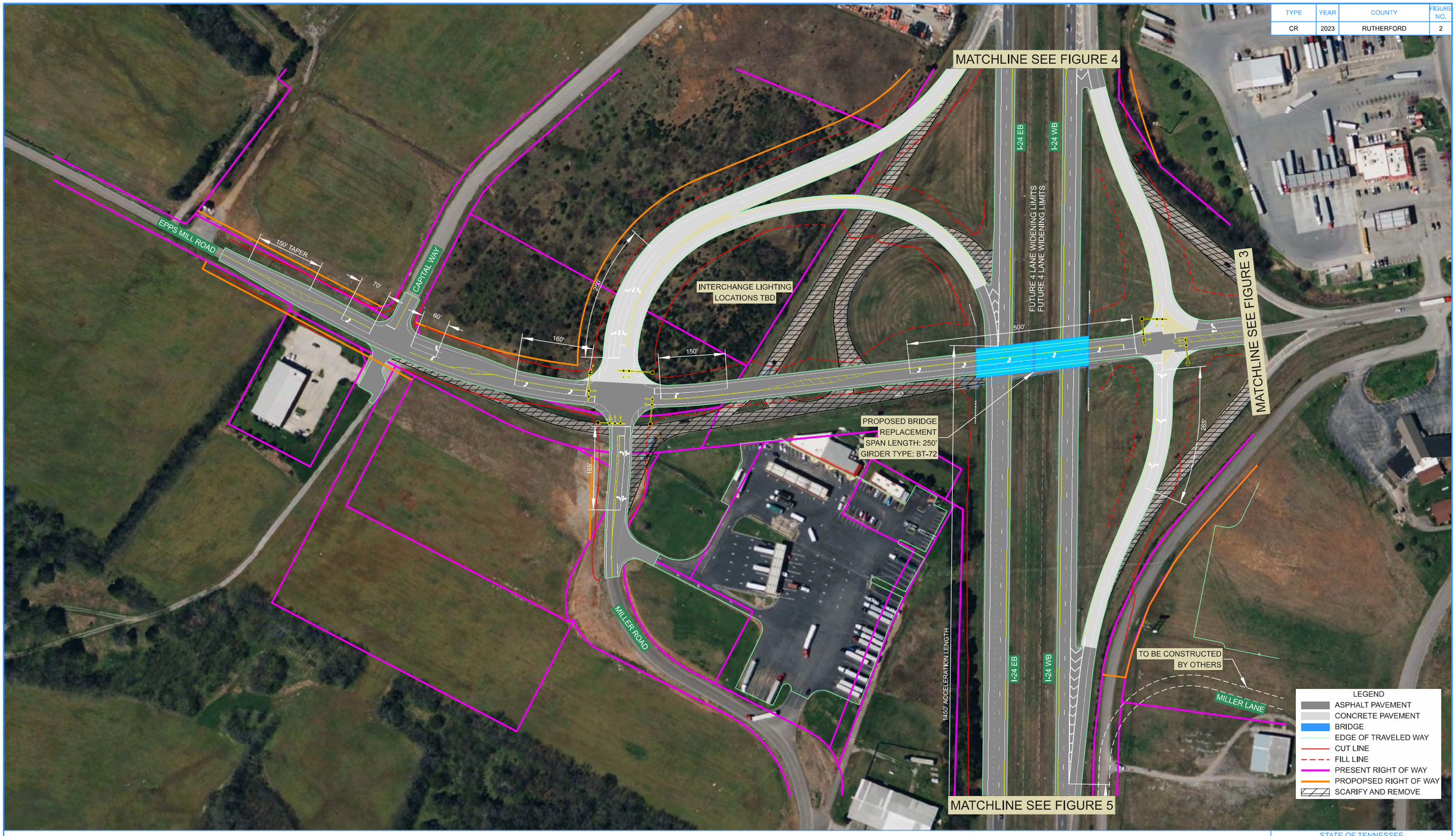
I-24 INTERCHANGE AT EPPS MILL ROAD (EXIT 89)
LOG MILE 0.00 TO LOG MILE 0.86
RUTHERFORD COUNTY

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

FIGURE 1
I-24 INTERCHANGE AT EPPS MILL ROAD (EXIT 89)
TYPICAL SECTIONS

8/2/2024 9:33:10 AM
C:\BMS\STV-PW-01\TRAVIS.PHY\DMS60289\124683-SHT-CONCEPT_04_REDUCTION COMMENTS.DGN

TYPE	YEAR	COUNTY	FIGURE NO.
CR	2023	RUTHERFORD	2



0 200' 400' 600'

N

CONCEPT REPORT

I-24 INTERCHANGE AT EPPS MILL ROAD (EXIT 89)
LOG MILE 0.00 TO LOG MILE 0.86
RUTHERFORD COUNTY

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

FIGURE 2
I-24 INTERCHANGE AT
EPPS MILL ROAD (EXIT 89)
CONCEPTUAL PLAN

8/2/2024 9:33:14 AM
C:\BMS\STV-PW-01\TRAVIS.PHY\DMS602891\124683-SHT-CONCEPT_04_REDUCTION COMMENTS.DGN

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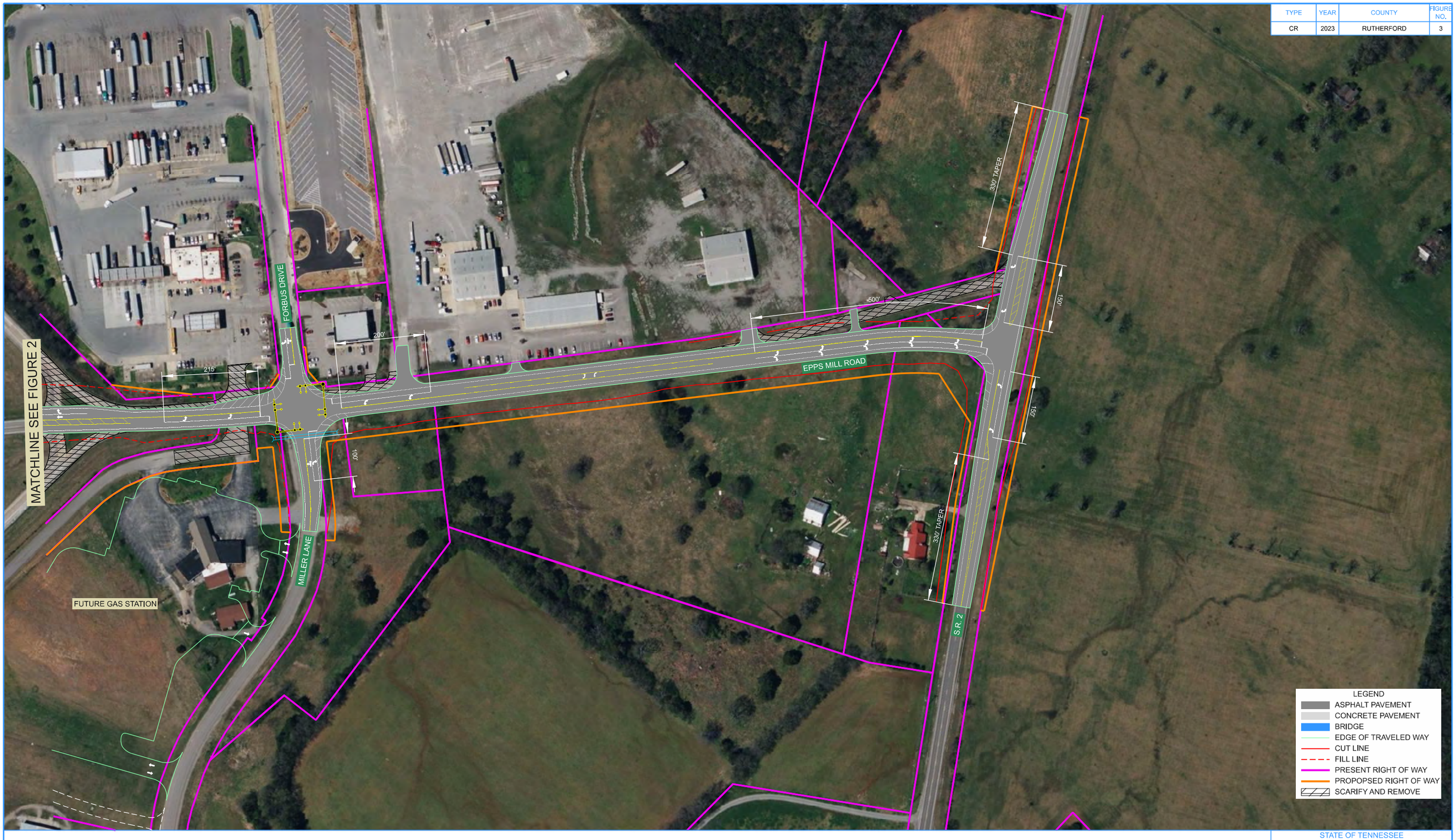
TYPE	YEAR	COUNTY	FIGURE NO.
CR	2023	RUTHERFORD	3



0 200' 400' 600'

N

CONCEPT REPORT

I-24 INTERCHANGE AT EPPS MILL ROAD (EXIT 89)
LOG MILE 0.00 TO LOG MILE 0.86
RUTHERFORD COUNTY

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

FIGURE 3
I-24 INTERCHANGE AT
EPPS MILL ROAD (EXIT 89)
CONCEPTUAL PLAN

8/2/2024 9:33:39 AM
C:\BMS\STV-PW-01\TRAVIS.PHY\DMS602891\124683-SHT-CONCEPT_04_REDUCTION COMMENTS.DGN

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TYPE	YEAR	COUNTY	FIGURE NO.
CR	2023	RUTHERFORD	4

I-24 EB

I-24 WB

FUTURE 4 LANE WIDENING LIMITS
FUTURE 4 LANE WIDENING LIMITS

300' TAPER

550' DECELERATION LENGTH

CAPITAL WAY

300' TAPER

850' ACCELERATION LENGTH

FORBUS DRIVE

MATCHLINE SEE FIGURE 2

LEGEND
- ASPHALT PAVEMENT
- CONCRETE PAVEMENT
- BRIDGE
- EDGE OF TRAVELED WAY
- CUT LINE
- FILL LINE
- PRESENT RIGHT OF WAY
- PROPOPSED RIGHT OF WAY
- SCARIFY AND REMOVE

0 200' 400' 600'

N

CONCEPT REPORT

I-24 INTERCHANGE AT EPPS MILL ROAD (EXIT 89)
LOG MILE 0.00 TO LOG MILE 0.86
RUTHERFORD COUNTY

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

FIGURE 4
I-24 INTERCHANGE AT
EPPS MILL ROAD (EXIT 89)
CONCEPTUAL PLAN

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TYPE	YEAR	COUNTY	FIGURE NO.
CR	2023	RUTHERFORD	5

MATCHLINE SEE FIGURE 2

MILLER ROAD

I-24 EB

FUTURE 4 LANE WIDENING LIMITS
FUTURE 4 LANE WIDENING LIMITS

I-24 WB

450' DECELERATION LENGTH

300' TAPER

300' TAPER

MILLER LANE

LEGEND
- ASPHALT PAVEMENT
- CONCRETE PAVEMENT
- BRIDGE
- EDGE OF TRAVELED WAY
- CUT LINE
- FILL LINE
- PRESENT RIGHT OF WAY
- PROPOPSED RIGHT OF WAY
- SCARIFY AND REMOVE

0 200' 400' 600'

CONCEPT REPORT

I-24 INTERCHANGE AT EPPS MILL ROAD (EXIT 89)
LOG MILE 0.00 TO LOG MILE 0.86
RUTHERFORD COUNTY

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

FIGURE 5
I-24 INTERCHANGE AT
EPPS MILL ROAD (EXIT 89)
CONCEPTUAL PLAN

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TYPE	YEAR	COUNTY	FIGURE NO.
CR	2023	RUTHERFORD	6

STUDY AREA BEGINS 300 FEET BEFORE BEGIN PROJECT

APPROX. 150 FEET FROM END OF SIDE ROAD

APPROX. 50 FEET FROM PROP. R.O.W

BEGIN PROJECT

EPPS MILL ROAD

CAPITAL WAY

MATCHLINE SEE FIGURE 8

I-24 EB

I-24 WB

APPROX. 50 FEET FROM PROP. R.O.W

MATCHLINE SEE FIGURE 7

APPROX. 50 FEET FROM PROP. R.O.W

APPROX. 50 FEET FROM PROP. R.O.W

CEMETARY

MILLER ROAD

APPROX. 150 FEET FROM SIDE ROAD TIE

I-24 EB

I-24 WB

APPROX. 50 FEET FROM PROP. R.O.W

MILLER LANE

MATCHLINE SEE FIGURE 9

LEGEND
- ASPHALT PAVEMENT
- CONCRETE PAVEMENT
- BRIDGE
- EDGE OF TRAVELED WAY
- CUT LINE
- FILL LINE
- PRESENT RIGHT OF WAY
- PROPOPSED RIGHT OF WAY
- ETSA BOUNDARY

0 200' 400' 600'

ENVIRONMENTAL TECHNICAL STUDY AREA

I-24 INTERCHANGE AT EPPS MILL ROAD (EXIT 89)
LOG MILE 0.00 TO LOG MILE 0.86
RUTHERFORD COUNTY

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

FIGURE 6
I-24 INTERCHANGE AT EPPS MILL ROAD (EXIT 89)
ETSA

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TYPE	YEAR	COUNTY	FIGURE NO.
CR	2023	RUTHERFORD	7

BEGIN PROJECT

APPROX. 50 FEET
FROM PROP. R.O.W

STUDY AREA BEGINS 300 FEET
BEFORE BEGIN PROJECT

APPROX. 50 FEET
FROM PROP. R.O.W

APPROX. 150 FEET
FROM END OF SIDE ROAD

APPROX. 50 FEET
FROM EX. R.O.W

FORBUS DRIVE

EPPS MILL ROAD

MATCHLINE SEE FIGURE 6

APPROX. 50 FEET
FROM PROP. R.O.W

APPROX. 50 FEET
FROM PROP. R.O.W

APPROX. 50 FEET
FROM PROP. R.O.W

MILLER LANE

APPROX. 50 FEET
FROM EX. R.O.W

S.R. 2

END PROJECT

STUDY AREA ENDS 300 FEET
AFTER END PROJECT

APPROX. 300 FEET
FROM END OF SIDE ROAD

LEGEND
- ASPHALT PAVEMENT
- CONCRETE PAVEMENT
- BRIDGE
- EDGE OF TRAVELED WAY
- CUT LINE
- FILL LINE
- PRESENT RIGHT OF WAY
- PROPOPSED RIGHT OF WAY
- ETSA BOUNDARY

0 200' 400' 600'

ENVIRONMENTAL TECHNICAL STUDY AREA

I-24 INTERCHANGE AT EPPS MILL ROAD (EXIT 89)
LOG MILE 0.00 TO LOG MILE 0.86
RUTHERFORD COUNTY

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

FIGURE 7
I-24 INTERCHANGE AT
EPPS MILL ROAD (EXIT 89)
ETSA

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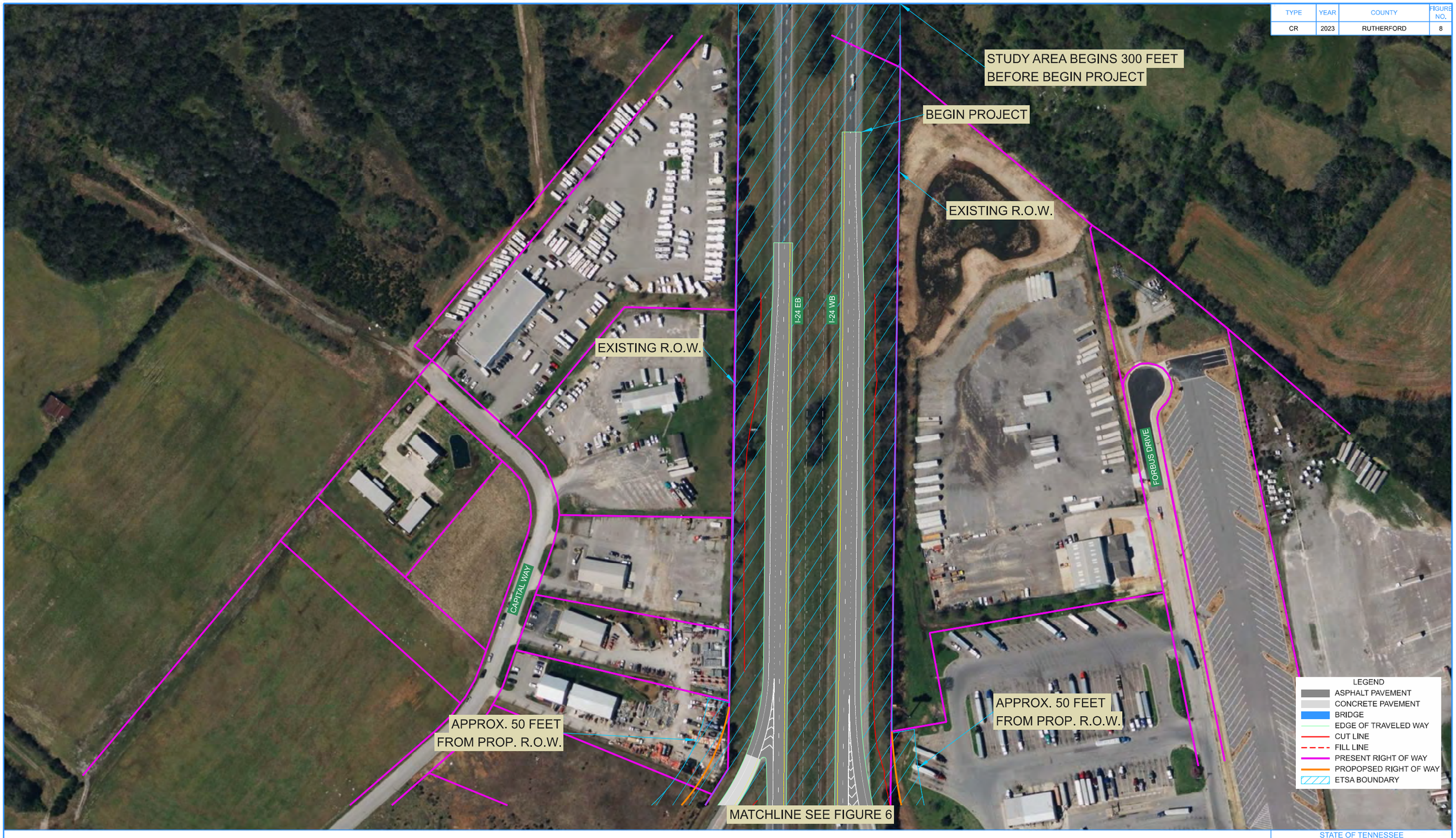
TYPE	YEAR	COUNTY	FIGURE NO.
CR	2023	RUTHERFORD	8



0 200' 400' 600'

N

ENVIRONMENTAL TECHNICAL STUDY AREA

I-24 INTERCHANGE AT EPPS MILL ROAD (EXIT 89)
LOG MILE 0.00 TO LOG MILE 0.86
RUTHERFORD COUNTY

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

FIGURE 8
I-24 INTERCHANGE AT
EPPS MILL ROAD (EXIT 89)
ETSA

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TYPE	YEAR	COUNTY	FIGURE NO.
CR	2023	RUTHERFORD	9

MATCHLINE SEE FIGURE 6

EXISTING R.O.W

MILLER ROAD

I-24 EB

I-24 WB

MILLER LANE

EXISTING R.O.W

END PROJECT

STUDY AREA BEGINS 300 FEET
AFTER END PROJECT

LEGEND
- ASPHALT PAVEMENT
- CONCRETE PAVEMENT
- BRIDGE
- EDGE OF TRAVELED WAY
- CUT LINE
- FILL LINE
- PRESENT RIGHT OF WAY
- PROPOPSED RIGHT OF WAY
- ETSA BOUNDARY

0 200' 400' 600'

ENVIRONMENTAL TECHNICAL STUDY AREA

I-24 INTERCHANGE AT EPPS MILL ROAD (EXIT 89)
LOG MILE 0.00 TO LOG MILE 0.86
RUTHERFORD COUNTY

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

FIGURE 9
I-24 INTERCHANGE AT
EPPS MILL ROAD (EXIT 89)
ETSA

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COST ESTIMATE SUMMARY

COST ESTIMATE SUMMARY

Route:	1044 (Epps Mill Road)
Termini:	SR-2 (L.M. 0.00) and Capital Way (L.M. 0.78)
Scope of Work:	Interchange Improvements
Project Type of Work:	Modify Interchange
County:	Rutherford
Length:	0.78 Miles
Date:	August 2, 2024
Estimate Type:	Design-Build
Years Inflated:	0

TN TDOT Department of Transportation

Estimate Developed By
Initial/Organization
STV Inc.

DESCRIPTION		LOCAL	STATE	FEDERAL	TOTAL
		0%	0%	0%	
Construction Items					
Removal Items		$0	$0	$0	$342,000
Asphalt Paving		$0	$0	$0	$4,380,000
Concrete Pavement		$0	$0	$0	$3,740,000
Drainage		$0	$0	$0	$837,000
Appurtenances		$0	$0	$0	$109,000
Structures & Contingency		$0	$0	$0	$4,340,000
Fencing		$0	$0	$0	$0
Signalization & Lighting		$0	$0	$0	$2,790,000
Railroad Crossing		$0	$0	$0	$0
Earthwork		$0	$0	$0	$3,350,000
Clearing and Grubbing		$0	$0	$0	$416,000
Seeding & Sodding		$0	$0	$0	$128,000
Rip-Rap or Slope Protection		$0	$0	$0	$0
Guardrail		$0	$0	$0	$132,000
Signing		$0	$0	$0	$20,600
Pavement Markings		$0	$0	$0	$154,000
Maintenance of Traffic		$0	$0	$0	$253,000
Construction Lines and Stakes		$0	$0	$0	$391,000
DESIGN-BID-BUILD & DESIGN-BUILD PERCENTAGES					
Mobilization	10%	$0	$0	$0	$2,100,000
Additional Items	20%	$0	$0	$0	$4,200,000
Const. Contingency (Structures Not Included)	30%	$0	$0	$0	$6,890,000
Const. Eng. & Inspec.	15%	$0	$0	$0	$5,130,000
Construction Estimate - DBB & DB		$0	$0	$0	$39,700,000
Right-of-Way & Utilties		**LOCAL**	**STATE**	**FEDERAL**	**TOTAL**
		0%	0%	0%	
Right-of-Way		$0	$0	$0	$11,100,000
Utilities		$0	$0	$0	$0
Preliminary Engineering		**LOCAL**	**STATE**	**FEDERAL**	**TOTAL**
		0%	0%	0%	
Prelim. Eng. (Design-Build)	20.0%	$0	$0	$0	$6,500,000
Design-Build Project Cost		$0	$0	$0	$ 57,300,000

PAY ITEM SUMMARY

TDOT PAY ITEM	TDOT DESCRIPTION	UNIT	TOOL QUANTITIES	ADDITIONAL QUANTITIES	TOOL QUANTITIES + ADDITIONAL	Unit Price	TOTAL COST
Pavment Removal							
202-03.01	REMOVAL OF ASPHALT PAVEMENT	SY	13408		13408	$ 16.37	$ 219,482.01
202-03	REMOVAL OF RIGID PAVEMENT	CY	884		884	$ 28.33	$ 25,042.32
415-01.02	COLD PLANING BITUMINOUS PAVEMENT	SY	9760		9760	$ 9.94	$ 97,014.40
						PAVEMENT REMOVAL TOTAL (ROUNDED)	$ 341,600
Asphalt Roads							
303-01	MINERAL AGGREGATE, TYPE A BASE, GRADING D	TON	56157		56157	$ 37.18	$ 2,087,914.32
307-(01, 02, 03).01	ASPHALT CONCRETE MIX (All Grades) (BPMB-HM) GRADING A	TON	5726		5726	$ 112.37	$ 643,469.05
307-01.(20 & 21 & 22)	AGGREGATE (BPMB-HM) GRADING A-S MIX	TON	3247		3247	$ 122.73	$ 398,447.06
307-(01 & 02 & 03).08	ASPHALT CONCRETE MIX (ALL GRADES) (BPMB-HM) GRADING B-M2	TON	5104		5104	$ 113.17	$ 577,604.95
402-01	BITUMINOUS MATERIAL FOR PRIME COAT (PC)	TON	63		63	$ 1,163.24	$ 72,781.33
402-02	AGGREGATE FOR COVER MATERIAL (PC)	TON	226		226	$ 89.00	$ 20,098.86
403-01	BITUMINOUS MATERIAL FOR TACK COAT (TC)	TON	32		32	$ 924.09	$ 30,014.31
411-01.07	ACS MIX (PG64-22) GRADING E SHOULDER	TON	1535		1535	$ 130.59	$ 200,441.67
411-(01 & 02 & 03).10	ACS MIX(ALL GRADES) GRADING D	TON	2580		2580	$ 135.17	$ 348,669.22
						PAVING TOTAL (ROUNDED)	$ 4,379,500
Concrete Roads							
313-03	TREATED PERMEABLE BASE	SY	17973		17973	$ 37.15	$ 667,709.33
501-01.03	PORTLAND CEMENT CONCRETE PAVEMENT (PLAIN) 10"	SY	17973		17973	$ 168.77	$ 3,033,359.47
604-01.01	CLASS A CONCRETE (ROADWAY)	CY	34.25925926		34	$ 1,148.02	$ 39,330.33
						CONCRETE RAMPS AND ROADWAYS TOTAL (ROUNDED)	$ 3,740,400
Drainage							
607-05.02	24" CONCRETE PIPE CULVERT (CLASS III)	LF	2221		2221	$ 172.02	$ 382,103.35
611-07.01	CLASS A CONCRETE (PIPE ENDWALLS)	CY	79		79	$ 2,034.76	$ 160,164.89
611-07.02	STEEL BAR REINFORCEMENT (PIPE ENDWALLS)	LB	7480		7480	$ 3.96	$ 29,622.00
611-12.02	CATCH BASINS, TYPE 12, > 4' - 8' DEPTH	EA	2		2	$ 11,799.31	$ 19,665.52
710-02	Aggregate Underdrains (with pipe)	LF	18171		18171	$ 13.48	$ 244,946.43
						DRAINAGE TOTAL (ROUNDED)	$ 836,600
Appurtenances							
711-05.71	51IN SINGLE SLOPE CONCRETE BARRIER WALL	LF	500		500	$ 217.47	$ 108,735.00
						ROADWAY AND PAVEMENT APPURTENANCES TOTAL (ROUNDED)	$ 108,800
Earthwork & Mineral							
203-01	ROAD & DRAINAGE EXCAVATION (UNCLASSIFIED)	CY	115094		115094	$ 14.81	$ 1,704,542.00
203-02.01	BORROW EXCAVATION (GRADED SOLID ROCK)	TON	25372		25372	$ 32.33	$ 820,291.96
203-03	BORROW EXCAVATION (UNCLASSIFIED)	CY	57547		57547	$ 14.37	$ 827,042.97
						EARTHWORK & MINERAL TOTAL (ROUNDED)	$ 3,351,900
Construction Lines and Stakes							
105-01	Construction Lines and Stakes	LS	1		1		$ 391,000.00
							$ 391,000
Structures							
N/A	Removal of Bridge	SF	10500		10500	$ 30.00	$ 315,000.00
N/A	New Bridge (Concrete I-Beam & Bulb-T):	SF	16104		16104	$ 200.00	$ 3,220,800.00
N/A	Contingency - New Bridge (Concrete I-Beam & Bulb-T):	%	25.0%		25.0%	25.0%	$ 805,200.00
						STRUCTURES TOTAL (ROUNDED)	$ 4,341,000
Interchanges and Unique Intersections							
						INTERCHANGES AND UNIQUE INTERSECTIONS TOTAL (ROUNDED)	$ -
Lighting & Signalization							

PAY ITEM SUMMARY

N/A	Traffic Signal	EA	3		3	$ 312,500.00	$ 937,500.00
N/A	HIGH MAST INTERCHANGE LIGHTING	LS		1	1	$ 1,500,000.00	$ 1,500,000.00
N/A	ITS Installation	LS		1	1	$ 350,000.00	$ 350,000.00
						LIGHTING & SIGNALIZATION TOTAL (ROUNDED)	$ 2,787,500
Guardrail							
705-01.01	GUARDRAIL AT BRIDGE ENDS	LF	100		100	$ 108.51	$ 10,850.94
705-06.01	W Beam GR (Type 2) Mash TL3	LF	1817		1817.11	$ 34.98	$ 63,562.51
705-06.20	Tangent Energy Absorbing Term Mash TL-3	EA	16		16	$ 3,607.19	$ 57,715.09
						GUARDRAIL TOTAL (ROUNDED)	$ 132,200
Seeding and Sodding							
801-01	SEEDING (WITH MULCH)	UNIT	1129		1129	$ 54.58	$ 61,641.51
801-01.07	TEMPORARY SEEDING (WITH MULCH)	UNIT	847		847	$ 35.33	$ 29,925.72
801-02	SEEDING (WITHOUT MULCH)	UNIT	847		847	$ 42.37	$ 35,888.85
						SODDING TOTAL (ROUNDED)	$ 127,500
Maintenace of Traffic							
N/A	Traffic Control	LS	1		1		$ 221,761.08
712-02.02	INTERCONNECTED PORTABLE BARRIER RAIL	LF	645		645	$ 48.61	$ 31,369.51
						MAINTENANCE OF TRAFFIC TOTAL (ROUNDED)	$ 253,200
Signs							
Not Listed	Signs (Construction)	LS	1		1	$ -	$ 20,600
						SIGNING TOTAL (ROUNDED)	$ 20,600
Pavement Markings							
716-12.02	ENHANCED FLAT THERMO P.M. (6IN)	LM	20.73601288		20.73601288	$ 7,419.17	$ 153,844.00
						PAVEMENT MARKINGS TOTAL (ROUNDED)	$ 153,900
Fencing							
						FENCE TOTAL (ROUNDED)	$ -
Rip-Rap							
						RIP-RAP & SLOPE PROTECTION TOTAL (ROUNDED)	$ -
Clearing and Grubing							
201-01	Clearing and Grubbing	LS			1	$ 415,572.41	$ 415,572.41
						CLEAR AND GRUBBING TOTAL (ROUNDED)	$ 415,600.00
Railroad At-Grade Crossing							
						RAILROAD CROSSING OR SEPARATION TOTAL (ROUNDED)	$ -
Utilties							
						UTILITIES TOTAL (ROUNDED)	$ -
Right-of-Way							
N/A	Right-of-Way	LS	1		1	$11,097,000	$ 11,097,000.00
						RIGHT-OF-WAY TOTAL (ROUNDED)	$ 11,097,000.00

INFLATED COST ESTIMATE

COST ESTIMATE SUMMARY (2023) - DESIGN-BID-BUILD						
PIN	**Project Type of Work**	**Preliminary Engineering:**	**Right-of-Way:**	**Utilities:**	**Construction:**	**Total Project Cost (2023):**
124683.06	nterchange Improvement	$ 3,970,000	$ 11,100,000	$ -	$ 39,700,000	$ 54,800,000

COST ESTIMATE SUMMARY (2023) - DESIGN-BUILD						
PIN	**Project Type of Work**	**Preliminary Engineering:**	**Right-of-Way:**	**Utilities:**	**Construction:**	**Total Project Cost (2023):**
124683.06	nterchange Improvement	$ 6,500,000	$ 11,100,000	$ -	$ 39,700,000	$ 57,300,000

COST ESTIMATE SUMMARY (2023) - CMGC & HIGH RISK SCENARIOS						
PIN	**Project Type of Work**	**Preliminary Engineering:**	**Right-of-Way:**	**Utilities:**	**Construction:**	**Total Project Cost (2023):**
124683.06	nterchange Improvement	$ 13,800,000	$ 11,100,000	$ -	$ 55,400,000	$ 80,300,000

DESIGN-BID-BUILD - INFLATED COST						
No. of Years	**Year**	**Preliminary Engineering:**	**Right-of-Way:**	**Utilities:**	**Construction:**	**Total Inflated Project Cost**
5	2029	$ 5,190,000	$ 14,500,000	$ -	$ 51,900,000	$ 71,600,000
10	2034	$ 6,790,000	$ 19,000,000	$ -	$ 67,800,000	$ 93,600,000

DESIGN-BUILD - INFLATED COST						
No. of Years	**Year**	**Preliminary Engineering:**	**Right-of-Way:**	**Utilities:**	**Construction:**	**Total Inflated Project Cost**
1	2025	$ 6,500,000	$ 11,700,000	$ -	$ 41,900,000	$ 60,500,000
2	2026	$ 6,500,000	$ 12,400,000	$ -	$ 44,200,000	$ 63,800,000
3	2027	$ 6,500,000	$ 13,000,000	$ -	$ 46,600,000	$ 67,300,000
4	2028	$ 6,500,000	$ 13,800,000	$ -	$ 49,200,000	$ 71,000,000
5	2029	$ 6,500,000	$ 14,500,000	$ -	$ 51,900,000	$ 74,900,000
10	2034	$ 6,500,000	$ 19,000,000	$ -	$ 67,800,000	$ 97,900,000

CMGC (HIGH RISK) - INFLATED COST						
No. of Years	**Year**	**Preliminary Engineering:**	**Right-of-Way:**	**Utilities:**	**Construction:**	**Total Inflated Project Cost**
5	2029	$ 18,000,000	$ 14,500,000	$ -	$ 72,400,000	$ 105,000,000
10	2034	$ 23,600,000	$ 19,000,000	$ -	$ 94,600,000	$ 137,000,000

INFLATION INPUTS	
Inflation Rate:	5.50%

TDOT Department of Transportation

Traffic Operations Division

0TO1 and 0TO2 TDOT Project Delivery Network Review

Project Information

PIN	124683.06
Project Number (if available)	N/A
County	Rutherford
Route	I-24 at Epps Mill Road Interchange
Termini	I-24 at Epps Mill Road Interchange
Compiled by	Jon Storey/ Greg Dyer/ Amin Salman
Date	May 17, 2023

General Access Management Statement:

All new projects are subject to HSAM geometric and access design criteria (HSAM Vol. 3) if they fall into our Policy rules, including new alignment, roadway widening, and major reconstruction projects. There may be dedicated cost for damages in the ROW acquisition. Uncontrolled open frontage should not be allowed. Deviations are often needed to prevent ROW takes. The deviation request form is online. Goal is to make the best and safest access possible.

TDOT Policy 385-01 concerning HSAM:
https://www.teamtn.gov/content/dam/teamtn/tdot/hr/policies/385-01.pdf

HSAM: https://www.tn.gov/tdot/traffic-operations-division/traffic-engineering-office/operations-and-safety/access-manual.html)

0TO1: Conduct Initial Traffic Ops/TSMO Review

Deliverable	Task	Responsible Party	
		Activity Leader	Additional Support
TSMO Alignment/Operations Review ITS Project Identification Form	▪ *TSMO Alignment & Operations Review*	TSMO Coordinator	Cross discipline team as listed below

Topic	Comments

TSMO Alignment & Operations Review	Please follow HSAM Volume 2 IIE Policy in high-level reconfiguration options (if applicable) and Volume 3 access management standards for driveway and sideroad spacing.
Attend Site Visit	Not yet scheduled
Review the Concept Report	Not yet developed
Other	None

OTO2: Develop TSMO Scope Items

Deliverable	Task	Responsible Party	
		Activity Leader	Additional Support
Signal Warrant (and Final Engineering Study)	• *Analyze Signal Warrants*	Signal Design Engineer	Signal Design Manager
Lighting Warrant	• *Analyze Lighting Warrants*	Lighting Design Engineer	Lighting Design Manager
TSMO & ITS Scope and Budget	• *Prepare TSMO & ITS Scope and Budget*	ITS/TSMO Design Engineer	ITS/TSMO Design Manager
SSEAF or SEAR	• *Complete SSEA Form or SEA Report*		

Topic	Comments
Analyze Signal Warrants	n/a
Analyze Lighting Warrants	Our Signals and Lighting Team recommends lighting at this interchange, dependent upon the City of Murfreesboro signing a maintenance agreement.
Prepare TSMO & ITS Scope and Budget	The ITS scope includes conduit, pull boxes, power & comm. cables., 1 CCTV, 1 RDS, and 1 demarcation with all required items. The estimated cost for the above equipment would be $323,890 and includes Construction, PE, and CEI costs.
Complete SSEA Form or SEA Report	N/A
Other	None

I24 Interchange Modification at Epps Mill Roadd, From west of Capital Way to SR-2 (US-41)

Rutherford County

124683.06

Proposed Project Area		
Total Project Length, **Miles**	**0.3**	1584
Fiber Trunk w/ 2" Conduit, **%**	**100%**	1584
Approx. Bored, **%**	**20%**	317
Approx. Structural, **%**	**0.0%**	0
Approx. Rock, **%**	**15%**	238

Proposed Project Devices			
CCTV	**1**	**RSU**	**0**
RDS	**1**	**RWIS**	**0**
HAR	**0**	**1 ESS**	**0**
DMS	**0**	**2 ESS**	**0**
TTMS	**0**	**3 ESS**	**0**
LCS Gantry	**0**	**Field Junction**	**0**
Ramp Meter	**0**	**HUB**	**0**

Relocated Project Devices			
CCTV	**0**	**RSU**	**0**
RDS	**0**	**RWIS**	**0**
HAR	**0**	**1 ESS**	**0**
DMS	**0**	**2 ESS**	**0**
TTMS	**0**	**3 ESS**	**0**
LCS Gantry	**0**	**Field Junction**	**0**
Ramp Meter	**0**	**HUB**	**0**

Item	Unit	Average Price	Total Cost
Fiber Optic Trunk	0.30	$ 182,800	$ 54,840
2" Conduit w/ Fiber Trunk	0.30	$ 44,900	$ 13,470
Single Run Guardrail	0	$ 40,530	$ -
80' CCTV Site	1	$ 101,010	$ 101,010
RDS at CCTV/DMS Site	1	$ 10,600	$ 10,600
HAR Site	0	$ 75,810	$ -
Truss-Mounted DMS Site	0	$ 313,085	$ -
Travel Time Message Sign Site	0	$ 77,270	$ -
Lane Control Signal Gantry Site	0	$ 237,910	$ -
Ramp Meter Site	0	$ 135,210	$ -
RSU (Bluetooth/CV2X/DSRC) at CCTV/DMS	0	$ 6,600	$ -
RWIS (Full) Site	0	$ 88,410	$ -
1 ESS at CCTV/DMS Site	0	$ 11,975	$ -
2 ESS at CCTV/DMS Site	0	$ 23,950	$ -
3 ESS at CCTV/DMS Site	0	$ 35,925	$ -
Field Junction Hub Site	0	$ 91,030	$ -
Communications Hub Building Site	0	$ 431,860	$ -
Relocated 80' CCTV Site	0	$ 38,510	$ -
Relocated RDS at CCTV/DMS Site	0	$ 3,500	$ -
Relocated HAR Site	0	$ 28,250	$ -
Relocated Truss-Mounted DMS Site	0	$ 138,085	$ -
Relocated Travel Time Message Sign Site	0	$ 45,770	$ -
Relocated Lane Control Signal Gantry Site	0	$ 151,410	$ -
Relocated Ramp Meter Site	0	$ 37,610	$ -
Relocated RSU (Bluetooth/CV2X/DSRC) at CCT	0	$ 2,500	$ -
Relocated RWIS (Full) Site	0	$ 34,510	$ -
Relocated 1 ESS at CCTV/DMS Site	0	$ 3,500	$ -
Relocated 2 ESS at CCTV/DMS Site	0	$ 7,000	$ -
Relocated 3 ESS at CCTV/DMS Site	0	$ 10,500	$ -
Relocated Field Junction Hub Site	0	$ 51,030	$ -
Relocated Communications Hub Building Site	0	$ 131,860	$ -
Device Grid Power Connection	1	$ 45,004	$ 45,004

MOBILIZATION	5%	of Construction	$ 11,246
MAINTENANCE OF TRAFFIC	5%	of Construction	$ 11,246
CONTINGENCY	10%	of Construction	$ 22,492
CONSTRUCTION			**$ 269,908**
PRELIMINARY ENGINEERING	10.0%	of Construction	**$ 26,991**
CE&I	10.0%	of Construction	**$ 26,991**
			$ 323,890

Crash Summary Report

County: RUTHERFORD **Route:** 01044 **Spcl Cse:** 0-NONE **Cnty Seq:** 1

Log Miles: 0.000 to 0.860 - Crash Dates: 3/1/2020 to 3/2/2023
Vehicle Filter: None - Other Factors Filter: None

Statistics

Fatal Crashes:	0
Total Killed:	0
Suspected Serious Injury Crashes:	2
Total Suspected Serious Injuries:	3
Other Injury Crashes:	5
Total Other Injuries:	8
Prop Damage Crashes:	41
Total Crashes:	**48**

Crash Location

Along Roadway:	25
At Intersection:	13
Railroad Crossing:	0
Bridge:	0
Underpass:	0
Ramp:	10
Private Property:	0
Other:	0

Crashes Involving

Pedestrians:	0
Hazardous Cargo:	0
Work / Constr Zones:	0
Fixed Objects:	2
Single Unit Trucks	4
Tractor - Trailer Trucks:	13
Bicycles:	0
Motorcycles:	0
Lane Departures:	8
Distracted Drivers:	1

Road Conditions

Ice:	0
Snow or Slush:	0
Sand, Mud, Dirt or Oil:	0
Wet:	10
Dry:	37

First Harmful Event

Pedestrian:	0
Pedalcycle:	0
Railway Train:	0
Deer (Animal):	0
Other Animal:	1
Motor Vehicle in Transport:	41
Motor Vehicle in Transport in Other Roadway:	0
Parked Motor Vehicle:	1
Other Type Non-Motorist:	0
Fixed Object:	2
Other Object (Not Fixed):	0
Non Collision:	0
Overturn:	1
Jackknife:	0
Cross Median:	0
Ran Off Road:	0

Manner of Collision

Rear End:	13
Head On:	2
Rear-to-Side / Rear:	1
Angle:	18
Sideswipe Same Dir:	5
Sideswipe Opp Dir:	2
Unknown:	2

Light Conditions

Dawn:	1
Daylight:	35
Dusk:	0
Dark / Lighted:	3
Dark / Not Lighted:	8
Not Indicated:	0

Weather Conditions

No Adverse Conditions:	39
Rain:	8
Sleet and Hail:	0
Snow:	0
Foggy:	0
Smog, Smoke:	0
Crosswind:	0

Fixed Objects

Boulder:	0	Other Barrier:	0	Ditch:	0
Building:	0	Highway Traffic Sign Post	0	Embankment:	0
Impact Attenuator:	0	Overhead Sign Support:	0	Fence:	0
Overhead Structure:	0	Luminaire/Light Support:	0	Wall:	0
Bridge Pier/Abutment/End:	0	Traffic Signal Support:	0	Mail Box:	0
Bridge Rail:	0	Utility Pole:	0	Shrubbery:	0
Guardrail:	0	Other Post, Pole Supports:	0	Tree:	1
Cable Barrier:	0	Culvert:	1	Fire Hydrant:	0
		Curb:	0	Other Fixed Object:	0

This report was generated by E-TRIMS

Crash Summary Report

County: RUTHERFORD **Route:** I0024 **Spcl Cse:** 0-NONE **Cnty Seq:** 1

Log Miles: 25.330 to 26.070 - Crash Dates: 3/1/2020 to 3/2/2023
Vehicle Filter: None - Other Factors Filter: None

Statistics

Fatal Crashes:	0
Total Killed:	0
Suspected Serious Injury Crashes:	2
Total Suspected Serious Injuries:	2
Other Injury Crashes:	12
Total Other Injuries:	13
Prop Damage Crashes:	49
Total Crashes:	**63**

Crash Location

Along Roadway:	53
At Intersection:	1
Railroad Crossing:	0
Bridge:	0
Underpass:	0
Ramp:	9
Private Property:	0
Other:	0

Crashes Involving

Pedestrians:	1
Hazardous Cargo:	0
Work / Constr Zones:	0
Fixed Objects:	8
Single Unit Trucks	3
Tractor - Trailer Trucks:	13
Bicycles:	0
Motorcycles:	0
Lane Departures:	19
Distracted Drivers:	0

Road Conditions

Ice:	1
Snow or Slush:	0
Sand, Mud, Dirt or Oil:	0
Wet:	6
Dry:	54

First Harmful Event

Pedestrian:	0
Pedalcycle:	0
Railway Train:	0
Deer (Animal):	3
Other Animal:	0
Motor Vehicle in Transport:	40
Motor Vehicle in Transport in Other Roadway:	0
Parked Motor Vehicle:	3
Other Type Non-Motorist:	0
Fixed Object:	8
Other Object (Not Fixed):	2
Non Collision:	1
Overturn:	4
Jackknife:	0
Cross Median:	0
Ran Off Road:	0

Manner of Collision

Rear End:	23
Head On:	0
Rear-to-Side / Rear:	0
Angle:	3
Sideswipe Same Dir:	17
Sideswipe Opp Dir:	0
Unknown:	0

Light Conditions

Dawn:	2
Daylight:	44
Dusk:	1
Dark / Lighted:	0
Dark / Not Lighted:	14
Not Indicated:	0

Weather Conditions

No Adverse Conditions:	57
Rain:	2
Sleet and Hail:	0
Snow:	0
Foggy:	1
Smog, Smoke:	0
Crosswind:	0

Fixed Objects

Boulder:	0	Other Barrier:	0	Ditch:	3
Building:	0	Highway Traffic Sign Post	0	Embankment:	2
Impact Attenuator:	0	Overhead Sign Support:	0	Fence:	0
Overhead Structure:	0	Luminaire/Light Support:	0	Wall:	0
Bridge Pier/Abutment/End:	0	Traffic Signal Support:	0	Mail Box:	0
Bridge Rail:	0	Utility Pole:	0	Shrubbery:	0
Guardrail:	2	Other Post, Pole Supports:	0	Tree:	1
Cable Barrier:	0	Culvert:	0	Fire Hydrant:	0
		Curb:	0	Other Fixed Object:	0

Crash Detail Report - Epps Mill Road

BLM	County	Route	Date of Crash	Time of Crash	Location	Type of Crash	Total Killed	Total Incap Injuries	Total Other Injuries	Total Veh	Vehicle Number	Most Harmful Event	Manner of First Collision	Driver Actions	Vehicle Going Direction	Relation to First Roadway	Roadway Surface Conditions	Case Number	Weather Cond	Light Conditions
0	RUTHERFORD	01044	1/20/2021	2025	Along Roadway	Suspected Serious Injury	0	1	1	2	1	Vehicle in Transport	ANGLE	No Contributing Actions	N	On Roadway	Dry	102880658	Clear	Dark-Not Lighted
0	RUTHERFORD	01044	1/20/2021	2025	Along Roadway	Suspected Serious Injury	0	1	1	2	2	Vehicle in Transport	ANGLE	No Contributing Actions	E	On Roadway	Dry	102880658	Clear	Dark-Not Lighted
0.02	RUTHERFORD	01044	9/22/2022	1430	Along Roadway	Suspected Serious Injury	0	2	0	2	1	Vehicle in Transport	HEAD-ON	Failure to Yield Right of Way	N	On Roadway	Dry	103430069	Clear	Daylight
0.02	RUTHERFORD	01044	9/22/2022	1430	Along Roadway	Suspected Serious Injury	0	2	0	2	2	Vehicle in Transport	HEAD-ON	No Contributing Actions	N	On Roadway	Dry	103430069	Clear	Daylight
0.26	RUTHERFORD	01044	5/13/2022	46	Along Roadway	Prop Damage (over)	0	0	0	2	1	Parked Motor Vehicle	SIDESWIPE, SAME DIR	Lane Departure	E	On Roadway	Dry	103300200	Clear	Dark-Lighted
0.26	RUTHERFORD	01044	5/13/2022	46	Along Roadway	Prop Damage (over)	0	0	0	2	2	Vehicle in Transport	SIDESWIPE, SAME DIR	No Contributing Actions	E	On Roadway	Dry	103300200	Clear	Dark-Lighted
0.33	RUTHERFORD	01044	6/18/2021	1105	Along Roadway	Prop Damage (over)	0	0	0	2	1	Vehicle in Transport	REAR-END	Following Improperly	W	On Roadway	Dry	103010877	Clear	Daylight
0.33	RUTHERFORD	01044	6/18/2021	1105	Along Roadway	Prop Damage (over)	0	0	0	2	2	Vehicle in Transport	REAR-END	No Contributing Actions	W	On Roadway	Dry	103010877	Clear	Daylight
0.67	RUTHERFORD	01044	2/26/2022	1428	Along Roadway	Prop Damage (over)	0	0	0	2	1	Vehicle in Transport	REAR-END	Improper Turn	W	On Roadway	Dry	103228482	Clear	Daylight
0.67	RUTHERFORD	01044	2/26/2022	1428	Along Roadway	Prop Damage (over)	0	0	0	2	2	Vehicle in Transport	REAR-END	No Contributing Actions	E	On Roadway	Dry	103228482	Clear	Daylight
0.73	RUTHERFORD	01044	5/2/2021	2145	Along Roadway	Prop Damage (over)	0	0	0	1	1	Overturn	NO COLLISION W/ VEHICLE	Speed too Fast for Conditions	N	Roadside - - Left	Wet	102978071	Rain	Dark-Not Lighted
0.01	RUTHERFORD	01044	1/10/2021	1002	Along Roadway	Prop Damage (under)	0	0	0	1	1	Standing Tree	NO COLLISION W/ VEHICLE	Swerved or Avoided	S	Roadside - - Right	Dry	102874168	Cloudy	Daylight
0.6	RUTHERFORD	01044	7/10/2022	459	Along	Prop	0	0	0	1	1	Unknown	UNKNOWN	Unknown	E	Unknown	Dry	103357714	Clear	Dark-Not
0	RUTHERFORD	01044	8/21/2020	1351	Along Roadway	Prop Damage (over)	0	0	0	2	1	Vehicle in Transport	REAR-END	No Contributing Actions	W	--	Wet	102765603	Rain	Daylight
0	RUTHERFORD	01044	8/21/2020	1351	Along Roadway	Prop Damage (over)	0	0	0	2	2	Vehicle in Transport	REAR-END	Following Improperly	W	--	Wet	102765603	Rain	Daylight
0	RUTHERFORD	01044	9/24/2021	650	Along Roadway	Prop Damage (over)	0	0	0	2	1	Vehicle in Transport	ANGLE	Lane Departure	W	--	Dry	103099364	Clear	Daylight
0	RUTHERFORD	01044	9/24/2021	650	Along Roadway	Prop Damage (over)	0	0	0	2	2	Vehicle in Transport	ANGLE	No Contributing Actions	E	--	Dry	103099364	Clear	Daylight
0.01	RUTHERFORD	01044	7/24/2020	1114	Along Roadway	Prop Damage (over)	0	0	0	2	1	Vehicle in Transport	ANGLE	Failure to Yield Right of Way	N	--	Dry	102747435	Clear	Daylight
0.01	RUTHERFORD	01044	7/24/2020	1114	Along Roadway	Prop Damage (over)	0	0	0	2	2	Vehicle in Transport	ANGLE	No Contributing Actions	N	--	Dry	102747435	Clear	Daylight
0.19	RUTHERFORD	01044	12/7/2020	1422	Along Roadway	Prop Damage (over)	0	0	0	2	1	Vehicle in Transport	OTHER	No Contributing Actions	E	--	Dry	102851471	Cloudy	Daylight
0.19	RUTHERFORD	01044	12/7/2020	1422	Along Roadway	Prop Damage (over)	0	0	0	2	2	Vehicle in Transport	OTHER	Improper Backing	S	--	Dry	102851471	Cloudy	Daylight
0.25	RUTHERFORD	01044	9/13/2020	1420	Along Roadway	Prop Damage (over)	0	0	0	2	1	Vehicle in Transport	REAR-END	No Contributing Actions	E	--	Wet	102784539	Rain	Daylight
0.25	RUTHERFORD	01044	9/13/2020	1420	Along Roadway	Prop Damage (over)	0	0	0	2	2	Vehicle in Transport	REAR-END	Following Improperly	E	--	Wet	102784539	Rain	Daylight
0.31	RUTHERFORD	01044	12/14/2021	2049	Along Roadway	Prop Damage (over)	0	0	0	2	1	Vehicle in Transport	SIDESWIPE, SAME DIR	Failure to Yield Right of Way	S	--	Dry	103169725	Clear	Dark-Not Lighted
0.31	RUTHERFORD	01044	12/14/2021	2049	Along Roadway	Prop Damage (over)	0	0	0	2	2	Vehicle in Transport	SIDESWIPE, SAME DIR	No Contributing Actions	S	--	Dry	103169725	Clear	Dark-Not Lighted
0.35	RUTHERFORD	01044	3/20/2020	1039	Along Roadway	Prop Damage (under)	0	0	0	2	1	Vehicle in Transport	REAR-END	Improper Backing	E	--	Wet	102685684	Cloudy	Daylight
0.35	RUTHERFORD	01044	3/20/2020	1039	Along Roadway	Prop Damage (under)	0	0	0	2	2	Vehicle in Transport	REAR-END	No Contributing Actions	E	--	Wet	102685684	Cloudy	Daylight
0.35	RUTHERFORD	01044	7/1/2022	2241	Along Roadway	Prop Damage (over)	0	0	0	2	1	Parked Motor Vehicle	ANGLE	Improper Backing	S	--	Dry	103351229	Clear	Dark-Lighted
0.35	RUTHERFORD	01044	7/1/2022	2241	Along Roadway	Prop Damage (over)	0	0	0	2	2	Parked Motor Vehicle	ANGLE	No Contributing Actions	W	--	Dry	103351229	Clear	Dark-Lighted
0.59	RUTHERFORD	01044	10/20/2022	1600	Along Roadway	Prop Damage (over)	0	0	0	2	1	Vehicle in Transport	HEAD-ON	Improper Turn	E	--	Dry	103454244	Clear	Daylight
0.59	RUTHERFORD	01044	10/20/2022	1600	Along Roadway	Prop Damage (over)	0	0	0	2	2	Vehicle in Transport	HEAD-ON	No Contributing Actions	S	--	Dry	103454244	Clear	Daylight

Crash Detail Report - Epps Mill Road

0.6	RUTHERFORD	01044	9/14/2021	1100	Along Roadway	Prop Damage (over)	0	0	0	2	1	Vehicle in Transport	REAR-END	Improper Backing	W	--	Dry	103089307	Clear	Daylight
0.6	RUTHERFORD	01044	9/14/2021	1100	Along Roadway	Prop Damage (over)	0	0	0	2	2	Vehicle in Transport	REAR-END	No Contributing Actions	W	--	Dry	103089307	Clear	Daylight
0.61	RUTHERFORD	01044	3/21/2020	1813	Along Roadway	Prop Damage (over)	0	0	0	2	1	Vehicle in Transport	ANGLE	No Contributing Actions	S	--	Dry	102685341	Clear	Daylight
0.61	RUTHERFORD	01044	3/21/2020	1813	Along Roadway	Prop Damage (over)	0	0	0	2	2	Vehicle in Transport	ANGLE	Unknown Action	N	--	Dry	102685341	Clear	Daylight
0.61	RUTHERFORD	01044	3/8/2022	1626	Along Roadway	Prop Damage (over)	0	0	0	2	1	Vehicle in Transport	ANGLE	No Contributing Actions	S	--	Dry	103241838	Clear	Daylight
0.61	RUTHERFORD	01044	3/8/2022	1626	Along Roadway	Prop Damage (over)	0	0	0	2	2	Vehicle in Transport	ANGLE	Failure to Yield Right of Way	N	--	Dry	103241838	Clear	Daylight
0.68	RUTHERFORD	01044	10/9/2020	1623	Along Roadway	Prop Damage (over)	0	0	0	2	1	Vehicle in Transport	REAR-END	No Contributing Actions	N	--	Wet	102804462	Rain	Daylight
0.68	RUTHERFORD	01044	10/9/2020	1623	Along Roadway	Prop Damage (over)	0	0	0	2	2	Vehicle in Transport	REAR-END	Lane Departure	S	--	Wet	102804462	Rain	Daylight
0.83	RUTHERFORD	01044	4/28/2022	900	Along Roadway	Prop Damage (over)	0	0	0	1	1	Other Animal	NO COLLISION W/ VEHICLE	No Contributing Actions	E	--	Dry	103289871	Clear	Daylight
0.33	RUTHERFORD	01044	11/4/2022	1203	At an Intersection	Prop Damage (over)	0	0	0	2	1	Vehicle in Transport	ANGLE	Improper Turn	E	On Roadway	Dry	103480078	Clear	Daylight
0.33	RUTHERFORD	01044	11/4/2022	1203	At an Intersection	Prop Damage (over)	0	0	0	2	2	Vehicle in Transport	ANGLE	No Contributing Actions	W	On Roadway	Dry	103480078	Clear	Daylight
0.67	RUTHERFORD	01044	4/30/2021	719	At an Intersection	Prop Damage (over)	0	0	0	2	1	Vehicle in Transport	ANGLE	Driver Distracted	E	On Roadway	Dry	102966423	Clear	Daylight
0.67	RUTHERFORD	01044	4/30/2021	719	At an Intersection	Prop Damage (over)	0	0	0	2	2	Vehicle in Transport	ANGLE	Failure to Yield Right of Way	W	On Roadway	Dry	102966423	Clear	Daylight
0.67	RUTHERFORD	01044	2/13/2023	1444	At an Intersection	Prop Damage (over)	0	0	0	1	1	Overturn	NO COLLISION W/ VEHICLE	Lane Departure	W	On Roadway	Dry	103573353	Clear	Daylight
0.31	RUTHERFORD	01044	12/12/2020	613	At an Intersection	Prop Damage (over)	0	0	0	2	1	Vehicle in Transport	REAR-END	Following Improperly	S	--	Wet	102855512	Rain	Dawn
0.31	RUTHERFORD	01044	12/12/2020	613	At an Intersection	Prop Damage (over)	0	0	0	2	2	Vehicle in Transport	REAR-END	No Contributing Actions	S	--	Wet	102855512	Rain	Dawn
0.33	RUTHERFORD	01044	11/14/2020	1705	At an Intersection	Prop Damage (over)	0	0	0	2	1	Vehicle in Transport	ANGLE	No Contributing Actions	E	--	Dry	102832077	Clear	Dark-Not Lighted
0.33	RUTHERFORD	01044	11/14/2020	1705	At an Intersection	Prop Damage (over)	0	0	0	2	2	Vehicle in Transport	ANGLE	Unknown Action	E	--	Dry	102832077	Clear	Dark-Not Lighted
0.61	RUTHERFORD	01044	3/27/2021	1545	At an Intersection	Prop Damage (over)	0	0	0	2	1	Vehicle in Transport	ANGLE	Unknown Action	W	--	Wet	102935029	Cloudy	Daylight
0.61	RUTHERFORD	01044	3/27/2021	1545	At an Intersection	Prop Damage (over)	0	0	0	2	2	Vehicle in Transport	ANGLE	Unknown Action	E	--	Wet	102935029	Cloudy	Daylight
0.61	RUTHERFORD	01044	5/26/2021	946	At an Intersection	Prop Damage (over)	0	0	0	2	1	Vehicle in Transport	ANGLE	Failure to Obey Traffic Controls	E	--	Dry	102989249	Clear	Daylight
0.61	RUTHERFORD	01044	5/26/2021	946	At an Intersection	Prop Damage (over)	0	0	0	2	2	Vehicle in Transport	ANGLE	No Contributing Actions	S	--	Dry	102989249	Clear	Daylight
0.62	RUTHERFORD	01044	8/1/2020	1645	At an Intersection	Prop Damage (over)	0	0	0	2	1	Vehicle in Transport	REAR-END	No Contributing Actions	E	--	Wet	102752022	Rain	Daylight
0.62	RUTHERFORD	01044	8/1/2020	1645	At an Intersection	Prop Damage (over)	0	0	0	2	2	Vehicle in Transport	REAR-END	Following Improperly	E	--	Wet	102752022	Rain	Daylight
0.67	RUTHERFORD	01044	10/6/2020	1620	At an Intersection	Prop Damage (over)	0	0	0	2	1	Vehicle in Transport	ANGLE	No Contributing Actions	W	--	Dry	102802087	Clear	Daylight
0.67	RUTHERFORD	01044	10/6/2020	1620	At an Intersection	Prop Damage (over)	0	0	0	2	2	Vehicle in Transport	ANGLE	Failure to Yield Right of Way	W	--	Dry	102802087	Clear	Daylight
0.67	RUTHERFORD	01044	10/13/2020	1120	At an Intersection	Prop Damage (over)	0	0	0	2	1	Vehicle in Transport	ANGLE	Failure to Yield Right of Way	E	--	Dry	102807556	Clear	Daylight
0.67	RUTHERFORD	01044	10/13/2020	1120	At an Intersection	Prop Damage (over)	0	0	0	2	2	Vehicle in Transport	ANGLE	No Contributing Actions	S	--	Dry	102807556	Clear	Daylight
0.67	RUTHERFORD	01044	12/1/2020	729	At an Intersection	Prop Damage (over)	0	0	0	2	1	Vehicle in Transport	SIDESWIPE, SAME DIR	Lane Departure	W	--	Dry	102850405	Clear	Daylight
0.67	RUTHERFORD	01044	12/1/2020	729	At an Intersection	Prop Damage (over)	0	0	0	2	2	Vehicle in Transport	SIDESWIPE, SAME DIR	No Contributing Actions	W	--	Dry	102850405	Clear	Daylight
0.31	RUTHERFORD	01044	11/21/2020	1117	At an Intersection	Prop Damage (over)	0	0	0	2	1	Vehicle in Transport	REAR-END	Improper Backing	N	--	Dry	102838665	Clear	Daylight

Crash Detail Report - Epps Mill Road

0.31	RUTHERFORD	01044	11/21/2020	1117	At an Intersection	Prop Damage (over)	0	0	0	2	2	Vehicle in Transport	REAR-END	No Contributing Actions	S	--	Dry	102838665	Clear	Daylight
0.67	RUTHERFORD	01044	2/22/2021	1208	At an Intersection	Prop Damage (over)	0	0	0	2	1	Vehicle in Transport	REAR-END	Other (Narrative)	N	--	Dry	102906555	Clear	Daylight
0.67	RUTHERFORD	01044	2/22/2021	1208	At an Intersection	Prop Damage (over)	0	0	0	2	2	Vehicle in Transport	REAR-END	Failure to Obey Traffic Controls	N	--	Dry	102906555	Clear	Daylight
0.33	RUTHERFORD	01044	6/29/2021	909	Ramp	Prop Damage (over)	0	0	0	2	1	Vehicle in Transport	SIDESWIPE, SAME DIR	Failure to Yield Right of Way	W	On Roadway	Dry	103019527	Clear	Daylight
0.33	RUTHERFORD	01044	6/29/2021	909	Ramp	Prop Damage (over)	0	0	0	2	2	Vehicle in Transport	SIDESWIPE, SAME DIR	No Contributing Actions	S	On Roadway	Dry	103019527	Clear	Daylight
0.33	RUTHERFORD	01044	11/25/2021	1827	Ramp	Possible Injury	0	0	3	2	1	Vehicle in Transport	ANGLE	Failure to Yield Right of Way	E	On Roadway	Wet	103153338	Rain	Dark-Not Lighted
0.33	RUTHERFORD	01044	11/25/2021	1827	Ramp	Possible Injury	0	0	3	2	2	Vehicle in Transport	ANGLE	No Contributing Actions	E	On Roadway	Wet	103153338	Rain	Dark-Not Lighted
0.4	RUTHERFORD	01044	10/28/2021	800	Ramp	Suspected Minor Injury	0	0	1	2	1	Vehicle in Transport	ANGLE	No Contributing Actions	W	On Roadway	Wet	103137118	Rain	Daylight
0.4	RUTHERFORD	01044	10/28/2021	800	Ramp	Suspected Minor Injury	0	0	1	2	2	Vehicle in Transport	ANGLE	Failure to Yield Right of Way	E	On Roadway	Wet	103137118	Rain	Daylight
0.6	RUTHERFORD	01044	12/9/2022	1826	Ramp	Possible Injury	0	0	1	2	1	Vehicle in Transport	ANGLE	Failure to Yield Right of Way	S	On Roadway	Dry	103505564	Clear	Dark-Not Lighted
0.6	RUTHERFORD	01044	12/9/2022	1826	Ramp	Possible Injury	0	0	1	2	2	Vehicle in Transport	ANGLE	No Contributing Actions	W	On Roadway	Dry	103505564	Clear	Dark-Not Lighted
0.6	RUTHERFORD	01044	12/12/2020	1847	Ramp	Possible Injury	0	0	1	2	1	Vehicle in Transport	SIDESWIPE, OPP DIR	Unknown Action	W	On Roadway	Dry	102857188	Clear	Dark-Lighted
0.6	RUTHERFORD	01044	12/12/2020	1847	Ramp	Possible Injury	0	0	1	2	2	Vehicle in Transport	SIDESWIPE, OPP DIR	No Contributing Actions	S	On Roadway	Dry	102857188	Clear	Dark-Lighted
0.61	RUTHERFORD	01044	6/15/2021	1335	Ramp	Prop Damage (over)	0	0	0	2	1	Vehicle in Transport	SIDESWIPE, OPP DIR	Failure to Yield Right of Way	N	On Roadway	Dry	103009349	Clear	Daylight
0.61	RUTHERFORD	01044	6/15/2021	1335	Ramp	Prop Damage (over)	0	0	0	2	2	Vehicle in Transport	SIDESWIPE, OPP DIR	No Contributing Actions	S	On Roadway	Dry	103009349	Clear	Daylight
0.37	RUTHERFORD	01044	11/15/2021	1454	Ramp	Prop Damage (over)	0	0	0	2	1	Vehicle in Transport	REAR-END	No Contributing Actions	W	--	Dry	103143818	Clear	Daylight
0.37	RUTHERFORD	01044	11/15/2021	1454	Ramp	Prop Damage (over)	0	0	0	2	2	Vehicle in Transport	REAR-END	Unknown Action	W	--	Dry	103143818	Clear	Daylight
0.55	RUTHERFORD	01044	3/22/2021	1750	Ramp	Prop Damage (over)	0	0	0	2	1	Vehicle in Transport	REAR-END	No Contributing Actions	S	--	Dry	102930002	Clear	Daylight
0.55	RUTHERFORD	01044	3/22/2021	1750	Ramp	Prop Damage (over)	0	0	0	2	2	Vehicle in Transport	REAR-END	Following Improperly	S	--	Dry	102930002	Clear	Daylight
0.61	RUTHERFORD	01044	2/26/2023	1924	Ramp	Prop Damage (over)	0	0	0	2	1	Vehicle in Transport	ANGLE	Failure to Yield Right of Way	E	--	Dry	103581576	Cloudy	Dark-Not Lighted
0.61	RUTHERFORD	01044	2/26/2023	1924	Ramp	Prop Damage (over)	0	0	0	2	2	Vehicle in Transport	ANGLE	Other (Narrative)	N	--	Dry	103581576	Cloudy	Dark-Not Lighted
0.62	RUTHERFORD	01044	9/14/2021	950	Ramp	Prop Damage (over)	0	0	0	2	1	Vehicle in Transport	SIDESWIPE, SAME DIR	No Contributing Actions	E	--	Dry	103089281	Clear	Daylight
0.62	RUTHERFORD	01044	9/14/2021	950	Ramp	Prop Damage (over)	0	0	0	2	2	Vehicle in Transport	SIDESWIPE, SAME DIR	Improper Passing	E	--	Dry	103089281	Clear	Daylight
0.31	RUTHERFORD	01044	4/2/2021	1748	Along Roadway	Possible Injury	0	0	1	2	1	Vehicle in Transport	ANGLE	Improper Turn	E	On Roadway	Dry	102941360	Clear	Daylight
0.31	RUTHERFORD	01044	4/2/2021	1748	Along Roadway	Possible Injury	0	0	1	2	2	Vehicle in Transport	ANGLE	No Contributing Actions	W	On Roadway	Dry	102941360	Clear	Daylight
0.35	RUTHERFORD	01044	7/1/2021	1229	Along Roadway	Prop Damage (over)	0	0	0	2	1	Vehicle in Transport	REAR TO SIDE	Improper Backing	W	--	Dry	103022611	Clear	Daylight
0.35	RUTHERFORD	01044	7/1/2021	1229	Along Roadway	Prop Damage (over)	0	0	0	2	2	Vehicle in Transport	REAR TO SIDE	No Contributing Actions	N	--	Dry	103022611	Clear	Daylight
0.67	RUTHERFORD	01044	3/10/2022	755	Along Roadway	Prop Damage (under)	0	0	0	2	1	--	--	No Contributing Actions	--	--	--	103242000	--	--
0.67	RUTHERFORD	01044	3/10/2022	755	Along Roadway	Prop Damage (under)	0	0	0	2	2	--	--	Improper Passing	--	--	--	103242000	--	--

Crash Detail Report - Interstate 24

NOTE: Property Damage Only crashes excluded

BLM	County	Route	Date of Crash	Time of Crash	Location	Type of Crash	Total Killed	Total Incap Injuries	Total Other Injuries	Total Veh	Vehicle Number	Most Harmful Event	Manner of First Collision	Driver Actions	Vehicle Going Direction	Relation to First Roadway	Roadway Surface Conditions	Case Number	Weather Cond	Light Conditions
25.43	RUTHERFORD	I0024	9/6/2020	2213	Along Roadway	Suspected Serious Injury	0	1	0	2	1	Vehicle in Transport	REAR-END	Reckless Negligent Driving	W	On Roadway	Dry	102779861	Clear	Dark-Not Lighted
25.43	RUTHERFORD	I0024	9/6/2020	2213	Along Roadway	Suspected Serious Injury	0	1	0	2	2	Vehicle in Transport	REAR-END	No Contributing Actions	W	On Roadway	Dry	102779861	Clear	Dark-Not Lighted
25.43	RUTHERFORD	I0024	9/6/2020	2213	Along Roadway	Suspected Serious Injury	0	1	0	2	3	--	REAR-END	--	--	On Roadway	Unknown	102779861	Clear	Dark-Not Lighted
25.5	RUTHERFORD	I0024	2/10/2021	915	Along Roadway	Suspected Minor Injury	0	0	1	2	1	Vehicle in Transport	REAR-END	Swerved or Avoided	W	On Roadway	Dry	102897985	Cloudy	Daylight
25.5	RUTHERFORD	I0024	2/10/2021	915	Along Roadway	Suspected Minor Injury	0	0	1	2	2	Vehicle in Transport	REAR-END	No Contributing Actions	W	On Roadway	Dry	102897985	Cloudy	Daylight
25.64	RUTHERFORD	I0024	1/22/2022	1307	Along Roadway	Suspected Minor Injury	0	0	1	2	1	Vehicle in Transport	SIDESWIPE, SAME DIR	Failure to Yield Right of Way	E	On Roadway	Dry	103198448	Clear	Daylight
25.64	RUTHERFORD	I0024	1/22/2022	1307	Along Roadway	Suspected Minor Injury	0	0	1	2	2	Vehicle in Transport	SIDESWIPE, SAME DIR	No Contributing Actions	E	On Roadway	Dry	103198448	Clear	Daylight
25.72	RUTHERFORD	I0024	6/20/2022	2054	Along Roadway	Suspected Serious Injury	0	1	0	2	1	Vehicle in Transport	REAR-END	Following Improperly	W	On Roadway	Dry	103335637	Clear	Dark-Not Lighted
25.72	RUTHERFORD	I0024	6/20/2022	2054	Along Roadway	Suspected Serious Injury	0	1	0	2	2	Vehicle in Transport	REAR-END	No Contributing Actions	W	On Roadway	Dry	103335637	Clear	Dark-Not Lighted
25.91	RUTHERFORD	I0024	6/7/2021	759	Along Roadway	Suspected Minor Injury	0	0	2	2	1	Vehicle in Transport	REAR-END	Following Improperly	E	On Roadway	Dry	103000530	Cloudy	Daylight
25.91	RUTHERFORD	I0024	6/7/2021	759	Along Roadway	Suspected Minor Injury	0	0	2	2	2	Vehicle in Transport	REAR-END	No Contributing Actions	E	On Roadway	Dry	103000530	Cloudy	Daylight
25.47	RUTHERFORD	I0024	2/24/2022	1944	Along Roadway	Possible Injury	0	0	1	1	1	Standing Tree	NO COLLISION W/ VEHICLE	Lane Departure	W	Shoulder	Wet	103227125	Clear	Dark-Not Lighted
25.94	RUTHERFORD	I0024	3/9/2021	2121	Along Roadway	Suspected Minor Injury	0	0	1	1	1	Other Non-Collision	NO COLLISION W/ VEHICLE	Driving Wrong Way on One-Way Roadway	W	Median Barrier	Dry	102920567	Clear	Dark-Not Lighted
25.65	RUTHERFOR	I0024	3/28/2021	548	Along	Suspected	0	0	1	1	1	Overturn	NO COLLISION	Speed too	E	Roadside -	Wet	102934712	Cloudy	Dawn
26.06	RUTHERFORD	I0024	4/8/2020	1952	Along Roadway	Suspected Minor Injury	0	0	1	1	1	Ditch	NO COLLISION W/ VEHICLE	Lane Departure	E	Roadside - Left	Dry	102692801	Clear	Dark-Not Lighted
25.59	RUTHERFORD	I0024	10/15/2022	618	Along Roadway	Possible Injury	0	0	1	1	1	Guardrail End	NO COLLISION W/ VEHICLE	Lane Departure	E	Roadside - Right	Dry	103449575	Clear	Dark-Not Lighted
25.4	RUTHERFORD	I0024	12/19/2022	605	Along Roadway	Suspected Minor Injury	0	0	1	1	1	Shrubbery	NO COLLISION W/ VEHICLE	Swerved or Avoided	W	Outside Trafficway	Dry	103515505	Cloudy	Dark-Not Lighted
25.72	RUTHERFORD	I0024	5/21/2022	1620	Ramp	Suspected Minor Injury	0	0	1	1	1	Overturn	NO COLLISION W/ VEHICLE	Speed too Fast for Conditions	E	On Roadway	Dry	103312319	Clear	Daylight
25.75	RUTHERFORD	I0024	10/28/2020	2103	Ramp	Suspected Minor Injury	0	0	1	2	1	Earth Embankment	REAR-END	Failure to Yield Right of Way	S	On Roadway	Wet	102818906	Cloudy	Dark-Not Lighted
25.75	RUTHERFORD	I0024	10/28/2020	2103	Ramp	Suspected Minor Injury	0	0	1	2	2	Vehicle in Transport	REAR-END	No Contributing Actions	S	On Roadway	Wet	102818906	Cloudy	Dark-Not Lighted
25.59	RUTHERFORD	I0024	2/27/2022	1222	Ramp	Suspected Minor Injury	0	0	1	1	1	Overturn	NO COLLISION W/ VEHICLE	Speed too Fast for Conditions	E	Roadside - Left	Dry	103229643	Cloudy	Daylight
25.59	RUTHERFORD	I0024	2/27/2022	1222	Ramp	Suspected Minor Injury	0	0	1	1	2	--	NO COLLISION W/ VEHICLE	--	--	Roadside - Left	Unknown	103229643	Cloudy	Daylight

TENNESSEE DEPARTMENT OF TRANSPORTATION

COUNTY	= Rutherford	Date:	3/29/2024
Route	= Epps Mill Road		
Location	= Murfreesboro		
Highway Type	= 2 or 3 Ln		
FUNCTIONAL CLAS	Urban Major Collector		
DATA YEARS	= 2020 to 2023		
ADT YEARS USED=	2023 eTrims		
COMMENTS	=		
ANALYZED BY	= TWP		

SECTION = MORE THAN 0.10 MILE / SPOT = LESS THAN OR EQUAL TO 0.10 MILE

BLM	ELM	Length	Average AADT	VMT
0.000	0.500	0.500	3,543	1,772
0.500	0.860	0.360	3,924	1,413
0.000	0.000	0.000	0	0
0.000	0.000	0.000	0	0
0.000	0.000	0.000	0	0
0.000	0.000	0.000	0	0
0.000	0.000	0.000	0	0
		0.860	3,702	3,184

INTERSECTION

Log Mile =

PRODUCED PURSUANT TO
PUBLIC RECORDS REQUEST
This document is covered by 23 USC §409
and its production pursuant to a public
document records request does not
waive the provisions of §409

Leg	Traffic AADT
North =	
East =	
South =	
West =	
Entering AADT =	0

2023 Etrims

2 Or 3 Ln
2020 To 2023

		Total	Fatal	Incap. Injury	*Severe Crashes	Other Injury
No. of Crashes	=	48	0	2	2	5
No. of Years	=	3				
SW avg. rate	=	3.137	0.160	0.070	0.230	0.289
21-23 S/W Rates						
Exposure (E)	=	3.4866				
Crash Rate (A)	=	13.767	0.000	0.574	0.574	1.434
Critical Rate (C)	=	5.488				
Severity Index (SI)	=	0.1875				
Actual Rate/SW Average	=	4.39	0.00	8.19	2.49	4.96
Ratio of A/C	=	2.51				

* Severe Crashes are the sum of fatal and incapacitating injury crashes

Revised 4/8/15

TENNESSEE DEPARTMENT OF TRANSPORTATION

COUNTY	= Rutherford	Date:	3/29/2024
Route	= I-24		
Location	= Murfreesboro		
Highway Type	= 4 Lane Divided Section		
FUNCTIONAL CLAS	Urban Interstate		
DATA YEARS	= 2020 to 2023		
ADT YEARS USED=	2023 eTrims		
COMMENTS	=		
ANALYZED BY	= TWP		

SECTION = MORE THAN 0.10 MILE / SPOT = LESS THAN OR EQUAL TO 0.10 MILE

BLM	ELM	Length	Average AADT	VMT
25.330	25.730	0.400	61,026	24,410
25.730	26.070	0.340	56,869	19,335
0.000		0.000		0
0.000	0.000	0.000	0	0
0.000	0.000	0.000	0	0
0.000	0.000	0.000	0	0
0.000	0.000	0.000	0	0
		0.740	59,116	43,746

INTERSECTION

Log Mile =

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document records request does not
waive the provisions of §409

Leg	Traffic AADT
North =	
East =	
South =	
West =	
Entering AADT =	0

2023 Etrims
4 Lane Divided Section
2020 To 2023

		Total	Fatal	Incap. Injury	*Severe Crashes	Other Injury
No. of Crashes	=	63	0	2	2	12
No. of Years	=	3				
SW avg. rate	=	1.126	0.007	0.020	0.027	0.123
21-23 S/W Rates						
Exposure (E)	=	47.9017				
Crash Rate (A)	=	1.315	0.000	0.042	0.042	0.251
Critical Rate (C)	=	1.493				
Severity Index (SI)	=	0.2540				
Actual Rate/SW Average	=	1.17	0.00	2.09	1.55	2.04
Ratio of A/C	=	0.88				

* Severe Crashes are the sum of fatal and incapacitating injury crashes

Revised 4/8/15

Route Feature Description Listing

Rutherford County (75) - Route: 01044, Special Case: 0-None , Log Mile 0 to 0.86

COUNTY: RUTHERFORD **COUNTY NO:** 75

ROUTE: 01044 **SPECIAL CASE:** 0-NONE **CTY SEQ:** 1

LOG MILE	ITEM CODE	ROUTE FEATURE	DESC CODE
0.000	3	SR-2 MANCHESTER HWY. RT. & LT.	310
0.000	0	BEGIN EPPS MILL RD.	920
0.000	9	1-WAY STOP	901
0.000	9	BEGIN 30 MPH	932
0.213	9	TRAFFIC COUNT STATION 111	959
0.310	5	A189 FORBUS DR. RT.	520
0.310	5	A194 MILLER LN. LT.	530
0.334	5	A514 MILLER LN. LT.	530
0.380	7	RAMP TO I-24 WB LNS. RT. & RAMP FROM I-24 WB LNS. LT.	701
0.410	7	RAMP TO I-24 WB LNS. RT. & RAMP FROM I-24 WB LNS. LT.	701
0.480	2	OVERHEAD [75I00240041]: I-24	241
0.500	3	I-24 / CENTER OF OVERHEAD	360
0.560	7	RAMP TO I-24 EB LNS. RT.	702
0.560	9	PEARSON CEMETERY LT.	913
0.580	7	RAMP TO I-24 EB LNS. RT.	702
0.610	7	RAMP FROM I-24 EB LNS. RT.	705
0.630	7	RAMP FROM I-24 EB LNS. RT.	705
0.672	5	A515 MILLER RD. LT.	530
0.784	5	D611 CAPITAL WAY RT.	520

Route Feature Description Listing

Rutherford County (75) - Route: I0024, Special Case: 0-None , Log Mile 25.33 to 26.07

COUNTY: RUTHERFORD **COUNTY NO:** 75

ROUTE: I0024 **SPECIAL CASE:** 0-NONE **CTY SEQ:** 1

LOG MILE	ITEM CODE	ROUTE FEATURE	DESC CODE
25.550	7	RAMP 89-D FROM 1044 EPPS MILL RD. LT.	725
25.570	0	EXIT 89: BUCHANAN RD.	990
25.570	7	RAMP 89-A TO 1044 EPPS MILL RD. RT.	721
25.710	7	RAMP 89-B FROM 1044 EPPS MILL RD. RT.	724
25.730	2	UNDERPASS [75I00240041]: 1044 EPPS MILL RD.	242
25.730	4	1044 EPPS MILL RD. / CENTER OF UNDERPASS	480
25.730	0	INTERCHANGE 0089	939
25.900	7	RAMP 89-C TO 1044 EPPS MILL RD. LT.	722
25.940	0	MILE POST # 89	963
25.970	9	CULVERT: DRAINAGE	980

Road Segment Report

Rutherford County (75) - Route: 01044, Special Case: 0-None

COUNTY: RUTHERFORD **COUNTY NO: 75**

ROUTE NBR	SPEC CASE	CTY SEQ	BEG LOG MILE	END LOG MILE	SP SY	SP SY2	SP SY3	US RTE	US RTE2	FUNCTIONAL CLASS	ADM SYS	URB AREA	INC AREA	GOV CON	ROAD NAME	HPMS SEC_ID
01044	0	1	0.000	2.788	22					U / MAJ COL	18-STP URBAN, NON-STATE SYS	210		CO. HWAY AGENCY	EPPS MILL RD.	
01044	0	1	2.788	4.270	22					U / MAJ COL	18-STP URBAN, NON-STATE SYS	210		CO. HWAY AGENCY	WAYSIDE RD.	750110440278
01044	0	1	4.270	4.620	22					U / MAJ COL	18-STP URBAN, NON-STATE SYS.	210		CO. HWAY AGENCY	CHRISTIANA-HOOVERS GAP RD	

Road Segment Report

Rutherford County (75) - Route: I0024, Special Case: 0-None

COUNTY: RUTHERFORD **COUNTY NO: 75**

ROUTE NBR	SPEC CASE	CTY SEQ	BEG LOG MILE	END LOG MILE	SP SY	SP SY2	SP SY3	US RTE	US RTE2	FUNCTIONAL CLASS	ADM SYS	URB AREA	INC AREA	GOV CON	ROAD NAME	HPMS SEC_ID
I0024	0	1	0.000	1.235	08	11	26			U / INTERSTATE	02-INTERSTATE URBAN	210	159	STATE HWAY AGENCY	I-24	7501I0240000
I0024	0	1	1.235	2.420	08	11	26			U / INTERSTATE	02-INTERSTATE URBAN	210	159	STATE HWAY AGENCY	I-24	7501I0240124
I0024	0	1	2.420	2.630	08	11	26			U / INTERSTATE	02-INTERSTATE URBAN	210	159	STATE HWAY AGENCY	I-24	
I0024	0	1	2.630	2.740	08	11	26			U / INTERSTATE	02-INTERSTATE URBAN	210	159	STATE HWAY AGENCY	I-24	7501I0240263
I0024	0	1	2.740	2.785	08	11	26			U / INTERSTATE	02-INTERSTATE URBAN	210	159	STATE HWAY AGENCY	I-24	7501I0240274
I0024	0	1	2.785	2.890	08	11	26			U / INTERSTATE	02-INTERSTATE URBAN	210	270	STATE HWAY AGENCY	I-24	7501I0240274
I0024	0	1	2.890	3.230	08	11	26			U / INTERSTATE	02-INTERSTATE URBAN	210	270	STATE HWAY AGENCY	I-24	
I0024	0	1	3.230	3.620	08	11	26			U / INTERSTATE	02-INTERSTATE URBAN	210	270	STATE HWAY AGENCY	I-24	7501I0240321
I0024	0	1	3.620	3.810	08	11	26			U / INTERSTATE	02-INTERSTATE URBAN	210	270	STATE HWAY AGENCY	I-24	
I0024	0	1	3.810	4.070	08	11	26			U / INTERSTATE	02-INTERSTATE URBAN	210	270	STATE HWAY AGENCY	I-24	7501I0240381
I0024	0	1	4.070	4.200	08	11	26			U / INTERSTATE	02-INTERSTATE URBAN	210	270	STATE HWAY AGENCY	I-24	
I0024	0	1	4.200	4.310	08	11	26			U / INTERSTATE	02-INTERSTATE URBAN	210	270	STATE HWAY AGENCY	I-24	7501I0240420
I0024	0	1	4.310	6.730	08	11	26			U / INTERSTATE	02-INTERSTATE URBAN	210		STATE HWAY AGENCY	I-24	7501I0240420
I0024	0	1	6.730	6.784	08	11	26			U / INTERSTATE	02-INTERSTATE URBAN	210		STATE HWAY AGENCY	I-24	
I0024	0	1	6.784	6.818	08	11	26			U / INTERSTATE	02-INTERSTATE URBAN	210	270	STATE HWAY AGENCY	I-24	
I0024	0	1	6.818	11.270	08	11	26			U / INTERSTATE	02-INTERSTATE URBAN	210		STATE HWAY AGENCY	I-24	
I0024	0	1	11.270	11.470	08	11	31			U / INTERSTATE	02-INTERSTATE URBAN	210		STATE HWAY AGENCY	I-24	
I0024	0	1	11.470	12.117	08	11				U / INTERSTATE	02-INTERSTATE URBAN	210		STATE HWAY AGENCY	I-24	
I0024	0	1	12.117	13.030	08	11				U / INTERSTATE	02-INTERSTATE URBAN	210	209	STATE HWAY AGENCY	I-24	
I0024	0	1	13.030	14.370	08	11				U / INTERSTATE	02-INTERSTATE URBAN	210	209	STATE HWAY AGENCY	I-24	7501I0241230
I0024	0	1	14.370	14.564	08	11				U / INTERSTATE	02-INTERSTATE URBAN	210	209	STATE HWAY AGENCY	I-24	
I0024	0	1	14.564	14.880	08	11				U / INTERSTATE	02-INTERSTATE URBAN	210	209	STATE HWAY AGENCY	I-24	7501I0241433
I0024	0	1	14.880	15.300	08	11				U / INTERSTATE	02-INTERSTATE URBAN	210	209	STATE HWAY AGENCY	I-24	7501I0241465
I0024	0	1	15.300	16.710	08	11				U / INTERSTATE	02-INTERSTATE URBAN	210	209	STATE HWAY AGENCY	I-24	

Road Segment Report

Rutherford County (75) - Route: I0024, Special Case: 0-None

COUNTY: RUTHERFORD **COUNTY NO: 75**

ROUTE NBR	SPEC CASE	CTY SEQ	BEG LOG MILE	END LOG MILE	SP SY	SP SY2	SP SY3	US RTE	US RTE2	FUNCTIONAL CLASS	ADM SYS	URB AREA	INC AREA	GOV CON	ROAD NAME	HPMS SEC_ID
I0024	0	1	16.710	17.680	08	11				U / INTERSTATE	02-INTERSTATE URBAN	210	209	STATE HWAY AGENCY	I-24	7501I0241648
I0024	0	1	17.680	17.810	08	11				U / INTERSTATE	02-INTERSTATE URBAN	210	209	STATE HWAY AGENCY	I-24	
I0024	0	1	17.810	18.170	08	11				U / INTERSTATE	02-INTERSTATE URBAN	210	209	STATE HWAY AGENCY	I-24	7501I0241768
I0024	0	1	18.170	18.280	08	11				U / INTERSTATE	02-INTERSTATE URBAN	210	209	STATE HWAY AGENCY	I-24	
I0024	0	1	18.280	18.730	08	11				U / INTERSTATE	02-INTERSTATE URBAN	210	209	STATE HWAY AGENCY	I-24	7501I0241817
I0024	0	1	18.730	18.739	08	11				U / INTERSTATE	02-INTERSTATE URBAN	210	209	STATE HWAY AGENCY	I-24	
I0024	0	1	18.739	19.020	08	11				U / INTERSTATE	02-INTERSTATE URBAN	210		STATE HWAY AGENCY	I-24	
I0024	0	1	19.020	20.490	08	11				U / INTERSTATE	02-INTERSTATE URBAN	210		STATE HWAY AGENCY	I-24	7501I0241848
I0024	0	1	20.490	21.500	08	11				U / INTERSTATE	02-INTERSTATE URBAN	210		STATE HWAY AGENCY	I-24	7501I0242088
I0024	0	1	21.500	27.718	08	11				U / INTERSTATE	02-INTERSTATE URBAN	210		STATE HWAY AGENCY	I-24	
I0024	0	1	27.718	33.290	08	11				R / INTERSTATE	01-INTERSTATE RURAL			STATE HWAY AGENCY	I-24	

Traffic Report

Rutherford County (75) - Route: 01044, Special Case: 0-None , Log Mile 0 to 0.86

COUNTY: RUTHERFORD

ROUTE	SC	CO SQ	BEG LOG MILE	END LOG MILE	YR OF TRAFFIC	ANNUAL AVERAGE DAILY TRAFFIC	PEAK HOUR %	DESIGN HOUR VOLUME	DIRECT DIST %	% PASS CARS	% SINGLE UNIT TRUCKS	% MULTI UNIT TRUCKS	CYCLE COUNTS STATION NBR	CYCLE COUNTS STATION COUNTY	CLASS COUNTS STATION NBR	CLASS COUNTS STATION COUNTY	IS CLASS COUNT?
01044	0	1	0.000	0.500	2023	3543	10	10	51	93	4	3	111	75	111C	75	YES
01044	0	1	0.500	4.620	2023	3924	11	11	65	97	2	1	110	75	111C	75	NO

Traffic Report

Rutherford County (75) - Route: I0024, Special Case: 0-None , Log Mile 25.33 to 26.07

COUNTY: RUTHERFORD

ROUTE	SC	CO SQ	BEG LOG MILE	END LOG MILE	YR OF TRAFFIC	ANNUAL AVERAGE DAILY TRAFFIC	PEAK HOUR %	DESIGN HOUR VOLUME	DIRECT DIST %	% PASS CARS	% SINGLE UNIT TRUCKS	% MULTI UNIT TRUCKS	CYCLE COUNTS STATION NBR	CYCLE COUNTS STATION COUNTY	CLASS COUNTS STATION NBR	CLASS COUNTS STATION COUNTY	IS CLASS COUNT?
I0024	0	1	20.490	25.730	2023	61026	9	9	53	72	4	24	109	75	287C	75	NO
I0024	0	1	25.730	33.290	2023	56869	9	9	60	72	4	24	112	75	287C	75	NO

TYPE	YEAR	COUNTY	FIGURE NO.
CONCEPT	2023	RUTHERFORD	1

CONDITION CODES LEGEND

X - X - X - # ← NUMBER OF VEHICLES

WEATHER	ROAD SURFACE	LIGHTING
C=Clear	D=Dry	D=Daylight
R=Rain	W=Wet	DKN=Dark Not Lighted
CLD=Cloudy	I=Icy	DKL=Dark Lighted
F=Fog	O=Other	DN=Dawn
S=Snow	U=Uknown	DS=Dusk
U=Uknown		U=Unknown

TYPE OF CRASH

NUMBER OF FATALITIES OR INJURIES
- F FATAL CRASH
- # INCAPACITATING/SUSPECT SERIOUS INJURY CRASH

NUMBER OF CRASHES
- # NON-INCAPCAITATING/SUSPECTED MINOR INJURY CRASH
- # PROPERTY DAMAGE CRASH

Time: A=AM P=PM
- [X] Parked Vehicle
- [X] Object (Specify)

CRASH LEGEND

- Vehicle Path (Direction of Travel)
- Backing Vehicle
- Rear End
- Head On
- Side Swipe (Same Direction)
- Side Swipe (Opposite Direction)
- Right Angle
- Left Turn
- Overturn
- Out of Control
- Pedestrian/Bicycle Pedestrian/Motorcycle (Specify Road User)
- Heavy Truck / Bus

0 400' 800' 1200'

N

CONCEPT REPORT

EPPS MILL ROAD
LOCAL ROUTE 01044
LOG MILE 0.00 TO LOG MILE 0.86
RUTHERFORD COUNTY

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

FIGURE 1
LOCAL ROUTE 01044
L.M. 0.00 TO
L.M. 0.86

3/29/2024 2:25:36 PM
C:\BMSISTV-PW-01\TRAVIS.PHY\DMS53950\CRASH DIAGRAMS.DGN

Crash Prediction Analysis

The most prominent countermeasures applied throughout the corridor are the installation of signals with left turn lanes and the widening of existing shoulders to 8 feet. Using the CMF Clearinghouse database, crash modification factors (CMFs) for each of these countermeasures were retrieved and applied to existing crash data to determine a reduced yearly crash rate. A total of 48 crashes happened during a 3-year period for an average of 16 crashes/year.

CMF x Yearly Crash Rate = Reduced Yearly Crash Rate

Since there are two different CMFs that will be applied, the following method published in the Highway Safety Manual (HSM) will be used for combining multiple CMFs.

$$N = N_{base}(CMF_1 * CMF_2 * CMF_n)$$

N_{Base} = 16 crashes/year

CMF_1

CMF ID: 7966 - INSTALL A TRAFFIC SIGNAL AND LEFT TURN LANES
Value: 0.541

CMF_2

CMF ID: 4817 - CHANGE SHOULDER WIDTH FROM X TO Y (IN FEET)
X = 4ft; Y = 8ft
Function: $CMF = e^{(-0.02990(Y-X))}$
Value: 0.887

Using the information above, the blended CMF is 0.480 and the predicted crash frequency (N) is equal to 7.678 crashes/year. In addition to the reduced crash frequency determined by CMF, additional benefits are expected due to the reconfiguration of the I-24 ramps. Departure speeds are improved on both EB and WB off-ramps and deceleration lengths are improved to meet current standards. Additionally, widening both off-ramps will provide more storage length and improve queueing issues seen in the design year, reducing the likelihood of rear-end collisions as vehicles exit the interstate. The larger parclo on-ramp has an improved design speed with an entrance curve onto I-24 that meets current recommendations of greater than 1000' radius and length of more than 200'. This, along with longer acceleration lanes, will allow drivers to match the speed of traffic more easily before merging, reducing the risk of crashes as vehicles transition onto I-24.

Site Visit Attendee List - Epps Mill Road Interchange Improvements and Widening
PIN 124683.06
Date: 6/2/2023

Name	Company	Email/Phone
Brad Thompson	STV	Brad.Thompson@STVinc.com
Amin Amin	STV	Amin.Amin@STVinc.com
Jacob Bastien	STV	Jacob.Bastien@STVinc.com
Abby Fox	STV	Abby.Fox@STVinc.com
Joseph Robertson	STV	Joseph.Robertson@STVinc.com
Jonathan Vogel	TDOT	Jonathan.Vogel@tn.gov
Miller Bernhardt	TDOT	Miller.Berhnardt@tn.gov
Emily Burgess	TDOT	Emily.Burgess@tn.gov
Konner Spradlin	TDOT	Konner.Spradlin@tn.gov
Michelle Nickerson	TDOT	Michelle.Nickerson@tn.gov
Steve Bryan	TDOT	Steve.Bryan@tn.gov
Colin Williams	STV	Colin.Williams@STVinc.com
Ty Tucker	TDOT	Ty.Tucker@tn.gov
Scott Stepp	TDOT	Scott.Stepp@tn.gov
Travis Phy	STV	Travis.Phy@STVinc.com
Scott Johnson	TDOT	Scott.Johnson@tn.gov
Caleb Smith	TDOT	Caleb.Smith@tn.gov
Clint Carpenter	TDOT	Clinton.Carpenter@tn.gov
Pawan Mohamad-Ali	STV	Pawan.Mohamad-Ali@STVinc.com
Jordan Burress	TDOT	Jordan.Burress@tn.gov

TDOT Department of Transportation

Environmental Division

0SD1 Environmental Desktop Review Form

Part 1 – Project Information

PIN	124683.06
Project Number (if available)	
County	Rutherford
Route	I-24
Termini	Interchange at Epps Mill Road/Buchanan Road; Epps Mill Road, From west of Capital Way to SR-2 (US-41) (IA)
Type of Document	
Date ENV DIV Comments are Due	May 22, 2023 @ 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 Rutherford 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 proposed project is not likely to halve the distance between the center of the near travel lane and adjacent noise-sensitive land use. As such, the project is likely to be a Type 3 project and additional noise studies would not be needed. However, the extent of the interchange modification will determine if the proposed project would be considered a Type 1 project or a Type 3 project. More design information is needed to determine the project type.

Cultural Resources

For Archaeology: If we stay in the existing ROW we can use the PA, but if new ROW is added a survey may be necessary. There are 3 previous sites around a 1 mile radius with the nearest being a cemetery and the two North of project are prehistoric sites dating from Archaic to Woodland periods.

Ecology

HazMat

Based on the information provided, the project has five known hazardous materials sites located adjacent to the project corridor as follows. Avoidance and minimization of these properties is recommended at this time.

1. TDEC UST Facility #5750366, Kwik Stop Market, 6137 Epps Mill Road, Christiana, 37037. This is an inactive facility with three permanently out of use tanks.
2. TDEC UST Facility #5750451, Love's Travel Stop No. 314, 6137 Epps Mill Road, Christiana, 37037. This is an active facility with seven currently in use tanks.
3. TDEC UST Facility #5750055, Crazy J's Fireworks, 6177 Epps Mill Road, Murfeesboro, 37130. This is an inactive facility with three permanently out of use tanks. This site is listed by TDEC as a facility with an environmental related activity that occurred due to a tank closure, a suspected release, or a confirmed release. The case is closed.
4. TDEC UST Facility #5750038, Outpost, 5435 Miller Lane, Christiana, 37037. This is an inactive facility with three permanently out of use tanks. This site is listed twice by TDEC as a facility with an environmental related activity that occurred due to a tank closure, a suspected release, or a confirmed release. Both cases are closed.
5. TDEC UST Facility #5750256, Serve N Go No.19, 5965 Miller Road, Christiana, 37037. This is an active facility with four currently in use and eight permanently out of use tanks. This site is listed twice by TDEC as a facility with an environmental related activity that occurred due to a tank closure, a suspected release, or a confirmed release. Both cases are closed.

Barrett Firearms Manufacturing, 5926 Miller Lane, Christiana, 37037 is listed in the EPA EnviroFacts Hazardous Waste database, but is not within the project footprint. Bridge 75I00240041 Epps Mill Road over I-24 (75-01044-00.48) will require an asbestos survey since it will be replaced.

NEPA

PPRM indicates State funding for this project, which will be a TEER evaluation. NEPA evaluation may change if Federal funding is added, which will most likely be a C-List Categorical Exclusion.

ROW Acquistion

The location and amount of additional ROW will be necessary for NEPA evaluation. Will this project result in neighboring land-use displacement and relocation?

Traffic Control

Any proposed traffic detours utilizing I-24 will need to be coordinated with FHWA. Will changes in access control impact the functional utility of any adjacent parcels?

Section 4(f)

There does not appear to be any Section 4(f) resources adjacent to the project footprint.

Section 6(f)

There does not appear to be any Section 6(f) resources adjacent to the project footprint.

Floodplain Info.

The project area is not in a FEMA floodway, floodplain, or study area. It is in Zone X—area determined to be outside 500-yr. Floodplain.

Multimodal Considerations & Recommendations

The proposed bridge will include 5' sidewalks on both sides that will connect to future sidewalk installation due to current budget constraints.

Existing Structure Summary

Bridge ID: 75i000240041 is twenty-eight (28) feet wide over I-24 and is a two-span 300’ long haunched steel welded plate girder bridge that is approaching 60 years of service life. Widening this type of structure is not recommended by TDOT Structures Division. A March 2022 inspection and appraisal report determined the sufficiency rating to be 75.0 for the existing structure and indicated bridge deck repairs.

NATIONAL BRIDGE INVENTORY
TENNESSEE INVENTORY AND APPRAISAL REPORT

TN TDOT Department of Transportation

BRIDGE ID NUMBER: **75I00240041**
BRIDGE OWNER: **STATE OF TENNESSEE**
FIPS CODE: **00000**
ROAD NAME: **EPPS MILL RD.**
CROSSING: **EPPS MILL RD / I24**
LOCATION: **5.2 MI NE JCT SR10&SR269**

COUNTY: **RUTHERFORD**
ROUTE: **01044**
SPECIAL CASE: **0**
COUNTY SEQUENCE: **1**
LOG MILE: **0.48**
SUFFICIENCY RATING: **75.0**

IDENTIFICATION

(16a,b) LATITUDE:	N	35.72240	DEGREES
(17a,b) LONGITUDE:	W	86.32037	DEGREES
(98a) BORDER BRIDGE STATE CODE:			N/A
(98b) PERCENT SHARE:			N/A
(99) BORDER BRIDGE NUMBER:			NOT APPLICABLE

BRIDGE TYPE AND MATERIAL

(43a) MAIN SPAN MATERIAL: **STEEL CONTINUOUS**
(44a) APPR SPAN MATERIAL: **NOT APPLICABLE**

(45) NUMBER OF MAIN SPANS: **2**
(46) NUMBER OF APPROACH SPANS: **0**
(107) TYPE OF DECK: **CONCRETE CAST-IN-PLACE**
(108) TYPE OF WEARING SURFACE AND DECK PROTECTION:
A) TYPE OF SURFACE: **ASPHALT**
B) TYPE MEMBRANE: **NONE**
C) TYPE PROTECTION: **NONE**

AGE AND SERVICE

(27) YEAR THE BRIDGE WAS BUILT: **1968**
(106) YEAR THE BRIDGE WAS REHABILITATED: **N/A**
(42a) SERVICE ON BRIDGE: **HIGHWAY**
(42b) UNDER BRIDGE: **HIGHWAY**
(28a) NUMBER OF LANES CARRIED BY BRIDGE: **2**
(28b) NUMBER OF LANES UNDER THE BRIDGE: **4**

GEOMETRIC DATA

(48) MAXIMUM SPAN LENGTH: **149.9 FT**
(49) TOTAL BRIDGE LENGTH: **299.9 FT**
(50a) LEFT SIDEWALK WIDTH: **0.0 FT**
(50b) RIGHT SIDEWALK WIDTH: **0.0 FT**
(51) BRIDGE CURB TO CURB WIDTH: **27.9 FT**
(52) BRIDGE OUT TO OUT WIDTH: **32.5 FT**
(32) APPROACH ROADWAY (W/ SHLDS) WIDTH: **31.8 FT**
(33) BRIDGE MEDIAN: **NO MEDIAN**
(34) BRIDGE SKEW: **10 DEGREES**
(35) BRIDGE FLARE: **NO FLARE**
(520) MIN VERTICAL CLEARANCE OVER RD: **NO RESTRICTION**
(47) MIN HORIZONTAL CLEARANCE ON ROADWAY: **27.9 FT**
(54a) VERT UNDERCLR: **HIGHWAY BENEATH BRIDGE**
(54b) MIN VERTICAL UNDERCLEARANCE: **16.17 FT**
(55a) HORZ UNDERCLR: **HIGHWAY BENEATH BRIDGE**
(55b) MIN HORZ UNDERCLR ON RIGHT: **36.09 FT**
(56) MIN HORZ UNDERCLR ON LEFT: **52.17 FT**

NAVIGATION DATA

(38) NAV CONTROL: **NOT APPLICABLE**
(39) NAVIGATION VERTICAL CLEARANCE: **N/A**
(116) LIFT BRIDGE VERT CLEARANCE: **N/A**
(40) NAVIGATION HORZ CLEARANCE: **N/A**

PUBLICATION DATE
08-Mar-22

CLASSIFICATION

(112) MEETS NBIS BRIDGE LENGTH: **YES**
(104) NATIONAL HIGHWAY SYSTEM: **NOT A NHS ROUTE**
(26) FUNCTIONAL CLASS: **URBAN COLLECTOR**
(101) PARALLEL BRIDGE: **NO PARALLEL BRIDGE**
(102) TRAFFIC DIR: **2-WAY TRAFFIC**
(103) TEMPORARY BRIDGE: **NOT APPLICABLE**
(110) NATIONAL TRUCK ROUTE: **NOT ON TRUCK NETWORK**
(37) HISTORICAL CLASS: **HISTORICAL SIGNIFICANCE HAS NOT BEEN DETERMINED**

CONDITION RATINGS

(58) DECK: **6**
(59) SUPERSTRUCTURE: **6**
(60) SUBSTRUCTURE: **7**
(61) STREAM CHANNEL AND CHANNEL PROTECTION: **N**
(62) CULVERT CONDITION (IF APPLICABLE): **N**

DESIGN LOAD AND WEIGHT POSTING

(31) DESIGN LOADING: **H-20-44**
WEIGHT POSTING (2 AXLE VEHICLES): **ALL LEGAL LOADS**
WEIGHT POSTING (3 OR MORE AXLES): **ALL LEGAL LOADS**
(70) BRIDGE POSTING CODE: **5**
(41) WT POSTING STATUS: **OPEN**

APPRAISAL

(67) STRUCTURAL EVALUATION: **6**
(68) DECK GEOMETRY: **4**
(69) UNDERCLEARANCE RATING: **5**
(71) WATERWAY ADEQUACY: **N**
(72) APPROACH ROADWAY ALIGNMENT: **8**
(36) TRAFFIC SAFETY FEATURES: **011N**
(113) SCOUR CONDITION RATING: **N**

RECOMMENDED IMPROVEMENTS

(75) TYPE OF WORK: **BRIDGE DECK REPAIR**
(76) LENGTH OF BRIDGE IMPROVEMENT: **299.9 FT**
(94) BRIDGE IMPROVEMENT COST: **$443,000.00**
(95) ROADWAY IMPROVEMENT COST: **$45,000.00**
(96) TOTAL PROJECT COST: **$665,000.00**
(97) YEAR OF IMPROVEMENT COST ESTIMATE: **2020**

INSPECTION DATES

(90) DATE OF LAST REGULAR INSPECTION: **6/8/2020**
(91) REGULAR INSPECTION FREQUENCY (MONTHS): **24**
(93b) DATE OF LAST UNDERWATER INSP (MO/YR): **N/A**
(92b) UNDERWATER INSP FREQUENCY (MONTHS): **N**
(93c) DATE OF SPECIAL INSPECTION (MO/YR): **N/A**
(92c) SPECIAL INSP FREQUENCY (MONTHS): **N**

PRODUCED PURSUANT TO PUBLIC RECORDS REQUEST
This document is covered by 23 USC §409 and its production pursuant to a public document records request does not waive the provisions of §409

Phy, Travis

From: Ted Kniazewycz
Sent: Friday, May 5, 2023 4:32 PM
To: Scott Stepp; Konner Spradlin
Cc: Eric Slayton; Kathleen McLaughlin
Subject: RE: Early Coordination (0SD1) - PIN 124683.06 Rutherford County I-24 and Epps Mill Rd/ Buchanan Rd

It should be replaced as future widening of I-24 would be a problem with that steel beam design.

Thanks,

TN TDOT Department of Transportation

Ted A. Kniazewycz, P.E.,F.ASCE | Director
Structures Division
p. 615-741-3351
c. 615-574-1220
ted.kniazewycz@tn.gov

From: Scott Stepp <Scott.Stepp@tn.gov>
Sent: Friday, May 5, 2023 3:54 PM
To: Konner Spradlin <Konner.Spradlin@tn.gov>
Cc: Ted Kniazewycz <Ted.Kniazewycz@tn.gov>; Eric Slayton <Eric.Slayton@tn.gov>; Kathleen McLaughlin <Kathleen.McLaughlin@tn.gov>
Subject: RE: Early Coordination (0SD1) - PIN 124683.06 Rutherford County I-24 and Epps Mill Rd/ Buchanan Rd

Konner,

The existing bridge on Epps Mill Road over I-24 is only 28' wide. If more than two traffic lanes will be needed across this bridge, an improvement will be necessary. The existing bridge is a two-span, 300' long (150' – 150') haunched steel welded plate girder bridge. I'm not sure how difficult it is to widen one of these structures. With the bridge approaching 60 years of service life by the time the project is constructed, it may be more prudent to phase replace the bridge with a new two-span concrete bulb-tee beam bridge. Ted might be able to weigh on these two options.

If only two lanes are needed, I would assume the existing bridge is satisfactory as-is.

That concludes my early coordination comments.

Thanks,

TN TDOT Department of Transportation

Scott A. Stepp, P.E. | Civil Engineering Manager 1
Structures Division
James K. Polk Building, Suite 1100
505 Deaderick Street, Nashville, TN 37243

p. 615-741-3353 f. 615-532-7745
scott.stepp@tn.gov

From: Wesley Peck <Wesley.Peck@tn.gov>
Sent: Friday, May 5, 2023 1:32 PM
To: Konner Spradlin <Konner.Spradlin@tn.gov>
Cc: Ted Kniazewycz <Ted.Kniazewycz@tn.gov>; Scott Stepp <Scott.Stepp@tn.gov>
Subject: RE: Early Coordination (0SD1) - PIN 124683.06 Rutherford County I-24 and Epps Mill Rd/ Buchanan Rd

Konner,

There don't appear to be any hydraulic structures or floodplain encroachments within the project limits shown. Note, there is a significant floodplain crossing immediately northwest of this project where I-24 crosses Hurricane Creek just above its confluence with the Middle Fork Stones River. This is a FEMA Zone AE floodplain and further coordination may be required if the project limits extend that far to the north. Impacts to the floodplain seem unlikely considering the distance, but I wanted to call it to your attention just in case. A partial flood map is attached.

Structures Division may have other comments regarding the bridge.

Wesley Peck, PE, MS | Civil Engineering Manager 2
Hydraulic Design Section | Structures Division
James K Polk Building, 11th Floor
505 Deaderick St, Nashville, TN 37243-0338
p. 615-532-5660
Wesley.Peck@tn.gov
tn.gov/tdot

From: Konner Spradlin <Konner.Spradlin@tn.gov>
Sent: Friday, May 5, 2023 12:40 PM
To: K.Brandon Chance <K.Brandon.Chance@tn.gov>; TDOT.ENV SpecialProjects <TDOT.ENV.SpecialProjects@tn.gov>; Travis W. Smith <Travis.W.Smith@tn.gov>; Lisa Dunn <Lisa.Dunn@tn.gov>; TDOT MultimodalPlanning <TDOT.MultimodalPlanning@tn.gov>; Daniel Pallme <Daniel.Pallme@tn.gov>; Stacy Morrison <Stacy.Morrison@tn.gov>; Brian Hurst <Brian.Hurst@tn.gov>; Jay Lanius <Jay.Lanius@tn.gov>; Konner Spradlin <Konner.Spradlin@tn.gov>; Gregory Dyer <Greg.Dyer@tn.gov>; TDOT.TrafficOps TSMO-Reviews <TDOT.TrafficOps.TSMO-Reviews@tn.gov>; TDOT ADA <TDOT.ADA@tn.gov>; Jonathan Russell <Jonathan.Russell@tn.gov>; Aso Hawrami <Aso.Hawrami@tn.gov>; Brad Abel <Brad.Abel@tn.gov>; Bradley Martin <Bradley.Martin@tn.gov>; Jon Zirkle <Jon.Zirkle@tn.gov>; Shane Hester <Shane.Hester@tn.gov>; Jordan Burress <Jordan.Burress@tn.gov>
Cc: Brian Egan <Brian.Egan@tn.gov>; Susannah Kniazewycz <Susannah.Kniazewycz@tn.gov>; Tammy Sellers <Tammy.Sellers@tn.gov>; Matt Meservy <Matt.Meservy@tn.gov>; James D. Kelley <James.D.Kelley@tn.gov>; Sharon Schutz <Sharon.Schutz@tn.gov>; Jeff Hoge <Jeff.Hoge@tn.gov>; Antonia Hayes <Antonia.Hayes@tn.gov>; Jim Waters <Jim.Waters@tn.gov>; Loren McWright <Loren.McWright@tn.gov>; Michael Gilbert <Michael.Gilbert@tn.gov>; Steve Allen <Steve.Allen@tn.gov>; Terry Gladden <Terry.Gladden@tn.gov>; Ted Kniazewycz <Ted.Kniazewycz@tn.gov>; Wesley Peck <Wesley.Peck@tn.gov>; Lee J. Smith <Lee.J.Smith@tn.gov>; Nathan Vatter <Nathan.Vatter@tn.gov>; Shane Hester <Shane.Hester@tn.gov>; Shaun Armstrong <Shaun.Armstrong@tn.gov>; Matt Lesko <Matt.Lesko@tn.gov>
Subject: Early Coordination (0SD1) - PIN 124683.06 Rutherford County I-24 and Epps Mill Rd/ Buchanan Rd

All,

As a part of the Project Delivery Network (PDN) Stage 0SD1 Early Coordination process, please see the attached map for details regarding the project location. The purpose of receiving comments is to have initial input compiled from the different functional areas prior to the site visit to identify areas of interests. We will compile all the comments we receive and discuss at the site visit which will be coordinated in the upcoming months. Below is the project information, rough scope, and a Google Maps link to the project location:

- PIN 124683.06
- Rutherford Counties
- Interchange at Epps Mill Road/Buchanan Road; Epps Mill Road, From west of Capital Way to SR-2 (US-41) (IA)
- Project Location: https://goo.gl/maps/o1MbU6MdnMkXqDJ29
- Project Type: Widening and interchange improvements
- Scope: Interchange at Epps Mill Road/Buchanan Road; Epps Mill Road, From west of Capital Way to SR-2 (US-41) (IA)
- Federal Funding: GFT project. Federal funding unknown

We request that each division identified within the PDN process provide their comments or confirmation of no comments by COB Monday, May 22nd. If your office has no comments at this time, please reply "no comments at this time" for documentation purposes.

Thank you for your input on this project,

TN TDOT Department of Transportation

Konner Spradlin, P.E. | C.E. Manager 1
Strategic Transportation Investments Division
James. K. Polk Building, 10th Floor
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p. 615-253-2432 c. 615-920-2822
Konner.Spradlin@tn.gov
tn.gov/tdot
https://www.tn.gov/tdot/strategic-transportation-investments.html

Intersection and Interchange Evaluation (IIE) Forms

TDOT IIE Form - Data Inputs

Version: 09142020

Project Information

Project and Location Data

Project Name:	Epps Mill Rd		
Major Road Name:	SR-2	Minor Road Name:	Epps Mill Rd
PIN:	124683.06	County:	Rutherford
Date:	6/4/2024	Analyst/Firm:	Trent Moody/STV Inc
Existing Control Type:	Two-Way Stop Control	No. of Legs:	3
Major Road Direction:	N-S	Opening Year: 2028	Design Year: 2048
Funct. Class of Major Road:	Minor Arterial	Land Use Context:	Suburban
Project Type of Work:	Intersection Improvements and Signals		

Traffic Data

Opening Year 2028	Major Road AADT:	6,270	
Design Year 2048	Major Road AADT:	16,300	
Major Road T % (AADT):	7%	Minor Road T % (AADT):	6%
Major Road T % (DHV):	5%	Minor Road T % (DHV):	4%

Multimodal Activity

Within a 1/2 mile of the project location are there:

Bus stop:	No	School:	No	Library:	No
Retail Center:	No	Other Civic Institution:	No	Context to Support Multimodal Activity:	No

Existing or Future Estimated Multimodal Activity Level: Low

Crash History and Intersection Crash Rate

Crash Data Year(s): | No. of Years: | No. of Crashes:

Leg	Current AADT
North:	
East:	
South:	
West:	
Entering AADT:	0

SW Avg. Rate:

Crash Rate (A): ######

Critical Rate (C): ######

A/SW: ######

A/C: ####

Turning Movement Volumes (TMV)

2028 =Opening Year Design Hourly Volumes (DHV)

			SR-2							
			0	162	347	0				
			(0)	(124)	(88)	(0)	SB			
		EB	PEDS	←	↓	→	PEDS	(0)	0	
147	(125)		↑	Entering Hourly Volumes			↑	(0)	0	Epps Mill Rd
0	(0)		→				←	(0)	0	
147	(51)		↓				↓	(0)	0	
0	(0)		PEDS	←	↑	→	PEDS	WB		
		NB		(177)	(258)	(0)	(0)			
				79	120	0	0			

(AM) = AM Peak Hour Approach

PM = PM Peak Hour Approach

Blue = Pedestrian Volumes

N W E S

2048 = Design Year Design Hourly Volumes (DHV)

			SR-2							
			0	421	902					
			(0)	(322)	(229)		SB			
		EB	PEDS	←	↓	→	PEDS			
382	(325)		↑	Entering Hourly Volumes			↑			Epps Mill Rd
0	(0)		→				←			
382	(133)		↓				↓			
0	(0)		PEDS	←	↑	→	PEDS	WB		
		NB		(330)	(671)					
				205	312					

Intersection Location:	SR-2 at Epps Mill Rd in Rutherford County				
Number of Intersection Legs:	3	**PIN:**	124683.06	**Date:**	6/4/24
Existing Control Type:	Two-Way Stop Control	**Analyst:**	Trent Moody/STV Inc	Version: 09142020	

TDOT IIE Stage I Form - Scoping

Control Type	Conflict Point Score (lower # is better)	Q1: Is the option feasible and reasonable?	Q2: Is the option likely to improve or maintain safety?	Q3: Is the option likely to improve operations?	Q4: Is the Optoin likely to improve or maintain multimodal access?	AM V/C Ratio (CAP X)	PM V/C Ratio (CAP X)	Decision: Should the Option proceed to Stage II?	Screening Decision Justification
At-Grade Intersection	Safety	Q1	Q2	Q3	Q4	Capacity		Decision	Screening Decision Justification
Traffic Signal	12	Yes	Yes	Yes	Yes	0.80	2.26	No	Provided in Capcity Analysis Memorandum
Two-Way Stop Control	12	Yes	Yes	No	No			**Yes**	Provided in Capcity Analysis Memorandum
All-Way Stop Control	12	No	-	-	-	2.04	7.35	No	Poor V/C
Continuous Green T	12	No	-	-	-	0.58	2.53	No	Poor V/C
Quadrant Roadway	n/a	No	-	-	-	0.50	2.88	No	Poor V/C
Partial Displaced Left Turn	12	No	-	-	-	0.61	2.37	No	Poor V/C
Displaced Left Turn	n/a	No	-	-	-	0.30	2.11	No	Poor V/C
Signalized RCUT	12	No	-	-	-	0.82	2.62	No	Poor V/C
J-Turn (Unsignalized RCUT)	12	No	-	-	-	0.75	7.79	No	Poor V/C
Median U-Turn	8	No	-	-	-	0.53	2.58	No	Poor V/C
Partial Median U -Turn	16	No	-	-	-	0.40	2.58	No	Poor V/C
Bowtie	n/a	No	-	-	-	0.83	4.19	No	Poor V/C
Split Intersection	n/a	No	-	-	-	0.61	2.34	No	Poor V/C
Roundabout	6	No	-	-	-	1.08	25.00	No	Poor V/C
Other (provide description)		No	-	-	-			No	
Grade-Separated Intersection	Safety	Q1	Q2	Q3	Q4	CAP-X		Decision	Screening Decision Justification
Echelon	n/a	No	-	-	-	0.28	1.85	No	Poor V/C
Center Turn Overpass	n/a	No	-	-	-	0.30	1.96	No	Poor V/C
Interchange	Safety	Q1	Q2	Q3	Q4	CAP-X		Decision	Screening Decision Justification
Diamond	n/a	No	-	-	-	0.42	3.80	-	
Partial Cloverleaf	n/a	No	-	-	-	0.20	1.04	-	
Displaced Left Turn Interchange	n/a	No	-	-	-	0.59	2.03	-	
Contraflow Left Interchange	n/a	No	-	-	-	0.43	2.14	-	
DDI	n/a	No	-	-	-	0.41	2.04	-	
Single Point	n/a	No	-	-	-	0.41	2.08	-	
Single Point with Roundabout	n/a	No	-	-	-	0.35	8.00	-	
Other (provide description)		No	-	-	-				

TN TDOT Department of Transportation	**Intersection Location:**		SR-2 at Epps Mill Rd in Rutherford County							
	Number of Intersection Legs:		3		**PIN:**	124683.06			**Date:**	6/4/24
	TDOT IIE Stage II Form - Selection				**Analyst:**	Trent Moody/STV Inc			Version: 09142020	
	Existing Control		**Option 1**		**Option 2**		**Option 3**		**Option 4**	
TDOT IIE Stage II Form - Selection	Two-Way Stop Control		Two-Way Stop Control		Traffic Signal		None		None	
Project Cost										
Tool Used	Not Applicable		-		-		-		-	
Total Project Cost	Not Applicable		-		-		-		-	
Life Cycle Cost										
Tool Used	-		-		-		-		-	
Analysis Period	2028 to 2048		2028 to 2048		2028 to 2048		2028 to 2048		2028 to 2048	
Total Life Cycle NPV Cost	-		-		-		-		-	
Traffic Operations										
Traffic Analysis Software Used	Synchro		Synchro		Synchro		-		-	
2028 Opening Year	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
LOS	C	C	C	C	-	-	-	-	-	-
Delay (s/veh)	19.2	20.5	20.8	18.4						
v/c	0.41	0.57	0.36	0.36						
Queues Accommodated?			-	-	-	-	-	-	-	-
2048 Design Year	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
LOS	F	F	F	F	B	C	-	-	-	-
Delay (s/veh)	1675.7	2413.8	1416.3	2198.4	17.7	30.8				
v/c	4.54	6.21	3.92	5.62	0.73	0.95				
Queues Accommodated?					-	-	-	-	-	-
Predictive Crash Analysis										
Tool Used	-		-		-		-		-	
Analysis Period	2028 to 2048		2028 to 2048		2028 to 2048		2028 to 2048		2028 to 2048	
Total Crashes										
Fatal & Injury Crashes										
Multimodal										
Are peds, bicyclists, and transit riders accommodated?	-		-		-		-		-	
Stakeholder Posture										
Local Community Support	Not Applicable		-		-		-		-	
TDOT Support	Not Applicable		-		-		-		-	
TDOT Approval										
Preferred Option?	Not Applicable		-		-		-		-	
Comments										
TDOT Reviewer Name and Title			Signature						Date	

Stage I Scoping Conflict Point Score (Default Crossing weight = 2, Merging, Diverging =1)

Weights:		Default values
Crossing	2	2
Merging	1	1
Diverging	1	1

		Conflict Point Count		Weighted Score	
	Conflict Type	4 Legs	3 Legs	4 Legs	3 Legs
At-Grade Intersections					
Traffic Signal	Crossing	16	3	32	6
	Merging	8	3	8	3
	Diverging	8	3	8	3
	Total	**32**	**9**	**48**	**12**
Stop Control	Crossing	16	3	32	6
	Merging	8	3	8	3
	Diverging	8	3	8	3
	Total	**32**	**9**	**48**	**12**
Continuous Green T	Crossing		3		6
	Merging		3		3
	Diverging		3		3
	Total	**n/a**	**9**	**n/a**	**12**
Quadrant	Crossing	10		20	
	Merging	10		10	
	Diverging	10		10	
	Total	**30**	**n/a**	**40**	**n/a**
Partial Displaced Left Turn	Crossing	14	3	28	6
	Merging	8	3	8	3
	Diverging	8	3	8	3
	Total	**30**	**9**	**44**	**12**
Displaced Left Turn	Crossing	12		24	
	Merging	8		8	
	Diverging	8		8	
	Total	**28**	**n/a**	**40**	**n/a**
Signalized RCUT	Crossing	2	1	4	2
	Merging	8	5	8	5
	Diverging	8	5	8	5
	Total	**18**	**11**	**20**	**12**
J-Turn (Unsignalized RCUT)	Crossing	2	1	4	2
	Merging	8	5	8	5
	Diverging	8	5	8	5
	Total	**18**	**11**	**20**	**12**
Median U-Turn	Crossing	4	0	8	0
	Merging	6	4	6	4
	Diverging	6	4	6	4
	Total	**16**	**8**	**20**	**8**
Partial Median U-Turn	Crossing	6	2	12	4
	Merging	8	6	8	6
	Diverging	8	6	8	6
	Total	**22**	**14**	**28**	**16**
Bowtie	Crossing	4		8	
	Merging	8		8	
	Diverging	8		8	
	Total	**20**	**n/a**	**24**	**n/a**
Split Intersection	Crossing	10		20	
	Merging	8		8	
	Diverging	8		8	
	Total	**26**	**n/a**	**36**	**n/a**
Roundabout	Crossing	0	0	0	0
	Merging	4	3	4	3
	Diverging	4	3	4	3
	Total	**8**	**6**	**8**	**6**
Grade-Separated Intersections					
Echelon	Crossing	6		12	
	Merging	8		8	
	Diverging	8		8	
	Total	**22**	**n/a**	**28**	**n/a**
Center Turn Overpass	Crossing	8		16	
	Merging	8		8	
	Diverging	8		8	
	Total	**24**	**n/a**	**32**	**n/a**
Interchanges					
Diamond	Crossing	6		12	
	Merging	8		8	
	Diverging	8		8	
	Total	**22**	**n/a**	**28**	**n/a**
Partial Cloverleaf	Crossing	2		4	
	Merging	8		8	
	Diverging	8		8	
	Total	**18**	**n/a**	**20**	**n/a**
Displaced Left Turn Interchange	Crossing	6		12	
	Merging	8		8	
	Diverging	8		8	
	Total	**22**	**n/a**	**28**	**n/a**
Contraflow Left Interchange	Crossing	8		16	
	Merging	8		8	
	Diverging	8		8	
	Total	**24**	**n/a**	**32**	**n/a**
DDI	Crossing	2		4	
	Merging	8		8	
	Diverging	8		8	
	Total	**18**	**n/a**	**20**	**n/a**
Single Point	Crossing	8		16	
	Merging	8		8	
	Diverging	8		8	
	Total	**24**	**n/a**	**32**	**n/a**
Single Point with Roundabout	Crossing	0		0	
	Merging	6		6	
	Diverging	6		6	
	Total	**12**	**n/a**	**12**	**n/a**

Intersection and Interchange Evaluation (IIE) Forms

TDOT IIE Form - Data Inputs

Version: 09142020

Project Information

Project and Location Data

Project Name:	Epps Mill Rd		
Major Road Name:	Epps Mill Rd	Minor Road Name:	Forbus Dr
PIN:	124683.06	County:	Rutherford
Date:	6/4/2024	Analyst/Firm:	Trent Moody/STV Inc
Existing Control Type:	Two-Way Stop Control	No. of Legs:	4
Major Road Direction:	E-W	Opening Year: 2028	Design Year: 2048
Funct. Class of Major Road:	Minor Arterial	Land Use Context:	Suburban
Project Type of Work:	Intersection Improvements and Signals		

Traffic Data

Opening Year 2028	Major Road AADT:	6,270	
Design Year 2048	Major Road AADT:	16,300	
Major Road T % (AADT):	19%	Minor Road T % (AADT):	30%
Major Road T % (DHV):	13%	Minor Road T % (DHV):	20%

Multimodal Activity

Within a 1/2 mile of the project location are there:

Bus stop:	No	School:	No	Library:	No
Retail Center:	No	Other Civic Institution:	No	Context to Support Multimodal Activity:	No

Existing or Future Estimated Multimodal Activity Level: Low

Crash History and Intersection Crash Rate

Crash Data Year(s):		No. of Years:	
		No. of Crashes:	

Leg	Current AADT
North:	
East:	
South:	
West:	
Entering AADT:	0

SW Avg. Rate:	
Crash Rate (A):	######
Critical Rate (C):	######
A/SW:	######
A/C:	####

Turning Movement Volumes (TMV)

2028 =Opening Year Design Hourly Volumes (DHV)

			Forbus Dr							
			0	203	0	35				
			(197)	(197)	(0)	(37)	SB			
		EB	PEDS	←	↓	→	PEDS	(0)	0	
222	(183)		↑				↑	(37)	23	Epps Mill Rd
249	(151)		→		Entering Hourly Volumes		←	(201)	253	
5	(15)		↓				↓	(7)	6	
0	(0)		PEDS	←	↑	→	PEDS		WB	
		NB		(2)	(0)	(2)	(0)			
				21	0	20	0			

(AM) = AM Peak Hour Approach

PM = PM Peak Hour Approach

Blue = Pedestrian Volumes

N W E S

2048 = Design Year Design Hourly Volumes (DHV)

			Forbus Dr							
			0	305	0	53				
			(0)	(296)	(0)	(56)	SB			
		EB	PEDS	←	↓	→	PEDS			
334	(275)		↑				↑	(56)	31	Epps Mill Rd
665	(411)		→		Entering Hourly Volumes		←	(556)	676	
13	(39)		↓				↓	(18)	16	
0	(0)		PEDS	←	↑	→	PEDS		WB	
		NB		(5)	(0)	(5)				
				55	0	52				

Intersection Location:	Epps Mill Rd at Forbus Dr in Rutherford County				
Number of Intersection Legs:	4	**PIN:**	124683.06	**Date:**	6/4/24
Existing Control Type:	Two-Way Stop Control	**Analyst:**	Trent Moody/STV Inc	Version: 09142020	

TDOT IIE Stage I Form - Scoping

Control Type	Conflict Point Score (lower # is better)	Is the option feasible and reasonable?	Is the option likely to improve or maintain safety?	Is the option likely to improve operations?	Is the Optoin likely to improve or maintain multimodal access?	AM V/C Ratio (CAP X)	PM V/C Ratio (CAP X)	Should the Option proceed to Stage II?	Screening Decision Justification
At-Grade Intersection	Safety	Q1	Q2	Q3	Q4	Capacity		Decision	
Traffic Signal	48	Yes	Yes	Yes	Yes	0.93	0.99	**Yes**	Signal warranted
Two-Way Stop Control	48	Yes	Yes	No	No	3.58	12.59	No	Existing condition. Poor V/C
All-Way Stop Control	48	No	-	-	-	1.80	2.20	No	Poor V/C
Continuous Green T	n/a	No	-	-	-	N/A	N/A	No	N/A
Quadrant Roadway	40	No	-	-	-	0.71	0.99	No	Geometric const. due to prox. to other intersections
Partial Displaced Left Turn	44	No	-	-	-	0.60	0.66	No	Geometric const. due to prox. to other intersections
Displaced Left Turn	40	No	-	-	-	0.57	0.66	No	Geometric const. due to prox. to other intersections
Signalized RCUT	20	No	-	-	-	0.81	0.79	No	Geometric const. due to prox. to other intersections
J-Turn (Unsignalized RCUT)	20	No	-	-	-	1.74	1.64	No	Poor V/C
Median U-Turn	20	No	-	-	-	0.82	1.05	No	Poor V/C
Partial Median U -Turn	28	No	-	-	-	0.79	1.06	No	Poor V/C
Bowtie	24	No	-	-	-	0.80	0.11	No	Geometric constraints/ out of project scope
Split Intersection	36	No	-	-	-	0.73	0.74	No	Geometric/ R.O.W. constraints
Roundabout	8	No	-	-	-	0.89	#####	No	Poor V/C
Other (provide description)		No	-	-	-			-	
Grade-Separated Intersection	Safety	Q1	Q2	Q3	Q4	CAP-X		Decision	Screening Decision Justification
Echelon	28	No	-	-	-	0.76	0.71	No	Geometric constr. due to prox. of other intersections
Center Turn Overpass	32	No	-	-	-	0.76	0.77	No	Geometric constr. due to prox. of other intersections
Interchange	Safety	Q1	Q2	Q3	Q4	CAP-X		Decision	Screening Decision Justification
Diamond	28	No	-	-	-	0.53	0.56	-	N/A
Partial Cloverleaf	20	No	-	-	-	0.09	0.14	-	N/A
Displaced Left Turn Interchange	28	No	-	-	-	0.52	0.53	-	N/A
Contraflow Left Interchange	32	No	-	-	-	0.37	0.37	-	N/A
DDI	20	No	-	-	-	0.17	0.26	-	N/A
Single Point	32	No	-	-	-	0.15	0.18	-	N/A
Single Point with Roundabout	12	No	-	-	-	0.34	0.35	-	N/A
Other (provide description)		No	-	-	-			-	

TN TDOT Department of Transportation	**Intersection Location:**		Epps Mill Rd at Forbus Dr in Rutherford County							
	Number of Intersection Legs:		4		**PIN:**	124683.06			**Date:**	6/4/24
	TDOT IIE Stage II Form - Selection				**Analyst:**	Trent Moody/STV Inc			Version: 09142020	
	Existing Control		**Option 1**		**Option 2**		**Option 3**		**Option 4**	
TDOT IIE Stage II Form - Selection	Two-Way Stop Control		Traffic Signal		None		None		None	
Project Cost										
Tool Used	Not Applicable		-		-		-		-	
Total Project Cost	Not Applicable		-		-		-		-	
Life Cycle Cost										
Tool Used	-		-		-		-		-	
Analysis Period	2028 to 2048		2028 to 2048		2028 to 2048		2028 to 2048		2028 to 2048	
Total Life Cycle NPV Cost	-		-		-		-		-	
Traffic Operations										
Traffic Analysis Software Used	Synchro		Synchro		-		-		-	
2028 Opening Year	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
LOS	B	B	A	A	-	-	-	-	-	-
Delay (s/veh)	11.3	12.1	8.3	7.7						
v/c	0.19	0.18	0.58	0.57						
Queues Accommodated?	-	-	-	-	-	-	-	-	-	-
2048 Design Year	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
LOS	F	F	B	B	-	-	-	-	-	-
Delay (s/veh)	57.9	156.3	13.4	15.3						
v/c	0.57	0.81	0.68	0.72						
Queues Accommodated?	-	-			-	-	-	-	-	-
Predictive Crash Analysis										
Tool Used	-		-		-		-		-	
Analysis Period	2028 to 2048		2028 to 2048		2028 to 2048		2028 to 2048		2028 to 2048	
Total Crashes										
Fatal & Injury Crashes										
Multimodal										
Are peds, bicyclists, and transit riders accommodated?	-		-		-		-		-	
Stakeholder Posture										
Local Community Support	Not Applicable		-		-		-		-	
TDOT Support	Not Applicable		-		-		-		-	
TDOT Approval										
Preferred Option?	Not Applicable		-		-		-		-	
Comments										
TDOT Reviewer Name and Title				Signature				Date		

Stage I Scoping Conflict Point Score (Default Crossing weight = 2, Merging, Diverging =1)

Weights:		Default values
Crossing	2	2
Merging	1	1
Diverging	1	1

		Conflict Point Count		Weighted Score	
	Conflict Type	4 Legs	3 Legs	4 Legs	3 Legs
At-Grade Intersections					
Traffic Signal	Crossing	16	3	32	6
	Merging	8	3	8	3
	Diverging	8	3	8	3
	Total	**32**	**9**	**48**	**12**
Stop Control	Crossing	16	3	32	6
	Merging	8	3	8	3
	Diverging	8	3	8	3
	Total	**32**	**9**	**48**	**12**
Continuous Green T	Crossing		3		6
	Merging		3		3
	Diverging		3		3
	Total	**n/a**	**9**	**n/a**	**12**
Quadrant	Crossing	10		20	
	Merging	10		10	
	Diverging	10		10	
	Total	**30**	**n/a**	**40**	**n/a**
Partial Displaced Left Turn	Crossing	14	3	28	6
	Merging	8	3	8	3
	Diverging	8	3	8	3
	Total	**30**	**9**	**44**	**12**
Displaced Left Turn	Crossing	12		24	
	Merging	8		8	
	Diverging	8		8	
	Total	**28**	**n/a**	**40**	**n/a**
Signalized RCUT	Crossing	2	1	4	2
	Merging	8	5	8	5
	Diverging	8	5	8	5
	Total	**18**	**11**	**20**	**12**
J-Turn (Unsignalized RCUT)	Crossing	2	1	4	2
	Merging	8	5	8	5
	Diverging	8	5	8	5
	Total	**18**	**11**	**20**	**12**
Median U-Turn	Crossing	4	0	8	0
	Merging	6	4	6	4
	Diverging	6	4	6	4
	Total	**16**	**8**	**20**	**8**
Partial Median U-Turn	Crossing	6	2	12	4
	Merging	8	6	8	6
	Diverging	8	6	8	6
	Total	**22**	**14**	**28**	**16**
Bowtie	Crossing	4		8	
	Merging	8		8	
	Diverging	8		8	
	Total	**20**	**n/a**	**24**	**n/a**
Split Intersection	Crossing	10		20	
	Merging	8		8	
	Diverging	8		8	
	Total	**26**	**n/a**	**36**	**n/a**
Roundabout	Crossing	0	0	0	0
	Merging	4	3	4	3
	Diverging	4	3	4	3
	Total	**8**	**6**	**8**	**6**
Grade-Separated Intersections					
Echelon	Crossing	6		12	
	Merging	8		8	
	Diverging	8		8	
	Total	**22**	**n/a**	**28**	**n/a**
Center Turn Overpass	Crossing	8		16	
	Merging	8		8	
	Diverging	8		8	
	Total	**24**	**n/a**	**32**	**n/a**
Interchanges					
Diamond	Crossing	6		12	
	Merging	8		8	
	Diverging	8		8	
	Total	**22**	**n/a**	**28**	**n/a**
Partial Cloverleaf	Crossing	2		4	
	Merging	8		8	
	Diverging	8		8	
	Total	**18**	**n/a**	**20**	**n/a**
Displaced Left Turn Interchange	Crossing	6		12	
	Merging	8		8	
	Diverging	8		8	
	Total	**22**	**n/a**	**28**	**n/a**
Contraflow Left Interchange	Crossing	8		16	
	Merging	8		8	
	Diverging	8		8	
	Total	**24**	**n/a**	**32**	**n/a**
DDI	Crossing	2		4	
	Merging	8		8	
	Diverging	8		8	
	Total	**18**	**n/a**	**20**	**n/a**
Single Point	Crossing	8		16	
	Merging	8		8	
	Diverging	8		8	
	Total	**24**	**n/a**	**32**	**n/a**
Single Point with Roundabout	Crossing	0		0	
	Merging	6		6	
	Diverging	6		6	
	Total	**12**	**n/a**	**12**	**n/a**

Intersection and Interchange Evaluation (IIE) Forms

TDOT IIE Form - Data Inputs

Version: 09142020

Project Information

Project and Location Data

Project Name:	Epps Mill Rd		
Major Road Name:	Epps Mill Rd	Minor Road Name:	I-24 Ramps
PIN:	124683.06	County:	Rutherford
Date:	6/4/2024	Analyst/Firm:	Trent Moody/STV Inc
Existing Control Type:	Other (provide description)	No. of Legs:	3
Major Road Direction:	E-W	Opening Year: 2028	Design Year: 2048
Funct. Class of Major Road:	Minor Arterial	Land Use Context:	Suburban
Project Type of Work:	Intersection Improvements and Signals		

Traffic Data

Opening Year 2028	Major Road AADT:	9,260	
Design Year 2048	Major Road AADT:	24,080	
Major Road T % (AADT):	23%	Minor Road T % (AADT):	10%
Major Road T % (DHV):	15%	Minor Road T % (DHV):	7%

Multimodal Activity

Within a 1/2 mile of the project location are there:

Bus stop:	No	School:	No	Library:	No
Retail Center:	No	Other Civic Institution:	No	Context to Support Multimodal Activity:	No

Existing or Future Estimated Multimodal Activity Level: Low

Crash History and Intersection Crash Rate

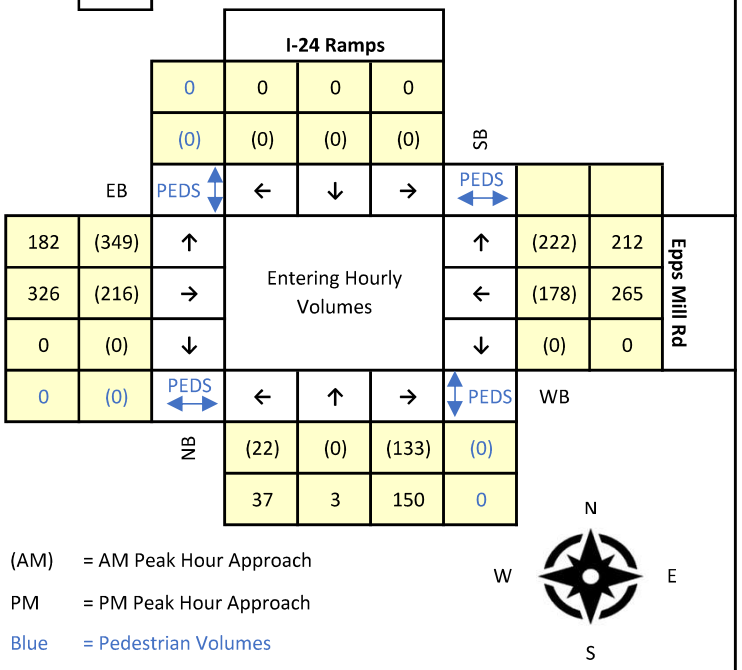
Crash Data Year(s):		No. of Years:	
		No. of Crashes:	

Leg	Current AADT
North:	
East:	
South:	
West:	
Entering AADT:	0

SW Avg. Rate:	
Crash Rate (A):	######
Critical Rate (C):	######
A/SW:	######
A/C:	####

Turning Movement Volumes (TMV)

2028 =Opening Year Design Hourly Volumes (DHV)

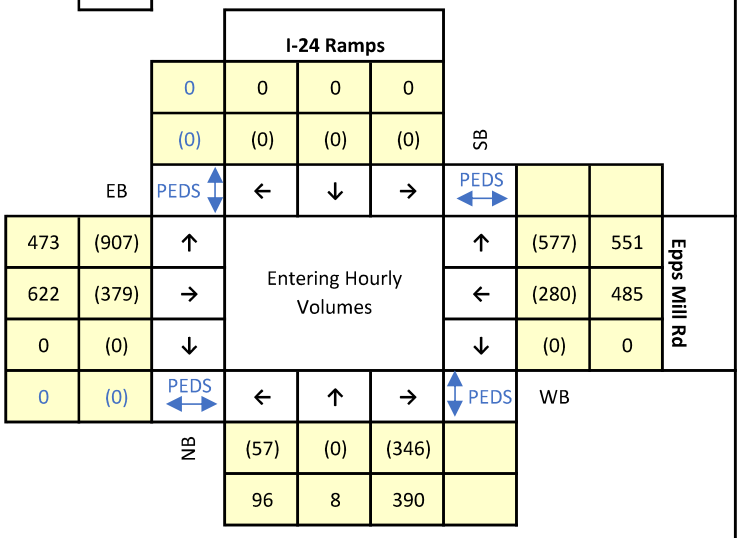


(AM) = AM Peak Hour Approach

PM = PM Peak Hour Approach

Blue = Pedestrian Volumes

2048 = Design Year Design Hourly Volumes (DHV)



Intersection Location:	Epps Mill Rd at I-24 Ramps in Rutherford County				
Number of Intersection Legs:	3	**PIN:**	124683.06	**Date:**	6/4/24
Existing Control Type:	Other (provide description)	**Analyst:**	Trent Moody/STV Inc	Version: 09142020	

TDOT IIE Stage I Form - Scoping

Control Type	Conflict Point Score (lower # is better)	Is the option feasible and reasonable?	Is the option likely to improve or maintain safety?	Is the option likely to improve operations?	Is the Optoin likely to improve or maintain multimodal access?	AM V/C Ratio (CAP X)	PM V/C Ratio (CAP X)	Should the Option proceed to Stage II?	Screening Decision Justification
At-Grade Intersection	Safety	Q1	Q2	Q3	Q4	Capacity		Decision	
Traffic Signal	12	Yes	Yes	Yes	Yes	1.40	1.02	**Yes**	Signal warranted
Two-Way Stop Control	12	Yes	Yes	No	No			No	Existing condition
All-Way Stop Control	12	No	-	-	-	1.84	1.89	No	Poor V/C
Continuous Green T	12	No	-	-	-	0.83	1.08	No	Poor V/C
Quadrant Roadway	n/a	No	-	-	-	N/A	N/A	No	N/A
Partial Displaced Left Turn	12	No	-	-	-	0.93	0.74	No	Geometric constr. due to prox. of other intersections
Displaced Left Turn	n/a	No	-	-	-	N/A	N/A	No	N/A
Signalized RCUT	12	No	-	-	-	0.88	0.79	No	Geometric constr. due to prox. of other intersections
J-Turn (Unsignalized RCUT)	12	No	-	-	-	2.01	1.39	No	Poor V/C
Median U-Turn	8	No	-	-	-	1.48	1.19	No	Poor V/C
Partial Median U -Turn	16	No	-	-	-	1.48	1.11	No	Poor V/C
Bowtie	n/a	No	-	-	-	N/A	N/A	No	N/A
Split Intersection	n/a	No	-	-	-	N/A	N/A	No	N/A
Roundabout	6	No	-	-	-	2.54	1.88	No	Poor V/C
Other (provide description)		No	-	-	-				
Grade-Separated Intersection	Safety	Q1	Q2	Q3	Q4	CAP-X		Decision	Screening Decision Justification
Echelon	n/a	No	-	-	-	0.90	0.78	No	Geometric constr. due to prox. of other intersections
Center Turn Overpass	n/a	No	-	-	-	0.71	1.06	No	Poor V/C
Interchange	Safety	Q1	Q2	Q3	Q4	CAP-X		Decision	Screening Decision Justification
Diamond	n/a	No	-	-	-	0.75	0.58	-	N/A
Partial Cloverleaf	n/a	No	-	-	-	0.20	0.13	-	N/A
Displaced Left Turn Interchange	n/a	No	-	-	-	0.79	0.61	-	N/A
Contraflow Left Interchange	n/a	No	-	-	-	0.80	0.63	-	N/A
DDI	n/a	No	-	-	-	0.73	0.56	-	N/A
Single Point	n/a	No	-	-	-	0.77	0.61	-	N/A
Single Point with Roundabout	n/a	No	-	-	-	1.46	0.90	-	N/A
Other (provide description)		No	-	-	-				

TN TDOT Department of Transportation	**Intersection Location:**		Epps Mill Rd at I-24 Ramps in Rutherford County							
	Number of Intersection Legs:		3		**PIN:**	124683.06			**Date:**	6/4/24
	TDOT IIE Stage II Form - Selection				**Analyst:**	Trent Moody/STV Inc			Version: 09142020	
	Existing Control		**Option 1**		**Option 2**		**Option 3**		**Option 4**	
TDOT IIE Stage II Form - Selection	Other (provide description		Traffic Signal		None		None		None	
Project Cost										
Tool Used	Not Applicable		-		-		-		-	
Total Project Cost	Not Applicable		-		-		-		-	
Life Cycle Cost										
Tool Used	-		-		-		-		-	
Analysis Period	2028 to 2048		2028 to 2048		2028 to 2048		2028 to 2048		2028 to 2048	
Total Life Cycle NPV Cost	-		-		-		-		-	
Traffic Operations										
Traffic Analysis Software Used	Synchro		Synchro		-		-		-	
2028 Opening Year	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
LOS	B	B	A	A	-	-	-	-	-	-
Delay (s/veh)	12.8	14.1	5.6	8.9						
v/c	0.16	0.21	0.4	0.53						
Queues Accommodated?			-	-	-	-	-	-	-	-
2048 Design Year	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
LOS	F	F	C	B	-	-	-	-	-	-
Delay (s/veh)	1487.4	508	24.2	11.4						
v/c	19	5.2	0.99	0.78						
Queues Accommodated?	-	-			-	-	-	-	-	-
Predictive Crash Analysis										
Tool Used	-		-		-		-		-	
Analysis Period	2028 to 2048		2028 to 2048		2028 to 2048		2028 to 2048		2028 to 2048	
Total Crashes										
Fatal & Injury Crashes										
Multimodal										
Are peds, bicyclists, and transit riders accommodated?	-		-		-		-		-	
Stakeholder Posture										
Local Community Support	Not Applicable		-		-		-		-	
TDOT Support	Not Applicable		-		-		-		-	
TDOT Approval										
Preferred Option?	Not Applicable		-		-		-		-	
Comments										
TDOT Reviewer Name and Title				Signature				Date		

Stage I Scoping Conflict Point Score (Default Crossing weight = 2, Merging, Diverging =1)

Weights:		Default values
Crossing	2	2
Merging	1	1
Diverging	1	1

		Conflict Point Count		Weighted Score	
	Conflict Type	4 Legs	3 Legs	4 Legs	3 Legs
At-Grade Intersections					
Traffic Signal	Crossing	16	3	32	6
	Merging	8	3	8	3
	Diverging	8	3	8	3
	Total	**32**	**9**	**48**	**12**
Stop Control	Crossing	16	3	32	6
	Merging	8	3	8	3
	Diverging	8	3	8	3
	Total	**32**	**9**	**48**	**12**
Continuous Green T	Crossing		3		6
	Merging		3		3
	Diverging		3		3
	Total	**n/a**	**9**	**n/a**	**12**
Quadrant	Crossing	10		20	
	Merging	10		10	
	Diverging	10		10	
	Total	**30**	**n/a**	**40**	**n/a**
Partial Displaced Left Turn	Crossing	14	3	28	6
	Merging	8	3	8	3
	Diverging	8	3	8	3
	Total	**30**	**9**	**44**	**12**
Displaced Left Turn	Crossing	12		24	
	Merging	8		8	
	Diverging	8		8	
	Total	**28**	**n/a**	**40**	**n/a**
Signalized RCUT	Crossing	2	1	4	2
	Merging	8	5	8	5
	Diverging	8	5	8	5
	Total	**18**	**11**	**20**	**12**
J-Turn (Unsignalized RCUT)	Crossing	2	1	4	2
	Merging	8	5	8	5
	Diverging	8	5	8	5
	Total	**18**	**11**	**20**	**12**
Median U-Turn	Crossing	4	0	8	0
	Merging	6	4	6	4
	Diverging	6	4	6	4
	Total	**16**	**8**	**20**	**8**
Partial Median U-Turn	Crossing	6	2	12	4
	Merging	8	6	8	6
	Diverging	8	6	8	6
	Total	**22**	**14**	**28**	**16**
Bowtie	Crossing	4		8	
	Merging	8		8	
	Diverging	8		8	
	Total	**20**	**n/a**	**24**	**n/a**
Split Intersection	Crossing	10		20	
	Merging	8		8	
	Diverging	8		8	
	Total	**26**	**n/a**	**36**	**n/a**
Roundabout	Crossing	0	0	0	0
	Merging	4	3	4	3
	Diverging	4	3	4	3
	Total	**8**	**6**	**8**	**6**
Grade-Separated Intersections					
Echelon	Crossing	6		12	
	Merging	8		8	
	Diverging	8		8	
	Total	**22**	**n/a**	**28**	**n/a**
Center Turn Overpass	Crossing	8		16	
	Merging	8		8	
	Diverging	8		8	
	Total	**24**	**n/a**	**32**	**n/a**
Interchanges					
Diamond	Crossing	6		12	
	Merging	8		8	
	Diverging	8		8	
	Total	**22**	**n/a**	**28**	**n/a**
Partial Cloverleaf	Crossing	2		4	
	Merging	8		8	
	Diverging	8		8	
	Total	**18**	**n/a**	**20**	**n/a**
Displaced Left Turn Interchange	Crossing	6		12	
	Merging	8		8	
	Diverging	8		8	
	Total	**22**	**n/a**	**28**	**n/a**
Contraflow Left Interchange	Crossing	8		16	
	Merging	8		8	
	Diverging	8		8	
	Total	**24**	**n/a**	**32**	**n/a**
DDI	Crossing	2		4	
	Merging	8		8	
	Diverging	8		8	
	Total	**18**	**n/a**	**20**	**n/a**
Single Point	Crossing	8		16	
	Merging	8		8	
	Diverging	8		8	
	Total	**24**	**n/a**	**32**	**n/a**
Single Point with Roundabout	Crossing	0		0	
	Merging	6		6	
	Diverging	6		6	
	Total	**12**	**n/a**	**12**	**n/a**

Intersection and Interchange Evaluation (IIE) Forms

TDOT IIE Form - Data Inputs

Version: 09142020

Project Information

Project and Location Data

Project Name:	Epps Mill Rd		
Major Road Name:	Epps Mill Rd	Minor Road Name:	I-24 Ramps/Miller Rd
PIN:	124683.06	County:	Rutherford
Date:	6/4/2024	Analyst/Firm:	Trent Moody/STV Inc
Existing Control Type:	None	No. of Legs:	4
Major Road Direction:	E-W	Opening Year: 2028	Design Year: 2048
Funct. Class of Major Road:	Interstate	Land Use Context:	Suburban
Project Type of Work:	Intersection Improvements and Signals		

Traffic Data

Opening Year 2028	Major Road AADT:	10,000	
Design Year 2048	Major Road AADT:	22,550	
Major Road T % (AADT):	17%	Minor Road T % (AADT):	10%
Major Road T % (DHV):	11%	Minor Road T % (DHV):	7%

Multimodal Activity

Within a 1/2 mile of the project location are there:

Bus stop:	No	School:	No	Library:	No
Retail Center:	No	Other Civic Institution:	No	Context to Support Multimodal Activity:	No

Existing or Future Estimated Multimodal Activity Level: Low

Crash History and Intersection Crash Rate

Crash Data Year(s):		No. of Years:	
		No. of Crashes:	

Leg	Current AADT
North:	
East:	
South:	
West:	
Entering AADT:	0

SW Avg. Rate:	
Crash Rate (A):	######
Critical Rate (C):	######
A/SW:	######
A/C:	####

Turning Movement Volumes (TMV)

2028 =Opening Year Design Hourly Volumes (DHV)

			I-24 Ramps/Miller Rd						
			0	223	97	218			
			(0)	(87)	(50)	(161)	SB		
		EB	PEDS	←	↓	→	PEDS		
35	(40)	↑	Entering Hourly Volumes			↑	(96)	107	Epps Mill Rd
168	(268)	→				←	(66)	136	
42	(42)	↓				↓	(38)	159	
0	(0)	PEDS	←	↑	→	PEDS	WB		
		NB	(25)	(20)	(136)	(0)			
			22	25	122	0			

(AM) = AM Peak Hour Approach

PM = PM Peak Hour Approach

Blue = Pedestrian Volumes

N W E S

2048 = Design Year Design Hourly Volumes (DHV)

			I-24 Ramps/Miller Rd						
			0	534	298	567			
			(0)	(168)	(188)	(419)	SB		
		EB	PEDS	←	↓	→	PEDS		
99	(117)	↑	Entering Hourly Volumes			↑	(255)	278	Epps Mill Rd
203	(500)	→				←	(36)	195	
109	(109)	↓				↓	(46)	108	
0	(0)	PEDS	←	↑	→	PEDS	WB		
		NB	(65)	(39)	(367)				
			57	57	325				

Intersection Location:	Epps Mill Rd at I-24 Ramps/Miller Rd in Rutherford County				
Number of Intersection Legs:	4	**PIN:**	124683.06	**Date:**	6/4/24
Existing Control Type:	None	**Analyst:**	Trent Moody/STV Inc	Version: 09142020	

TDOT IIE Stage I Form - Scoping

Control Type	Conflict Point Score (lower # is better)	Is the option feasible and reasonable?	Is the option likely to improve or maintain safety?	Is the option likely to improve operations?	Is the Optoin likely to improve or maintain multimodal access?	AM V/C Ratio (CAP X)	PM V/C Ratio (CAP X)	Should the Option proceed to Stage II?	Screening Decision Justification
At-Grade Intersection	Safety	Q1	Q2	Q3	Q4	Capacity		Decision	
Traffic Signal	48	Yes	Yes	Yes	Yes	0.92	0.83	**Yes**	Signal Warranted
Two-Way Stop Control	48	Yes	No	No	No	18.80	6.67	No	Poor V/C
All-Way Stop Control	48	No	-	-	-	1.90	2.17	No	Poor V/C
Continuous Green T	n/a	No	-	-	-	N/A	N/A	-	N/A
Quadrant Roadway	40	No	-	-	-	0.55	0.62	No	Not feasible with interstate ramp
Partial Displaced Left Turn	44	No	-	-	-	0.85	0.81	No	Not feasible with interstate ramp
Displaced Left Turn	40	No	-	-	-	0.61	0.51	No	Not feasible with interstate ramp
Signalized RCUT	20	No	-	-	-	0.94	1.30	No	Poor V/C
J-Turn (Unsignalized RCUT)	20	No	-	-	-	1.94	2.09	No	Poor V/C
Median U-Turn	20	No	-	-	-	0.83	1.01	No	Poor V/C
Partial Median U -Turn	28	No	-	-	-	0.96	0.87	No	Not feasible with interstate ramp
Bowtie	24	No	-	-	-	0.92	1.27	No	Poor V/C
Split Intersection	36	No	-	-	-	0.88	0.79	No	Not feasible with interstate ramp
Roundabout	8	No	-	-	-	1.29	1.32	No	Poor V/C
Other (provide description)		No	-	-	-				
Grade-Separated Intersection	Safety	Q1	Q2	Q3	Q4	CAP-X		Decision	Screening Decision Justification
Echelon	28	No	-	-	-	0.59	0.60	No	Not feasible with interstate ramp
Center Turn Overpass	32	No	-	-	-	0.59	0.60	No	Not feasible with interstate ramp
Interchange	Safety	Q1	Q2	Q3	Q4	CAP-X		Decision	Screening Decision Justification
Diamond	28	No	-	-	-	0.70	0.63	-	N/A
Partial Cloverleaf	20	No	-	-	-	0.30	0.40	-	N/A
Displaced Left Turn Interchange	28	No	-	-	-	0.32	0.42	-	N/A
Contraflow Left Interchange	32	No	-	-	-	0.64	0.73	-	N/A
DDI	20	No	-	-	-	0.24	0.31	-	N/A
Single Point	32	No	-	-	-	0.39	0.52	-	N/A
Single Point with Roundabout	12	No	-	-	-	0.53	0.75	-	N/A
Other (provide description)		No	-	-	-				

TN TDOT Department of Transportation	**Intersection Location:**		Epps Mill Rd at I-24 Ramps/Miller Rd in Rutherford County							
	Number of Intersection Legs:		4		**PIN:**	124683.06			**Date:**	6/4/24
	TDOT IIE Stage II Form - Selection				**Analyst:**	Trent Moody/STV Inc			Version: 09142020	
	Existing Control		**Option 1**		**Option 2**		**Option 3**		**Option 4**	
TDOT IIE Stage II Form - Selection	None		Traffic Signal		None		None		None	
Project Cost										
Tool Used	Not Applicable		-		-		-		-	
Total Project Cost	Not Applicable		-		-		-		-	
Life Cycle Cost										
Tool Used	-		-		-		-		-	
Analysis Period	2028 to 2048		2028 to 2048		2028 to 2048		2028 to 2048		2028 to 2048	
Total Life Cycle NPV Cost	-		-		-		-		-	
Traffic Operations										
Traffic Analysis Software Used	Synchro		Synchro		-		-		-	
2028 Opening Year	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
LOS			B	B	-	-	-	-	-	-
Delay (s/veh)			16.1	17.4						
v/c			0.39	0.56						
Queues Accommodated?	-	-	-	-	-	-	-	-	-	-
2048 Design Year	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
LOS			D	C	-	-	-	-	-	-
Delay (s/veh)			35.6	27.3						
v/c			0.94	0.97						
Queues Accommodated?	-	-			-	-	-	-	-	-
Predictive Crash Analysis										
Tool Used	-		-		-		-		-	
Analysis Period	2028 to 2048		2028 to 2048		2028 to 2048		2028 to 2048		2028 to 2048	
Total Crashes										
Fatal & Injury Crashes										
Multimodal										
Are peds, bicyclists, and transit riders accommodated?	-		-		-		-		-	
Stakeholder Posture										
Local Community Support	Not Applicable		-		-		-		-	
TDOT Support	Not Applicable		-		-		-		-	
TDOT Approval										
Preferred Option?	Not Applicable		-		-		-		-	
Comments										
TDOT Reviewer Name and Title			Signature				Date			

Stage I Scoping Conflict Point Score (Default Crossing weight = 2, Merging, Diverging =1)

Weights:		Default values
Crossing	2	2
Merging	1	1
Diverging	1	1

		Conflict Point Count		Weighted Score	
	Conflict Type	4 Legs	3 Legs	4 Legs	3 Legs
At-Grade Intersections					
Traffic Signal	Crossing	16	3	32	6
	Merging	8	3	8	3
	Diverging	8	3	8	3
	Total	**32**	**9**	**48**	**12**
Stop Control	Crossing	16	3	32	6
	Merging	8	3	8	3
	Diverging	8	3	8	3
	Total	**32**	**9**	**48**	**12**
Continuous Green T	Crossing		3		6
	Merging		3		3
	Diverging		3		3
	Total	**n/a**	**9**	**n/a**	**12**
Quadrant	Crossing	10		20	
	Merging	10		10	
	Diverging	10		10	
	Total	**30**	**n/a**	**40**	**n/a**
Partial Displaced Left Turn	Crossing	14	3	28	6
	Merging	8	3	8	3
	Diverging	8	3	8	3
	Total	**30**	**9**	**44**	**12**
Displaced Left Turn	Crossing	12		24	
	Merging	8		8	
	Diverging	8		8	
	Total	**28**	**n/a**	**40**	**n/a**
Signalized RCUT	Crossing	2	1	4	2
	Merging	8	5	8	5
	Diverging	8	5	8	5
	Total	**18**	**11**	**20**	**12**
J-Turn (Unsignalized RCUT)	Crossing	2	1	4	2
	Merging	8	5	8	5
	Diverging	8	5	8	5
	Total	**18**	**11**	**20**	**12**
Median U-Turn	Crossing	4	0	8	0
	Merging	6	4	6	4
	Diverging	6	4	6	4
	Total	**16**	**8**	**20**	**8**
Partial Median U-Turn	Crossing	6	2	12	4
	Merging	8	6	8	6
	Diverging	8	6	8	6
	Total	**22**	**14**	**28**	**16**
Bowtie	Crossing	4		8	
	Merging	8		8	
	Diverging	8		8	
	Total	**20**	**n/a**	**24**	**n/a**
Split Intersection	Crossing	10		20	
	Merging	8		8	
	Diverging	8		8	
	Total	**26**	**n/a**	**36**	**n/a**
Roundabout	Crossing	0	0	0	0
	Merging	4	3	4	3
	Diverging	4	3	4	3
	Total	**8**	**6**	**8**	**6**
Grade-Separated Intersections					
Echelon	Crossing	6		12	
	Merging	8		8	
	Diverging	8		8	
	Total	**22**	**n/a**	**28**	**n/a**
Center Turn Overpass	Crossing	8		16	
	Merging	8		8	
	Diverging	8		8	
	Total	**24**	**n/a**	**32**	**n/a**
Interchanges					
Diamond	Crossing	6		12	
	Merging	8		8	
	Diverging	8		8	
	Total	**22**	**n/a**	**28**	**n/a**
Partial Cloverleaf	Crossing	2		4	
	Merging	8		8	
	Diverging	8		8	
	Total	**18**	**n/a**	**20**	**n/a**
Displaced Left Turn Interchange	Crossing	6		12	
	Merging	8		8	
	Diverging	8		8	
	Total	**22**	**n/a**	**28**	**n/a**
Contraflow Left Interchange	Crossing	8		16	
	Merging	8		8	
	Diverging	8		8	
	Total	**24**	**n/a**	**32**	**n/a**
DDI	Crossing	2		4	
	Merging	8		8	
	Diverging	8		8	
	Total	**18**	**n/a**	**20**	**n/a**
Single Point	Crossing	8		16	
	Merging	8		8	
	Diverging	8		8	
	Total	**24**	**n/a**	**32**	**n/a**
Single Point with Roundabout	Crossing	0		0	
	Merging	6		6	
	Diverging	6		6	
	Total	**12**	**n/a**	**12**	**n/a**

Intersection and Interchange Evaluation (IIE) Forms

TDOT IIE Form - Data Inputs

Version: 09142020

Project Information

Project and Location Data

Project Name:	Epps Mill Rd		
Major Road Name:	Epps Mill Rd	Minor Road Name:	Capital Way/DG
PIN:	124683.06	County:	Rutherford
Date:	4/26/2024	Analyst/Firm:	Trent Moody/STV Inc
Existing Control Type:	Two-Way Stop Control	No. of Legs:	4
Major Road Direction:	E-W	Opening Year: 2028	Design Year: 2048
Funct. Class of Major Road:	Principal Arterial	Land Use Context:	Suburban
Project Type of Work:	Intersection Improvements and Signals		

Traffic Data

Opening Year 2028	Major Road AADT:	5,765	
Design Year 2048	Major Road AADT:	15,000	
Major Road T % (AADT):	6%	Minor Road T % (AADT):	38%
Major Road T % (DHV):	4%	Minor Road T % (DHV):	25%

Multimodal Activity

Within a 1/2 mile of the project location are there:

Bus stop:	No	School:	No	Library:	No
Retail Center:	No	Other Civic Institution:	No	Context to Support Multimodal Activity:	No

Existing or Future Estimated Multimodal Activity Level: Low

Crash History and Intersection Crash Rate

Crash Data Year(s): | No. of Years: | No. of Crashes:

Leg	Current AADT
North:	
East:	
South:	
West:	
Entering AADT:	0

SW Avg. Rate:
Crash Rate (A): ######
Critical Rate (C): ######
A/SW: ######
A/C: ####

Turning Movement Volumes (TMV)

2028 =Opening Year Design Hourly Volumes (DHV)

			Capital Way/DG							
			0	11	0	71				
			(0)	(2)	(0)	(25)	SB			
		EB	PEDS	←	↓	→	PEDS			
3	(11)	↑	Entering Hourly Volumes			↑	(36)	23	Epps Mill Rd	
146	(320)	→				←	(139)	330		
23	(6)	↓				↓	(3)	28		
0	(0)	PEDS	←	↑	→	PEDS	WB			
		NB	(0)	(2)	(5)	(0)				
			15	2	28	0				

(AM) = AM Peak Hour Approach

PM = PM Peak Hour Approach

Blue = Pedestrian Volumes

N W E S

2048 = Design Year Design Hourly Volumes (DHV)

			Capital Way/DG							
			0	29	0	185				
			(0)	(5)	(0)	(65)	SB			
		EB	PEDS	←	↓	→	PEDS			
8	(29)	↑	Entering Hourly Volumes			↑	(94)	60	Epps Mill Rd	
153	(648)	→				←	(167)	653		
60	(16)	↓				↓	(8)	73		
0	(0)	PEDS	←	↑	→	PEDS	WB			
		NB	(0)	(5)	(13)					
			39	5	73					

Intersection Location:	Epps Mill Rd at Capital Way/DG in Rutherford County				
Number of Intersection Legs:	4	**PIN:**	124683.06	**Date:**	4/26/24
Existing Control Type:	Two-Way Stop Control	**Analyst:**	Trent Moody/STV Inc	Version: 09142020	

TDOT IIE Stage I Form - Scoping

Control Type	Conflict Point Score (lower # is better)	Is the option feasible and reasonable?	Is the option likely to improve or maintain safety?	Is the option likely to improve operations?	Is the Optoin likely to improve or maintain multimodal access?	AM V/C Ratio (CAP X)	PM V/C Ratio (CAP X)	Should the Option proceed to Stage II?	
At-Grade Intersection	Safety	Q1	Q2	Q3	Q4	Capacity		Decision	Screening Decision Justification
Traffic Signal	48	No	No	No	No	0.47	0.63	No	Not warranted
Two-Way Stop Control	48	Yes	Yes	Yes	Yes	0.52	2.01	**Yes**	Existing Condition
All-Way Stop Control	48	No	-	-	-	0.75	1.20	No	Poor V/C
Continuous Green T	n/a	No	-	-	-	N/A	N/A	-	N/A
Quadrant Roadway	40	No	-	-	-	0.30	0.42	No	Geometric const. due to prox. to other intersections
Partial Displaced Left Turn	44	No	-	-	-	0.46	0.59	No	Geometric const. due to prox. to other intersections
Displaced Left Turn	40	No	-	-	-	0.43	0.54	No	Geometric const. due to prox. to other intersections
Signalized RCUT	20	No	-	-	-	0.47	0.64	No	Geometric const. due to prox. to other intersections
J-Turn (Unsignalized RCUT)	20	No	-	-	-	0.13	0.85	No	Geometric const. due to prox. to other intersections
Median U-Turn	20	No	-	-	-	0.47	0.63	No	Geometric const. due to prox. to other intersections
Partial Median U -Turn	28	No	-	-	-	0.47	0.69	No	Geometric const. due to prox. to other intersections
Bowtie	24	No	-	-	-	0.49	0.74	No	Geometric const. due to prox. to other intersections
Split Intersection	36	No	-	-	-	0.45	0.57	No	Geometric const. due to prox. to other intersections
Roundabout	8	No	-	-	-	0.75	0.96	No	Geometric const. due to prox. to other intersections
Other (provide description)		No	-	-	-			-	
Grade-Separated Intersection	Safety	Q1	Q2	Q3	Q4	CAP-X		Decision	Screening Decision Justification
Echelon	28	No	-	-	-	0.39	0.58	No	Geometric const. due to prox. to other intersections
Center Turn Overpass	32	No	-	-	-	0.39	0.48	No	Geometric const. due to prox. to other intersections
Interchange	Safety	Q1	Q2	Q3	Q4	CAP-X		Decision	Screening Decision Justification
Diamond	28	No	-	-	-	0.47	0.56	-	
Partial Cloverleaf	20	No	-	-	-	0.04	0.14	-	
Displaced Left Turn Interchange	28	No	-	-	-	0.22	0.60	-	
Contraflow Left Interchange	32	No	-	-	-	0.12	0.25	-	
DDI	20	No	-	-	-	0.07	0.12	-	
Single Point	32	No	-	-	-	0.08	0.21	-	
Single Point with Roundabout	12	No	-	-	-	0.07	0.20	-	
Other (provide description)		No	-	-	-			-	

TN TDOT Department of Transportation	**Intersection Location:**		Epps Mill Rd at Capital Way/DG in Rutherford County							
	Number of Intersection Legs:		4		**PIN:**	124683.06			**Date:**	4/26/24
	TDOT IIE Stage II Form - Selection				**Analyst:**	Trent Moody/STV Inc			Version: 09142020	
	Existing Control		**Option 1**		**Option 2**		**Option 3**		**Option 4**	
TDOT IIE Stage II Form - Selection	Two-Way Stop Control		Two-Way Stop Control		None		None		None	
Project Cost										
Tool Used	Not Applicable		-		-		-		-	
Total Project Cost	Not Applicable		-		-		-		-	
Life Cycle Cost										
Tool Used	-		-		-		-		-	
Analysis Period	2028 to 2048		2028 to 2048		2028 to 2048		2028 to 2048		2028 to 2048	
Total Life Cycle NPV Cost	-		-		-		-		-	
Traffic Operations										
Traffic Analysis Software Used	Synchro		Synchro		-		-		-	
2028 Opening Year	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
LOS	B	C	B	C	-	-	-	-	-	-
Delay (s/veh)	12.8	15.5	14	15.8						
v/c	0.06	0.19	0.063	0.197						
Queues Accommodated?	-	-	-	-	-	-	-	-	-	-
2048 Design Year	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
LOS	D	F	D	F	-	-	-	-	-	-
Delay (s/veh)	25.1	145.5	32	184.8						
v/c	0.28	1.1	0.347	1.202						
Queues Accommodated?	-	-			-	-	-	-	-	-
Predictive Crash Analysis										
Tool Used	-		-		-		-		-	
Analysis Period	2028 to 2048		2028 to 2048		2028 to 2048		2028 to 2048		2028 to 2048	
Total Crashes										
Fatal & Injury Crashes										
Multimodal										
Are peds, bicyclists, and transit riders accommodated?	-		-		-		-		-	
Stakeholder Posture										
Local Community Support	Not Applicable		-		-		-		-	
TDOT Support	Not Applicable		-		-		-		-	
TDOT Approval										
Preferred Option?	Not Applicable		-		-		-		-	
Comments										
TDOT Reviewer Name and Title			Signature						Date	

Stage I Scoping Conflict Point Score (Default Crossing weight = 2, Merging, Diverging =1)

Weights:		Default values
Crossing	2	2
Merging	1	1
Diverging	1	1

		Conflict Point Count		Weighted Score	
	Conflict Type	4 Legs	3 Legs	4 Legs	3 Legs
At-Grade Intersections					
Traffic Signal	Crossing	16	3	32	6
	Merging	8	3	8	3
	Diverging	8	3	8	3
	Total	**32**	**9**	**48**	**12**
Stop Control	Crossing	16	3	32	6
	Merging	8	3	8	3
	Diverging	8	3	8	3
	Total	**32**	**9**	**48**	**12**
Continuous Green T	Crossing		3		6
	Merging		3		3
	Diverging		3		3
	Total	**n/a**	**9**	**n/a**	**12**
Quadrant	Crossing	10		20	
	Merging	10		10	
	Diverging	10		10	
	Total	**30**	**n/a**	**40**	**n/a**
Partial Displaced Left Turn	Crossing	14	3	28	6
	Merging	8	3	8	3
	Diverging	8	3	8	3
	Total	**30**	**9**	**44**	**12**
Displaced Left Turn	Crossing	12		24	
	Merging	8		8	
	Diverging	8		8	
	Total	**28**	**n/a**	**40**	**n/a**
Signalized RCUT	Crossing	2	1	4	2
	Merging	8	5	8	5
	Diverging	8	5	8	5
	Total	**18**	**11**	**20**	**12**
J-Turn (Unsignalized RCUT)	Crossing	2	1	4	2
	Merging	8	5	8	5
	Diverging	8	5	8	5
	Total	**18**	**11**	**20**	**12**
Median U-Turn	Crossing	4	0	8	0
	Merging	6	4	6	4
	Diverging	6	4	6	4
	Total	**16**	**8**	**20**	**8**
Partial Median U-Turn	Crossing	6	2	12	4
	Merging	8	6	8	6
	Diverging	8	6	8	6
	Total	**22**	**14**	**28**	**16**
Bowtie	Crossing	4		8	
	Merging	8		8	
	Diverging	8		8	
	Total	**20**	**n/a**	**24**	**n/a**
Split Intersection	Crossing	10		20	
	Merging	8		8	
	Diverging	8		8	
	Total	**26**	**n/a**	**36**	**n/a**
Roundabout	Crossing	0	0	0	0
	Merging	4	3	4	3
	Diverging	4	3	4	3
	Total	**8**	**6**	**8**	**6**
Grade-Separated Intersections					
Echelon	Crossing	6		12	
	Merging	8		8	
	Diverging	8		8	
	Total	**22**	**n/a**	**28**	**n/a**
Center Turn Overpass	Crossing	8		16	
	Merging	8		8	
	Diverging	8		8	
	Total	**24**	**n/a**	**32**	**n/a**
Interchanges					
Diamond	Crossing	6		12	
	Merging	8		8	
	Diverging	8		8	
	Total	**22**	**n/a**	**28**	**n/a**
Partial Cloverleaf	Crossing	2		4	
	Merging	8		8	
	Diverging	8		8	
	Total	**18**	**n/a**	**20**	**n/a**
Displaced Left Turn Interchange	Crossing	6		12	
	Merging	8		8	
	Diverging	8		8	
	Total	**22**	**n/a**	**28**	**n/a**
Contraflow Left Interchange	Crossing	8		16	
	Merging	8		8	
	Diverging	8		8	
	Total	**24**	**n/a**	**32**	**n/a**
DDI	Crossing	2		4	
	Merging	8		8	
	Diverging	8		8	
	Total	**18**	**n/a**	**20**	**n/a**
Single Point	Crossing	8		16	
	Merging	8		8	
	Diverging	8		8	
	Total	**24**	**n/a**	**32**	**n/a**
Single Point with Roundabout	Crossing	0		0	
	Merging	6		6	
	Diverging	6		6	
	Total	**12**	**n/a**	**12**	**n/a**

CAPACITY ANALYSIS MEMORANDUM

TO: FILE

FROM: Trent Moody, PE, STV Engineers, Inc.

DATE: June 2024

SUBJECT: I-24 at Exit 89 (Epps Mill Road) Traffic Analysis

An analysis was performed along Epps Mill Road for five intersections based on a proposed concept and with projected traffic volumes provided by TDOT, approved 7/12/2023. The intersections include:

- Epps Mill Road at TN-2/US 41
- Epps Mill Road at Forbus Drive/Miller Lane
- Epps Mill Road at I-24 WB Ramps
- Epps Mill Road at I-24 EB Ramps/Miller Lane
- Epps Mill Road at Capital Way/Dollar General Driveway

The following scenarios were analyzed for measures of effectiveness including level of service (LOS), delay, and queuing during the AM and PM peak hours:

- 2028 Base Year No Build Conditions (BY-NB)
- 2048 Future Year No Build Conditions (FY-NB)
- 2028 Base Year Build Conditions (BY-B)
- 2048 Future Build Conditions (FY-B)

Each intersection was assessed to determine if signal warrants based upon the 2023 edition of the Manual of Uniform Traffic Control Devices (MUTCD) were satisfied in build conditions.

Signal Warrants

For each intersection in the study area a signal warrant analysis was performed to determine if a traffic signal was warranted based upon MUTCD warrants. 13-hour (6:00 AM – 7:00 PM) turning movements counts (TMCs) were collected in May 2024. The volumes were projected into 2028, 2033, and 2048 with 4% growth rate similar to the TDOT projected traffic volumes approved 7/12/2023 and were assessed against MUTCD Warrants 1-3 (8-Hour Volume, 4-Hour Volume, and Peak-Hour Volume). 2033 was assessed as an interim year anticipated to be approximately 5-years beyond the opening year of the project. Due to the speed along Epps Mill Road being less than 40 MPH, 100 % volumes were used in 8-Hour Volume and 4-Hour Volume analyses.

Right turn reduction were also considered at each of the minor street approaches. Specifically, the intersection of Epps Mill Road with Forbus Drive and the I-24 Ramps. Forbus Drive connects to an existing truck stop along with other land uses that generate a large amount of heavy vehicle traffic (62% per TDOT projected traffic volumes). Due to the amount of heavy vehicles along Forbus Drive no right turn reduction was applied to this minor street approach as the heavy vehicles will require much larger gaps along Epps Mill Road to complete their turn. Due to the inclusion of all right turns the minor street was analyzed as a two-lane approach. At the I-24 Ramps it was determined that right turn were able to complete their movement with reduced conflict and

therefore a 60% right turn reduction was applied to the volumes at these locations based upon engineering judgement.

The signal warrant results summary is presented in Table 1 below.

Table 1: Signal Warrant Results Summary

		Signal Warrants				
		Warrant 1 (8 Hour)		Warrant 2 (4 Hour)	Warrant 3 (Peak Hour)	
Intersection	Analysis Year	Cond. A	Cond. B	Vehicular Volume	A - Peak Hour Delay	B - Peak Hour Volume
Epps Mill Road at TN-2 (US Hwy 41)	2028	No	No	No	No	No
	2033	No	No	No	No	Yes
	2048	Yes	Yes	Yes	No	Yes
Epps Mill Road at Forbus Drive	2028	No	No	No	No	No
	2033	Yes	No	Yes	No	No
	2048	Yes	Yes	Yes	No	Yes
Epps Mill Road at I-24 WB Ramp*	2028	No	No	No	No	No
	2033	No	No	No	No	No
	2048	No	Yes	Yes	No	Yes
Epps Mill Road at I-24 EB Ramp/Miller Road**	2028	No	No	No	No	No
	2033	Yes	No	Yes	No	Yes
	2048	Yes	Yes	Yes	No	Yes
Epps Mill Road at Capital Way/Dollar General Entrance	2028	No	No	No	No	No
	2033	No	No	No	No	No
	2048	No	No	No	No	No

*NBR turns reduced by 60% from analysis due to proposed dedicated channelized lane and yield condition
** Right turns were reduced by 60% based on engineering judgement

The resulting analysis revealed that all study intersections, with exception of Epps Mill Road at Capital Way/Dollar General Driveway, satisfied 8-Hour, 4-Hour, and Peak-Hour signal warrants by the design year in 2048. Further information of the signal warrant analysis is provided in the attachments.

Capacity Analysis

Each study intersection was analyzed using Synchro/SimTraffic analysis software. AM and PM design hourly volumes provided by TDOT were used in analysis of 2028 and 2048 No-Build & Build conditions. Due to the intersections of Epps Mill Road with Forbus Drive and the I-24 Ramps satisfying 8-Hour, 4-Hour, and Peak-Hour signal warrants, these intersections were modeled as signalized intersections in the build analysis. While the intersection of Epps Mill Road at TN-2/US 41 also satisfied 8-Hour, 4-Hour, and Peak-Hour signal warrants in the design year, coordination with TDOT determined to analyze this intersection as unsignalized in build analysis.

Figures 1-3 attached illustrate the study area/vicinity map, the existing lane geometry, and the proposed lane geometry, respectively.

It should be noted that the Synchro LOS results presented Epps Mill Road as the eastbound and westbound approaches throughout the study area. All intersecting roadways were presented as northbound and southbound approaches, while acknowledging that I-24 runs eastbound and westbound.

The LOS and delay for each intersection and approach are presented in the tables below (Tables 2-5).

Table 2: LOS for 2028 Base Year No Build Conditions

Intersection	2028 Base No Build Conditions					
	Overall / Approach		AM Peak		PM Peak	
			LOS	Delay	LOS	Delay
TN-2 (US-41) & Epps Mill Rd	**Unsignalized**					
	Eastbound (Epps Mill Rd)	Approach	C	19.2	C	20.5
	Northbound (TN-2/US-41)	Left-Turn	A	7.7	A	8.2
Forbus Drive & Epps Mill Rd	**Unsignalized**					
	Eastbound (Epps Mill Rd)	Left-Turn	A	7.9	A	8.0
	Westbound (Epps Mill Rd)	Left-Turn	A	7.6	A	7.8
	Northbound (Forbus Dr)	Approach	C	15.8	B	14.4
	Southbound (Forbus Dr)	Approach	B	11.3	B	12.1
Miller Ln/Driveway & Epps Mill Rd	**Unsignalized**					
	Eastbound (Epps Mill Rd)	Left-Turn	A	8.3	A	8.5
	Westbound (Epps Mill Rd)	Left-Turn	A	7.7	A	8.0
	Northbound (Miller Ln)	Approach	A	9.5	C	20.6
	Southbound (Driveway)	Approach	B	12.8	B	14.1
I-24 WB On Ramp/Off Ramp & Epps Mill Rd	**Unsignalized**					
	Eastbound (Epps Mill Rd)	Left-Turn	A	8.4	A	8.2
	Northbound (I-24 WB Off Ramp)	Approach	B	12.9	B	13.9
Epps Mill Rd & I-24 EB Off Ramp	**Unsignalized**					
	Southbound (I-24 EB Off Ramp)	Approach	B	13.0	B	14.2
Miller Rd & Epps Mill Rd	**Unsignalized**					
	Westbound (Epps Mill Rd)	Left-Turn	A	8.2	A	8.1
	Northbound (Miller Rd)	Approach	B	12.8	B	12.6
Dollar General Driveway/Capital Way & Epps Mill Rd	**Unsignalized**					
	Eastbound (Epps Mill Rd)	Left-Turn	A	7.6	A	8.0
	Westbound (Epps Mill Rd)	Left-Turn	A	7.9	A	7.6
	Northbound (DG Driveway)	Approach	B	10.9	B	11.1
	Southbound (Capital Way)	Approach	B	12.8	C	15.5

Table 3: LOS for 2048 Future No Build Conditions

Intersection	2048 Base No Build Conditions					
	Overall / Approach		AM Peak		PM Peak	
			LOS	Delay	LOS	Delay
TN-2 (US-41) & Epps Mill Rd	**Unsignalized**					
	Eastbound (Epps Mill Rd)	Approach	**F**	1675.7	**F**	2413.8
	Northbound (TN-2/US-41)	Left-Turn	A	8.6	B	11.6
Forbus Drive & Epps Mill Rd	**Unsignalized**					
	Eastbound (Epps Mill Rd)	Left-Turn	A	9.2	A	9.7
	Westbound (Epps Mill Rd)	Left-Turn	A	8.3	A	9.2
	Northbound (Forbus Dr)	Approach	**F**	57.9	**F**	85.1
	Southbound (Forbus Dr)	Approach	D	29	**F**	69.2
Miller Ln/Driveway & Epps Mill Rd	**Unsignalized**					
	Eastbound (Epps Mill Rd)	Left-Turn	B	10.5	B	11.4
	Westbound (Epps Mill Rd)	Left-Turn	A	8.6	A	9.4
	Northbound (Miller Ln)	Approach	B	11.7	**F**	714.3
	Southbound (Driveway)	Approach	**F**	55.9	**F**	272
I-24 WB On Ramp/Off Ramp & Epps Mill Rd	**Unsignalized**					
	Eastbound (Epps Mill Rd)	Left-Turn	B	14.4	B	11
	Northbound (I-24 WB Off Ramp)	Approach	**F**	1487.4	**F**	508
Epps Mill Rd & I-24 EB Off Ramp	**Unsignalized**					
	Southbound (I-24 EB Off Ramp)	Approach	**F**	231.4	**F**	272
Miller Rd & Epps Mill Rd	**Unsignalized**					
	Westbound (Epps Mill Rd)	Left-Turn	B	10.6	A	9.9
	Northbound (Miller Rd)	Approach	**F**	253.2	**F**	686.3
Dollar General Driveway/Capital Way & Epps Mill Rd	**Unsignalized**					
	Eastbound (Epps Mill Rd)	Left-Turn	A	7.8	A	9.1
	Westbound (Epps Mill Rd)	Left-Turn	A	8.9	A	7.8
	Northbound (DG Driveway)	Approach	C	15.2	C	17.2
	Southbound (Capital Way)	Approach	D	25.1	**F**	145.5

Table 4: LOS for 2028 Base Build Conditions

Intersection	2028 Base Year Build Conditions					
	Overall / Approach		AM Peak		PM Peak	
			LOS	Delay	LOS	Delay
TN-2 (US Hwy-41) & Epps Mill Rd	**Unsignalized**					
	Eastbound	Approach	C	20.8	C	18.4
	Northbound	Left-Turn	A	8.0	A	8.7
Forbus Drive & Epps Mill Rd	**Signalized**					
	Overall		A	8.3	A	7.7
	Eastbound	Approach	A	2.4	A	2.2
	Westbound	Approach	A	6.5	A	6.0
	Northbound	Approach	C	24.0	C	26.5
	Southbound	Approach	B	18.6	B	17.5
I-24 WB Off Ramp/I-24 WB On Ramp & Epps Mill Rd	**Signalized**					
	Overall		A	5.6	A	8.9
	Eastbound	Approach	A	4.9	A	6.1
	Westbound	Approach	A	6.4	A	6.0
	Northbound	Approach	A	6.0	C	23.6
Miller Rd/I-24 EB On/Off Ramp & Epps Mill Rd	**Signalized**					
	Overall		B	16.1	B	17.4
	Eastbound	Approach	C	24.6	B	13.8
	Westbound	Approach	A	8.3	B	10.9
	Northbound	Approach	B	11.6	C	24.8
	Southbound	Approach	B	14.1	C	20.3
Dollar General Driveway/Capital Way & Epps Mill Rd	**Unsignalized**					
	Eastbound	Left-Turn	A	7.6	A	8.0
	Westbound	Left-Turn	A	7.9	A	7.6
	Northbound	Approach	B	10.9	B	11.2
	Southbound	Approach	B	14.0	C	15.8

Table 5: LOS for 2048 Future Build Conditions

Intersection	2048 Future Year Build Conditions					
	Overall / Approach		AM Peak		PM Peak	
			LOS	Delay	LOS	Delay
TN-2 (US Hwy-41) & Epps Mill Rd	**Unsignalized**					
	Eastbound	Approach	**F**	**1416.3**	**F**	**2198.4**
	Northbound	Left-Turn	B	10.2	C	16.2
	Signalized					
	Overall		B	17.7	C	30.8
	Eastbound	Approach	D	38.4	D	42.4
	Northbound	Approach	B	12.7	C	26.5
	Southbound	Approach	A	9.6	C	25.8
Forbus Drive & Epps Mill Rd	**Signalized**					
	Overall		B	13.4	B	15.3
	Eastbound	Approach	A	5.0	A	8.1
	Westbound	Approach	B	18.5	C	20.3
	Northbound	Approach	C	21.2	C	23.3
	Southbound	Approach	C	21.6	C	23.3
I-24 W Off Ramp/I-24 W On Ramp & Epps Mill Rd	**Signalized**					
	Overall		C	24.2	B	11.4
	Eastbound	Approach	C	26.2	A	8.6
	Westbound	Approach	C	30.0	A	8.8
	Northbound	Approach	A	5.9	C	23.3
Miller Rd/I-24 EB On/Off Ramp & Epps Mill Rd	**Signalized**					
	Overall		D	35.6	C	27.3
	Eastbound	Approach	D	44.6	C	33.0
	Westbound	Approach	A	9.9	C	20.6
	Northbound	Approach	D	39.7	C	32.3
	Southbound	Approach	D	35.9	C	26.8
Dollar General Driveway/Capital Way & Epps Mill Rd	**Unsignalized**					
	Eastbound	Left-Turn	A	7.8	A	9.1
	Westbound	Left-Turn	A	8.9	A	7.8
	Northbound	Approach	C	15.2	C	19.3
	Southbound	Approach	D	32.0	**F**	**184.8**

The BY-NB scenario performs well with LOS C or better for each approach at all intersections. However, the FY-NB produces significant delays at multiple intersection approaches that resulted in LOS F. A design concept was developed for Epps Mill Rd to achieve improved LOS and reduce queueing at all intersections and approaches.

In the BY-B scenario, the project improvements result in all signals operating at LOS B or better overall. With the growth of future traffic analyzed in the FY-B scenario, all proposed signals operate at LOS D or better overall and nearly all approaches operate at LOS D or better as well. The one approaches that does not operate at LOS D or better include:

- LOS F is present along the southbound approach of Capital Way in the FY-B scenario. This intersection did not satisfy any signal warrants, and it is typical for minor street approaches to witness LOS F levels of delay during peak periods; therefore, no improvement is recommended at this intersection as a part of this project.

The intersection of Epps Mill Road at TN-2/US 41 was modeled as both an unsignalized intersection and signalized in the FY-B scenario. In the unsignalized scenario, queues from this stop-controlled approach queued back to the west into adjacent intersections, gridlocking a majority of the network in the simulations. This queueing and gridlock is observed in a screenshot from the simulation below.

Extensive congestion throughout the network in the FY-B scenario with a stop sign on Epps Mill Road at TN-2/US 41.

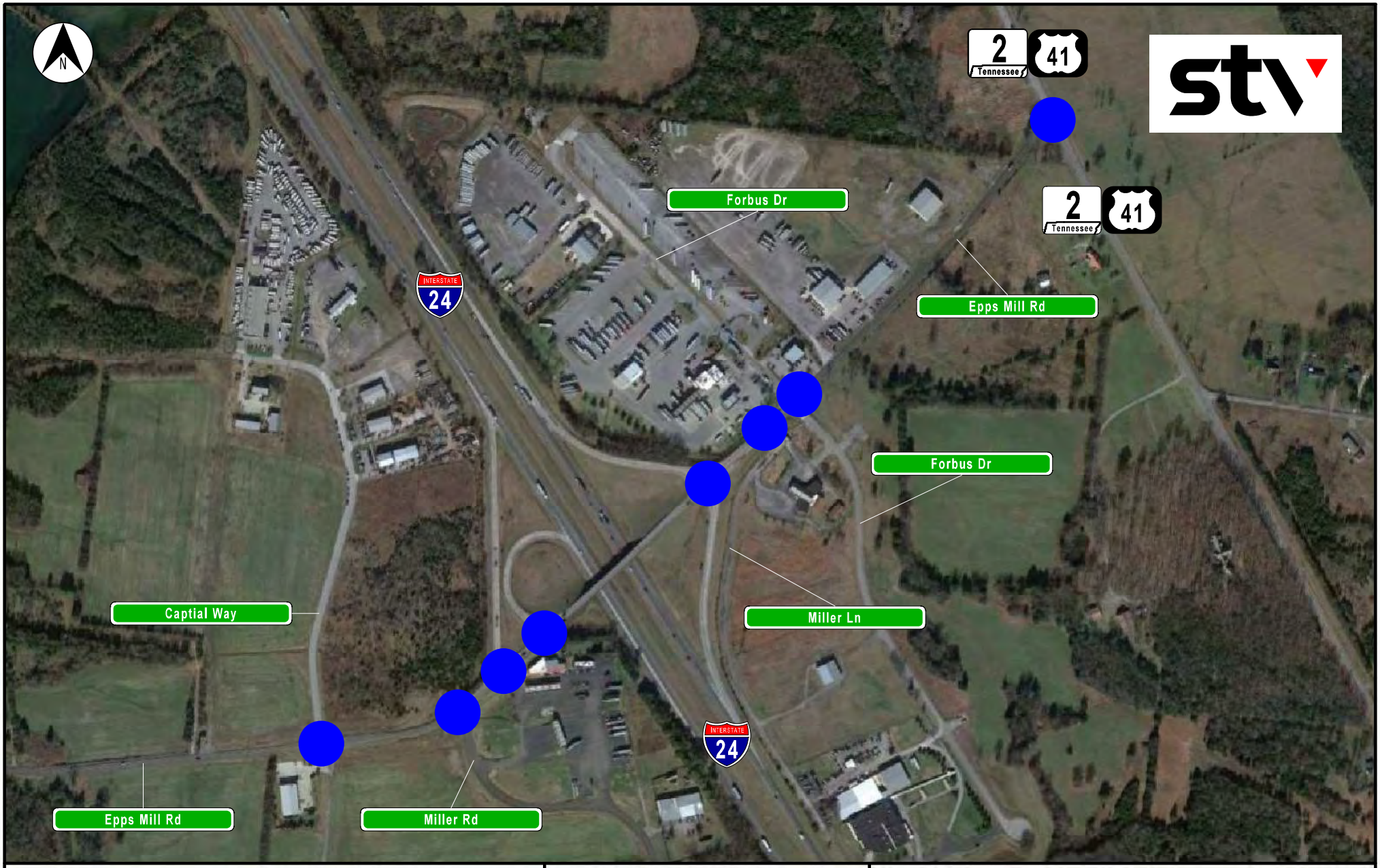
To alleviate these issues, a signal was modeled in the FY-B scenario; it is anticipated that the intersection will operate acceptably under signal control. Sometime between 2028 and 2048, a signal will likely be needed at this intersection. However, even with a traffic signal, it should be noted that extensive queuing was observed on the southbound approach of TN-2 in the FY-B PM scenario (with signal). This queuing is due to the projected increase in traffic along this approach in future conditions and is not anticipated to be mitigated as a part of this project.

The average and maximum queue lengths for each scenario analyzed during the AM and PM peak hours are found in Figures 4-35 attached.

Attachments

Figures 1-3 (Vicinity Map, Existing & Proposed Lane Geometry)
Figures 4-35 (Average and Maximum SimTraffic Queue Lengths)
TDOT Traffic Volume Projections
Synchro/SimTraffic Outputs
HCS Reports – Merge/Diverge
2028 Signal Warrants
2033 Signal Warrants
2048 Signal Warrants

FIGURES



Interchange at Epps Mill Rd (Exit 89)

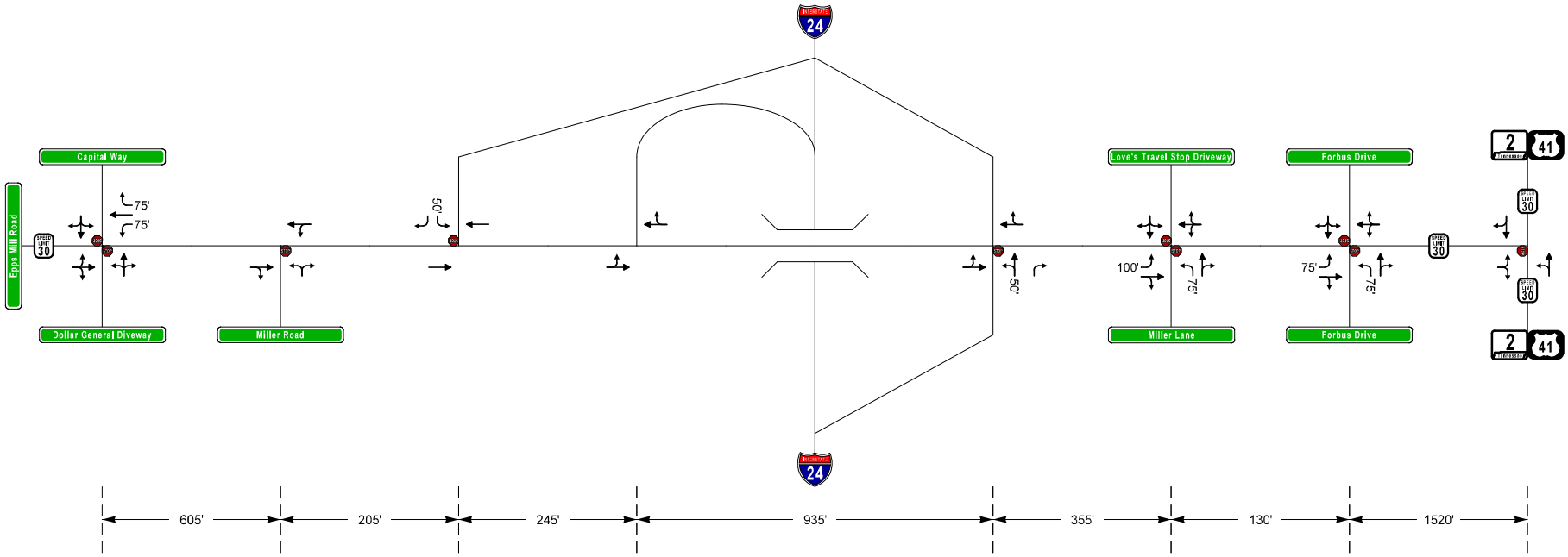
Christiana, Tennessee

Vicinity Map

Figure 1

Legend

Study Intersections



Interchange at Epps Mill Rd (Exit 89)

Christiana, Tennessee

Existing Lane Geometry

Figure 2

Legend

- Turning Movement
- Roadway
- Stop Sign
- XX' Storage Length

TYPE	YEAR	COUNTY	FIGURE NO.
CR	2024	RUTHERFORD	1

0 300' 600' 900'

N

CONCEPT REPORT

2028 AM PEAK HOUR QUEUE DIAGRAM
INTERCHANGE AT EPPS MILL ROAD (EXIT 89)
LOG MILE 0.00 TO LOG MILE 0.86
RUTHERFORD COUNTY

- NO BUILD
- BUILD (QUEUE IMPROVES)
- BUILD (QUEUE GETS WORSE)

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

FIGURE 1
I-24 INTERCHANGE AT
EPPS MILL ROAD (EXIT 89)
QUEUE DIAGRAM

8/1/2024 2:05:40 PM
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TYPE	YEAR	COUNTY	FIGURE NO.
CR	2024	RUTHERFORD	2

0 300' 600' 900'

N

CONCEPT REPORT

2028 PM PEAK HOUR QUEUE DIAGRAM
INTERCHANGE AT EPPS MILL ROAD (EXIT 89)
LOG MILE 0.00 TO LOG MILE 0.86
RUTHERFORD COUNTY

- NO BUILD
- BUILD (QUEUE IMPROVES)
- BUILD (QUEUE GETS WORSE)

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

FIGURE 2
I-24 INTERCHANGE AT
EPPS MILL ROAD (EXIT 89)
QUEUE DIAGRAM

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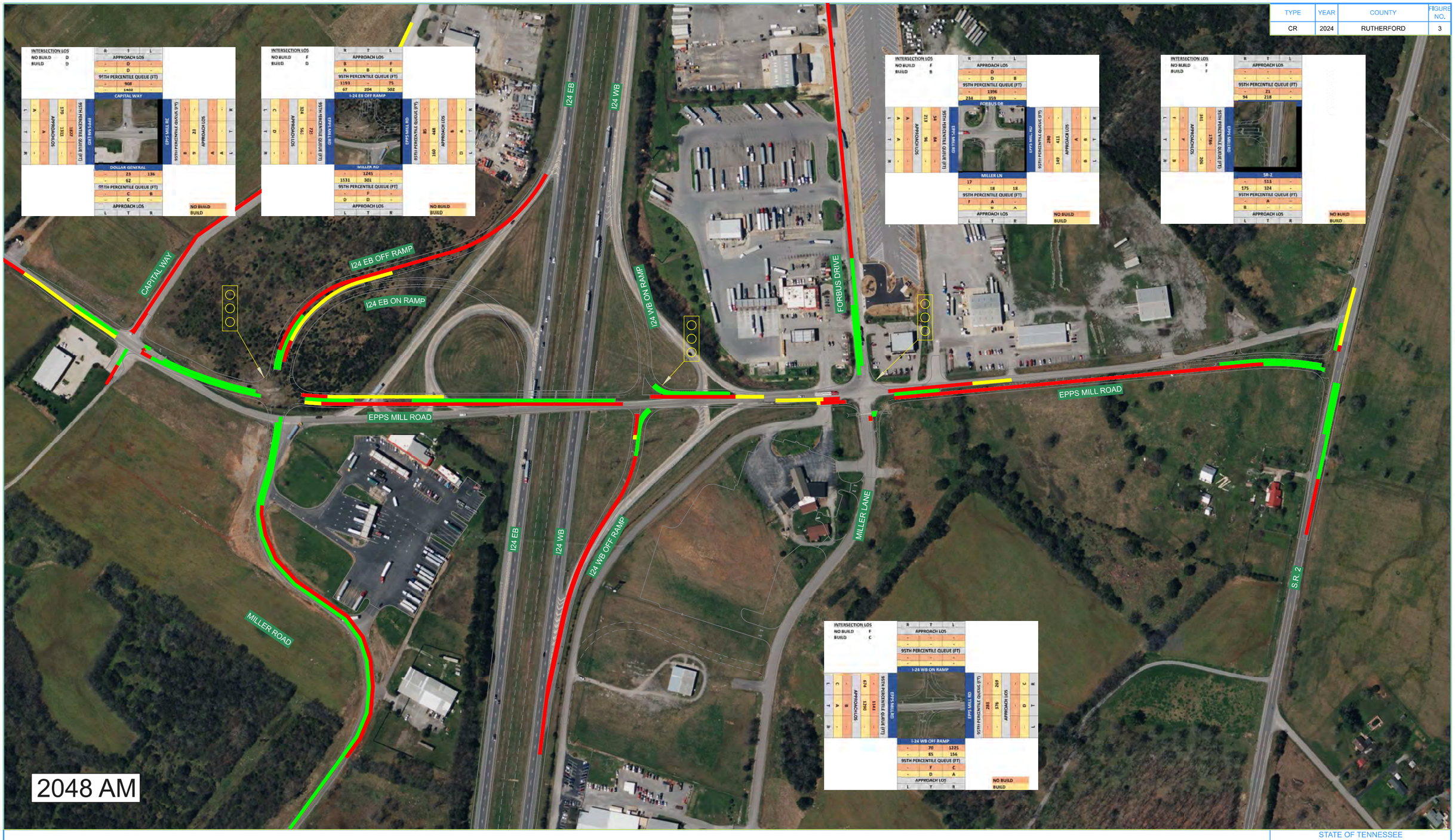
TYPE	YEAR	COUNTY	FIGURE NO.
CR	2024	RUTHERFORD	3



0 300' 600' 900'

N

CONCEPT REPORT

2048 AM PEAK HOUR QUEUE DIAGRAM
INTERCHANGE AT EPPS MILL ROAD (EXIT 89)
LOG MILE 0.00 TO LOG MILE 0.86
RUTHERFORD COUNTY

- NO BUILD
- BUILD (QUEUE IMPROVES)
- BUILD (QUEUE GETS WORSE)

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

FIGURE 3
I-24 INTERCHANGE AT
EPPS MILL ROAD (EXIT 89)
QUEUE DIAGRAM

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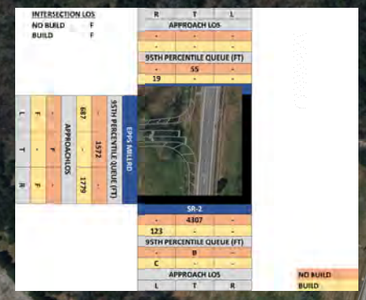
TYPE	YEAR	COUNTY	FIGURE NO.
CR	2024	RUTHERFORD	4



CAPITAL WAY
I24 EB OFF RAMP
I24 EB ON RAMP
EPPS MILL ROAD
MILLER ROAD
I24 EB
I24 WB
I24 WB ON RAMP
I24 WB OFF RAMP
FORBUS DRIVE
MILLER LANE
S.R. 2

2048 PM

0 300' 600' 900'

N

CONCEPT REPORT

2048 PM PEAK HOUR QUEUE DIAGRAM
INTERCHANGE AT EPPS MILL ROAD (EXIT 89)
LOG MILE 0.00 TO LOG MILE 0.86
RUTHERFORD COUNTY

NO BUILD
BUILD (QUEUE IMPROVES)
BUILD (QUEUE GETS WORSE)

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

FIGURE 4
I-24 INTERCHANGE AT
EPPS MILL ROAD (EXIT 89)
QUEUE DIAGRAM

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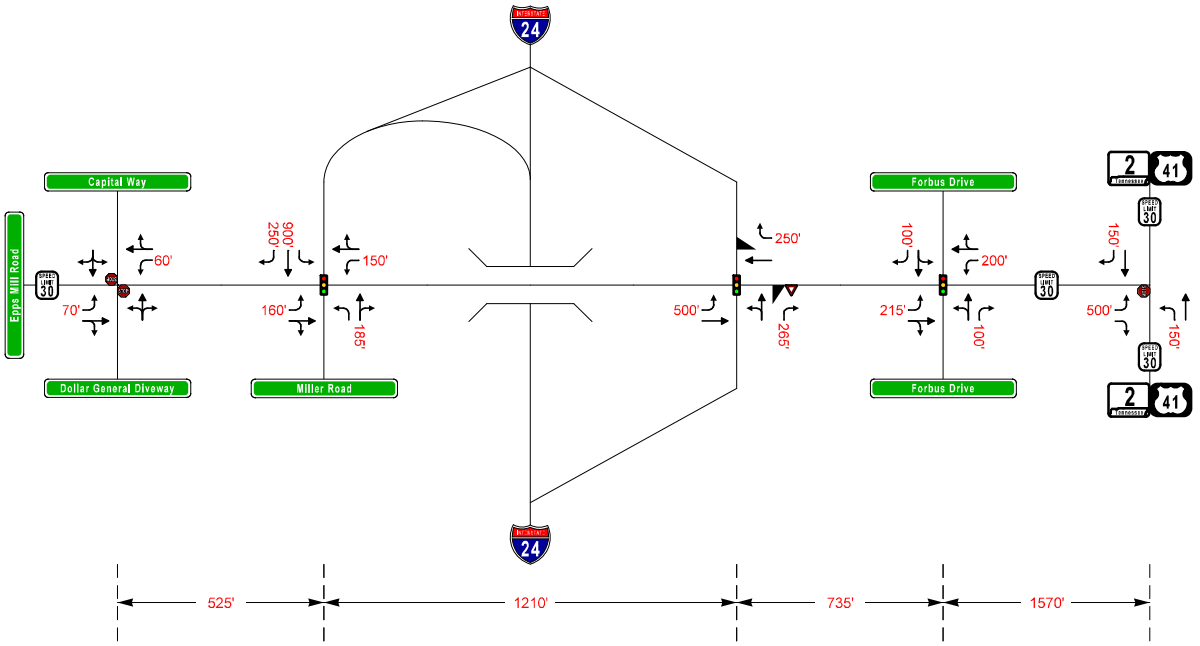


Interchange at Epps Mill Rd (Exit 89)

Christiana, Tennessee

Proposed Lane Geometry

Figure 3

Legend

- Turning Movement
- Roadway
- Stop Sign
- XX Recommended Improvements
- Traffic Signal
- Yield
- Island

AVERAGE AND MAXIMUM

SIMTRAFFIC QUEUE LENGTH

TDOT TRAFFIC VOLUME PROJECTIONS

TENNESSEE DEPARTMENT OF TRANSPORTATION
STRATEGIC TRANSPORTATION INVESTMENTS DIVISION

PROJECT NO.: 75I024-S0-009 ROUTE: EPPS MILL ROAD
COUNTY: RUTHERFORD CITY:
PROJECT PIN NUMBER: 124683.06
PROJECT DESCRIPTION: FROM S.R. 2 TO WEST OF CAPITAL WAY [INCLUDES I-24 INTERCHANGE]

[1] I-24 AVERAGE TRAFFIC DATA.
[2] EPPS MILL ROAD AVERAGE TRAFFIC DATA

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: 2028
PROJECTED LETTING DATE: 2028

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]	47,190	2028	64,600	5,584	8	2048	55-45	23	35		
[2]	6,630	2028	14,890	1,621	11	2048	55-45	9	14		

REQUESTED BY: NAME TY TUCKER DATE 5/8/23
DIVISION S.T.I.D.
ADDRESS 1000 J. K. POLK BUILDING
NASHVILLE TN 37243

REVIEWED BY: RANDY BOGUSKIE Randy Boguskie DATE 7/12/2023
TRANSPORTATION MANAGER 1
SUITE 1000, JAMES K. POLK BUILDING

APPROVED BY: TONY ARMSTRONG Tony Armstrong DATE 7/12/2023
TRANSPORTATION MANAGER 2
SUITE 1000, JAMES K. POLK BUILDING

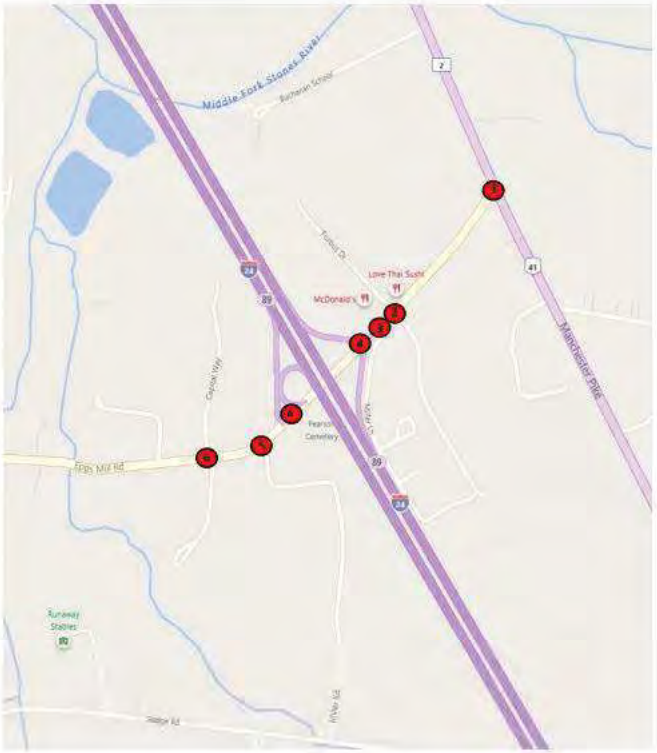
COMMENTS:

FURNISH THE 2028-2048 AADT's AND DHV's.

THIS TRAFFIC IS BASED ON 2022 CYCLE COUNTS AND [8] 8 HOUR TURNING MOVEMENT COUNTS [JUNE 2023]. THE DESIGN YEAR TRAFFIC IS BASED ON THE AVERAGE GROWTH RATE FROM THE NASHVILLE MPO COMPUTER ASSIGNMENT MODEL. AADT's AND BOTH YEAR DHV's ARE INCLUDED.
THIS TRAFFIC REVISES THE PREVIOUS PROJECT DATED JUNE 16, 2023.

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)



Rutherford County

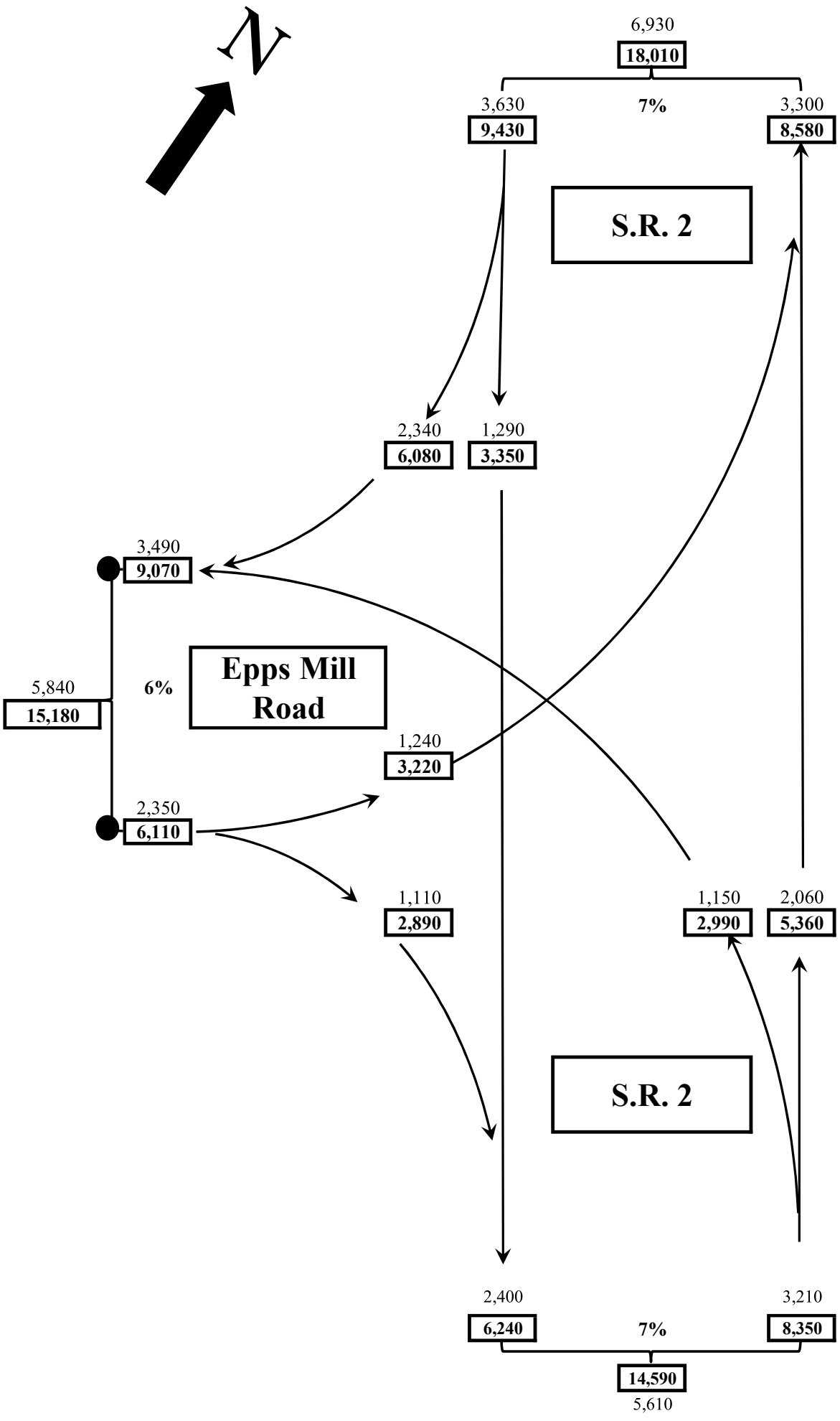
Epps Mill Road

From S.R. 2 to West of Capital Way

[Includes I-24 Interchange]

AADT

1



Rutherford County

Epps Mill Road @ S.R. 2

Legend:

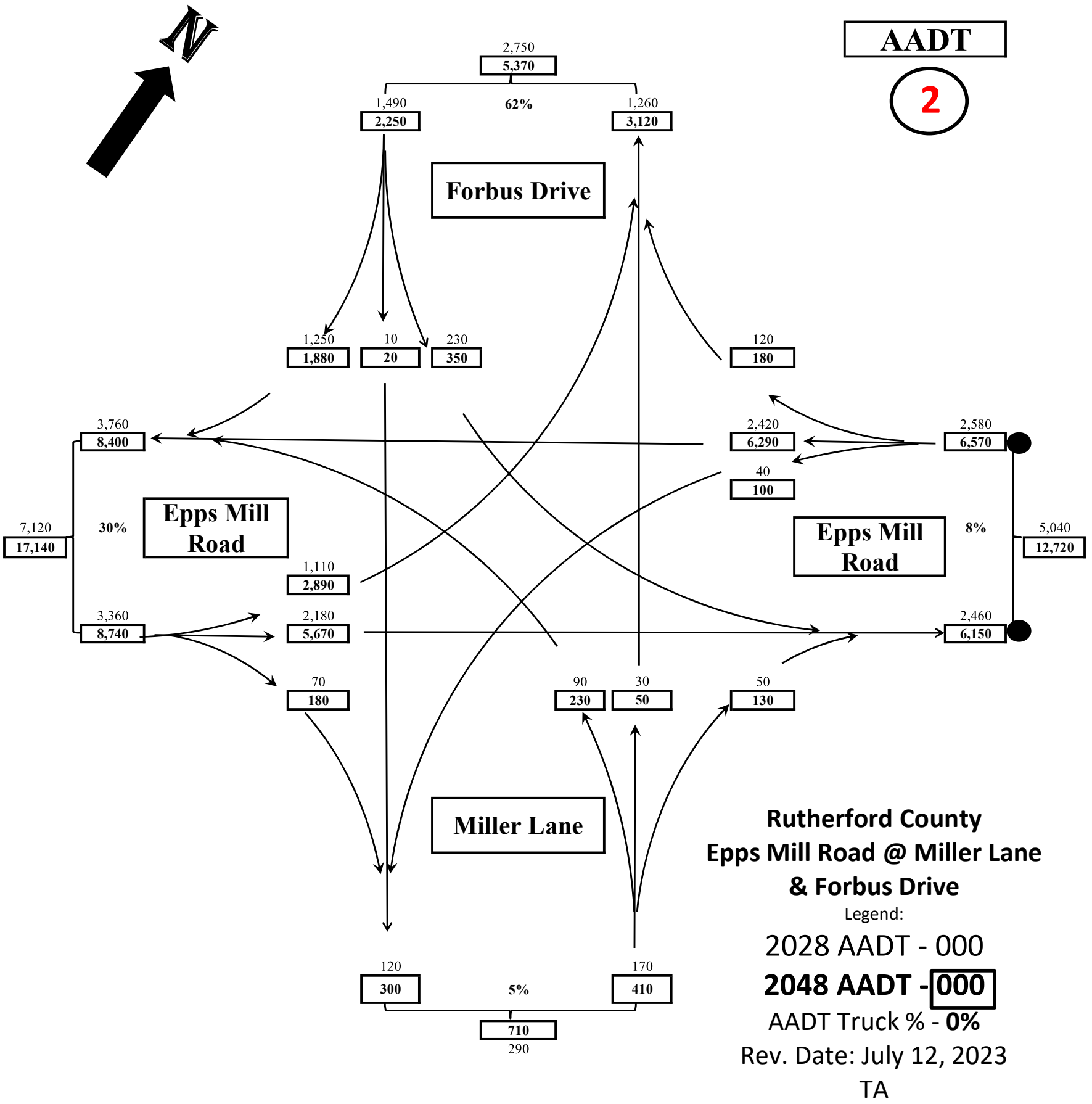
2028 AADT - 000

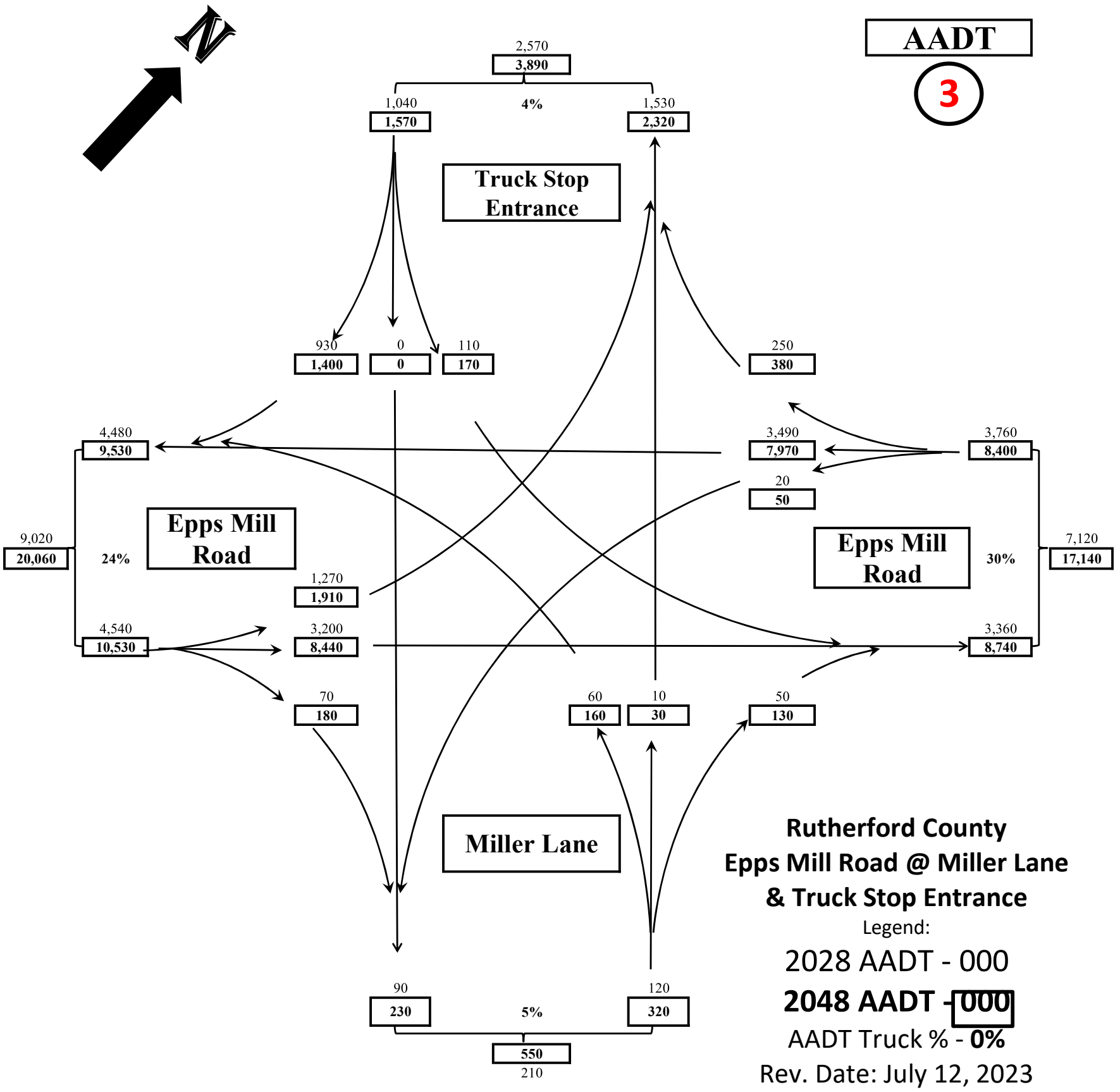
2048 AADT - 000

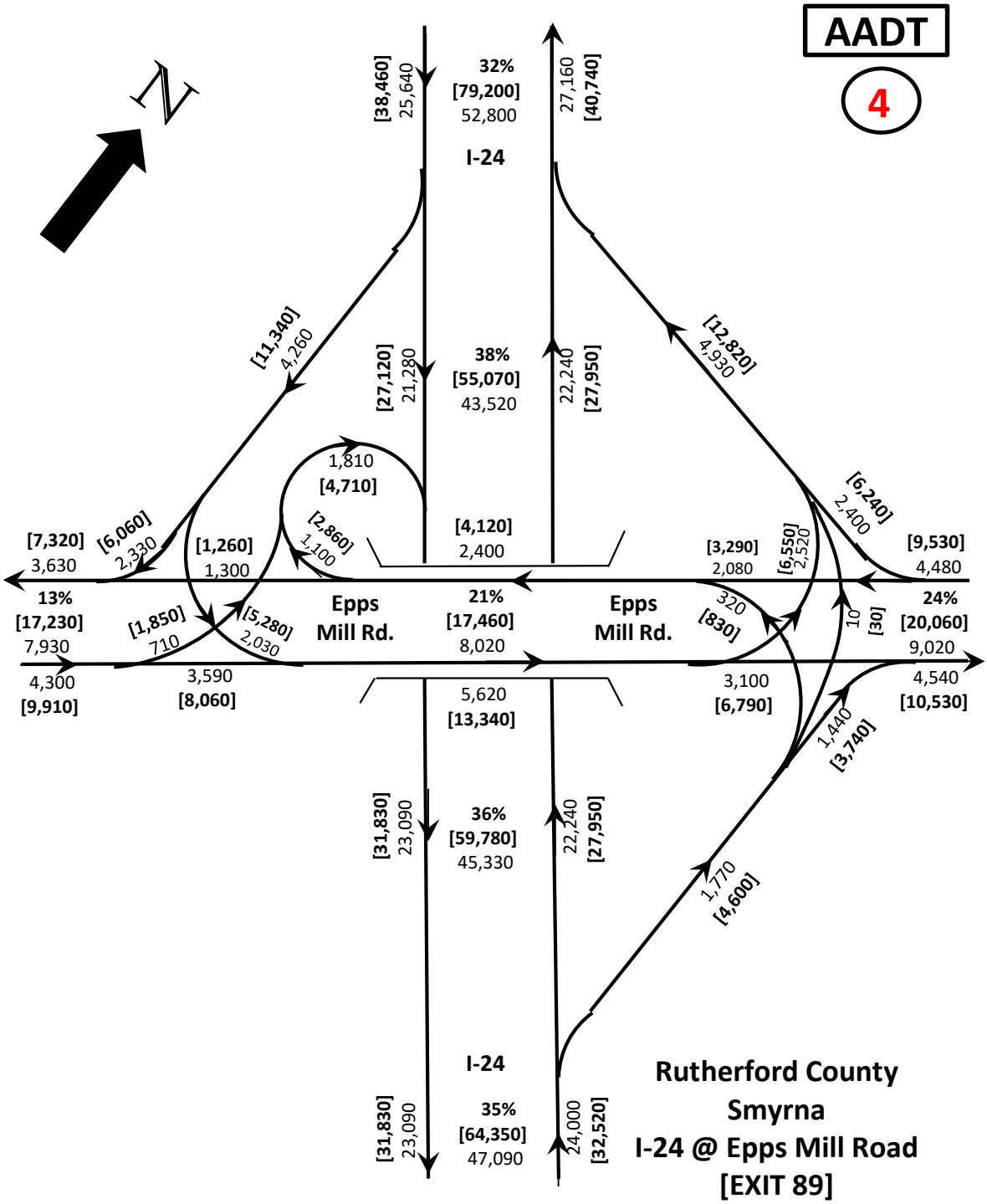
AADT Truck % - **0%**

Date: June 15, 2023

TA


N
AADT
2
2,750
5,370
62%
1,490
2,250
1,260
3,120
Forbus Drive
1,250
1,880
10
20
230
350
120
180
3,760
8,400
2,420
6,290
2,580
6,570
40
100
7,120
17,140
30%
Epps Mill Road
Epps Mill Road
8%
5,040
12,720
1,110
2,890
3,360
8,740
2,180
5,670
2,460
6,150
70
180
90
230
30
50
50
130
Miller Lane
120
300
5%
170
410
710
290
Rutherford County
Epps Mill Road @ Miller Lane
& Forbus Drive
Legend:
2028 AADT - 000
2048 AADT - 000
AADT Truck % - 0%
Rev. Date: July 12, 2023
TA


N
AADT
3
2,570
3,890
1,040
1,570
4%
1,530
2,320
Truck Stop
Entrance
930
1,400
0
0
110
170
250
380
4,480
9,530
3,490
7,970
3,760
8,400
20
50
9,020
20,060
24%
Epps Mill
Road
Epps Mill
Road
30%
7,120
17,140
1,270
1,910
4,540
10,530
3,200
8,440
3,360
8,740
70
180
60
160
10
30
50
130
Miller Lane
90
230
5%
120
320
550
210
Rutherford County
Epps Mill Road @ Miller Lane
& Truck Stop Entrance
Legend:
2028 AADT - 000
2048 AADT - 000
AADT Truck % - 0%
Rev. Date: July 12, 2023
TA



Rutherford County
Smyrna
I-24 @ Epps Mill Road
[EXIT 89]

Legend:

2028 AADT - 000

2048 AADT - [000]

AADT Truck % - **0%**

Rev. Date: July 12, 2023

TA

N

AADT

5

2,400
4,120

2,130
3,420

3,630
7,320

1,500
3,900

5,370
10,570

7%

Epps Mill Road

Epps Mill Road

13%

7,930
17,230

2,970
6,450

2,570
5,410

4,300
9,910

400
1,040

270
700

1,730
4,500

Miller Lane

1,900
4,940

23%

2,000
5,200

10,140
3,900

Rutherford County
Epps Mill Road
@ Miller Lane

Legend:

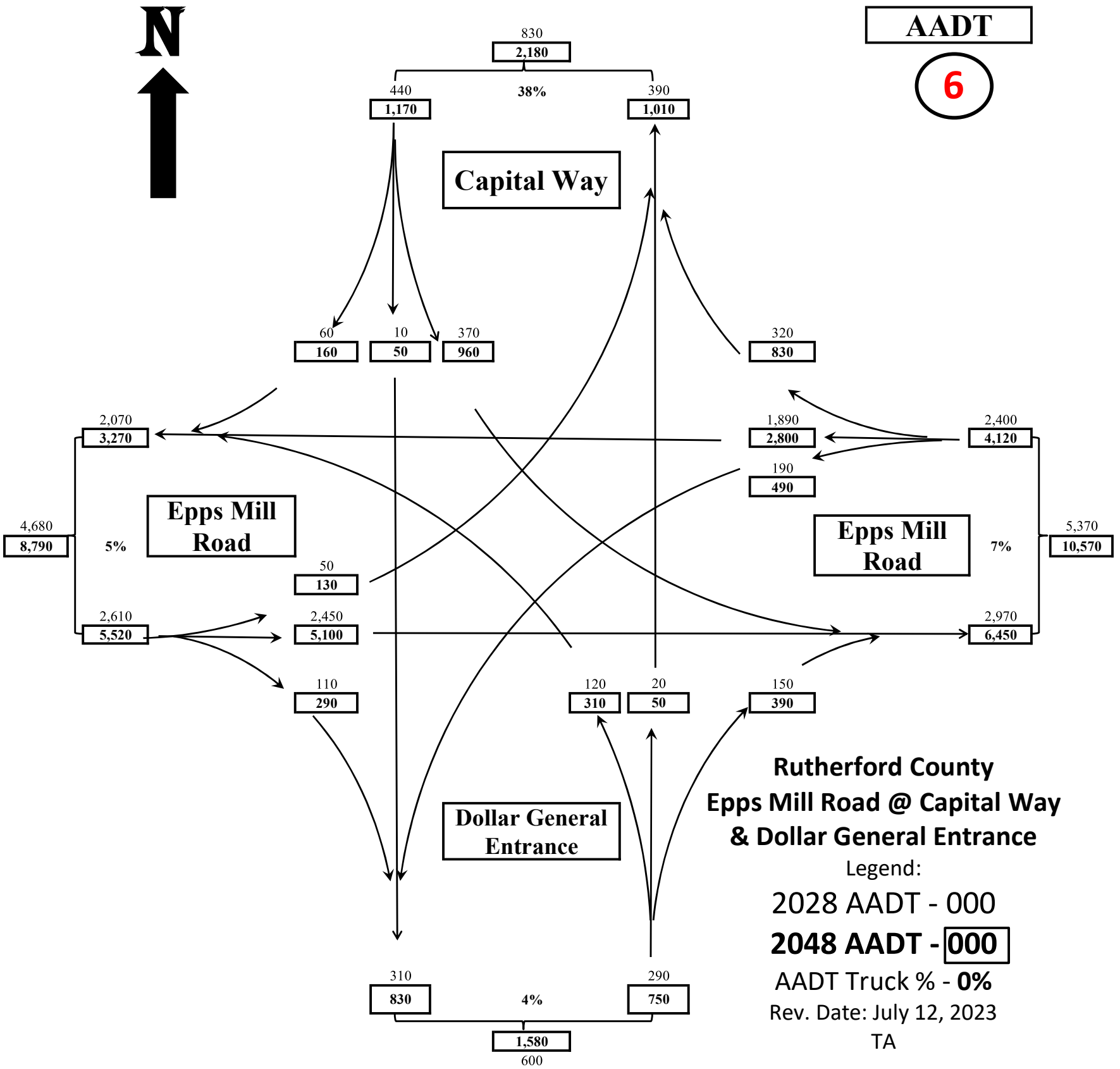
2028 AADT - 000

2048 AADT - 000

AADT Truck % - **0%**

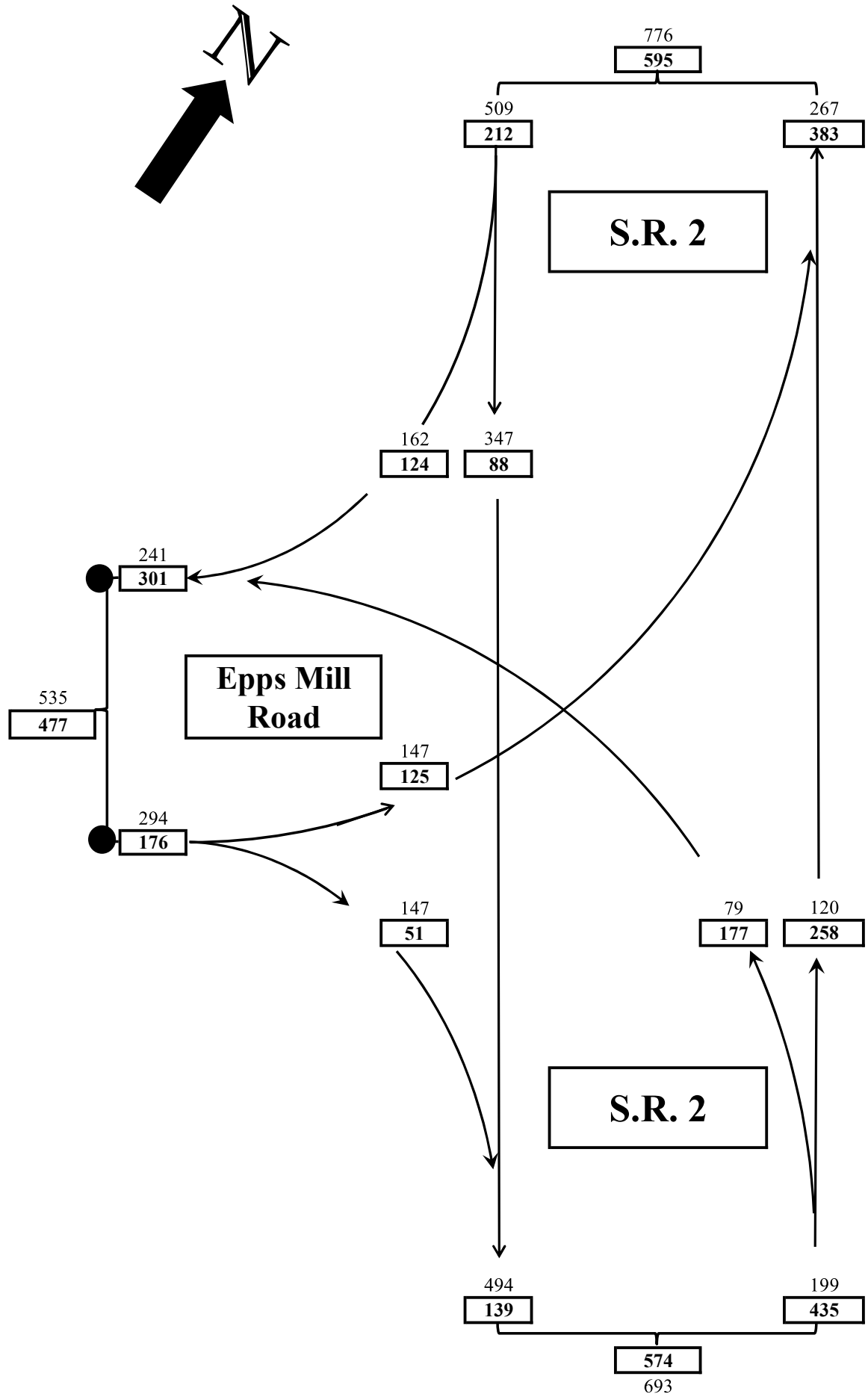
Rev. Date: July 12, 2023

TA


N
AADT
6
830
2,180
440
1,170
38%
390
1,010
Capital Way
60
160
10
50
370
960
320
830
2,070
3,270
1,890
2,800
2,400
4,120
190
490
4,680
8,790
5%
Epps Mill Road
Epps Mill Road
7%
5,370
10,570
50
130
2,610
5,520
2,450
5,100
2,970
6,450
110
290
120
310
20
50
150
390
Dollar General Entrance
310
830
4%
290
750
1,580
600
Rutherford County
Epps Mill Road @ Capital Way
& Dollar General Entrance
Legend:
2028 AADT - 000
2048 AADT - 000
AADT Truck % - 0%
Rev. Date: July 12, 2023
TA

2028 DHV

1



Rutherford County
Epps Mill Road @ S.R. 2

2028 DHV

PM

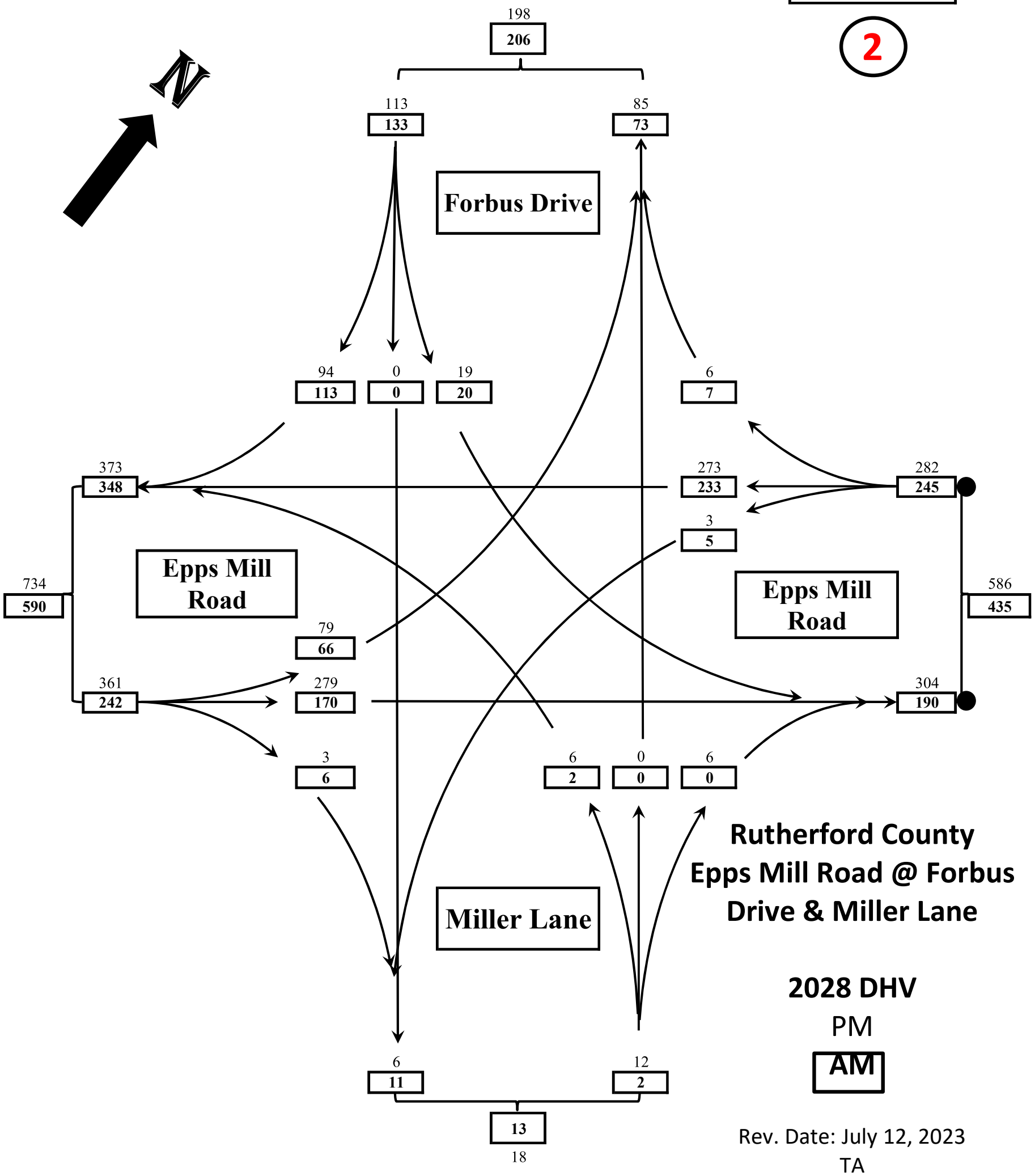
AM

Date: June 15, 2023

TA

2028 DHV

2



Rutherford County
Epps Mill Road @ Forbus Drive & Miller Lane

2028 DHV

PM

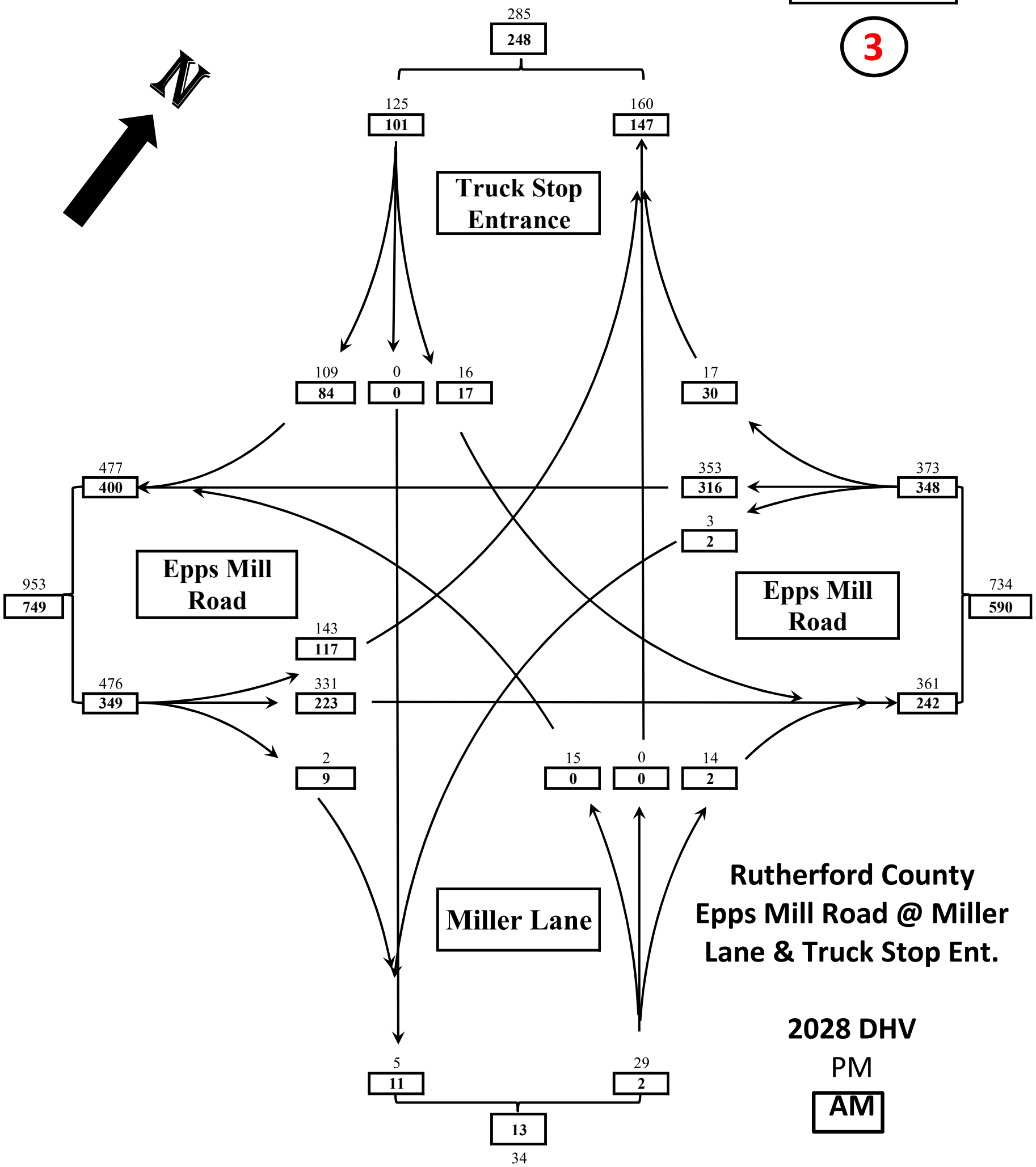
AM

Rev. Date: July 12, 2023

TA

2028 DHV

3



Rutherford County
Epps Mill Road @ Miller Lane & Truck Stop Ent.

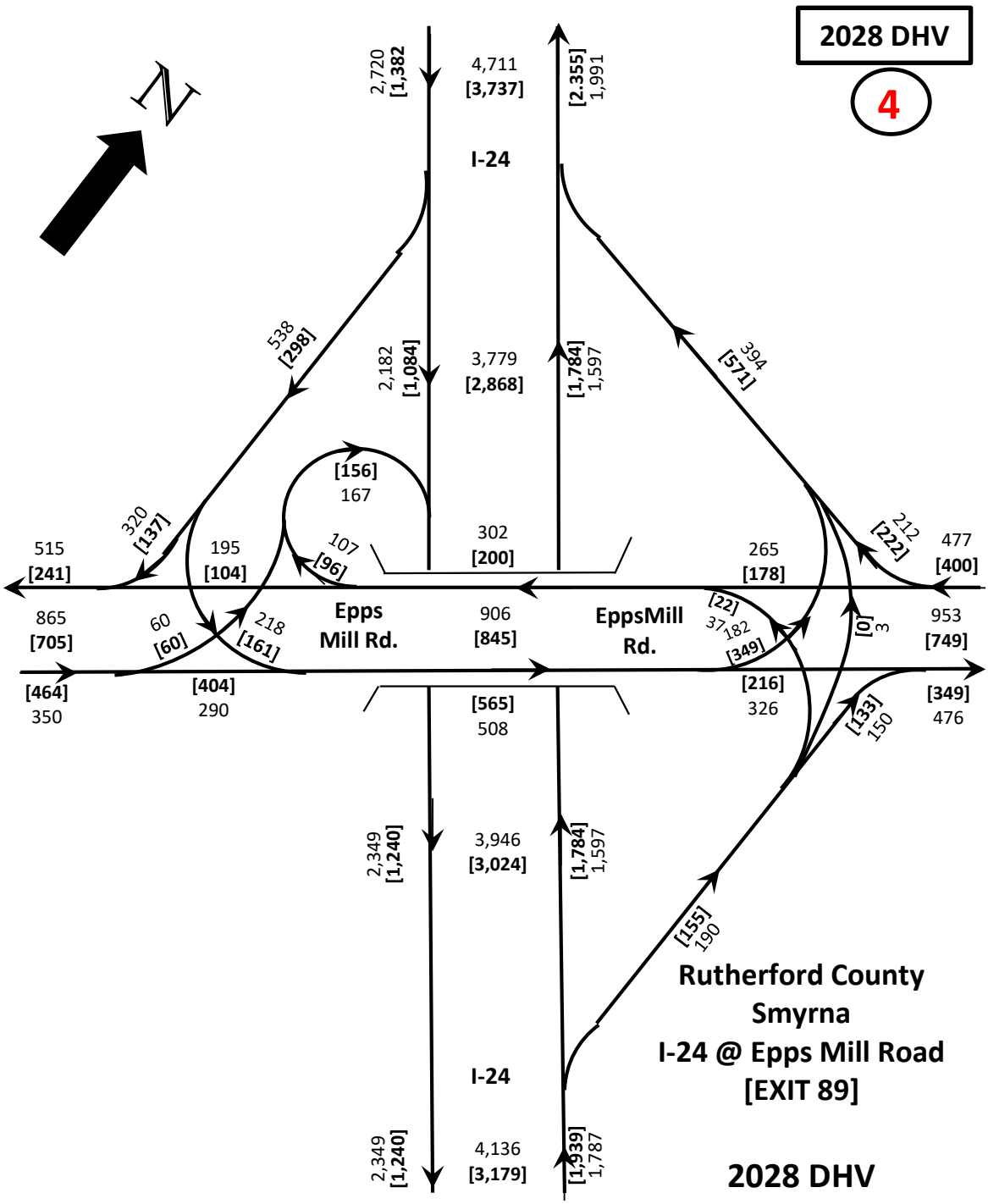
2028 DHV

PM

AM

Rev. Date: July 12, 2023

TA



Rutherford County
Smyrna
I-24 @ Epps Mill Road
[EXIT 89]

2028 DHV

PM

[AM]

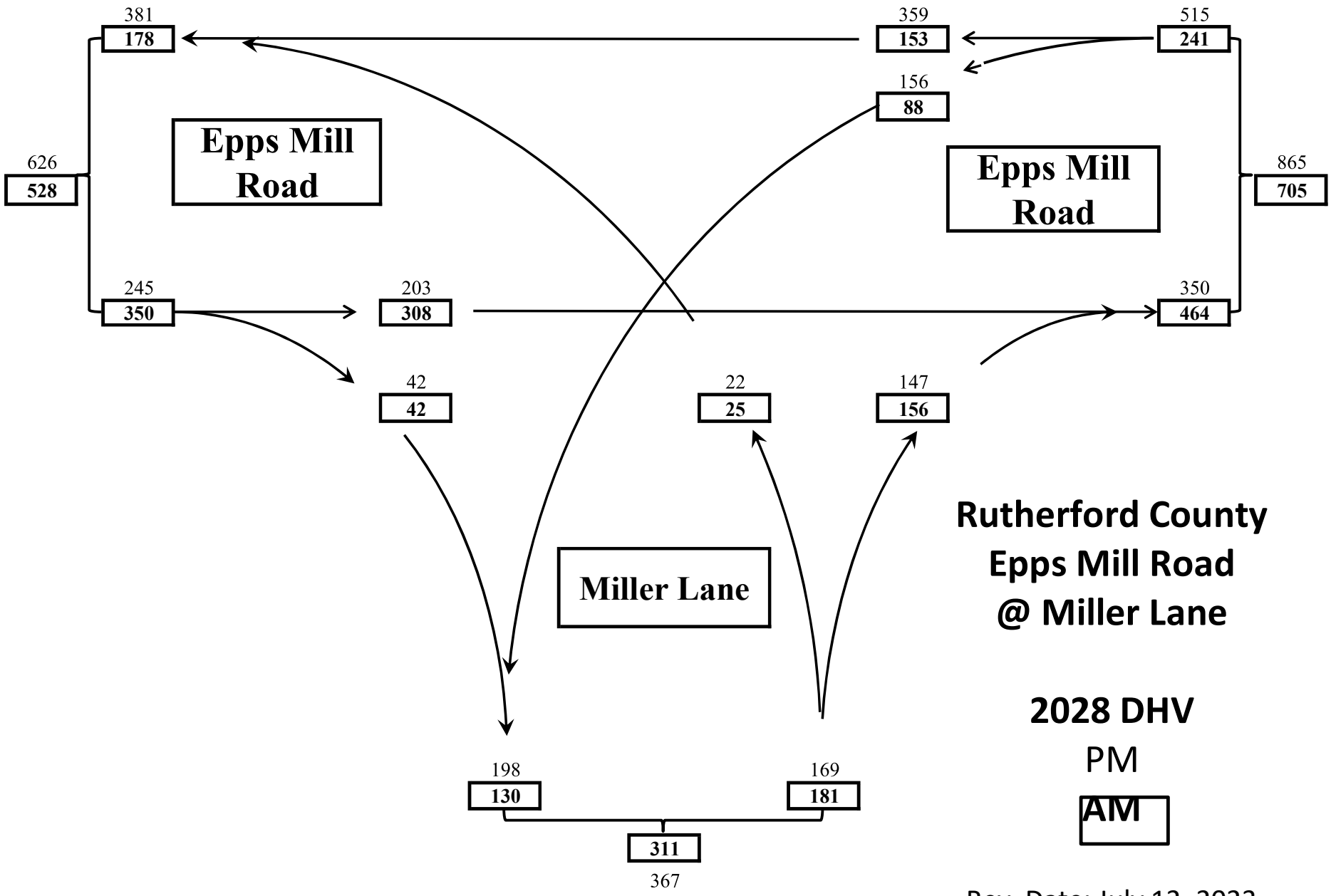
Rev. Date: July 12, 2023

TA

N

2028 DHV

5



Rutherford County
Epps Mill Road
@ Miller Lane

2028 DHV

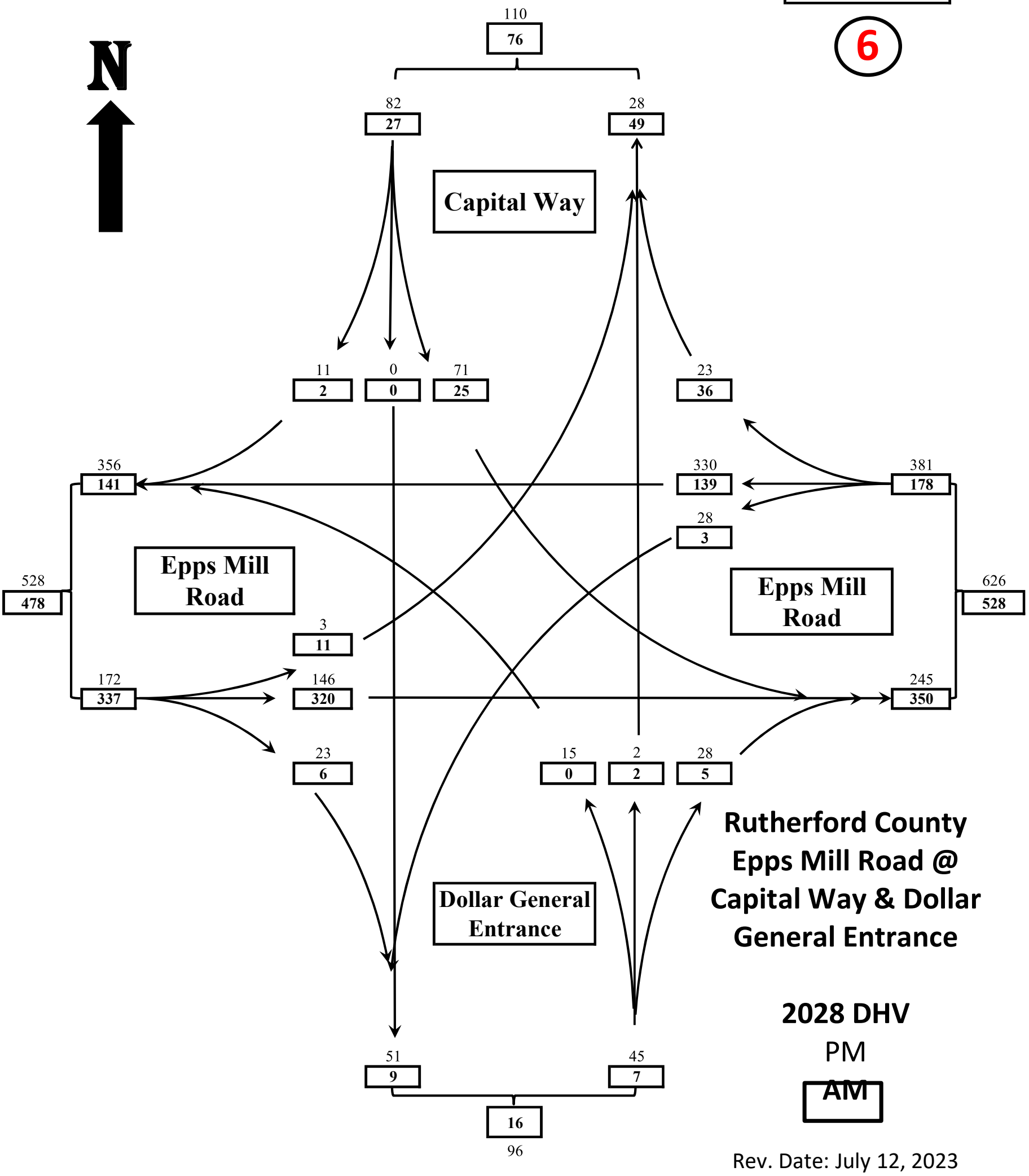
PM

AM

Rev. Date: July 12, 2023
TA

2028 DHV

6



Rutherford County
Epps Mill Road @ Capital Way & Dollar General Entrance

2028 DHV

PM

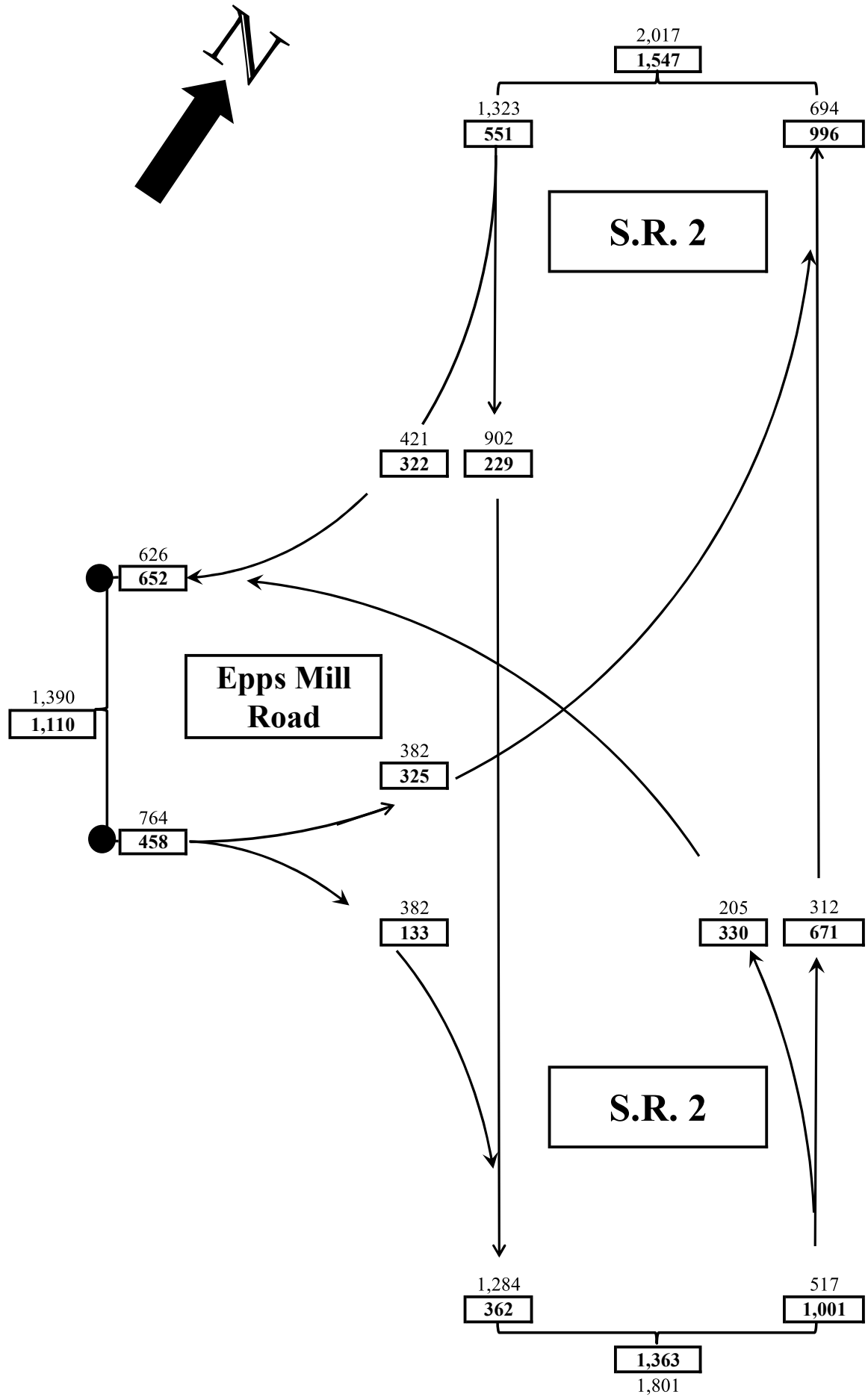
AM

Rev. Date: July 12, 2023

TA

2048 DHV

1



Rutherford County
Epps Mill Road @ S.R. 2

2048 DHV

PM

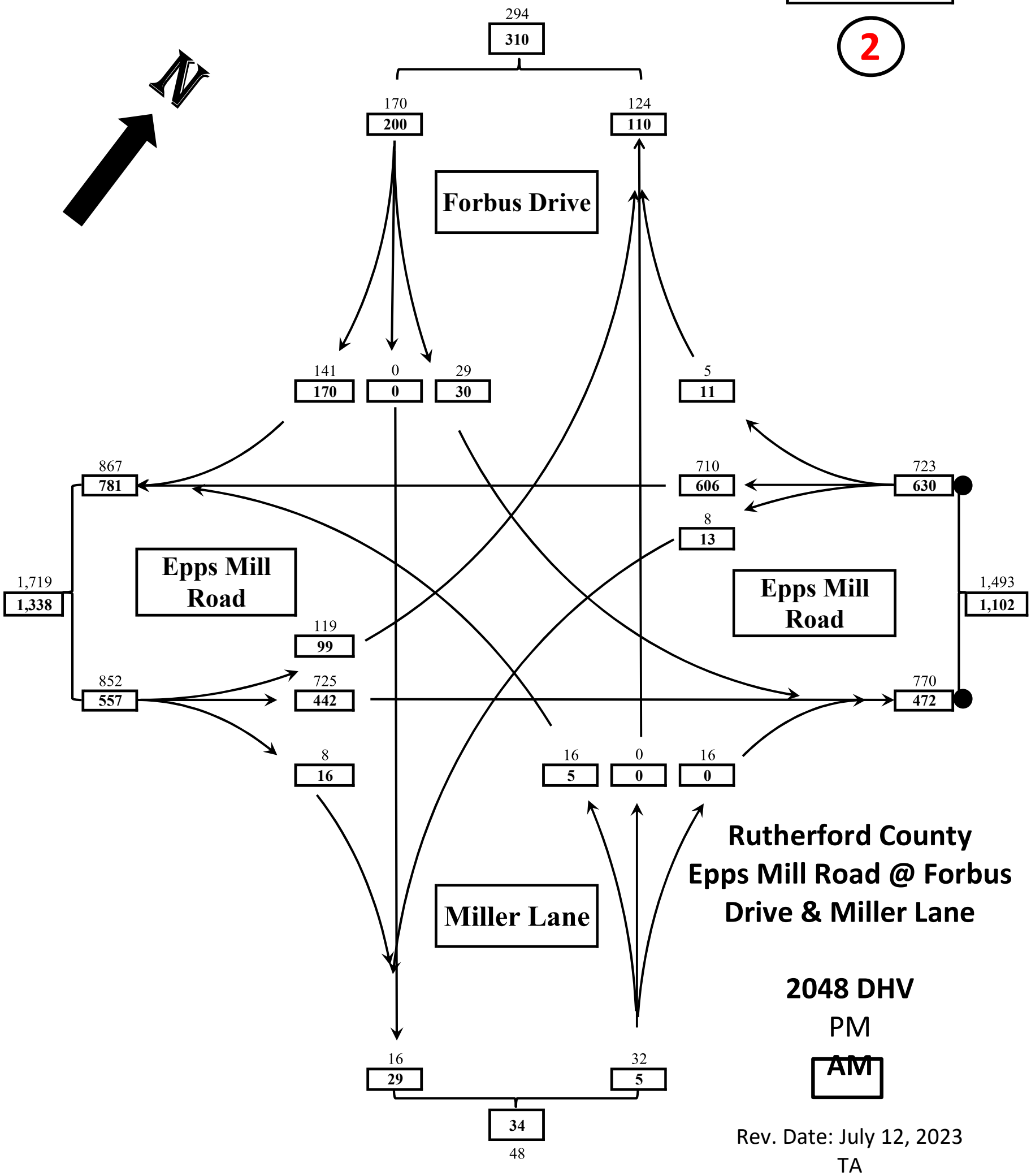
AM

Date: June 15, 2023

TA

2048 DHV

2



Rutherford County
Epps Mill Road @ Forbus Drive & Miller Lane

2048 DHV

PM

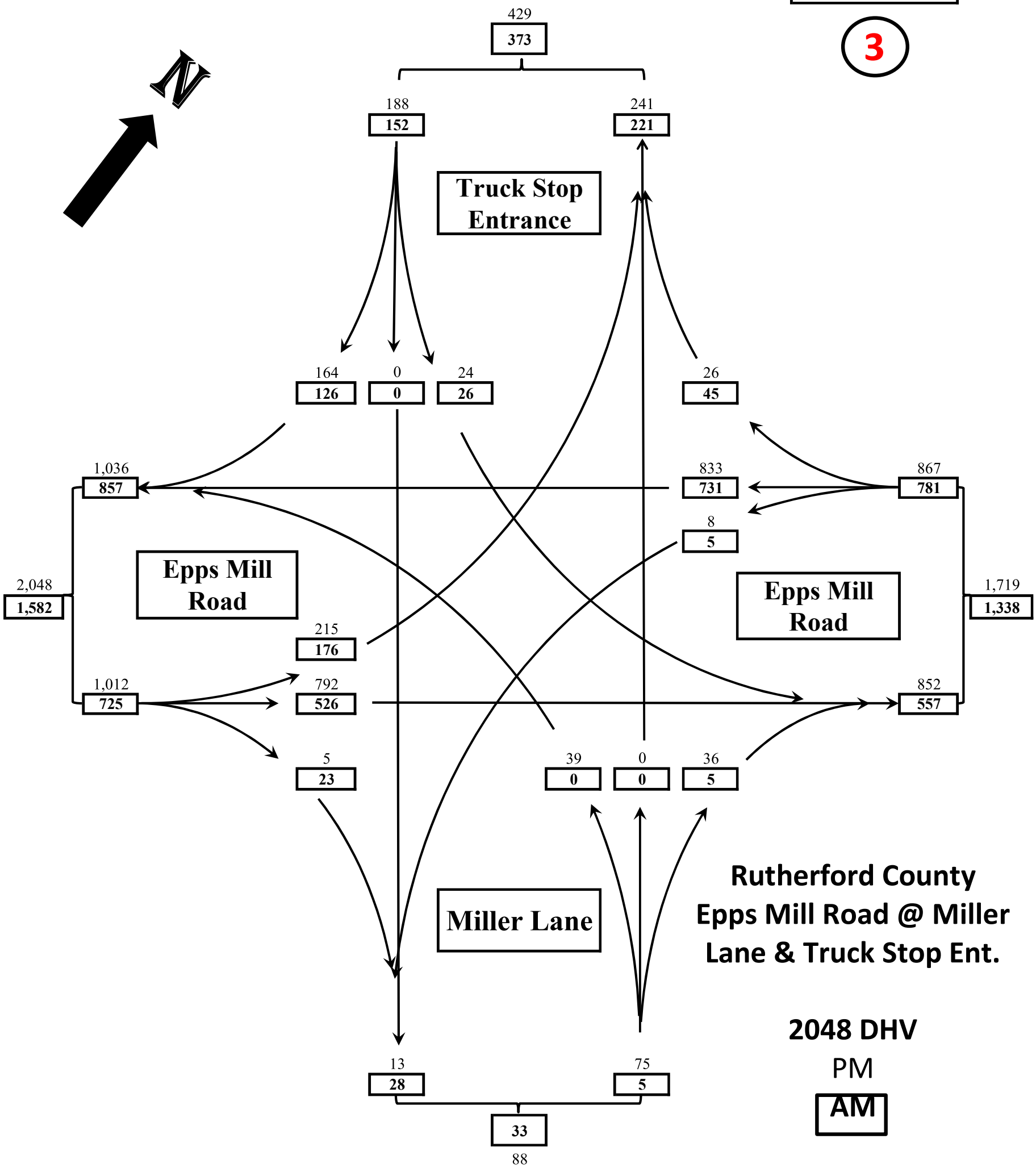
AM

Rev. Date: July 12, 2023

TA

2048 DHV

3



Rutherford County
Epps Mill Road @ Miller Lane & Truck Stop Ent.

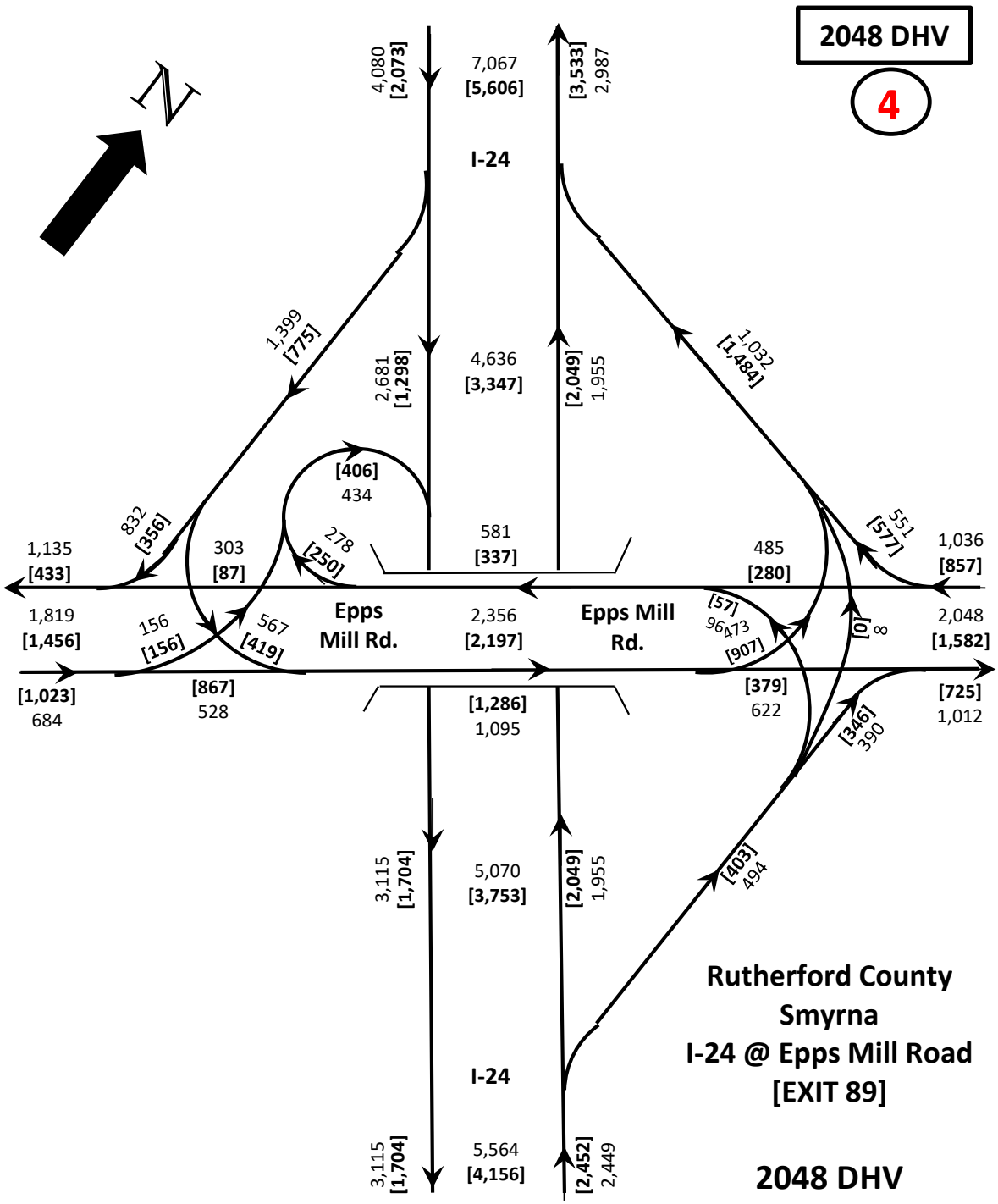
2048 DHV

PM

AM

Rev. Date: July 12, 2023

TA



Rutherford County
Smyrna
I-24 @ Epps Mill Road
[EXIT 89]

2048 DHV
PM
[AM]

Rev. Date: July 12, 2023
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2048 DHV

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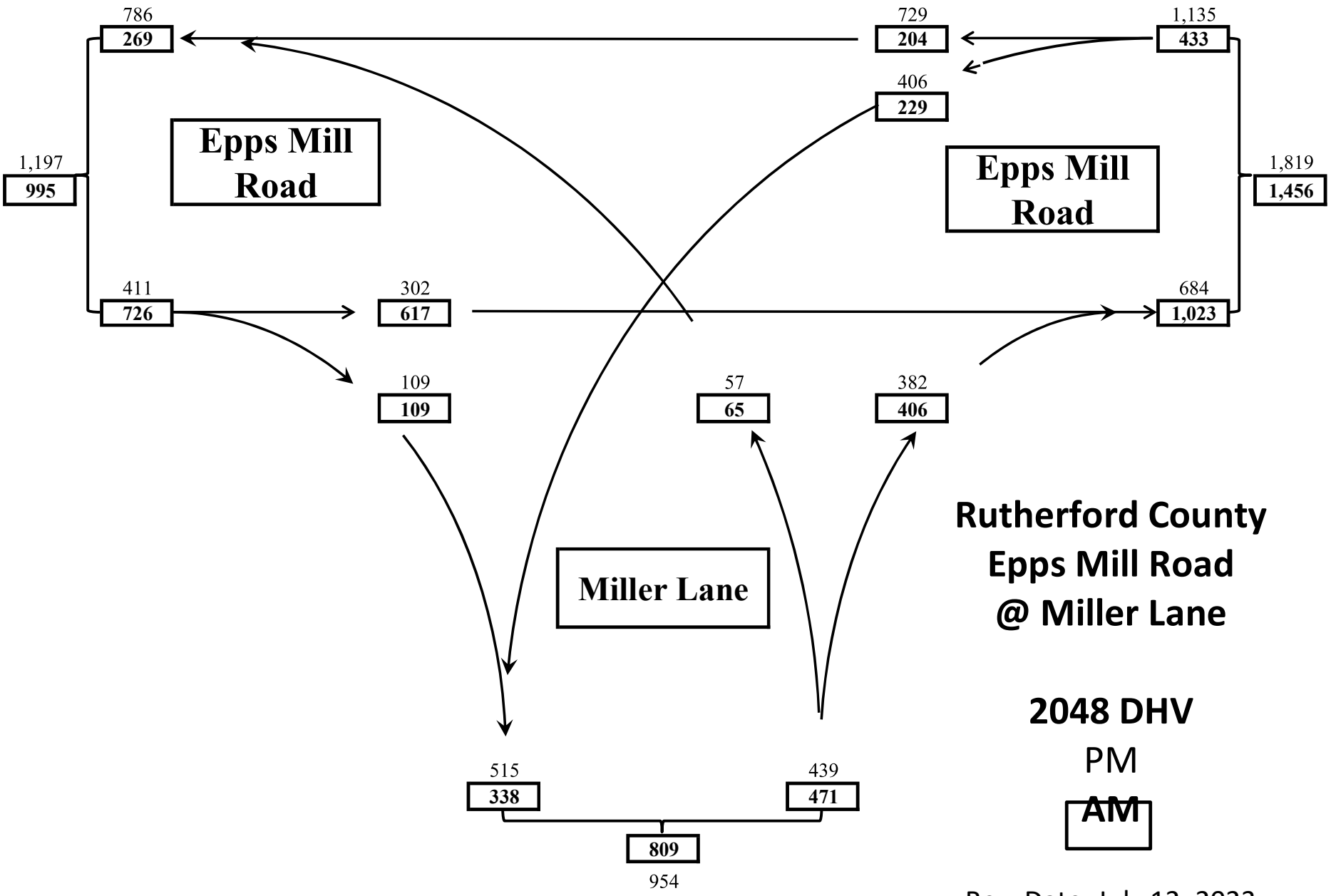

Rutherford County
Epps Mill Road
@ Miller Lane

2048 DHV

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Rev. Date: July 12, 2023
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2048 DHV

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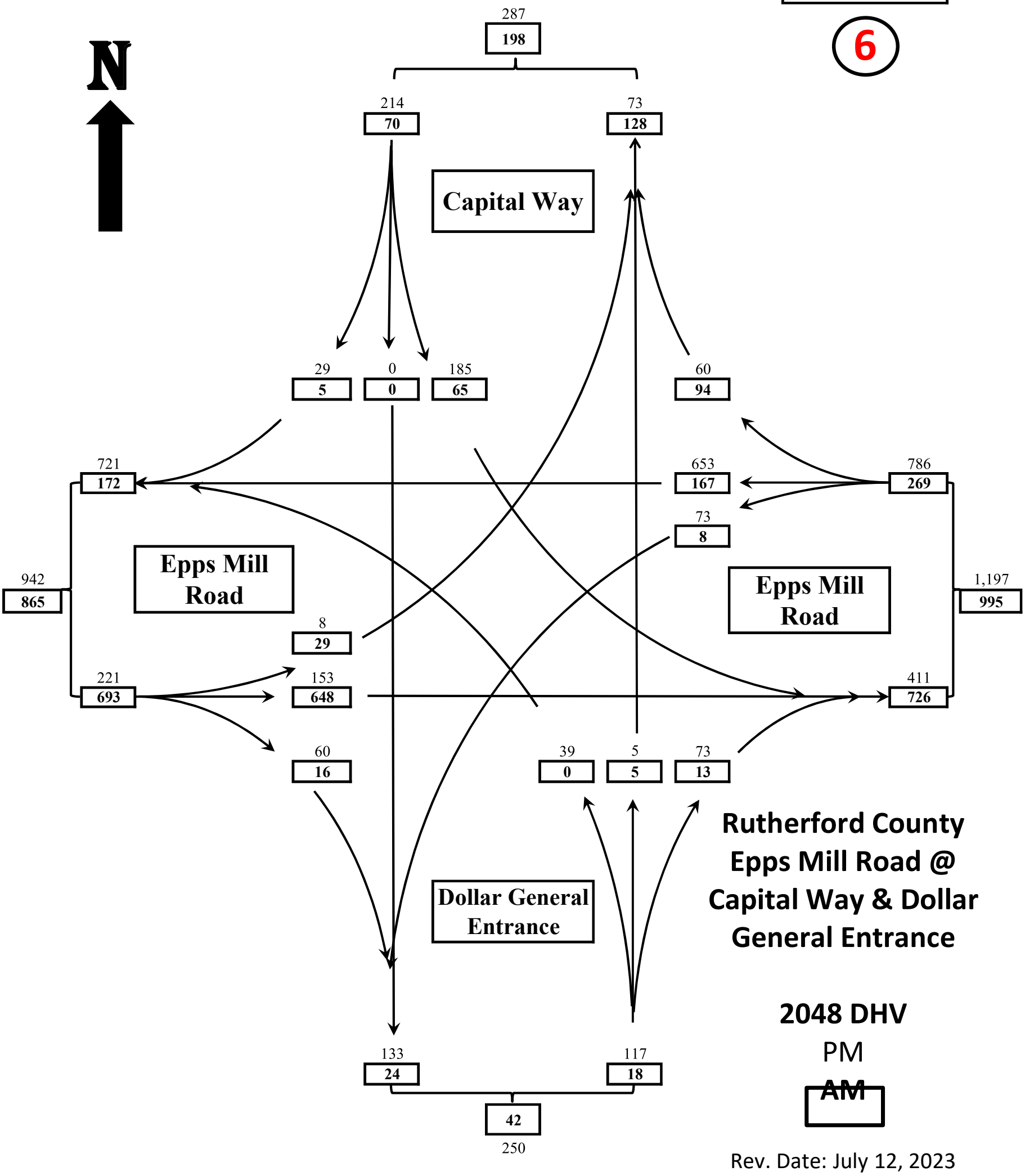

Rutherford County
Epps Mill Road @ Capital Way & Dollar General Entrance

2048 DHV

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Rev. Date: July 12, 2023

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SYNCHRO/SIMTRAFFIC RESULTS

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	125	51	177	258	88	124
Future Volume (vph)	125	51	177	258	88	124
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.961				0.921	
Flt Protected	0.966			0.980		
Satd. Flow (prot)	1712	0	0	1808	1699	0
Flt Permitted	0.966			0.980		
Satd. Flow (perm)	1712	0	0	1808	1699	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	1662			3584	2221	
Travel Time (s)	37.8			81.5	50.5	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	125	51	177	258	88	124
Shared Lane Traffic (%)						
Lane Group Flow (vph)	176	0	0	435	212	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 55.6%		ICU Level of Service B	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	6.8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	125	51	177	258	88	124
Future Vol, veh/h	125	51	177	258	88	124
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	Free	-	Free
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	125	51	177	258	88	124

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	700	88	88	0	-	0
Stage 1	88	-	-	-	-	-
Stage 2	612	-	-	-	-	-
Critical Hdwy	6.43	6.23	4.13	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	2.227	-	-	-
Pot Cap-1 Maneuver	404	968	1501	-	-	0
Stage 1	933	-	-	-	-	0
Stage 2	539	-	-	-	-	0
Platoon blocked, %				-	-	
Mov Cap-1 Maneuver	348	968	1501	-	-	-
Mov Cap-2 Maneuver	348	-	-	-	-	-
Stage 1	804	-	-	-	-	-
Stage 2	539	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	19.2	3.1	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT
Capacity (veh/h)	1501	-	427	-
HCM Lane V/C Ratio	0.118	-	0.412	-
HCM Control Delay (s)	7.7	0	19.2	-
HCM Lane LOS	A	A	C	-
HCM 95th %tile Q(veh)	0.4	-	2	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	66	170	6	5	233	7	2	0	0	20	0	113
Future Volume (vph)	66	170	6	5	233	7	2	0	0	20	0	113
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	75		0	0		0	0		75	0		0
Storage Lanes	1		0	0		0	1		0	0		0
Taper Length (ft)	0			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.995			0.996						0.885	
Flt Protected	0.950				0.999		0.950				0.993	
Satd. Flow (prot)	1752	1835	0	0	1835	0	1752	1845	0	0	1621	0
Flt Permitted	0.950				0.999		0.950				0.993	
Satd. Flow (perm)	1752	1835	0	0	1835	0	1752	1845	0	0	1621	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		120			1662			1121			1094	
Travel Time (s)		2.7			37.8			25.5			24.9	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	66	170	6	5	233	7	2	0	0	20	0	113
Shared Lane Traffic (%)												
Lane Group Flow (vph)	66	176	0	0	245	0	2	0	0	0	133	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 47.0%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	3.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	66	170	6	5	233	7	2	0	0	20	0	113
Future Vol, veh/h	66	170	6	5	233	7	2	0	0	20	0	113
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	75	-	-	-	-	-	0	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	66	170	6	5	233	7	2	0	0	20	0	113

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	240	0	0	176	0	0	608	555	173	552	555	237
Stage 1	-	-	-	-	-	-	305	305	-	247	247	-
Stage 2	-	-	-	-	-	-	303	250	-	305	308	-
Critical Hdwy	4.13	-	-	4.13	-	-	7.13	6.53	6.23	7.13	6.53	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	5.53	-	6.13	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.13	5.53	-	6.13	5.53	-
Follow-up Hdwy	2.227	-	-	2.227	-	-	3.527	4.027	3.327	3.527	4.027	3.327
Pot Cap-1 Maneuver	1321	-	-	1394	-	-	406	439	868	443	439	800
Stage 1	-	-	-	-	-	-	702	660	-	755	700	-
Stage 2	-	-	-	-	-	-	704	698	-	702	658	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1321	-	-	1394	-	-	334	415	868	425	415	800
Mov Cap-2 Maneuver	-	-	-	-	-	-	334	415	-	425	415	-
Stage 1	-	-	-	-	-	-	667	627	-	717	697	-
Stage 2	-	-	-	-	-	-	602	695	-	667	625	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	2.1	0.2	15.8	11.3
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	334	-	1321	-	-	1394	-	-	706
HCM Lane V/C Ratio	0.006	-	0.05	-	-	0.004	-	-	0.188
HCM Control Delay (s)	15.8	0	7.9	-	-	7.6	0	-	11.3
HCM Lane LOS	C	A	A	-	-	A	A	-	B
HCM 95th %tile Q(veh)	0	-	0.2	-	-	0	-	-	0.7

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	117	223	9	2	316	30	0	0	2	17	0	84
Future Volume (vph)	117	223	9	2	316	30	0	0	2	17	0	84
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		0	0		0	75		0	0		0
Storage Lanes	1		0	0		0	1		0	0		0
Taper Length (ft)	50			25			100			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.994			0.988			0.850			0.888	
Flt Protected	0.950										0.992	
Satd. Flow (prot)	1752	1834	0	0	1823	0	1845	1568	0	0	1625	0
Flt Permitted	0.950										0.992	
Satd. Flow (perm)	1752	1834	0	0	1823	0	1845	1568	0	0	1625	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		379			120			1105			1093	
Travel Time (s)		8.6			2.7			25.1			24.8	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	117	223	9	2	316	30	0	0	2	17	0	84
Shared Lane Traffic (%)												
Lane Group Flow (vph)	117	232	0	0	348	0	0	2	0	0	101	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 53.6%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	2.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	117	223	9	2	316	30	0	0	2	17	0	84
Future Vol, veh/h	117	223	9	2	316	30	0	0	2	17	0	84
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	-	-	-	75	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	117	223	9	2	316	30	0	0	2	17	0	84

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	346	0	0	232	0	0	839	812	228	798	801	331
Stage 1	-	-	-	-	-	-	462	462	-	335	335	-
Stage 2	-	-	-	-	-	-	377	350	-	463	466	-
Critical Hdwy	4.13	-	-	4.13	-	-	7.13	6.53	6.23	7.13	6.53	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	5.53	-	6.13	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.13	5.53	-	6.13	5.53	-
Follow-up Hdwy	2.227	-	-	2.227	-	-	3.527	4.027	3.327	3.527	4.027	3.327
Pot Cap-1 Maneuver	1207	-	-	1330	-	-	284	312	809	303	317	708
Stage 1	-	-	-	-	-	-	578	563	-	677	641	-
Stage 2	-	-	-	-	-	-	642	631	-	577	561	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1207	-	-	1330	-	-	231	281	809	279	286	708
Mov Cap-2 Maneuver	-	-	-	-	-	-	231	281	-	279	286	-
Stage 1	-	-	-	-	-	-	522	508	-	611	640	-
Stage 2	-	-	-	-	-	-	565	630	-	520	507	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	2.8	0	9.5	12.8
HCM LOS			A	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	809	1207	-	-	1330	-	-	562
HCM Lane V/C Ratio	-	0.002	0.097	-	-	0.002	-	-	0.18
HCM Control Delay (s)	0	9.5	8.3	-	-	7.7	0	-	12.8
HCM Lane LOS	A	A	A	-	-	A	A	-	B
HCM 95th %tile Q(veh)	-	0	0.3	-	-	0	-	-	0.7

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	349	216	0	0	178	222	22	0	133	0	0	0
Future Volume (vph)	349	216	0	0	178	222	22	0	133	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	50		0	0		0
Storage Lanes	0		0	0		0	1		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.925				0.850			
Flt Protected		0.970						0.950				
Satd. Flow (prot)	0	1789	0	0	1706	0	0	1752	1568	0	0	0
Flt Permitted		0.970						0.950				
Satd. Flow (perm)	0	1789	0	0	1706	0	0	1752	1568	0	0	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		980			379			1085			1070	
Travel Time (s)		22.3			8.6			24.7			24.3	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	349	216	0	0	178	222	22	0	133	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	565	0	0	400	0	0	22	133	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 67.0%		ICU Level of Service C	
Analysis Period (min) 15			

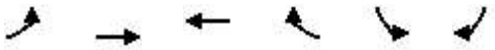
Intersection	
Int Delay, s/veh	4.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	349	216	0	0	178	222	22	0	133	0	0	0
Future Vol, veh/h	349	216	0	0	178	222	22	0	133	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Free	Free	Free
RT Channelized	-	-	None	-	-	Yield	-	-	Yield	-	-	None
Storage Length	-	-	-	-	-	-	50	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	349	216	0	0	178	222	22	0	133	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	178	0	-	-	-	0	1092	1092	216
Stage 1	-	-	-	-	-	-	914	914	-
Stage 2	-	-	-	-	-	-	178	178	-
Critical Hdwy	4.13	-	-	-	-	-	6.43	6.53	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-	5.43	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.43	5.53	-
Follow-up Hdwy	2.227	-	-	-	-	-	3.527	4.027	3.327
Pot Cap-1 Maneuver	1392	-	0	0	-	-	236	214	821
Stage 1	-	-	0	0	-	-	389	351	-
Stage 2	-	-	0	0	-	-	850	750	-
Platoon blocked, %		-			-	-			
Mov Cap-1 Maneuver	1392	-	-	-	-	-	169	0	821
Mov Cap-2 Maneuver	-	-	-	-	-	-	169	0	-
Stage 1	-	-	-	-	-	-	278	0	-
Stage 2	-	-	-	-	-	-	850	0	-

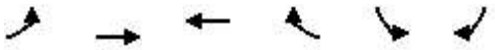
Approach	EB	WB	NB
HCM Control Delay, s	5.2	0	12.9
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	WBT	WBR
Capacity (veh/h)	169	821	1392	-	-	-
HCM Lane V/C Ratio	0.13	0.162	0.251	-	-	-
HCM Control Delay (s)	29.5	10.2	8.4	0	-	-
HCM Lane LOS	D	B	A	A	-	-
HCM 95th %tile Q(veh)	0.4	0.6	1	-	-	-



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	60	565	104	96	0	0
Future Volume (vph)	60	565	104	96	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.935			
Flt Protected		0.995				
Satd. Flow (prot)	0	1835	1725	0	0	0
Flt Permitted		0.995				
Satd. Flow (perm)	0	1835	1725	0	0	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		216	980		814	
Travel Time (s)		4.9	22.3		18.5	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	60	565	104	96	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	625	200	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		0	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 51.1%		ICU Level of Service A	
Analysis Period (min) 15			



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	464	104	0	161	137
Future Volume (vph)	0	464	104	0	161	137
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0			0	50	0
Storage Lanes	0			0	1	1
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						0.850
Flt Protected					0.950	
Satd. Flow (prot)	0	1845	1845	0	1752	1568
Flt Permitted					0.950	
Satd. Flow (perm)	0	1845	1845	0	1752	1568
Link Speed (mph)		30	30		30	
Link Distance (ft)		218	216		1094	
Travel Time (s)		5.0	4.9		24.9	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	464	104	0	161	137
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	464	104	0	161	137
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	40.0%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	4.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↰	↱
Traffic Vol, veh/h	0	464	104	0	161	137
Future Vol, veh/h	0	464	104	0	161	137
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Yield
Storage Length	-	-	-	-	50	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	0	464	104	0	161	137

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	568	104
Stage 1	-	-	-	-	104	-
Stage 2	-	-	-	-	464	-
Critical Hdwy	-	-	-	-	6.43	6.23
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.43	-
Follow-up Hdwy	-	-	-	-	3.527	3.327
Pot Cap-1 Maneuver	0	-	-	0	483	948
Stage 1	0	-	-	0	918	-
Stage 2	0	-	-	0	631	-
Platoon blocked, %		-	-			
Mov Cap-1 Maneuver	-	-	-	-	483	948
Mov Cap-2 Maneuver	-	-	-	-	483	-
Stage 1	-	-	-	-	918	-
Stage 2	-	-	-	-	631	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	13
HCM LOS			B

Minor Lane/Major Mvmt	EBT	WBT	SBLn1	SBLn2
Capacity (veh/h)	-	-	483	948
HCM Lane V/C Ratio	-	-	0.333	0.145
HCM Control Delay (s)	-	-	16.1	9.4
HCM Lane LOS	-	-	C	A
HCM 95th %tile Q(veh)	-	-	1.4	0.5

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	308	42	88	153	25	156
Future Volume (vph)	308	42	88	153	25	156
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.984				0.884	
Flt Protected				0.982	0.993	
Satd. Flow (prot)	1815	0	0	1811	1619	0
Flt Permitted				0.982	0.993	
Satd. Flow (perm)	1815	0	0	1811	1619	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	594			218	1252	
Travel Time (s)	13.5			5.0	28.5	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	308	42	88	153	25	156
Shared Lane Traffic (%)						
Lane Group Flow (vph)	350	0	0	241	181	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 52.7%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	3.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	308	42	88	153	25	156
Future Vol, veh/h	308	42	88	153	25	156
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	308	42	88	153	25	156

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	350	0	658	329
Stage 1	-	-	-	-	329	-
Stage 2	-	-	-	-	329	-
Critical Hdwy	-	-	4.13	-	6.43	6.23
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.43	-
Follow-up Hdwy	-	-	2.227	-	3.527	3.327
Pot Cap-1 Maneuver	-	-	1203	-	428	710
Stage 1	-	-	-	-	727	-
Stage 2	-	-	-	-	727	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1203	-	394	710
Mov Cap-2 Maneuver	-	-	-	-	394	-
Stage 1	-	-	-	-	727	-
Stage 2	-	-	-	-	669	-

Approach	EB	WB	NB
HCM Control Delay, s	0	3	12.8
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	639	-	-	1203	-
HCM Lane V/C Ratio	0.283	-	-	0.073	-
HCM Control Delay (s)	12.8	-	-	8.2	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	1.2	-	-	0.2	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	11	320	6	3	139	36	0	2	5	25	0	2
Future Volume (vph)	11	320	6	3	139	36	0	2	5	25	0	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	75		75	0		0	0		0
Storage Lanes	0		0	1		1	0		1	0		0
Taper Length (ft)	25			100			0			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.998				0.850			0.850		0.990	
Flt Protected		0.998		0.950							0.956	
Satd. Flow (prot)	0	1837	0	1752	1845	1568	0	1845	1568	0	1746	0
Flt Permitted		0.998		0.950							0.956	
Satd. Flow (perm)	0	1837	0	1752	1845	1568	0	1845	1568	0	1746	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1306			594			1202			1203	
Travel Time (s)		29.7			13.5			27.3			27.3	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	11	320	6	3	139	36	0	2	5	25	0	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	337	0	3	139	36	0	2	5	0	27	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	41.0%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	11	320	6	3	139	36	0	2	5	25	0	2
Future Vol, veh/h	11	320	6	3	139	36	0	2	5	25	0	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	75	-	75	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	11	320	6	3	139	36	0	2	5	25	0	2

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	175	0	0	326	0	0	509	526	323	494	493	139
Stage 1	-	-	-	-	-	-	345	345	-	145	145	-
Stage 2	-	-	-	-	-	-	164	181	-	349	348	-
Critical Hdwy	4.13	-	-	4.13	-	-	7.13	6.53	6.23	7.13	6.53	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	5.53	-	6.13	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.13	5.53	-	6.13	5.53	-
Follow-up Hdwy	2.227	-	-	2.227	-	-	3.527	4.027	3.327	3.527	4.027	3.327
Pot Cap-1 Maneuver	1395	-	-	1228	-	-	473	455	716	484	476	907
Stage 1	-	-	-	-	-	-	668	634	-	855	775	-
Stage 2	-	-	-	-	-	-	836	748	-	665	632	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1395	-	-	1228	-	-	467	450	716	474	470	907
Mov Cap-2 Maneuver	-	-	-	-	-	-	467	450	-	474	470	-
Stage 1	-	-	-	-	-	-	661	628	-	846	773	-
Stage 2	-	-	-	-	-	-	832	747	-	652	626	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0.1	10.9	12.8
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	450	716	1395	-	-	1228	-	-	491
HCM Lane V/C Ratio	0.004	0.007	0.008	-	-	0.002	-	-	0.055
HCM Control Delay (s)	13	10.1	7.6	0	-	7.9	-	-	12.8
HCM Lane LOS	B	B	A	A	-	A	-	-	B
HCM 95th %tile Q(veh)	0	0	0	-	-	0	-	-	0.2

Intersection: 100: TN-2 (US Hwy-41) & Epps Mill Rd

Movement	EB	NB	SB
Directions Served	LR	LT	TR
Maximum Queue (ft)	154	161	22
Average Queue (ft)	52	43	3
95th Queue (ft)	102	96	15
Link Distance (ft)	1572	3548	2191
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 200: Forbus Drive & Epps Mill Rd

Movement	EB	EB	WB	NB	SB
Directions Served	L	TR	LTR	L	LTR
Maximum Queue (ft)	38	75	40	24	72
Average Queue (ft)	16	7	2	4	41
95th Queue (ft)	40	41	14	19	66
Link Distance (ft)		52	1572	1076	1059
Upstream Blk Time (%)	0	0			
Queuing Penalty (veh)	0	1			
Storage Bay Dist (ft)	75				
Storage Blk Time (%)	0	0			
Queuing Penalty (veh)	0	0			

Intersection: 300: Miller Ln/Driveway & Epps Mill Rd

Movement	EB	EB	WB	NB	SB
Directions Served	L	TR	LTR	TR	LTR
Maximum Queue (ft)	65	54	52	18	79
Average Queue (ft)	29	4	12	1	44
95th Queue (ft)	51	22	40	6	69
Link Distance (ft)		320	52	1061	1057
Upstream Blk Time (%)			0		
Queuing Penalty (veh)			0		
Storage Bay Dist (ft)	100				
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 400: I-24 WB On Ramp & Epps Mill Rd

Movement	EB	WB	NB	NB
Directions Served	LT	TR	LT	R
Maximum Queue (ft)	111	61	55	56
Average Queue (ft)	52	5	13	2
95th Queue (ft)	88	32	38	18
Link Distance (ft)	908	320		1037
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)			50	
Storage Blk Time (%)			3	0
Queuing Penalty (veh)			4	0

Intersection: 500: Epps Mill Rd & I-24 EB On Loop

Movement	EB
Directions Served	LT
Maximum Queue (ft)	53
Average Queue (ft)	4
95th Queue (ft)	24
Link Distance (ft)	157
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 600: Epps Mill Rd & I-24 EB Off Ramp

Movement	SB	SB
Directions Served	L	R
Maximum Queue (ft)	75	127
Average Queue (ft)	42	4
95th Queue (ft)	71	42
Link Distance (ft)		1034
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)	50	
Storage Blk Time (%)	5	
Queuing Penalty (veh)	7	

Intersection: 700: Miller Rd & Epps Mill Rd

Movement	EB	WB	NB
Directions Served	TR	LT	LR
Maximum Queue (ft)	27	93	152
Average Queue (ft)	2	24	49
95th Queue (ft)	15	65	98
Link Distance (ft)	506	186	1202
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 800: Dollar General Driveway/Capital Way & Epps Mill Rd

Movement	EB	WB	NB	NB	SB
Directions Served	LTR	L	LT	R	LTR
Maximum Queue (ft)	24	24	31	30	49
Average Queue (ft)	1	1	2	1	14
95th Queue (ft)	8	8	14	10	40
Link Distance (ft)	1272		1168	1168	1158
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)		75			
Storage Blk Time (%)					
Queuing Penalty (veh)					

Network Summary

Network wide Queuing Penalty: 13

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	147	147	79	120	347	162
Future Volume (vph)	147	147	79	120	347	162
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.932				0.957	
Flt Protected	0.976			0.981		
Satd. Flow (prot)	1678	0	0	1810	1765	0
Flt Permitted	0.976			0.981		
Satd. Flow (perm)	1678	0	0	1810	1765	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	1662			3584	2221	
Travel Time (s)	37.8			81.5	50.5	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	147	147	79	120	347	162
Shared Lane Traffic (%)						
Lane Group Flow (vph)	294	0	0	199	509	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 66.0%		ICU Level of Service C	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	147	147	79	120	347	162
Future Vol, veh/h	147	147	79	120	347	162
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	Free	-	Free
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	147	147	79	120	347	162

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	625	347	347	0	-	0
Stage 1	347	-	-	-	-	-
Stage 2	278	-	-	-	-	-
Critical Hdwy	6.43	6.23	4.13	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	2.227	-	-	-
Pot Cap-1 Maneuver	447	694	1206	-	-	0
Stage 1	713	-	-	-	-	0
Stage 2	767	-	-	-	-	0
Platoon blocked, %				-	-	
Mov Cap-1 Maneuver	416	694	1206	-	-	-
Mov Cap-2 Maneuver	416	-	-	-	-	-
Stage 1	663	-	-	-	-	-
Stage 2	767	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	20.5	3.3	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT
Capacity (veh/h)	1206	-	520	-
HCM Lane V/C Ratio	0.066	-	0.565	-
HCM Control Delay (s)	8.2	0	20.5	-
HCM Lane LOS	A	A	C	-
HCM 95th %tile Q(veh)	0.2	-	3.5	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	79	279	3	3	273	6	6	0	6	19	0	94
Future Volume (vph)	79	279	3	3	273	6	6	0	6	19	0	94
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	75		0	0		0	0		75	0		0
Storage Lanes	1		0	0		0	1		0	0		0
Taper Length (ft)	0			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.998			0.997			0.850			0.888	
Flt Protected	0.950				0.999		0.950				0.992	
Satd. Flow (prot)	1752	1841	0	0	1837	0	1752	1568	0	0	1625	0
Flt Permitted	0.950				0.999		0.950				0.992	
Satd. Flow (perm)	1752	1841	0	0	1837	0	1752	1568	0	0	1625	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		120			1662			1121			1094	
Travel Time (s)		2.7			37.8			25.5			24.9	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	79	279	3	3	273	6	6	0	6	19	0	94
Shared Lane Traffic (%)												
Lane Group Flow (vph)	79	282	0	0	282	0	6	6	0	0	113	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 53.3%		ICU Level of Service A	
Analysis Period (min) 15			

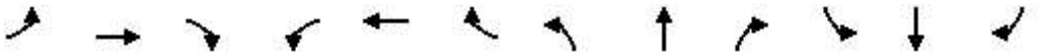
Intersection	
Int Delay, s/veh	2.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	79	279	3	3	273	6	6	0	6	19	0	94
Future Vol, veh/h	79	279	3	3	273	6	6	0	6	19	0	94
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	75	-	-	-	-	-	0	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	79	279	3	3	273	6	6	0	6	19	0	94

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	279	0	0	282	0	0	768	724	281	724	722	276
Stage 1	-	-	-	-	-	-	439	439	-	282	282	-
Stage 2	-	-	-	-	-	-	329	285	-	442	440	-
Critical Hdwy	4.13	-	-	4.13	-	-	7.13	6.53	6.23	7.13	6.53	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	5.53	-	6.13	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.13	5.53	-	6.13	5.53	-
Follow-up Hdwy	2.227	-	-	2.227	-	-	3.527	4.027	3.327	3.527	4.027	3.327
Pot Cap-1 Maneuver	1278	-	-	1275	-	-	317	351	755	340	352	760
Stage 1	-	-	-	-	-	-	595	576	-	723	676	-
Stage 2	-	-	-	-	-	-	682	674	-	592	576	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1278	-	-	1275	-	-	264	328	755	321	329	760
Mov Cap-2 Maneuver	-	-	-	-	-	-	264	328	-	321	329	-
Stage 1	-	-	-	-	-	-	558	540	-	678	674	-
Stage 2	-	-	-	-	-	-	596	672	-	551	540	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.8	0.1	14.4	12.1
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	264	755	1278	-	-	1275	-	-	618
HCM Lane V/C Ratio	0.023	0.008	0.062	-	-	0.002	-	-	0.183
HCM Control Delay (s)	19	9.8	8	-	-	7.8	0	-	12.1
HCM Lane LOS	C	A	A	-	-	A	A	-	B
HCM 95th %tile Q(veh)	0.1	0	0.2	-	-	0	-	-	0.7



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	143	331	2	3	353	17	15	0	14	16	0	109
Future Volume (vph)	143	331	2	3	353	17	15	0	14	16	0	109
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		0	0		0	75		0	0		0
Storage Lanes	1		0	0		0	1		0	0		0
Taper Length (ft)	50			25			100			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.999			0.994			0.850			0.882	
Flt Protected	0.950						0.950				0.994	
Satd. Flow (prot)	1752	1843	0	0	1834	0	1752	1568	0	0	1617	0
Flt Permitted	0.950						0.950				0.994	
Satd. Flow (perm)	1752	1843	0	0	1834	0	1752	1568	0	0	1617	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		379			120			1105			1093	
Travel Time (s)		8.6			2.7			25.1			24.8	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	143	331	2	3	353	17	15	0	14	16	0	109
Shared Lane Traffic (%)												
Lane Group Flow (vph)	143	333	0	0	373	0	15	14	0	0	125	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 61.6%		ICU Level of Service B	
Analysis Period (min) 15			

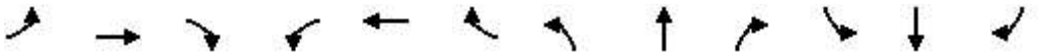
Intersection	
Int Delay, s/veh	3.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	143	331	2	3	353	17	15	0	14	16	0	109
Future Vol, veh/h	143	331	2	3	353	17	15	0	14	16	0	109
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	-	-	-	75	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	143	331	2	3	353	17	15	0	14	16	0	109

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	370	0	0	333	0	0	1040	994	332	993	987	362
Stage 1	-	-	-	-	-	-	618	618	-	368	368	-
Stage 2	-	-	-	-	-	-	422	376	-	625	619	-
Critical Hdwy	4.13	-	-	4.13	-	-	7.13	6.53	6.23	7.13	6.53	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	5.53	-	6.13	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.13	5.53	-	6.13	5.53	-
Follow-up Hdwy	2.227	-	-	2.227	-	-	3.527	4.027	3.327	3.527	4.027	3.327
Pot Cap-1 Maneuver	1183	-	-	1221	-	-	207	244	707	223	246	680
Stage 1	-	-	-	-	-	-	475	479	-	650	620	-
Stage 2	-	-	-	-	-	-	607	615	-	471	479	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1183	-	-	1221	-	-	157	214	707	198	215	680
Mov Cap-2 Maneuver	-	-	-	-	-	-	157	214	-	198	215	-
Stage 1	-	-	-	-	-	-	418	421	-	571	618	-
Stage 2	-	-	-	-	-	-	508	613	-	406	421	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	2.5	0.1	20.6	14.1
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	157	707	1183	-	-	1221	-	-	518
HCM Lane V/C Ratio	0.096	0.02	0.121	-	-	0.002	-	-	0.241
HCM Control Delay (s)	30.3	10.2	8.5	-	-	8	0	-	14.1
HCM Lane LOS	D	B	A	-	-	A	A	-	B
HCM 95th %tile Q(veh)	0.3	0.1	0.4	-	-	0	-	-	0.9



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	182	326	0	0	265	212	37	3	150	0	0	0
Future Volume (vph)	182	326	0	0	265	212	37	3	150	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	50		0	0		0
Storage Lanes	0		0	0		0	1		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.940				0.850			
Flt Protected		0.982						0.956				
Satd. Flow (prot)	0	1811	0	0	1734	0	0	1763	1568	0	0	0
Flt Permitted		0.982						0.956				
Satd. Flow (perm)	0	1811	0	0	1734	0	0	1763	1568	0	0	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		980			379			1085			1070	
Travel Time (s)		22.3			8.6			24.7			24.3	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	182	326	0	0	265	212	37	3	150	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	508	0	0	477	0	0	40	150	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 67.5%		ICU Level of Service C	
Analysis Period (min) 15			

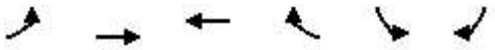
Intersection	
Int Delay, s/veh	3.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	182	326	0	0	265	212	37	3	150	0	0	0
Future Vol, veh/h	182	326	0	0	265	212	37	3	150	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Free	Free	Free
RT Channelized	-	-	None	-	-	Yield	-	-	Yield	-	-	None
Storage Length	-	-	-	-	-	-	50	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	182	326	0	0	265	212	37	3	150	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	265	0	-	-	-	0	955	955	326
Stage 1	-	-	-	-	-	-	690	690	-
Stage 2	-	-	-	-	-	-	265	265	-
Critical Hdwy	4.13	-	-	-	-	-	6.43	6.53	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-	5.43	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.43	5.53	-
Follow-up Hdwy	2.227	-	-	-	-	-	3.527	4.027	3.327
Pot Cap-1 Maneuver	1293	-	0	0	-	-	285	257	713
Stage 1	-	-	0	0	-	-	496	445	-
Stage 2	-	-	0	0	-	-	777	688	-
Platoon blocked, %		-			-	-			
Mov Cap-1 Maneuver	1293	-	-	-	-	-	236	0	713
Mov Cap-2 Maneuver	-	-	-	-	-	-	236	0	-
Stage 1	-	-	-	-	-	-	411	0	-
Stage 2	-	-	-	-	-	-	777	0	-

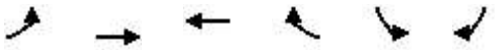
Approach	EB	WB	NB
HCM Control Delay, s	3	0	13.9
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	WBT	WBR
Capacity (veh/h)	236	713	1293	-	-	-
HCM Lane V/C Ratio	0.169	0.21	0.141	-	-	-
HCM Control Delay (s)	23.3	11.4	8.2	0	-	-
HCM Lane LOS	C	B	A	A	-	-
HCM 95th %tile Q(veh)	0.6	0.8	0.5	-	-	-



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	60	508	195	107	0	0
Future Volume (vph)	60	508	195	107	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.952			
Flt Protected		0.995				
Satd. Flow (prot)	0	1835	1756	0	0	0
Flt Permitted		0.995				
Satd. Flow (perm)	0	1835	1756	0	0	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		216	980		814	
Travel Time (s)		4.9	22.3		18.5	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	60	508	195	107	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	568	302	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		0	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 53.5%		ICU Level of Service A	
Analysis Period (min) 15			



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	350	195	0	218	320
Future Volume (vph)	0	350	195	0	218	320
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0			0	50	0
Storage Lanes	0			0	1	1
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						0.850
Flt Protected					0.950	
Satd. Flow (prot)	0	1845	1845	0	1752	1568
Flt Permitted					0.950	
Satd. Flow (perm)	0	1845	1845	0	1752	1568
Link Speed (mph)		30	30		30	
Link Distance (ft)		218	216		1094	
Travel Time (s)		5.0	4.9		24.9	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	350	195	0	218	320
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	350	195	0	218	320
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 37.2%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	7.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↖	↗
Traffic Vol, veh/h	0	350	195	0	218	320
Future Vol, veh/h	0	350	195	0	218	320
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Yield
Storage Length	-	-	-	-	50	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	0	350	195	0	218	320

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	545	195
Stage 1	-	-	-	-	195	-
Stage 2	-	-	-	-	350	-
Critical Hdwy	-	-	-	-	6.43	6.23
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.43	-
Follow-up Hdwy	-	-	-	-	3.527	3.327
Pot Cap-1 Maneuver	0	-	-	0	498	844
Stage 1	0	-	-	0	836	-
Stage 2	0	-	-	0	711	-
Platoon blocked, %		-	-			
Mov Cap-1 Maneuver	-	-	-	-	498	844
Mov Cap-2 Maneuver	-	-	-	-	498	-
Stage 1	-	-	-	-	836	-
Stage 2	-	-	-	-	711	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	14.2
HCM LOS			B

Minor Lane/Major Mvmt	EBT	WBT	SBLn1	SBLn2
Capacity (veh/h)	-	-	498	844
HCM Lane V/C Ratio	-	-	0.438	0.379
HCM Control Delay (s)	-	-	17.7	11.8
HCM Lane LOS	-	-	C	B
HCM 95th %tile Q(veh)	-	-	2.2	1.8

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	203	42	156	359	22	147
Future Volume (vph)	203	42	156	359	22	147
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.977				0.883	
Flt Protected				0.985	0.994	
Satd. Flow (prot)	1802	0	0	1817	1619	0
Flt Permitted				0.985	0.994	
Satd. Flow (perm)	1802	0	0	1817	1619	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	594			218	1252	
Travel Time (s)	13.5			5.0	28.5	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	203	42	156	359	22	147
Shared Lane Traffic (%)						
Lane Group Flow (vph)	245	0	0	515	169	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 61.1%		ICU Level of Service B	
Analysis Period (min) 15			

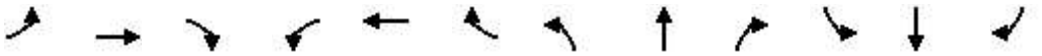
Intersection	
Int Delay, s/veh	3.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	203	42	156	359	22	147
Future Vol, veh/h	203	42	156	359	22	147
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	203	42	156	359	22	147

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	245	0	895	224
Stage 1	-	-	-	-	224	-
Stage 2	-	-	-	-	671	-
Critical Hdwy	-	-	4.13	-	6.43	6.23
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.43	-
Follow-up Hdwy	-	-	2.227	-	3.527	3.327
Pot Cap-1 Maneuver	-	-	1315	-	310	813
Stage 1	-	-	-	-	811	-
Stage 2	-	-	-	-	506	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1315	-	264	813
Mov Cap-2 Maneuver	-	-	-	-	264	-
Stage 1	-	-	-	-	811	-
Stage 2	-	-	-	-	431	-

Approach	EB	WB	NB
HCM Control Delay, s	0	2.5	12.6
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	640	-	-	1315	-
HCM Lane V/C Ratio	0.264	-	-	0.119	-
HCM Control Delay (s)	12.6	-	-	8.1	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	1.1	-	-	0.4	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	11	146	23	28	330	23	15	2	28	71	0	11
Future Volume (vph)	11	146	23	28	330	23	15	2	28	71	0	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	75		75	0		0	0		0
Storage Lanes	0		0	1		1	0		1	0		0
Taper Length (ft)	25			100			0			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.983				0.850			0.850		0.982	
Flt Protected		0.997		0.950				0.958			0.959	
Satd. Flow (prot)	0	1808	0	1752	1845	1568	0	1767	1568	0	1737	0
Flt Permitted		0.997		0.950				0.958			0.959	
Satd. Flow (perm)	0	1808	0	1752	1845	1568	0	1767	1568	0	1737	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1306			594			1202			1203	
Travel Time (s)		29.7			13.5			27.3			27.3	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	11	146	23	28	330	23	15	2	28	71	0	11
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	180	0	28	330	23	0	17	28	0	82	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 36.2%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	11	146	23	28	330	23	15	2	28	71	0	11
Future Vol, veh/h	11	146	23	28	330	23	15	2	28	71	0	11
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	75	-	75	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	11	146	23	28	330	23	15	2	28	71	0	11

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	353	0	0	169	0	0	583	589	158	581	577	330
Stage 1	-	-	-	-	-	-	180	180	-	386	386	-
Stage 2	-	-	-	-	-	-	403	409	-	195	191	-
Critical Hdwy	4.13	-	-	4.13	-	-	7.13	6.53	6.23	7.13	6.53	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	5.53	-	6.13	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.13	5.53	-	6.13	5.53	-
Follow-up Hdwy	2.227	-	-	2.227	-	-	3.527	4.027	3.327	3.527	4.027	3.327
Pot Cap-1 Maneuver	1200	-	-	1402	-	-	422	419	885	424	426	709
Stage 1	-	-	-	-	-	-	819	749	-	635	608	-
Stage 2	-	-	-	-	-	-	622	594	-	804	740	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1200	-	-	1402	-	-	406	406	885	400	413	709
Mov Cap-2 Maneuver	-	-	-	-	-	-	406	406	-	400	413	-
Stage 1	-	-	-	-	-	-	811	742	-	629	596	-
Stage 2	-	-	-	-	-	-	600	582	-	769	733	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	0.6	11.1	15.5
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	406	885	1200	-	-	1402	-	-	425
HCM Lane V/C Ratio	0.042	0.032	0.009	-	-	0.02	-	-	0.193
HCM Control Delay (s)	14.3	9.2	8	0	-	7.6	-	-	15.5
HCM Lane LOS	B	A	A	A	-	A	-	-	C
HCM 95th %tile Q(veh)	0.1	0.1	0	-	-	0.1	-	-	0.7

Intersection: 100: TN-2 (US Hwy-41) & Epps Mill Rd

Movement	EB	NB	SB
Directions Served	LR	LT	TR
Maximum Queue (ft)	189	136	55
Average Queue (ft)	85	31	4
95th Queue (ft)	155	77	23
Link Distance (ft)	1572	3548	2191
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 200: Forbus Drive & Epps Mill Rd

Movement	EB	EB	WB	NB	NB	SB
Directions Served	L	TR	LTR	L	TR	LTR
Maximum Queue (ft)	38	28	30	25	48	111
Average Queue (ft)	13	1	1	8	9	42
95th Queue (ft)	37	9	11	26	32	71
Link Distance (ft)		52	1572	1076	1076	1059
Upstream Blk Time (%)	0					
Queuing Penalty (veh)	0					
Storage Bay Dist (ft)	75					
Storage Blk Time (%)	0					
Queuing Penalty (veh)	0					

Intersection: 300: Miller Ln/Driveway & Epps Mill Rd

Movement	EB	EB	WB	NB	NB	SB
Directions Served	L	TR	LTR	L	TR	LTR
Maximum Queue (ft)	64	24	55	24	20	79
Average Queue (ft)	24	2	10	10	7	49
95th Queue (ft)	48	11	37	30	23	76
Link Distance (ft)		320	52		1061	1057
Upstream Blk Time (%)			0			
Queuing Penalty (veh)			0			
Storage Bay Dist (ft)	100			75		
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 400: I-24 WB On Ramp & Epps Mill Rd

Movement	EB	WB	NB	NB
Directions Served	LT	TR	LT	R
Maximum Queue (ft)	157	141	62	31
Average Queue (ft)	54	6	24	2
95th Queue (ft)	116	48	48	12
Link Distance (ft)	908	320		1037
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)			50	
Storage Blk Time (%)			2	0
Queuing Penalty (veh)			3	0

Intersection: 500: Epps Mill Rd & I-24 EB On Loop

Movement	EB
Directions Served	LT
Maximum Queue (ft)	118
Average Queue (ft)	26
95th Queue (ft)	76
Link Distance (ft)	157
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 600: Epps Mill Rd & I-24 EB Off Ramp

Movement	SB	SB
Directions Served	L	R
Maximum Queue (ft)	74	99
Average Queue (ft)	48	6
95th Queue (ft)	73	42
Link Distance (ft)		1034
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)	50	
Storage Blk Time (%)	7	0
Queuing Penalty (veh)	23	0

Intersection: 700: Miller Rd & Epps Mill Rd

Movement	EB	WB	NB
Directions Served	TR	LT	LR
Maximum Queue (ft)	22	226	127
Average Queue (ft)	2	52	48
95th Queue (ft)	13	138	100
Link Distance (ft)	506	186	1202
Upstream Blk Time (%)		1	
Queuing Penalty (veh)		4	
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 800: Dollar General Driveway/Capital Way & Epps Mill Rd

Movement	EB	WB	NB	NB	SB
Directions Served	LTR	L	LT	R	LTR
Maximum Queue (ft)	26	47	31	48	74
Average Queue (ft)	6	7	19	20	31
95th Queue (ft)	24	28	43	45	55
Link Distance (ft)	1272		1168	1168	1158
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)		75			
Storage Blk Time (%)					
Queuing Penalty (veh)					

Network Summary

Network wide Queuing Penalty: 32

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	325	133	330	671	229	124
Future Volume (vph)	325	133	330	671	229	124
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.961				0.953	
Flt Protected	0.966			0.984		
Satd. Flow (prot)	1712	0	0	1815	1758	0
Flt Permitted	0.966			0.984		
Satd. Flow (perm)	1712	0	0	1815	1758	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	1662			3584	2221	
Travel Time (s)	37.8			81.5	50.5	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	325	133	330	671	229	124
Shared Lane Traffic (%)						
Lane Group Flow (vph)	458	0	0	1001	353	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 109.3%		ICU Level of Service H	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	456.3

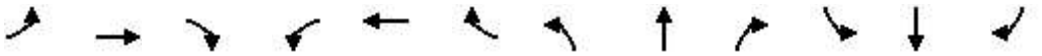
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	325	133	330	671	229	124
Future Vol, veh/h	325	133	330	671	229	124
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	Free	-	Free
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	325	133	330	671	229	124

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1560	229	229	0	-	0
Stage 1	229	-	-	-	-	-
Stage 2	1331	-	-	-	-	-
Critical Hdwy	6.43	6.23	4.13	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	2.227	-	-	-
Pot Cap-1 Maneuver	~ 123	808	1333	-	-	0
Stage 1	807	-	-	-	-	0
Stage 2	~ 245	-	-	-	-	0
Platoon blocked, %				-	-	
Mov Cap-1 Maneuver	~ 74	808	1333	-	-	-
Mov Cap-2 Maneuver	~ 74	-	-	-	-	-
Stage 1	488	-	-	-	-	-
Stage 2	~ 245	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, $	1675.7	2.8	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT
Capacity (veh/h)	1333	-	101	-
HCM Lane V/C Ratio	0.248	-	4.535	-
HCM Control Delay (s)	8.6	$	1675.7	-
HCM Lane LOS	A	A	F	-
HCM 95th %tile Q(veh)	1	-	48.2	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	99	442	16	13	606	11	5	0	0	30	0	170
Future Volume (vph)	99	442	16	13	606	11	5	0	0	30	0	170
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	75		0	0		0	0		75	0		0
Storage Lanes	1		0	0		0	1		0	0		0
Taper Length (ft)	0			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.995			0.998						0.885	
Flt Protected	0.950				0.999		0.950				0.993	
Satd. Flow (prot)	1752	1835	0	0	1839	0	1752	1845	0	0	1621	0
Flt Permitted	0.950				0.999		0.950				0.993	
Satd. Flow (perm)	1752	1835	0	0	1839	0	1752	1845	0	0	1621	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		120			1662			1121			1094	
Travel Time (s)		2.7			37.8			25.5			24.9	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	99	442	16	13	606	11	5	0	0	30	0	170
Shared Lane Traffic (%)												
Lane Group Flow (vph)	99	458	0	0	630	0	5	0	0	0	200	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 86.3%		ICU Level of Service E	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	5.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	99	442	16	13	606	11	5	0	0	30	0	170
Future Vol, veh/h	99	442	16	13	606	11	5	0	0	30	0	170
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	75	-	-	-	-	-	0	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	99	442	16	13	606	11	5	0	0	30	0	170

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	617	0	0	458	0	0	1371	1291	450	1286	1294	612
Stage 1	-	-	-	-	-	-	648	648	-	638	638	-
Stage 2	-	-	-	-	-	-	723	643	-	648	656	-
Critical Hdwy	4.13	-	-	4.13	-	-	7.13	6.53	6.23	7.13	6.53	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	5.53	-	6.13	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.13	5.53	-	6.13	5.53	-
Follow-up Hdwy	2.227	-	-	2.227	-	-	3.527	4.027	3.327	3.527	4.027	3.327
Pot Cap-1 Maneuver	958	-	-	1098	-	-	123	162	607	141	162	491
Stage 1	-	-	-	-	-	-	457	464	-	463	469	-
Stage 2	-	-	-	-	-	-	416	467	-	457	461	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	958	-	-	1098	-	-	73	143	607	128	143	491
Mov Cap-2 Maneuver	-	-	-	-	-	-	73	143	-	128	143	-
Stage 1	-	-	-	-	-	-	410	416	-	415	461	-
Stage 2	-	-	-	-	-	-	267	459	-	410	414	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.6	0.2	57.9	29
HCM LOS			F	D

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	73	-	958	-	-	1098	-	-	344
HCM Lane V/C Ratio	0.068	-	0.103	-	-	0.012	-	-	0.581
HCM Control Delay (s)	57.9	0	9.2	-	-	8.3	0	-	29
HCM Lane LOS	F	A	A	-	-	A	A	-	D
HCM 95th %tile Q(veh)	0.2	-	0.3	-	-	0	-	-	3.5

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	176	526	23	5	731	45	0	0	5	26	0	126
Future Volume (vph)	176	526	23	5	731	45	0	0	5	26	0	126
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		0	0		0	75		0	0		0
Storage Lanes	1		0	0		0	1		0	0		0
Taper Length (ft)	50			25			100			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.994			0.992			0.850			0.888	
Flt Protected	0.950										0.992	
Satd. Flow (prot)	1752	1834	0	0	1830	0	1845	1568	0	0	1625	0
Flt Permitted	0.950										0.992	
Satd. Flow (perm)	1752	1834	0	0	1830	0	1845	1568	0	0	1625	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		379			120			1105			1093	
Travel Time (s)		8.6			2.7			25.1			24.8	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	176	526	23	5	731	45	0	0	5	26	0	126
Shared Lane Traffic (%)												
Lane Group Flow (vph)	176	549	0	0	781	0	0	5	0	0	152	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 96.4%		ICU Level of Service F	
Analysis Period (min) 15			

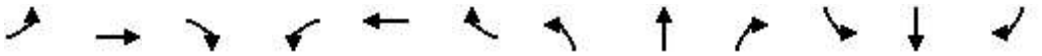
Intersection	
Int Delay, s/veh	6.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	176	526	23	5	731	45	0	0	5	26	0	126
Future Vol, veh/h	176	526	23	5	731	45	0	0	5	26	0	126
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	-	-	-	75	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	176	526	23	5	731	45	0	0	5	26	0	126

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	776	0	0	549	0	0	1717	1676	538	1656	1665	754
Stage 1	-	-	-	-	-	-	890	890	-	764	764	-
Stage 2	-	-	-	-	-	-	827	786	-	892	901	-
Critical Hdwy	4.13	-	-	4.13	-	-	7.13	6.53	6.23	7.13	6.53	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	5.53	-	6.13	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.13	5.53	-	6.13	5.53	-
Follow-up Hdwy	2.227	-	-	2.227	-	-	3.527	4.027	3.327	3.527	4.027	3.327
Pot Cap-1 Maneuver	836	-	-	1016	-	-	70	95	541	78	96	407
Stage 1	-	-	-	-	-	-	336	360	-	395	411	-
Stage 2	-	-	-	-	-	-	364	402	-	335	356	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	836	-	-	1016	-	-	40	74	541	64	75	407
Mov Cap-2 Maneuver	-	-	-	-	-	-	40	74	-	64	75	-
Stage 1	-	-	-	-	-	-	265	284	-	312	407	-
Stage 2	-	-	-	-	-	-	249	398	-	262	281	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	2.5	0.1	11.7	55.9
HCM LOS			B	F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	541	836	-	-	1016	-	-	212
HCM Lane V/C Ratio	-	0.009	0.211	-	-	0.005	-	-	0.717
HCM Control Delay (s)	0	11.7	10.5	-	-	8.6	0	-	55.9
HCM Lane LOS	A	B	B	-	-	A	A	-	F
HCM 95th %tile Q(veh)	-	0	0.8	-	-	0	-	-	4.7



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	907	379	0	0	280	577	57	0	346	0	0	0
Future Volume (vph)	907	379	0	0	280	577	57	0	346	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	50		0	0		0
Storage Lanes	0		0	0		0	1		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.909				0.850			
Flt Protected		0.966						0.950				
Satd. Flow (prot)	0	1782	0	0	1677	0	0	1752	1568	0	0	0
Flt Permitted		0.966						0.950				
Satd. Flow (perm)	0	1782	0	0	1677	0	0	1752	1568	0	0	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		980			379			1085			1066	
Travel Time (s)		22.3			8.6			24.7			24.2	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	907	379	0	0	280	577	57	0	346	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1286	0	0	857	0	0	57	346	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 133.7%		ICU Level of Service H	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	240.6

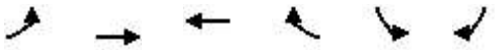
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	907	379	0	0	280	577	57	0	346	0	0	0
Future Vol, veh/h	907	379	0	0	280	577	57	0	346	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Free	Free	Free
RT Channelized	-	-	None	-	-	Yield	-	-	Yield	-	-	None
Storage Length	-	-	-	-	-	-	50	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	-	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	907	379	0	0	280	577	57	0	346	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	280	0	-	-	-	0	2473	2473	379
Stage 1	-	-	-	-	-	-	2193	2193	-
Stage 2	-	-	-	-	-	-	280	280	-
Critical Hdwy	4.13	-	-	-	-	-	6.43	6.53	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-	5.43	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.43	5.53	-
Follow-up Hdwy	2.227	-	-	-	-	-	3.527	4.027	3.327
Pot Cap-1 Maneuver	1277	-	0	0	-	-	~ 33	30	666
Stage 1	-	-	0	0	-	-	91	83	-
Stage 2	-	-	0	0	-	-	765	677	-
Platoon blocked, %		-			-	-			
Mov Cap-1 Maneuver	1277	-	-	-	-	-	~ 3	0	666
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 3	0	-
Stage 1	-	-	-	-	-	-	~ 9	0	-
Stage 2	-	-	-	-	-	-	765	0	-

Approach	EB	WB	NB
HCM Control Delay, s	10.2	0	$ 1487.4
HCM LOS			F

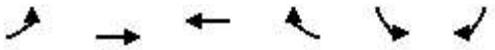
Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	WBT	WBR
Capacity (veh/h)	3	666	1277	-	-	-
HCM Lane V/C Ratio	19	0.52	0.71	-	-	-
HCM Control Delay (s)	$ 10418.6	16.1	14.4	0	-	-
HCM Lane LOS	F	C	B	A	-	-
HCM 95th %tile Q(veh)	9.1	3	6.5	-	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	156	1286	87	250	0	0
Future Volume (vph)	156	1286	87	250	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.900			
Flt Protected		0.995				
Satd. Flow (prot)	0	1835	1660	0	0	0
Flt Permitted		0.995				
Satd. Flow (perm)	0	1835	1660	0	0	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		216	980		814	
Travel Time (s)		4.9	22.3		18.5	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	156	1286	87	250	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1442	337	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		0	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 102.9%		ICU Level of Service G	
Analysis Period (min) 15			



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	1023	87	0	419	356
Future Volume (vph)	0	1023	87	0	419	356
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0			0	50	0
Storage Lanes	0			0	1	1
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						0.850
Flt Protected					0.950	
Satd. Flow (prot)	0	1845	1845	0	1752	1568
Flt Permitted					0.950	
Satd. Flow (perm)	0	1845	1845	0	1752	1568
Link Speed (mph)		30	30		30	
Link Distance (ft)		218	216		1094	
Travel Time (s)		5.0	4.9		24.9	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	1023	87	0	419	356
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1023	87	0	419	356
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 83.7%		ICU Level of Service E	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	95.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↖	↗
Traffic Vol, veh/h	0	1023	87	0	419	356
Future Vol, veh/h	0	1023	87	0	419	356
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Yield
Storage Length	-	-	-	-	50	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	0	1023	87	0	419	356

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	1110	87
Stage 1	-	-	-	-	87	-
Stage 2	-	-	-	-	1023	-
Critical Hdwy	-	-	-	-	6.43	6.23
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.43	-
Follow-up Hdwy	-	-	-	-	3.527	3.327
Pot Cap-1 Maneuver	0	-	-	0	~ 231	969
Stage 1	0	-	-	0	934	-
Stage 2	0	-	-	0	~ 345	-
Platoon blocked, %		-	-			
Mov Cap-1 Maneuver	-	-	-	-	~ 231	969
Mov Cap-2 Maneuver	-	-	-	-	~ 231	-
Stage 1	-	-	-	-	934	-
Stage 2	-	-	-	-	~ 345	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	231.4
HCM LOS			F

Minor Lane/Major Mvmt	EBT	WBT	SBLn1	SBLn2
Capacity (veh/h)	-	-	231	969
HCM Lane V/C Ratio	-	-	1.814	0.367
HCM Control Delay (s)	-	-	-$ 418.8	10.9
HCM Lane LOS	-	-	F	B
HCM 95th %tile Q(veh)	-	-	28.9	1.7

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	617	109	234	209	65	406
Future Volume (vph)	617	109	234	209	65	406
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.980				0.884	
Flt Protected				0.974	0.993	
Satd. Flow (prot)	1808	0	0	1797	1619	0
Flt Permitted				0.974	0.993	
Satd. Flow (perm)	1808	0	0	1797	1619	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	594			218	1252	
Travel Time (s)	13.5			5.0	28.5	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	617	109	234	209	65	406
Shared Lane Traffic (%)						
Lane Group Flow (vph)	726	0	0	443	471	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 101.7%		ICU Level of Service G	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	74.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	617	109	234	209	65	406
Future Vol, veh/h	617	109	234	209	65	406
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	617	109	234	209	65	406

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	726	0	1349	672
Stage 1	-	-	-	-	672	-
Stage 2	-	-	-	-	677	-
Critical Hdwy	-	-	4.13	-	6.43	6.23
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.43	-
Follow-up Hdwy	-	-	2.227	-	3.527	3.327
Pot Cap-1 Maneuver	-	-	872	-	165	454
Stage 1	-	-	-	-	506	-
Stage 2	-	-	-	-	503	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	872	-	115	454
Mov Cap-2 Maneuver	-	-	-	-	115	-
Stage 1	-	-	-	-	506	-
Stage 2	-	-	-	-	350	-

Approach	EB	WB	NB
HCM Control Delay, s	0	5.6	253.2
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	323	-	-	872	-
HCM Lane V/C Ratio	1.458	-	-	0.268	-
HCM Control Delay (s)	253.2	-	-	10.6	0
HCM Lane LOS	F	-	-	B	A
HCM 95th %tile Q(veh)	25.4	-	-	1.1	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	29	648	16	8	172	94	0	5	13	65	0	5
Future Volume (vph)	29	648	16	8	172	94	0	5	13	65	0	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	75		75	0		0	0		0
Storage Lanes	0		0	1		1	0		1	0		0
Taper Length (ft)	25			100			0			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.997				0.850			0.850		0.990	
Flt Protected		0.998		0.950							0.956	
Satd. Flow (prot)	0	1835	0	1752	1845	1568	0	1845	1568	0	1746	0
Flt Permitted		0.998		0.950							0.956	
Satd. Flow (perm)	0	1835	0	1752	1845	1568	0	1845	1568	0	1746	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1306			594			1202			1203	
Travel Time (s)		29.7			13.5			27.3			27.3	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	29	648	16	8	172	94	0	5	13	65	0	5
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	693	0	8	172	94	0	5	13	0	70	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 66.3%		ICU Level of Service C	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	2.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	29	648	16	8	172	94	0	5	13	65	0	5
Future Vol, veh/h	29	648	16	8	172	94	0	5	13	65	0	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	75	-	75	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	29	648	16	8	172	94	0	5	13	65	0	5

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	266	0	0	664	0	0	952	996	656	911	910	172
Stage 1	-	-	-	-	-	-	714	714	-	188	188	-
Stage 2	-	-	-	-	-	-	238	282	-	723	722	-
Critical Hdwy	4.13	-	-	4.13	-	-	7.13	6.53	6.23	7.13	6.53	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	5.53	-	6.13	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.13	5.53	-	6.13	5.53	-
Follow-up Hdwy	2.227	-	-	2.227	-	-	3.527	4.027	3.327	3.527	4.027	3.327
Pot Cap-1 Maneuver	1292	-	-	920	-	-	238	243	464	254	273	869
Stage 1	-	-	-	-	-	-	421	433	-	811	743	-
Stage 2	-	-	-	-	-	-	763	676	-	416	430	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1292	-	-	920	-	-	229	232	464	235	261	869
Mov Cap-2 Maneuver	-	-	-	-	-	-	229	232	-	235	261	-
Stage 1	-	-	-	-	-	-	406	417	-	782	736	-
Stage 2	-	-	-	-	-	-	752	670	-	385	415	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	0.3	15.2	25.1
HCM LOS			C	D

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	232	464	1292	-	-	920	-	-	248
HCM Lane V/C Ratio	0.022	0.028	0.022	-	-	0.009	-	-	0.282
HCM Control Delay (s)	20.9	13	7.8	0	-	8.9	-	-	25.1
HCM Lane LOS	C	B	A	A	-	A	-	-	D
HCM 95th %tile Q(veh)	0.1	0.1	0.1	-	-	0	-	-	1.1

Intersection: 100: TN-2 (US Hwy-41) & Epps Mill Rd

Movement	EB	NB	SB
Directions Served	LR	LT	TR
Maximum Queue (ft)	1587	561	31
Average Queue (ft)	1534	245	5
95th Queue (ft)	1786	513	21
Link Distance (ft)	1572	3548	2191
Upstream Blk Time (%)	75		
Queuing Penalty (veh)	355		
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 200: Forbus Drive & Epps Mill Rd

Movement	EB	EB	WB	NB	SB
Directions Served	L	TR	LTR	L	LTR
Maximum Queue (ft)	51	70	503	25	1074
Average Queue (ft)	17	52	58	3	824
95th Queue (ft)	54	84	280	17	1396
Link Distance (ft)		52	1572		1059
Upstream Blk Time (%)	0	76			60
Queuing Penalty (veh)	0	422			0
Storage Bay Dist (ft)	75			75	
Storage Blk Time (%)	0	76			
Queuing Penalty (veh)	1	75			

Intersection: 300: Miller Ln/Driveway & Epps Mill Rd

Movement	EB	EB	WB	NB	SB
Directions Served	L	TR	LTR	TR	LTR
Maximum Queue (ft)	150	452	56	40	1062
Average Queue (ft)	69	384	9	4	555
95th Queue (ft)	187	597	40	20	1219
Link Distance (ft)		318	52	1061	1057
Upstream Blk Time (%)		87	3		30
Queuing Penalty (veh)		627	21		0
Storage Bay Dist (ft)	100				
Storage Blk Time (%)		86			
Queuing Penalty (veh)		152			

Intersection: 400: I-24 WB On Ramp & Epps Mill Rd

Movement	EB	WB	NB	NB
Directions Served	LT	TR	LT	R
Maximum Queue (ft)	927	328	75	1052
Average Queue (ft)	841	76	18	979
95th Queue (ft)	1143	283	70	1225
Link Distance (ft)	912	318		1037
Upstream Blk Time (%)	52	3		82
Queuing Penalty (veh)	671	22		0
Storage Bay Dist (ft)			50	
Storage Blk Time (%)			14	
Queuing Penalty (veh)			48	

Intersection: 500: Epps Mill Rd & I-24 EB On Loop

Movement	EB	WB
Directions Served	LT	TR
Maximum Queue (ft)	170	79
Average Queue (ft)	136	4
95th Queue (ft)	225	33
Link Distance (ft)	157	912
Upstream Blk Time (%)	51	
Queuing Penalty (veh)	737	
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 600: Epps Mill Rd & I-24 EB Off Ramp

Movement	EB	SB	SB
Directions Served	T	L	R
Maximum Queue (ft)	204	75	1049
Average Queue (ft)	152	71	1011
95th Queue (ft)	273	75	1193
Link Distance (ft)	186		1034
Upstream Blk Time (%)	51		92
Queuing Penalty (veh)	518		0
Storage Bay Dist (ft)		50	
Storage Blk Time (%)		99	1
Queuing Penalty (veh)		353	3

Intersection: 700: Miller Rd & Epps Mill Rd

Movement	EB	WB	NB
Directions Served	TR	LT	LR
Maximum Queue (ft)	518	147	1265
Average Queue (ft)	377	25	1214
95th Queue (ft)	725	85	1245
Link Distance (ft)	506	186	1202
Upstream Blk Time (%)	46		100
Queuing Penalty (veh)	337		0
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 800: Dollar General Driveway/Capital Way & Epps Mill Rd

Movement	EB	WB	NB	NB	SB
Directions Served	LTR	L	LT	R	LTR
Maximum Queue (ft)	1306	25	31	179	1016
Average Queue (ft)	858	1	5	46	349
95th Queue (ft)	1827	8	23	136	908
Link Distance (ft)	1272		1168	1168	1158
Upstream Blk Time (%)	57				
Queuing Penalty (veh)	0				
Storage Bay Dist (ft)		75			
Storage Blk Time (%)					
Queuing Penalty (veh)					

Network Summary

Network wide Queuing Penalty: 4344

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	382	382	205	312	902	421
Future Volume (vph)	382	382	205	312	902	421
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.932				0.957	
Flt Protected	0.976			0.981		
Satd. Flow (prot)	1678	0	0	1810	1765	0
Flt Permitted	0.976			0.981		
Satd. Flow (perm)	1678	0	0	1810	1765	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	1662			3584	2221	
Travel Time (s)	37.8			81.5	50.5	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	382	382	205	312	902	421
Shared Lane Traffic (%)						
Lane Group Flow (vph)	764	0	0	517	1323	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 155.5%		ICU Level of Service H	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	845.9

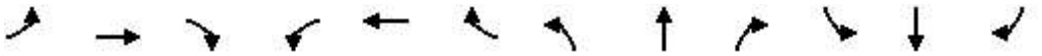
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	382	382	205	312	902	421
Future Vol, veh/h	382	382	205	312	902	421
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	Free	-	Free
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	382	382	205	312	902	421

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1624	902	902	0	-	0
Stage 1	902	-	-	-	-	-
Stage 2	722	-	-	-	-	-
Critical Hdwy	6.43	6.23	4.13	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	2.227	-	-	-
Pot Cap-1 Maneuver	~ 112	~ 335	749	-	-	0
Stage 1	394	-	-	-	-	0
Stage 2	479	-	-	-	-	0
Platoon blocked, %				-	-	
Mov Cap-1 Maneuver	~ 75	~ 335	749	-	-	-
Mov Cap-2 Maneuver	~ 75	-	-	-	-	-
Stage 1	~ 264	-	-	-	-	-
Stage 2	479	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, $	2413.8	4.6	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT
Capacity (veh/h)	749	-	123	-
HCM Lane V/C Ratio	0.274	-	6.211	-
HCM Control Delay (s)	11.6	$	2413.8	-
HCM Lane LOS	B	A	F	-
HCM 95th %tile Q(veh)	1.1	-	83.6	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	119	725	8	13	710	5	16	0	16	29	0	141
Future Volume (vph)	119	725	8	13	710	5	16	0	16	29	0	141
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	75		0	0		0	0		75	0		0
Storage Lanes	1		0	0		0	1		0	0		0
Taper Length (ft)	0			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.998			0.999			0.850			0.888	
Flt Protected	0.950				0.999		0.950				0.992	
Satd. Flow (prot)	1752	1841	0	0	1841	0	1752	1568	0	0	1625	0
Flt Permitted	0.950				0.999		0.950				0.992	
Satd. Flow (perm)	1752	1841	0	0	1841	0	1752	1568	0	0	1625	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		120			1662			1121			1094	
Travel Time (s)		2.7			37.8			25.5			24.9	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	119	725	8	13	710	5	16	0	16	29	0	141
Shared Lane Traffic (%)												
Lane Group Flow (vph)	119	733	0	0	728	0	16	16	0	0	170	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 101.6%		ICU Level of Service G	
Analysis Period (min) 15			

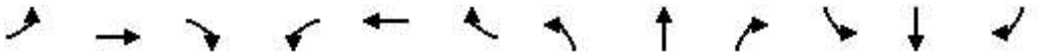
Intersection	
Int Delay, s/veh	8.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	119	725	8	13	710	5	16	0	16	29	0	141
Future Vol, veh/h	119	725	8	13	710	5	16	0	16	29	0	141
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	75	-	-	-	-	-	0	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	119	725	8	13	710	5	16	0	16	29	0	141

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	715	0	0	733	0	0	1776	1708	729	1714	1710	713
Stage 1	-	-	-	-	-	-	967	967	-	739	739	-
Stage 2	-	-	-	-	-	-	809	741	-	975	971	-
Critical Hdwy	4.13	-	-	4.13	-	-	7.13	6.53	6.23	7.13	6.53	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	5.53	-	6.13	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.13	5.53	-	6.13	5.53	-
Follow-up Hdwy	2.227	-	-	2.227	-	-	3.527	4.027	3.327	3.527	4.027	3.327
Pot Cap-1 Maneuver	881	-	-	867	-	-	64	90	421	71	90	430
Stage 1	-	-	-	-	-	-	304	331	-	408	422	-
Stage 2	-	-	-	-	-	-	373	421	-	301	330	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	881	-	-	867	-	-	38	76	421	60	76	430
Mov Cap-2 Maneuver	-	-	-	-	-	-	38	76	-	60	76	-
Stage 1	-	-	-	-	-	-	263	286	-	353	411	-
Stage 2	-	-	-	-	-	-	244	410	-	250	285	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.4	0.2	85.1	69.2
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	38	421	881	-	-	867	-	-	210
HCM Lane V/C Ratio	0.421	0.038	0.135	-	-	0.015	-	-	0.81
HCM Control Delay (s)	156.3	13.9	9.7	-	-	9.2	0	-	69.2
HCM Lane LOS	F	B	A	-	-	A	A	-	F
HCM 95th %tile Q(veh)	1.4	0.1	0.5	-	-	0	-	-	5.9



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	215	792	5	8	833	26	39	0	36	24	0	164
Future Volume (vph)	215	792	5	8	833	26	39	0	36	24	0	164
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		0	0		0	75		0	0		0
Storage Lanes	1		0	0		0	1		0	0		0
Taper Length (ft)	50			25			100			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.999			0.996			0.850			0.882	
Flt Protected	0.950						0.950				0.994	
Satd. Flow (prot)	1752	1843	0	0	1837	0	1752	1568	0	0	1617	0
Flt Permitted	0.950						0.950				0.994	
Satd. Flow (perm)	1752	1843	0	0	1837	0	1752	1568	0	0	1617	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		379			120			1105			1093	
Travel Time (s)		8.6			2.7			25.1			24.8	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	215	792	5	8	833	26	39	0	36	24	0	164
Shared Lane Traffic (%)												
Lane Group Flow (vph)	215	797	0	0	867	0	39	36	0	0	188	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 116.0%		ICU Level of Service H	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	50.1

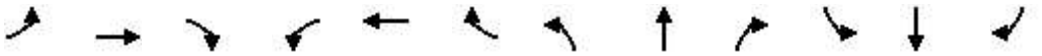
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	215	792	5	8	833	26	39	0	36	24	0	164
Future Vol, veh/h	215	792	5	8	833	26	39	0	36	24	0	164
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	-	-	-	75	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	215	792	5	8	833	26	39	0	36	24	0	164

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	859	0	0	797	0	0	2169	2100	795	2105	2089	846
Stage 1	-	-	-	-	-	-	1225	1225	-	862	862	-
Stage 2	-	-	-	-	-	-	944	875	-	1243	1227	-
Critical Hdwy	4.13	-	-	4.13	-	-	7.13	6.53	6.23	7.13	6.53	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	5.53	-	6.13	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.13	5.53	-	6.13	5.53	-
Follow-up Hdwy	2.227	-	-	2.227	-	-	3.527	4.027	3.327	3.527	4.027	3.327
Pot Cap-1 Maneuver	778	-	-	821	-	-	~ 34	51	386	37	52	361
Stage 1	-	-	-	-	-	-	218	250	-	348	371	-
Stage 2	-	-	-	-	-	-	314	366	-	213	250	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	778	-	-	821	-	-	~ 14	36	386	26	37	361
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 14	36	-	26	37	-
Stage 1	-	-	-	-	-	-	158	181	-	252	364	-
Stage 2	-	-	-	-	-	-	168	359	-	140	181	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	2.4	0.1	$ 714.3	272
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	14	386	778	-	-	821	-	-	136
HCM Lane V/C Ratio	2.786	0.093	0.276	-	-	0.01	-	-	1.382
HCM Control Delay (s)	$ 1359.5	15.3	11.4	-	-	9.4	0	-	272
HCM Lane LOS	F	C	B	-	-	A	A	-	F
HCM 95th %tile Q(veh)	5.7	0.3	1.1	-	-	0	-	-	12.3

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	473	622	0	0	485	551	96	8	390	0	0	0
Future Volume (vph)	473	622	0	0	485	551	96	8	390	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	50		0	0		0
Storage Lanes	0		0	0		0	1		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.928				0.850			
Flt Protected		0.979						0.956				
Satd. Flow (prot)	0	1806	0	0	1712	0	0	1763	1568	0	0	0
Flt Permitted		0.979						0.956				
Satd. Flow (perm)	0	1806	0	0	1712	0	0	1763	1568	0	0	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		980			379			1085			1066	
Travel Time (s)		22.3			8.6			24.7			24.2	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	473	622	0	0	485	551	96	8	390	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1095	0	0	1036	0	0	104	390	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 133.9%		ICU Level of Service H	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	97.6

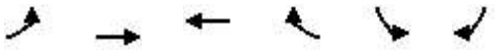
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	473	622	0	0	485	551	96	8	390	0	0	0
Future Vol, veh/h	473	622	0	0	485	551	96	8	390	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Free	Free	Free
RT Channelized	-	-	None	-	-	Yield	-	-	Yield	-	-	None
Storage Length	-	-	-	-	-	-	50	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	-	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	473	622	0	0	485	551	96	8	390	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	485	0	-	-	-	0	2053	2053	622
Stage 1	-	-	-	-	-	-	1568	1568	-
Stage 2	-	-	-	-	-	-	485	485	-
Critical Hdwy	4.13	-	-	-	-	-	6.43	6.53	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-	5.43	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.43	5.53	-
Follow-up Hdwy	2.227	-	-	-	-	-	3.527	4.027	3.327
Pot Cap-1 Maneuver	1073	-	0	0	-	-	~ 61	55	485
Stage 1	-	-	0	0	-	-	188	171	-
Stage 2	-	-	0	0	-	-	617	550	-
Platoon blocked, %		-			-	-			
Mov Cap-1 Maneuver	1073	-	-	-	-	-	~ 20	0	485
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 20	0	-
Stage 1	-	-	-	-	-	-	~ 61	0	-
Stage 2	-	-	-	-	-	-	617	0	-

Approach	EB	WB	NB
HCM Control Delay, s	4.7	0	$ 508
HCM LOS			F

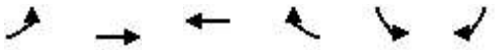
Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	WBT	WBR
Capacity (veh/h)	20	485	1073	-	-	-
HCM Lane V/C Ratio	5.2	0.804	0.441	-	-	-
HCM Control Delay (s)	$ 2276.4	36.4	11	0	-	-
HCM Lane LOS	F	E	B	A	-	-
HCM 95th %tile Q(veh)	13.4	7.5	2.3	-	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	156	1095	303	278	0	0
Future Volume (vph)	156	1095	303	278	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.935			
Flt Protected		0.994				
Satd. Flow (prot)	0	1834	1725	0	0	0
Flt Permitted		0.994				
Satd. Flow (perm)	0	1834	1725	0	0	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		216	980		814	
Travel Time (s)		4.9	22.3		18.5	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	156	1095	303	278	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1251	581	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		0	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 105.9%		ICU Level of Service G	
Analysis Period (min) 15			



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	684	303	0	567	832
Future Volume (vph)	0	684	303	0	567	832
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0			0	50	0
Storage Lanes	0			0	1	1
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						0.850
Flt Protected					0.950	
Satd. Flow (prot)	0	1845	1845	0	1752	1568
Flt Permitted					0.950	
Satd. Flow (perm)	0	1845	1845	0	1752	1568
Link Speed (mph)		30	30		30	
Link Distance (ft)		218	216		1094	
Travel Time (s)		5.0	4.9		24.9	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	684	303	0	567	832
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	684	303	0	567	832
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 74.1%		ICU Level of Service D	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	159.5

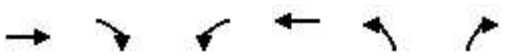
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↰	↱
Traffic Vol, veh/h	0	684	303	0	567	832
Future Vol, veh/h	0	684	303	0	567	832
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Yield
Storage Length	-	-	-	-	50	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	0	684	303	0	567	832

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	987	303
Stage 1	-	-	-	-	303	-
Stage 2	-	-	-	-	684	-
Critical Hdwy	-	-	-	-	6.43	6.23
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.43	-
Follow-up Hdwy	-	-	-	-	3.527	3.327
Pot Cap-1 Maneuver	0	-	-	0	~ 273	~ 734
Stage 1	0	-	-	0	747	-
Stage 2	0	-	-	0	~ 499	-
Platoon blocked, %		-	-			
Mov Cap-1 Maneuver	-	-	-	-	~ 273	~ 734
Mov Cap-2 Maneuver	-	-	-	-	~ 273	-
Stage 1	-	-	-	-	747	-
Stage 2	-	-	-	-	~ 499	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	272
HCM LOS			F

Minor Lane/Major Mvmt	EBT	WBT	SBLn1	SBLn2
Capacity (veh/h)	-	-	273	734
HCM Lane V/C Ratio	-	-	2.077	1.134
HCM Control Delay (s)	-	-	$ 527	98.3
HCM Lane LOS	-	-	F	F
HCM 95th %tile Q(veh)	-	-	41.8	24.8

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	302	109	406	729	57	382
Future Volume (vph)	302	109	406	729	57	382
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.964				0.883	
Flt Protected				0.982	0.994	
Satd. Flow (prot)	1778	0	0	1811	1619	0
Flt Permitted				0.982	0.994	
Satd. Flow (perm)	1778	0	0	1811	1619	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	594			218	1252	
Travel Time (s)	13.5			5.0	28.5	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	302	109	406	729	57	382
Shared Lane Traffic (%)						
Lane Group Flow (vph)	411	0	0	1135	439	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 120.1%		ICU Level of Service H	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	153.8

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	302	109	406	729	57	382
Future Vol, veh/h	302	109	406	729	57	382
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	302	109	406	729	57	382

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	411	0	1898	357
Stage 1	-	-	-	-	357	-
Stage 2	-	-	-	-	1541	-
Critical Hdwy	-	-	4.13	-	6.43	6.23
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.43	-
Follow-up Hdwy	-	-	2.227	-	3.527	3.327
Pot Cap-1 Maneuver	-	-	1142	-	76	685
Stage 1	-	-	-	-	706	-
Stage 2	-	-	-	-	194	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1142	-	~ 31	685
Mov Cap-2 Maneuver	-	-	-	-	~ 31	-
Stage 1	-	-	-	-	706	-
Stage 2	-	-	-	-	78	-

Approach	EB	WB	NB
HCM Control Delay, s	0	3.5	$ 686.3
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	183	-	-	1142	-
HCM Lane V/C Ratio	2.399	-	-	0.356	-
HCM Control Delay (s)	$ 686.3	-	-	9.9	0
HCM Lane LOS	F	-	-	A	A
HCM 95th %tile Q(veh)	36.5	-	-	1.6	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	8	153	60	73	653	60	39	5	73	185	0	29
Future Volume (vph)	8	153	60	73	653	60	39	5	73	185	0	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	75		75	0		0	0		0
Storage Lanes	0		0	1		1	0		1	0		0
Taper Length (ft)	25			100			0			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.963				0.850			0.850		0.982	
Flt Protected		0.998		0.950				0.958			0.959	
Satd. Flow (prot)	0	1773	0	1752	1845	1568	0	1767	1568	0	1737	0
Flt Permitted		0.998		0.950				0.958			0.959	
Satd. Flow (perm)	0	1773	0	1752	1845	1568	0	1767	1568	0	1737	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1306			594			1202			1203	
Travel Time (s)		29.7			13.5			27.3			27.3	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	8	153	60	73	653	60	39	5	73	185	0	29
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	221	0	73	653	60	0	44	73	0	214	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 64.7%		ICU Level of Service C	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	25.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	8	153	60	73	653	60	39	5	73	185	0	29
Future Vol, veh/h	8	153	60	73	653	60	39	5	73	185	0	29
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	75	-	75	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	8	153	60	73	653	60	39	5	73	185	0	29

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	713	0	0	213	0	0	1043	1058	183	1037	1028	653
Stage 1	-	-	-	-	-	-	199	199	-	799	799	-
Stage 2	-	-	-	-	-	-	844	859	-	238	229	-
Critical Hdwy	4.13	-	-	4.13	-	-	7.13	6.53	6.23	7.13	6.53	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	5.53	-	6.13	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.13	5.53	-	6.13	5.53	-
Follow-up Hdwy	2.227	-	-	2.227	-	-	3.527	4.027	3.327	3.527	4.027	3.327
Pot Cap-1 Maneuver	882	-	-	1351	-	-	207	224	857	208	233	466
Stage 1	-	-	-	-	-	-	801	735	-	378	396	-
Stage 2	-	-	-	-	-	-	356	372	-	763	713	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	882	-	-	1351	-	-	185	210	857	~ 178	218	466
Mov Cap-2 Maneuver	-	-	-	-	-	-	185	210	-	~ 178	218	-
Stage 1	-	-	-	-	-	-	793	728	-	374	375	-
Stage 2	-	-	-	-	-	-	316	352	-	686	706	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	0.7	17.2	145.5
HCM LOS			C	F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	188	857	882	-	-	1351	-	-	194
HCM Lane V/C Ratio	0.234	0.085	0.009	-	-	0.054	-	-	1.103
HCM Control Delay (s)	29.9	9.6	9.1	0	-	7.8	-	-	145.5
HCM Lane LOS	D	A	A	A	-	A	-	-	F
HCM 95th %tile Q(veh)	0.9	0.3	0	-	-	0.2	-	-	10.3

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection: 100: TN-2 (US Hwy-41) & Epps Mill Rd

Movement	EB	NB	SB
Directions Served	LR	LT	TR
Maximum Queue (ft)	1572	3582	90
Average Queue (ft)	1572	3290	14
95th Queue (ft)	1572	4307	55
Link Distance (ft)	1572	3548	2191
Upstream Blk Time (%)	100	77	
Queuing Penalty (veh)	770	0	
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 200: Forbus Drive & Epps Mill Rd

Movement	EB	WB	NB	NB	SB
Directions Served	TR	LTR	L	TR	LTR
Maximum Queue (ft)	52	21	23	634	1062
Average Queue (ft)	52	1	1	331	903
95th Queue (ft)	52	7	7	634	1334
Link Distance (ft)	52	1572		1076	1059
Upstream Blk Time (%)	100				67
Queuing Penalty (veh)	852				0
Storage Bay Dist (ft)			75		
Storage Blk Time (%)	100			98	
Queuing Penalty (veh)	119			16	

Intersection: 300: Miller Ln/Driveway & Epps Mill Rd

Movement	EB	WB	NB	NB	SB
Directions Served	TR	LTR	L	TR	LTR
Maximum Queue (ft)	432	54	63	1056	1072
Average Queue (ft)	418	2	4	783	936
95th Queue (ft)	422	18	28	1336	1397
Link Distance (ft)	318	52		1061	1057
Upstream Blk Time (%)	98	0		44	76
Queuing Penalty (veh)	994	0		0	0
Storage Bay Dist (ft)			75		
Storage Blk Time (%)	100		0	97	
Queuing Penalty (veh)	215		0	38	

Intersection: 400: I-24 WB On Ramp & Epps Mill Rd

Movement	EB	WB	NB	NB
Directions Served	LT	TR	LT	R
Maximum Queue (ft)	912	322	74	1040
Average Queue (ft)	893	13	2	1024
95th Queue (ft)	1061	109	25	1056
Link Distance (ft)	912	318		1037
Upstream Blk Time (%)	94	0		95
Queuing Penalty (veh)	1027	2		0
Storage Bay Dist (ft)			50	
Storage Blk Time (%)			3	
Queuing Penalty (veh)			12	

Intersection: 500: Epps Mill Rd & I-24 EB On Loop

Movement	EB
Directions Served	LT
Maximum Queue (ft)	159
Average Queue (ft)	150
95th Queue (ft)	198
Link Distance (ft)	157
Upstream Blk Time (%)	93
Queuing Penalty (veh)	1162
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 600: Epps Mill Rd & I-24 EB Off Ramp

Movement	EB	SB	SB
Directions Served	T	L	R
Maximum Queue (ft)	186	75	1086
Average Queue (ft)	174	67	1037
95th Queue (ft)	251	71	1056
Link Distance (ft)	186		1034
Upstream Blk Time (%)	91		100
Queuing Penalty (veh)	623		0
Storage Bay Dist (ft)		50	
Storage Blk Time (%)		100	0
Queuing Penalty (veh)		830	0

Intersection: 700: Miller Rd & Epps Mill Rd

Movement	EB	WB	NB
Directions Served	TR	LT	LR
Maximum Queue (ft)	524	322	1213
Average Queue (ft)	463	24	1113
95th Queue (ft)	685	157	1521
Link Distance (ft)	506	186	1202
Upstream Blk Time (%)	86	3	85
Queuing Penalty (veh)	355	31	0
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 800: Dollar General Driveway/Capital Way & Epps Mill Rd

Movement	EB	WB	NB	NB	SB
Directions Served	LTR	L	LT	R	LTR
Maximum Queue (ft)	1286	25	1163	1175	1158
Average Queue (ft)	989	2	352	714	901
95th Queue (ft)	1777	12	1090	1410	1574
Link Distance (ft)	1272		1168	1168	1158
Upstream Blk Time (%)	65		15	30	65
Queuing Penalty (veh)	0		0	0	0
Storage Bay Dist (ft)		75			
Storage Blk Time (%)					
Queuing Penalty (veh)					

Network Summary

Network wide Queuing Penalty: 7046

Lane Group	EBL	EBR	NBL	NBT	NBR	SBL	SBT	SBR	SWL	SWR
Lane Configurations										
Traffic Volume (vph)	0	0	0	0	156	0	298	0	0	0
Future Volume (vph)	0	0	0	0	156	0	298	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	0		250	0		400	0	0
Storage Lanes	0	0	0		0	0		1	0	0
Taper Length (ft)	100		100			100			100	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	1.00
Frt					0.865					
Flt Protected										
Satd. Flow (prot)	0	0	0	0	1596	0	3505	0	0	0
Flt Permitted										
Satd. Flow (perm)	0	0	0	0	1596	0	3505	0	0	0
Link Speed (mph)	30			30			30		30	
Link Distance (ft)	223			492			1603		744	
Travel Time (s)	5.1			11.2			36.4		16.9	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	0	0	156	0	298	0	0	0
Shared Lane Traffic (%)										
Lane Group Flow (vph)	0	0	0	0	156	0	298	0	0	0
Enter Blocked Intersection	No	No	No	No	Yes	No	Yes	No	No	No
Lane Alignment	Left	Right	Left	Left	Right	Left	Left	Right	Left	Right
Median Width(ft)	0			0			0		0	
Link Offset(ft)	0			0			0		0	
Crosswalk Width(ft)	16			16			16		16	
Two way Left Turn Lane										
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	60	60	60		9	15		60	15	60
Sign Control	Stop			Free			Free		Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 13.0%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	5.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	125	51	177	258	88	124
Future Vol, veh/h	125	51	177	258	88	124
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	500	0	150	-	-	150
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	3	1	1	2	2	1
Mvmt Flow	125	51	177	258	88	124

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	700	88	212	0	-	0
Stage 1	88	-	-	-	-	-
Stage 2	612	-	-	-	-	-
Critical Hdwy	6.43	6.21	4.11	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.309	2.209	-	-	-
Pot Cap-1 Maneuver	404	973	1364	-	-	-
Stage 1	933	-	-	-	-	-
Stage 2	539	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	351	973	1364	-	-	-
Mov Cap-2 Maneuver	351	-	-	-	-	-
Stage 1	812	-	-	-	-	-
Stage 2	539	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	17.4	3.3	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1364	-	351	973	-	-
HCM Lane V/C Ratio	0.13	-	0.356	0.052	-	-
HCM Control Delay (s/veh)	8	-	20.8	8.9	-	-
HCM Lane LOS	A	-	C	A	-	-
HCM 95th %tile Q (veh)	0.4	-	1.6	0.2	-	-

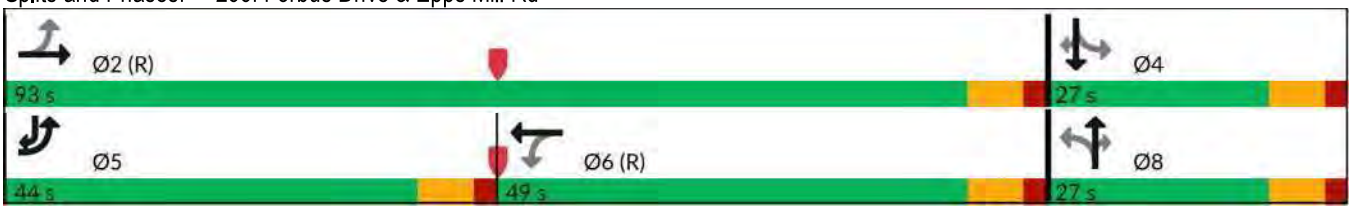
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	183	151	15	7	201	37	2	0	2	37	0	197
Future Volume (vph)	183	151	15	7	201	37	2	0	2	37	0	197
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	215		0	200		0	100		100	100		100
Storage Lanes	1		0	1		0	0		1	0		1
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.986			0.977				0.850			0.850
Flt Protected	0.950			0.950				0.950			0.950	
Satd. Flow (prot)	1410	1808	0	1805	1778	0	0	1805	1615	0	1787	1016
Flt Permitted	0.576			0.652				0.733			0.757	
Satd. Flow (perm)	855	1808	0	1239	1778	0	0	1393	1615	0	1424	1016
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		11			9				100			197
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		760			1553			1296			992	
Travel Time (s)		17.3			35.3			29.5			22.5	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	28%	4%	0%	0%	5%	1%	0%	0%	0%	1%	0%	59%
Adj. Flow (vph)	183	151	15	7	201	37	2	0	2	37	0	197
Shared Lane Traffic (%)												
Lane Group Flow (vph)	183	166	0	7	238	0	0	2	2	0	37	197
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		Yes			Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		Perm	NA		Perm	NA	Perm	Perm	NA	pm+ov
Protected Phases	5	2			6			8			4	5

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	2			6			8		8	4		4
Detector Phase	5	2		6	6		8	8	8	4	4	5
Switch Phase												
Minimum Initial (s)	7.0	10.0		10.0	10.0		10.0	10.0	10.0	10.0	10.0	7.0
Minimum Split (s)	14.0	17.0		25.0	25.0		25.0	25.0	25.0	17.0	17.0	14.0
Total Split (s)	44.0	93.0		49.0	49.0		27.0	27.0	27.0	27.0	27.0	44.0
Total Split (%)	36.7%	77.5%		40.8%	40.8%		22.5%	22.5%	22.5%	22.5%	22.5%	36.7%
Maximum Green (s)	37.0	86.0		42.0	42.0		20.0	20.0	20.0	20.0	20.0	37.0
Yellow Time (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0		-2.0	-2.0			-2.0	-2.0		-2.0	-2.0
Total Lost Time (s)	5.0	5.0		5.0	5.0			5.0	5.0		5.0	5.0
Lead/Lag	Lead			Lag	Lag							Lead
Lead-Lag Optimize?	Yes			Yes	Yes							Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Max		C-Max	C-Max		None	None	None	None	None	None
Walk Time (s)				7.0	7.0		7.0	7.0	7.0			
Flash Dont Walk (s)				11.0	11.0		11.0	11.0	11.0			
Pedestrian Calls (#/hr)				0	0		0	0	0			
Act Effct Green (s)	104.4	106.4		88.6	88.6			12.4	12.4		12.4	21.4
Actuated g/C Ratio	0.87	0.89		0.74	0.74			0.10	0.10		0.10	0.18
v/c Ratio	0.23	0.10		0.00	0.18			0.01	0.00		0.25	0.57
Control Delay (s/veh)	2.8	1.9		6.8	6.5			48.0	0.0		53.8	12.0
Queue Delay	0.0	0.0		0.0	0.0			0.0	0.0		0.0	0.0
Total Delay (s/veh)	2.8	1.9		6.8	6.5			48.0	0.0		53.8	12.0
LOS	A	A		A	A			D	A		D	B
Approach Delay (s/veh)		2.4			6.5			24.0			18.6	
Approach LOS		A			A			C			B	
90th %ile Green (s)	11.4	93.9		75.5	75.5		12.1	12.1	12.1	12.1	12.1	11.4
90th %ile Term Code	Gap	Coord		Coord	Coord		Hold	Hold	Hold	Gap	Gap	Gap
70th %ile Green (s)	9.6	96.0		79.4	79.4		10.0	10.0	10.0	10.0	10.0	9.6
70th %ile Term Code	Gap	Coord		Coord	Coord		Hold	Hold	Hold	Min	Min	Gap
50th %ile Green (s)	8.7	96.0		80.3	80.3		10.0	10.0	10.0	10.0	10.0	8.7
50th %ile Term Code	Gap	Coord		Coord	Coord		Hold	Hold	Hold	Min	Min	Gap
30th %ile Green (s)	7.0	113.0		99.0	99.0		0.0	0.0	0.0	0.0	0.0	7.0
30th %ile Term Code	Min	Coord		Coord	Coord		Skip	Skip	Skip	Skip	Skip	Min
10th %ile Green (s)	7.0	113.0		99.0	99.0		0.0	0.0	0.0	0.0	0.0	7.0
10th %ile Term Code	Min	Coord		Coord	Coord		Skip	Skip	Skip	Skip	Skip	Min
Stops (vph)	38	31		3	82			3	0		36	26
Fuel Used(gal)	1	1		0	4			0	0		1	2
CO Emissions (g/hr)	98	85		8	255			4	1		62	150
NOx Emissions (g/hr)	19	17		2	50			1	0		12	29
VOC Emissions (g/hr)	23	20		2	59			1	0		14	35
Dilemma Vehicles (#)	0	0		0	0			0	0		0	0
Queue Length 50th (ft)	29	24		2	70			1	0		27	0
Queue Length 95th (ft)	62	49		8	121			10	0		61	63
Internal Link Dist (ft)		680			1473			1216			912	
Turn Bay Length (ft)	215			200					100			100
Base Capacity (vph)	923	1604		915	1315			255	377		261	535

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Starvation Cap Reductn	0	0		0	0			0	0		0	0
Spillback Cap Reductn	0	0		0	0			0	0		0	0
Storage Cap Reductn	0	0		0	0			0	0		0	0
Reduced v/c Ratio	0.20	0.10		0.01	0.18			0.01	0.01		0.14	0.37

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 35 (29%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green			
Natural Cycle: 65			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.58			
Intersection Signal Delay (s/veh): 8.3		Intersection LOS: A	
Intersection Capacity Utilization 45.9%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 200: Forbus Drive & Epps Mill Rd



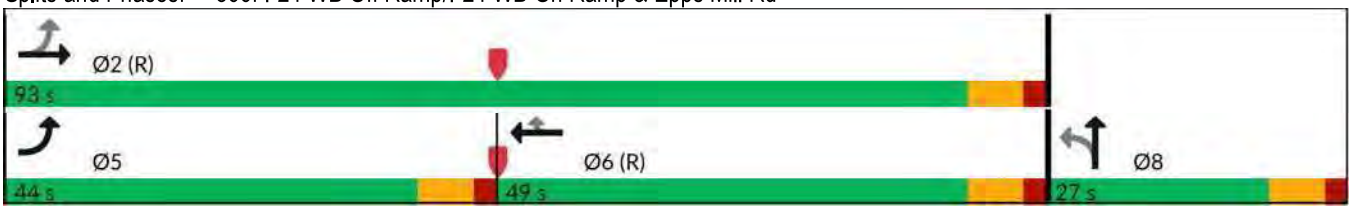
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	349	216	0	0	178	222	22	0	133	0	0	0
Future Volume (vph)	349	216	0	0	178	222	22	0	133	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	500		0	0		250	0		265	0		0
Storage Lanes	1		0	0		1	0		1	0		0
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt						0.850			0.850			
Flt Protected	0.950							0.950				
Satd. Flow (prot)	1736	1667	0	0	1667	1442	0	1752	1568	0	0	0
Flt Permitted	0.593							0.950				
Satd. Flow (perm)	1083	1667	0	0	1667	1442	0	1752	1568	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						222			164			
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1165			760			632			307	
Travel Time (s)		26.5			17.3			14.4			7.0	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	4%	14%	0%	0%	14%	12%	3%	3%	3%	3%	3%	3%
Adj. Flow (vph)	349	216	0	0	178	222	22	0	133	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	349	216	0	0	178	222	0	22	133	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane					Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2			2	1	1	2	1			
Detector Template	Left	Thru			Thru	Right	Left	Thru	Right			
Leading Detector (ft)	20	100			100	20	20	100	20			
Trailing Detector (ft)	0	0			0	0	0	0	0			
Detector 1 Position(ft)	0	0			0	0	0	0	0			
Detector 1 Size(ft)	20	6			6	20	20	6	20			
Detector 1 Type	Cl+Ex	Cl+Ex			Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex			
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0	0.0	0.0	0.0	0.0			
Detector 1 Queue (s)	0.0	0.0			0.0	0.0	0.0	0.0	0.0			
Detector 1 Delay (s)	0.0	0.0			0.0	0.0	0.0	0.0	0.0			
Detector 2 Position(ft)		94			94			94				
Detector 2 Size(ft)		6			6			6				
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				
Turn Type	pm+pt	NA			NA	Perm	Perm	NA	Free			
Protected Phases	5	2			6			8				

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	2					6	8		Free			
Detector Phase	5	2			6	6	8	8				
Switch Phase												
Minimum Initial (s)	7.0	10.0			10.0	10.0	10.0	10.0				
Minimum Split (s)	14.0	25.0			25.0	25.0	25.0	25.0				
Total Split (s)	44.0	93.0			49.0	49.0	27.0	27.0				
Total Split (%)	36.7%	77.5%			40.8%	40.8%	22.5%	22.5%				
Maximum Green (s)	37.0	86.0			42.0	42.0	20.0	20.0				
Yellow Time (s)	5.0	5.0			5.0	5.0	5.0	5.0				
All-Red Time (s)	2.0	2.0			2.0	2.0	2.0	2.0				
Lost Time Adjust (s)	-2.0	-2.0			-2.0	-2.0		-2.0				
Total Lost Time (s)	5.0	5.0			5.0	5.0		5.0				
Lead/Lag	Lead				Lag	Lag						
Lead-Lag Optimize?	Yes				Yes	Yes						
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0				
Recall Mode	None	C-Max			C-Max	C-Max	Max	Max				
Walk Time (s)					7.0	7.0	7.0	7.0				
Flash Dont Walk (s)					11.0	11.0	11.0	11.0				
Pedestrian Calls (#/hr)					0	0	0	0				
Act Effct Green (s)	88.0	88.0			67.3	67.3		22.0	120.0			
Actuated g/C Ratio	0.73	0.73			0.56	0.56		0.18	1.00			
v/c Ratio	0.39	0.17			0.19	0.24		0.06	0.08			
Control Delay (s/veh)	5.3	4.2			12.6	1.4		41.3	0.1			
Queue Delay	0.0	0.0			0.0	0.0		0.0	0.0			
Total Delay (s/veh)	5.3	4.2			12.6	1.4		41.3	0.1			
LOS	A	A			B	A		D	A			
Approach Delay (s/veh)		4.9			6.4			6.0				
Approach LOS		A			A			A				
90th %ile Green (s)	17.7	86.0			61.3	61.3	20.0	20.0				
90th %ile Term Code	Gap	Coord			Coord	Coord	MaxR	MaxR				
70th %ile Green (s)	15.1	86.0			63.9	63.9	20.0	20.0				
70th %ile Term Code	Gap	Coord			Coord	Coord	MaxR	MaxR				
50th %ile Green (s)	13.5	86.0			65.5	65.5	20.0	20.0				
50th %ile Term Code	Gap	Coord			Coord	Coord	MaxR	MaxR				
30th %ile Green (s)	12.0	86.0			67.0	67.0	20.0	20.0				
30th %ile Term Code	Gap	Coord			Coord	Coord	MaxR	MaxR				
10th %ile Green (s)	10.0	86.0			69.0	69.0	20.0	20.0				
10th %ile Term Code	Gap	Coord			Coord	Coord	MaxR	MaxR				
Stops (vph)	73	44			73	6		20	0			
Fuel Used(gal)	4	2			2	1		0	1			
CO Emissions (g/hr)	276	167			134	99		28	46			
NOx Emissions (g/hr)	54	33			26	19		5	9			
VOC Emissions (g/hr)	64	39			31	23		7	11			
Dilemma Vehicles (#)	0	0			0	0		0	0			
Queue Length 50th (ft)	51	30			61	0		14	0			
Queue Length 95th (ft)	92	59			81	13		38	0			
Internal Link Dist (ft)		1085			680			552			227	
Turn Bay Length (ft)	500					250			265			
Base Capacity (vph)	1006	1222			935	906		321	1568			

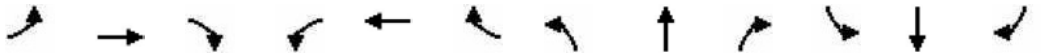
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Starvation Cap Reductn	0	0			0	0		0	0			
Spillback Cap Reductn	0	0			0	0		0	0			
Storage Cap Reductn	0	0			0	0		0	0			
Reduced v/c Ratio	0.35	0.18			0.19	0.25		0.07	0.08			

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 118 (98%), Referenced to phase 2:EBTL and 6:WBT, Start of Green			
Natural Cycle: 65			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.40			
Intersection Signal Delay (s/veh): 5.6		Intersection LOS: A	
Intersection Capacity Utilization 53.9%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 300: I-24 WB Off Ramp/I-24 WB On Ramp & Epps Mill Rd



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	40	268	42	38	66	96	25	20	136	161	50	87
Future Volume (vph)	40	268	42	38	66	96	25	20	136	161	50	87
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	160		160	150		0	185		185	0		250
Storage Lanes	1		0	1		0	0		1	1		1
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.980			0.911			0.869				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1752	1854	0	1752	1513	0	1805	1396	0	1570	1845	1538
Flt Permitted	0.631			0.467			0.724			0.545		
Satd. Flow (perm)	1164	1854	0	861	1513	0	1376	1396	0	900	1845	1538
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		8			76			136				87
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		559			1165			1215			492	
Travel Time (s)		12.7			26.5			27.6			11.2	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	3%	0%	3%	3%	12%	16%	0%	0%	21%	15%	3%	5%
Adj. Flow (vph)	40	268	42	38	66	96	25	20	136	161	50	87
Shared Lane Traffic (%)												
Lane Group Flow (vph)	40	310	0	38	162	0	25	156	0	161	50	87
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100		20	100	20
Trailing Detector (ft)	0	0		0	0		0	0		0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		pm+pt	NA	Perm
Protected Phases		2			6			4		3	8	

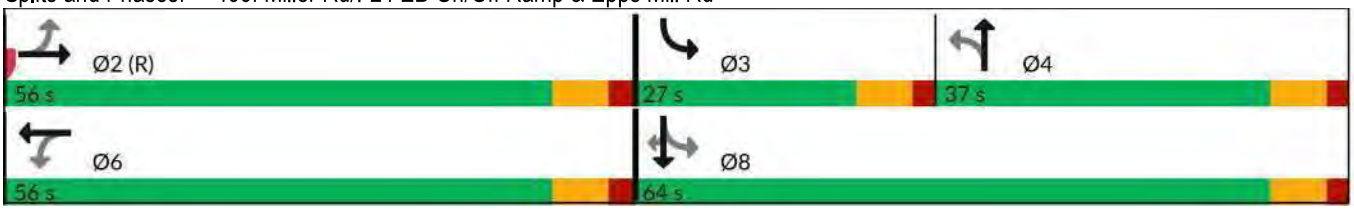


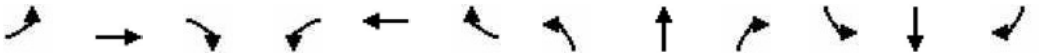
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	2			6			4			8		8
Detector Phase	2	2		6	6		4	4		3	8	8
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0		7.0	10.0	10.0
Minimum Split (s)	17.0	17.0		17.0	17.0		25.0	25.0		14.0	17.0	17.0
Total Split (s)	56.0	56.0		56.0	56.0		37.0	37.0		27.0	64.0	64.0
Total Split (%)	46.7%	46.7%		46.7%	46.7%		30.8%	30.8%		22.5%	53.3%	53.3%
Maximum Green (s)	49.0	49.0		49.0	49.0		30.0	30.0		20.0	57.0	57.0
Yellow Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	5.0
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0		-2.0	-2.0		-2.0	-2.0		-2.0	-2.0	-2.0
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	5.0
Lead/Lag							Lag	Lag		Lead		
Lead-Lag Optimize?							Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	C-Max	C-Max		Max	Max		Max	Max		None	Max	Max
Walk Time (s)							7.0	7.0				
Flash Dont Walk (s)							11.0	11.0				
Pedestrian Calls (#/hr)							0	0				
Act Effct Green (s)	51.0	51.0		51.0	51.0		39.5	39.5		59.0	59.0	59.0
Actuated g/C Ratio	0.43	0.43		0.43	0.43		0.33	0.33		0.49	0.49	0.49
v/c Ratio	0.08	0.39		0.10	0.23		0.05	0.28		0.30	0.05	0.10
Control Delay (s/veh)	21.2	24.9		15.4	6.5		29.7	8.6		19.0	16.2	3.6
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay (s/veh)	21.2	24.9		15.4	6.5		29.7	8.6		19.0	16.2	3.6
LOS	C	C		B	A		C	A		B	B	A
Approach Delay (s/veh)		24.6			8.3			11.6			14.1	
Approach LOS		C			A			B			B	
90th %ile Green (s)	49.0	49.0		49.0	49.0		33.0	33.0		17.0	57.0	57.0
90th %ile Term Code	Coord	Coord		Coord	Coord		MaxR	MaxR		Gap	MaxR	MaxR
70th %ile Green (s)	49.0	49.0		49.0	49.0		35.8	35.8		14.2	57.0	57.0
70th %ile Term Code	Coord	Coord		Coord	Coord		MaxR	MaxR		Gap	MaxR	MaxR
50th %ile Green (s)	49.0	49.0		49.0	49.0		37.6	37.6		12.4	57.0	57.0
50th %ile Term Code	Coord	Coord		Coord	Coord		MaxR	MaxR		Gap	MaxR	MaxR
30th %ile Green (s)	49.0	49.0		49.0	49.0		39.3	39.3		10.7	57.0	57.0
30th %ile Term Code	Coord	Coord		Coord	Coord		MaxR	MaxR		Gap	MaxR	MaxR
10th %ile Green (s)	49.0	49.0		49.0	49.0		41.6	41.6		8.4	57.0	57.0
10th %ile Term Code	Coord	Coord		Coord	Coord		MaxR	MaxR		Gap	MaxR	MaxR
Stops (vph)	24	203		11	27		18	28		88	25	10
Fuel Used(gal)	0	4		1	2		0	2		2	0	0
CO Emissions (g/hr)	34	283		37	128		34	133		121	35	32
NOx Emissions (g/hr)	7	55		7	25		7	26		24	7	6
VOC Emissions (g/hr)	8	66		9	30		8	31		28	8	7
Dilemma Vehicles (#)	0	0		0	0		0	0		0	0	0
Queue Length 50th (ft)	18	158		8	6		13	11		68	20	0
Queue Length 95th (ft)	41	234		22	29		36	64		113	42	27
Internal Link Dist (ft)		479			1085			1135			412	
Turn Bay Length (ft)	160			150			185					250
Base Capacity (vph)	494	792		365	686		452	550		565	907	800

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Starvation Cap Reductn	0	0		0	0		0	0		0	0	0
Spillback Cap Reductn	0	0		0	0		0	0		0	0	0
Storage Cap Reductn	0	0		0	0		0	0		0	0	0
Reduced v/c Ratio	0.08	0.39		0.10	0.24		0.06	0.28		0.28	0.06	0.11

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 0 (0%), Referenced to phase 2:EBTL, Start of Green			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.39			
Intersection Signal Delay (s/veh): 16.1		Intersection LOS: B	
Intersection Capacity Utilization 60.0%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 400: Miller Rd/I-24 EB On/Off Ramp & Epps Mill Rd





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	11	320	6	3	139	36	0	2	5	25	0	2
Future Volume (vph)	11	320	6	3	139	36	0	2	5	25	0	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	70		0	60		0	0		0	0		0
Storage Lanes	1		0	1		0	0		1	0		0
Taper Length (ft)	150			100			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.997			0.969			0.904			0.990	
Flt Protected	0.950			0.950							0.956	
Satd. Flow (prot)	1787	1823	0	1805	1737	0	0	1718	0	0	1303	0
Flt Permitted	0.950			0.950							0.956	
Satd. Flow (perm)	1787	1823	0	1805	1737	0	0	1718	0	0	1303	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1306			559			1202			1203	
Travel Time (s)		29.7			12.7			27.3			27.3	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	4%	0%	0%	7%	2%	0%	0%	0%	41%	0%	0%
Adj. Flow (vph)	11	320	6	3	139	36	0	2	5	25	0	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	11	326	0	3	175	0	0	7	0	0	27	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 32.0%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	11	320	6	3	139	36	0	2	5	25	0	2
Future Vol, veh/h	11	320	6	3	139	36	0	2	5	25	0	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	70	-	-	60	-	-	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	1	4	0	0	7	2	0	0	0	41	0	0
Mvmt Flow	11	320	6	3	139	36	0	2	5	25	0	2

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	175	0	0	326	0	0	509	526	323	512	511	157
Stage 1	-	-	-	-	-	-	345	345	-	163	163	-
Stage 2	-	-	-	-	-	-	164	181	-	349	348	-
Critical Hdwy	4.11	-	-	4.1	-	-	7.1	6.5	6.2	7.51	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.51	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.51	5.5	-
Follow-up Hdwy	2.209	-	-	2.2	-	-	3.5	4	3.3	3.869	4	3.3
Pot Cap-1 Maneuver	1407	-	-	1245	-	-	478	460	723	416	469	894
Stage 1	-	-	-	-	-	-	675	640	-	755	767	-
Stage 2	-	-	-	-	-	-	843	754	-	594	638	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1407	-	-	1245	-	-	473	455	723	409	464	894
Mov Cap-2 Maneuver	-	-	-	-	-	-	473	455	-	409	464	-
Stage 1	-	-	-	-	-	-	670	635	-	749	765	-
Stage 2	-	-	-	-	-	-	839	752	-	583	633	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	0.2	0.1	10.9	14
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	619	1407	-	-	1245	-	-	426
HCM Lane V/C Ratio	0.011	0.008	-	-	0.002	-	-	0.063
HCM Control Delay (s/veh)	10.9	7.6	-	-	7.9	-	-	14
HCM Lane LOS	B	A	-	-	A	-	-	B
HCM 95th %tile Q (veh)	0	0	-	-	0	-	-	0.2

Intersection: 2: I-24 EB On/Off Ramp/I-24 EB Off Ramp & I-24 EB On Loop

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 100: TN-2 (US Hwy-41) & Epps Mill Rd

Movement	EB	EB	NB	NB	SB	SB
Directions Served	L	R	L	T	T	R
Maximum Queue (ft)	197	41	118	139	54	54
Average Queue (ft)	84	14	49	71	24	15
95th Queue (ft)	147	31	95	125	55	41
Link Distance (ft)		1460		3604	2195	
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)	500		150			150
Storage Blk Time (%)				0		
Queuing Penalty (veh)				0		

Intersection: 200: Forbus Drive & Epps Mill Rd

Movement	EB	EB	WB	WB	NB	SB	SB
Directions Served	L	TR	L	TR	R	LT	R
Maximum Queue (ft)	154	103	27	151	29	74	166
Average Queue (ft)	53	15	2	47	4	32	89
95th Queue (ft)	111	54	12	109	19	58	140
Link Distance (ft)		692		1460		957	
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)	215		200		100		100
Storage Blk Time (%)							4
Queuing Penalty (veh)							2

Intersection: 300: I-24 WB Off Ramp/I-24 WB On Ramp & Epps Mill Rd

Movement	EB	EB	WB	NB
Directions Served	L	T	T	LT
Maximum Queue (ft)	228	164	230	50
Average Queue (ft)	134	55	99	17
95th Queue (ft)	212	112	198	50
Link Distance (ft)		1107	692	595
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	500			
Storage Blk Time (%)			0	
Queuing Penalty (veh)			0	

Intersection: 400: Miller Rd/I-24 EB On/Off Ramp & Epps Mill Rd

Movement	EB	EB	WB	WB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	TR	L	TR	L	T	R
Maximum Queue (ft)	260	326	102	95	183	200	196	73	65
Average Queue (ft)	39	141	29	36	20	76	121	19	32
95th Queue (ft)	117	254	69	74	73	161	192	56	55
Link Distance (ft)		482		1107	1173		434	434	
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	160		150			185			250
Storage Blk Time (%)		8			0	1			
Queuing Penalty (veh)		3			0	0			

Intersection: 500: Dollar General Driveway/Capital Way & Epps Mill Rd

Movement	EB	WB	NB	SB
Directions Served	L	L	LTR	LTR
Maximum Queue (ft)	28	28	31	78
Average Queue (ft)	2	1	5	26
95th Queue (ft)	13	9	23	65
Link Distance (ft)			1166	1164
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	70	60		
Storage Blk Time (%)				
Queuing Penalty (veh)				

Network Summary

Network wide Queuing Penalty: 5

Lane Group	EBL	EBR	NBL	NBT	NBR	SBL	SBT	SBR	SWL	SWR
Lane Configurations										
Traffic Volume (vph)	0	0	0	0	167	0	538	0	0	0
Future Volume (vph)	0	0	0	0	167	0	538	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	0		250	0		400	0	0
Storage Lanes	0	0	0		0	0		1	0	0
Taper Length (ft)	100		100			100			100	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	1.00
Frt					0.865					
Flt Protected										
Satd. Flow (prot)	0	0	0	0	1596	0	3505	0	0	0
Flt Permitted										
Satd. Flow (perm)	0	0	0	0	1596	0	3505	0	0	0
Link Speed (mph)	30			30			30		30	
Link Distance (ft)	223			492			1603		744	
Travel Time (s)	5.1			11.2			36.4		16.9	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	0	0	167	0	538	0	0	0
Shared Lane Traffic (%)										
Lane Group Flow (vph)	0	0	0	0	167	0	538	0	0	0
Enter Blocked Intersection	No	No	No	No	Yes	No	Yes	No	No	No
Lane Alignment	Left	Right	Left	Left	Right	Left	Left	Right	Left	Right
Median Width(ft)	0			0			0		0	
Link Offset(ft)	0			0			0		0	
Crosswalk Width(ft)	16			16			16		16	
Two way Left Turn Lane										
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15		60	60		9	60	9
Sign Control	Stop			Free			Free		Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 18.2%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	147	147	79	120	347	162
Future Vol, veh/h	147	147	79	120	347	162
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	500	0	150	-	-	150
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	3	1	1	2	2	1
Mvmt Flow	147	147	79	120	347	162

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	625	347	509	0	-	0
Stage 1	347	-	-	-	-	-
Stage 2	278	-	-	-	-	-
Critical Hdwy	6.43	6.21	4.11	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.309	2.209	-	-	-
Pot Cap-1 Maneuver	447	698	1061	-	-	-
Stage 1	713	-	-	-	-	-
Stage 2	767	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	414	698	1061	-	-	-
Mov Cap-2 Maneuver	414	-	-	-	-	-
Stage 1	660	-	-	-	-	-
Stage 2	767	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	14.9	3.4	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1061	-	414	698	-	-
HCM Lane V/C Ratio	0.074	-	0.355	0.211	-	-
HCM Control Delay (s/veh)	8.7	-	18.4	11.5	-	-
HCM Lane LOS	A	-	C	B	-	-
HCM 95th %tile Q (veh)	0.2	-	1.6	0.8	-	-

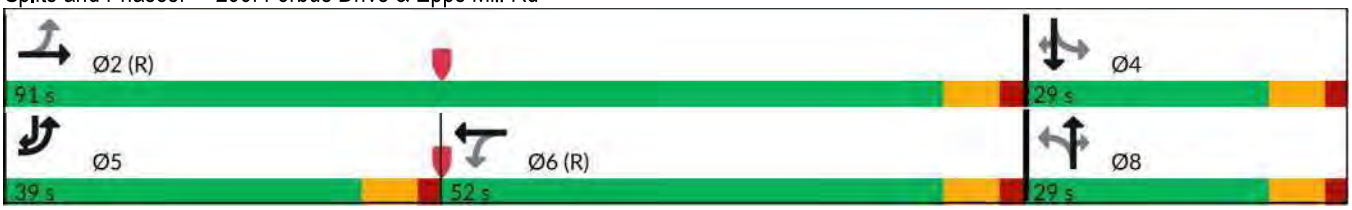
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	222	249	5	6	253	23	21	0	20	35	0	203
Future Volume (vph)	222	249	5	6	253	23	21	0	20	35	0	203
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	215		0	200		0	100		100	100		100
Storage Lanes	1		0	1		0	0		1	0		1
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.997			0.987				0.850			0.850
Flt Protected	0.950			0.950				0.950			0.950	
Satd. Flow (prot)	1467	1858	0	1805	1824	0	0	1805	1615	0	1752	1062
Flt Permitted	0.549			0.602				0.734			0.744	
Satd. Flow (perm)	848	1858	0	1144	1824	0	0	1395	1615	0	1372	1062
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2			4				100			203
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		760			1553			1296			992	
Travel Time (s)		17.3			35.3			29.5			22.5	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	23%	2%	0%	0%	3%	1%	0%	0%	0%	3%	0%	52%
Adj. Flow (vph)	222	249	5	6	253	23	21	0	20	35	0	203
Shared Lane Traffic (%)												
Lane Group Flow (vph)	222	254	0	6	276	0	0	21	20	0	35	203
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		Yes			Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		Perm	NA		Perm	NA	Perm	Perm	NA	pm+ov
Protected Phases	5	2			6			8			4	5

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	2			6			8		8	4		4
Detector Phase	5	2		6	6		8	8	8	4	4	5
Switch Phase												
Minimum Initial (s)	7.0	10.0		10.0	10.0		10.0	10.0	10.0	10.0	10.0	7.0
Minimum Split (s)	14.0	17.0		25.0	25.0		17.0	17.0	17.0	25.0	25.0	14.0
Total Split (s)	39.0	91.0		52.0	52.0		29.0	29.0	29.0	29.0	29.0	39.0
Total Split (%)	32.5%	75.8%		43.3%	43.3%		24.2%	24.2%	24.2%	24.2%	24.2%	32.5%
Maximum Green (s)	32.0	84.0		45.0	45.0		22.0	22.0	22.0	22.0	22.0	32.0
Yellow Time (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0		-2.0	-2.0			-2.0	-2.0		-2.0	-2.0
Total Lost Time (s)	5.0	5.0		5.0	5.0			5.0	5.0		5.0	5.0
Lead/Lag	Lead			Lag	Lag							Lead
Lead-Lag Optimize?	Yes			Yes	Yes							Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Max		C-Max	C-Max		None	None	None	None	None	None
Walk Time (s)				7.0	7.0					7.0	7.0	
Flash Dont Walk (s)				11.0	11.0					11.0	11.0	
Pedestrian Calls (#/hr)				0	0					0	0	
Act Effct Green (s)	104.4	106.4		88.2	88.2			12.4	12.4		12.4	21.8
Actuated g/C Ratio	0.87	0.89		0.74	0.74			0.10	0.10		0.10	0.18
v/c Ratio	0.27	0.15		0.00	0.20			0.14	0.07		0.24	0.56
Control Delay (s/veh)	2.6	1.7		6.8	6.0			51.1	0.6		53.9	11.2
Queue Delay	0.0	0.0		0.0	0.0			0.0	0.0		0.0	0.0
Total Delay (s/veh)	2.6	1.7		6.8	6.0			51.1	0.6		53.9	11.2
LOS	A	A		A	A			D	A		D	B
Approach Delay (s/veh)		2.2			6.0			26.5			17.5	
Approach LOS		A			A			C			B	
90th %ile Green (s)	12.4	93.9		74.5	74.5		12.1	12.1	12.1	12.1	12.1	12.4
90th %ile Term Code	Gap	Coord		Coord	Coord		Hold	Hold	Hold	Gap	Gap	Gap
70th %ile Green (s)	10.3	96.0		78.7	78.7		10.0	10.0	10.0	10.0	10.0	10.3
70th %ile Term Code	Gap	Coord		Coord	Coord		Min	Min	Min	Min	Min	Gap
50th %ile Green (s)	9.4	96.0		79.6	79.6		10.0	10.0	10.0	10.0	10.0	9.4
50th %ile Term Code	Gap	Coord		Coord	Coord		Min	Min	Min	Min	Min	Gap
30th %ile Green (s)	7.0	113.0		99.0	99.0		0.0	0.0	0.0	0.0	0.0	7.0
30th %ile Term Code	Min	Coord		Coord	Coord		Skip	Skip	Skip	Skip	Skip	Min
10th %ile Green (s)	7.0	113.0		99.0	99.0		0.0	0.0	0.0	0.0	0.0	7.0
10th %ile Term Code	Min	Coord		Coord	Coord		Skip	Skip	Skip	Skip	Skip	Min
Stops (vph)	37	35		2	75			20	0		32	25
Fuel Used(gal)	2	2		0	4			1	0		1	2
CO Emissions (g/hr)	115	125		6	286			38	14		58	152
NOx Emissions (g/hr)	22	24		1	56			7	3		11	30
VOC Emissions (g/hr)	27	29		1	66			9	3		13	35
Dilemma Vehicles (#)	0	0		0	0			0	0		0	0
Queue Length 50th (ft)	8	9		1	63			15	0		25	0
Queue Length 95th (ft)	40	45		6	103			41	0		58	62
Internal Link Dist (ft)		680			1473			1216			912	
Turn Bay Length (ft)	215			200					100			100
Base Capacity (vph)	913	1647		840	1340			279	403		274	522

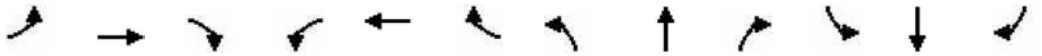
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Starvation Cap Reductn	0	0		0	0			0	0		0	0
Spillback Cap Reductn	0	0		0	0			0	0		0	0
Storage Cap Reductn	0	0		0	0			0	0		0	0
Reduced v/c Ratio	0.24	0.15		0.01	0.21			0.08	0.05		0.13	0.39

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 45 (38%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green			
Natural Cycle: 65			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.57			
Intersection Signal Delay (s/veh): 7.7		Intersection LOS: A	
Intersection Capacity Utilization 48.1%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 200: Forbus Drive & Epps Mill Rd



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	182	326	0	0	265	212	37	8	150	0	0	0
Future Volume (vph)	182	326	0	0	265	212	37	8	150	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	500		0	0		250	0		265	0		0
Storage Lanes	1		0	0		1	0		1	0		0
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt						0.850			0.850			
Flt Protected	0.950							0.961				
Satd. Flow (prot)	1752	1845	0	0	1727	1429	0	1754	1392	0	0	0
Flt Permitted	0.572							0.961				
Satd. Flow (perm)	1055	1845	0	0	1727	1429	0	1754	1392	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						212			150			
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1165			760			632			307	
Travel Time (s)		26.5			17.3			14.4			7.0	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	3%	3%	3%	0%	10%	13%	5%	0%	16%	3%	3%	3%
Adj. Flow (vph)	182	326	0	0	265	212	37	8	150	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	182	326	0	0	265	212	0	45	150	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane					Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	60		60	60		60	60		60	60		60
Number of Detectors	1	2			2	1	1	2	1			
Detector Template	Left	Thru			Thru	Right	Left	Thru	Right			
Leading Detector (ft)	20	100			100	20	20	100	20			
Trailing Detector (ft)	0	0			0	0	0	0	0			
Detector 1 Position(ft)	0	0			0	0	0	0	0			
Detector 1 Size(ft)	20	6			6	20	20	6	20			
Detector 1 Type	Cl+Ex	Cl+Ex			Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex			
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0	0.0	0.0	0.0	0.0			
Detector 1 Queue (s)	0.0	0.0			0.0	0.0	0.0	0.0	0.0			
Detector 1 Delay (s)	0.0	0.0			0.0	0.0	0.0	0.0	0.0			
Detector 2 Position(ft)		94			94			94				
Detector 2 Size(ft)		6			6			6				
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				
Turn Type	pm+pt	NA			NA	Free	Perm	NA	Perm			
Protected Phases	5	2			6			8				

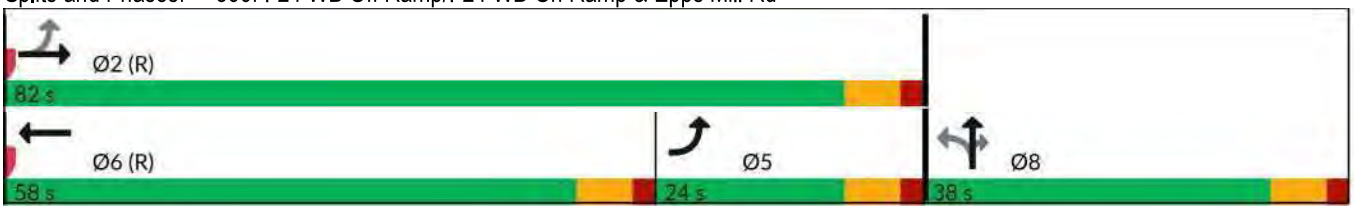


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	2					Free	8		8			
Detector Phase	5	2			6		8	8	8			
Switch Phase												
Minimum Initial (s)	7.0	10.0			10.0		10.0	10.0	10.0			
Minimum Split (s)	14.0	25.0			25.0		25.0	25.0	25.0			
Total Split (s)	24.0	82.0			58.0		38.0	38.0	38.0			
Total Split (%)	20.0%	68.3%			48.3%		31.7%	31.7%	31.7%			
Maximum Green (s)	17.0	75.0			51.0		31.0	31.0	31.0			
Yellow Time (s)	5.0	5.0			5.0		5.0	5.0	5.0			
All-Red Time (s)	2.0	2.0			2.0		2.0	2.0	2.0			
Lost Time Adjust (s)	-2.0	-2.0			-2.0			-2.0	-2.0			
Total Lost Time (s)	5.0	5.0			5.0			5.0	5.0			
Lead/Lag	Lag				Lead							
Lead-Lag Optimize?	Yes				Yes							
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0	3.0			
Recall Mode	None	C-Max			C-Max		None	None	None			
Walk Time (s)					7.0		7.0	7.0	7.0			
Flash Dont Walk (s)					11.0		11.0	11.0	11.0			
Pedestrian Calls (#/hr)					0		0	0	0			
Act Effct Green (s)	97.3	97.3			73.3	120.0		12.7	12.7			
Actuated g/C Ratio	0.81	0.81			0.61	1.00		0.11	0.11			
v/c Ratio	0.18	0.21			0.25	0.14		0.24	0.53			
Control Delay (s/veh)	6.1	6.0			10.5	0.2		52.2	14.9			
Queue Delay	0.0	0.0			0.0	0.0		0.0	0.0			
Total Delay (s/veh)	6.1	6.0			10.5	0.2		52.2	14.9			
LOS	A	A			B	A		D	B			
Approach Delay (s/veh)		6.1			6.0			23.6				
Approach LOS		A			A			C				
90th %ile Green (s)	17.0	92.4			68.4		13.6	13.6	13.6			
90th %ile Term Code	Hold	Coord			Coord		Gap	Gap	Gap			
70th %ile Green (s)	17.0	96.0			72.0		10.0	10.0	10.0			
70th %ile Term Code	Hold	Coord			Coord		Min	Min	Min			
50th %ile Green (s)	17.0	96.0			72.0		10.0	10.0	10.0			
50th %ile Term Code	Hold	Coord			Coord		Min	Min	Min			
30th %ile Green (s)	17.0	96.0			72.0		10.0	10.0	10.0			
30th %ile Term Code	Hold	Coord			Coord		Min	Min	Min			
10th %ile Green (s)	17.0	96.0			72.0		10.0	10.0	10.0			
10th %ile Term Code	Hold	Coord			Coord		Min	Min	Min			
Stops (vph)	70	135			104	0		41	24			
Fuel Used(gal)	2	4			3	1		1	1			
CO Emissions (g/hr)	159	287			190	88		65	93			
NOx Emissions (g/hr)	31	56			37	17		13	18			
VOC Emissions (g/hr)	37	67			44	20		15	22			
Dilemma Vehicles (#)	0	0			0	0		0	0			
Queue Length 50th (ft)	57	107			83	0		33	0			
Queue Length 95th (ft)	82	138			116	0		69	61			
Internal Link Dist (ft)		1085			680			552			227	
Turn Bay Length (ft)	500					250			265			
Base Capacity (vph)	965	1495			1054	1429		482	491			

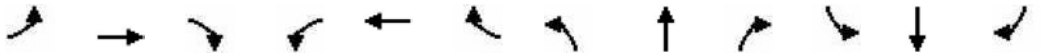
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Starvation Cap Reductn	0	0			0	0		0	0			
Spillback Cap Reductn	0	0			0	0		0	0			
Storage Cap Reductn	0	0			0	0		0	0			
Reduced v/c Ratio	0.19	0.22			0.25	0.15		0.09	0.31			

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 116 (97%), Referenced to phase 2:EBTL and 6:WBT, Start of Green			
Natural Cycle: 65			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.53			
Intersection Signal Delay (s/veh): 8.9		Intersection LOS: A	
Intersection Capacity Utilization 44.9%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 300: I-24 WB Off Ramp/I-24 WB On Ramp & Epps Mill Rd



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	35	168	42	59	136	107	22	25	122	218	97	223
Future Volume (vph)	35	168	42	59	136	107	22	25	122	218	97	223
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	160		160	150		0	185		185	0		250
Storage Lanes	1		0	1		0	0		1	1		1
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.970			0.934			0.876				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1752	1832	0	1752	1560	0	1805	1417	0	1570	1845	1538
Flt Permitted	0.580			0.609			0.694			0.319		
Satd. Flow (perm)	1070	1832	0	1123	1560	0	1319	1417	0	527	1845	1538
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		12			39			122				223
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		559			1165			1215			492	
Travel Time (s)		12.7			26.5			27.6			11.2	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	3%	0%	3%	3%	12%	16%	0%	0%	21%	15%	3%	5%
Adj. Flow (vph)	35	168	42	59	136	107	22	25	122	218	97	223
Shared Lane Traffic (%)												
Lane Group Flow (vph)	35	210	0	59	243	0	22	147	0	218	97	223
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	60		9	15		60	15		9	60		60
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100		20	100	20
Trailing Detector (ft)	0	0		0	0		0	0		0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		pm+pt	NA	Perm
Protected Phases		2			6			8		7	4	

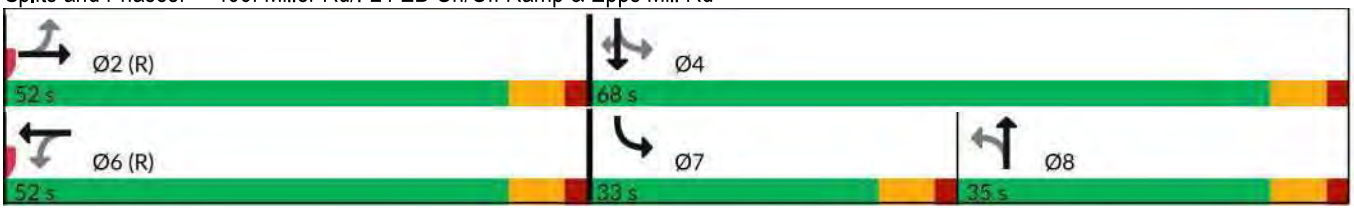


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	2			6			8			4		4
Detector Phase	2	2		6	6		8	8		7	4	4
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0		7.0	10.0	10.0
Minimum Split (s)	17.0	17.0		17.0	17.0		25.0	25.0		14.0	17.0	17.0
Total Split (s)	52.0	52.0		52.0	52.0		35.0	35.0		33.0	68.0	68.0
Total Split (%)	43.3%	43.3%		43.3%	43.3%		29.2%	29.2%		27.5%	56.7%	56.7%
Maximum Green (s)	45.0	45.0		45.0	45.0		28.0	28.0		26.0	61.0	61.0
Yellow Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	5.0
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0		-2.0	-2.0		-2.0	-2.0		-2.0	-2.0	-2.0
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	5.0
Lead/Lag							Lag	Lag		Lead		
Lead-Lag Optimize?							Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	C-Max	C-Max		C-Max	C-Max		None	None		None	None	None
Walk Time (s)							7.0	7.0				
Flash Dont Walk (s)							11.0	11.0				
Pedestrian Calls (#/hr)							0	0				
Act Effct Green (s)	68.2	68.2		68.2	68.2		13.3	13.3		41.8	41.8	41.8
Actuated g/C Ratio	0.57	0.57		0.57	0.57		0.11	0.11		0.35	0.35	0.35
v/c Ratio	0.05	0.20		0.09	0.26		0.15	0.55		0.56	0.15	0.32
Control Delay (s/veh)	14.2	13.7		12.4	10.5		49.7	21.0		34.3	25.7	4.2
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay (s/veh)	14.2	13.7		12.4	10.5		49.7	21.0		34.3	25.7	4.2
LOS	B	B		B	B		D	C		C	C	A
Approach Delay (s/veh)		13.8			10.9			24.8			20.3	
Approach LOS		B			B			C			C	
90th %ile Green (s)	57.5	57.5		57.5	57.5		15.5	15.5		26.0	48.5	48.5
90th %ile Term Code	Coord	Coord		Coord	Coord		Gap	Gap		Max	Hold	Hold
70th %ile Green (s)	62.1	62.1		62.1	62.1		10.9	10.9		26.0	43.9	43.9
70th %ile Term Code	Coord	Coord		Coord	Coord		Gap	Gap		Max	Hold	Hold
50th %ile Green (s)	66.2	66.2		66.2	66.2		10.0	10.0		22.8	39.8	39.8
50th %ile Term Code	Coord	Coord		Coord	Coord		Min	Min		Gap	Hold	Hold
30th %ile Green (s)	69.9	69.9		69.9	69.9		10.0	10.0		19.1	36.1	36.1
30th %ile Term Code	Coord	Coord		Coord	Coord		Min	Min		Gap	Hold	Hold
10th %ile Green (s)	75.1	75.1		75.1	75.1		10.0	10.0		13.9	30.9	30.9
10th %ile Term Code	Coord	Coord		Coord	Coord		Min	Min		Gap	Hold	Hold
Stops (vph)	17	97		20	80		22	37		157	62	19
Fuel Used(gal)	0	2		1	3		1	2		3	1	1
CO Emissions (g/hr)	24	143		56	222		39	156		226	85	81
NOx Emissions (g/hr)	5	28		11	43		8	30		44	17	16
VOC Emissions (g/hr)	6	33		13	51		9	36		52	20	19
Dilemma Vehicles (#)	0	0		0	0		0	0		0	0	0
Queue Length 50th (ft)	12	71		16	56		16	18		127	51	0
Queue Length 95th (ft)	32	134		29	99		41	80		175	81	47
Internal Link Dist (ft)		479			1085			1135			412	
Turn Bay Length (ft)	160			150			185					250
Base Capacity (vph)	607	1045		637	903		329	445		426	968	913

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Starvation Cap Reductn	0	0		0	0		0	0		0	0	0
Spillback Cap Reductn	0	0		0	0		0	0		0	0	0
Storage Cap Reductn	0	0		0	0		0	0		0	0	0
Reduced v/c Ratio	0.06	0.20		0.09	0.27		0.07	0.33		0.51	0.10	0.24

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.56			
Intersection Signal Delay (s/veh): 17.4		Intersection LOS: B	
Intersection Capacity Utilization 59.6%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 400: Miller Rd/I-24 EB On/Off Ramp & Epps Mill Rd



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	146	23	28	330	23	15	2	28	71	0	11
Future Volume (vph)	3	146	23	28	330	23	15	2	28	71	0	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	70		0	60		0	0		0	0		0
Storage Lanes	1		0	1		0	0		1	0		0
Taper Length (ft)	150			100			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.980			0.990			0.916			0.982	
Flt Protected	0.950			0.950				0.984			0.959	
Satd. Flow (prot)	1805	1830	0	1805	1841	0	0	1713	0	0	1604	0
Flt Permitted	0.950			0.950				0.984			0.959	
Satd. Flow (perm)	1805	1830	0	1805	1841	0	0	1713	0	0	1604	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1306			559			1202			1203	
Travel Time (s)		29.7			12.7			27.3			27.3	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	2%	0%	0%	2%	5%	0%	0%	0%	13%	0%	2%
Adj. Flow (vph)	3	146	23	28	330	23	15	2	28	71	0	11
Shared Lane Traffic (%)												
Lane Group Flow (vph)	3	169	0	28	353	0	0	45	0	0	82	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 40.3%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	146	23	28	330	23	15	2	28	71	0	11
Future Vol, veh/h	3	146	23	28	330	23	15	2	28	71	0	11
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	70	-	-	60	-	-	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	0	2	0	0	2	5	0	0	0	13	0	2
Mvmt Flow	3	146	23	28	330	23	15	2	28	71	0	11

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	353	0	0	169	0	0	567	573	158	577	573	342
Stage 1	-	-	-	-	-	-	164	164	-	398	398	-
Stage 2	-	-	-	-	-	-	403	409	-	179	175	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.23	6.5	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.23	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.23	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.617	4	3.318
Pot Cap-1 Maneuver	1217	-	-	1421	-	-	437	432	893	412	432	701
Stage 1	-	-	-	-	-	-	843	766	-	606	606	-
Stage 2	-	-	-	-	-	-	628	600	-	798	758	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1217	-	-	1421	-	-	423	422	893	391	422	701
Mov Cap-2 Maneuver	-	-	-	-	-	-	423	422	-	391	422	-
Stage 1	-	-	-	-	-	-	841	764	-	605	594	-
Stage 2	-	-	-	-	-	-	606	588	-	769	756	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	0.1	0.6	11.2	15.8
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	629	1217	-	-	1421	-	-	416
HCM Lane V/C Ratio	0.072	0.002	-	-	0.02	-	-	0.197
HCM Control Delay (s/veh)	11.2	8	-	-	7.6	-	-	15.8
HCM Lane LOS	B	A	-	-	A	-	-	C
HCM 95th %tile Q (veh)	0.2	0	-	-	0.1	-	-	0.7

Intersection: 2: I-24 EB On/Off Ramp/I-24 EB Off Ramp & I-24 EB On Loop

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 100: TN-2 (US Hwy-41) & Epps Mill Rd

Movement	EB	EB	NB	NB	SB	SB
Directions Served	L	R	L	T	T	R
Maximum Queue (ft)	198	106	75	55	231	54
Average Queue (ft)	124	43	34	19	89	15
95th Queue (ft)	187	81	67	56	191	45
Link Distance (ft)		1460		3604	2195	
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)	500		150			150
Storage Blk Time (%)					2	
Queuing Penalty (veh)					4	

Intersection: 200: Forbus Drive & Epps Mill Rd

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	TR	L	TR	LT	R	LT	R
Maximum Queue (ft)	160	59	49	135	69	53	117	154
Average Queue (ft)	61	15	4	49	16	10	30	92
95th Queue (ft)	134	49	24	111	45	34	77	141
Link Distance (ft)		692		1460	1257		957	
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)	215		200			100		100
Storage Blk Time (%)							1	3
Queuing Penalty (veh)							3	1

Intersection: 300: I-24 WB Off Ramp/I-24 WB On Ramp & Epps Mill Rd

Movement	EB	EB	WB	NB	NB
Directions Served	L	T	T	LT	R
Maximum Queue (ft)	96	231	156	92	75
Average Queue (ft)	49	80	34	41	7
95th Queue (ft)	92	162	103	80	40
Link Distance (ft)		1107	692	595	
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)	500				265
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 400: Miller Rd/I-24 EB On/Off Ramp & Epps Mill Rd

Movement	EB	EB	WB	WB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	TR	L	TR	L	T	R
Maximum Queue (ft)	69	156	69	182	232	218	296	176	92
Average Queue (ft)	20	68	31	64	25	88	168	63	53
95th Queue (ft)	55	135	63	131	96	187	289	129	77
Link Distance (ft)		482		1107	1173		434	434	
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	160		150			185			250
Storage Blk Time (%)		0		2	0	1			
Queuing Penalty (veh)		0		1	0	0			

Intersection: 500: Dollar General Driveway/Capital Way & Epps Mill Rd

Movement	EB	WB	NB	SB
Directions Served	L	L	LTR	LTR
Maximum Queue (ft)	28	28	52	92
Average Queue (ft)	1	6	23	39
95th Queue (ft)	9	24	48	70
Link Distance (ft)			1166	1164
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	70	60		
Storage Blk Time (%)				
Queuing Penalty (veh)				

Network Summary

Network wide Queuing Penalty: 9

Lane Group	EBL	EBR	NBL	NBT	NBR	SBL	SBT	SBR	SWL	SWR
Lane Configurations										
Traffic Volume (vph)	0	0	0	0	411	0	775	0	0	0
Future Volume (vph)	0	0	0	0	411	0	775	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	0		0	0		400	0	0
Storage Lanes	0	0	0		1	0		1	0	0
Taper Length (ft)	100		100			100			100	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	1.00
Frt					0.865					
Flt Protected										
Satd. Flow (prot)	0	0	0	0	1596	0	3505	0	0	0
Flt Permitted										
Satd. Flow (perm)	0	0	0	0	1596	0	3505	0	0	0
Link Speed (mph)	30			30			30		30	
Link Distance (ft)	223			518			1608		690	
Travel Time (s)	5.1			11.8			36.5		15.7	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	0	0	411	0	775	0	0	0
Shared Lane Traffic (%)										
Lane Group Flow (vph)	0	0	0	0	411	0	775	0	0	0
Enter Blocked Intersection	No	No	No	No	Yes	No	Yes	No	No	No
Lane Alignment	Left	Right	Left	Left	Right	Left	Left	Right	Left	Right
Median Width(ft)	0			0			0		0	
Link Offset(ft)	0			0			0		0	
Crosswalk Width(ft)	16			16			16		16	
Two way Left Turn Lane										
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	60	60	60		9	15		60	15	60
Sign Control	Stop			Free			Free		Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 28.8%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	231.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	325	133	330	671	229	322
Future Vol, veh/h	325	133	330	671	229	322
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	500	0	150	-	-	150
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	3	1	1	2	2	1
Mvmt Flow	325	133	330	671	229	322

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1560	229	551	0	-	0
Stage 1	229	-	-	-	-	-
Stage 2	1331	-	-	-	-	-
Critical Hdwy	6.43	6.21	4.11	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.309	2.209	-	-	-
Pot Cap-1 Maneuver	~ 123	813	1024	-	-	-
Stage 1	807	-	-	-	-	-
Stage 2	~ 245	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 83	813	1024	-	-	-
Mov Cap-2 Maneuver	~ 83	-	-	-	-	-
Stage 1	547	-	-	-	-	-
Stage 2	~ 245	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/$	1008	3.4	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1024	-	83	813	-	-
HCM Lane V/C Ratio	0.322	-	3.916	0.164	-	-
HCM Control Delay (s/veh)	10.2	$	1416.3	10.3	-	-
HCM Lane LOS	B	-	F	B	-	-
HCM 95th %tile Q (veh)	1.4	-	33.9	0.6	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

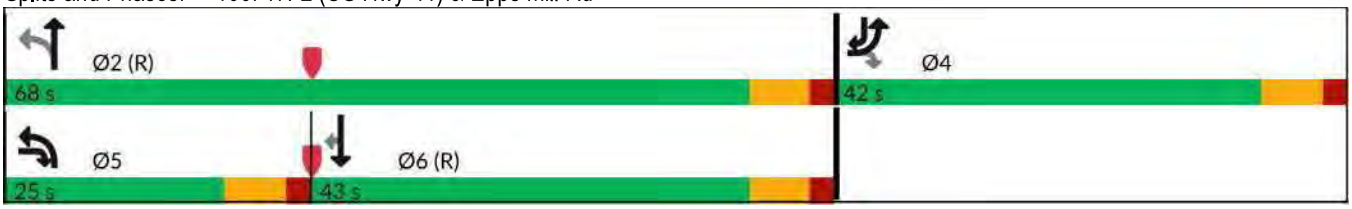
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	325	133	330	671	229	322
Future Volume (vph)	325	133	330	671	229	322
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	500	0	150			150
Storage Lanes	1	1	1			1
Taper Length (ft)	100		300			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850				0.850
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1752	1599	1787	1863	1863	1599
Flt Permitted	0.950		0.521			
Satd. Flow (perm)	1752	1599	980	1863	1863	1599
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		133				322
Link Speed (mph)	30			30	30	
Link Distance (ft)	1613			3584	2221	
Travel Time (s)	36.7			81.5	50.5	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	3%	1%	1%	2%	2%	1%
Adj. Flow (vph)	325	133	330	671	229	322
Shared Lane Traffic (%)						
Lane Group Flow (vph)	325	133	330	671	229	322
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane	Yes					
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Number of Detectors	1	1	1	2	2	1
Detector Template	Left	Right	Left	Thru	Thru	Right
Leading Detector (ft)	20	20	20	100	100	20
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	20	20	20	6	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)				94	94	
Detector 2 Size(ft)				6	6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	Prot	pm+ov	pm+pt	NA	NA	pm+ov
Protected Phases	4	5	5	2	6	4

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Permitted Phases		4	2			6
Detector Phase	4	5	5	2	6	4
Switch Phase						
Minimum Initial (s)	7.0	7.0	7.0	10.0	10.0	7.0
Minimum Split (s)	14.0	14.0	14.0	17.0	17.0	14.0
Total Split (s)	42.0	25.0	25.0	68.0	43.0	42.0
Total Split (%)	38.2%	22.7%	22.7%	61.8%	39.1%	38.2%
Maximum Green (s)	35.0	18.0	18.0	61.0	36.0	35.0
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag		Lead	Lead		Lag	
Lead-Lag Optimize?		Yes	Yes		Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	C-Max	C-Max	None
Act Effct Green (s)	27.9	49.0	72.1	72.1	51.0	83.9
Actuated g/C Ratio	0.25	0.45	0.66	0.66	0.46	0.76
v/c Ratio	0.73	0.16	0.43	0.55	0.26	0.24
Control Delay (s/veh)	51.7	5.6	11.0	13.5	21.7	0.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	51.7	5.6	11.0	13.5	21.7	0.9
LOS	D	A	B	B	C	A
Approach Delay (s/veh)	38.4			12.7	9.6	
Approach LOS	D			B	A	
90th %ile Green (s)	34.2	18.8	18.8	61.8	36.0	34.2
90th %ile Term Code	Gap	Max	Max	Coord	Coord	Gap
70th %ile Green (s)	29.8	16.9	16.9	66.2	42.3	29.8
70th %ile Term Code	Gap	Gap	Gap	Coord	Coord	Gap
50th %ile Green (s)	25.8	14.0	14.0	70.2	49.2	25.8
50th %ile Term Code	Gap	Gap	Gap	Coord	Coord	Gap
30th %ile Green (s)	22.4	11.7	11.7	73.6	54.9	22.4
30th %ile Term Code	Gap	Gap	Gap	Coord	Coord	Gap
10th %ile Green (s)	17.5	9.1	9.1	78.5	62.4	17.5
10th %ile Term Code	Gap	Gap	Gap	Coord	Coord	Gap
Stops (vph)	301	33	140	362	145	11
Fuel Used(gal)	9	2	11	23	6	6
CO Emissions (g/hr)	641	140	750	1580	404	399
NOx Emissions (g/hr)	125	27	146	307	79	78
VOC Emissions (g/hr)	149	33	174	366	94	92
Dilemma Vehicles (#)	0	0	0	0	0	0
Queue Length 50th (ft)	218	10	90	232	96	0
Queue Length 95th (ft)	314	32	168	413	187	22
Internal Link Dist (ft)	1533			3504	2141	
Turn Bay Length (ft)	500		150			150
Base Capacity (vph)	589	840	789	1220	863	1401
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Reduced v/c Ratio	0.55	0.16	0.42	0.55	0.27	0.23

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green			
Natural Cycle: 50			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.73			
Intersection Signal Delay (s/veh): 17.7		Intersection LOS: B	
Intersection Capacity Utilization 61.7%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 100: TN-2 (US Hwy-41) & Epps Mill Rd



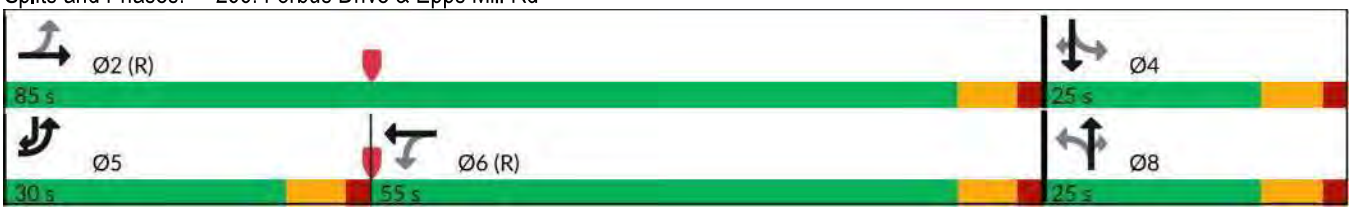
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	275	411	39	18	556	56	5	0	5	56	0	296
Future Volume (vph)	275	411	39	18	556	56	5	0	5	56	0	296
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	215		0	200		0	100		100	100		100
Storage Lanes	1		0	1		0	0		1	0		1
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.987			0.986				0.850			0.850
Flt Protected	0.950			0.950				0.950			0.950	
Satd. Flow (prot)	1410	1809	0	1805	1790	0	0	1805	1615	0	1787	1016
Flt Permitted	0.307			0.503				0.720			0.754	
Satd. Flow (perm)	456	1809	0	956	1790	0	0	1368	1615	0	1418	1016
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		11			6				109			220
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		710			1613			1227			992	
Travel Time (s)		16.1			36.7			27.9			22.5	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	28%	4%	0%	0%	5%	1%	0%	0%	0%	1%	0%	59%
Adj. Flow (vph)	275	411	39	18	556	56	5	0	5	56	0	296
Shared Lane Traffic (%)												
Lane Group Flow (vph)	275	450	0	18	612	0	0	5	5	0	56	296
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		Yes			Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		Perm	NA		Perm	NA	Perm	Perm	NA	pm+ov
Protected Phases	5	2			6			8			4	5

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	2			6			8		8	4		4
Detector Phase	5	2		6	6		8	8	8	4	4	5
Switch Phase												
Minimum Initial (s)	7.0	10.0		10.0	10.0		10.0	10.0	10.0	10.0	10.0	7.0
Minimum Split (s)	14.0	17.0		25.0	25.0		25.0	25.0	25.0	17.0	17.0	14.0
Total Split (s)	30.0	85.0		55.0	55.0		25.0	25.0	25.0	25.0	25.0	30.0
Total Split (%)	27.3%	77.3%		50.0%	50.0%		22.7%	22.7%	22.7%	22.7%	22.7%	27.3%
Maximum Green (s)	23.0	78.0		48.0	48.0		18.0	18.0	18.0	18.0	18.0	23.0
Yellow Time (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0		-2.0	-2.0			-2.0	-2.0		-2.0	-2.0
Total Lost Time (s)	5.0	5.0		5.0	5.0			5.0	5.0		5.0	5.0
Lead/Lag	Lead			Lag	Lag							Lead
Lead-Lag Optimize?	Yes			Yes	Yes							Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Max		C-Max	C-Max		None	None	None	None	None	None
Walk Time (s)				7.0	7.0		7.0	7.0	7.0			
Flash Dont Walk (s)				11.0	11.0		11.0	11.0	11.0			
Pedestrian Calls (#/hr)				0	0		0	0	0			
Act Effct Green (s)	90.3	91.3		70.0	70.0			13.1	13.1		13.1	30.0
Actuated g/C Ratio	0.82	0.83		0.64	0.64			0.12	0.12		0.12	0.27
v/c Ratio	0.54	0.29		0.02	0.53			0.03	0.01		0.33	0.67
Control Delay (s/veh)	8.2	3.0		15.9	18.5			42.2	0.2		49.7	16.3
Queue Delay	0.0	0.0		0.0	0.0			0.0	0.0		0.0	0.0
Total Delay (s/veh)	8.2	3.0		15.9	18.5			42.2	0.2		49.7	16.3
LOS	A	A		B	B			D	A		D	B
Approach Delay (s/veh)		5.0			18.5			21.2			21.6	
Approach LOS		A			B			C			C	
90th %ile Green (s)	23.7	82.1		51.4	51.4		13.9	13.9	13.9	13.9	13.9	23.7
90th %ile Term Code	Gap	Coord		Coord	Coord		Hold	Hold	Hold	Gap	Gap	Gap
70th %ile Green (s)	15.4	84.6		62.2	62.2		11.4	11.4	11.4	11.4	11.4	15.4
70th %ile Term Code	Gap	Coord		Coord	Coord		Hold	Hold	Hold	Gap	Gap	Gap
50th %ile Green (s)	10.8	86.0		68.2	68.2		10.0	10.0	10.0	10.0	10.0	10.8
50th %ile Term Code	Gap	Coord		Coord	Coord		Hold	Hold	Hold	Min	Min	Gap
30th %ile Green (s)	9.6	86.0		69.4	69.4		10.0	10.0	10.0	10.0	10.0	9.6
30th %ile Term Code	Gap	Coord		Coord	Coord		Hold	Hold	Hold	Min	Min	Gap
10th %ile Green (s)	7.0	103.0		89.0	89.0		0.0	0.0	0.0	0.0	0.0	7.0
10th %ile Term Code	Min	Coord		Coord	Coord		Skip	Skip	Skip	Skip	Skip	Min
Stops (vph)	68	72		10	345			7	0		50	78
Fuel Used(gal)	2	3		0	12			0	0		1	4
CO Emissions (g/hr)	165	221		24	833			9	3		89	259
NOx Emissions (g/hr)	32	43		5	162			2	1		17	50
VOC Emissions (g/hr)	38	51		6	193			2	1		21	60
Dilemma Vehicles (#)	0	0		0	0			0	0		0	0
Queue Length 50th (ft)	34	56		4	217			3	0		37	42
Queue Length 95th (ft)	56	84		m23	456			14	0		75	114
Internal Link Dist (ft)		630			1533			1147			912	
Turn Bay Length (ft)	215			200					100			100
Base Capacity (vph)	592	1504		608	1141			248	382		257	507

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Starvation Cap Reductn	0	0		0	0			0	0		0	0
Spillback Cap Reductn	0	0		0	0			0	0		0	0
Storage Cap Reductn	0	0		0	0			0	0		0	0
Reduced v/c Ratio	0.46	0.30		0.03	0.54			0.02	0.01		0.22	0.58

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 78 (71%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green			
Natural Cycle: 80			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.68			
Intersection Signal Delay (s/veh): 13.4		Intersection LOS: B	
Intersection Capacity Utilization 71.8%		ICU Level of Service C	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 200: Forbus Drive & Epps Mill Rd



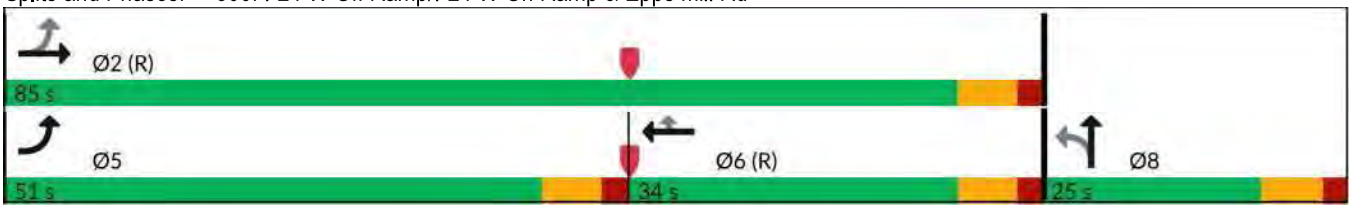
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	907	379	0	0	280	577	57	0	346	0	0	0
Future Volume (vph)	907	379	0	0	280	577	57	0	346	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	500		0	0		250	0		265	0		0
Storage Lanes	1		0	0		1	0		1	0		0
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt						0.850			0.850			
Flt Protected	0.950							0.950				
Satd. Flow (prot)	1736	1667	0	0	1667	1442	0	1752	1568	0	0	0
Flt Permitted	0.330							0.950				
Satd. Flow (perm)	603	1667	0	0	1667	1442	0	1752	1568	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						396			346			
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1201			710			632			300	
Travel Time (s)		27.3			16.1			14.4			6.8	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	4%	14%	0%	0%	14%	12%	3%	3%	3%	3%	3%	3%
Adj. Flow (vph)	907	379	0	0	280	577	57	0	346	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	907	379	0	0	280	577	0	57	346	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane					Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2			2	1	1	2	1			
Detector Template	Left	Thru			Thru	Right	Left	Thru	Right			
Leading Detector (ft)	20	100			100	20	20	100	20			
Trailing Detector (ft)	0	0			0	0	0	0	0			
Detector 1 Position(ft)	0	0			0	0	0	0	0			
Detector 1 Size(ft)	20	6			6	20	20	6	20			
Detector 1 Type	Cl+Ex	Cl+Ex			Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex			
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0	0.0	0.0	0.0	0.0			
Detector 1 Queue (s)	0.0	0.0			0.0	0.0	0.0	0.0	0.0			
Detector 1 Delay (s)	0.0	0.0			0.0	0.0	0.0	0.0	0.0			
Detector 2 Position(ft)		94			94			94				
Detector 2 Size(ft)		6			6			6				
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				
Turn Type	pm+pt	NA			NA	Perm	Perm	NA	Free			
Protected Phases	5	2			6			8				

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	2					6	8		Free			
Detector Phase	5	2			6	6	8	8				
Switch Phase												
Minimum Initial (s)	7.0	10.0			10.0	10.0	10.0	10.0				
Minimum Split (s)	14.0	25.0			25.0	25.0	25.0	25.0				
Total Split (s)	51.0	85.0			34.0	34.0	25.0	25.0				
Total Split (%)	46.4%	77.3%			30.9%	30.9%	22.7%	22.7%				
Maximum Green (s)	44.0	78.0			27.0	27.0	18.0	18.0				
Yellow Time (s)	5.0	5.0			5.0	5.0	5.0	5.0				
All-Red Time (s)	2.0	2.0			2.0	2.0	2.0	2.0				
Lost Time Adjust (s)	-2.0	-2.0			-2.0	-2.0		-2.0				
Total Lost Time (s)	5.0	5.0			5.0	5.0		5.0				
Lead/Lag	Lead				Lag	Lag						
Lead-Lag Optimize?	Yes				Yes	Yes						
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0				
Recall Mode	None	C-Max			C-Max	C-Max	Max	Max				
Walk Time (s)					7.0	7.0	7.0	7.0				
Flash Dont Walk (s)					11.0	11.0	11.0	11.0				
Pedestrian Calls (#/hr)					0	0	0	0				
Act Effct Green (s)	80.0	80.0			29.0	29.0		20.0	110.0			
Actuated g/C Ratio	0.73	0.73			0.26	0.26		0.18	1.00			
v/c Ratio	0.99	0.31			0.63	0.85		0.17	0.22			
Control Delay (s/veh)	34.8	5.2			41.1	24.6		39.8	0.3			
Queue Delay	0.0	0.0			0.0	0.0		0.0	0.0			
Total Delay (s/veh)	34.8	5.2			41.1	24.6		39.8	0.3			
LOS	C	A			D	C		D	A			
Approach Delay (s/veh)		26.2			30.0			5.9				
Approach LOS		C			C			A				
90th %ile Green (s)	44.0	78.0			27.0	27.0	18.0	18.0				
90th %ile Term Code	Max	Coord			Coord	Coord	MaxR	MaxR				
70th %ile Green (s)	44.0	78.0			27.0	27.0	18.0	18.0				
70th %ile Term Code	Max	Coord			Coord	Coord	MaxR	MaxR				
50th %ile Green (s)	44.0	78.0			27.0	27.0	18.0	18.0				
50th %ile Term Code	Max	Coord			Coord	Coord	MaxR	MaxR				
30th %ile Green (s)	44.0	78.0			27.0	27.0	18.0	18.0				
30th %ile Term Code	Max	Coord			Coord	Coord	MaxR	MaxR				
10th %ile Green (s)	44.0	78.0			27.0	27.0	18.0	18.0				
10th %ile Term Code	Max	Coord			Coord	Coord	MaxR	MaxR				
Stops (vph)	587	134			247	344		46	0			
Fuel Used(gal)	18	5			5	8		1	2			
CO Emissions (g/hr)	1271	328			368	558		70	121			
NOx Emissions (g/hr)	247	64			72	109		14	23			
VOC Emissions (g/hr)	295	76			85	129		16	28			
Dilemma Vehicles (#)	0	0			0	0		0	0			
Queue Length 50th (ft)	376	82			194	181		34	0			
Queue Length 95th (ft)	m#688	m91			234	#336		72	0			
Internal Link Dist (ft)		1121			630			552			220	
Turn Bay Length (ft)	500					250			265			
Base Capacity (vph)	912	1212			439	671		318	1568			

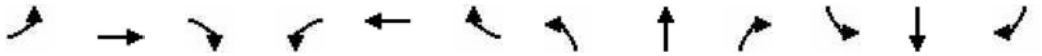
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Starvation Cap Reductn	0	0			0	0		0	0			
Spillback Cap Reductn	0	0			0	0		0	0			
Storage Cap Reductn	0	0			0	0		0	0			
Reduced v/c Ratio	0.99	0.31			0.64	0.86		0.18	0.22			

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 99 (90%), Referenced to phase 2:EBTL and 6:WBT, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.99			
Intersection Signal Delay (s/veh): 24.2		Intersection LOS: C	
Intersection Capacity Utilization 106.8%		ICU Level of Service G	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 300: I-24 W Off Ramp/I-24 W On Ramp & Epps Mill Rd



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	117	500	109	46	36	255	65	39	367	419	188	168
Future Volume (vph)	117	500	109	46	36	255	65	39	367	419	188	168
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	160		160	150		0	185		185	250		250
Storage Lanes	1		0	1		0	0		1	0		1
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.973			0.869			0.864				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1752	1839	0	1752	1429	0	1805	1380	0	1570	1845	1538
Flt Permitted	0.464			0.113			0.639			0.135		
Satd. Flow (perm)	856	1839	0	208	1429	0	1214	1380	0	223	1845	1538
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		11			255			177				168
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		559			1201			1215			518	
Travel Time (s)		12.7			27.3			27.6			11.8	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	3%	0%	3%	3%	12%	16%	0%	0%	21%	15%	3%	5%
Adj. Flow (vph)	117	500	109	46	36	255	65	39	367	419	188	168
Shared Lane Traffic (%)												
Lane Group Flow (vph)	117	609	0	46	291	0	65	406	0	419	188	168
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100		20	100	20
Trailing Detector (ft)	0	0		0	0		0	0		0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		pm+pt	NA	Perm
Protected Phases		2			6			4		3	8	

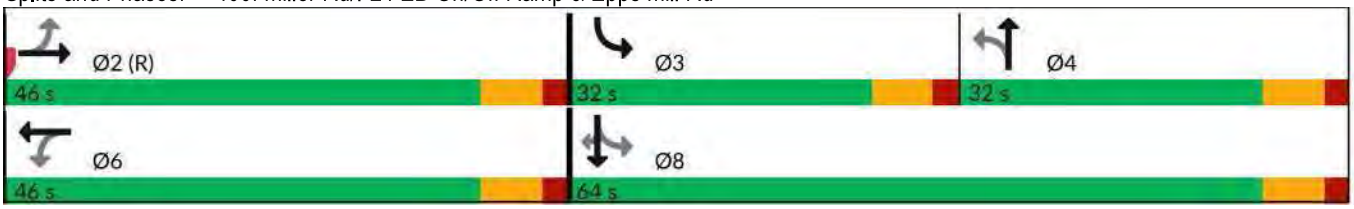


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	2			6			4			8		8
Detector Phase	2	2		6	6		4	4		3	8	8
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0		7.0	10.0	10.0
Minimum Split (s)	17.0	17.0		17.0	17.0		25.0	25.0		14.0	17.0	17.0
Total Split (s)	46.0	46.0		46.0	46.0		32.0	32.0		32.0	64.0	64.0
Total Split (%)	41.8%	41.8%		41.8%	41.8%		29.1%	29.1%		29.1%	58.2%	58.2%
Maximum Green (s)	39.0	39.0		39.0	39.0		25.0	25.0		25.0	57.0	57.0
Yellow Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	5.0
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0		-2.0	-2.0		-2.0	-2.0		-2.0	-2.0	-2.0
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	5.0
Lead/Lag							Lag	Lag		Lead		
Lead-Lag Optimize?							Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	C-Max	C-Max		Max	Max		Max	Max		None	Max	Max
Walk Time (s)							7.0	7.0				
Flash Dont Walk (s)							11.0	11.0				
Pedestrian Calls (#/hr)							0	0				
Act Effct Green (s)	41.0	41.0		41.0	41.0		27.4	27.4		59.0	59.0	59.0
Actuated g/C Ratio	0.37	0.37		0.37	0.37		0.25	0.25		0.54	0.54	0.54
v/c Ratio	0.36	0.88		0.59	0.42		0.21	0.85		0.93	0.19	0.18
Control Delay (s/veh)	29.2	47.5		50.4	3.4		35.4	40.4		59.3	13.8	2.4
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay (s/veh)	29.2	47.5		50.4	3.4		35.4	40.4		59.3	13.8	2.4
LOS	C	D		D	A		D	D		E	B	A
Approach Delay (s/veh)		44.6			9.9			39.7			35.9	
Approach LOS		D			A			D			D	
90th %ile Green (s)	39.0	39.0		39.0	39.0		25.0	25.0		25.0	57.0	57.0
90th %ile Term Code	Coord	Coord		Coord	Coord		MaxR	MaxR		Max	MaxR	MaxR
70th %ile Green (s)	39.0	39.0		39.0	39.0		25.0	25.0		25.0	57.0	57.0
70th %ile Term Code	Coord	Coord		Coord	Coord		MaxR	MaxR		Max	MaxR	MaxR
50th %ile Green (s)	39.0	39.0		39.0	39.0		25.0	25.0		25.0	57.0	57.0
50th %ile Term Code	Coord	Coord		Coord	Coord		MaxR	MaxR		Max	MaxR	MaxR
30th %ile Green (s)	39.0	39.0		39.0	39.0		25.0	25.0		25.0	57.0	57.0
30th %ile Term Code	Coord	Coord		Coord	Coord		MaxR	MaxR		Max	MaxR	MaxR
10th %ile Green (s)	39.0	39.0		39.0	39.0		26.8	26.8		23.2	57.0	57.0
10th %ile Term Code	Coord	Coord		Coord	Coord		MaxR	MaxR		Gap	MaxR	MaxR
Stops (vph)	85	524		16	27		51	219		302	93	13
Fuel Used(gal)	2	11		1	3		1	8		8	2	1
CO Emissions (g/hr)	117	800		69	215		96	587		589	126	58
NOx Emissions (g/hr)	23	156		13	42		19	114		115	25	11
VOC Emissions (g/hr)	27	185		16	50		22	136		136	29	14
Dilemma Vehicles (#)	0	0		0	0		0	0		0	0	0
Queue Length 50th (ft)	59	391		7	1		37	163		238	65	0
Queue Length 95th (ft)	112	#602		m23	3		76	#341		#433	105	31
Internal Link Dist (ft)		479			1121			1135			438	
Turn Bay Length (ft)	160			150			185			250		250
Base Capacity (vph)	319	692		77	692		301	476		450	989	902

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Starvation Cap Reductn	0	0		0	0		0	0		0	0	0
Spillback Cap Reductn	0	0		0	0		0	0		0	0	0
Storage Cap Reductn	0	0		0	0		0	0		0	0	0
Reduced v/c Ratio	0.37	0.88		0.60	0.42		0.22	0.85		0.93	0.19	0.19

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 0 (0%), Referenced to phase 2:EBTL, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.94			
Intersection Signal Delay (s/veh): 35.6		Intersection LOS: D	
Intersection Capacity Utilization 105.9%		ICU Level of Service G	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 400: Miller Rd/I-24 EB On/Off Ramp & Epps Mill Rd



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	29	648	16	8	167	94	0	5	13	65	0	5
Future Volume (vph)	29	648	16	8	167	94	0	5	13	65	0	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	70		0	60		0	0		0	0		0
Storage Lanes	1		0	1		0	0		1	0		0
Taper Length (ft)	150			100			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.996			0.946			0.902			0.990	
Flt Protected	0.950			0.950							0.956	
Satd. Flow (prot)	1787	1821	0	1805	1709	0	0	1714	0	0	1302	0
Flt Permitted	0.950			0.950							0.956	
Satd. Flow (perm)	1787	1821	0	1805	1709	0	0	1714	0	0	1302	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1306			559			1202			1203	
Travel Time (s)		29.7			12.7			27.3			27.3	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	4%	0%	0%	7%	2%	0%	0%	0%	41%	0%	0%
Adj. Flow (vph)	29	648	16	8	167	94	0	5	13	65	0	5
Shared Lane Traffic (%)												
Lane Group Flow (vph)	29	664	0	8	261	0	0	18	0	0	70	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 52.3%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	2.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	29	648	16	8	167	94	0	5	13	65	0	5
Future Vol, veh/h	29	648	16	8	167	94	0	5	13	65	0	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	70	-	-	60	-	-	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	1	4	0	0	7	2	0	0	0	41	0	0
Mvmt Flow	29	648	16	8	167	94	0	5	13	65	0	5

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	261	0	0	664	0	0	947	991	656	953	952	214
Stage 1	-	-	-	-	-	-	714	714	-	230	230	-
Stage 2	-	-	-	-	-	-	233	277	-	723	722	-
Critical Hdwy	4.11	-	-	4.1	-	-	7.1	6.5	6.2	7.51	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.51	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.51	5.5	-
Follow-up Hdwy	2.209	-	-	2.2	-	-	3.5	4	3.3	3.869	4	3.3
Pot Cap-1 Maneuver	1309	-	-	935	-	-	243	248	469	204	261	831
Stage 1	-	-	-	-	-	-	425	438	-	693	718	-
Stage 2	-	-	-	-	-	-	775	685	-	362	434	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1309	-	-	935	-	-	236	240	469	191	253	831
Mov Cap-2 Maneuver	-	-	-	-	-	-	236	240	-	191	253	-
Stage 1	-	-	-	-	-	-	416	428	-	678	712	-
Stage 2	-	-	-	-	-	-	764	679	-	340	424	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	0.3	0.3	15.2	32
HCM LOS			C	D

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	371	1309	-	-	935	-	-	202
HCM Lane V/C Ratio	0.049	0.022	-	-	0.009	-	-	0.347
HCM Control Delay (s/veh)	15.2	7.8	-	-	8.9	-	-	32
HCM Lane LOS	C	A	-	-	A	-	-	D
HCM 95th %tile Q (veh)	0.2	0.1	-	-	0	-	-	1.5

Intersection: 2: I-24 EB On/Off Ramp/I-24 EB Off Ramp & I-24 EB On Loop

Movement	SB
Directions Served	T
Maximum Queue (ft)	38
Average Queue (ft)	2
95th Queue (ft)	15
Link Distance (ft)	1592
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 100: TN-2 (US Hwy-41) & Epps Mill Rd

Movement	EB	EB	NB	NB	SB	SB
Directions Served	L	R	L	T	T	R
Maximum Queue (ft)	358	382	186	351	267	119
Average Queue (ft)	212	61	100	174	118	53
95th Queue (ft)	341	206	175	324	218	94
Link Distance (ft)		1518		3547	2189	
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)	500		150			150
Storage Blk Time (%)			2	11	4	
Queuing Penalty (veh)			13	38	14	

Intersection: 200: Forbus Drive & Epps Mill Rd

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	TR	L	TR	LT	R	LT	R
Maximum Queue (ft)	273	107	300	405	26	28	398	200
Average Queue (ft)	110	40	28	255	4	3	153	159
95th Queue (ft)	213	96	149	411	18	18	359	234
Link Distance (ft)		644		1518	1183		957	
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)	215		200			100		100
Storage Blk Time (%)	1			17			1	29
Queuing Penalty (veh)	6			3			3	16

Intersection: 300: I-24 W Off Ramp/I-24 W On Ramp & Epps Mill Rd

Movement	EB	EB	WB	WB	NB	NB
Directions Served	L	T	T	R	LT	R
Maximum Queue (ft)	600	1148	404	350	111	215
Average Queue (ft)	571	703	218	57	37	68
95th Queue (ft)	674	1290	376	269	85	156
Link Distance (ft)		1142	644		595	
Upstream Blk Time (%)		0				
Queuing Penalty (veh)		6				
Storage Bay Dist (ft)	500			250		265
Storage Blk Time (%)	38	9	7			
Queuing Penalty (veh)	143	85	43			

Intersection: 400: Miller Rd/I-24 EB On/Off Ramp & Epps Mill Rd

Movement	EB	EB	WB	WB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	TR	L	TR	L	T	R
Maximum Queue (ft)	260	498	249	844	1236	285	515	282	75
Average Queue (ft)	168	463	73	184	811	280	316	92	40
95th Queue (ft)	324	563	160	468	1531	301	502	204	67
Link Distance (ft)		481		1142	1173		462	462	
Upstream Blk Time (%)		38			41		3		
Queuing Penalty (veh)		276			0		10		
Storage Bay Dist (ft)	160		150			185			250
Storage Blk Time (%)	1	61	1	16	2	75		3	
Queuing Penalty (veh)	8	72	2	7	8	49		5	

Intersection: 500: Dollar General Driveway/Capital Way & Epps Mill Rd

Movement	EB	EB	WB	WB	NB	SB
Directions Served	L	TR	L	TR	LTR	LTR
Maximum Queue (ft)	220	1287	28	70	76	1172
Average Queue (ft)	38	664	1	2	19	749
95th Queue (ft)	170	1311	9	23	62	1482
Link Distance (ft)		1272		481	1166	1164
Upstream Blk Time (%)		1				41
Queuing Penalty (veh)		0				0
Storage Bay Dist (ft)	70		60			
Storage Blk Time (%)		53		1		
Queuing Penalty (veh)		15		0		

Network Summary

Network wide Queuing Penalty: 822

Lane Group	EBL	EBR	NBL	NBT	NBR	SBL	SBT	SBR	SWL	SWR
Lane Configurations										
Traffic Volume (vph)	0	0	0	0	434	0	1399	0	0	0
Future Volume (vph)	0	0	0	0	434	0	1399	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	0		0	0		400	0	0
Storage Lanes	0	0	0		1	0		1	0	0
Taper Length (ft)	100		100			100			100	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	1.00
Frt					0.865					
Flt Protected										
Satd. Flow (prot)	0	0	0	0	1596	0	3505	0	0	0
Flt Permitted										
Satd. Flow (perm)	0	0	0	0	1596	0	3505	0	0	0
Link Speed (mph)	30			30			30		30	
Link Distance (ft)	223			518			1608		690	
Travel Time (s)	5.1			11.8			36.5		15.7	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	0	0	434	0	1399	0	0	0
Shared Lane Traffic (%)										
Lane Group Flow (vph)	0	0	0	0	434	0	1399	0	0	0
Enter Blocked Intersection	No	No	No	No	Yes	No	Yes	No	No	No
Lane Alignment	Left	Right	Left	Left	Right	Left	Left	Right	Left	Right
Median Width(ft)	0			0			0		0	
Link Offset(ft)	0			0			0		0	
Crosswalk Width(ft)	16			16			16		16	
Two way Left Turn Lane										
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15		60	60		9	60	9
Sign Control	Stop			Free			Free		Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 42.0%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	342

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	382	382	205	312	902	421
Future Vol, veh/h	382	382	205	312	902	421
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	500	0	150	-	-	150
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	3	1	1	2	2	1
Mvmt Flow	382	382	205	312	902	421

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1624	902	1323	0	-	0
Stage 1	902	-	-	-	-	-
Stage 2	722	-	-	-	-	-
Critical Hdwy	6.43	6.21	4.11	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.309	2.209	-	-	-
Pot Cap-1 Maneuver	~ 112	~ 338	525	-	-	-
Stage 1	394	-	-	-	-	-
Stage 2	479	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 68	~ 338	525	-	-	-
Mov Cap-2 Maneuver	~ 68	-	-	-	-	-
Stage 1	~ 240	-	-	-	-	-
Stage 2	479	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, $/v	161.3	6.4	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	525	-	68	338	-	-
HCM Lane V/C Ratio	0.39	-	5.618	1.13	-	-
HCM Control Delay (s/veh)	16.2	-	$ 2198.4	124.2	-	-
HCM Lane LOS	C	-	F	F	-	-
HCM 95th %tile Q (veh)	1.8	-	42.6	15	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

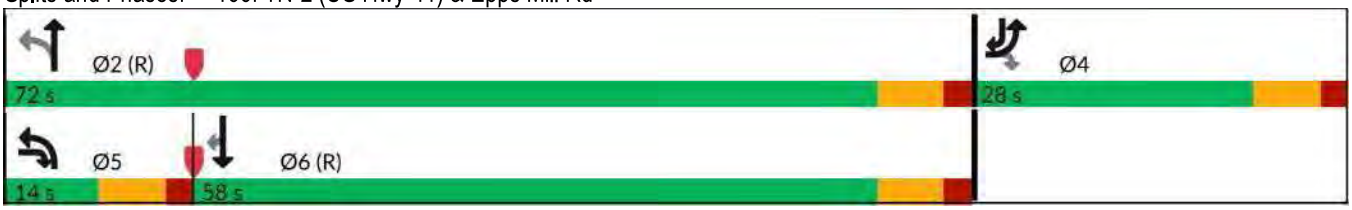
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	382	382	205	312	902	421
Future Volume (vph)	382	382	205	312	902	421
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	500	0	150			150
Storage Lanes	1	1	1			1
Taper Length (ft)	100		300			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850				0.850
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1752	1599	1787	1863	1863	1599
Flt Permitted	0.950		0.069			
Satd. Flow (perm)	1752	1599	130	1863	1863	1599
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		115				141
Link Speed (mph)	30			30	30	
Link Distance (ft)	1613			3584	2221	
Travel Time (s)	36.7			81.5	50.5	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	3%	1%	1%	2%	2%	1%
Adj. Flow (vph)	382	382	205	312	902	421
Shared Lane Traffic (%)						
Lane Group Flow (vph)	382	382	205	312	902	421
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane	Yes					
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Number of Detectors	1	1	1	2	2	1
Detector Template	Left	Right	Left	Thru	Thru	Right
Leading Detector (ft)	20	20	20	100	100	20
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	20	20	20	6	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)				94	94	
Detector 2 Size(ft)				6	6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	Prot	pm+ov	pm+pt	NA	NA	pm+ov
Protected Phases	4	5	5	2	6	4

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Permitted Phases		4	2			6
Detector Phase	4	5	5	2	6	4
Switch Phase						
Minimum Initial (s)	7.0	7.0	7.0	10.0	10.0	7.0
Minimum Split (s)	14.0	14.0	14.0	17.0	17.0	14.0
Total Split (s)	28.0	14.0	14.0	72.0	58.0	28.0
Total Split (%)	28.0%	14.0%	14.0%	72.0%	58.0%	28.0%
Maximum Green (s)	21.0	7.0	7.0	65.0	51.0	21.0
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag		Lead	Lead		Lag	
Lead-Lag Optimize?		Yes	Yes		Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	C-Max	C-Max	None
Act Effct Green (s)	23.0	37.0	67.0	67.0	53.0	81.0
Actuated g/C Ratio	0.23	0.37	0.67	0.67	0.53	0.81
v/c Ratio	0.95	0.57	0.86	0.25	0.91	0.31
Control Delay (s/veh)	68.9	15.7	55.8	7.1	36.8	2.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	68.9	15.7	55.8	7.1	36.8	2.1
LOS	E	B	E	A	D	A
Approach Delay (s/veh)	42.4			26.5	25.8	
Approach LOS	D			C	C	
90th %ile Green (s)	21.0	7.0	7.0	65.0	51.0	21.0
90th %ile Term Code	Max	Max	Max	Coord	Coord	Max
70th %ile Green (s)	21.0	7.0	7.0	65.0	51.0	21.0
70th %ile Term Code	Max	Max	Max	Coord	Coord	Max
50th %ile Green (s)	21.0	7.0	7.0	65.0	51.0	21.0
50th %ile Term Code	Max	Max	Max	Coord	Coord	Max
30th %ile Green (s)	21.0	7.0	7.0	65.0	51.0	21.0
30th %ile Term Code	Max	Max	Max	Coord	Coord	Max
10th %ile Green (s)	21.0	7.0	7.0	65.0	51.0	21.0
10th %ile Term Code	Max	Max	Max	Coord	Coord	Max
Stops (vph)	315	228	109	116	748	59
Fuel Used(gal)	12	7	9	10	27	8
CO Emissions (g/hr)	833	509	605	686	1854	545
NOx Emissions (g/hr)	162	99	118	133	361	106
VOC Emissions (g/hr)	193	118	140	159	430	126
Dilemma Vehicles (#)	0	0	0	0	0	0
Queue Length 50th (ft)	234	101	78	70	498	31
Queue Length 95th (ft)	#419	164	#207	107	#780	52
Internal Link Dist (ft)	1533			3504	2141	
Turn Bay Length (ft)	500		150			150
Base Capacity (vph)	402	664	236	1248	987	1321
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0

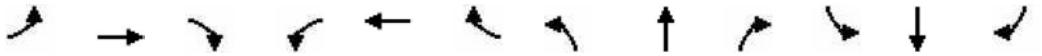
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Reduced v/c Ratio	0.95	0.58	0.87	0.25	0.91	0.32

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 64 (64%), Referenced to phase 2:NBTL and 6:SBT, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.95			
Intersection Signal Delay (s/veh): 30.8		Intersection LOS: C	
Intersection Capacity Utilization 92.5%		ICU Level of Service F	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 100: TN-2 (US Hwy-41) & Epps Mill Rd



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	334	665	13	16	676	31	55	0	52	53	0	305
Future Volume (vph)	334	665	13	16	676	31	55	0	52	53	0	305
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	215		0	200		0	100		100	100		100
Storage Lanes	1		0	1		0	0		1	0		1
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.997			0.993				0.850			0.850
Flt Protected	0.950			0.950				0.950			0.950	
Satd. Flow (prot)	1467	1858	0	1805	1833	0	0	1805	1615	0	1752	1062
Flt Permitted	0.216			0.348				0.722			0.721	
Satd. Flow (perm)	334	1858	0	661	1833	0	0	1372	1615	0	1330	1062
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2			3				120			137
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		710			1613			1227			992	
Travel Time (s)		16.1			36.7			27.9			22.5	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	23%	2%	0%	0%	3%	1%	0%	0%	0%	3%	0%	52%
Adj. Flow (vph)	334	665	13	16	676	31	55	0	52	53	0	305
Shared Lane Traffic (%)												
Lane Group Flow (vph)	334	678	0	16	707	0	0	55	52	0	53	305
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		Yes			Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		Perm	NA		Perm	NA	Perm	Perm	NA	pm+ov
Protected Phases	5	2			6			8			4	5

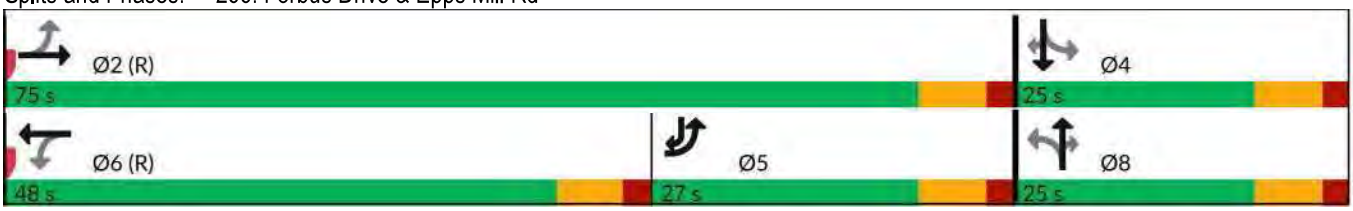


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	2			6			8		8	4		4
Detector Phase	5	2		6	6		8	8	8	4	4	5
Switch Phase												
Minimum Initial (s)	7.0	10.0		10.0	10.0		10.0	10.0	10.0	10.0	10.0	7.0
Minimum Split (s)	14.0	17.0		25.0	25.0		17.0	17.0	17.0	25.0	25.0	14.0
Total Split (s)	27.0	75.0		48.0	48.0		25.0	25.0	25.0	25.0	25.0	27.0
Total Split (%)	27.0%	75.0%		48.0%	48.0%		25.0%	25.0%	25.0%	25.0%	25.0%	27.0%
Maximum Green (s)	20.0	68.0		41.0	41.0		18.0	18.0	18.0	18.0	18.0	20.0
Yellow Time (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0		-2.0	-2.0			-2.0	-2.0		-2.0	-2.0
Total Lost Time (s)	5.0	5.0		5.0	5.0			5.0	5.0		5.0	5.0
Lead/Lag	Lag			Lead	Lead							Lag
Lead-Lag Optimize?	Yes			Yes	Yes							Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Max		C-Max	C-Max		None	None	None	None	None	None
Walk Time (s)				7.0	7.0					7.0	7.0	
Flash Dont Walk (s)				11.0	11.0					11.0	11.0	
Pedestrian Calls (#/hr)				0	0					0	0	
Act Effct Green (s)	80.5	81.5		53.5	53.5			12.9	12.9		12.9	36.5
Actuated g/C Ratio	0.81	0.82		0.54	0.54			0.13	0.13		0.13	0.37
v/c Ratio	0.64	0.44		0.04	0.71			0.31	0.16		0.30	0.64
Control Delay (s/veh)	17.4	3.4		12.3	20.4			44.2	1.1		44.3	19.7
Queue Delay	0.0	0.0		0.0	0.0			0.0	0.0		0.0	0.0
Total Delay (s/veh)	17.4	3.5		12.3	20.4			44.2	1.1		44.3	19.7
LOS	B	A		B	C			D	A		D	B
Approach Delay (s/veh)		8.1			20.3			23.3			23.3	
Approach LOS		A			C			C			C	
90th %ile Green (s)	20.0	72.6		45.6	45.6		13.4	13.4	13.4	13.4	13.4	20.0
90th %ile Term Code	Max	Coord		Coord	Coord		Gap	Gap	Gap	Gap	Gap	Max
70th %ile Green (s)	20.0	75.0		48.0	48.0		11.0	11.0	11.0	11.0	11.0	20.0
70th %ile Term Code	Max	Coord		Coord	Coord		Gap	Gap	Gap	Gap	Gap	Max
50th %ile Green (s)	20.0	76.0		49.0	49.0		10.0	10.0	10.0	10.0	10.0	20.0
50th %ile Term Code	Max	Coord		Coord	Coord		Min	Min	Min	Min	Min	Max
30th %ile Green (s)	20.0	76.0		49.0	49.0		10.0	10.0	10.0	10.0	10.0	20.0
30th %ile Term Code	Hold	Coord		Coord	Coord		Min	Min	Min	Min	Min	Hold
10th %ile Green (s)	20.0	93.0		66.0	66.0		0.0	0.0	0.0	0.0	0.0	20.0
10th %ile Term Code	Hold	Coord		Coord	Coord		Skip	Skip	Skip	Skip	Skip	Hold
Stops (vph)	220	134		7	431			50	0		47	140
Fuel Used(gal)	4	5		0	14			1	1		1	4
CO Emissions (g/hr)	297	348		20	994			91	36		80	304
NOx Emissions (g/hr)	58	68		4	193			18	7		16	59
VOC Emissions (g/hr)	69	81		5	230			21	8		19	71
Dilemma Vehicles (#)	0	0		0	0			0	0		0	0
Queue Length 50th (ft)	48	84		4	263			33	0		31	82
Queue Length 95th (ft)	168	123		m12	m353			69	0		68	166
Internal Link Dist (ft)		630			1533			1147			912	
Turn Bay Length (ft)	215			200					100			100
Base Capacity (vph)	518	1515		353	982			274	419		266	474

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Starvation Cap Reductn	0	143		0	0			0	0		0	0
Spillback Cap Reductn	0	0		0	0			0	0		0	0
Storage Cap Reductn	0	0		0	0			0	0		0	0
Reduced v/c Ratio	0.64	0.49		0.05	0.72			0.20	0.12		0.20	0.64

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 66 (66%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.72			
Intersection Signal Delay (s/veh): 15.3		Intersection LOS: B	
Intersection Capacity Utilization 78.2%		ICU Level of Service D	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 200: Forbus Drive & Epps Mill Rd



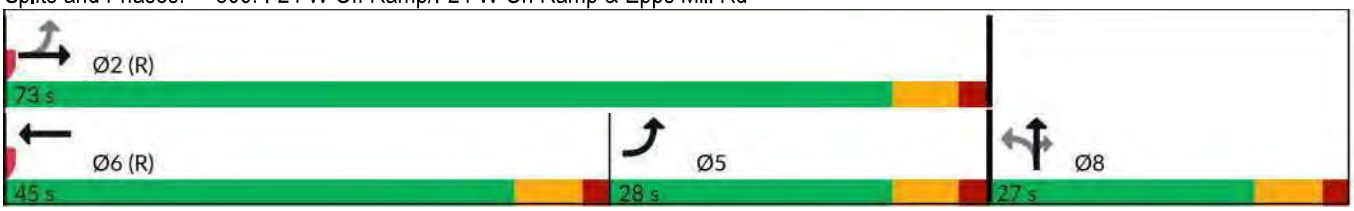
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	473	622	0	0	485	551	96	8	390	0	0	0
Future Volume (vph)	473	622	0	0	485	551	96	8	390	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	500		0	0		250	0		265	0		0
Storage Lanes	1		0	0		1	0		1	0		0
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt						0.850			0.850			
Flt Protected	0.950							0.956				
Satd. Flow (prot)	1752	1845	0	0	1727	1429	0	1736	1392	0	0	0
Flt Permitted	0.345							0.956				
Satd. Flow (perm)	636	1845	0	0	1727	1429	0	1736	1392	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						450			333			
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1201			710			632			300	
Travel Time (s)		27.3			16.1			14.4			6.8	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	3%	3%	3%	0%	10%	13%	5%	0%	16%	3%	3%	3%
Adj. Flow (vph)	473	622	0	0	485	551	96	8	390	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	473	622	0	0	485	551	0	104	390	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane					Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	60		60	60		60	60		60	60		60
Number of Detectors	1	2			2	1	1	2	1			
Detector Template	Left	Thru			Thru	Right	Left	Thru	Right			
Leading Detector (ft)	20	100			100	20	20	100	20			
Trailing Detector (ft)	0	0			0	0	0	0	0			
Detector 1 Position(ft)	0	0			0	0	0	0	0			
Detector 1 Size(ft)	20	6			6	20	20	6	20			
Detector 1 Type	Cl+Ex	Cl+Ex			Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex			
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0	0.0	0.0	0.0	0.0			
Detector 1 Queue (s)	0.0	0.0			0.0	0.0	0.0	0.0	0.0			
Detector 1 Delay (s)	0.0	0.0			0.0	0.0	0.0	0.0	0.0			
Detector 2 Position(ft)		94			94			94				
Detector 2 Size(ft)		6			6			6				
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				
Turn Type	pm+pt	NA			NA	Free	Perm	NA	Perm			
Protected Phases	5	2			6			8				

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	2					Free	8		8			
Detector Phase	5	2			6		8	8	8			
Switch Phase												
Minimum Initial (s)	7.0	10.0			10.0		10.0	10.0	10.0			
Minimum Split (s)	14.0	25.0			25.0		25.0	25.0	25.0			
Total Split (s)	28.0	73.0			45.0		27.0	27.0	27.0			
Total Split (%)	28.0%	73.0%			45.0%		27.0%	27.0%	27.0%			
Maximum Green (s)	21.0	66.0			38.0		20.0	20.0	20.0			
Yellow Time (s)	5.0	5.0			5.0		5.0	5.0	5.0			
All-Red Time (s)	2.0	2.0			2.0		2.0	2.0	2.0			
Lost Time Adjust (s)	-2.0	-2.0			-2.0			-2.0	-2.0			
Total Lost Time (s)	5.0	5.0			5.0			5.0	5.0			
Lead/Lag	Lag				Lead							
Lead-Lag Optimize?	Yes				Yes							
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0	3.0			
Recall Mode	None	C-Max			C-Max		None	None	None			
Walk Time (s)					7.0		7.0	7.0	7.0			
Flash Dont Walk (s)					11.0		11.0	11.0	11.0			
Pedestrian Calls (#/hr)					0		0	0	0			
Act Effct Green (s)	74.1	74.1			46.1	100.0		15.9	15.9			
Actuated g/C Ratio	0.74	0.74			0.46	1.00		0.16	0.16			
v/c Ratio	0.65	0.45			0.60	0.38		0.37	0.77			
Control Delay (s/veh)	14.6	3.9			18.1	0.5		40.4	18.7			
Queue Delay	0.0	0.0			0.0	0.0		0.0	0.0			
Total Delay (s/veh)	14.6	3.9			18.1	0.5		40.4	18.7			
LOS	B	A			B	A		D	B			
Approach Delay (s/veh)		8.6			8.8			23.3				
Approach LOS		A			A			C				
90th %ile Green (s)	21.0	66.0			38.0		20.0	20.0	20.0			
90th %ile Term Code	Max	Coord			Coord		Max	Max	Max			
70th %ile Green (s)	21.0	68.7			40.7		17.3	17.3	17.3			
70th %ile Term Code	Hold	Coord			Coord		Gap	Gap	Gap			
50th %ile Green (s)	21.0	73.8			45.8		12.2	12.2	12.2			
50th %ile Term Code	Hold	Coord			Coord		Gap	Gap	Gap			
30th %ile Green (s)	21.0	76.0			48.0		10.0	10.0	10.0			
30th %ile Term Code	Hold	Coord			Coord		Min	Min	Min			
10th %ile Green (s)	21.0	76.0			48.0		10.0	10.0	10.0			
10th %ile Term Code	Hold	Coord			Coord		Min	Min	Min			
Stops (vph)	207	171			304	0		89	86			
Fuel Used(gal)	7	7			6	3		2	4			
CO Emissions (g/hr)	488	508			430	218		130	272			
NOx Emissions (g/hr)	95	99			84	42		25	53			
VOC Emissions (g/hr)	113	118			100	50		30	63			
Dilemma Vehicles (#)	0	0			0	0		0	0			
Queue Length 50th (ft)	53	35			130	0		61	33			
Queue Length 95th (ft)	m135	m172			310	0		104	134			
Internal Link Dist (ft)		1121			630			552			220	
Turn Bay Length (ft)	500					250			265			
Base Capacity (vph)	727	1367			796	1429		381	565			

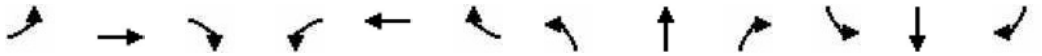
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Starvation Cap Reductn	0	0			0	0		0	0			
Spillback Cap Reductn	0	0			0	0		0	0			
Storage Cap Reductn	0	0			0	0		0	0			
Reduced v/c Ratio	0.65	0.46			0.61	0.39		0.27	0.69			

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 79 (79%), Referenced to phase 2:EBTL and 6:WBT, Start of Green			
Natural Cycle: 75			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.78			
Intersection Signal Delay (s/veh): 11.4		Intersection LOS: B	
Intersection Capacity Utilization 72.6%		ICU Level of Service C	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 300: I-24 W Off Ramp/I-24 W On Ramp & Epps Mill Rd



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	99	203	109	108	195	278	57	57	325	567	298	534
Future Volume (vph)	99	203	109	108	195	278	57	57	325	567	298	534
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	160		160	150		0	185		185	250		250
Storage Lanes	1		0	1		0	0		1	0		1
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.948			0.912			0.872				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1752	1783	0	1752	1515	0	1805	1406	0	1570	1845	1538
Flt Permitted	0.237			0.430			0.578			0.182		
Satd. Flow (perm)	437	1783	0	793	1515	0	1098	1406	0	301	1845	1538
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		28			75			257				498
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		559			1201			1215			518	
Travel Time (s)		12.7			27.3			27.6			11.8	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	3%	0%	3%	3%	12%	16%	0%	0%	21%	15%	3%	5%
Adj. Flow (vph)	99	203	109	108	195	278	57	57	325	567	298	534
Shared Lane Traffic (%)												
Lane Group Flow (vph)	99	312	0	108	473	0	57	382	0	567	298	534
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	60		9	15		60	15		9	60		60
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100		20	100	20
Trailing Detector (ft)	0	0		0	0		0	0		0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		pm+pt	NA	Perm
Protected Phases		2			6			8		7	4	

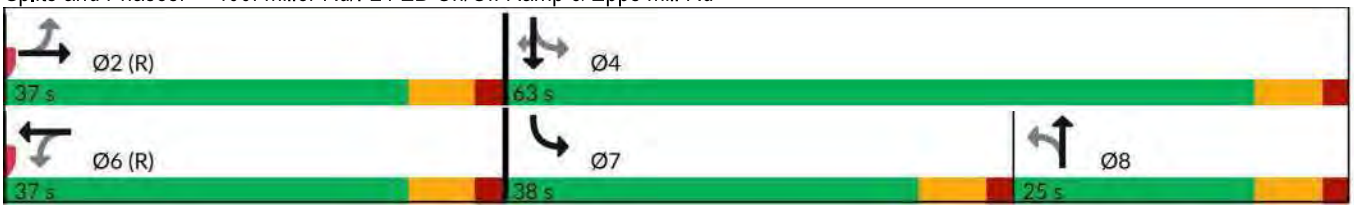


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	2			6			8			4		4
Detector Phase	2	2		6	6		8	8		7	4	4
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0		7.0	10.0	10.0
Minimum Split (s)	17.0	17.0		17.0	17.0		25.0	25.0		14.0	17.0	17.0
Total Split (s)	37.0	37.0		37.0	37.0		25.0	25.0		38.0	63.0	63.0
Total Split (%)	37.0%	37.0%		37.0%	37.0%		25.0%	25.0%		38.0%	63.0%	63.0%
Maximum Green (s)	30.0	30.0		30.0	30.0		18.0	18.0		31.0	56.0	56.0
Yellow Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	5.0
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0		-2.0	-2.0		-2.0	-2.0		-2.0	-2.0	-2.0
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	5.0
Lead/Lag							Lag	Lag		Lead		
Lead-Lag Optimize?							Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	C-Max	C-Max		C-Max	C-Max		None	None		None	None	None
Walk Time (s)							7.0	7.0				
Flash Dont Walk (s)							11.0	11.0				
Pedestrian Calls (#/hr)							0	0				
Act Effct Green (s)	35.0	35.0		35.0	35.0		17.0	17.0		55.0	55.0	55.0
Actuated g/C Ratio	0.35	0.35		0.35	0.35		0.17	0.17		0.55	0.55	0.55
v/c Ratio	0.65	0.48		0.38	0.81		0.30	0.84		0.97	0.29	0.49
Control Delay (s/veh)	51.8	26.9		13.5	22.1		39.6	31.2		56.7	12.5	3.0
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay (s/veh)	51.8	26.9		13.5	22.1		39.6	31.2		56.7	12.5	3.0
LOS	D	C		B	C		D	C		E	B	A
Approach Delay (s/veh)		33.0			20.6			32.3			26.8	
Approach LOS		C			C			C			C	
90th %ile Green (s)	30.0	30.0		30.0	30.0		18.0	18.0		31.0	56.0	56.0
90th %ile Term Code	Coord	Coord		Coord	Coord		Max	Max		Max	Hold	Hold
70th %ile Green (s)	30.0	30.0		30.0	30.0		18.0	18.0		31.0	56.0	56.0
70th %ile Term Code	Coord	Coord		Coord	Coord		Max	Max		Max	Hold	Hold
50th %ile Green (s)	31.0	31.0		31.0	31.0		17.0	17.0		31.0	55.0	55.0
50th %ile Term Code	Coord	Coord		Coord	Coord		Gap	Gap		Max	Hold	Hold
30th %ile Green (s)	36.2	36.2		36.2	36.2		11.8	11.8		31.0	49.8	49.8
30th %ile Term Code	Coord	Coord		Coord	Coord		Gap	Gap		Max	Hold	Hold
10th %ile Green (s)	38.0	38.0		38.0	38.0		10.0	10.0		31.0	48.0	48.0
10th %ile Term Code	Coord	Coord		Coord	Coord		Min	Min		Max	Hold	Hold
Stops (vph)	80	223		58	316		48	132		422	148	40
Fuel Used(gal)	2	4		2	8		1	7		11	3	3
CO Emissions (g/hr)	134	301		114	581		88	474		781	195	190
NOx Emissions (g/hr)	26	59		22	113		17	92		152	38	37
VOC Emissions (g/hr)	31	70		26	135		21	110		181	45	44
Dilemma Vehicles (#)	0	0		0	0		0	0		0	0	0
Queue Length 50th (ft)	54	144		37	252		31	75		298	91	10
Queue Length 95th (ft)	#143	232		m41	#420		69	#224		#519	136	54
Internal Link Dist (ft)		479			1121			1135			438	
Turn Bay Length (ft)	160			150			185			250		250
Base Capacity (vph)	152	643		277	579		219	486		584	1070	1101

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Starvation Cap Reductn	0	0		0	0		0	0		0	0	0
Spillback Cap Reductn	0	0		0	0		0	0		0	0	0
Storage Cap Reductn	0	0		0	0		0	0		0	0	0
Reduced v/c Ratio	0.65	0.49		0.39	0.82		0.26	0.79		0.97	0.28	0.49

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 8 (8%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.97			
Intersection Signal Delay (s/veh): 27.3		Intersection LOS: C	
Intersection Capacity Utilization 106.8%		ICU Level of Service G	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 400: Miller Rd/I-24 EB On/Off Ramp & Epps Mill Rd



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	8	153	60	73	653	60	39	5	73	185	0	29
Future Volume (vph)	8	153	60	73	653	60	39	5	73	185	0	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	70		0	60		0	0		0	0		0
Storage Lanes	1		0	1		0	0		1	0		0
Taper Length (ft)	150			100			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.958			0.987			0.916			0.982	
Flt Protected	0.950			0.950				0.984			0.959	
Satd. Flow (prot)	1805	1794	0	1805	1834	0	0	1713	0	0	1605	0
Flt Permitted	0.950			0.950				0.984			0.959	
Satd. Flow (perm)	1805	1794	0	1805	1834	0	0	1713	0	0	1605	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1306			559			1202			1203	
Travel Time (s)		29.7			12.7			27.3			27.3	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	2%	0%	0%	2%	5%	0%	0%	0%	13%	0%	2%
Adj. Flow (vph)	8	153	60	73	653	60	39	5	73	185	0	29
Shared Lane Traffic (%)												
Lane Group Flow (vph)	8	213	0	73	713	0	0	117	0	0	214	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 70.0%		ICU Level of Service C	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	31.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	8	153	60	73	653	60	39	5	73	185	0	29
Future Vol, veh/h	8	153	60	73	653	60	39	5	73	185	0	29
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	70	-	-	60	-	-	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	0	2	0	0	2	5	0	0	0	13	0	2
Mvmt Flow	8	153	60	73	653	60	39	5	73	185	0	29

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	713	0	0	213	0	0	1043	1058	183	1067	1058	683
Stage 1	-	-	-	-	-	-	199	199	-	829	829	-
Stage 2	-	-	-	-	-	-	844	859	-	238	229	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.23	6.5	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.23	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.23	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.617	4	3.318
Pot Cap-1 Maneuver	896	-	-	1369	-	-	209	227	865	190	227	449
Stage 1	-	-	-	-	-	-	807	740	-	349	388	-
Stage 2	-	-	-	-	-	-	361	376	-	741	718	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	896	-	-	1369	-	-	186	213	865	~ 163	213	449
Mov Cap-2 Maneuver	-	-	-	-	-	-	186	213	-	~ 163	213	-
Stage 1	-	-	-	-	-	-	800	733	-	346	367	-
Stage 2	-	-	-	-	-	-	320	356	-	668	712	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	0.3	0.7	19.3	184.8
HCM LOS			C	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	368	896	-	-	1369	-	-	178
HCM Lane V/C Ratio	0.318	0.009	-	-	0.053	-	-	1.202
HCM Control Delay (s/veh)	19.3	9.1	-	-	7.8	-	-	184.8
HCM Lane LOS	C	A	-	-	A	-	-	F
HCM 95th %tile Q (veh)	1.3	0	-	-	0.2	-	-	11.5

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection: 2: I-24 EB On/Off Ramp/I-24 EB Off Ramp & I-24 EB On Loop

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 100: TN-2 (US Hwy-41) & Epps Mill Rd

Movement	EB	EB	NB	SB
Directions Served	L	R	L	R
Maximum Queue (ft)	599	1518	115	22
Average Queue (ft)	509	872	74	4
95th Queue (ft)	687	1779	123	19
Link Distance (ft)		1518		
Upstream Blk Time (%)		13		
Queuing Penalty (veh)		103		
Storage Bay Dist (ft)	500		150	150
Storage Blk Time (%)	55	54		
Queuing Penalty (veh)	209	205		

Intersection: 200: Forbus Drive & Epps Mill Rd

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	TR	L	TR	LT	R	LT	R
Maximum Queue (ft)	235	427	25	285	154	56	279	199
Average Queue (ft)	132	161	17	215	41	38	135	154
95th Queue (ft)	239	422	34	310	136	60	321	242
Link Distance (ft)		644		1518	1183		957	
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)	215		200			100		100
Storage Blk Time (%)	3	8		10	9		0	31
Queuing Penalty (veh)	23	26		2	5		1	16

Intersection: 300: I-24 W Off Ramp/I-24 W On Ramp & Epps Mill Rd

Movement	EB	EB	WB	NB	NB
Directions Served	L	T	T	LT	R
Maximum Queue (ft)	217	136	265	109	158
Average Queue (ft)	138	90	128	68	102
95th Queue (ft)	245	174	263	122	165
Link Distance (ft)		1142	644	595	
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)	500				265
Storage Blk Time (%)			1		
Queuing Penalty (veh)			7		

Intersection: 400: Miller Rd/I-24 EB On/Off Ramp & Epps Mill Rd

Movement	EB	EB	WB	WB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	TR	L	TR	L	T	R
Maximum Queue (ft)	160	158	249	404	1047	285	430	256	194
Average Queue (ft)	129	135	127	271	868	285	316	122	116
95th Queue (ft)	169	169	230	394	1057	285	428	238	213
Link Distance (ft)		481		1142	1173		462	462	
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	160		150			185			250
Storage Blk Time (%)	6	1		16		87		1	
Queuing Penalty (veh)	18	1		17		50		5	

Intersection: 500: Dollar General Driveway/Capital Way & Epps Mill Rd

Movement	EB	WB	NB	SB
Directions Served	L	L	LTR	LTR
Maximum Queue (ft)	28	28	74	316
Average Queue (ft)	6	17	43	204
95th Queue (ft)	24	39	72	360
Link Distance (ft)			1166	1164
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	70	60		
Storage Blk Time (%)				
Queuing Penalty (veh)				

Network Summary

Network wide Queuing Penalty: 687

HCS REPORTS – MERGE/DIVERGE

HCS7 Freeway Diverge Report

Project Information			
Analyst	STV Inc.	Date	7/17/2023
Agency	TDOT	Analysis Year	2028
Jurisdiction		Time Analyzed	AM peak
Project Description	BY NB - I 24 EB off ramp	Units	U.S. Customary

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	2	1
Free-Flow Speed (FFS), mi/h	75.4	35.0
Segment Length (L) / Deceleration Length (LA),ft	1500	260
Terrain Type	Level	Specific Grade
Percent Grade, %	-	4.00
Segment Type / Ramp Type	Freeway	Right-Sided One-Lane

Adjustment Factors		
Driver Population	Mostly Familiar	Mostly Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	0.975	0.975
Final Capacity Adjustment Factor (CAF)	0.968	0.968
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	1382	298
Peak Hour Factor (PHF)	1.00	1.00
Total Trucks, %	32.00	32.00
Single-Unit Trucks (SUT), %	-	30
Tractor-Trailers (TT), %	-	70
Heavy Vehicle Adjustment Factor (fHV)	0.758	0.753
Flow Rate (vi),pc/h	1823	396
Capacity (c), pc/h	4646	1936
Volume-to-Capacity Ratio (v/c)	0.39	0.20

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Number of Outer Lanes on Freeway (NO)	0
Distance to Upstream Ramp (LUP), ft	-	Speed Index (DS)	0.475
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/h/ln	-
Distance to Downstream Ramp (LDOWN), ft	-	Off-Ramp Influence Area Speed (SR), mi/h	58.5
Prop. Freeway Vehicles in Lane 1 and 2 (PFD)	1.000	Outer Lanes Freeway Speed (SO), mi/h	80.6
Flow in Lanes 1 and 2 (v12), pc/h	1823	Ramp Junction Speed (S), mi/h	58.5
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	15.6
Level of Service (LOS)	B	Density in Ramp Influence Area (DR), pc/mi/ln	17.6

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HCS7 Freeway Diverge Report

Project Information			
Analyst	STV Inc.	Date	7/17/2023
Agency	TDOT	Analysis Year	2028
Jurisdiction		Time Analyzed	PM peak
Project Description	BY NB - I 24 EB off ramp	Units	U.S. Customary

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	2	1
Free-Flow Speed (FFS), mi/h	75.4	35.0
Segment Length (L) / Deceleration Length (LA),ft	1500	773
Terrain Type	Level	Specific Grade
Percent Grade, %	-	4.00
Segment Type / Ramp Type	Freeway	Right-Sided One-Lane

Adjustment Factors		
Driver Population	Mostly Familiar	Mostly Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	0.975	0.975
Final Capacity Adjustment Factor (CAF)	0.968	0.968
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	2720	538
Peak Hour Factor (PHF)	1.00	1.00
Total Trucks, %	32.00	32.00
Single-Unit Trucks (SUT), %	-	30
Tractor-Trailers (TT), %	-	70
Heavy Vehicle Adjustment Factor (fHV)	0.758	0.753
Flow Rate (vi),pc/h	3588	714
Capacity (c), pc/h	4646	1936
Volume-to-Capacity Ratio (v/c)	0.77	0.37

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Number of Outer Lanes on Freeway (NO)	0
Distance to Upstream Ramp (LUP), ft	-	Speed Index (DS)	0.504
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/h/ln	-
Distance to Downstream Ramp (LDOWN), ft	-	Off-Ramp Influence Area Speed (SR), mi/h	57.6
Prop. Freeway Vehicles in Lane 1 and 2 (PFD)	1.000	Outer Lanes Freeway Speed (SO), mi/h	80.6
Flow in Lanes 1 and 2 (v12), pc/h	3588	Ramp Junction Speed (S), mi/h	57.6
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	31.1
Level of Service (LOS)	D	Density in Ramp Influence Area (DR), pc/mi/ln	28.2

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HCS7 Freeway Diverge Report

Project Information

Analyst	STV Inc.	Date	7/17/2023
Agency	TDOT	Analysis Year	2048
Jurisdiction		Time Analyzed	AM peak
Project Description	FY NB - I 24 EB off ramp	Units	U.S. Customary

Geometric Data

	Freeway	Ramp
Number of Lanes (N), ln	2	1
Free-Flow Speed (FFS), mi/h	75.4	35.0
Segment Length (L) / Deceleration Length (LA),ft	1500	260
Terrain Type	Level	Specific Grade
Percent Grade, %	-	4.00
Segment Type / Ramp Type	Freeway	Right-Sided One-Lane

Adjustment Factors

Driver Population	Mostly Familiar	Mostly Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	0.975	0.975
Final Capacity Adjustment Factor (CAF)	0.968	0.968
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity

Demand Volume (Vi)	2073	775
Peak Hour Factor (PHF)	1.00	1.00
Total Trucks, %	32.00	32.00
Single-Unit Trucks (SUT), %	-	30
Tractor-Trailers (TT), %	-	70
Heavy Vehicle Adjustment Factor (fHV)	0.758	0.753
Flow Rate (vi),pc/h	2735	1029
Capacity (c), pc/h	4646	1936
Volume-to-Capacity Ratio (v/c)	0.59	0.53

Speed and Density

Upstream Equilibrium Distance (LEQ), ft	-	Number of Outer Lanes on Freeway (NO)	0
Distance to Upstream Ramp (LUP), ft	-	Speed Index (DS)	0.532
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/h/ln	-
Distance to Downstream Ramp (LDOWN), ft	-	Off-Ramp Influence Area Speed (SR), mi/h	56.7
Prop. Freeway Vehicles in Lane 1 and 2 (PFD)	1.000	Outer Lanes Freeway Speed (SO), mi/h	80.6
Flow in Lanes 1 and 2 (v12), pc/h	2735	Ramp Junction Speed (S), mi/h	56.7
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	24.1
Level of Service (LOS)	C	Density in Ramp Influence Area (DR), pc/mi/ln	25.4

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HCS7 Freeway Diverge Report

Project Information			
Analyst	STV Inc.	Date	7/17/2023
Agency	TDOT	Analysis Year	2048
Jurisdiction		Time Analyzed	PM peak
Project Description	FY NB - I 24 EB off ramp	Units	U.S. Customary

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	2	1
Free-Flow Speed (FFS), mi/h	75.4	35.0
Segment Length (L) / Deceleration Length (LA),ft	1500	260
Terrain Type	Level	Specific Grade
Percent Grade, %	-	4.00
Segment Type / Ramp Type	Freeway	Right-Sided One-Lane

Adjustment Factors		
Driver Population	Mostly Familiar	Mostly Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	0.975	0.975
Final Capacity Adjustment Factor (CAF)	0.968	0.968
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	4080	1399
Peak Hour Factor (PHF)	1.00	1.00
Total Trucks, %	32.00	32.00
Single-Unit Trucks (SUT), %	-	30
Tractor-Trailers (TT), %	-	70
Heavy Vehicle Adjustment Factor (fHV)	0.758	0.753
Flow Rate (vi),pc/h	5383	1858
Capacity (c), pc/h	4646	1936
Volume-to-Capacity Ratio (v/c)	1.16	0.96

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	0.0	Number of Outer Lanes on Freeway (NO)	0
Distance to Upstream Ramp (LUP), ft	-	Speed Index (DS)	-
Downstream Equilibrium Distance (LEQ), ft	0.0	Flow Outer Lanes (vOA), pc/h/ln	-
Distance to Downstream Ramp (LDOWN), ft	-	Off-Ramp Influence Area Speed (SR), mi/h	-
Prop. Freeway Vehicles in Lane 1 and 2 (PFD)	1.000	Outer Lanes Freeway Speed (SO), mi/h	-
Flow in Lanes 1 and 2 (v12), pc/h	5383	Ramp Junction Speed (S), mi/h	-
Flow Entering Ramp-Infl. Area (vR12), pc/h	5383	Average Density (D), pc/mi/ln	-
Level of Service (LOS)	F	Density in Ramp Influence Area (DR), pc/mi/ln	-

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HCS7 Freeway Diverge Report

Project Information			
Analyst	STV Inc.	Date	7/17/2023
Agency	TDOT	Analysis Year	2028
Jurisdiction		Time Analyzed	AM peak
Project Description	BY B - I 24 EB off ramp	Units	U.S. Customary

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	2	1
Free-Flow Speed (FFS), mi/h	75.4	35.0
Segment Length (L) / Deceleration Length (LA),ft	1500	773
Terrain Type	Level	Specific Grade
Percent Grade, %	-	3.27
Segment Type / Ramp Type	Freeway	Right-Sided One-Lane

Adjustment Factors		
Driver Population	Mostly Familiar	Mostly Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	0.975	0.975
Final Capacity Adjustment Factor (CAF)	0.968	0.968
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	1382	298
Peak Hour Factor (PHF)	1.00	1.00
Total Trucks, %	32.00	32.00
Single-Unit Trucks (SUT), %	-	30
Tractor-Trailers (TT), %	-	70
Heavy Vehicle Adjustment Factor (fHV)	0.758	0.746
Flow Rate (vi),pc/h	1823	399
Capacity (c), pc/h	4646	1936
Volume-to-Capacity Ratio (v/c)	0.39	0.21

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Number of Outer Lanes on Freeway (NO)	0
Distance to Upstream Ramp (LUP), ft	-	Speed Index (DS)	0.476
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/h/ln	-
Distance to Downstream Ramp (LDOWN), ft	-	Off-Ramp Influence Area Speed (SR), mi/h	58.5
Prop. Freeway Vehicles in Lane 1 and 2 (PFD)	1.000	Outer Lanes Freeway Speed (SO), mi/h	80.6
Flow in Lanes 1 and 2 (v12), pc/h	1823	Ramp Junction Speed (S), mi/h	58.5
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	15.6
Level of Service (LOS)	B	Density in Ramp Influence Area (DR), pc/mi/ln	13.0

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HCS7 Freeway Diverge Report

Project Information			
Analyst	STV Inc.	Date	7/17/2023
Agency	TDOT	Analysis Year	2028
Jurisdiction		Time Analyzed	PM peak
Project Description	BY B - I 24 EB off ramp	Units	U.S. Customary

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	2	1
Free-Flow Speed (FFS), mi/h	75.4	35.0
Segment Length (L) / Deceleration Length (LA),ft	1500	773
Terrain Type	Level	Specific Grade
Percent Grade, %	-	3.27
Segment Type / Ramp Type	Freeway	Right-Sided One-Lane

Adjustment Factors		
Driver Population	Mostly Familiar	Mostly Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	0.975	0.975
Final Capacity Adjustment Factor (CAF)	0.968	0.968
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	2720	538
Peak Hour Factor (PHF)	1.00	1.00
Total Trucks, %	32.00	32.00
Single-Unit Trucks (SUT), %	-	30
Tractor-Trailers (TT), %	-	70
Heavy Vehicle Adjustment Factor (fHV)	0.758	0.746
Flow Rate (vi),pc/h	3588	721
Capacity (c), pc/h	4646	1936
Volume-to-Capacity Ratio (v/c)	0.77	0.37

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Number of Outer Lanes on Freeway (NO)	0
Distance to Upstream Ramp (LUP), ft	-	Speed Index (DS)	0.505
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/h/ln	-
Distance to Downstream Ramp (LDOWN), ft	-	Off-Ramp Influence Area Speed (SR), mi/h	57.6
Prop. Freeway Vehicles in Lane 1 and 2 (PFD)	1.000	Outer Lanes Freeway Speed (SO), mi/h	80.6
Flow in Lanes 1 and 2 (v12), pc/h	3588	Ramp Junction Speed (S), mi/h	57.6
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	31.1
Level of Service (LOS)	D	Density in Ramp Influence Area (DR), pc/mi/ln	28.2

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HCS7 Freeway Diverge Report

Project Information			
Analyst	STV Inc.	Date	7/17/2023
Agency	TDOT	Analysis Year	2048
Jurisdiction		Time Analyzed	AM peak
Project Description	FY B - I 24 EB off ramp	Units	U.S. Customary

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	2	1
Free-Flow Speed (FFS), mi/h	75.4	35.0
Segment Length (L) / Deceleration Length (LA),ft	1500	773
Terrain Type	Level	Specific Grade
Percent Grade, %	-	3.27
Segment Type / Ramp Type	Freeway	Right-Sided One-Lane

Adjustment Factors		
Driver Population	Mostly Familiar	Mostly Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	0.975	0.975
Final Capacity Adjustment Factor (CAF)	0.968	0.968
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	2073	775
Peak Hour Factor (PHF)	1.00	1.00
Total Trucks, %	32.00	32.00
Single-Unit Trucks (SUT), %	-	30
Tractor-Trailers (TT), %	-	70
Heavy Vehicle Adjustment Factor (fHV)	0.758	0.746
Flow Rate (vi),pc/h	2735	1039
Capacity (c), pc/h	4646	1936
Volume-to-Capacity Ratio (v/c)	0.59	0.54

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Number of Outer Lanes on Freeway (NO)	0
Distance to Upstream Ramp (LUP), ft	-	Speed Index (DS)	0.533
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/h/ln	-
Distance to Downstream Ramp (LDOWN), ft	-	Off-Ramp Influence Area Speed (SR), mi/h	56.7
Prop. Freeway Vehicles in Lane 1 and 2 (PFD)	1.000	Outer Lanes Freeway Speed (SO), mi/h	80.6
Flow in Lanes 1 and 2 (v12), pc/h	2735	Ramp Junction Speed (S), mi/h	56.7
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	24.1
Level of Service (LOS)	C	Density in Ramp Influence Area (DR), pc/mi/ln	20.8

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HCS7 Freeway Diverge Report

Project Information			
Analyst	STV Inc.	Date	7/17/2023
Agency	TDOT	Analysis Year	2048
Jurisdiction		Time Analyzed	PM peak
Project Description	FY B - I 24 EB off ramp	Units	U.S. Customary

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	2	1
Free-Flow Speed (FFS), mi/h	75.4	35.0
Segment Length (L) / Deceleration Length (LA),ft	1500	773
Terrain Type	Level	Specific Grade
Percent Grade, %	-	3.27
Segment Type / Ramp Type	Freeway	Right-Sided One-Lane

Adjustment Factors		
Driver Population	Mostly Familiar	Mostly Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	0.975	0.975
Final Capacity Adjustment Factor (CAF)	0.968	0.968
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	4080	1399
Peak Hour Factor (PHF)	1.00	1.00
Total Trucks, %	32.00	32.00
Single-Unit Trucks (SUT), %	-	30
Tractor-Trailers (TT), %	-	70
Heavy Vehicle Adjustment Factor (fHV)	0.758	0.746
Flow Rate (vi),pc/h	5383	1875
Capacity (c), pc/h	4646	1936
Volume-to-Capacity Ratio (v/c)	1.16	0.97

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	0.0	Number of Outer Lanes on Freeway (NO)	0
Distance to Upstream Ramp (LUP), ft	-	Speed Index (DS)	-
Downstream Equilibrium Distance (LEQ), ft	0.0	Flow Outer Lanes (vOA), pc/h/ln	-
Distance to Downstream Ramp (LDOWN), ft	-	Off-Ramp Influence Area Speed (SR), mi/h	-
Prop. Freeway Vehicles in Lane 1 and 2 (PFD)	1.000	Outer Lanes Freeway Speed (SO), mi/h	-
Flow in Lanes 1 and 2 (v12), pc/h	5383	Ramp Junction Speed (S), mi/h	-
Flow Entering Ramp-Infl. Area (vR12), pc/h	5383	Average Density (D), pc/mi/ln	-
Level of Service (LOS)	F	Density in Ramp Influence Area (DR), pc/mi/ln	-

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HCS7 Freeway Merge Report

Project Information			
Analyst	STV Inc.	Date	7/17/2023
Agency	TDOT	Analysis Year	2028
Jurisdiction		Time Analyzed	AM Peak
Project Description	BY NB - I 24 EB on loop	Units	U.S. Customary

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	2	1
Free-Flow Speed (FFS), mi/h	75.4	35.0
Segment Length (L) / Acceleration Length (LA),ft	1500	938
Terrain Type	Level	Specific Grade
Percent Grade, %	-	-5.60
Segment Type / Ramp Type	Freeway	Right-Sided One-Lane

Adjustment Factors		
Driver Population	Mostly Familiar	Mostly Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	0.975	0.975
Final Capacity Adjustment Factor (CAF)	0.968	0.968
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	1240	156
Peak Hour Factor (PHF)	1.00	1.00
Total Trucks, %	35.00	35.00
Single-Unit Trucks (SUT), %	-	30
Tractor-Trailers (TT), %	-	70
Heavy Vehicle Adjustment Factor (fHV)	0.741	0.747
Flow Rate (vi),pc/h	1673	209
Capacity (c), pc/h	4646	1936
Volume-to-Capacity Ratio (v/c)	0.41	0.11

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Number of Outer Lanes on Freeway (NO)	0
Distance to Upstream Ramp (LUP), ft	-	Speed Index (MS)	0.283
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/h/ln	-
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influence Area Speed (SR), mi/h	64.6
Prop. Freeway Vehicles in Lane 1 and 2 (PFM)	1.000	Outer Lanes Freeway Speed (SO), mi/h	73.5
Flow in Lanes 1 and 2 (v12), pc/h	1673	Ramp Junction Speed (S), mi/h	64.6
Flow Entering Ramp-Infl. Area (vR12), pc/h	1882	Average Density (D), pc/mi/ln	14.6
Level of Service (LOS)	B	Density in Ramp Influence Area (DR), pc/mi/ln	14.2

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HCS7 Freeway Merge Report

Project Information			
Analyst	STV Inc.	Date	7/17/2023
Agency	TDOT	Analysis Year	2028
Jurisdiction		Time Analyzed	PM Peak
Project Description	BY NB - I 24 EB on loop	Units	U.S. Customary

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	2	1
Free-Flow Speed (FFS), mi/h	75.4	35.0
Segment Length (L) / Acceleration Length (LA),ft	1500	938
Terrain Type	Level	Specific Grade
Percent Grade, %	-	-5.60
Segment Type / Ramp Type	Freeway	Right-Sided One-Lane

Adjustment Factors		
Driver Population	Mostly Familiar	Mostly Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	0.975	0.975
Final Capacity Adjustment Factor (CAF)	0.968	0.968
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	2349	167
Peak Hour Factor (PHF)	1.00	1.00
Total Trucks, %	35.00	35.00
Single-Unit Trucks (SUT), %	-	30
Tractor-Trailers (TT), %	-	70
Heavy Vehicle Adjustment Factor (fHV)	0.741	0.747
Flow Rate (vi),pc/h	3170	224
Capacity (c), pc/h	4646	1936
Volume-to-Capacity Ratio (v/c)	0.73	0.12

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Number of Outer Lanes on Freeway (NO)	0
Distance to Upstream Ramp (LUP), ft	-	Speed Index (MS)	0.373
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/h/ln	-
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influence Area Speed (SR), mi/h	61.8
Prop. Freeway Vehicles in Lane 1 and 2 (PFM)	1.000	Outer Lanes Freeway Speed (SO), mi/h	73.5
Flow in Lanes 1 and 2 (v12), pc/h	3170	Ramp Junction Speed (S), mi/h	61.8
Flow Entering Ramp-Infl. Area (vR12), pc/h	3394	Average Density (D), pc/mi/ln	27.5
Level of Service (LOS)	C	Density in Ramp Influence Area (DR), pc/mi/ln	26.0

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HCS7 Freeway Merge Report

Project Information

Analyst	STV Inc.	Date	7/17/2023
Agency	TDOT	Analysis Year	2048
Jurisdiction		Time Analyzed	AM Peak
Project Description	FY NB - I 24 EB on loop	Units	U.S. Customary

Geometric Data

	Freeway	Ramp
Number of Lanes (N), ln	2	1
Free-Flow Speed (FFS), mi/h	75.4	35.0
Segment Length (L) / Acceleration Length (LA),ft	1500	938
Terrain Type	Level	Specific Grade
Percent Grade, %	-	-5.60
Segment Type / Ramp Type	Freeway	Right-Sided One-Lane

Adjustment Factors

Driver Population	Mostly Familiar	Mostly Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	0.975	0.975
Final Capacity Adjustment Factor (CAF)	0.968	0.968
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity

Demand Volume (Vi)	1704	406
Peak Hour Factor (PHF)	1.00	1.00
Total Trucks, %	35.00	35.00
Single-Unit Trucks (SUT), %	-	30
Tractor-Trailers (TT), %	-	70
Heavy Vehicle Adjustment Factor (fHV)	0.741	0.747
Flow Rate (vi),pc/h	2300	544
Capacity (c), pc/h	4646	1936
Volume-to-Capacity Ratio (v/c)	0.61	0.28

Speed and Density

Upstream Equilibrium Distance (LEQ), ft	-	Number of Outer Lanes on Freeway (NO)	0
Distance to Upstream Ramp (LUP), ft	-	Speed Index (MS)	0.324
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/h/ln	-
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influence Area Speed (SR), mi/h	63.3
Prop. Freeway Vehicles in Lane 1 and 2 (PFM)	1.000	Outer Lanes Freeway Speed (SO), mi/h	73.5
Flow in Lanes 1 and 2 (v12), pc/h	2300	Ramp Junction Speed (S), mi/h	63.3
Flow Entering Ramp-Infl. Area (vR12), pc/h	2844	Average Density (D), pc/mi/ln	22.5
Level of Service (LOS)	C	Density in Ramp Influence Area (DR), pc/mi/ln	21.6

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HCS7 Freeway Merge Report

Project Information			
Analyst	STV Inc.	Date	7/17/2023
Agency	TDOT	Analysis Year	2048
Jurisdiction		Time Analyzed	PM Peak
Project Description	FY NB - I 24 EB on loop	Units	U.S. Customary

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	2	1
Free-Flow Speed (FFS), mi/h	75.4	35.0
Segment Length (L) / Acceleration Length (LA),ft	1500	938
Terrain Type	Level	Specific Grade
Percent Grade, %	-	-5.60
Segment Type / Ramp Type	Freeway	Right-Sided One-Lane

Adjustment Factors		
Driver Population	Mostly Familiar	Mostly Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	0.975	0.975
Final Capacity Adjustment Factor (CAF)	0.968	0.968
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	3115	434
Peak Hour Factor (PHF)	1.00	1.00
Total Trucks, %	35.00	35.00
Single-Unit Trucks (SUT), %	-	30
Tractor-Trailers (TT), %	-	70
Heavy Vehicle Adjustment Factor (fHV)	0.741	0.747
Flow Rate (vi),pc/h	4204	581
Capacity (c), pc/h	4646	1936
Volume-to-Capacity Ratio (v/c)	1.03	0.30

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	821.6	Number of Outer Lanes on Freeway (NO)	0
Distance to Upstream Ramp (LUP), ft	-	Speed Index (MS)	-
Downstream Equilibrium Distance (LEQ), ft	0.0	Flow Outer Lanes (vOA), pc/h/ln	-
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influence Area Speed (SR), mi/h	-
Prop. Freeway Vehicles in Lane 1 and 2 (PFM)	1.000	Outer Lanes Freeway Speed (SO), mi/h	-
Flow in Lanes 1 and 2 (v12), pc/h	4204	Ramp Junction Speed (S), mi/h	-
Flow Entering Ramp-Infl. Area (vR12), pc/h	4785	Average Density (D), pc/mi/ln	-
Level of Service (LOS)	F	Density in Ramp Influence Area (DR), pc/mi/ln	-

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HCS7 Freeway Merge Report

Project Information			
Analyst	STV Inc.	Date	7/17/2023
Agency	TDOT	Analysis Year	2028
Jurisdiction		Time Analyzed	AM Peak
Project Description	BY B - I 24 EB on loop	Units	U.S. Customary

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	2	1
Free-Flow Speed (FFS), mi/h	75.4	35.0
Segment Length (L) / Acceleration Length (LA),ft	1500	1500
Terrain Type	Level	Specific Grade
Percent Grade, %	-	-1.50
Segment Type / Ramp Type	Freeway	Right-Sided One-Lane

Adjustment Factors		
Driver Population	Mostly Familiar	Mostly Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	0.975	0.975
Final Capacity Adjustment Factor (CAF)	0.968	0.968
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	1240	156
Peak Hour Factor (PHF)	1.00	1.00
Total Trucks, %	35.00	35.00
Single-Unit Trucks (SUT), %	-	30
Tractor-Trailers (TT), %	-	70
Heavy Vehicle Adjustment Factor (fHV)	0.741	0.747
Flow Rate (vi),pc/h	1673	209
Capacity (c), pc/h	4646	1936
Volume-to-Capacity Ratio (v/c)	0.41	0.11

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Number of Outer Lanes on Freeway (NO)	0
Distance to Upstream Ramp (LUP), ft	-	Speed Index (MS)	0.244
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/h/ln	-
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influence Area Speed (SR), mi/h	65.8
Prop. Freeway Vehicles in Lane 1 and 2 (PFM)	1.000	Outer Lanes Freeway Speed (SO), mi/h	73.5
Flow in Lanes 1 and 2 (v12), pc/h	1673	Ramp Junction Speed (S), mi/h	65.8
Flow Entering Ramp-Infl. Area (vR12), pc/h	1882	Average Density (D), pc/mi/ln	14.3
Level of Service (LOS)	B	Density in Ramp Influence Area (DR), pc/mi/ln	10.7

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HCS7 Freeway Merge Report

Project Information

Analyst	STV Inc.	Date	7/17/2023
Agency	TDOT	Analysis Year	2028
Jurisdiction		Time Analyzed	PM Peak
Project Description	BY B - I 24 EB on loop	Units	U.S. Customary

Geometric Data

	Freeway	Ramp
Number of Lanes (N), ln	2	1
Free-Flow Speed (FFS), mi/h	75.4	35.0
Segment Length (L) / Acceleration Length (LA),ft	1500	1500
Terrain Type	Level	Specific Grade
Percent Grade, %	-	-1.50
Segment Type / Ramp Type	Freeway	Right-Sided One-Lane

Adjustment Factors

Driver Population	Mostly Familiar	Mostly Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	0.975	0.975
Final Capacity Adjustment Factor (CAF)	0.968	0.968
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity

Demand Volume (Vi)	2349	167
Peak Hour Factor (PHF)	1.00	1.00
Total Trucks, %	35.00	35.00
Single-Unit Trucks (SUT), %	-	30
Tractor-Trailers (TT), %	-	70
Heavy Vehicle Adjustment Factor (fHV)	0.741	0.747
Flow Rate (vi),pc/h	3170	224
Capacity (c), pc/h	4646	1936
Volume-to-Capacity Ratio (v/c)	0.73	0.12

Speed and Density

Upstream Equilibrium Distance (LEQ), ft	-	Number of Outer Lanes on Freeway (NO)	0
Distance to Upstream Ramp (LUP), ft	-	Speed Index (MS)	0.335
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/h/ln	-
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influence Area Speed (SR), mi/h	62.9
Prop. Freeway Vehicles in Lane 1 and 2 (PFM)	1.000	Outer Lanes Freeway Speed (SO), mi/h	73.5
Flow in Lanes 1 and 2 (v12), pc/h	3170	Ramp Junction Speed (S), mi/h	62.9
Flow Entering Ramp-Infl. Area (vR12), pc/h	3394	Average Density (D), pc/mi/ln	27.0
Level of Service (LOS)	C	Density in Ramp Influence Area (DR), pc/mi/ln	22.5

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HCS7 Freeway Merge Report

Project Information			
Analyst	STV Inc.	Date	7/17/2023
Agency	TDOT	Analysis Year	2048
Jurisdiction		Time Analyzed	AM Peak
Project Description	FY B - I 24 EB on loop	Units	U.S. Customary

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	2	1
Free-Flow Speed (FFS), mi/h	75.4	35.0
Segment Length (L) / Acceleration Length (LA),ft	1500	1500
Terrain Type	Level	Specific Grade
Percent Grade, %	-	-1.50
Segment Type / Ramp Type	Freeway	Right-Sided One-Lane

Adjustment Factors		
Driver Population	Mostly Familiar	Mostly Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	0.975	0.975
Final Capacity Adjustment Factor (CAF)	0.968	0.968
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	1704	406
Peak Hour Factor (PHF)	1.00	1.00
Total Trucks, %	35.00	35.00
Single-Unit Trucks (SUT), %	-	30
Tractor-Trailers (TT), %	-	70
Heavy Vehicle Adjustment Factor (fHV)	0.741	0.747
Flow Rate (vi),pc/h	2300	544
Capacity (c), pc/h	4646	1936
Volume-to-Capacity Ratio (v/c)	0.61	0.28

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Number of Outer Lanes on Freeway (NO)	0
Distance to Upstream Ramp (LUP), ft	-	Speed Index (MS)	0.286
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/h/ln	-
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influence Area Speed (SR), mi/h	64.5
Prop. Freeway Vehicles in Lane 1 and 2 (PFM)	1.000	Outer Lanes Freeway Speed (SO), mi/h	73.5
Flow in Lanes 1 and 2 (v12), pc/h	2300	Ramp Junction Speed (S), mi/h	64.5
Flow Entering Ramp-Infl. Area (vR12), pc/h	2844	Average Density (D), pc/mi/ln	22.0
Level of Service (LOS)	B	Density in Ramp Influence Area (DR), pc/mi/ln	18.1

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HCS7 Freeway Merge Report

Project Information

Analyst	STV Inc.	Date	7/17/2023
Agency	TDOT	Analysis Year	2048
Jurisdiction		Time Analyzed	PM Peak
Project Description	FY B - I 24 EB on loop	Units	U.S. Customary

Geometric Data

	Freeway	Ramp
Number of Lanes (N), ln	2	1
Free-Flow Speed (FFS), mi/h	75.4	35.0
Segment Length (L) / Acceleration Length (LA),ft	1500	1500
Terrain Type	Level	Specific Grade
Percent Grade, %	-	-1.50
Segment Type / Ramp Type	Freeway	Right-Sided One-Lane

Adjustment Factors

Driver Population	Mostly Familiar	Mostly Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	0.975	0.975
Final Capacity Adjustment Factor (CAF)	0.968	0.968
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity

Demand Volume (Vi)	3115	434
Peak Hour Factor (PHF)	1.00	1.00
Total Trucks, %	35.00	35.00
Single-Unit Trucks (SUT), %	-	30
Tractor-Trailers (TT), %	-	70
Heavy Vehicle Adjustment Factor (fHV)	0.741	0.747
Flow Rate (vi),pc/h	4204	581
Capacity (c), pc/h	4646	1936
Volume-to-Capacity Ratio (v/c)	1.03	0.30

Speed and Density

Upstream Equilibrium Distance (LEQ), ft	1071.1	Number of Outer Lanes on Freeway (NO)	0
Distance to Upstream Ramp (LUP), ft	-	Speed Index (MS)	-
Downstream Equilibrium Distance (LEQ), ft	0.0	Flow Outer Lanes (vOA), pc/h/ln	-
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influence Area Speed (SR), mi/h	-
Prop. Freeway Vehicles in Lane 1 and 2 (PFM)	1.000	Outer Lanes Freeway Speed (SO), mi/h	-
Flow in Lanes 1 and 2 (v12), pc/h	4204	Ramp Junction Speed (S), mi/h	-
Flow Entering Ramp-Infl. Area (vR12), pc/h	4785	Average Density (D), pc/mi/ln	-
Level of Service (LOS)	F	Density in Ramp Influence Area (DR), pc/mi/ln	-

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HCS7 Freeway Diverge Report

Project Information			
Analyst	STV Inc.	Date	7/17/2023
Agency	TDOT	Analysis Year	2028
Jurisdiction		Time Analyzed	AM peak
Project Description	BY NB - I 24 WB off ramp	Units	U.S. Customary

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	2	1
Free-Flow Speed (FFS), mi/h	75.4	35.0
Segment Length (L) / Deceleration Length (LA),ft	1500	217
Terrain Type	Level	Specific Grade
Percent Grade, %	-	2.60
Segment Type / Ramp Type	Freeway	Right-Sided One-Lane

Adjustment Factors		
Driver Population	Mostly Familiar	Mostly Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	0.975	0.975
Final Capacity Adjustment Factor (CAF)	0.968	0.968
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	1939	155
Peak Hour Factor (PHF)	1.00	1.00
Total Trucks, %	35.00	35.00
Single-Unit Trucks (SUT), %	-	30
Tractor-Trailers (TT), %	-	70
Heavy Vehicle Adjustment Factor (fHV)	0.741	0.746
Flow Rate (vi),pc/h	2617	208
Capacity (c), pc/h	4646	1936
Volume-to-Capacity Ratio (v/c)	0.56	0.11

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Number of Outer Lanes on Freeway (NO)	0
Distance to Upstream Ramp (LUP), ft	-	Speed Index (DS)	0.458
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/h/ln	-
Distance to Downstream Ramp (LDOWN), ft	-	Off-Ramp Influence Area Speed (SR), mi/h	59.1
Prop. Freeway Vehicles in Lane 1 and 2 (PFD)	1.000	Outer Lanes Freeway Speed (SO), mi/h	80.6
Flow in Lanes 1 and 2 (v12), pc/h	2617	Ramp Junction Speed (S), mi/h	59.1
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	22.1
Level of Service (LOS)	C	Density in Ramp Influence Area (DR), pc/mi/ln	24.8

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HCS7 Freeway Diverge Report

Project Information			
Analyst	STV Inc.	Date	7/17/2023
Agency	TDOT	Analysis Year	2028
Jurisdiction		Time Analyzed	PM peak
Project Description	BY NB - I 24 WB off ramp	Units	U.S. Customary

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	2	1
Free-Flow Speed (FFS), mi/h	75.4	35.0
Segment Length (L) / Deceleration Length (LA),ft	1500	217
Terrain Type	Level	Specific Grade
Percent Grade, %	-	2.60
Segment Type / Ramp Type	Freeway	Right-Sided One-Lane

Adjustment Factors		
Driver Population	Mostly Familiar	Mostly Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	0.975	0.975
Final Capacity Adjustment Factor (CAF)	0.968	0.968
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	1787	190
Peak Hour Factor (PHF)	1.00	1.00
Total Trucks, %	35.00	35.00
Single-Unit Trucks (SUT), %	-	30
Tractor-Trailers (TT), %	-	70
Heavy Vehicle Adjustment Factor (fHV)	0.741	0.746
Flow Rate (vi),pc/h	2412	255
Capacity (c), pc/h	4646	1936
Volume-to-Capacity Ratio (v/c)	0.52	0.13

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Number of Outer Lanes on Freeway (NO)	0
Distance to Upstream Ramp (LUP), ft	-	Speed Index (DS)	0.463
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/h/ln	-
Distance to Downstream Ramp (LDOWN), ft	-	Off-Ramp Influence Area Speed (SR), mi/h	58.9
Prop. Freeway Vehicles in Lane 1 and 2 (PFD)	1.000	Outer Lanes Freeway Speed (SO), mi/h	80.6
Flow in Lanes 1 and 2 (v12), pc/h	2412	Ramp Junction Speed (S), mi/h	58.9
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	20.5
Level of Service (LOS)	C	Density in Ramp Influence Area (DR), pc/mi/ln	23.0

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HCS7 Freeway Diverge Report

Project Information

Analyst	STV Inc.	Date	7/17/2023
Agency	TDOT	Analysis Year	2048
Jurisdiction		Time Analyzed	AM peak
Project Description	FY NB - I 24 WB off ramp	Units	U.S. Customary

Geometric Data

	Freeway	Ramp
Number of Lanes (N), ln	2	1
Free-Flow Speed (FFS), mi/h	75.4	35.0
Segment Length (L) / Deceleration Length (LA),ft	1500	217
Terrain Type	Level	Specific Grade
Percent Grade, %	-	2.60
Segment Type / Ramp Type	Freeway	Right-Sided One-Lane

Adjustment Factors

Driver Population	Mostly Familiar	Mostly Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	0.975	0.975
Final Capacity Adjustment Factor (CAF)	0.968	0.968
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity

Demand Volume (Vi)	2452	403
Peak Hour Factor (PHF)	1.00	1.00
Total Trucks, %	35.00	35.00
Single-Unit Trucks (SUT), %	-	30
Tractor-Trailers (TT), %	-	70
Heavy Vehicle Adjustment Factor (fHV)	0.741	0.746
Flow Rate (vi),pc/h	3309	540
Capacity (c), pc/h	4646	1936
Volume-to-Capacity Ratio (v/c)	0.71	0.28

Speed and Density

Upstream Equilibrium Distance (LEQ), ft	-	Number of Outer Lanes on Freeway (NO)	0
Distance to Upstream Ramp (LUP), ft	-	Speed Index (DS)	0.488
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/h/ln	-
Distance to Downstream Ramp (LDOWN), ft	-	Off-Ramp Influence Area Speed (SR), mi/h	58.1
Prop. Freeway Vehicles in Lane 1 and 2 (PFD)	1.000	Outer Lanes Freeway Speed (SO), mi/h	80.6
Flow in Lanes 1 and 2 (v12), pc/h	3309	Ramp Junction Speed (S), mi/h	58.1
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	28.5
Level of Service (LOS)	D	Density in Ramp Influence Area (DR), pc/mi/ln	30.8

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HCS7 Freeway Diverge Report

Project Information			
Analyst	STV Inc.	Date	7/17/2023
Agency	TDOT	Analysis Year	2048
Jurisdiction		Time Analyzed	PM peak
Project Description	FY NB - I 24 WB off ramp	Units	U.S. Customary

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	2	1
Free-Flow Speed (FFS), mi/h	75.4	35.0
Segment Length (L) / Deceleration Length (LA),ft	1500	217
Terrain Type	Level	Specific Grade
Percent Grade, %	-	2.60
Segment Type / Ramp Type	Freeway	Right-Sided One-Lane

Adjustment Factors		
Driver Population	Mostly Familiar	Mostly Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	0.975	0.975
Final Capacity Adjustment Factor (CAF)	0.968	0.968
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	2449	494
Peak Hour Factor (PHF)	1.00	1.00
Total Trucks, %	35.00	35.00
Single-Unit Trucks (SUT), %	-	30
Tractor-Trailers (TT), %	-	70
Heavy Vehicle Adjustment Factor (fHV)	0.741	0.746
Flow Rate (vi),pc/h	3305	662
Capacity (c), pc/h	4646	1936
Volume-to-Capacity Ratio (v/c)	0.71	0.34

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Number of Outer Lanes on Freeway (NO)	0
Distance to Upstream Ramp (LUP), ft	-	Speed Index (DS)	0.499
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/h/ln	-
Distance to Downstream Ramp (LDOWN), ft	-	Off-Ramp Influence Area Speed (SR), mi/h	57.8
Prop. Freeway Vehicles in Lane 1 and 2 (PFD)	1.000	Outer Lanes Freeway Speed (SO), mi/h	80.6
Flow in Lanes 1 and 2 (v12), pc/h	3305	Ramp Junction Speed (S), mi/h	57.8
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	28.6
Level of Service (LOS)	D	Density in Ramp Influence Area (DR), pc/mi/ln	30.7

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HCS7 Freeway Diverge Report

Project Information

Analyst	STV Inc.	Date	7/17/2023
Agency	TDOT	Analysis Year	2028
Jurisdiction		Time Analyzed	AM peak
Project Description	BY B - I 24 WB off ramp	Units	U.S. Customary

Geometric Data

	Freeway	Ramp
Number of Lanes (N), ln	2	1
Free-Flow Speed (FFS), mi/h	75.4	35.0
Segment Length (L) / Deceleration Length (LA),ft	1500	740
Terrain Type	Level	Specific Grade
Percent Grade, %	-	2.78
Segment Type / Ramp Type	Freeway	Right-Sided One-Lane

Adjustment Factors

Driver Population	Mostly Familiar	Mostly Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	0.975	0.975
Final Capacity Adjustment Factor (CAF)	0.968	0.968
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity

Demand Volume (Vi)	1939	155
Peak Hour Factor (PHF)	1.00	1.00
Total Trucks, %	35.00	35.00
Single-Unit Trucks (SUT), %	-	30
Tractor-Trailers (TT), %	-	70
Heavy Vehicle Adjustment Factor (fHV)	0.741	0.746
Flow Rate (vi),pc/h	2617	208
Capacity (c), pc/h	4646	1936
Volume-to-Capacity Ratio (v/c)	0.56	0.11

Speed and Density

Upstream Equilibrium Distance (LEQ), ft	-	Number of Outer Lanes on Freeway (NO)	0
Distance to Upstream Ramp (LUP), ft	-	Speed Index (DS)	0.458
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/h/ln	-
Distance to Downstream Ramp (LDOWN), ft	-	Off-Ramp Influence Area Speed (SR), mi/h	59.1
Prop. Freeway Vehicles in Lane 1 and 2 (PFD)	1.000	Outer Lanes Freeway Speed (SO), mi/h	80.6
Flow in Lanes 1 and 2 (v12), pc/h	2617	Ramp Junction Speed (S), mi/h	59.1
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	22.1
Level of Service (LOS)	C	Density in Ramp Influence Area (DR), pc/mi/ln	20.1

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HCS7 Freeway Diverge Report

Project Information

Analyst	STV Inc.	Date	7/17/2023
Agency	TDOT	Analysis Year	2028
Jurisdiction		Time Analyzed	PM peak
Project Description	BY B - I 24 WB off ramp	Units	U.S. Customary

Geometric Data

	Freeway	Ramp
Number of Lanes (N), ln	2	1
Free-Flow Speed (FFS), mi/h	75.4	35.0
Segment Length (L) / Deceleration Length (LA),ft	1500	740
Terrain Type	Level	Specific Grade
Percent Grade, %	-	2.78
Segment Type / Ramp Type	Freeway	Right-Sided One-Lane

Adjustment Factors

Driver Population	Mostly Familiar	Mostly Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	0.975	0.975
Final Capacity Adjustment Factor (CAF)	0.968	0.968
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity

Demand Volume (Vi)	1787	190
Peak Hour Factor (PHF)	1.00	1.00
Total Trucks, %	35.00	35.00
Single-Unit Trucks (SUT), %	-	30
Tractor-Trailers (TT), %	-	70
Heavy Vehicle Adjustment Factor (fHV)	0.741	0.746
Flow Rate (vi),pc/h	2412	255
Capacity (c), pc/h	4646	1936
Volume-to-Capacity Ratio (v/c)	0.52	0.13

Speed and Density

Upstream Equilibrium Distance (LEQ), ft	-	Number of Outer Lanes on Freeway (NO)	0
Distance to Upstream Ramp (LUP), ft	-	Speed Index (DS)	0.463
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/h/ln	-
Distance to Downstream Ramp (LDOWN), ft	-	Off-Ramp Influence Area Speed (SR), mi/h	58.9
Prop. Freeway Vehicles in Lane 1 and 2 (PFD)	1.000	Outer Lanes Freeway Speed (SO), mi/h	80.6
Flow in Lanes 1 and 2 (v12), pc/h	2412	Ramp Junction Speed (S), mi/h	58.9
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	20.5
Level of Service (LOS)	B	Density in Ramp Influence Area (DR), pc/mi/ln	18.3

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HCS7 Freeway Diverge Report

Project Information			
Analyst	STV Inc.	Date	7/17/2023
Agency	TDOT	Analysis Year	2048
Jurisdiction		Time Analyzed	AM peak
Project Description	FY B - I 24 WB off ramp	Units	U.S. Customary

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	2	1
Free-Flow Speed (FFS), mi/h	75.4	35.0
Segment Length (L) / Deceleration Length (LA),ft	1500	740
Terrain Type	Level	Specific Grade
Percent Grade, %	-	2.78
Segment Type / Ramp Type	Freeway	Right-Sided One-Lane

Adjustment Factors		
Driver Population	Mostly Familiar	Mostly Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	0.975	0.975
Final Capacity Adjustment Factor (CAF)	0.968	0.968
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	2452	403
Peak Hour Factor (PHF)	1.00	1.00
Total Trucks, %	35.00	35.00
Single-Unit Trucks (SUT), %	-	30
Tractor-Trailers (TT), %	-	70
Heavy Vehicle Adjustment Factor (fHV)	0.741	0.746
Flow Rate (vi),pc/h	3309	540
Capacity (c), pc/h	4646	1936
Volume-to-Capacity Ratio (v/c)	0.71	0.28

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Number of Outer Lanes on Freeway (NO)	0
Distance to Upstream Ramp (LUP), ft	-	Speed Index (DS)	0.488
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/h/ln	-
Distance to Downstream Ramp (LDOWN), ft	-	Off-Ramp Influence Area Speed (SR), mi/h	58.1
Prop. Freeway Vehicles in Lane 1 and 2 (PFD)	1.000	Outer Lanes Freeway Speed (SO), mi/h	80.6
Flow in Lanes 1 and 2 (v12), pc/h	3309	Ramp Junction Speed (S), mi/h	58.1
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	28.5
Level of Service (LOS)	C	Density in Ramp Influence Area (DR), pc/mi/ln	26.0

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HCS7 Freeway Diverge Report

Project Information			
Analyst	STV Inc.	Date	7/17/2023
Agency	TDOT	Analysis Year	2048
Jurisdiction		Time Analyzed	PM peak
Project Description	FY B - I 24 WB off ramp	Units	U.S. Customary

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	2	1
Free-Flow Speed (FFS), mi/h	75.4	35.0
Segment Length (L) / Deceleration Length (LA),ft	1500	740
Terrain Type	Level	Specific Grade
Percent Grade, %	-	2.78
Segment Type / Ramp Type	Freeway	Right-Sided One-Lane

Adjustment Factors		
Driver Population	Mostly Familiar	Mostly Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	0.975	0.975
Final Capacity Adjustment Factor (CAF)	0.968	0.968
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	2449	494
Peak Hour Factor (PHF)	1.00	1.00
Total Trucks, %	35.00	35.00
Single-Unit Trucks (SUT), %	-	30
Tractor-Trailers (TT), %	-	70
Heavy Vehicle Adjustment Factor (fHV)	0.741	0.746
Flow Rate (vi),pc/h	3305	662
Capacity (c), pc/h	4646	1936
Volume-to-Capacity Ratio (v/c)	0.71	0.34

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Number of Outer Lanes on Freeway (NO)	0
Distance to Upstream Ramp (LUP), ft	-	Speed Index (DS)	0.499
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/h/ln	-
Distance to Downstream Ramp (LDOWN), ft	-	Off-Ramp Influence Area Speed (SR), mi/h	57.8
Prop. Freeway Vehicles in Lane 1 and 2 (PFD)	1.000	Outer Lanes Freeway Speed (SO), mi/h	80.6
Flow in Lanes 1 and 2 (v12), pc/h	3305	Ramp Junction Speed (S), mi/h	57.8
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	28.6
Level of Service (LOS)	C	Density in Ramp Influence Area (DR), pc/mi/ln	26.0

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HCS7 Freeway Merge Report

Project Information			
Analyst	STV Inc.	Date	7/18/2023
Agency	TDOT	Analysis Year	2028
Jurisdiction		Time Analyzed	AM Peak
Project Description	BY NB - I 24 WB on ramp	Units	U.S. Customary

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	2	1
Free-Flow Speed (FFS), mi/h	75.4	35.0
Segment Length (L) / Acceleration Length (LA),ft	1500	1087
Terrain Type	Level	Specific Grade
Percent Grade, %	-	-5.10
Segment Type / Ramp Type	Freeway	Right-Sided One-Lane

Adjustment Factors		
Driver Population	Mostly Familiar	Mostly Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	0.975	0.975
Final Capacity Adjustment Factor (CAF)	0.968	0.968
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	2355	571
Peak Hour Factor (PHF)	1.00	1.00
Total Trucks, %	32.00	32.00
Single-Unit Trucks (SUT), %	-	30
Tractor-Trailers (TT), %	-	70
Heavy Vehicle Adjustment Factor (fHV)	0.758	0.763
Flow Rate (vi),pc/h	3107	748
Capacity (c), pc/h	4646	1936
Volume-to-Capacity Ratio (v/c)	0.83	0.39

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Number of Outer Lanes on Freeway (NO)	0
Distance to Upstream Ramp (LUP), ft	-	Speed Index (MS)	0.431
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/h/ln	-
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influence Area Speed (SR), mi/h	59.9
Prop. Freeway Vehicles in Lane 1 and 2 (PFM)	1.000	Outer Lanes Freeway Speed (SO), mi/h	73.5
Flow in Lanes 1 and 2 (v12), pc/h	3107	Ramp Junction Speed (S), mi/h	59.9
Flow Entering Ramp-Infl. Area (vR12), pc/h	3855	Average Density (D), pc/mi/ln	32.2
Level of Service (LOS)	D	Density in Ramp Influence Area (DR), pc/mi/ln	28.5

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HCS7 Freeway Merge Report

Project Information			
Analyst	STV Inc.	Date	7/18/2023
Agency	TDOT	Analysis Year	2028
Jurisdiction		Time Analyzed	PM Peak
Project Description	BY NB - I 24 WB on ramp	Units	U.S. Customary

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	2	1
Free-Flow Speed (FFS), mi/h	75.4	35.0
Segment Length (L) / Acceleration Length (LA),ft	1500	1087
Terrain Type	Level	Specific Grade
Percent Grade, %	-	-5.10
Segment Type / Ramp Type	Freeway	Right-Sided One-Lane

Adjustment Factors		
Driver Population	Mostly Familiar	Mostly Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	0.975	0.975
Final Capacity Adjustment Factor (CAF)	0.968	0.968
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	1991	394
Peak Hour Factor (PHF)	1.00	1.00
Total Trucks, %	32.00	32.00
Single-Unit Trucks (SUT), %	-	30
Tractor-Trailers (TT), %	-	70
Heavy Vehicle Adjustment Factor (fHV)	0.758	0.763
Flow Rate (vi),pc/h	2627	516
Capacity (c), pc/h	4646	1936
Volume-to-Capacity Ratio (v/c)	0.68	0.27

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Number of Outer Lanes on Freeway (NO)	0
Distance to Upstream Ramp (LUP), ft	-	Speed Index (MS)	0.337
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/h/ln	-
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influence Area Speed (SR), mi/h	62.9
Prop. Freeway Vehicles in Lane 1 and 2 (PFM)	1.000	Outer Lanes Freeway Speed (SO), mi/h	73.5
Flow in Lanes 1 and 2 (v12), pc/h	2627	Ramp Junction Speed (S), mi/h	62.9
Flow Entering Ramp-Infl. Area (vR12), pc/h	3143	Average Density (D), pc/mi/ln	25.0
Level of Service (LOS)	C	Density in Ramp Influence Area (DR), pc/mi/ln	23.0

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HCS7 Freeway Merge Report

Project Information

Analyst	STV Inc.	Date	7/18/2023
Agency	TDOT	Analysis Year	2048
Jurisdiction		Time Analyzed	AM Peak
Project Description	FY NB - I 24 WB on ramp	Units	U.S. Customary

Geometric Data

	Freeway	Ramp
Number of Lanes (N), ln	2	1
Free-Flow Speed (FFS), mi/h	75.4	35.0
Segment Length (L) / Acceleration Length (LA),ft	1500	1087
Terrain Type	Level	Specific Grade
Percent Grade, %	-	-5.10
Segment Type / Ramp Type	Freeway	Right-Sided One-Lane

Adjustment Factors

Driver Population	Mostly Familiar	Mostly Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	0.975	0.975
Final Capacity Adjustment Factor (CAF)	0.968	0.968
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity

Demand Volume (Vi)	3533	1484
Peak Hour Factor (PHF)	1.00	1.00
Total Trucks, %	32.00	32.00
Single-Unit Trucks (SUT), %	-	30
Tractor-Trailers (TT), %	-	70
Heavy Vehicle Adjustment Factor (fHV)	0.758	0.763
Flow Rate (vi),pc/h	4661	1936
Capacity (c), pc/h	4646	1936
Volume-to-Capacity Ratio (v/c)	1.42	1.00

Speed and Density

Upstream Equilibrium Distance (LEQ), ft	1275.5	Number of Outer Lanes on Freeway (NO)	0
Distance to Upstream Ramp (LUP), ft	-	Speed Index (MS)	-
Downstream Equilibrium Distance (LEQ), ft	0.0	Flow Outer Lanes (vOA), pc/h/ln	-
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influence Area Speed (SR), mi/h	-
Prop. Freeway Vehicles in Lane 1 and 2 (PFM)	1.000	Outer Lanes Freeway Speed (SO), mi/h	-
Flow in Lanes 1 and 2 (v12), pc/h	4661	Ramp Junction Speed (S), mi/h	-
Flow Entering Ramp-Infl. Area (vR12), pc/h	6597	Average Density (D), pc/mi/ln	-
Level of Service (LOS)	F	Density in Ramp Influence Area (DR), pc/mi/ln	-

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HCS7 Freeway Merge Report

Project Information			
Analyst	STV Inc.	Date	7/18/2023
Agency	TDOT	Analysis Year	2048
Jurisdiction		Time Analyzed	PM Peak
Project Description	FY NB - I 24 WB on ramp	Units	U.S. Customary

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	2	1
Free-Flow Speed (FFS), mi/h	75.4	35.0
Segment Length (L) / Acceleration Length (LA),ft	1500	1087
Terrain Type	Level	Specific Grade
Percent Grade, %	-	-5.10
Segment Type / Ramp Type	Freeway	Right-Sided One-Lane

Adjustment Factors		
Driver Population	Mostly Familiar	Mostly Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	0.975	0.975
Final Capacity Adjustment Factor (CAF)	0.968	0.968
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	2987	1032
Peak Hour Factor (PHF)	1.00	1.00
Total Trucks, %	32.00	32.00
Single-Unit Trucks (SUT), %	-	30
Tractor-Trailers (TT), %	-	70
Heavy Vehicle Adjustment Factor (fHV)	0.758	0.763
Flow Rate (vi),pc/h	3941	1353
Capacity (c), pc/h	4646	1936
Volume-to-Capacity Ratio (v/c)	1.14	0.70

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	996.7	Number of Outer Lanes on Freeway (NO)	0
Distance to Upstream Ramp (LUP), ft	-	Speed Index (MS)	-
Downstream Equilibrium Distance (LEQ), ft	0.0	Flow Outer Lanes (vOA), pc/h/ln	-
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influence Area Speed (SR), mi/h	-
Prop. Freeway Vehicles in Lane 1 and 2 (PFM)	1.000	Outer Lanes Freeway Speed (SO), mi/h	-
Flow in Lanes 1 and 2 (v12), pc/h	3941	Ramp Junction Speed (S), mi/h	-
Flow Entering Ramp-Infl. Area (vR12), pc/h	5294	Average Density (D), pc/mi/ln	-
Level of Service (LOS)	F	Density in Ramp Influence Area (DR), pc/mi/ln	-

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HCS7 Freeway Merge Report

Project Information			
Analyst	STV Inc.	Date	7/18/2023
Agency	TDOT	Analysis Year	2028
Jurisdiction		Time Analyzed	AM Peak
Project Description	BY B - I 24 WB on ramp	Units	U.S. Customary

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	2	1
Free-Flow Speed (FFS), mi/h	75.4	35.0
Segment Length (L) / Acceleration Length (LA),ft	1500	1150
Terrain Type	Level	Specific Grade
Percent Grade, %	-	-4.86
Segment Type / Ramp Type	Freeway	Right-Sided One-Lane

Adjustment Factors		
Driver Population	Mostly Familiar	Mostly Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	0.975	0.975
Final Capacity Adjustment Factor (CAF)	0.968	0.968
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	2355	571
Peak Hour Factor (PHF)	1.00	1.00
Total Trucks, %	32.00	32.00
Single-Unit Trucks (SUT), %	-	30
Tractor-Trailers (TT), %	-	70
Heavy Vehicle Adjustment Factor (fHV)	0.758	0.763
Flow Rate (vi),pc/h	3107	748
Capacity (c), pc/h	4646	1936
Volume-to-Capacity Ratio (v/c)	0.83	0.39

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Number of Outer Lanes on Freeway (NO)	0
Distance to Upstream Ramp (LUP), ft	-	Speed Index (MS)	0.427
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/h/ln	-
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influence Area Speed (SR), mi/h	60.0
Prop. Freeway Vehicles in Lane 1 and 2 (PFM)	1.000	Outer Lanes Freeway Speed (SO), mi/h	73.5
Flow in Lanes 1 and 2 (v12), pc/h	3107	Ramp Junction Speed (S), mi/h	60.0
Flow Entering Ramp-Infl. Area (vR12), pc/h	3855	Average Density (D), pc/mi/ln	32.1
Level of Service (LOS)	D	Density in Ramp Influence Area (DR), pc/mi/ln	28.1

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HCS7 Freeway Merge Report

Project Information			
Analyst	STV Inc.	Date	7/18/2023
Agency	TDOT	Analysis Year	2028
Jurisdiction		Time Analyzed	PM Peak
Project Description	BY B - I 24 WB on ramp	Units	U.S. Customary

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	2	1
Free-Flow Speed (FFS), mi/h	75.4	35.0
Segment Length (L) / Acceleration Length (LA),ft	1500	1150
Terrain Type	Level	Specific Grade
Percent Grade, %	-	-4.86
Segment Type / Ramp Type	Freeway	Right-Sided One-Lane

Adjustment Factors		
Driver Population	Mostly Familiar	Mostly Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	0.975	0.975
Final Capacity Adjustment Factor (CAF)	0.968	0.968
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	1991	394
Peak Hour Factor (PHF)	1.00	1.00
Total Trucks, %	32.00	32.00
Single-Unit Trucks (SUT), %	-	30
Tractor-Trailers (TT), %	-	70
Heavy Vehicle Adjustment Factor (fHV)	0.758	0.763
Flow Rate (vi),pc/h	2627	516
Capacity (c), pc/h	4646	1936
Volume-to-Capacity Ratio (v/c)	0.68	0.27

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Number of Outer Lanes on Freeway (NO)	0
Distance to Upstream Ramp (LUP), ft	-	Speed Index (MS)	0.333
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/h/ln	-
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influence Area Speed (SR), mi/h	63.0
Prop. Freeway Vehicles in Lane 1 and 2 (PFM)	1.000	Outer Lanes Freeway Speed (SO), mi/h	73.5
Flow in Lanes 1 and 2 (v12), pc/h	2627	Ramp Junction Speed (S), mi/h	63.0
Flow Entering Ramp-Infl. Area (vR12), pc/h	3143	Average Density (D), pc/mi/ln	24.9
Level of Service (LOS)	C	Density in Ramp Influence Area (DR), pc/mi/ln	22.6

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HCS7 Freeway Merge Report

Project Information

Analyst	STV Inc.	Date	7/18/2023
Agency	TDOT	Analysis Year	2048
Jurisdiction		Time Analyzed	AM Peak
Project Description	FY B - I 24 WB on ramp	Units	U.S. Customary

Geometric Data

	Freeway	Ramp
Number of Lanes (N), ln	2	1
Free-Flow Speed (FFS), mi/h	75.4	35.0
Segment Length (L) / Acceleration Length (LA),ft	1500	1150
Terrain Type	Level	Specific Grade
Percent Grade, %	-	-4.86
Segment Type / Ramp Type	Freeway	Right-Sided One-Lane

Adjustment Factors

Driver Population	Mostly Familiar	Mostly Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	0.975	0.975
Final Capacity Adjustment Factor (CAF)	0.968	0.968
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity

Demand Volume (Vi)	3533	1484
Peak Hour Factor (PHF)	1.00	1.00
Total Trucks, %	32.00	32.00
Single-Unit Trucks (SUT), %	-	30
Tractor-Trailers (TT), %	-	70
Heavy Vehicle Adjustment Factor (fHV)	0.758	0.763
Flow Rate (vi),pc/h	4661	1936
Capacity (c), pc/h	4646	1936
Volume-to-Capacity Ratio (v/c)	1.42	1.00

Speed and Density

Upstream Equilibrium Distance (LEQ), ft	1303.5	Number of Outer Lanes on Freeway (NO)	0
Distance to Upstream Ramp (LUP), ft	-	Speed Index (MS)	-
Downstream Equilibrium Distance (LEQ), ft	0.0	Flow Outer Lanes (vOA), pc/h/ln	-
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influence Area Speed (SR), mi/h	-
Prop. Freeway Vehicles in Lane 1 and 2 (PFM)	1.000	Outer Lanes Freeway Speed (SO), mi/h	-
Flow in Lanes 1 and 2 (v12), pc/h	4661	Ramp Junction Speed (S), mi/h	-
Flow Entering Ramp-Infl. Area (vR12), pc/h	6597	Average Density (D), pc/mi/ln	-
Level of Service (LOS)	F	Density in Ramp Influence Area (DR), pc/mi/ln	-

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HCS7 Freeway Merge Report

Project Information			
Analyst	STV Inc.	Date	7/18/2023
Agency	TDOT	Analysis Year	2048
Jurisdiction		Time Analyzed	PM Peak
Project Description	FY B - I 24 WB on ramp	Units	U.S. Customary

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	2	1
Free-Flow Speed (FFS), mi/h	75.4	35.0
Segment Length (L) / Acceleration Length (LA),ft	1500	1150
Terrain Type	Level	Specific Grade
Percent Grade, %	-	-4.86
Segment Type / Ramp Type	Freeway	Right-Sided One-Lane

Adjustment Factors		
Driver Population	Mostly Familiar	Mostly Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	0.975	0.975
Final Capacity Adjustment Factor (CAF)	0.968	0.968
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	2987	1032
Peak Hour Factor (PHF)	1.00	1.00
Total Trucks, %	32.00	32.00
Single-Unit Trucks (SUT), %	-	30
Tractor-Trailers (TT), %	-	70
Heavy Vehicle Adjustment Factor (fHV)	0.758	0.763
Flow Rate (vi),pc/h	3941	1353
Capacity (c), pc/h	4646	1936
Volume-to-Capacity Ratio (v/c)	1.14	0.70

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	1024.6	Number of Outer Lanes on Freeway (NO)	0
Distance to Upstream Ramp (LUP), ft	-	Speed Index (MS)	-
Downstream Equilibrium Distance (LEQ), ft	0.0	Flow Outer Lanes (vOA), pc/h/ln	-
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influence Area Speed (SR), mi/h	-
Prop. Freeway Vehicles in Lane 1 and 2 (PFM)	1.000	Outer Lanes Freeway Speed (SO), mi/h	-
Flow in Lanes 1 and 2 (v12), pc/h	3941	Ramp Junction Speed (S), mi/h	-
Flow Entering Ramp-Infl. Area (vR12), pc/h	5294	Average Density (D), pc/mi/ln	-
Level of Service (LOS)	F	Density in Ramp Influence Area (DR), pc/mi/ln	-

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2028 SIGNAL WARRANTS

Traffic Signal Warrant Summary

TN-2 US Hwy 41 and Epps Mill Rd

Date: 22-May-24

Analyst: STV Inc.

Warrant 1	Condition A	NO
	Condition B	NO
Warrant 2	Four Hour Vehicular Volume	NO
Warrant 3	A - Peak Hour Delay	NO
	B - Peak Hour Volume	NO
Warrant 4	Pedestrian Volume	NO
Warrant 5	School Crossing	N/A
Warrant 6	Coordinated Signal System	NO
Warrant 7	Crash Experience	NO
Warrant 8	Roadway network	N/A
Warrant 9	Intersection Near a grade Crossing	N/A

MUTCD Reference:

http://mutcd.fhwa.dot.gov/htm/2009/part4/part4c.htm#section4C02

TIME PERIOD		TN-2 US Hwy 41					TN-2 US Hwy 41					Epps Mill Rd					Epps Mill Rd				
		RTR:	1	DIRECTION:		NB	RTR:	1	DIRECTION:		SB	RTR:	1	DIRECTION:		EB	RTR:	1	DIRECTION:		WB
START	END	Major Street					Major Street					Minor Street					Minor Street				
		L	T	R	PED	B	L	T	R	PED	B	L	T	R	PED	B	L	T	R	PED	B
6:00 AM	6:15 AM	32	43	0	0	0	0	12	11	0	0	13	0	5	0	0	0	0	0	0	0
6:15 AM	6:30 AM	33	53	0	0	0	0	6	12	0	0	30	0	7	0	0	0	0	0	0	0
6:30 AM	6:45 AM	29	51	0	0	0	0	11	25	0	0	30	0	4	0	0	0	0	0	0	0
6:45 AM	7:00 AM	26	41	0	0	0	0	14	40	0	0	32	0	14	0	0	0	0	0	0	0
7:00 AM	7:15 AM	29	49	0	0	0	0	12	35	0	0	21	0	16	0	0	0	0	0	0	0
7:15 AM	7:30 AM	42	40	0	0	0	0	11	33	0	0	40	0	4	0	0	0	0	0	0	0
7:30 AM	7:45 AM	36	23	0	0	0	0	19	34	0	0	26	0	14	0	0	0	0	0	0	0
7:45 AM	8:00 AM	23	29	0	0	0	0	21	39	0	0	23	0	6	0	0	0	0	0	0	0
8:00 AM	8:15 AM	27	36	0	0	0	0	11	19	0	0	26	0	12	0	0	0	0	0	0	0
8:15 AM	8:30 AM	27	30	0	0	0	0	18	15	0	0	18	0	12	0	0	0	0	0	0	0
8:30 AM	8:45 AM	22	37	0	0	0	0	18	13	0	0	8	0	12	0	0	0	0	0	0	0
8:45 AM	9:00 AM	16	42	0	0	0	0	18	12	0	0	12	0	13	0	0	0	0	0	0	0
9:00 AM	9:15 AM	7	28	0	0	0	0	13	9	0	0	12	0	6	0	0	0	0	0	0	0
9:15 AM	9:30 AM	7	33	0	0	0	0	20	15	0	0	18	0	9	0	0	0	0	0	0	0
9:30 AM	9:45 AM	19	32	0	0	0	0	35	14	0	0	18	0	7	0	0	0	0	0	0	0
9:45 AM	10:00 AM	9	39	0	0	0	0	33	11	0	0	16	0	9	0	0	0	0	0	0	0
10:00 AM	10:15 AM	13	29	0	0	0	0	15	18	0	0	12	0	19	0	0	0	0	0	0	0
10:15 AM	10:30 AM	15	32	0	0	0	0	19	11	0	0	8	0	12	0	0	0	0	0	0	0
10:30 AM	10:45 AM	11	30	0	0	0	0	26	15	0	0	20	0	16	0	0	0	0	0	0	0
10:45 AM	11:00 AM	16	22	0	0	0	0	27	16	0	0	12	0	6	0	0	0	0	0	0	0
11:00 AM	11:15 AM	9	28	0	0	0	0	34	16	0	0	14	0	15	0	0	0	0	0	0	0
11:15 AM	11:30 AM	14	14	0	0	0	0	37	20	0	0	14	0	13	0	0	0	0	0	0	0
11:30 AM	11:45 AM	12	34	0	0	0	0	23	18	0	0	14	0	12	0	0	0	0	0	0	0
11:45 AM	12:00 PM	7	26	0	0	0	0	30	27	0	0	19	0	15	0	0	0	0	0	0	0
12:00 PM	12:15 PM	19	32	0	0	0	0	27	16	0	0	18	0	16	0	0	0	0	0	0	0
12:15 PM	12:30 PM	14	32	0	0	0	0	34	20	0	0	21	0	14	0	0	0	0	0	0	0
12:30 PM	12:45 PM	11	23	0	0	0	0	41	14	0	0	12	0	20	0	0	0	0	0	0	0
12:45 PM	1:00 PM	27	27	0	0	0	0	32	15	0	0	15	0	9	0	0	0	0	0	0	0
1:00 PM	1:15 PM	16	25	0	0	0	0	40	21	0	0	9	0	19	0	0	0	0	0	0	0
1:15 PM	1:30 PM	15	25	0	0	0	0	39	22	0	0	21	0	14	0	0	0	0	0	0	0
1:30 PM	1:45 PM	15	29	0	0	0	0	28	27	0	0	18	0	13	0	0	0	0	0	0	0
1:45 PM	2:00 PM	12	23	0	0	0	0	26	19	0	0	28	0	21	0	0	0	0	0	0	0
2:00 PM	2:15 PM	14	32	0	0	0	0	34	28	0	0	20	0	15	0	0	0	0	0	0	0
2:15 PM	2:30 PM	18	30	0	0	0	0	29	21	0	0	18	0	18	0	0	0	0	0	0	0
2:30 PM	2:45 PM	21	23	0	0	0	0	25	29	0	0	32	0	13	0	0	0	0	0	0	0
2:45 PM	3:00 PM	11	14	0	0	0	0	41	19	0	0	27	0	16	0	0	0	0	0	0	0
3:00 PM	3:15 PM	18	20	0	0	0	0	64	21	0	0	18	0	16	0	0	0	0	0	0	0
3:15 PM	3:30 PM	11	28	0	0	0	0	46	20	0	0	22	0	36	0	0	0	0	0	0	0
3:30 PM	3:45 PM	40	46	0	0	0	0	69	27	0	0	35	0	34	0	0	0	0	0	0	0
3:45 PM	4:00 PM	46	42	0	0	0	0	67	21	0	0	28	0	32	0	0	0	0	0	0	0
4:00 PM	4:15 PM	33	34	0	0	0	0	76	28	0	0	29	0	37	0	0	0	0	0	0	0
4:15 PM	4:30 PM	20	13	0	0	0	0	53	34	0	0	20	0	33	0	0	0	0	0	0	0
4:30 PM	4:45 PM	13	22	0	0	0	0	64	26	0	0	26	0	37	0	0	0	0	0	0	0
4:45 PM	5:00 PM	16	30	0	0	0	0	49	40	0	0	25	0	21	0	0	0	0	0	0	0
5:00 PM	5:15 PM	23	21	0	0	0	0	60	29	0	0	36	0	30	0	0	0	0	0	0	0
5:15 PM	5:30 PM	9	30	0	4	0	0	70	23	0	0	26	0	26	0	0	0	0	0	0	0
5:30 PM	5:45 PM	11	21	0	0	0	0	64	18	0	0	25	0	16	0	0	0	0	0	0	0
5:45 PM	6:00 PM	9	23	0	0	0	0	46	20	0	0	20	0	33	0	0	0	0	0	0	0
6:00 PM	6:15 PM	7	19	0	0	0	0	35	32	0	0	15	0	9	0	0	0	0	0	0	0
6:15 PM	6:30 PM	14	15	0	0	0	0	36	11	0	0	23	0	21	0	0	0	0	0	0	0
6:30 PM	6:45 PM	8	19	0	0	0	0	49	23	0	0	19	0	21	0	0	0	0	0	0	0

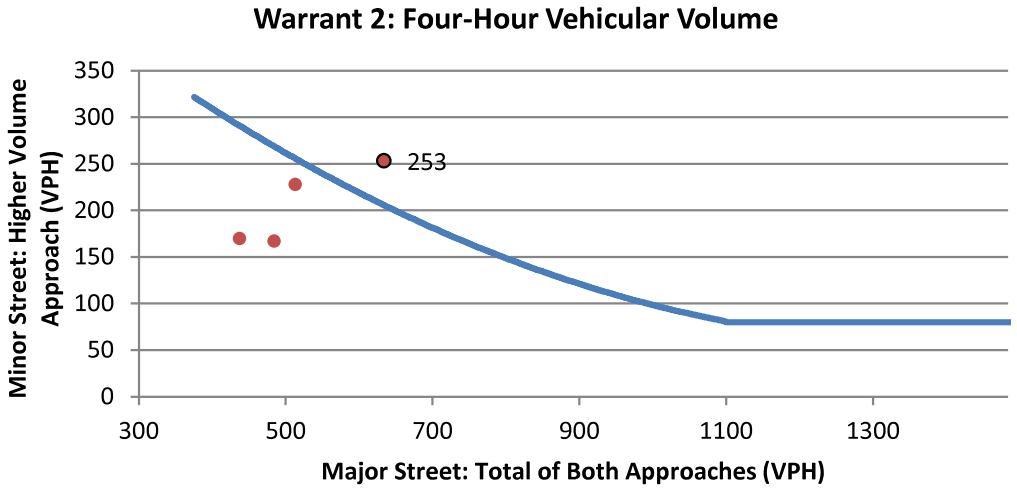
Warrant 1- Eight Hour Vehicular Volume

5/22/2024						
Time Period		Major Street		Minor Street		Meets
START	END	TN-2 US Hwy 41	>500	Epps Mill Rd	>150	Condition?
3:15 PM	4:15 PM	634	Y	253	Y	**Y**
4:15 PM	5:15 PM	513	Y	228	Y	**Y**
5:15 PM	6:15 PM	437	N	170	Y	N
6:45 AM	7:45 AM	484	N	167	Y	N
1:45 PM	2:45 PM	384	N	165	Y	N
11:45 AM	12:45 PM	373	N	135	N	N
12:45 PM	1:45 PM	403	N	118	N	N
7:45 AM	8:45 AM	385	N	117	N	N

Condition B - Interruption of Continuous Traffic						
Time Period		Major Street		Minor Street		Meets
START	END	TN-2 US Hwy 41	>750	Epps Mill Rd	>75	Condition?
3:15 PM	4:15 PM	634	N	253	Y	N
4:15 PM	5:15 PM	513	N	228	Y	N
5:15 PM	6:15 PM	437	N	170	Y	N
6:45 AM	7:45 AM	484	N	167	Y	N
1:45 PM	2:45 PM	384	N	165	Y	N
11:45 AM	12:45 PM	373	N	135	Y	N
12:45 PM	1:45 PM	403	N	118	Y	N
7:45 AM	8:45 AM	385	N	117	Y	N

Warrant 2 - Four Hour Vehicular Volume

1 Major & 1 Minor



Time Period		Major Street Vol.	Minor Street Vol.	Total Volume	Above
Start	End	(both approaches)	(higher approach)	(all approaches)	Curve?
6:45 AM	7:45 AM	484	167	651	NO
3:15 PM	**4:15 PM**	**634**	**253**	**887**	**YES**
4:15 PM	5:15 PM	513	228	741	NO
5:15 PM	6:15 PM	437	170	607	NO

Warrant 3 - Peak Hour Volume

PA

NOTE: Requirements 1 - 3 must ***ALL*** be met for the ***SAME*** hour for Part A of warrant to be met

1. Stopped Delay

1 Lane Approach	
Stopped Delay: (veh*hr)	**1**
Requirement Met:	**NO**

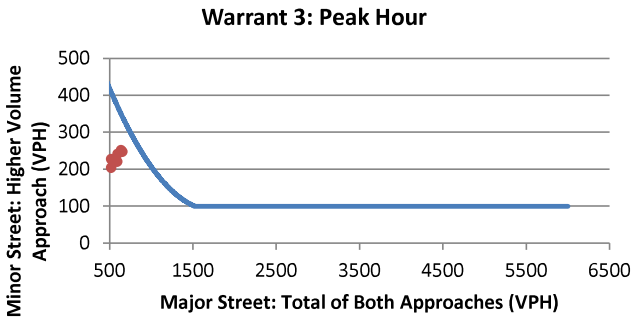
2. Minor Approach Volume

1 Moving Lane	
Approach Volume (veh/hr)	**10**
Requirement Met:	**NO**

3. Total Entering Volume Serviced

3 Approaches	
Intersection Volume (veh/hr)	**342**
Requirement Met:	**NO**

PART B: Peak Hour Volume



TIME PERIOD START	TIME PERIOD END	Major Street (both approaches)	Minor Street (higher approach)	Above Curve?
6:00 AM	7:00 AM	439	135	NO
6:15 AM	7:15 AM	466	154	NO
6:30 AM	7:30 AM	488	161	NO
6:45 AM	7:45 AM	484	167	NO
7:00 AM	8:00 AM	475	150	NO
7:15 AM	8:15 AM	443	151	NO
7:30 AM	8:30 AM	407	137	NO
7:45 AM	8:45 AM	385	117	NO
8:00 AM	9:00 AM	361	113	NO
8:15 AM	9:15 AM	325	93	NO
8:30 AM	9:30 AM	310	90	NO
8:45 AM	9:45 AM	320	95	NO
9:00 AM	10:00 AM	324	95	NO
9:15 AM	10:15 AM	342	108	NO
9:30 AM	10:30 AM	344	101	NO
9:45 AM	10:45 AM	326	112	NO
10:00 AM	11:00 AM	315	105	NO
10:15 AM	11:15 AM	327	103	NO
10:30 AM	11:30 AM	335	110	NO
10:45 AM	11:45 AM	340	100	NO
11:00 AM	12:00 PM	349	116	NO
11:15 AM	12:15 PM	356	121	NO
11:30 AM	12:30 PM	371	129	NO
11:45 AM	12:45 PM	373	135	NO
12:00 PM	1:00 PM	384	125	NO
12:15 PM	1:15 PM	392	119	NO
12:30 PM	1:30 PM	393	119	NO
12:45 PM	1:45 PM	403	118	NO
1:00 PM	2:00 PM	382	143	NO
1:15 PM	2:15 PM	388	150	NO
1:30 PM	2:30 PM	385	151	NO
1:45 PM	2:45 PM	384	165	NO

Traffic Signal Warrant Summary

Epps Mill Rd and Forbus Dr

Date: 24-May-24

Analyst: STV Inc.

Warrant 1	Condition A	NO
	Condition B	NO
Warrant 2	Four Hour Vehicular Volume	NO
Warrant 3	A - Peak Hour Delay	NO
	B - Peak Hour Volume	NO
Warrant 4	Pedestrian Volume	NO
Warrant 5	School Crossing	N/A
Warrant 6	Coordinated Signal System	NO
Warrant 7	Crash Experience	NO
Warrant 8	Roadway network	N/A
Warrant 9	Intersection Near a grade Crossing	N/A

MUTCD Reference:

http://mutcd.fhwa.dot.gov/htm/2009/part4/part4c.htm#section4C02

TIME PERIOD		Epps Mill Rd					Epps Mill Rd					Forbus Dr					Forbus Dr				
		RTR:	1	DIRECTION:		EB	RTR:	1	DIRECTION:		WB	RTR:	1	DIRECTION:		NB	RTR:	1	DIRECTION:		SB
START	END	Major Street					Major Street					Minor Street					Minor Street				
		L	T	R	PED	B	L	T	R	PED	B	L	T	R	PED	B	L	T	R	PED	B
6:00 AM	6:15 AM	35	32	2	0	0	4	40	8	0	0	0	0	0	0	0	2	0	35	0	0
6:15 AM	6:30 AM	34	51	5	0	0	5	40	4	0	0	1	0	0	0	0	5	0	36	0	0
6:30 AM	6:45 AM	36	44	5	0	0	1	53	12	0	0	0	0	0	0	0	4	0	30	0	0
6:45 AM	7:00 AM	32	63	16	0	0	5	63	9	0	0	0	0	0	0	0	8	0	39	0	0
7:00 AM	7:15 AM	33	53	9	0	0	4	61	6	0	0	2	1	1	0	0	4	0	49	0	0
7:15 AM	7:30 AM	43	58	7	0	0	2	76	8	0	0	0	0	0	0	0	7	0	41	0	0
7:30 AM	7:45 AM	51	58	13	0	0	4	69	8	0	0	2	0	0	0	0	2	2	50	0	0
7:45 AM	8:00 AM	39	53	9	0	0	0	57	6	0	0	4	0	1	0	0	6	2	50	0	0
8:00 AM	8:15 AM	34	61	7	0	0	0	46	6	0	0	8	0	0	0	0	4	0	43	0	0
8:15 AM	8:30 AM	33	44	4	0	0	1	42	8	0	0	0	0	0	0	0	6	0	51	0	0
8:30 AM	8:45 AM	47	42	6	0	0	0	29	7	0	0	2	0	0	0	0	0	0	35	0	0
8:45 AM	9:00 AM	44	39	1	0	0	1	27	4	0	0	4	0	0	0	0	2	0	42	0	0
9:00 AM	9:15 AM	41	30	4	0	0	0	18	4	0	0	1	1	0	0	0	5	2	54	0	0
9:15 AM	9:30 AM	36	37	4	0	0	1	23	5	0	0	2	1	1	0	0	4	0	46	0	0
9:30 AM	9:45 AM	36	47	1	0	0	0	33	11	0	0	2	1	0	0	0	1	0	43	0	0
9:45 AM	10:00 AM	51	42	2	0	0	0	16	6	0	0	4	0	0	0	0	6	0	42	0	0
10:00 AM	10:15 AM	37	42	0	0	0	0	32	7	0	0	1	0	0	0	0	6	0	40	0	0
10:15 AM	10:30 AM	30	41	2	0	0	0	29	2	0	0	0	0	0	0	0	4	0	49	0	0
10:30 AM	10:45 AM	35	50	4	0	0	0	26	7	0	0	5	2	2	0	0	4	0	36	0	0
10:45 AM	11:00 AM	40	30	2	0	0	4	28	7	0	0	0	5	0	0	0	4	1	39	0	0
11:00 AM	11:15 AM	39	43	6	0	0	4	26	6	0	0	7	2	5	0	0	6	2	41	0	0
11:15 AM	11:30 AM	40	43	2	0	0	2	37	8	0	0	4	0	0	0	0	4	1	39	0	0
11:30 AM	11:45 AM	46	44	8	0	0	0	23	7	0	0	9	1	4	0	0	5	0	36	0	0
11:45 AM	12:00 PM	41	40	1	0	0	0	28	4	0	0	7	2	4	0	0	13	2	33	0	0
12:00 PM	12:15 PM	44	47	2	0	0	1	35	13	0	0	5	0	4	0	0	9	0	50	0	0
12:15 PM	12:30 PM	42	41	7	0	0	4	29	6	0	0	2	1	4	0	4	9	0	53	0	0
12:30 PM	12:45 PM	32	41	7	0	0	0	29	5	0	0	2	0	0	0	0	6	1	43	0	0
12:45 PM	1:00 PM	41	50	6	4	0	4	43	8	0	0	2	0	0	0	0	5	0	48	0	0
1:00 PM	1:15 PM	36	42	5	0	0	1	35	6	0	0	5	0	1	0	0	5	0	40	0	0
1:15 PM	1:30 PM	33	51	4	0	0	2	40	4	0	0	5	0	2	0	0	2	0	39	0	0
1:30 PM	1:45 PM	51	54	1	0	0	0	39	9	0	0	2	0	1	0	0	7	0	34	0	0
1:45 PM	2:00 PM	50	64	2	0	0	0	34	8	0	0	2	0	0	0	0	8	0	51	0	0
2:00 PM	2:15 PM	40	53	2	0	0	0	42	11	0	0	1	0	1	0	0	2	0	40	0	0
2:15 PM	2:30 PM	49	41	4	0	0	0	36	9	0	0	4	0	0	0	0	7	0	43	0	0
2:30 PM	2:45 PM	56	64	8	0	0	1	50	7	0	0	2	1	0	0	0	7	0	55	0	0
2:45 PM	3:00 PM	42	67	4	0	0	2	27	6	0	0	2	0	0	0	0	6	1	48	0	0
3:00 PM	3:15 PM	41	53	7	0	0	1	37	6	0	0	2	1	1	0	0	4	0	46	0	0
3:15 PM	3:30 PM	42	61	1	0	0	1	32	5	0	0	4	0	0	0	0	6	0	39	0	0
3:30 PM	3:45 PM	34	48	0	0	0	0	61	15	0	0	36	0	28	0	0	6	0	43	0	0
3:45 PM	4:00 PM	48	75	1	0	0	0	61	11	0	0	8	0	1	0	0	4	0	42	0	0
4:00 PM	4:15 PM	51	81	0	0	0	0	64	6	0	0	5	1	6	0	0	9	0	54	0	0
4:15 PM	4:30 PM	44	67	2	0	0	1	58	11	0	0	5	4	2	0	0	1	0	53	0	0
4:30 PM	4:45 PM	41	73	0	0	0	0	44	6	0	0	18	4	6	0	0	5	0	51	0	0
4:45 PM	5:00 PM	33	50	0	4	0	0	53	12	0	0	7	0	2	0	0	7	0	41	0	0
5:00 PM	5:15 PM	46	69	1	0	0	0	63	7	0	0	15	0	2	0	0	6	0	32	0	0
5:15 PM	5:30 PM	47	68	0	0	0	0	35	6	0	0	6	0	5	0	0	1	0	32	0	0
5:30 PM	5:45 PM	26	46	0	0	0	0	27	5	0	0	4	0	0	0	0	6	0	40	0	0
5:45 PM	6:00 PM	47	69	0	0	0	0	35	7	0	0	0	0	0	0	0	5	0	32	0	0
6:00 PM	6:15 PM	33	48	0	0	0	0	33	8	0	0	5	0	0	0	0	2	0	42	0	0
6:15 PM	6:30 PM	39	58	0	0	0	0	28	6	0	0	0	0	0	0	0	7	0	34	0	0
6:30 PM	6:45 PM	32	49	5	0	0	0	35	8	0	0	0	0	0	0	0	6	0	30	0	0

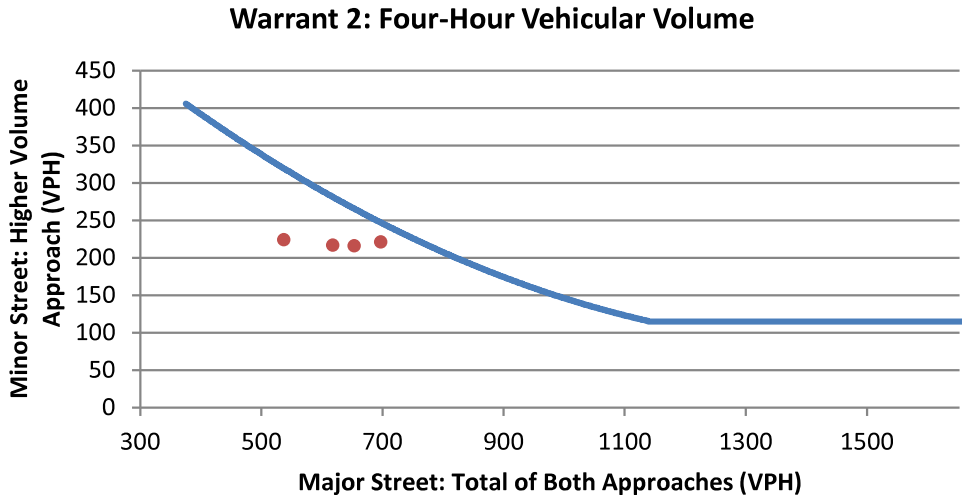
Warrant 1- Eight Hour Vehicular Volume

5/24/2024						
Time Period		Major Street		Minor Street		Meets
START	END	Epps Mill Rd	>500	Forbus Dr	>200	Condition?
12:00 PM	1:00 PM	537	Y	224	Y	**Y**
4:00 PM	5:00 PM	697	Y	221	Y	**Y**
2:15 PM	3:15 PM	618	Y	217	Y	**Y**
7:30 AM	8:30 AM	653	Y	216	Y	**Y**
9:00 AM	10:00 AM	448	N	203	Y	N
10:15 AM	11:15 AM	461	N	186	N	N
1:00 PM	2:00 PM	571	Y	186	N	N
6:30 AM	7:30 AM	699	Y	182	N	N

Condition B - Interruption of Continuous Traffic						
Time Period		Major Street		Minor Street		Meets
START	END	Epps Mill Rd	>750	Forbus Dr	>100	Condition?
12:00 PM	1:00 PM	537	N	224	Y	N
4:00 PM	5:00 PM	697	N	221	Y	N
2:15 PM	3:15 PM	618	N	217	Y	N
7:30 AM	8:30 AM	653	N	216	Y	N
9:00 AM	10:00 AM	448	N	203	Y	N
10:15 AM	11:15 AM	461	N	186	Y	N
1:00 PM	2:00 PM	571	N	186	Y	N
6:30 AM	7:30 AM	699	N	182	Y	N

Warrant 2 - Four Hour Vehicular Volume

1 Major & 2 Minor



Time Period		Major Street Vol.	Minor Street Vol.	Total Volume	Above
Start	End	(both approaches)	(higher approach)	(all approaches)	Curve?
7:30 AM	8:30 AM	653	216	869	NO
12:00 PM	1:00 PM	537	224	761	NO
2:15 PM	3:15 PM	618	217	835	NO
4:00 PM	5:00 PM	697	221	918	NO

Warrant 3 - Peak Hour Volume

PA

NOTE: Requirements 1 - 3 must ***ALL*** be met for the ***SAME*** hour for Part A of warrant to be met

1. Stopped Delay

1 Lane Approach	
Stopped Delay: (veh*hr)	**1**
Requirement Met:	**NO**

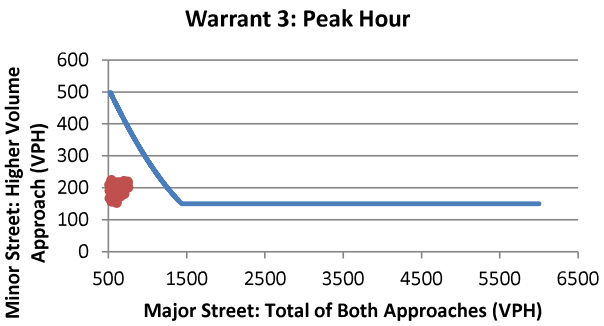
2. Minor Approach Volume

1 Moving Lane	
Approach Volume (veh/hr)	**10**
Requirement Met:	**NO**

3. Total Entering Volume Serviced

3 Approaches	
Intersection Volume (veh/hr)	**342**
Requirement Met:	**NO**

PART B: Peak Hour Volume



TIME PERIOD START	TIME PERIOD END	Major Street (both approaches)	Minor Street (higher approach)	Above Curve?
6:00 AM	7:00 AM	599	159	NO
6:15 AM	7:15 AM	644	175	NO
6:30 AM	7:30 AM	699	182	NO
6:45 AM	7:45 AM	751	202	NO
7:00 AM	8:00 AM	727	213	NO
7:15 AM	8:15 AM	715	207	NO
7:30 AM	8:30 AM	653	216	NO
7:45 AM	8:45 AM	581	197	NO
8:00 AM	9:00 AM	533	183	NO
8:15 AM	9:15 AM	476	197	NO
8:30 AM	9:30 AM	450	190	NO
8:45 AM	9:45 AM	447	199	NO
9:00 AM	10:00 AM	448	203	NO
9:15 AM	10:15 AM	469	188	NO
9:30 AM	10:30 AM	467	191	NO
9:45 AM	10:45 AM	461	187	NO
10:00 AM	11:00 AM	455	183	NO
10:15 AM	11:15 AM	461	186	NO
10:30 AM	11:30 AM	489	177	NO
10:45 AM	11:45 AM	495	178	NO
11:00 AM	12:00 PM	498	182	NO
11:15 AM	12:15 PM	516	192	NO
11:30 AM	12:30 PM	513	210	NO
11:45 AM	12:45 PM	499	219	NO
12:00 PM	1:00 PM	537	224	NO
12:15 PM	1:15 PM	520	210	NO
12:30 PM	1:30 PM	525	189	NO
12:45 PM	1:45 PM	565	180	NO
1:00 PM	2:00 PM	571	186	NO
1:15 PM	2:15 PM	594	183	NO
1:30 PM	2:30 PM	599	192	NO
1:45 PM	2:45 PM	631	213	NO

Traffic Signal Warrant Summary

Epps Mill Rd and I-24 WB Ramp

Date: 22-May-24

Analyst: STV Inc.

Warrant 1	Condition A	NO
	Condition B	NO
Warrant 2	Four Hour Vehicular Volume	NO
Warrant 3	A - Peak Hour Delay	NO
	B - Peak Hour Volume	NO
Warrant 4	Pedestrian Volume	NO
Warrant 5	School Crossing	N/A
Warrant 6	Coordinated Signal System	NO
Warrant 7	Crash Experience	NO
Warrant 8	Roadway network	N/A
Warrant 9	Intersection Near a grade Crossing	N/A

MUTCD Reference:

http://mutcd.fhwa.dot.gov/htm/2009/part4/part4c.htm#section4C02

TIME PERIOD		Epps Mill Rd					Epps Mill Rd					I-24 WB Off Ramp									
		RTR:	1	DIRECTION:		EB	RTR:	1	DIRECTION:		WB	RTR:	0.4	DIRECTION:		NB	RTR:	1	DIRECTION:		SB
START	END	Major Street					Major Street					Minor Street					Minor Street				
		L	T	R	PED	B	L	T	R	PED	B	L	T	R	PED	B	L	T	R	PED	B
6:00 AM	6:15 AM	64	35	0	0	0	0	22	46	0	0	4	0	20	0	0	0	0	0	0	0
6:15 AM	6:30 AM	71	47	0	0	0	0	26	46	0	0	2	0	28	0	0	0	0	0	0	0
6:30 AM	6:45 AM	58	47	0	0	0	0	29	43	0	0	7	1	22	0	0	0	0	0	0	0
6:45 AM	7:00 AM	84	69	0	0	0	0	41	50	0	0	9	1	22	0	0	0	0	0	0	0
7:00 AM	7:15 AM	58	50	0	0	0	0	36	67	0	0	7	2	22	0	0	0	0	0	0	0
7:15 AM	7:30 AM	138	61	0	0	0	0	36	70	0	0	5	0	27	0	0	0	0	0	0	0
7:30 AM	7:45 AM	136	63	0	0	0	0	36	78	0	0	4	1	35	0	0	0	0	0	0	0
7:45 AM	8:00 AM	54	58	0	0	0	0	36	68	0	0	7	0	19	0	0	0	0	0	0	0
8:00 AM	8:15 AM	62	60	0	0	0	0	33	58	0	0	1	1	22	0	4	0	0	0	0	0
8:15 AM	8:30 AM	54	43	0	0	0	0	35	50	0	0	6	0	20	0	0	0	0	0	0	0
8:30 AM	8:45 AM	60	42	0	0	0	0	30	33	0	0	5	0	28	0	0	0	0	0	0	0
8:45 AM	9:00 AM	27	39	0	0	0	0	27	42	0	0	4	0	28	0	0	0	0	0	0	4
9:00 AM	9:15 AM	29	36	0	0	0	0	26	42	0	0	2	0	23	0	0	0	0	0	0	0
9:15 AM	9:30 AM	34	47	0	0	0	0	32	35	0	0	6	2	12	0	0	0	0	0	0	0
9:30 AM	9:45 AM	36	46	0	0	0	0	40	35	0	0	6	0	21	0	0	0	0	0	0	0
9:45 AM	10:00 AM	27	46	0	0	0	0	35	25	0	0	2	0	27	0	0	0	0	0	0	0
10:00 AM	10:15 AM	23	48	0	0	0	0	32	34	0	0	2	1	19	0	0	0	0	0	0	0
10:15 AM	10:30 AM	28	40	0	0	0	0	33	43	0	0	4	1	13	0	0	0	0	0	0	0
10:30 AM	10:45 AM	30	58	0	0	0	0	35	26	0	0	2	0	18	0	0	0	0	0	0	0
10:45 AM	11:00 AM	16	35	0	0	0	0	37	28	0	0	2	1	19	0	0	0	0	0	0	0
11:00 AM	11:15 AM	23	54	0	4	0	0	37	30	0	0	4	0	19	0	0	0	0	0	0	0
11:15 AM	11:30 AM	27	46	0	0	0	0	42	27	0	0	0	0	20	0	0	0	0	0	0	0
11:30 AM	11:45 AM	26	51	0	0	0	0	29	37	0	0	4	4	20	0	0	0	0	0	0	0
11:45 AM	12:00 PM	20	37	0	0	0	0	40	28	0	0	4	1	25	0	0	0	0	0	0	0
12:00 PM	12:15 PM	26	50	0	0	0	0	36	42	0	0	7	0	21	0	0	0	0	0	0	0
12:15 PM	12:30 PM	33	55	0	0	0	0	47	29	0	0	1	1	15	0	0	0	0	0	0	0
12:30 PM	12:45 PM	18	46	0	0	0	0	43	30	0	0	6	0	15	0	0	0	0	0	0	0
12:45 PM	1:00 PM	30	48	0	0	0	0	39	44	0	0	2	0	22	0	0	0	0	0	0	0
1:00 PM	1:15 PM	32	48	0	0	0	0	37	39	0	0	2	1	15	0	0	0	0	0	0	0
1:15 PM	1:30 PM	22	53	0	0	0	0	48	28	0	0	2	1	16	0	0	0	0	0	0	0
1:30 PM	1:45 PM	29	57	0	0	0	0	42	28	0	0	6	2	27	0	0	0	0	0	0	0
1:45 PM	2:00 PM	37	75	0	0	0	0	47	34	0	0	7	0	22	0	0	0	0	0	0	0
2:00 PM	2:15 PM	28	53	0	0	0	0	43	33	0	0	5	0	16	0	0	0	0	0	0	0
2:15 PM	2:30 PM	34	50	0	0	0	0	44	34	0	0	4	0	26	0	0	0	0	0	0	0
2:30 PM	2:45 PM	54	80	0	0	0	0	47	53	0	0	5	0	22	0	0	0	0	0	0	0
2:45 PM	3:00 PM	41	63	0	0	0	0	33	36	0	0	6	1	22	0	0	0	0	0	0	0
3:00 PM	3:15 PM	32	56	0	0	0	0	36	42	0	0	7	0	25	0	0	0	0	0	0	0
3:15 PM	3:30 PM	42	64	0	0	0	0	43	26	0	0	1	0	25	0	0	0	0	0	0	0
3:30 PM	3:45 PM	16	56	0	0	0	0	61	68	4	0	6	2	15	0	0	0	0	0	0	0
3:45 PM	4:00 PM	25	84	0	0	0	0	47	55	0	0	4	0	18	0	0	0	0	0	0	0
4:00 PM	4:15 PM	32	83	0	0	0	0	57	66	0	0	9	2	28	0	0	0	0	0	0	4
4:15 PM	4:30 PM	36	66	0	0	0	0	56	47	0	0	11	0	28	0	0	0	0	0	0	0
4:30 PM	4:45 PM	32	63	0	0	0	0	68	41	0	0	13	0	29	0	0	0	0	0	0	0
4:45 PM	5:00 PM	36	50	0	0	0	0	46	46	0	0	6	0	19	0	0	0	0	0	0	0
5:00 PM	5:15 PM	36	71	0	0	0	0	60	48	0	0	8	1	29	0	0	0	0	0	0	0
5:15 PM	5:30 PM	28	64	0	0	0	0	41	28	0	0	11	0	29	0	0	0	0	0	0	0
5:30 PM	5:45 PM	35	46	0	0	0	0	41	22	0	0	7	0	18	0	0	0	0	0	0	0
5:45 PM	6:00 PM	29	68	0	0	0	0	34	26	0	0	6	0	23	0	0	0	0	0	0	0
6:00 PM	6:15 PM	39	47	0	0	0	0	46	27	0	0	6	0	15	0	0	0	0	0	0	0
6:15 PM	6:30 PM	26	67	0	0	0	0	39	20	0	0	8	0	14	0	0	0	0	0	0	0
6:30 PM	6:45 PM	26	51	0	0	0	0	42	18	0	0	4	0	18	0	0	0	0	0	0	0

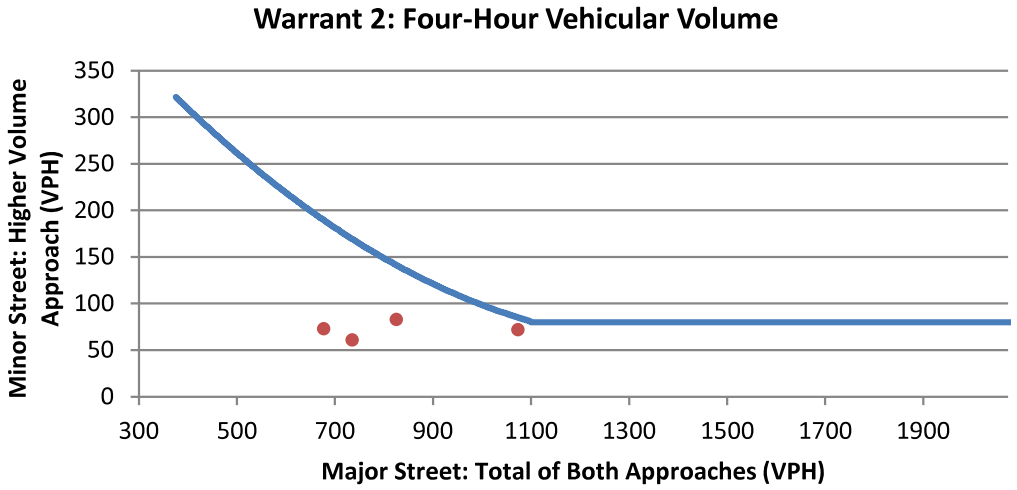
Warrant 1- Eight Hour Vehicular Volume

5/22/2024						
Time Period		Major Street		Minor Street		Meets
START	END	Epps Mill Rd	>500	I-24 N Ramp	>150	Condition?
4:00 PM	5:00 PM	825	Y	83	N	N
5:00 PM	6:00 PM	677	Y	73	N	N
6:45 AM	7:45 AM	1073	Y	72	N	N
2:15 PM	3:15 PM	735	Y	61	N	N
7:45 AM	8:45 AM	776	Y	56	N	N
1:15 PM	2:15 PM	657	Y	55	N	N
11:15 AM	12:15 PM	564	Y	54	N	N
8:45 AM	9:45 AM	573	Y	53	N	N

Condition B - Interruption of Continuous Traffic						
Time Period		Major Street		Minor Street		Meets
START	END	Epps Mill Rd	>750	I-24 N Ramp	>75	Condition?
4:00 PM	5:00 PM	825	Y	83	Y	**Y**
5:00 PM	6:00 PM	677	N	73	N	N
6:45 AM	7:45 AM	1073	Y	72	N	N
2:15 PM	3:15 PM	735	N	61	N	N
7:45 AM	8:45 AM	776	Y	56	N	N
1:15 PM	2:15 PM	657	N	55	N	N
11:15 AM	12:15 PM	564	N	54	N	N
8:45 AM	9:45 AM	573	N	53	N	N

Warrant 2 - Four Hour Vehicular Volume

1 Major & 1 Minor



Time Period		Major Street Vol.	Minor Street Vol.	Total Volume	Above
Start	End	(both approaches)	(higher approach)	(all approaches)	Curve?
6:45 AM	7:45 AM	1073	72	1145	NO
2:15 PM	3:15 PM	735	61	796	NO
4:00 PM	5:00 PM	825	83	908	NO
5:00 PM	6:00 PM	677	73	750	NO

Warrant 3 - Peak Hour Volume

PA

NOTE: Requirements 1 - 3 must ***ALL*** be met for the ***SAME*** hour for Part A of warrant to be met

1. Stopped Delay

1 Lane Approach	
Stopped Delay: (veh*hr)	**1**
Requirement Met:	**NO**

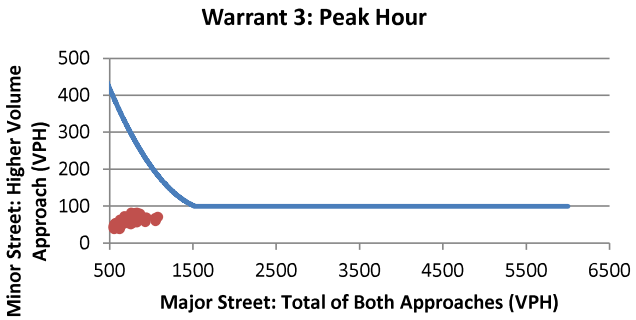
2. Minor Approach Volume

1 Moving Lane	
Approach Volume (veh/hr)	**10**
Requirement Met:	**NO**

3. Total Entering Volume Serviced

3 Approaches	
Intersection Volume (veh/hr)	**342**
Requirement Met:	**NO**

PART B: Peak Hour Volume



TIME PERIOD START	TIME PERIOD END	Major Street (both approaches)	Minor Street (higher approach)	Above Curve?
6:00 AM	7:00 AM	778	61	NO
6:15 AM	7:15 AM	822	67	NO
6:30 AM	7:30 AM	937	70	NO
6:45 AM	7:45 AM	1073	72	NO
7:00 AM	8:00 AM	1045	68	NO
7:15 AM	8:15 AM	1047	61	NO
7:30 AM	8:30 AM	924	59	NO
7:45 AM	8:45 AM	776	56	NO
8:00 AM	9:00 AM	695	56	NO
8:15 AM	9:15 AM	615	56	NO
8:30 AM	9:30 AM	581	55	NO
8:45 AM	9:45 AM	573	53	NO
9:00 AM	10:00 AM	571	51	NO
9:15 AM	10:15 AM	575	51	NO
9:30 AM	10:30 AM	571	48	NO
9:45 AM	10:45 AM	563	43	NO
10:00 AM	11:00 AM	546	41	NO
10:15 AM	11:15 AM	553	42	NO
10:30 AM	11:30 AM	551	40	NO
10:45 AM	11:45 AM	545	47	NO
11:00 AM	12:00 PM	554	51	NO
11:15 AM	12:15 PM	564	54	NO
11:30 AM	12:30 PM	586	54	NO
11:45 AM	12:45 PM	580	50	NO
12:00 PM	1:00 PM	616	46	NO
12:15 PM	1:15 PM	618	40	NO
12:30 PM	1:30 PM	605	41	NO
12:45 PM	1:45 PM	624	48	NO
1:00 PM	2:00 PM	656	53	NO
1:15 PM	2:15 PM	657	55	NO
1:30 PM	2:30 PM	668	60	NO
1:45 PM	2:45 PM	746	55	NO

Traffic Signal Warrant Summary

Epps Mill Rd and I-24 EB Off Ramp

Date: 24-May-24

Analyst: STV Inc.

Warrant 1	Condition A	NO
	Condition B	NO
Warrant 2	Four Hour Vehicular Volume	NO
Warrant 3	A - Peak Hour Delay	NO
	B - Peak Hour Volume	NO
Warrant 4	Pedestrian Volume	
Warrant 5	School Crossing	N/A
Warrant 6	Coordinated Signal System	NO
Warrant 7	Crash Experience	NO
Warrant 8	Roadway network	N/A
Warrant 9	Intersection Near a grade Crossing	N/A

MUTCD Reference:

http://mutcd.fhwa.dot.gov/htm/2009/part4/part4c.htm#section4C02

TIME PERIOD		Epps Mill Rd					Epps Mill Rd					Miller Road					I-24 EB Off Ramp				
		RTR:	1	DIRECTION:		EB	RTR:	1	DIRECTION:		WB	RTR:	0.4	DIRECTION:		NB	RTR:	0.4	DIRECTION:		SB
START	END	Major Street					Major Street					Minor Street					Minor Street				
		L	T	R	PED	B	L	T	R	PED	B	L	T	R	PED	B	L	T	R	PED	B
6:00 AM	6:15 AM	9	76	8	0	0	11	12	23	0	0	2	7	27	0	0	15	6	9	0	0
6:15 AM	6:30 AM	8	103	11	0	0	14	13	20	0	0	0	6	23	0	0	13	5	8	0	0
6:30 AM	6:45 AM	18	84	11	0	0	28	20	19	0	0	4	6	24	0	0	18	7	11	0	0
6:45 AM	7:00 AM	11	96	5	0	0	39	27	14	0	0	5	7	26	0	0	22	9	13	0	0
7:00 AM	7:15 AM	7	116	7	0	0	61	19	26	0	0	4	10	41	0	0	24	10	14	0	0
7:15 AM	7:30 AM	13	167	12	0	0	36	34	29	0	0	4	20	80	0	0	23	9	14	0	0
7:30 AM	7:45 AM	9	152	9	0	0	29	37	22	0	0	9	15	58	0	0	31	12	19	0	0
7:45 AM	8:00 AM	7	102	8	0	0	33	35	26	0	0	6	10	40	0	0	24	10	14	0	0
8:00 AM	8:15 AM	6	87	8	0	0	15	39	20	0	0	7	7	29	0	0	19	7	11	0	0
8:15 AM	8:30 AM	9	61	12	0	0	19	43	16	0	0	4	6	23	0	0	27	11	16	0	0
8:30 AM	8:45 AM	6	68	6	0	0	15	28	21	0	0	4	7	27	0	0	22	9	13	0	0
8:45 AM	9:00 AM	16	53	1	0	3	19	16	28	0	0	1	5	22	0	0	26	10	15	0	0
9:00 AM	9:15 AM	1	51	5	0	0	15	29	27	0	0	4	4	16	0	0	25	10	15	0	0
9:15 AM	9:30 AM	8	53	6	0	0	12	29	26	0	0	1	4	18	0	0	30	12	18	0	0
9:30 AM	9:45 AM	8	53	8	0	0	21	20	18	0	0	2	6	22	0	0	25	10	15	0	0
9:45 AM	10:00 AM	9	43	1	0	0	30	28	30	0	0	2	2	9	0	0	23	9	14	0	0
10:00 AM	10:15 AM	9	35	1	0	0	16	32	27	0	0	0	4	17	0	0	29	11	17	0	0
10:15 AM	10:30 AM	13	48	5	0	0	19	35	21	0	0	4	5	20	0	0	25	10	15	0	0
10:30 AM	10:45 AM	11	47	7	0	0	18	22	26	0	0	6	7	28	0	0	27	11	16	0	0
10:45 AM	11:00 AM	11	35	5	0	0	18	28	26	0	0	4	4	18	0	0	36	14	21	0	0
11:00 AM	11:15 AM	20	44	6	0	0	23	27	26	0	0	1	6	23	0	0	25	10	15	0	0
11:15 AM	11:30 AM	6	44	1	0	0	12	29	23	0	0	4	5	19	0	0	23	9	14	0	0
11:30 AM	11:45 AM	9	44	4	0	0	25	26	20	0	0	2	5	20	0	0	22	9	13	0	0
11:45 AM	12:00 PM	2	35	1	0	0	21	39	20	0	0	1	3	10	0	0	26	10	15	0	0
12:00 PM	12:15 PM	14	35	5	0	0	20	46	21	0	3	5	4	18	0	0	26	11	16	0	0
12:15 PM	12:30 PM	9	33	9	0	0	15	29	15	0	0	6	3	13	0	0	28	11	17	0	0
12:30 PM	12:45 PM	5	29	7	0	0	21	32	22	0	0	2	2	9	0	0	29	12	18	0	0
12:45 PM	1:00 PM	8	49	6	0	0	19	41	27	0	3	4	5	21	0	0	33	13	20	0	0
1:00 PM	1:15 PM	7	64	11	0	0	20	39	27	0	0	5	5	21	0	0	28	11	17	0	0
1:15 PM	1:30 PM	7	49	5	0	0	49	21	20	0	0	4	3	12	0	0	29	11	17	0	0
1:30 PM	1:45 PM	11	46	5	0	0	48	44	33	0	0	6	5	21	0	0	27	11	16	0	0
1:45 PM	2:00 PM	13	68	2	0	0	37	40	35	0	0	8	9	36	0	0	32	13	19	0	0
2:00 PM	2:15 PM	7	57	11	0	0	27	36	19	0	0	7	6	23	0	0	30	12	18	0	0
2:15 PM	2:30 PM	8	43	6	0	0	49	46	28	0	0	8	4	16	0	0	34	14	20	0	0
2:30 PM	2:45 PM	9	95	4	0	0	23	35	28	0	0	11	15	58	0	0	33	13	20	0	0
2:45 PM	3:00 PM	11	66	2	0	0	26	64	25	0	0	5	7	26	0	0	37	15	22	0	0
3:00 PM	3:15 PM	19	56	4	0	0	30	61	23	0	0	2	7	27	0	0	39	16	24	0	0
3:15 PM	3:30 PM	15	55	0	0	0	49	57	16	0	0	8	7	27	0	0	44	18	27	0	0
3:30 PM	3:45 PM	7	66	4	0	0	43	68	25	0	0	6	7	26	0	0	45	18	27	0	0
3:45 PM	4:00 PM	20	54	5	0	0	40	69	15	0	0	7	6	25	0	0	54	22	33	0	3
4:00 PM	4:15 PM	11	68	8	0	0	27	77	25	0	0	7	6	24	0	0	33	13	20	0	0
4:15 PM	4:30 PM	14	51	8	0	0	26	62	19	0	0	2	5	21	0	0	39	16	24	0	0
4:30 PM	4:45 PM	18	53	6	0	0	40	88	18	0	0	4	6	22	0	0	45	18	27	0	0
4:45 PM	5:00 PM	13	57	8	0	0	33	62	29	0	0	11	7	30	0	0	45	18	27	0	0
5:00 PM	5:15 PM	14	66	11	0	0	37	68	22	0	0	7	7	26	0	0	43	17	26	0	0
5:15 PM	5:30 PM	5	101	6	0	0	28	69	33	0	0	2	7	28	0	0	50	20	30	0	0
5:30 PM	5:45 PM	15	74	7	0	0	37	77	22	0	0	7	8	31	0	0	44	18	26	0	0
5:45 PM	6:00 PM	14	57	8	0	0	30	71	18	0	0	8	6	22	0	0	47	19	28	0	0
6:00 PM	6:15 PM	9	54	8	0	0	15	63	25	0	0	5	4	17	0	0	44	18	26	0	0
6:15 PM	6:30 PM	7	49	5	0	0	28	42	28	0	0	5	3	13	0	0	47	19	28	0	0
6:30 PM	6:45 PM	12	42	6	0	0	25	39	18	0	0	4	5	20	0	0	36	15	22	0	0

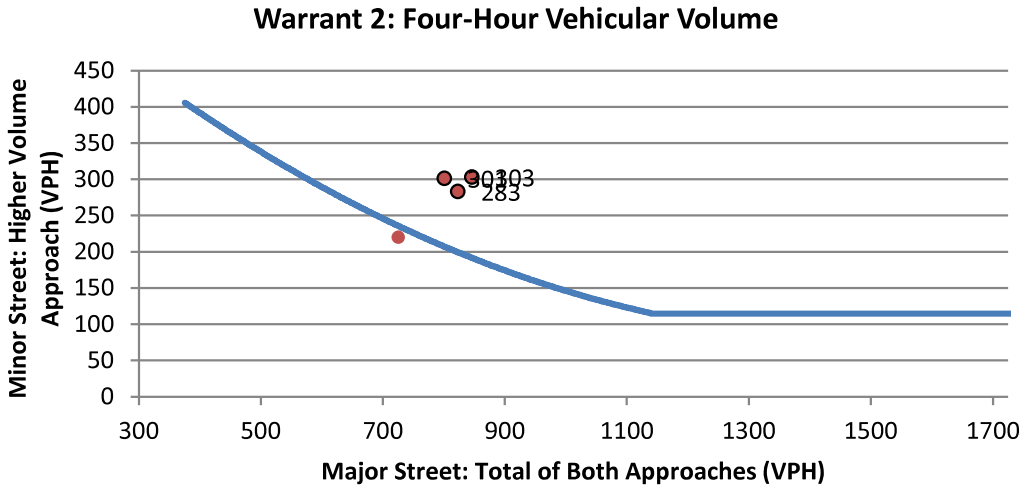
Warrant 1- Eight Hour Vehicular Volume

5/24/2024						
Time Period		Major Street		Minor Street		Meets
START	END	Epps Mill Rd	>500	I-24 S Ramp	>200	Condition?
5:15 PM	6:15 PM	846	Y	303	Y	**Y**
3:00 PM	4:00 PM	801	Y	301	Y	**Y**
4:15 PM	5:15 PM	823	Y	283	Y	**Y**
2:00 PM	3:00 PM	725	Y	220	Y	**Y**
12:30 PM	1:30 PM	585	Y	195	N	N
6:15 PM	7:15 PM	402	N	195	N	N
10:00 AM	11:00 AM	515	Y	190	N	N
8:45 AM	9:45 AM	523	Y	173	N	N

Condition B - Interruption of Continuous Traffic						
Time Period		Major Street		Minor Street		Meets
START	END	Epps Mill Rd	>750	I-24 S Ramp	>100	Condition?
5:15 PM	6:15 PM	846	Y	303	Y	**Y**
3:00 PM	4:00 PM	801	Y	301	Y	**Y**
4:15 PM	5:15 PM	823	Y	283	Y	**Y**
2:00 PM	3:00 PM	725	N	220	Y	N
12:30 PM	1:30 PM	585	N	195	Y	N
6:15 PM	7:15 PM	402	N	195	Y	N
10:00 AM	11:00 AM	515	N	190	Y	N
8:45 AM	9:45 AM	523	N	173	Y	N

Warrant 2 - Four Hour Vehicular Volume

1 Major & 2 Minor



Time Period		Major Street Vol.	Minor Street Vol.	Total Volume	Above
Start	End	(both approaches)	(higher approach)	(all approaches)	Curve?
2:00 PM	3:00 PM	725	220	945	NO
3:00 PM	**4:00 PM**	**801**	**301**	**1102**	**YES**
4:15 PM	**5:15 PM**	**823**	**283**	**1106**	**YES**
5:15 PM	**6:15 PM**	**846**	**303**	**1149**	**YES**

Warrant 3 - Peak Hour Volume

PA

NOTE: Requirements 1 - 3 must ***ALL*** be met for the ***SAME*** hour for Part A of warrant to be met

1. Stopped Delay

1 Lane Approach	
Stopped Delay: (veh*hr)	**1**
Requirement Met:	**NO**

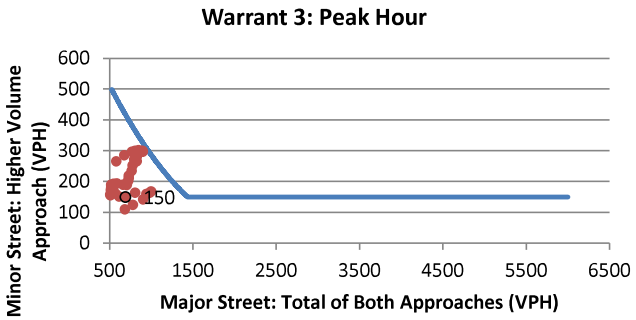
2. Minor Approach Volume

1 Moving Lane	
Approach Volume (veh/hr)	**10**
Requirement Met:	**NO**

3. Total Entering Volume Serviced

3 Approaches	
Intersection Volume (veh/hr)	**342**
Requirement Met:	**NO**

PART B: Peak Hour Volume



TIME PERIOD START	TIME PERIOD END	Major Street (both approaches)	Minor Street (higher approach)	Above Curve?
6:00 AM	7:00 AM	680	111	NO
6:15 AM	7:15 AM	777	126	NO
6:30 AM	7:30 AM	899	143	NO
6:45 AM	7:45 AM	977	165	NO
7:00 AM	8:00 AM	996	169	NO
7:15 AM	8:15 AM	935	161	NO
7:30 AM	8:30 AM	804	165	NO
7:45 AM	8:45 AM	690	150	NO
8:00 AM	9:00 AM	612	152	NO
8:15 AM	9:15 AM	565	163	NO
8:30 AM	9:30 AM	539	168	NO
8:45 AM	9:45 AM	523	173	NO
9:00 AM	10:00 AM	531	169	NO
9:15 AM	10:15 AM	523	175	NO
9:30 AM	10:30 AM	530	167	NO
9:45 AM	10:45 AM	533	170	NO
10:00 AM	11:00 AM	515	190	NO
10:15 AM	11:15 AM	541	184	NO
10:30 AM	11:30 AM	515	181	NO
10:45 AM	11:45 AM	512	173	NO
11:00 AM	12:00 PM	507	157	NO
11:15 AM	12:15 PM	502	159	NO
11:30 AM	12:30 PM	497	167	NO
11:45 AM	12:45 PM	485	179	NO
12:00 PM	1:00 PM	517	191	NO
12:15 PM	1:15 PM	544	194	NO
12:30 PM	1:30 PM	585	195	NO
12:45 PM	1:45 PM	656	191	NO
1:00 PM	2:00 PM	701	190	NO
1:15 PM	2:15 PM	690	193	NO
1:30 PM	2:30 PM	719	202	NO
1:45 PM	2:45 PM	726	212	NO

Traffic Signal Warrant Summary

Epps Mill Rd and Capital Way

Date: 24-May-24

Analyst: STV Inc.

Warrant 1	Condition A	NO
	Condition B	NO
Warrant 2	Four Hour Vehicular Volume	NO
Warrant 3	A - Peak Hour Delay	NO
	B - Peak Hour Volume	NO
Warrant 4	Pedestrian Volume	NO
Warrant 5	School Crossing	N/A
Warrant 6	Coordinated Signal System	NO
Warrant 7	Crash Experience	NO
Warrant 8	Roadway network	N/A
Warrant 9	Intersection Near a grade Crossing	N/A

MUTCD Reference:

http://mutcd.fhwa.dot.gov/htm/2009/part4/part4c.htm#section4C02

TIME PERIOD		Epps Mill Rd					Epps Mill Rd					Dollar General Driveway					Capital Way				
		RTR:	1	DIRECTION:		EB	RTR:	1	DIRECTION:		WB	RTR:	1	DIRECTION:		NB	RTR:	1	DIRECTION:		SB
START	END	Major Street					Major Street					Minor Street					Minor Street				
		L	T	R	PED	B	L	T	R	PED	B	L	T	R	PED	B	L	T	R	PED	B
6:00 AM	6:15 AM	0	7	0	0	0	0	7	2	0	0	0	0	0	0	0	1	0	0	0	0
6:15 AM	6:30 AM	0	9	0	0	0	0	5	4	0	0	0	0	0	0	0	2	0	0	0	0
6:30 AM	6:45 AM	0	13	0	0	0	0	8	5	0	0	0	0	0	0	0	1	0	2	0	0
6:45 AM	7:00 AM	0	9	0	0	0	4	5	4	0	0	0	1	2	0	0	1	0	1	0	0
7:00 AM	7:15 AM	0	7	0	0	0	0	1	6	0	0	0	0	1	0	0	2	1	0	0	0
7:15 AM	7:30 AM	1	13	1	0	0	1	11	9	0	0	1	0	4	0	0	4	0	0	0	0
7:30 AM	7:45 AM	1	9	2	0	0	5	7	14	0	0	1	0	6	0	0	5	0	0	0	0
7:45 AM	8:00 AM	0	9	1	0	0	2	15	7	0	0	0	0	5	0	0	2	0	0	0	0
8:00 AM	8:15 AM	1	8	1	0	0	5	11	8	0	0	4	0	4	0	0	4	1	1	0	0
8:15 AM	8:30 AM	1	12	1	0	0	1	11	5	0	0	1	0	2	0	0	5	0	1	0	0
8:30 AM	8:45 AM	0	6	0	0	0	1	6	7	0	0	0	0	2	0	0	6	0	0	0	0
8:45 AM	9:00 AM	1	6	0	0	0	1	9	5	0	0	0	0	1	0	0	0	1	0	0	0
9:00 AM	9:15 AM	1	8	1	0	0	1	19	5	0	0	1	0	2	0	0	6	0	0	0	0
9:15 AM	9:30 AM	0	21	1	0	0	1	9	8	0	0	0	1	0	0	0	5	1	1	0	0
9:30 AM	9:45 AM	0	16	1	0	0	4	12	8	0	0	0	1	2	0	0	4	0	1	0	0
9:45 AM	10:00 AM	0	19	0	0	0	1	19	4	0	0	1	0	2	0	0	2	0	1	0	0
10:00 AM	10:15 AM	0	23	0	0	0	4	13	6	0	0	0	0	2	0	0	7	0	0	0	0
10:15 AM	10:30 AM	0	18	0	0	0	9	9	11	0	0	2	0	6	0	0	5	0	0	0	0
10:30 AM	10:45 AM	2	19	4	0	0	6	15	6	0	0	7	0	5	0	0	5	1	4	0	0
10:45 AM	11:00 AM	0	28	2	0	0	6	15	5	0	0	2	0	5	0	0	5	1	1	0	0
11:00 AM	11:15 AM	1	23	1	0	0	2	18	7	0	0	4	0	2	0	0	7	0	1	0	0
11:15 AM	11:30 AM	0	33	2	0	0	2	16	1	0	0	0	0	2	0	0	8	0	0	0	0
11:30 AM	11:45 AM	1	21	1	0	0	5	25	2	0	0	1	0	4	0	0	1	0	0	0	0
11:45 AM	12:00 PM	0	29	1	0	0	4	28	4	0	0	2	1	6	0	0	6	0	0	0	0
12:00 PM	12:15 PM	0	35	1	0	0	4	25	5	0	0	0	0	4	0	0	1	0	1	0	0
12:15 PM	12:30 PM	0	26	0	0	0	8	16	8	0	0	7	0	1	0	0	7	0	1	0	0
12:30 PM	12:45 PM	0	30	4	0	0	4	28	12	0	0	5	0	5	0	0	9	0	0	0	0
12:45 PM	1:00 PM	0	25	1	0	0	2	25	4	0	0	1	0	4	0	0	9	0	0	0	0
1:00 PM	1:15 PM	2	33	2	0	0	4	25	6	0	0	2	1	4	0	0	6	0	2	0	0
1:15 PM	1:30 PM	1	28	2	0	0	5	33	7	0	0	2	0	1	0	0	8	1	0	0	0
1:30 PM	1:45 PM	0	33	1	0	0	1	27	4	0	0	5	0	4	0	0	2	0	0	0	0
1:45 PM	2:00 PM	1	30	4	0	0	1	25	4	0	0	4	0	2	0	0	4	0	0	0	0
2:00 PM	2:15 PM	0	41	7	0	0	2	37	5	0	0	2	0	4	0	0	5	1	1	0	0
2:15 PM	2:30 PM	0	42	2	0	0	2	29	6	0	0	4	0	5	0	0	5	0	1	0	0
2:30 PM	2:45 PM	0	23	5	0	0	2	26	4	0	0	2	0	6	0	0	4	0	1	0	0
2:45 PM	3:00 PM	1	30	2	0	0	6	36	5	0	0	7	0	2	0	0	5	0	0	0	0
3:00 PM	3:15 PM	4	29	1	0	0	5	44	6	0	0	1	0	4	0	0	5	0	1	0	0
3:15 PM	3:30 PM	1	26	7	0	0	1	51	2	0	0	4	1	2	0	0	6	0	1	0	0
3:30 PM	3:45 PM	1	34	4	0	0	7	58	4	0	0	2	0	6	0	0	4	0	1	0	0
3:45 PM	4:00 PM	1	34	2	0	0	8	68	2	0	0	1	0	9	0	0	6	0	1	0	0
4:00 PM	4:15 PM	0	42	1	0	0	2	42	0	0	0	2	0	5	0	0	8	0	0	0	0
4:15 PM	4:30 PM	2	46	5	0	0	5	55	6	0	0	4	0	2	0	0	7	0	1	0	0
4:30 PM	4:45 PM	1	39	1	0	0	8	63	5	5	0	4	0	6	0	0	7	1	0	0	0
4:45 PM	5:00 PM	0	37	4	0	0	6	63	5	0	0	7	1	4	0	0	5	0	1	0	0
5:00 PM	5:15 PM	0	55	5	0	0	7	64	1	0	0	6	0	5	0	0	13	0	4	0	0
5:15 PM	5:30 PM	0	23	2	0	0	11	62	6	0	0	4	0	7	0	0	7	0	5	0	0
5:30 PM	5:45 PM	1	34	4	0	0	6	58	8	0	0	5	0	6	0	0	7	1	0	0	0
5:45 PM	6:00 PM	0	40	4	0	0	4	51	2	0	0	7	0	4	0	0	2	0	0	0	0
6:00 PM	6:15 PM	0	26	2	0	0	11	58	5	0	0	4	0	4	0	0	8	1	0	0	0
6:15 PM	6:30 PM	0	28	2	0	0	11	49	6	0	0	9	0	5	0	0	4	0	0	0	0
6:30 PM	6:45 PM	0	29	6	0	0	4	40	1	0	0	5	0	8	0	0	11	0	5	0	0

Warrant 1- Eight Hour Vehicular Volume

Condition A - Minimum Vehicular Volume

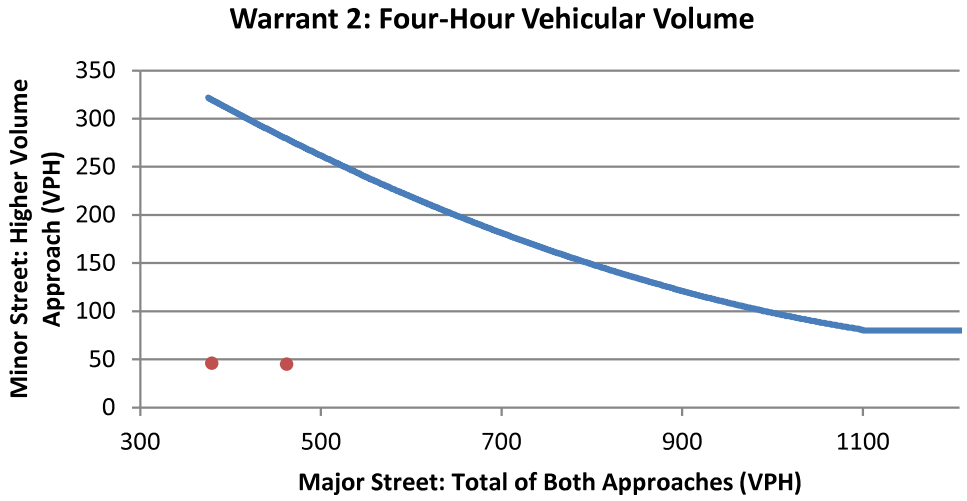
Time Period		Major Street		Minor Street		Meets
START	END	Epps Mill Rd	>500	Capital Way	>150	Condition?
5:45 PM	6:45 PM	379	N	46	N	N
4:45 PM	5:45 PM	462	N	45	N	N
12:30 PM	1:30 PM	283	N	35	N	N
10:15 AM	11:15 AM	207	N	33	N	N
3:45 PM	4:45 PM	438	N	33	N	N
2:00 PM	3:00 PM	313	N	32	N	N
11:30 AM	12:30 PM	249	N	26	N	N
7:15 AM	8:15 AM	142	N	25	N	N

Condition B - Interruption of Continuous Traffic

Time Period		Major Street		Minor Street		Meets
START	END	Epps Mill Rd	>750	Capital Way	>75	Condition?
5:45 PM	6:45 PM	379	N	46	N	N
4:45 PM	5:45 PM	462	N	45	N	N
12:30 PM	1:30 PM	283	N	35	N	N
10:15 AM	11:15 AM	207	N	33	N	N
3:45 PM	4:45 PM	438	N	33	N	N
2:00 PM	3:00 PM	313	N	32	N	N
11:30 AM	12:30 PM	249	N	26	N	N
7:15 AM	8:15 AM	142	N	25	N	N

Warrant 2 - Four Hour Vehicular Volume

1 Major & 1 Minor



Time Period		Major Street Vol.	Minor Street Vol.	Total Volume	Above
Start	End	(both approaches)	(higher approach)	(all approaches)	Curve?
10:15 AM	11:15 AM	207	33	240	NO
12:30 PM	1:30 PM	283	35	318	NO
4:45 PM	5:45 PM	462	45	507	NO
5:45 PM	6:45 PM	379	46	425	NO

Warrant 3 - Peak Hour Volume

PART A: Peak Hour Delay

NOTE: Requirements 1 - 3 must ***ALL*** be met for the ***SAME*** hour for Part A of warrant to be met

1. Stopped Delay

1 Lane Approach	
Stopped Delay: (veh*hr)	**1**
Requirement Met:	**NO**

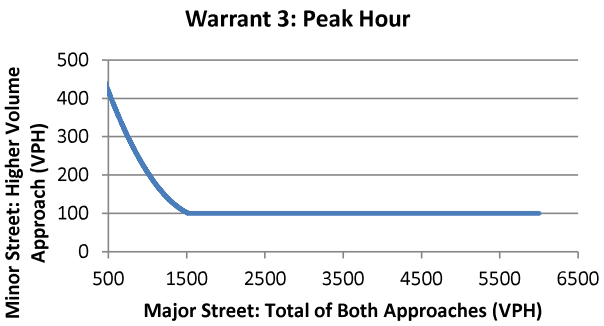
2. Minor Approach Volume

1 Moving Lane	
Approach Volume (veh/hr)	**10**
Requirement Met:	**NO**

3. Total Entering Volume Serviced

3 Approaches	
Intersection Volume (veh/hr)	**342**
Requirement Met:	**NO**

PART B: Peak Hour Volume



TIME PERIOD START	TIME PERIOD END	Major Street (both approaches)	Minor Street (higher approach)	Above Curve?
6:00 AM	7:00 AM	82	8	NO
6:15 AM	7:15 AM	80	10	NO
6:30 AM	7:30 AM	98	12	NO
6:45 AM	7:45 AM	110	16	NO
7:00 AM	8:00 AM	122	18	NO
7:15 AM	8:15 AM	142	25	NO
7:30 AM	8:30 AM	137	23	NO
7:45 AM	8:45 AM	119	20	NO
8:00 AM	9:00 AM	107	19	NO
8:15 AM	9:15 AM	108	19	NO
8:30 AM	9:30 AM	117	20	NO
8:45 AM	9:45 AM	138	19	NO
9:00 AM	10:00 AM	159	21	NO
9:15 AM	10:15 AM	170	22	NO
9:30 AM	10:30 AM	177	20	NO
9:45 AM	10:45 AM	188	25	NO
10:00 AM	11:00 AM	201	29	NO
10:15 AM	11:15 AM	207	33	NO
10:30 AM	11:30 AM	214	33	NO
10:45 AM	11:45 AM	217	24	NO
11:00 AM	12:00 PM	227	23	NO
11:15 AM	12:15 PM	245	20	NO
11:30 AM	12:30 PM	249	26	NO
11:45 AM	12:45 PM	272	31	NO
12:00 PM	1:00 PM	263	28	NO
12:15 PM	1:15 PM	265	34	NO
12:30 PM	1:30 PM	283	35	NO
12:45 PM	1:45 PM	271	28	NO
1:00 PM	2:00 PM	279	25	NO
1:15 PM	2:15 PM	299	24	NO
1:30 PM	2:30 PM	304	30	NO
1:45 PM	2:45 PM	298	29	NO

2033 SIGNAL WAARANTS

Traffic Signal Warrant Summary

TN-2 US Hwy 41 and Epps Mill Rd

Date: 22-May-24

Analyst: STV Inc.

Warrant 1	Condition A	NO
	Condition B	NO
Warrant 2	Four Hour Vehicular Volume	NO
Warrant 3	A - Peak Hour Delay	NO
	B - Peak Hour Volume	**YES**
Warrant 4	Pedestrian Volume	NO
Warrant 5	School Crossing	N/A
Warrant 6	Coordinated Signal System	NO
Warrant 7	Crash Experience	NO
Warrant 8	Roadway network	N/A
Warrant 9	Intersection Near a grade Crossing	N/A

MUTCD Reference:

http://mutcd.fhwa.dot.gov/htm/2009/part4/part4c.htm#section4C02

TIME PERIOD		TN-2 US Hwy 41					TN-2 US Hwy 41					Epps Mill Rd					Epps Mill Rd				
		RTR:	1	DIRECTION:		NB	RTR:	1	DIRECTION:		SB	RTR:	1	DIRECTION:		EB	RTR:	1	DIRECTION:		WB
START	END	Major Street					Major Street					Minor Street					Minor Street				
		L	T	R	PED	B	L	T	R	PED	B	L	T	R	PED	B	L	T	R	PED	B
6:00 AM	6:15 AM	38	53	0	0	0	0	14	13	0	0	16	0	6	0	0	0	0	0	0	0
6:15 AM	6:30 AM	40	64	0	0	0	0	7	14	0	0	37	0	9	0	0	0	0	0	0	0
6:30 AM	6:45 AM	36	63	0	0	0	0	13	30	0	0	37	0	4	0	0	0	0	0	0	0
6:45 AM	7:00 AM	31	50	0	0	0	0	17	48	0	0	38	0	17	0	0	0	0	0	0	0
7:00 AM	7:15 AM	36	60	0	0	0	0	14	43	0	0	26	0	20	0	0	0	0	0	0	0
7:15 AM	7:30 AM	51	48	0	0	0	0	13	40	0	0	48	0	4	0	0	0	0	0	0	0
7:30 AM	7:45 AM	44	28	0	0	0	0	23	41	0	0	31	0	17	0	0	0	0	0	0	0
7:45 AM	8:00 AM	28	36	0	0	0	0	26	47	0	0	28	0	7	0	0	0	0	0	0	0
8:00 AM	8:15 AM	33	44	0	0	0	0	13	23	0	0	31	0	14	0	0	0	0	0	0	0
8:15 AM	8:30 AM	33	37	0	0	0	0	21	19	0	0	21	0	14	0	0	0	0	0	0	0
8:30 AM	8:45 AM	27	46	0	0	0	0	21	16	0	0	10	0	14	0	0	0	0	0	0	0
8:45 AM	9:00 AM	20	51	0	0	0	0	21	14	0	0	14	0	16	0	0	0	0	0	0	0
9:00 AM	9:15 AM	9	34	0	0	0	0	16	11	0	0	14	0	7	0	0	0	0	0	0	0
9:15 AM	9:30 AM	9	40	0	0	0	0	24	19	0	0	21	0	11	0	0	0	0	0	0	0
9:30 AM	9:45 AM	23	38	0	0	0	0	43	17	0	0	21	0	9	0	0	0	0	0	0	0
9:45 AM	10:00 AM	11	47	0	0	0	0	40	13	0	0	20	0	11	0	0	0	0	0	0	0
10:00 AM	10:15 AM	16	36	0	0	0	0	19	21	0	0	14	0	23	0	0	0	0	0	0	0
10:15 AM	10:30 AM	19	38	0	0	0	0	23	13	0	0	10	0	14	0	0	0	0	0	0	0
10:30 AM	10:45 AM	13	37	0	0	0	0	31	19	0	0	24	0	20	0	0	0	0	0	0	0
10:45 AM	11:00 AM	20	27	0	0	0	0	33	20	0	0	14	0	7	0	0	0	0	0	0	0
11:00 AM	11:15 AM	11	34	0	0	0	0	41	20	0	0	17	0	19	0	0	0	0	0	0	0
11:15 AM	11:30 AM	17	17	0	0	0	0	46	24	0	0	17	0	16	0	0	0	0	0	0	0
11:30 AM	11:45 AM	14	41	0	0	0	0	28	21	0	0	17	0	14	0	0	0	0	0	0	0
11:45 AM	12:00 PM	9	31	0	0	0	0	37	33	0	0	23	0	19	0	0	0	0	0	0	0
12:00 PM	12:15 PM	23	38	0	0	0	0	33	20	0	0	21	0	20	0	0	0	0	0	0	0
12:15 PM	12:30 PM	17	38	0	0	0	0	41	24	0	0	26	0	17	0	0	0	0	0	0	0
12:30 PM	12:45 PM	13	28	0	0	0	0	50	17	0	0	14	0	24	0	0	0	0	0	0	0
12:45 PM	1:00 PM	33	33	0	0	0	0	38	19	0	0	19	0	11	0	0	0	0	0	0	0
1:00 PM	1:15 PM	20	30	0	0	0	0	48	26	0	0	11	0	23	0	0	0	0	0	0	0
1:15 PM	1:30 PM	19	30	0	0	0	0	47	27	0	0	26	0	17	0	0	0	0	0	0	0
1:30 PM	1:45 PM	19	36	0	0	0	0	34	33	0	0	21	0	16	0	0	0	0	0	0	0
1:45 PM	2:00 PM	14	28	0	0	0	0	31	23	0	0	34	0	26	0	0	0	0	0	0	0
2:00 PM	2:15 PM	17	38	0	0	0	0	41	34	0	0	24	0	19	0	0	0	0	0	0	0
2:15 PM	2:30 PM	21	37	0	0	0	0	36	26	0	0	21	0	21	0	0	0	0	0	0	0
2:30 PM	2:45 PM	26	28	0	0	0	0	30	36	0	0	38	0	16	0	0	0	0	0	0	0
2:45 PM	3:00 PM	13	17	0	0	0	0	50	23	0	0	33	0	20	0	0	0	0	0	0	0
3:00 PM	3:15 PM	21	24	0	0	0	0	78	26	0	0	21	0	20	0	0	0	0	0	0	0
3:15 PM	3:30 PM	13	34	0	0	0	0	56	24	0	0	27	0	44	0	0	0	0	0	0	0
3:30 PM	3:45 PM	48	56	0	0	0	0	84	33	0	0	43	0	41	0	0	0	0	0	0	0
3:45 PM	4:00 PM	56	51	0	0	0	0	81	26	0	0	34	0	38	0	0	0	0	0	0	0
4:00 PM	4:15 PM	40	41	0	0	0	0	93	34	0	0	36	0	46	0	0	0	0	0	0	0
4:15 PM	4:30 PM	24	16	0	0	0	0	64	41	0	0	24	0	40	0	0	0	0	0	0	0
4:30 PM	4:45 PM	16	27	0	0	0	0	78	31	0	0	31	0	46	0	0	0	0	0	0	0
4:45 PM	5:00 PM	20	37	0	0	0	0	60	48	0	0	30	0	26	0	0	0	0	0	0	0
5:00 PM	5:15 PM	28	26	0	0	0	0	73	36	0	0	44	0	37	0	0	0	0	0	0	0
5:15 PM	5:30 PM	11	37	0	4	0	0	85	28	0	0	31	0	31	0	0	0	0	0	0	0
5:30 PM	5:45 PM	13	26	0	0	0	0	78	21	0	0	30	0	20	0	0	0	0	0	0	0
5:45 PM	6:00 PM	11	28	0	0	0	0	56	24	0	0	24	0	40	0	0	0	0	0	0	0
6:00 PM	6:15 PM	9	23	0	0	0	0	43	38	0	0	19	0	11	0	0	0	0	0	0	0
6:15 PM	6:30 PM	17	19	0	0	0	0	44	13	0	0	28	0	26	0	0	0	0	0	0	0
6:30 PM	6:45 PM	10	23	0	0	0	0	60	28	0	0	23	0	26	0	0	0	0	0	0	0

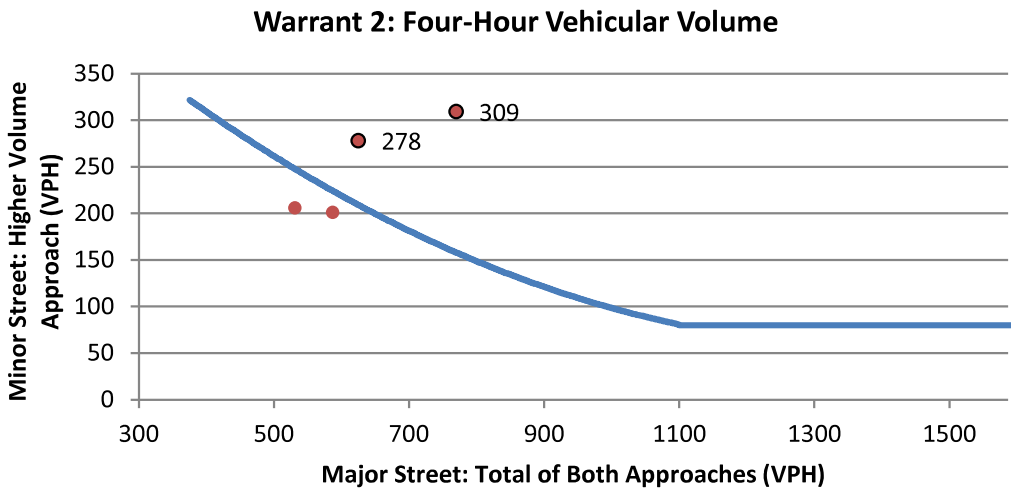
Warrant 1- Eight Hour Vehicular Volume

5/22/2024						
Time Period		Major Street		Minor Street		Meets
START	END	TN-2 US Hwy 41	>500	Epps Mill Rd	>150	Condition?
3:15 PM	4:15 PM	770	Y	309	Y	**Y**
4:15 PM	5:15 PM	625	Y	278	Y	**Y**
5:15 PM	6:15 PM	531	Y	206	Y	**Y**
6:45 AM	7:45 AM	587	Y	201	Y	**Y**
1:45 PM	2:45 PM	466	N	199	Y	N
11:45 AM	12:45 PM	452	N	164	Y	N
12:45 PM	1:45 PM	492	N	144	N	N
7:45 AM	8:45 AM	470	N	139	N	N

Condition B - Interruption of Continuous Traffic						
Time Period		Major Street		Minor Street		Meets
START	END	TN-2 US Hwy 41	>750	Epps Mill Rd	>75	Condition?
3:15 PM	4:15 PM	770	Y	309	Y	**Y**
4:15 PM	5:15 PM	625	N	278	Y	N
5:15 PM	6:15 PM	531	N	206	Y	N
6:45 AM	7:45 AM	587	N	201	Y	N
1:45 PM	2:45 PM	466	N	199	Y	N
11:45 AM	12:45 PM	452	N	164	Y	N
12:45 PM	1:45 PM	492	N	144	Y	N
7:45 AM	8:45 AM	470	N	139	Y	N

Warrant 2 - Four Hour Vehicular Volume

1 Major & 1 Minor



Time Period		Major Street Vol.	Minor Street Vol.	Total Volume	Above
Start	End	(both approaches)	(higher approach)	(all approaches)	Curve?
6:45 AM	7:45 AM	587	201	788	NO
3:15 PM	**4:15 PM**	**770**	**309**	**1079**	**YES**
4:15 PM	**5:15 PM**	**625**	**278**	**903**	**YES**
5:15 PM	6:15 PM	531	206	737	NO

Warrant 3 - Peak Hour Volume

PA

NOTE: Requirements 1 - 3 must ***ALL*** be met for the ***SAME*** hour for Part A of warrant to be met

1. Stopped Delay

1 Lane Approach	
Stopped Delay: (veh*hr)	**1**
Requirement Met:	**NO**

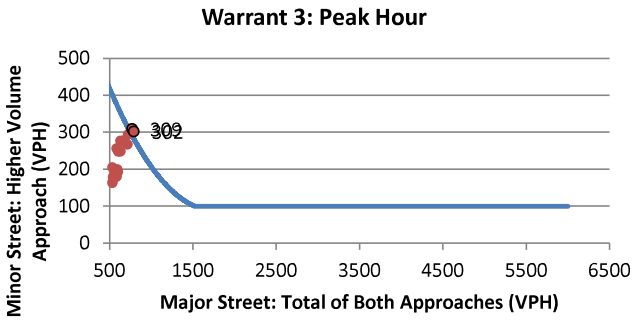
2. Minor Approach Volume

1 Moving Lane	
Approach Volume (veh/hr)	**10**
Requirement Met:	**NO**

3. Total Entering Volume Serviced

3 Approaches	
Intersection Volume (veh/hr)	**342**
Requirement Met:	**NO**

PART B: Peak Hour Volume



Warrant 3 is met based on the requirements of PART B

TIME PERIOD START	TIME PERIOD END	Major Street (both approaches)	Minor Street (higher approach)	Above Curve?
6:00 AM	7:00 AM	531	164	NO
6:15 AM	7:15 AM	566	188	NO
6:30 AM	7:30 AM	593	194	NO
6:45 AM	7:45 AM	587	201	NO
7:00 AM	8:00 AM	578	181	NO
7:15 AM	8:15 AM	538	180	NO
7:30 AM	8:30 AM	496	163	NO
7:45 AM	8:45 AM	470	139	NO
8:00 AM	9:00 AM	439	134	NO
8:15 AM	9:15 AM	396	110	NO
8:30 AM	9:30 AM	378	107	NO
8:45 AM	9:45 AM	389	113	NO
9:00 AM	10:00 AM	394	114	NO
9:15 AM	10:15 AM	416	130	NO
9:30 AM	10:30 AM	417	122	NO
9:45 AM	10:45 AM	396	136	NO
10:00 AM	11:00 AM	385	126	NO
10:15 AM	11:15 AM	399	125	NO
10:30 AM	11:30 AM	410	134	NO
10:45 AM	11:45 AM	414	121	NO
11:00 AM	12:00 PM	424	142	NO
11:15 AM	12:15 PM	432	147	NO
11:30 AM	12:30 PM	448	157	NO
11:45 AM	12:45 PM	452	164	NO
12:00 PM	1:00 PM	465	152	NO
12:15 PM	1:15 PM	475	145	NO
12:30 PM	1:30 PM	478	145	NO
12:45 PM	1:45 PM	492	144	NO
1:00 PM	2:00 PM	465	174	NO
1:15 PM	2:15 PM	471	183	NO
1:30 PM	2:30 PM	468	182	NO
1:45 PM	2:45 PM	466	199	NO

Traffic Signal Warrant Summary

Epps Mill Rd and Forbus Dr

Date: 24-May-24

Analyst: STV Inc.

Warrant 1	Condition A	**YES**
	Condition B	NO
Warrant 2	Four Hour Vehicular Volume	**YES**
Warrant 3	A - Peak Hour Delay	NO
	B - Peak Hour Volume	NO
Warrant 4	Pedestrian Volume	NO
Warrant 5	School Crossing	N/A
Warrant 6	Coordinated Signal System	NO
Warrant 7	Crash Experience	NO
Warrant 8	Roadway network	N/A
Warrant 9	Intersection Near a grade Crossing	N/A

MUTCD Reference:

http://mutcd.fhwa.dot.gov/htm/2009/part4/part4c.htm#section4C02

TIME PERIOD		Epps Mill Rd					Epps Mill Rd					Forbus Dr					Forbus Dr				
		RTR:	1	DIRECTION:	EB		RTR:	1	DIRECTION:	WB		RTR:	1	DIRECTION:	NB		RTR:	1	DIRECTION:	SB	
START	END	Major Street					Major Street					Minor Street					Minor Street				
		L	T	R	PED	B	L	T	R	PED	B	L	T	R	PED	B	L	T	R	PED	B
6:00 AM	6:15 AM	43	38	3	0	0	4	48	10	0	0	0	0	0	0	0	3	0	43	0	0
6:15 AM	6:30 AM	41	63	6	0	0	6	48	4	0	0	1	0	0	0	0	6	0	44	0	0
6:30 AM	6:45 AM	44	54	6	0	0	1	64	14	0	0	0	0	0	0	0	4	0	37	0	0
6:45 AM	7:00 AM	38	77	20	0	0	6	77	11	0	0	0	0	0	0	0	10	0	47	0	0
7:00 AM	7:15 AM	40	64	11	0	0	4	74	7	0	0	3	1	1	0	0	4	0	60	0	0
7:15 AM	7:30 AM	53	71	9	0	0	3	93	10	0	0	0	0	0	0	0	9	0	50	0	0
7:30 AM	7:45 AM	63	71	16	0	0	4	84	10	0	0	3	0	0	0	0	3	3	61	0	0
7:45 AM	8:00 AM	47	64	11	0	0	0	70	7	0	0	4	0	1	0	0	7	3	61	0	0
8:00 AM	8:15 AM	41	74	9	0	0	0	56	7	0	0	10	0	0	0	0	4	0	53	0	0
8:15 AM	8:30 AM	40	54	4	0	0	1	51	10	0	0	0	0	0	0	0	7	0	63	0	0
8:30 AM	8:45 AM	57	51	7	0	0	0	36	9	0	0	3	0	0	0	0	0	0	43	0	0
8:45 AM	9:00 AM	54	47	1	0	0	1	33	4	0	0	4	0	0	0	0	3	0	51	0	0
9:00 AM	9:15 AM	50	37	4	0	0	0	21	4	0	0	1	1	0	0	0	6	3	65	0	0
9:15 AM	9:30 AM	44	46	4	0	0	1	28	6	0	0	3	1	1	0	0	4	0	56	0	0
9:30 AM	9:45 AM	44	57	1	0	0	0	40	13	0	0	3	1	0	0	0	1	0	53	0	0
9:45 AM	10:00 AM	63	51	3	0	0	0	20	7	0	0	4	0	0	0	0	7	0	51	0	0
10:00 AM	10:15 AM	46	51	0	0	0	0	38	9	0	0	1	0	0	0	0	7	0	48	0	0
10:15 AM	10:30 AM	37	50	3	0	0	0	36	3	0	0	0	0	0	0	0	4	0	60	0	0
10:30 AM	10:45 AM	43	61	4	0	0	0	31	9	0	0	6	3	3	0	0	4	0	44	0	0
10:45 AM	11:00 AM	48	37	3	0	0	4	34	9	0	0	0	6	0	0	0	4	1	47	0	0
11:00 AM	11:15 AM	47	53	7	0	0	4	31	7	0	0	9	3	6	0	0	7	3	50	0	0
11:15 AM	11:30 AM	48	53	3	0	0	3	46	10	0	0	4	0	0	0	0	4	1	47	0	0
11:30 AM	11:45 AM	56	54	10	0	0	0	28	9	0	0	11	1	4	0	0	6	0	44	0	0
11:45 AM	12:00 PM	50	48	1	0	0	0	34	4	0	0	9	3	4	0	0	16	3	40	0	0
12:00 PM	12:15 PM	54	57	3	0	0	1	43	16	0	0	6	0	4	0	0	11	0	61	0	0
12:15 PM	12:30 PM	51	50	9	0	0	4	36	7	0	0	3	1	4	0	4	11	0	64	0	0
12:30 PM	12:45 PM	38	50	9	0	0	0	36	6	0	0	3	0	0	0	0	7	1	53	0	0
12:45 PM	1:00 PM	50	61	7	4	0	4	53	10	0	0	3	0	0	0	0	6	0	58	0	0
1:00 PM	1:15 PM	44	51	6	0	0	1	43	7	0	0	6	0	1	0	0	6	0	48	0	0
1:15 PM	1:30 PM	40	63	4	0	0	3	48	4	0	0	6	0	3	0	0	3	0	47	0	0
1:30 PM	1:45 PM	63	65	1	0	0	0	47	11	0	0	3	0	1	0	0	9	0	41	0	0
1:45 PM	2:00 PM	61	78	3	0	0	0	41	10	0	0	3	0	0	0	0	10	0	63	0	0
2:00 PM	2:15 PM	48	64	3	0	0	0	51	13	0	0	1	0	1	0	0	3	0	48	0	0
2:15 PM	2:30 PM	60	50	4	0	0	0	44	11	0	0	4	0	0	0	0	9	0	53	0	0
2:30 PM	2:45 PM	68	78	10	0	0	1	61	9	0	0	3	1	0	0	0	9	0	67	0	0
2:45 PM	3:00 PM	51	81	4	0	0	3	33	7	0	0	3	0	0	0	0	7	1	58	0	0
3:00 PM	3:15 PM	50	64	9	0	0	1	46	7	0	0	3	1	1	0	0	4	0	56	0	0
3:15 PM	3:30 PM	51	74	1	0	0	1	38	6	0	0	4	0	0	0	0	7	0	47	0	0
3:30 PM	3:45 PM	41	58	0	0	0	0	74	19	0	0	44	0	34	0	0	7	0	53	0	0
3:45 PM	4:00 PM	58	91	1	0	0	0	74	13	0	0	10	0	1	0	0	4	0	51	0	0
4:00 PM	4:15 PM	63	98	0	0	0	0	78	7	0	0	6	1	7	0	0	11	0	65	0	0
4:15 PM	4:30 PM	54	81	3	0	0	1	71	13	0	0	6	4	3	0	0	1	0	64	0	0
4:30 PM	4:45 PM	50	88	0	0	0	0	54	7	0	0	21	4	7	0	0	6	0	63	0	0
4:45 PM	5:00 PM	40	61	0	4	0	0	64	14	0	0	9	0	3	0	0	9	0	50	0	0
5:00 PM	5:15 PM	56	84	1	0	0	0	77	9	0	0	19	0	3	0	0	7	0	38	0	0
5:15 PM	5:30 PM	57	83	0	0	0	0	43	7	0	0	7	0	6	0	0	1	0	38	0	0
5:30 PM	5:45 PM	31	56	0	0	0	0	33	6	0	0	4	0	0	0	0	7	0	48	0	0
5:45 PM	6:00 PM	57	84	0	0	0	0	43	9	0	0	0	0	0	0	0	6	0	38	0	0
6:00 PM	6:15 PM	40	58	0	0	0	0	40	10	0	0	6	0	0	0	0	3	0	51	0	0
6:15 PM	6:30 PM	47	71	0	0	0	0	34	7	0	0	0	0	0	0	0	9	0	41	0	0
6:30 PM	6:45 PM	38	60	6	0	0	0	43	10	0	0	0	0	0	0	0	7	0	37	0	0

Warrant 1- Eight Hour Vehicular Volume

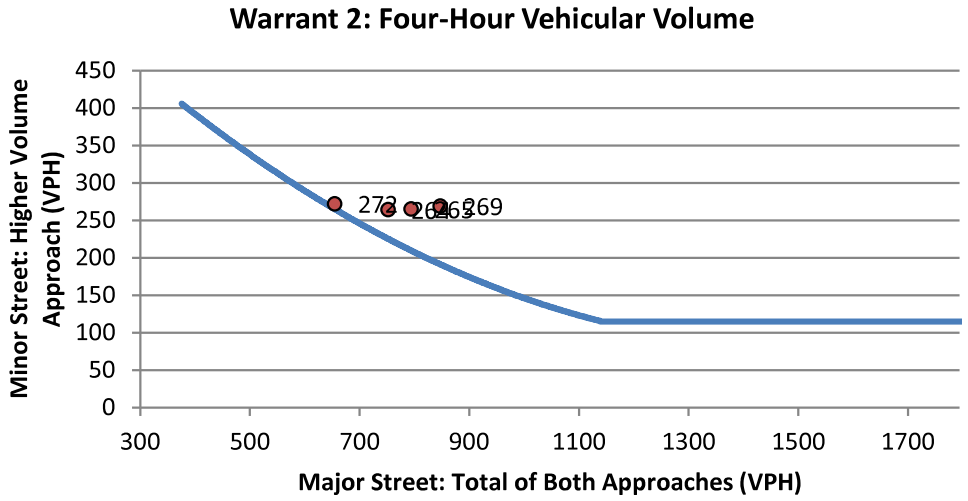
5/24/2024						
Time Period		Major Street		Minor Street		Meets
START	END	Epps Mill Rd	>500	Forbus Dr	>200	Condition?
12:00 PM	1:00 PM	655	Y	272	Y	**Y**
4:00 PM	5:00 PM	847	Y	269	Y	**Y**
7:30 AM	8:30 AM	794	Y	265	Y	**Y**
2:15 PM	3:15 PM	752	Y	264	Y	**Y**
9:00 AM	10:00 AM	544	Y	246	Y	**Y**
1:00 PM	2:00 PM	694	Y	227	Y	**Y**
10:15 AM	11:15 AM	561	Y	224	Y	**Y**
6:30 AM	7:30 AM	851	Y	221	Y	**Y**

Condition B - Interruption of Continuous Traffic						
Time Period		Major Street		Minor Street		Meets
START	END	Epps Mill Rd	>750	Forbus Dr	>100	Condition?
12:00 PM	1:00 PM	655	N	272	Y	N
4:00 PM	5:00 PM	847	Y	269	Y	**Y**
7:30 AM	8:30 AM	794	Y	265	Y	**Y**
2:15 PM	3:15 PM	752	Y	264	Y	**Y**
9:00 AM	10:00 AM	544	N	246	Y	N
1:00 PM	2:00 PM	694	N	227	Y	N
10:15 AM	11:15 AM	561	N	224	Y	N
6:30 AM	7:30 AM	851	Y	221	Y	**Y**

Warrant 1 is met by satisfying the requirements of Condition A.

Warrant 2 - Four Hour Vehicular Volume

1 Major & 2 Minor



Time Period		Major Street Vol.	Minor Street Vol.	Total Volume	Above
Start	End	(both approaches)	(higher approach)	(all approaches)	Curve?
7:30 AM	8:30 AM	794	265	1059	YES
12:00 PM	1:00 PM	655	272	927	YES
2:15 PM	3:15 PM	752	264	1016	YES
4:00 PM	5:00 PM	847	269	1116	YES

Warrant 3 - Peak Hour Volume

PA

NOTE: Requirements 1 - 3 must ***ALL*** be met for the ***SAME*** hour for Part A of warrant to be met

1. Stopped Delay

1 Lane Approach	
Stopped Delay: (veh*hr)	**1**
Requirement Met:	**NO**

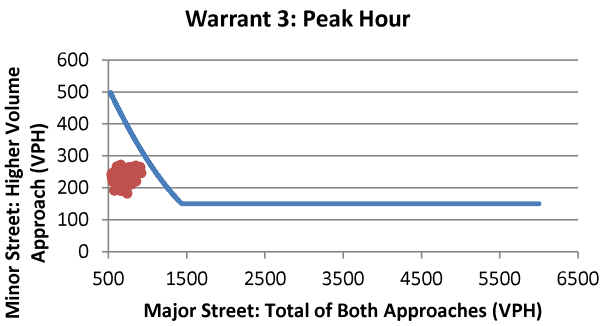
2. Minor Approach Volume

1 Moving Lane	
Approach Volume (veh/hr)	**10**
Requirement Met:	**NO**

3. Total Entering Volume Serviced

3 Approaches	
Intersection Volume (veh/hr)	**342**
Requirement Met:	**NO**

PART B: Peak Hour Volume



TIME PERIOD START	TIME PERIOD END	Major Street (both approaches)	Minor Street (higher approach)	Above Curve?
6:00 AM	7:00 AM	726	194	NO
6:15 AM	7:15 AM	780	212	NO
6:30 AM	7:30 AM	851	221	NO
6:45 AM	7:45 AM	916	247	NO
7:00 AM	8:00 AM	886	261	NO
7:15 AM	8:15 AM	873	254	NO
7:30 AM	8:30 AM	794	265	NO
7:45 AM	8:45 AM	706	241	NO
8:00 AM	9:00 AM	647	224	NO
8:15 AM	9:15 AM	576	241	NO
8:30 AM	9:30 AM	545	231	NO
8:45 AM	9:45 AM	540	242	NO
9:00 AM	10:00 AM	544	246	NO
9:15 AM	10:15 AM	572	227	NO
9:30 AM	10:30 AM	572	231	NO
9:45 AM	10:45 AM	565	225	NO
10:00 AM	11:00 AM	556	219	NO
10:15 AM	11:15 AM	561	224	NO
10:30 AM	11:30 AM	595	212	NO
10:45 AM	11:45 AM	604	214	NO
11:00 AM	12:00 PM	606	221	NO
11:15 AM	12:15 PM	631	233	NO
11:30 AM	12:30 PM	625	256	NO
11:45 AM	12:45 PM	607	267	NO
12:00 PM	1:00 PM	655	272	NO
12:15 PM	1:15 PM	633	254	NO
12:30 PM	1:30 PM	638	229	NO
12:45 PM	1:45 PM	686	218	NO
1:00 PM	2:00 PM	694	227	NO
1:15 PM	2:15 PM	721	224	NO
1:30 PM	2:30 PM	728	236	NO
1:45 PM	2:45 PM	768	262	NO

Traffic Signal Warrant Summary

Epps Mill Rd and I-24 WB Ramp

Date: 22-May-24

Analyst: STV Inc.

Warrant 1	Condition A	NO
	Condition B	NO
Warrant 2	Four Hour Vehicular Volume	NO
Warrant 3	A - Peak Hour Delay	NO
	B - Peak Hour Volume	NO
Warrant 4	Pedestrian Volume	NO
Warrant 5	School Crossing	N/A
Warrant 6	Coordinated Signal System	NO
Warrant 7	Crash Experience	NO
Warrant 8	Roadway network	N/A
Warrant 9	Intersection Near a grade Crossing	N/A

MUTCD Reference:

http://mutcd.fhwa.dot.gov/htm/2009/part4/part4c.htm#section4C02

TIME PERIOD		Epps Mill Rd					Epps Mill Rd					I-24 WB Off Ramp									
		RTR:	1	DIRECTION:		EB	RTR:	1	DIRECTION:		WB	RTR:	0.4	DIRECTION:		NB	RTR:	1	DIRECTION:		SB
START	END	Major Street					Major Street					Minor Street					Minor Street				
		L	T	R	PED	B	L	T	R	PED	B	L	T	R	PED	B	L	T	R	PED	B
6:00 AM	6:15 AM	78	43	0	0	0	0	27	56	0	0	4	0	24	0	0	0	0	0	0	0
6:15 AM	6:30 AM	87	57	0	0	0	0	31	56	0	0	3	0	34	0	0	0	0	0	0	0
6:30 AM	6:45 AM	71	57	0	0	0	0	36	53	0	0	9	1	27	0	0	0	0	0	0	0
6:45 AM	7:00 AM	102	84	0	0	0	0	50	61	0	0	11	1	27	0	0	0	0	0	0	0
7:00 AM	7:15 AM	71	61	0	0	0	0	44	81	0	0	9	3	27	0	0	0	0	0	0	0
7:15 AM	7:30 AM	168	74	0	0	0	0	44	85	0	0	6	0	33	0	0	0	0	0	0	0
7:30 AM	7:45 AM	165	77	0	0	0	0	44	95	0	0	4	1	43	0	0	0	0	0	0	0
7:45 AM	8:00 AM	65	71	0	0	0	0	44	83	0	0	9	0	23	0	0	0	0	0	0	0
8:00 AM	8:15 AM	75	73	0	0	0	0	40	71	0	0	1	1	27	0	4	0	0	0	0	0
8:15 AM	8:30 AM	65	53	0	0	0	0	43	61	0	0	7	0	24	0	0	0	0	0	0	0
8:30 AM	8:45 AM	73	51	0	0	0	0	37	40	0	0	6	0	34	0	0	0	0	0	0	0
8:45 AM	9:00 AM	33	47	0	0	0	0	33	51	0	0	4	0	34	0	0	0	0	0	0	4
9:00 AM	9:15 AM	36	44	0	0	0	0	31	51	0	0	3	0	28	0	0	0	0	0	0	0
9:15 AM	9:30 AM	41	57	0	0	0	0	38	43	0	0	7	3	14	0	0	0	0	0	0	0
9:30 AM	9:45 AM	44	56	0	0	0	0	48	43	0	0	7	0	26	0	0	0	0	0	0	0
9:45 AM	10:00 AM	33	56	0	0	0	0	43	30	0	0	3	0	33	0	0	0	0	0	0	0
10:00 AM	10:15 AM	28	58	0	0	0	0	38	41	0	0	3	1	23	0	0	0	0	0	0	0
10:15 AM	10:30 AM	34	48	0	0	0	0	40	53	0	0	4	1	16	0	0	0	0	0	0	0
10:30 AM	10:45 AM	37	71	0	0	0	0	43	31	0	0	3	0	21	0	0	0	0	0	0	0
10:45 AM	11:00 AM	20	43	0	0	0	0	46	34	0	0	3	1	23	0	0	0	0	0	0	0
11:00 AM	11:15 AM	28	65	0	4	0	0	46	37	0	0	4	0	23	0	0	0	0	0	0	0
11:15 AM	11:30 AM	33	56	0	0	0	0	51	33	0	0	0	0	24	0	0	0	0	0	0	0
11:30 AM	11:45 AM	31	63	0	0	0	0	36	46	0	0	4	4	24	0	0	0	0	0	0	0
11:45 AM	12:00 PM	24	46	0	0	0	0	48	34	0	0	4	1	30	0	0	0	0	0	0	0
12:00 PM	12:15 PM	31	61	0	0	0	0	44	51	0	0	9	0	26	0	0	0	0	0	0	0
12:15 PM	12:30 PM	40	67	0	0	0	0	57	36	0	0	1	1	19	0	0	0	0	0	0	0
12:30 PM	12:45 PM	21	56	0	0	0	0	53	37	0	0	7	0	19	0	0	0	0	0	0	0
12:45 PM	1:00 PM	37	58	0	0	0	0	47	54	0	0	3	0	27	0	0	0	0	0	0	0
1:00 PM	1:15 PM	38	58	0	0	0	0	46	47	0	0	3	1	19	0	0	0	0	0	0	0
1:15 PM	1:30 PM	27	64	0	0	0	0	58	34	0	0	3	1	20	0	0	0	0	0	0	0
1:30 PM	1:45 PM	36	70	0	0	0	0	51	34	0	0	7	3	33	0	0	0	0	0	0	0
1:45 PM	2:00 PM	46	91	0	0	0	0	57	41	0	0	9	0	27	0	0	0	0	0	0	0
2:00 PM	2:15 PM	34	64	0	0	0	0	53	40	0	0	6	0	20	0	0	0	0	0	0	0
2:15 PM	2:30 PM	41	61	0	0	0	0	54	41	0	0	4	0	31	0	0	0	0	0	0	0
2:30 PM	2:45 PM	65	97	0	0	0	0	57	64	0	0	6	0	27	0	0	0	0	0	0	0
2:45 PM	3:00 PM	50	77	0	0	0	0	40	44	0	0	7	1	27	0	0	0	0	0	0	0
3:00 PM	3:15 PM	38	68	0	0	0	0	44	51	0	0	9	0	30	0	0	0	0	0	0	0
3:15 PM	3:30 PM	51	78	0	0	0	0	53	31	0	0	1	0	30	0	0	0	0	0	0	0
3:30 PM	3:45 PM	20	68	0	0	0	0	74	83	4	0	7	3	19	0	0	0	0	0	0	0
3:45 PM	4:00 PM	30	102	0	0	0	0	57	67	0	0	4	0	21	0	0	0	0	0	0	0
4:00 PM	4:15 PM	38	101	0	0	0	0	70	80	0	0	11	3	34	0	0	0	0	0	0	4
4:15 PM	4:30 PM	44	80	0	0	0	0	68	57	0	0	13	0	34	0	0	0	0	0	0	0
4:30 PM	4:45 PM	38	77	0	0	0	0	83	50	0	0	16	0	36	0	0	0	0	0	0	0
4:45 PM	5:00 PM	44	61	0	0	0	0	56	56	0	0	7	0	23	0	0	0	0	0	0	0
5:00 PM	5:15 PM	44	87	0	0	0	0	73	58	0	0	10	1	36	0	0	0	0	0	0	0
5:15 PM	5:30 PM	34	78	0	0	0	0	50	34	0	0	13	0	36	0	0	0	0	0	0	0
5:30 PM	5:45 PM	43	56	0	0	0	0	50	27	0	0	9	0	21	0	0	0	0	0	0	0
5:45 PM	6:00 PM	36	83	0	0	0	0	41	31	0	0	7	0	28	0	0	0	0	0	0	0
6:00 PM	6:15 PM	47	57	0	0	0	0	56	33	0	0	7	0	19	0	0	0	0	0	0	0
6:15 PM	6:30 PM	31	81	0	0	0	0	47	24	0	0	10	0	17	0	0	0	0	0	0	0
6:30 PM	6:45 PM	31	63	0	0	0	0	51	21	0	0	4	0	21	0	0	0	0	0	0	0

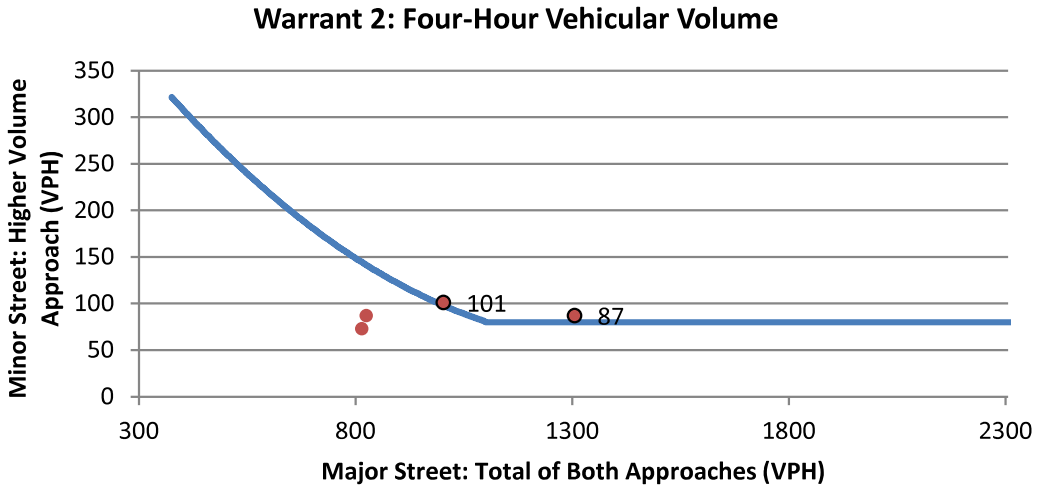
Warrant 1- Eight Hour Vehicular Volume

5/22/2024						
Time Period		Major Street		Minor Street		Meets
START	END	Epps Mill Rd	>500	I-24 N Ramp	>150	Condition?
4:00 PM	5:00 PM	1003	Y	101	N	N
6:45 AM	7:45 AM	1306	Y	87	N	N
5:00 PM	6:00 PM	825	Y	87	N	N
1:30 PM	2:30 PM	814	Y	73	N	N
2:45 PM	3:45 PM	870	Y	71	N	N
8:15 AM	9:15 AM	749	Y	69	N	N
11:15 AM	12:15 PM	688	Y	64	N	N
9:15 AM	10:15 AM	697	Y	62	N	N

Condition B - Interruption of Continuous Traffic						
Time Period		Major Street		Minor Street		Meets
START	END	Epps Mill Rd	>750	I-24 N Ramp	>75	Condition?
4:00 PM	5:00 PM	1003	Y	101	Y	**Y**
6:45 AM	7:45 AM	1306	Y	87	Y	**Y**
5:00 PM	6:00 PM	825	Y	87	Y	**Y**
1:30 PM	2:30 PM	814	Y	73	N	N
2:45 PM	3:45 PM	870	Y	71	N	N
8:15 AM	9:15 AM	749	N	69	N	N
11:15 AM	12:15 PM	688	N	64	N	N
9:15 AM	10:15 AM	697	N	62	N	N

Warrant 2 - Four Hour Vehicular Volume

1 Major & 1 Minor



Time Period		Major Street Vol.	Minor Street Vol.	Total Volume	Above
Start	End	(both approaches)	(higher approach)	(all approaches)	Curve?
6:45 AM	**7:45 AM**	**1306**	**87**	**1393**	**YES**
1:30 PM	2:30 PM	814	73	887	NO
4:00 PM	**5:00 PM**	**1003**	**101**	**1104**	**YES**
5:00 PM	6:00 PM	825	87	912	NO

Warrant 3 - Peak Hour Volume

PA

NOTE: Requirements 1 - 3 must ***ALL*** be met for the ***SAME*** hour for Part A of warrant to be met

1. Stopped Delay

1 Lane Approach	
Stopped Delay: (veh*hr)	**1**
Requirement Met:	**NO**

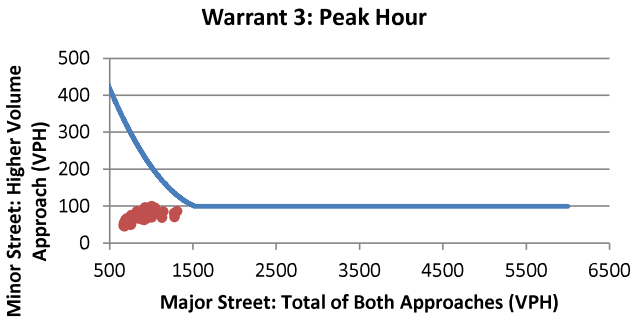
2. Minor Approach Volume

1 Moving Lane	
Approach Volume (veh/hr)	**10**
Requirement Met:	**NO**

3. Total Entering Volume Serviced

3 Approaches	
Intersection Volume (veh/hr)	**342**
Requirement Met:	**NO**

PART B: Peak Hour Volume



TIME PERIOD START	TIME PERIOD END	Major Street (both approaches)	Minor Street (higher approach)	Above Curve?
6:00 AM	7:00 AM	949	75	NO
6:15 AM	7:15 AM	1002	84	NO
6:30 AM	7:30 AM	1142	86	NO
6:45 AM	7:45 AM	1306	87	NO
7:00 AM	8:00 AM	1272	82	NO
7:15 AM	8:15 AM	1274	72	NO
7:30 AM	8:30 AM	1125	70	NO
7:45 AM	8:45 AM	945	68	NO
8:00 AM	9:00 AM	846	68	NO
8:15 AM	9:15 AM	749	69	NO
8:30 AM	9:30 AM	706	68	NO
8:45 AM	9:45 AM	696	65	NO
9:00 AM	10:00 AM	694	63	NO
9:15 AM	10:15 AM	697	62	NO
9:30 AM	10:30 AM	693	57	NO
9:45 AM	10:45 AM	684	51	NO
10:00 AM	11:00 AM	665	48	NO
10:15 AM	11:15 AM	676	48	NO
10:30 AM	11:30 AM	674	47	NO
10:45 AM	11:45 AM	668	54	NO
11:00 AM	12:00 PM	677	58	NO
11:15 AM	12:15 PM	688	64	NO
11:30 AM	12:30 PM	715	64	NO
11:45 AM	12:45 PM	706	61	NO
12:00 PM	1:00 PM	750	58	NO
12:15 PM	1:15 PM	752	51	NO
12:30 PM	1:30 PM	735	53	NO
12:45 PM	1:45 PM	759	61	NO
1:00 PM	2:00 PM	798	67	NO
1:15 PM	2:15 PM	800	69	NO
1:30 PM	2:30 PM	814	73	NO
1:45 PM	2:45 PM	906	67	NO

Traffic Signal Warrant Summary

Epps Mill Rd and I-24 EB Off Ramp

Date: 22-May-24

Analyst: STV Inc.

Warrant 1	Condition A	**YES**
	Condition B	NO
Warrant 2	Four Hour Vehicular Volume	**YES**
Warrant 3	A - Peak Hour Delay	NO
	B - Peak Hour Volume	**YES**
Warrant 4	Pedestrian Volume	
Warrant 5	School Crossing	N/A
Warrant 6	Coordinated Signal System	NO
Warrant 7	Crash Experience	NO
Warrant 8	Roadway network	N/A
Warrant 9	Intersection Near a grade Crossing	N/A

MUTCD Reference:

http://mutcd.fhwa.dot.gov/htm/2009/part4/part4c.htm#section4C02

TIME PERIOD		Epps Mill Rd					Epps Mill Rd					Miller Road					I-24 EB Off Ramp				
		RTR:	1	DIRECTION:		EB	RTR:	1	DIRECTION:		WB	RTR:	0.4	DIRECTION:		NB	RTR:	0.4	DIRECTION:		SB
START	END	Major Street					Major Street					Minor Street					Minor Street				
		L	T	R	PED	B	L	T	R	PED	B	L	T	R	PED	B	L	T	R	PED	B
6:00 AM	6:15 AM	11	93	10	0	0	13	14	28	0	0	3	8	33	0	0	18	7	11	0	0
6:15 AM	6:30 AM	10	125	13	0	0	17	16	24	0	0	0	7	28	0	0	16	7	10	0	0
6:30 AM	6:45 AM	21	102	13	0	0	34	24	23	0	0	4	7	30	0	0	22	9	13	0	0
6:45 AM	7:00 AM	13	117	6	0	0	47	33	17	0	0	6	8	32	0	0	27	11	16	0	0
7:00 AM	7:15 AM	9	141	9	0	0	74	23	31	0	0	4	13	50	0	0	29	12	18	0	0
7:15 AM	7:30 AM	16	204	14	0	0	44	41	36	0	0	4	24	98	0	0	28	11	17	0	0
7:30 AM	7:45 AM	11	185	11	0	0	36	46	27	0	0	11	18	71	0	0	38	15	23	0	0
7:45 AM	8:00 AM	9	124	10	0	0	40	43	31	0	0	7	12	49	0	0	29	12	18	0	0
8:00 AM	8:15 AM	7	105	10	0	0	19	47	24	0	0	9	9	35	0	0	23	9	14	0	0
8:15 AM	8:30 AM	11	74	14	0	0	23	53	20	0	0	4	7	28	0	0	33	13	20	0	0
8:30 AM	8:45 AM	7	83	7	0	0	19	34	26	0	0	4	8	33	0	0	27	11	16	0	0
8:45 AM	9:00 AM	20	64	1	0	3	23	20	34	0	0	1	7	26	0	0	31	13	19	0	0
9:00 AM	9:15 AM	1	63	6	0	0	19	36	33	0	0	4	5	19	0	0	31	12	18	0	0
9:15 AM	9:30 AM	10	64	7	0	0	14	36	31	0	0	1	5	22	0	0	37	15	22	0	0
9:30 AM	9:45 AM	10	64	10	0	0	26	24	21	0	0	3	7	27	0	0	30	12	18	0	0
9:45 AM	10:00 AM	11	53	1	0	0	37	34	37	0	0	3	3	11	0	0	28	11	17	0	0
10:00 AM	10:15 AM	11	43	1	0	0	20	38	33	0	0	0	5	20	0	0	35	14	21	0	0
10:15 AM	10:30 AM	16	58	6	0	0	23	43	26	0	0	4	6	24	0	0	30	12	18	0	0
10:30 AM	10:45 AM	13	57	9	0	0	21	27	31	0	0	7	9	34	0	0	33	13	20	0	0
10:45 AM	11:00 AM	13	43	6	0	0	21	34	31	0	0	4	5	22	0	0	43	17	26	0	0
11:00 AM	11:15 AM	24	54	7	0	0	28	33	31	0	0	1	7	28	0	0	30	12	18	0	0
11:15 AM	11:30 AM	7	54	1	0	0	14	36	28	0	0	4	6	23	0	0	28	11	17	0	0
11:30 AM	11:45 AM	11	54	4	0	0	30	31	24	0	0	3	6	24	0	0	27	11	16	0	0
11:45 AM	12:00 PM	3	43	1	0	0	26	47	24	0	0	1	3	13	0	0	31	13	19	0	0
12:00 PM	12:15 PM	17	43	6	0	0	24	56	26	0	3	6	5	22	0	0	32	13	19	0	0
12:15 PM	12:30 PM	11	40	11	0	0	19	36	19	0	0	7	4	16	0	0	34	14	20	0	0
12:30 PM	12:45 PM	6	36	9	0	0	26	38	27	0	0	3	3	11	0	0	36	14	21	0	0
12:45 PM	1:00 PM	10	60	7	0	0	23	50	33	0	3	4	6	25	0	0	40	16	24	0	0
1:00 PM	1:15 PM	9	78	13	0	0	24	47	33	0	0	6	6	25	0	0	34	14	20	0	0
1:15 PM	1:30 PM	9	60	6	0	0	60	26	24	0	0	4	4	15	0	0	35	14	21	0	0
1:30 PM	1:45 PM	13	56	6	0	0	58	54	40	0	0	7	6	25	0	0	33	13	20	0	0
1:45 PM	2:00 PM	16	83	3	0	0	46	48	43	0	0	10	11	43	0	0	38	15	23	0	0
2:00 PM	2:15 PM	9	70	13	0	0	33	44	23	0	0	9	7	28	0	0	37	15	22	0	0
2:15 PM	2:30 PM	10	53	7	0	0	60	56	34	0	0	10	5	19	0	0	41	17	25	0	0
2:30 PM	2:45 PM	11	115	4	0	0	28	43	34	0	0	13	18	71	0	0	41	16	24	0	0
2:45 PM	3:00 PM	13	80	3	0	0	31	78	30	0	0	6	8	32	0	0	46	18	27	0	0
3:00 PM	3:15 PM	23	68	4	0	0	37	74	28	0	0	3	8	33	0	0	48	19	29	0	0
3:15 PM	3:30 PM	19	67	0	0	0	60	70	20	0	0	10	8	33	0	0	54	22	32	0	0
3:30 PM	3:45 PM	9	80	4	0	0	53	83	30	0	0	7	8	32	0	0	55	22	33	0	0
3:45 PM	4:00 PM	24	65	6	0	0	48	84	19	0	0	9	8	31	0	0	66	26	40	0	3
4:00 PM	4:15 PM	13	83	10	0	0	33	94	30	0	0	9	7	30	0	0	41	16	24	0	0
4:15 PM	4:30 PM	17	63	10	0	0	31	75	23	0	0	3	6	25	0	0	48	19	29	0	0
4:30 PM	4:45 PM	21	64	7	0	0	48	107	21	0	0	4	7	27	0	0	55	22	33	0	0
4:45 PM	5:00 PM	16	70	10	0	0	40	75	36	0	0	13	9	36	0	0	55	22	33	0	0
5:00 PM	5:15 PM	17	80	13	0	0	46	83	27	0	0	9	8	32	0	0	52	21	31	0	0
5:15 PM	5:30 PM	6	122	7	0	0	34	84	40	0	0	3	9	34	0	0	60	24	36	0	0
5:30 PM	5:45 PM	19	90	9	0	0	46	94	27	0	0	9	9	38	0	0	53	21	32	0	0
5:45 PM	6:00 PM	17	70	10	0	0	37	87	21	0	0	10	7	27	0	0	57	23	34	0	0
6:00 PM	6:15 PM	11	65	10	0	0	19	77	30	0	0	6	5	20	0	0	53	21	32	0	0
6:15 PM	6:30 PM	9	60	6	0	0	34	51	34	0	0	6	4	16	0	0	57	23	34	0	0
6:30 PM	6:45 PM	14	51	7	0	0	30	47	21	0	0	4	6	24	0	0	44	18	26	0	0

Warrant 1- Eight Hour Vehicular Volume

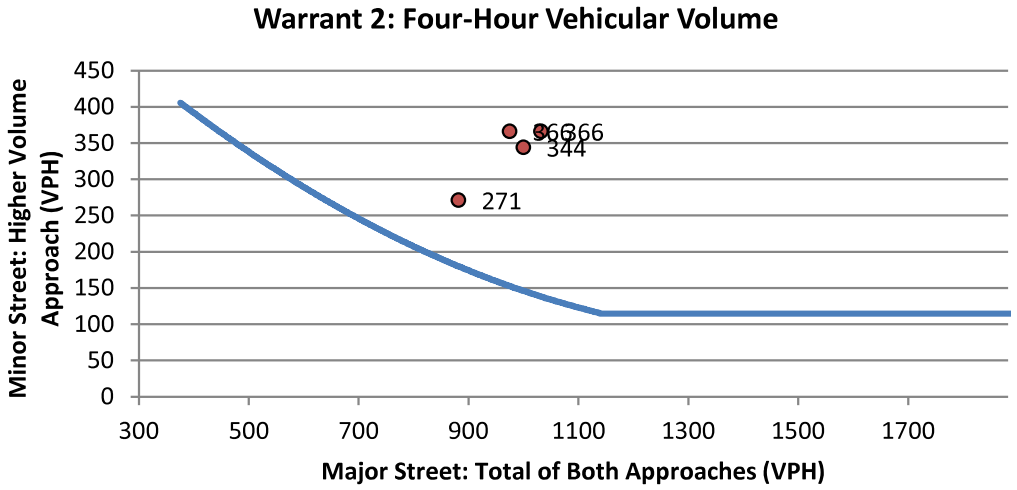
Condition A - Minimum Vehicular Volume						
Time Period		Major Street		Minor Street		Meets
START	END	Epps Mill Rd	>500	I-24 S Ramp	>200	Condition?
3:00 PM	4:00 PM	975	Y	366	Y	**Y**
5:15 PM	6:15 PM	1032	Y	366	Y	**Y**
4:15 PM	5:15 PM	1000	Y	344	Y	**Y**
2:00 PM	3:00 PM	882	Y	271	Y	**Y**
12:30 PM	1:30 PM	714	Y	237	Y	**Y**
6:45 AM	7:45 AM	1191	Y	201	Y	**Y**
10:00 AM	11:00 AM	624	Y	230	Y	**Y**
8:45 AM	9:45 AM	637	Y	212	Y	**Y**

Condition B - Interruption of Continuous Traffic						
Time Period		Major Street		Minor Street		Meets
START	END	Epps Mill Rd	>750	I-24 S Ramp	>100	Condition?
3:00 PM	4:00 PM	975	Y	366	Y	**Y**
5:15 PM	6:15 PM	1032	Y	366	Y	**Y**
4:15 PM	5:15 PM	1000	Y	344	Y	**Y**
2:00 PM	3:00 PM	882	Y	271	Y	**Y**
12:30 PM	1:30 PM	714	N	237	Y	N
6:15 PM	7:15 PM	486	N	236	Y	N
10:00 AM	11:00 AM	624	N	230	Y	N
8:45 AM	9:45 AM	637	N	212	Y	N

Warrant 1 is met by satisfying the requirements of Condition A.

Warrant 2 - Four Hour Vehicular Volume

1 Major & 2 Minor



Time Period		Major Street Vol.	Minor Street Vol.	Total Volume	Above
Start	End	(both approaches)	(higher approach)	(all approaches)	Curve?
2:00 PM	3:00 PM	882	271	1153	YES
3:00 PM	4:00 PM	975	366	1341	YES
4:15 PM	5:15 PM	1000	344	1344	YES
5:15 PM	6:15 PM	1032	366	1398	YES

Warrant 3 - Peak Hour Volume

PART A: Peak Hour Delay

NOTE: Requirements 1 - 3 must ***ALL*** be met for the ***SAME*** hour for Part A of warrant to be met

1. Stopped Delay

1 Lane Approach	
Stopped Delay: (veh*hr)	**1**
Requirement Met:	**NO**

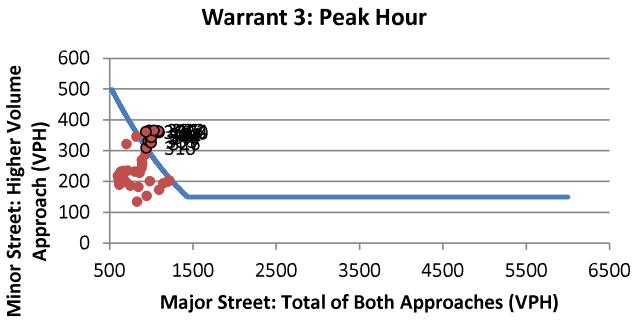
2. Minor Approach Volume

1 Moving Lane	
Approach Volume (veh/hr)	**10**
Requirement Met:	**NO**

3. Total Entering Volume Serviced

3 Approaches	
Intersection Volume (veh/hr)	**342**
Requirement Met:	**NO**

PART B: Peak Hour Volume



Warrant 3 is met based on the requirements of PART B

TIME PERIOD START	TIME PERIOD END	Major Street (both approaches)	Minor Street (higher approach)	Above Curve?
6:00 AM	7:00 AM	824	136	NO
6:15 AM	7:15 AM	942	155	NO
6:30 AM	7:30 AM	1092	174	NO
6:45 AM	7:45 AM	1191	200	NO
7:00 AM	8:00 AM	1215	204	NO
7:15 AM	8:15 AM	1140	195	NO
7:30 AM	8:30 AM	980	202	NO
7:45 AM	8:45 AM	840	184	NO
8:00 AM	9:00 AM	745	188	NO
8:15 AM	9:15 AM	691	200	NO
8:30 AM	9:30 AM	658	207	NO
8:45 AM	9:45 AM	637	212	NO
9:00 AM	10:00 AM	648	206	NO
9:15 AM	10:15 AM	636	213	NO
9:30 AM	10:30 AM	646	201	NO
9:45 AM	10:45 AM	649	206	NO
10:00 AM	11:00 AM	624	230	NO
10:15 AM	11:15 AM	655	222	NO
10:30 AM	11:30 AM	623	219	NO
10:45 AM	11:45 AM	619	209	NO
11:00 AM	12:00 PM	615	191	NO
11:15 AM	12:15 PM	610	195	NO
11:30 AM	12:30 PM	606	205	NO
11:45 AM	12:45 PM	594	219	NO
12:00 PM	1:00 PM	633	233	NO
12:15 PM	1:15 PM	665	236	NO
12:30 PM	1:30 PM	714	237	NO
12:45 PM	1:45 PM	799	233	NO
1:00 PM	2:00 PM	855	229	NO
1:15 PM	2:15 PM	843	234	NO
1:30 PM	2:30 PM	878	245	NO
1:45 PM	2:45 PM	886	258	NO

Traffic Signal Warrant Summary

Epps Mill Rd and Capital Way

Date: 24-May-24

Analyst: STV Inc.

Warrant 1	Condition A	NO
	Condition B	NO
Warrant 2	Four Hour Vehicular Volume	NO
Warrant 3	A - Peak Hour Delay	NO
	B - Peak Hour Volume	NO
Warrant 4	Pedestrian Volume	NO
Warrant 5	School Crossing	N/A
Warrant 6	Coordinated Signal System	NO
Warrant 7	Crash Experience	NO
Warrant 8	Roadway network	N/A
Warrant 9	Intersection Near a grade Crossing	N/A

MUTCD Reference:

http://mutcd.fhwa.dot.gov/htm/2009/part4/part4c.htm#section4C02

TIME PERIOD		Epps Mill Rd					Epps Mill Rd					Dollar General Driveway					Capital Way				
		RTR:	1	DIRECTION:		EB	RTR:	1	DIRECTION:		WB	RTR:	1	DIRECTION:		NB	RTR:	1	DIRECTION:		SB
START	END	Major Street					Major Street					Minor Street					Minor Street				
		L	T	R	PED	B	L	T	R	PED	B	L	T	R	PED	B	L	T	R	PED	B
6:00 AM	6:15 AM	0	9	0	0	0	0	9	3	0	0	0	0	0	0	0	1	0	0	0	0
6:15 AM	6:30 AM	0	11	0	0	0	0	6	4	0	0	0	0	0	0	0	3	0	0	0	0
6:30 AM	6:45 AM	0	16	0	0	0	0	10	6	0	0	0	0	0	0	0	1	0	3	0	0
6:45 AM	7:00 AM	0	11	0	0	0	4	6	4	0	0	0	1	3	0	0	1	0	1	0	0
7:00 AM	7:15 AM	0	9	0	0	0	0	1	7	0	0	0	0	1	0	0	3	1	0	0	0
7:15 AM	7:30 AM	1	16	1	0	0	1	13	11	0	0	1	0	4	0	0	4	0	0	0	0
7:30 AM	7:45 AM	1	11	3	0	0	6	9	17	0	0	1	0	7	0	0	6	0	0	0	0
7:45 AM	8:00 AM	0	11	1	0	0	3	19	9	0	0	0	0	6	0	0	3	0	0	0	0
8:00 AM	8:15 AM	1	10	1	0	0	6	13	10	0	0	4	0	4	0	0	4	1	1	0	0
8:15 AM	8:30 AM	1	14	1	0	0	1	13	6	0	0	1	0	3	0	0	6	0	1	0	0
8:30 AM	8:45 AM	0	7	0	0	0	1	7	9	0	0	0	0	3	0	0	7	0	0	0	0
8:45 AM	9:00 AM	1	7	0	0	0	1	11	6	0	0	0	0	1	0	0	0	1	0	0	0
9:00 AM	9:15 AM	1	10	1	0	0	1	23	6	0	0	1	0	3	0	0	7	0	0	0	0
9:15 AM	9:30 AM	0	26	1	0	0	1	11	10	0	0	0	1	0	0	0	6	1	1	0	0
9:30 AM	9:45 AM	0	20	1	0	0	4	14	10	0	0	0	1	3	0	0	4	0	1	0	0
9:45 AM	10:00 AM	0	23	0	0	0	1	23	4	0	0	1	0	3	0	0	3	0	1	0	0
10:00 AM	10:15 AM	0	28	0	0	0	4	16	7	0	0	0	0	3	0	0	9	0	0	0	0
10:15 AM	10:30 AM	0	21	0	0	0	11	11	13	0	0	3	0	7	0	0	6	0	0	0	0
10:30 AM	10:45 AM	3	23	4	0	0	7	19	7	0	0	9	0	6	0	0	6	1	4	0	0
10:45 AM	11:00 AM	0	34	3	0	0	7	19	6	0	0	3	0	6	0	0	6	1	1	0	0
11:00 AM	11:15 AM	1	28	1	0	0	3	21	9	0	0	4	0	3	0	0	9	0	1	0	0
11:15 AM	11:30 AM	0	40	3	0	0	3	20	1	0	0	0	0	3	0	0	10	0	0	0	0
11:30 AM	11:45 AM	1	26	1	0	0	6	30	3	0	0	1	0	4	0	0	1	0	0	0	0
11:45 AM	12:00 PM	0	36	1	0	0	4	34	4	0	0	3	1	7	0	0	7	0	0	0	0
12:00 PM	12:15 PM	0	43	1	0	0	4	30	6	0	0	0	0	4	0	0	1	0	1	0	0
12:15 PM	12:30 PM	0	31	0	0	0	10	20	10	0	0	9	0	1	0	0	9	0	1	0	0
12:30 PM	12:45 PM	0	37	4	0	0	4	34	14	0	0	6	0	6	0	0	11	0	0	0	0
12:45 PM	1:00 PM	0	30	1	0	0	3	30	4	0	0	1	0	4	0	0	11	0	0	0	0
1:00 PM	1:15 PM	3	40	3	0	0	4	30	7	0	0	3	1	4	0	0	7	0	3	0	0
1:15 PM	1:30 PM	1	34	3	0	0	6	40	9	0	0	3	0	1	0	0	10	1	0	0	0
1:30 PM	1:45 PM	0	40	1	0	0	1	33	4	0	0	6	0	4	0	0	3	0	0	0	0
1:45 PM	2:00 PM	1	37	4	0	0	1	30	4	0	0	4	0	3	0	0	4	0	0	0	0
2:00 PM	2:15 PM	0	50	9	0	0	3	46	6	0	0	3	0	4	0	0	6	1	1	0	0
2:15 PM	2:30 PM	0	51	3	0	0	3	36	7	0	0	4	0	6	0	0	6	0	1	0	0
2:30 PM	2:45 PM	0	28	6	0	0	3	31	4	0	0	3	0	7	0	0	4	0	1	0	0
2:45 PM	3:00 PM	1	37	3	0	0	7	44	6	0	0	9	0	3	0	0	6	0	0	0	0
3:00 PM	3:15 PM	4	36	1	0	0	6	54	7	0	0	1	0	4	0	0	6	0	1	0	0
3:15 PM	3:30 PM	1	31	9	0	0	1	63	3	0	0	4	1	3	0	0	7	0	1	0	0
3:30 PM	3:45 PM	1	41	4	0	0	9	71	4	0	0	3	0	7	0	0	4	0	1	0	0
3:45 PM	4:00 PM	1	41	3	0	0	10	83	3	0	0	1	0	11	0	0	7	0	1	0	0
4:00 PM	4:15 PM	0	51	1	0	0	3	51	0	0	0	3	0	6	0	0	10	0	0	0	0
4:15 PM	4:30 PM	3	56	6	0	0	6	67	7	0	0	4	0	3	0	0	9	0	1	0	0
4:30 PM	4:45 PM	1	47	1	0	0	10	77	6	5	0	4	0	7	0	0	9	1	0	0	0
4:45 PM	5:00 PM	0	46	4	0	0	7	77	6	0	0	9	1	4	0	0	6	0	1	0	0
5:00 PM	5:15 PM	0	67	6	0	0	9	78	1	0	0	7	0	6	0	0	16	0	4	0	0
5:15 PM	5:30 PM	0	28	3	0	0	13	75	7	0	0	4	0	9	0	0	9	0	6	0	0
5:30 PM	5:45 PM	1	41	4	0	0	7	71	10	0	0	6	0	7	0	0	9	1	0	0	0
5:45 PM	6:00 PM	0	48	4	0	0	4	63	3	0	0	9	0	4	0	0	3	0	0	0	0
6:00 PM	6:15 PM	0	31	3	0	0	13	71	6	0	0	4	0	4	0	0	10	1	0	0	0
6:15 PM	6:30 PM	0	34	3	0	0	13	60	7	0	0	11	0	6	0	0	4	0	0	0	0
6:30 PM	6:45 PM	0	36	7	0	0	4	48	1	0	0	6	0	10	0	0	13	0	6	0	0

Warrant 1- Eight Hour Vehicular Volume

Condition A - Minimum Vehicular Volume

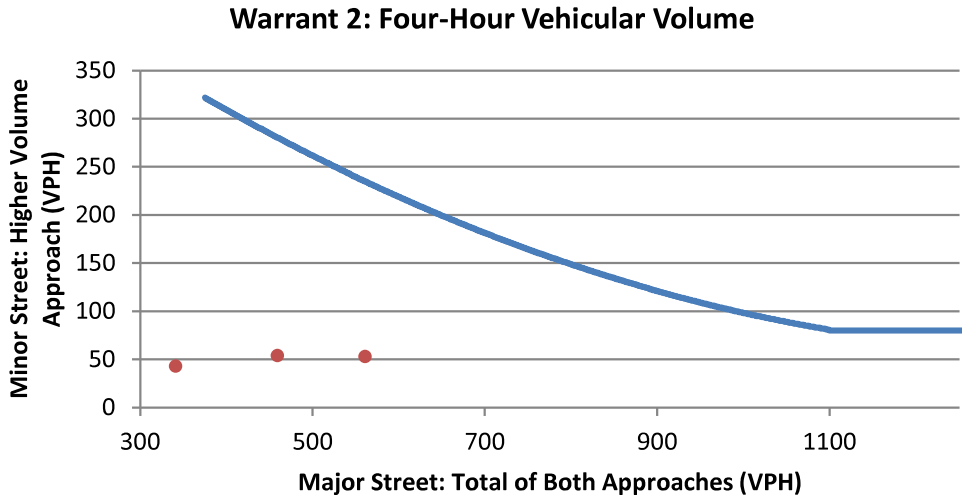
Time Period		Major Street		Minor Street		Meets
START	END	Epps Mill Rd	>500	Capital Way	>150	Condition?
5:45 PM	6:45 PM	459	N	54	N	N
4:45 PM	5:45 PM	561	Y	53	N	N
12:30 PM	1:30 PM	341	N	43	N	N
10:15 AM	11:15 AM	251	N	41	N	N
2:00 PM	3:00 PM	384	N	39	N	N
3:15 PM	4:15 PM	485	N	39	N	N
11:30 AM	12:30 PM	301	N	30	N	N
7:15 AM	8:15 AM	174	N	27	N	N

Condition B - Interruption of Continuous Traffic

Time Period		Major Street		Minor Street		Meets
START	END	Epps Mill Rd	>750	Capital Way	>75	Condition?
5:45 PM	6:45 PM	459	N	54	N	N
4:45 PM	5:45 PM	561	N	53	N	N
12:30 PM	1:30 PM	341	N	43	N	N
10:15 AM	11:15 AM	251	N	41	N	N
2:00 PM	3:00 PM	384	N	39	N	N
3:15 PM	4:15 PM	485	N	39	N	N
11:30 AM	12:30 PM	301	N	30	N	N
7:15 AM	8:15 AM	174	N	27	N	N

Warrant 2 - Four Hour Vehicular Volume

1 Major & 1 Minor



Time Period		Major Street Vol.	Minor Street Vol.	Total Volume	Above
Start	End	(both approaches)	(higher approach)	(all approaches)	Curve?
10:15 AM	11:15 AM	251	41	292	NO
12:30 PM	1:30 PM	341	43	384	NO
4:45 PM	5:45 PM	561	53	614	NO
5:45 PM	6:45 PM	459	54	513	NO

Warrant 3 - Peak Hour Volume

PART A: Peak Hour Delay

NOTE: Requirements 1 - 3 must ***ALL*** be met for the ***SAME*** hour for Part A of warrant to be met

1. Stopped Delay

1 Lane Approach	
Stopped Delay: (veh*hr)	**1**
Requirement Met:	**NO**

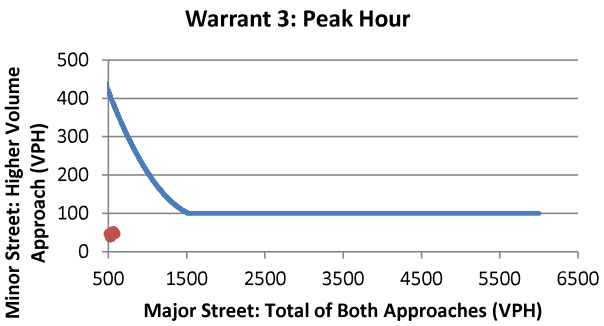
2. Minor Approach Volume

1 Moving Lane	
Approach Volume (veh/hr)	**10**
Requirement Met:	**NO**

3. Total Entering Volume Serviced

3 Approaches	
Intersection Volume (veh/hr)	**342**
Requirement Met:	**NO**

PART B: Peak Hour Volume



TIME PERIOD START	TIME PERIOD END	Major Street (both approaches)	Minor Street (higher approach)	Above Curve?
6:00 AM	7:00 AM	99	10	NO
6:15 AM	7:15 AM	95	13	NO
6:30 AM	7:30 AM	117	14	NO
6:45 AM	7:45 AM	132	18	NO
7:00 AM	8:00 AM	150	20	NO
7:15 AM	8:15 AM	174	27	NO
7:30 AM	8:30 AM	167	26	NO
7:45 AM	8:45 AM	144	23	NO
8:00 AM	9:00 AM	127	21	NO
8:15 AM	9:15 AM	128	22	NO
8:30 AM	9:30 AM	141	23	NO
8:45 AM	9:45 AM	166	21	NO
9:00 AM	10:00 AM	191	24	NO
9:15 AM	10:15 AM	204	26	NO
9:30 AM	10:30 AM	211	24	NO
9:45 AM	10:45 AM	225	32	NO
10:00 AM	11:00 AM	243	37	NO
10:15 AM	11:15 AM	251	41	NO
10:30 AM	11:30 AM	262	39	NO
10:45 AM	11:45 AM	266	29	NO
11:00 AM	12:00 PM	276	28	NO
11:15 AM	12:15 PM	297	23	NO
11:30 AM	12:30 PM	301	30	NO
11:45 AM	12:45 PM	327	37	NO
12:00 PM	1:00 PM	316	34	NO
12:15 PM	1:15 PM	319	42	NO
12:30 PM	1:30 PM	341	43	NO
12:45 PM	1:45 PM	327	35	NO
1:00 PM	2:00 PM	336	29	NO
1:15 PM	2:15 PM	363	28	NO
1:30 PM	2:30 PM	370	34	NO
1:45 PM	2:45 PM	363	34	NO

2048 SIGNAL WARRANTS

Traffic Signal Warrant Summary

TN-2 US Hwy 41 and Epps Mill Rd

Date: 22-May-24

Analyst: STV Inc.

Warrant 1	Condition A	**YES**
	Condition B	**YES**
Warrant 2	Four Hour Vehicular Volume	**YES**
Warrant 3	A - Peak Hour Delay	NO
	B - Peak Hour Volume	**YES**
Warrant 4	Pedestrian Volume	NO
Warrant 5	School Crossing	N/A
Warrant 6	Coordinated Signal System	NO
Warrant 7	Crash Experience	NO
Warrant 8	Roadway network	N/A
Warrant 9	Intersection Near a grade Crossing	N/A

MUTCD Reference:

http://mutcd.fhwa.dot.gov/htm/2009/part4/part4c.htm#section4C02

TIME PERIOD		TN-2 US Hwy 41					TN-2 US Hwy 41					Epps Mill Rd					Epps Mill Rd				
		RTR:	1	DIRECTION:		NB	RTR:	1	DIRECTION:		SB	RTR:	1	DIRECTION:		EB	RTR:	1	DIRECTION:		WB
START	END	Major Street					Major Street					Minor Street					Minor Street				
		L	T	R	PED	B	L	T	R	PED	B	L	T	R	PED	B	L	T	R	PED	B
6:00 AM	6:15 AM	69	95	0	0	0	0	26	23	0	0	28	0	10	0	0	0	0	0	0	0
6:15 AM	6:30 AM	72	115	0	0	0	0	13	26	0	0	67	0	15	0	0	0	0	0	0	0
6:30 AM	6:45 AM	64	113	0	0	0	0	23	54	0	0	67	0	8	0	0	0	0	0	0	0
6:45 AM	7:00 AM	56	90	0	0	0	0	31	87	0	0	69	0	31	0	0	0	0	0	0	0
7:00 AM	7:15 AM	64	108	0	0	0	0	26	77	0	0	46	0	36	0	0	0	0	0	0	0
7:15 AM	7:30 AM	92	87	0	0	0	0	23	72	0	0	87	0	8	0	0	0	0	0	0	0
7:30 AM	7:45 AM	79	51	0	0	0	0	41	74	0	0	56	0	31	0	0	0	0	0	0	0
7:45 AM	8:00 AM	51	64	0	0	0	0	46	85	0	0	51	0	13	0	0	0	0	0	0	0
8:00 AM	8:15 AM	59	79	0	0	0	0	23	41	0	0	56	0	26	0	0	0	0	0	0	0
8:15 AM	8:30 AM	59	67	0	0	0	0	38	33	0	0	38	0	26	0	0	0	0	0	0	0
8:30 AM	8:45 AM	49	82	0	0	0	0	38	28	0	0	18	0	26	0	0	0	0	0	0	0
8:45 AM	9:00 AM	36	92	0	0	0	0	38	26	0	0	26	0	28	0	0	0	0	0	0	0
9:00 AM	9:15 AM	15	62	0	0	0	0	28	21	0	0	26	0	13	0	0	0	0	0	0	0
9:15 AM	9:30 AM	15	72	0	0	0	0	44	33	0	0	38	0	21	0	0	0	0	0	0	0
9:30 AM	9:45 AM	41	69	0	0	0	0	77	31	0	0	38	0	15	0	0	0	0	0	0	0
9:45 AM	10:00 AM	21	85	0	0	0	0	72	23	0	0	36	0	21	0	0	0	0	0	0	0
10:00 AM	10:15 AM	28	64	0	0	0	0	33	38	0	0	26	0	41	0	0	0	0	0	0	0
10:15 AM	10:30 AM	33	69	0	0	0	0	41	23	0	0	18	0	26	0	0	0	0	0	0	0
10:30 AM	10:45 AM	23	67	0	0	0	0	56	33	0	0	44	0	36	0	0	0	0	0	0	0
10:45 AM	11:00 AM	36	49	0	0	0	0	59	36	0	0	26	0	13	0	0	0	0	0	0	0
11:00 AM	11:15 AM	21	62	0	0	0	0	74	36	0	0	31	0	33	0	0	0	0	0	0	0
11:15 AM	11:30 AM	31	31	0	0	0	0	82	44	0	0	31	0	28	0	0	0	0	0	0	0
11:30 AM	11:45 AM	26	74	0	0	0	0	51	38	0	0	31	0	26	0	0	0	0	0	0	0
11:45 AM	12:00 PM	15	56	0	0	0	0	67	59	0	0	41	0	33	0	0	0	0	0	0	0
12:00 PM	12:15 PM	41	69	0	0	0	0	59	36	0	0	38	0	36	0	0	0	0	0	0	0
12:15 PM	12:30 PM	31	69	0	0	0	0	74	44	0	0	46	0	31	0	0	0	0	0	0	0
12:30 PM	12:45 PM	23	51	0	0	0	0	90	31	0	0	26	0	44	0	0	0	0	0	0	0
12:45 PM	1:00 PM	59	59	0	0	0	0	69	33	0	0	33	0	21	0	0	0	0	0	0	0
1:00 PM	1:15 PM	36	54	0	0	0	0	87	46	0	0	21	0	41	0	0	0	0	0	0	0
1:15 PM	1:30 PM	33	54	0	0	0	0	85	49	0	0	46	0	31	0	0	0	0	0	0	0
1:30 PM	1:45 PM	33	64	0	0	0	0	62	59	0	0	38	0	28	0	0	0	0	0	0	0
1:45 PM	2:00 PM	26	51	0	0	0	0	56	41	0	0	62	0	46	0	0	0	0	0	0	0
2:00 PM	2:15 PM	31	69	0	0	0	0	74	62	0	0	44	0	33	0	0	0	0	0	0	0
2:15 PM	2:30 PM	38	67	0	0	0	0	64	46	0	0	38	0	38	0	0	0	0	0	0	0
2:30 PM	2:45 PM	46	51	0	0	0	0	54	64	0	0	69	0	28	0	0	0	0	0	0	0
2:45 PM	3:00 PM	23	31	0	0	0	0	90	41	0	0	59	0	36	0	0	0	0	0	0	0
3:00 PM	3:15 PM	38	44	0	0	0	0	141	46	0	0	38	0	36	0	0	0	0	0	0	0
3:15 PM	3:30 PM	23	62	0	0	0	0	100	44	0	0	49	0	79	0	0	0	0	0	0	0
3:30 PM	3:45 PM	87	100	0	0	0	0	151	59	0	0	77	0	74	0	0	0	0	0	0	0
3:45 PM	4:00 PM	100	92	0	0	0	0	146	46	0	0	62	0	69	0	0	0	0	0	0	0
4:00 PM	4:15 PM	72	74	0	0	0	0	167	62	0	0	64	0	82	0	0	0	0	0	0	0
4:15 PM	4:30 PM	44	28	0	0	0	0	115	74	0	0	44	0	72	0	0	0	0	0	0	0
4:30 PM	4:45 PM	28	49	0	0	0	0	141	56	0	0	56	0	82	0	0	0	0	0	0	0
4:45 PM	5:00 PM	36	67	0	0	0	0	108	87	0	0	54	0	46	0	0	0	0	0	0	0
5:00 PM	5:15 PM	51	46	0	0	0	0	131	64	0	0	79	0	67	0	0	0	0	0	0	0
5:15 PM	5:30 PM	21	67	0	4	0	0	154	51	0	0	56	0	56	0	0	0	0	0	0	0
5:30 PM	5:45 PM	23	46	0	0	0	0	141	38	0	0	54	0	36	0	0	0	0	0	0	0
5:45 PM	6:00 PM	21	51	0	0	0	0	100	44	0	0	44	0	72	0	0	0	0	0	0	0
6:00 PM	6:15 PM	15	41	0	0	0	0	77	69	0	0	33	0	21	0	0	0	0	0	0	0
6:15 PM	6:30 PM	31	33	0	0	0	0	79	23	0	0	51	0	46	0	0	0	0	0	0	0
6:30 PM	6:45 PM	18	41	0	0	0	0	108	51	0	0	41	0	46	0	0	0	0	0	0	0

Warrant 1- Eight Hour Vehicular Volume

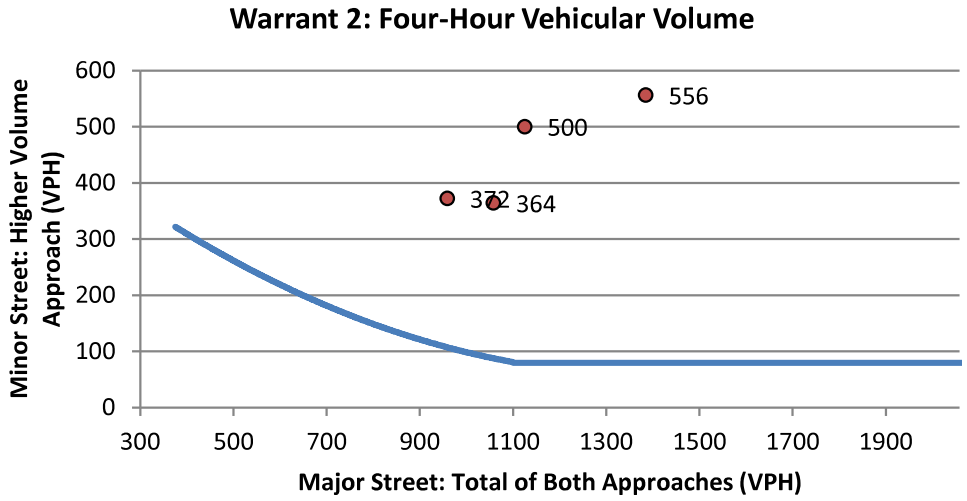
5/22/2024						
Time Period		Major Street		Minor Street		Meets
START	END	TN-2 US Hwy 41	>500	Epps Mill Rd	>150	Condition?
3:15 PM	4:15 PM	1385	Y	556	Y	**Y**
4:15 PM	5:15 PM	1125	Y	500	Y	**Y**
5:15 PM	6:15 PM	959	Y	372	Y	**Y**
6:45 AM	7:45 AM	1058	Y	364	Y	**Y**
1:45 PM	2:45 PM	840	Y	358	Y	**Y**
11:45 AM	12:45 PM	815	Y	295	Y	**Y**
12:45 PM	1:45 PM	882	Y	259	Y	**Y**
7:45 AM	8:45 AM	842	Y	254	Y	**Y**

Condition B - Interruption of Continuous Traffic						
Time Period		Major Street		Minor Street		Meets
START	END	TN-2 US Hwy 41	>750	Epps Mill Rd	>75	Condition?
3:15 PM	4:15 PM	1385	Y	556	Y	**Y**
4:15 PM	5:15 PM	1125	Y	500	Y	**Y**
5:15 PM	6:15 PM	959	Y	372	Y	**Y**
6:45 AM	7:45 AM	1058	Y	364	Y	**Y**
1:45 PM	2:45 PM	840	Y	358	Y	**Y**
11:45 AM	12:45 PM	815	Y	295	Y	**Y**
12:45 PM	1:45 PM	882	Y	259	Y	**Y**
7:45 AM	8:45 AM	842	Y	254	Y	**Y**

Warrant 1 is met by satisfying the requirements of Conidtions A & B.

Warrant 2 - Four Hour Vehicular Volume

1 Major & 1 Minor



Time Period		Major Street Vol.	Minor Street Vol.	Total Volume	Above
Start	End	(both approaches)	(higher approach)	(all approaches)	Curve?
6:45 AM	7:45 AM	1058	364	1422	YES
3:15 PM	4:15 PM	1385	556	1941	YES
4:15 PM	5:15 PM	1125	500	1625	YES
5:15 PM	6:15 PM	959	372	1331	YES

Warrant 3 - Peak Hour Volume

PA

NOTE: Requirements 1 - 3 must ***ALL*** be met for the ***SAME*** hour for Part A of warrant to be met

1. Stopped Delay

1 Lane Approach	
Stopped Delay: (veh*hr)	**1**
Requirement Met:	**NO**

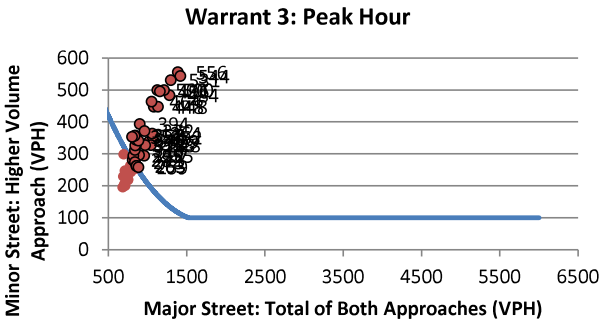
2. Minor Approach Volume

1 Moving Lane	
Approach Volume (veh/hr)	**10**
Requirement Met:	**NO**

3. Total Entering Volume Serviced

3 Approaches	
Intersection Volume (veh/hr)	**342**
Requirement Met:	**NO**

PART B: Peak Hour Volume



Warrant 3 is met based on the requirements of PART B

TIME PERIOD START	TIME PERIOD END	Major Street (both approaches)	Minor Street (higher approach)	Above Curve?
6:00 AM	**7:00 AM**	**957**	**295**	**YES**
6:15 AM	**7:15 AM**	**1019**	**339**	**YES**
6:30 AM	**7:30 AM**	**1067**	**352**	**YES**
6:45 AM	**7:45 AM**	**1058**	**364**	**YES**
7:00 AM	**8:00 AM**	**1040**	**328**	**YES**
7:15 AM	**8:15 AM**	**967**	**328**	**YES**
7:30 AM	**8:30 AM**	**890**	**297**	**YES**
7:45 AM	8:45 AM	842	254	NO
8:00 AM	9:00 AM	788	244	NO
8:15 AM	9:15 AM	712	201	NO
8:30 AM	9:30 AM	679	196	NO
8:45 AM	9:45 AM	700	205	NO
9:00 AM	10:00 AM	709	208	NO
9:15 AM	10:15 AM	746	236	NO
9:30 AM	10:30 AM	748	221	NO
9:45 AM	10:45 AM	709	248	NO
10:00 AM	11:00 AM	688	230	NO
10:15 AM	11:15 AM	718	227	NO
10:30 AM	11:30 AM	740	242	NO
10:45 AM	11:45 AM	750	219	NO
11:00 AM	12:00 PM	767	254	NO
11:15 AM	12:15 PM	779	264	NO
11:30 AM	**12:30 PM**	**809**	**282**	**YES**
11:45 AM	**12:45 PM**	**815**	**295**	**YES**
12:00 PM	**1:00 PM**	**838**	**275**	**YES**
12:15 PM	**1:15 PM**	**856**	**263**	**YES**
12:30 PM	**1:30 PM**	**859**	**263**	**YES**
12:45 PM	**1:45 PM**	**882**	**259**	**YES**
1:00 PM	**2:00 PM**	**836**	**313**	**YES**
1:15 PM	**2:15 PM**	**849**	**328**	**YES**
1:30 PM	**2:30 PM**	**843**	**327**	**YES**
1:45 PM	**2:45 PM**	**840**	**358**	**YES**

Traffic Signal Warrant Summary

Epps Mill Rd and Forbus Dr

Date: 24-May-24

Analyst: STV Inc.

Warrant 1	Condition A	**YES**
	Condition B	**YES**
Warrant 2	Four Hour Vehicular Volume	**YES**
Warrant 3	A - Peak Hour Delay	NO
	B - Peak Hour Volume	**YES**
Warrant 4	Pedestrian Volume	NO
Warrant 5	School Crossing	N/A
Warrant 6	Coordinated Signal System	NO
Warrant 7	Crash Experience	NO
Warrant 8	Roadway network	N/A
Warrant 9	Intersection Near a grade Crossing	N/A

MUTCD Reference:

http://mutcd.fhwa.dot.gov/htm/2009/part4/part4c.htm#section4C02

TIME PERIOD		Epps Mill Rd					Epps Mill Rd					Forbus Dr					Forbus Dr				
		RTR:	1	DIRECTION:		EB	RTR:	1	DIRECTION:		WB	RTR:	1	DIRECTION:		NB	RTR:	1	DIRECTION:		SB
START	END	Major Street					Major Street					Minor Street					Minor Street				
		L	T	R	PED	B	L	T	R	PED	B	L	T	R	PED	B	L	T	R	PED	B
6:00 AM	6:15 AM	77	69	5	0	0	8	87	18	0	0	0	0	0	0	0	5	0	77	0	0
6:15 AM	6:30 AM	74	113	10	0	0	10	87	8	0	0	3	0	0	0	0	10	0	79	0	0
6:30 AM	6:45 AM	79	97	10	0	0	3	115	26	0	0	0	0	0	0	0	8	0	67	0	0
6:45 AM	7:00 AM	69	138	36	0	0	10	138	21	0	0	0	0	0	0	0	18	0	85	0	0
7:00 AM	7:15 AM	299	417	61	0	0	31	427	73	0	0	3	0	0	0	0	41	0	308	0	0
7:15 AM	7:30 AM	72	115	21	0	0	8	133	13	0	0	5	3	3	0	0	8	0	108	0	0
7:30 AM	7:45 AM	95	128	15	0	0	5	167	18	0	0	0	0	0	0	0	15	0	90	0	0
7:45 AM	8:00 AM	113	128	28	0	0	8	151	18	0	0	5	0	0	0	0	5	5	110	0	0
8:00 AM	8:15 AM	85	115	21	0	0	0	126	13	0	0	8	0	3	0	0	13	5	110	0	0
8:15 AM	8:30 AM	74	133	15	0	0	0	100	13	0	0	18	0	0	0	0	8	0	95	0	0
8:30 AM	8:45 AM	72	97	8	0	0	3	92	18	0	0	0	0	0	0	0	13	0	113	0	0
8:45 AM	9:00 AM	103	92	13	0	0	0	64	15	0	0	5	0	0	0	0	0	0	77	0	0
9:00 AM	9:15 AM	97	85	3	0	0	3	59	8	0	0	8	0	0	0	0	5	0	92	0	0
9:15 AM	9:30 AM	90	67	8	0	0	0	38	8	0	0	3	3	0	0	0	10	5	118	0	0
9:30 AM	9:45 AM	79	82	8	0	0	3	51	10	0	0	5	3	3	0	0	8	0	100	0	0
9:45 AM	10:00 AM	79	103	3	0	0	0	72	23	0	0	5	3	0	0	0	3	0	95	0	0
10:00 AM	10:15 AM	113	92	5	0	0	0	36	13	0	0	8	0	0	0	0	13	0	92	0	0
10:15 AM	10:30 AM	82	92	0	0	0	0	69	15	0	0	3	0	0	0	0	13	0	87	0	0
10:30 AM	10:45 AM	67	90	5	0	0	0	64	5	0	0	0	0	0	0	0	8	0	108	0	0
10:45 AM	11:00 AM	77	110	8	0	0	0	56	15	0	0	10	5	5	0	0	8	0	79	0	0
11:00 AM	11:15 AM	87	67	5	0	0	8	62	15	0	0	0	10	0	0	0	8	3	85	0	0
11:15 AM	11:30 AM	85	95	13	0	0	8	56	13	0	0	15	5	10	0	0	13	5	90	0	0
11:30 AM	11:45 AM	87	95	5	0	0	5	82	18	0	0	8	0	0	0	0	8	3	85	0	0
11:45 AM	12:00 PM	100	97	18	0	0	0	51	15	0	0	21	3	8	0	0	10	0	79	0	0
12:00 PM	12:15 PM	90	87	3	0	0	0	62	8	0	0	15	5	8	0	0	28	5	72	0	0
12:15 PM	12:30 PM	97	103	5	0	0	3	77	28	0	0	10	0	8	0	4	21	0	110	0	0
12:30 PM	12:45 PM	92	90	15	0	0	8	64	13	0	0	5	3	8	0	0	21	0	115	0	0
12:45 PM	1:00 PM	69	90	15	4	0	0	64	10	0	0	5	0	0	0	0	13	3	95	0	0
1:00 PM	1:15 PM	90	110	13	0	0	8	95	18	0	0	5	0	0	0	0	10	0	105	0	0
1:15 PM	1:30 PM	79	92	10	0	0	3	77	13	0	0	10	0	3	0	0	10	0	87	0	0
1:30 PM	1:45 PM	72	113	8	0	0	5	87	8	0	0	10	0	5	0	0	5	0	85	0	0
1:45 PM	2:00 PM	113	118	3	0	0	0	85	21	0	0	5	0	3	0	0	15	0	74	0	0
2:00 PM	2:15 PM	110	141	5	0	0	0	74	18	0	0	5	0	0	0	0	18	0	113	0	0
2:15 PM	2:30 PM	87	115	5	0	0	0	92	23	0	0	3	0	3	0	0	5	0	87	0	0
2:30 PM	2:45 PM	108	90	8	0	0	0	79	21	0	0	8	0	0	0	0	15	0	95	0	0
2:45 PM	3:00 PM	123	141	18	0	0	3	110	15	0	0	5	3	0	0	0	15	0	120	0	0
3:00 PM	3:15 PM	92	146	8	0	0	5	59	13	0	0	5	0	0	0	0	13	3	105	0	0
3:15 PM	3:30 PM	90	115	15	0	0	3	82	13	0	0	5	3	3	0	0	8	0	100	0	0
3:30 PM	3:45 PM	92	133	3	0	0	3	69	10	0	0	8	0	0	0	0	13	0	85	0	0
3:45 PM	4:00 PM	74	105	0	0	0	0	133	33	0	0	79	0	62	0	0	13	0	95	0	0
4:00 PM	4:15 PM	105	164	3	0	0	0	133	23	0	0	18	0	3	0	0	8	0	92	0	0
4:15 PM	4:30 PM	113	177	0	0	0	0	141	13	0	0	10	3	13	0	0	21	0	118	0	0
4:30 PM	4:45 PM	97	146	5	0	0	3	128	23	0	0	10	8	5	0	0	3	0	115	0	0
4:45 PM	5:00 PM	90	159	0	4	0	0	97	13	0	0	38	8	13	0	0	10	0	113	0	0
5:00 PM	5:15 PM	72	110	0	0	0	0	115	26	0	0	15	0	5	0	0	15	0	90	0	0
5:15 PM	5:30 PM	100	151	3	0	0	0	138	15	0	0	33	0	5	0	0	13	0	69	0	0
5:30 PM	5:45 PM	103	149	0	0	0	0	77	13	0	0	13	0	10	0	0	3	0	69	0	0
5:45 PM	6:00 PM	56	100	0	0	0	0	59	10	0	0	8	0	0	0	0	13	0	87	0	0
6:00 PM	6:15 PM	103	151	0	0	0	0	77	15	0	0	0	0	0	0	0	10	0	69	0	0
6:15 PM	6:30 PM	72	105	0	0	0	0	72	18	0	0	10	0	0	0	0	5	0	92	0	0
6:30 PM	6:45 PM	85	128	0	0	0	0	62	13	0	0	0	0	0	0	0	15	0	74	0	0

Warrant 1- Eight Hour Vehicular Volume

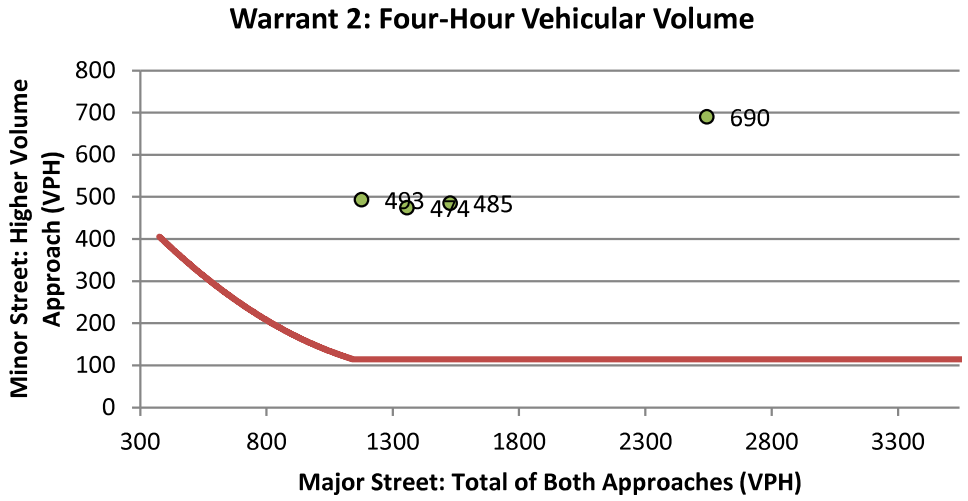
5/24/2024						
Time Period		Major Street		Minor Street		Meets
START	END	Epps Mill Rd	>500	Forbus Dr	>200	Condition?
7:00 AM	8:00 AM	2544	Y	690	Y	**Y**
12:15 PM	1:15 PM	1177	Y	493	Y	**Y**
4:15 PM	5:15 PM	1528	Y	485	Y	**Y**
2:30 PM	3:30 PM	1357	Y	474	Y	**Y**
9:15 AM	10:15 AM	983	Y	444	Y	**Y**
8:00 AM	9:00 AM	1272	Y	434	Y	**Y**
10:30 AM	11:30 AM	1011	Y	407	Y	**Y**
1:15 PM	2:15 PM	1255	Y	407	Y	**Y**

Condition B - Interruption of Continuous Traffic						
Time Period		Major Street		Minor Street		Meets
START	END	Epps Mill Rd	>750	Forbus Dr	>100	Condition?
7:00 AM	8:00 AM	2544	Y	690	Y	**Y**
12:15 PM	1:15 PM	1177	Y	493	Y	**Y**
4:15 PM	5:15 PM	1528	Y	485	Y	**Y**
2:30 PM	3:30 PM	1357	Y	474	Y	**Y**
9:15 AM	10:15 AM	983	Y	444	Y	**Y**
8:00 AM	9:00 AM	1272	Y	434	Y	**Y**
10:30 AM	11:30 AM	1011	Y	407	Y	**Y**
1:15 PM	2:15 PM	1255	Y	407	Y	**Y**

Warrant 1 is met by satisfying the requirements of Conidtions A & B.

Warrant 2 - Four Hour Vehicular Volume

1 Major & 2 Minor



Time Period		Major Street Vol.	Minor Street Vol.	Total Volume	Above
Start	End	(both approaches)	(higher approach)	(all approaches)	Curve?
7:00 AM	8:00 AM	2544	690	3234	YES
12:15 PM	1:15 PM	1177	493	1670	YES
2:30 PM	3:30 PM	1357	474	1831	YES
4:15 PM	5:15 PM	1528	485	2013	YES

Warrant 3 - Peak Hour Volume

PA

NOTE: Requirements 1 - 3 must ***ALL*** be met for the ***SAME*** hour for Part A of warrant to be met

1. Stopped Delay

1 Lane Approach	
Stopped Delay: (veh*hr)	**1**
Requirement Met:	**NO**

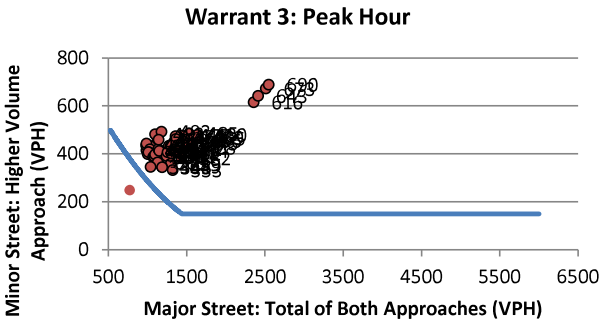
2. Minor Approach Volume

1 Moving Lane	
Approach Volume (veh/hr)	**10**
Requirement Met:	**NO**

3. Total Entering Volume Serviced

3 Approaches	
Intersection Volume (veh/hr)	**342**
Requirement Met:	**NO**

PART B: Peak Hour Volume



Warrant 3 is met based on the requirements of PART B

TIME PERIOD START	TIME PERIOD END	Major Street (both approaches)	Minor Street (higher approach)	Above Curve?
6:00 AM	7:00 AM	1308	349	YES
6:15 AM	7:15 AM	2352	616	YES
6:30 AM	7:30 AM	2412	643	YES
6:45 AM	7:45 AM	2510	673	YES
7:00 AM	8:00 AM	2544	690	YES
7:15 AM	8:15 AM	1596	469	YES
7:30 AM	8:30 AM	1569	456	YES
7:45 AM	8:45 AM	1431	477	YES
8:00 AM	9:00 AM	1272	434	YES
8:15 AM	9:15 AM	1167	403	YES
8:30 AM	9:30 AM	1043	433	YES
8:45 AM	9:45 AM	986	415	YES
9:00 AM	10:00 AM	979	436	YES
9:15 AM	10:15 AM	983	444	YES
9:30 AM	10:30 AM	1030	411	YES
9:45 AM	10:45 AM	1028	419	YES
10:00 AM	11:00 AM	1014	408	YES
10:15 AM	11:15 AM	999	399	YES
10:30 AM	11:30 AM	1011	407	YES
10:45 AM	11:45 AM	1072	387	YES
11:00 AM	12:00 PM	1087	389	YES
11:15 AM	12:15 PM	1093	398	YES
11:30 AM	12:30 PM	1136	421	YES
11:45 AM	12:45 PM	1126	461	YES
12:00 PM	1:00 PM	1093	483	YES
12:15 PM	1:15 PM	1177	493	YES
12:30 PM	1:30 PM	1138	459	YES
12:45 PM	1:45 PM	1149	413	YES
1:00 PM	2:00 PM	1241	391	YES
1:15 PM	2:15 PM	1255	407	YES
1:30 PM	2:30 PM	1303	402	YES
1:45 PM	2:45 PM	1316	422	YES

Traffic Signal Warrant Summary

Epps Mill Rd and I-24 WB Ramp

Date: 22-May-24

Analyst: STV Inc.

Warrant 1	Condition A	NO
	Condition B	**YES**
Warrant 2	Four Hour Vehicular Volume	**YES**
Warrant 3	A - Peak Hour Delay	NO
	B - Peak Hour Volume	**YES**
Warrant 4	Pedestrian Volume	NO
Warrant 5	School Crossing	N/A
Warrant 6	Coordinated Signal System	NO
Warrant 7	Crash Experience	NO
Warrant 8	Roadway network	N/A
Warrant 9	Intersection Near a grade Crossing	N/A

MUTCD Reference:

http://mutcd.fhwa.dot.gov/htm/2009/part4/part4c.htm#section4C02

TIME PERIOD		Epps Mill Rd					Epps Mill Rd					I-24 WB Off Ramp									
		RTR:	1	DIRECTION:		EB	RTR:	1	DIRECTION:		WB	RTR:	0.4	DIRECTION:		NB	RTR:	1	DIRECTION:		SB
START	END	Major Street					Major Street					Minor Street					Minor Street				
		L	T	R	PED	B	L	T	R	PED	B	L	T	R	PED	B	L	T	R	PED	B
6:00 AM	6:15 AM	141	77	0	0	0	0	49	100	0	0	8	0	44	0	0	0	0	0	0	0
6:15 AM	6:30 AM	156	103	0	0	0	0	56	100	0	0	5	0	62	0	0	0	0	0	0	0
6:30 AM	6:45 AM	128	103	0	0	0	0	64	95	0	0	15	3	49	0	0	0	0	0	0	0
6:45 AM	7:00 AM	185	151	0	0	0	0	90	110	0	0	21	3	49	0	0	0	0	0	0	0
7:00 AM	7:15 AM	128	110	0	0	0	0	79	146	0	0	15	5	49	0	0	0	0	0	0	0
7:15 AM	7:30 AM	302	133	0	0	0	0	79	154	0	0	10	0	59	0	0	0	0	0	0	0
7:30 AM	7:45 AM	297	138	0	0	0	0	79	172	0	0	8	3	77	0	0	0	0	0	0	0
7:45 AM	8:00 AM	118	128	0	0	0	0	79	149	0	0	15	0	41	0	0	0	0	0	0	0
8:00 AM	8:15 AM	136	131	0	0	0	0	72	128	0	0	3	3	49	0	4	0	0	0	0	0
8:15 AM	8:30 AM	118	95	0	0	0	0	77	110	0	0	13	0	44	0	0	0	0	0	0	0
8:30 AM	8:45 AM	131	92	0	0	0	0	67	72	0	0	10	0	62	0	0	0	0	0	0	0
8:45 AM	9:00 AM	59	85	0	0	0	0	59	92	0	0	8	0	62	0	0	0	0	0	0	4
9:00 AM	9:15 AM	64	79	0	0	0	0	56	92	0	0	5	0	51	0	0	0	0	0	0	0
9:15 AM	9:30 AM	74	103	0	0	0	0	69	77	0	0	13	5	26	0	0	0	0	0	0	0
9:30 AM	9:45 AM	79	100	0	0	0	0	87	77	0	0	13	0	46	0	0	0	0	0	0	0
9:45 AM	10:00 AM	59	100	0	0	0	0	77	54	0	0	5	0	59	0	0	0	0	0	0	0
10:00 AM	10:15 AM	51	105	0	0	0	0	69	74	0	0	5	3	41	0	0	0	0	0	0	0
10:15 AM	10:30 AM	62	87	0	0	0	0	72	95	0	0	8	3	28	0	0	0	0	0	0	0
10:30 AM	10:45 AM	67	128	0	0	0	0	77	56	0	0	5	0	38	0	0	0	0	0	0	0
10:45 AM	11:00 AM	36	77	0	0	0	0	82	62	0	0	5	3	41	0	0	0	0	0	0	0
11:00 AM	11:15 AM	51	118	0	4	0	0	82	67	0	0	8	0	41	0	0	0	0	0	0	0
11:15 AM	11:30 AM	59	100	0	0	0	0	92	59	0	0	0	0	44	0	0	0	0	0	0	0
11:30 AM	11:45 AM	56	113	0	0	0	0	64	82	0	0	8	8	44	0	0	0	0	0	0	0
11:45 AM	12:00 PM	44	82	0	0	0	0	87	62	0	0	8	3	54	0	0	0	0	0	0	0
12:00 PM	12:15 PM	56	110	0	0	0	0	79	92	0	0	15	0	46	0	0	0	0	0	0	0
12:15 PM	12:30 PM	72	120	0	0	0	0	103	64	0	0	3	3	33	0	0	0	0	0	0	0
12:30 PM	12:45 PM	38	100	0	0	0	0	95	67	0	0	13	0	33	0	0	0	0	0	0	0
12:45 PM	1:00 PM	67	105	0	0	0	0	85	97	0	0	5	0	49	0	0	0	0	0	0	0
1:00 PM	1:15 PM	69	105	0	0	0	0	82	85	0	0	5	3	33	0	0	0	0	0	0	0
1:15 PM	1:30 PM	49	115	0	0	0	0	105	62	0	0	5	3	36	0	0	0	0	0	0	0
1:30 PM	1:45 PM	64	126	0	0	0	0	92	62	0	0	13	5	59	0	0	0	0	0	0	0
1:45 PM	2:00 PM	82	164	0	0	0	0	103	74	0	0	15	0	49	0	0	0	0	0	0	0
2:00 PM	2:15 PM	62	115	0	0	0	0	95	72	0	0	10	0	36	0	0	0	0	0	0	0
2:15 PM	2:30 PM	74	110	0	0	0	0	97	74	0	0	8	0	56	0	0	0	0	0	0	0
2:30 PM	2:45 PM	118	174	0	0	0	0	103	115	0	0	10	0	49	0	0	0	0	0	0	0
2:45 PM	3:00 PM	90	138	0	0	0	0	72	79	0	0	13	3	49	0	0	0	0	0	0	0
3:00 PM	3:15 PM	69	123	0	0	0	0	79	92	0	0	15	0	54	0	0	0	0	0	0	0
3:15 PM	3:30 PM	92	141	0	0	0	0	95	56	0	0	3	0	54	0	0	0	0	0	0	0
3:30 PM	3:45 PM	36	123	0	0	0	0	133	149	4	0	13	5	33	0	0	0	0	0	0	0
3:45 PM	4:00 PM	54	185	0	0	0	0	103	120	0	0	8	0	38	0	0	0	0	0	0	0
4:00 PM	4:15 PM	69	182	0	0	0	0	126	144	0	0	21	5	62	0	0	0	0	0	0	4
4:15 PM	4:30 PM	79	144	0	0	0	0	123	103	0	0	23	0	62	0	0	0	0	0	0	0
4:30 PM	4:45 PM	69	138	0	0	0	0	149	90	0	0	28	0	64	0	0	0	0	0	0	0
4:45 PM	5:00 PM	79	110	0	0	0	0	100	100	0	0	13	0	41	0	0	0	0	0	0	0
5:00 PM	5:15 PM	79	156	0	0	0	0	131	105	0	0	18	3	64	0	0	0	0	0	0	0
5:15 PM	5:30 PM	62	141	0	0	0	0	90	62	0	0	23	0	64	0	0	0	0	0	0	0
5:30 PM	5:45 PM	77	100	0	0	0	0	90	49	0	0	15	0	38	0	0	0	0	0	0	0
5:45 PM	6:00 PM	64	149	0	0	0	0	74	56	0	0	13	0	51	0	0	0	0	0	0	0
6:00 PM	6:15 PM	85	103	0	0	0	0	100	59	0	0	13	0	33	0	0	0	0	0	0	0
6:15 PM	6:30 PM	56	146	0	0	0	0	85	44	0	0	18	0	31	0	0	0	0	0	0	0
6:30 PM	6:45 PM	56	113	0	0	0	0	92	38	0	0	8	0	38	0	0	0	0	0	0	0

Warrant 1- Eight Hour Vehicular Volume

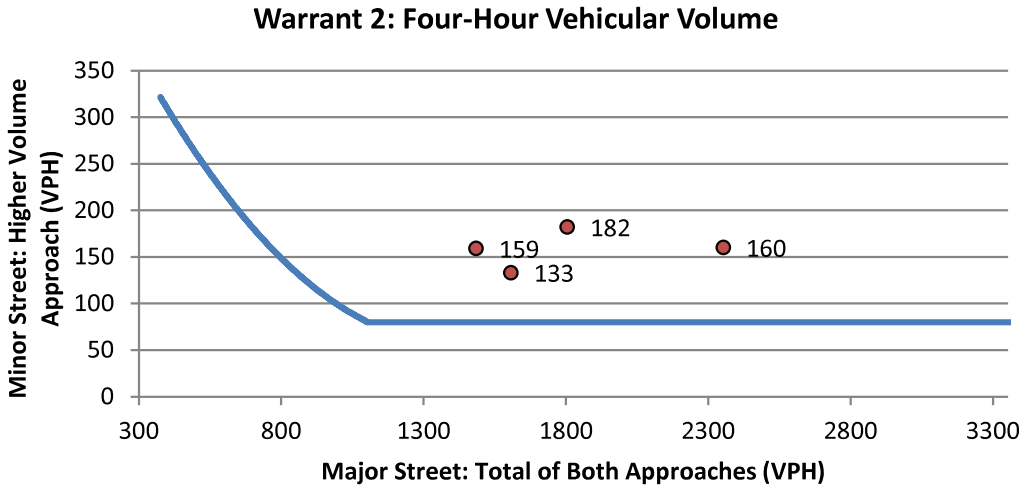
5/22/2024						
Time Period		Major Street		Minor Street		Meets
START	END	Epps Mill Rd	>500	I-24 N Ramp	>150	Condition?
4:00 PM	5:00 PM	1805	Y	182	Y	**Y**
6:45 AM	7:45 AM	2353	Y	160	Y	**Y**
5:00 PM	6:00 PM	1485	Y	159	Y	**Y**
2:15 PM	3:15 PM	1607	Y	133	N	N
8:00 AM	9:00 AM	1524	Y	125	N	N
1:15 PM	2:15 PM	1442	Y	123	N	N
11:30 AM	12:30 PM	1286	Y	119	N	N
9:00 AM	10:00 AM	1247	Y	113	N	N

Condition B - Interruption of Continuous Traffic						
Time Period		Major Street		Minor Street		Meets
START	END	Epps Mill Rd	>750	I-24 N Ramp	>75	Condition?
4:00 PM	5:00 PM	1805	Y	182	Y	**Y**
6:45 AM	7:45 AM	2353	Y	160	Y	**Y**
5:00 PM	6:00 PM	1485	Y	159	Y	**Y**
2:15 PM	3:15 PM	1607	Y	133	Y	**Y**
8:00 AM	9:00 AM	1524	Y	125	Y	**Y**
1:15 PM	2:15 PM	1442	Y	123	Y	**Y**
11:30 AM	12:30 PM	1286	Y	119	Y	**Y**
9:00 AM	10:00 AM	1247	Y	113	Y	**Y**

Warrant 1 is met by satisfying the requirements of Condition B.

Warrant 2 - Four Hour Vehicular Volume

1 Major & 1 Minor



Time Period		Major Street Vol.	Minor Street Vol.	Total Volume	Above
Start	End	(both approaches)	(higher approach)	(all approaches)	Curve?
6:45 AM	7:45 AM	2353	160	2513	YES
2:15 PM	3:15 PM	1607	133	1740	YES
4:00 PM	5:00 PM	1805	182	1987	YES
5:00 PM	6:00 PM	1485	159	1644	YES

Warrant 3 - Peak Hour Volume

PA

NOTE: Requirements 1 - 3 must ***ALL*** be met for the ***SAME*** hour for Part A of warrant to be met

1. Stopped Delay

1 Lane Approach	
Stopped Delay: (veh*hr)	**1**
Requirement Met:	**NO**

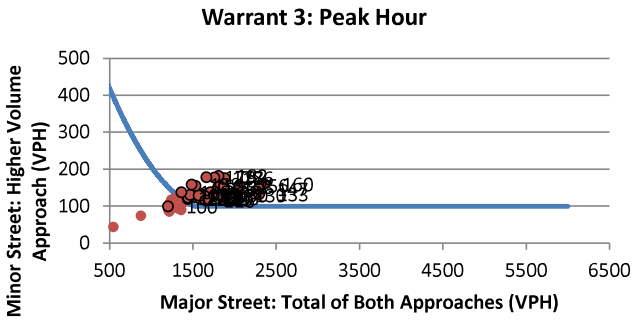
2. Minor Approach Volume

1 Moving Lane	
Approach Volume (veh/hr)	**10**
Requirement Met:	**NO**

3. Total Entering Volume Serviced

3 Approaches	
Intersection Volume (veh/hr)	**342**
Requirement Met:	**NO**

PART B: Peak Hour Volume



Warrant 3 is met based on the requirements of PART B

TIME PERIOD START	TIME PERIOD END	Major Street (both approaches)	Minor Street (higher approach)	Above Curve?
6:00 AM	**7:00 AM**	**1708**	**138**	**YES**
6:15 AM	**7:15 AM**	**1804**	**152**	**YES**
6:30 AM	**7:30 AM**	**2057**	**156**	**YES**
6:45 AM	**7:45 AM**	**2353**	**160**	**YES**
7:00 AM	**8:00 AM**	**2291**	**147**	**YES**
7:15 AM	**8:15 AM**	**2295**	**133**	**YES**
7:30 AM	**8:30 AM**	**2027**	**130**	**YES**
7:45 AM	**8:45 AM**	**1703**	**123**	**YES**
8:00 AM	**9:00 AM**	**1524**	**125**	**YES**
8:15 AM	**9:15 AM**	**1348**	**124**	**YES**
8:30 AM	9:30 AM	1271	121	NO
8:45 AM	9:45 AM	1252	117	NO
9:00 AM	10:00 AM	1247	113	NO
9:15 AM	10:15 AM	1255	112	NO
9:30 AM	10:30 AM	1248	106	NO
9:45 AM	10:45 AM	1233	95	NO
10:00 AM	11:00 AM	1200	90	NO
10:15 AM	11:15 AM	1219	90	NO
10:30 AM	11:30 AM	1213	86	NO
10:45 AM	**11:45 AM**	**1200**	**100**	**YES**
11:00 AM	12:00 PM	1218	109	NO
11:15 AM	12:15 PM	1237	118	NO
11:30 AM	12:30 PM	1286	119	NO
11:45 AM	12:45 PM	1271	111	NO
12:00 PM	1:00 PM	1350	103	NO
12:15 PM	1:15 PM	1354	91	NO
12:30 PM	1:30 PM	1326	94	NO
12:45 PM	1:45 PM	1370	110	NO
1:00 PM	**2:00 PM**	**1439**	**120**	**YES**
1:15 PM	**2:15 PM**	**1442**	**123**	**YES**
1:30 PM	**2:30 PM**	**1466**	**131**	**YES**
1:45 PM	**2:45 PM**	**1632**	**119**	**YES**

Traffic Signal Warrant Summary

Epps Mill Rd and I-24 EB Off Ramp

Date: 22-May-24

Analyst: STV Inc.

Warrant 1	Condition A	**YES**
	Condition B	**YES**
Warrant 2	Four Hour Vehicular Volume	**YES**
Warrant 3	A - Peak Hour Delay	NO
	B - Peak Hour Volume	**YES**
Warrant 4	Pedestrian Volume	
Warrant 5	School Crossing	N/A
Warrant 6	Coordinated Signal System	NO
Warrant 7	Crash Experience	NO
Warrant 8	Roadway network	N/A
Warrant 9	Intersection Near a grade Crossing	N/A

MUTCD Reference:

http://mutcd.fhwa.dot.gov/htm/2009/part4/part4c.htm#section4C02

TIME PERIOD		Epps Mill Rd					Epps Mill Rd					Miller Road					I-24 EB Off Ramp				
		RTR:	1	DIRECTION:		EB	RTR:	1	DIRECTION:		WB	RTR:	0.4	DIRECTION:		NB	RTR:	0.4	DIRECTION:		SB
START	END	Major Street					Major Street					Minor Street					Minor Street				
		L	T	R	PED	B	L	T	R	PED	B	L	T	R	PED	B	L	T	R	PED	B
6:00 AM	6:15 AM	21	167	18	0	0	23	26	51	0	0	5	15	59	0	0	32	13	19	0	0
6:15 AM	6:30 AM	18	226	23	0	0	31	28	44	0	0	0	13	51	0	0	29	12	18	0	0
6:30 AM	6:45 AM	38	185	23	0	0	62	44	41	0	0	8	13	53	0	0	40	16	24	0	0
6:45 AM	7:00 AM	23	210	10	0	0	85	59	31	0	0	10	14	57	0	0	49	19	29	0	0
7:00 AM	7:15 AM	15	254	15	0	0	133	41	56	0	0	8	23	90	0	0	53	21	32	0	0
7:15 AM	7:30 AM	28	367	26	0	0	79	74	64	0	0	8	44	176	0	0	51	21	31	0	0
7:30 AM	7:45 AM	21	333	21	0	0	64	82	49	0	0	21	32	127	0	0	68	27	41	0	0
7:45 AM	8:00 AM	15	223	18	0	0	72	77	56	0	0	13	22	88	0	0	53	21	32	0	0
8:00 AM	8:15 AM	13	190	18	0	0	33	85	44	0	0	15	16	64	0	0	41	16	25	0	0
8:15 AM	8:30 AM	21	133	26	0	0	41	95	36	0	0	8	13	51	0	0	59	24	35	0	0
8:30 AM	8:45 AM	13	149	13	0	0	33	62	46	0	0	8	15	59	0	0	49	19	29	0	0
8:45 AM	9:00 AM	36	115	3	0	3	41	36	62	0	0	3	12	47	0	0	56	23	34	0	0
9:00 AM	9:15 AM	3	113	10	0	0	33	64	59	0	0	8	9	35	0	0	55	22	33	0	0
9:15 AM	9:30 AM	18	115	13	0	0	26	64	56	0	0	3	10	39	0	0	67	27	40	0	0
9:30 AM	9:45 AM	18	115	18	0	0	46	44	38	0	0	5	12	49	0	0	54	22	32	0	0
9:45 AM	10:00 AM	21	95	3	0	0	67	62	67	0	0	5	5	21	0	0	51	21	31	0	0
10:00 AM	10:15 AM	21	77	3	0	0	36	69	59	0	0	0	9	37	0	0	63	25	38	0	0
10:15 AM	10:30 AM	28	105	10	0	0	41	77	46	0	0	8	11	43	0	0	54	22	32	0	0
10:30 AM	10:45 AM	23	103	15	0	0	38	49	56	0	0	13	15	62	0	0	59	24	35	0	0
10:45 AM	11:00 AM	23	77	10	0	0	38	62	56	0	0	8	10	39	0	0	78	31	47	0	0
11:00 AM	11:15 AM	44	97	13	0	0	51	59	56	0	0	3	13	51	0	0	54	22	32	0	0
11:15 AM	11:30 AM	13	97	3	0	0	26	64	51	0	0	8	10	41	0	0	50	20	30	0	0
11:30 AM	11:45 AM	21	97	8	0	0	54	56	44	0	0	5	11	43	0	0	49	19	29	0	0
11:45 AM	12:00 PM	5	77	3	0	0	46	85	44	0	0	3	6	23	0	0	56	23	34	0	0
12:00 PM	12:15 PM	31	77	10	0	0	44	100	46	0	3	10	10	39	0	0	58	23	35	0	0
12:15 PM	12:30 PM	21	72	21	0	0	33	64	33	0	0	13	7	29	0	0	62	25	37	0	0
12:30 PM	12:45 PM	10	64	15	0	0	46	69	49	0	0	5	5	21	0	0	64	26	38	0	0
12:45 PM	1:00 PM	18	108	13	0	0	41	90	59	0	3	8	11	45	0	0	72	29	43	0	0
1:00 PM	1:15 PM	15	141	23	0	0	44	85	59	0	0	10	11	45	0	0	62	25	37	0	0
1:15 PM	1:30 PM	15	108	10	0	0	108	46	44	0	0	8	7	27	0	0	63	25	38	0	0
1:30 PM	1:45 PM	23	100	10	0	0	105	97	72	0	0	13	11	45	0	0	59	24	35	0	0
1:45 PM	2:00 PM	28	149	5	0	0	82	87	77	0	0	18	19	78	0	0	69	28	42	0	0
2:00 PM	2:15 PM	15	126	23	0	0	59	79	41	0	0	15	13	51	0	0	67	27	40	0	0
2:15 PM	2:30 PM	18	95	13	0	0	108	100	62	0	0	18	9	35	0	0	74	30	45	0	0
2:30 PM	2:45 PM	21	208	8	0	0	51	77	62	0	0	23	32	127	0	0	73	29	44	0	0
2:45 PM	3:00 PM	23	144	5	0	0	56	141	54	0	0	10	14	57	0	0	82	33	49	0	0
3:00 PM	3:15 PM	41	123	8	0	0	67	133	51	0	0	5	15	59	0	0	86	34	52	0	0
3:15 PM	3:30 PM	33	120	0	0	0	108	126	36	0	0	18	15	59	0	0	97	39	58	0	0
3:30 PM	3:45 PM	15	144	8	0	0	95	149	54	0	0	13	14	57	0	0	99	39	59	0	0
3:45 PM	4:00 PM	44	118	10	0	0	87	151	33	0	0	15	14	55	0	0	119	48	72	0	3
4:00 PM	4:15 PM	23	149	18	0	0	59	169	54	0	0	15	13	53	0	0	73	29	44	0	0
4:15 PM	4:30 PM	31	113	18	0	0	56	136	41	0	0	5	11	45	0	0	86	34	52	0	0
4:30 PM	4:45 PM	38	115	13	0	0	87	192	38	0	0	8	12	49	0	0	99	39	59	0	0
4:45 PM	5:00 PM	28	126	18	0	0	72	136	64	0	0	23	16	66	0	0	99	39	59	0	0
5:00 PM	5:15 PM	31	144	23	0	0	82	149	49	0	0	15	14	57	0	0	94	37	56	0	0
5:15 PM	5:30 PM	10	220	13	0	0	62	151	72	0	0	5	15	62	0	0	109	44	65	0	0
5:30 PM	5:45 PM	33	161	15	0	0	82	169	49	0	0	15	17	68	0	0	96	38	58	0	0
5:45 PM	6:00 PM	31	126	18	0	0	67	156	38	0	0	18	12	49	0	0	103	41	62	0	0
6:00 PM	6:15 PM	21	118	18	0	0	33	138	54	0	0	10	9	37	0	0	96	38	58	0	0
6:15 PM	6:30 PM	15	108	10	0	0	62	92	62	0	0	10	7	29	0	0	103	41	62	0	0
6:30 PM	6:45 PM	26	92	13	0	0	54	85	38	0	0	8	11	43	0	0	79	32	48	0	0

Warrant 1- Eight Hour Vehicular Volume

Condition A - Minimum Vehicular Volume

Time Period		Major Street		Minor Street		Meets
START	END	Epps Mill Rd	>500	I-24 S Ramp	>200	Condition?
5:15 PM	6:15 PM	1855	Y	662	Y	**Y**
3:00 PM	4:00 PM	1754	Y	658	Y	**Y**
4:15 PM	5:15 PM	1800	Y	618	Y	**Y**
2:00 PM	3:00 PM	1589	Y	487	Y	**Y**
12:30 PM	1:30 PM	1280	Y	428	Y	**Y**
6:15 PM	7:15 PM	878	Y	427	Y	**Y**
10:00 AM	11:00 AM	1122	Y	417	Y	**Y**
8:45 AM	9:45 AM	1146	Y	382	Y	**Y**

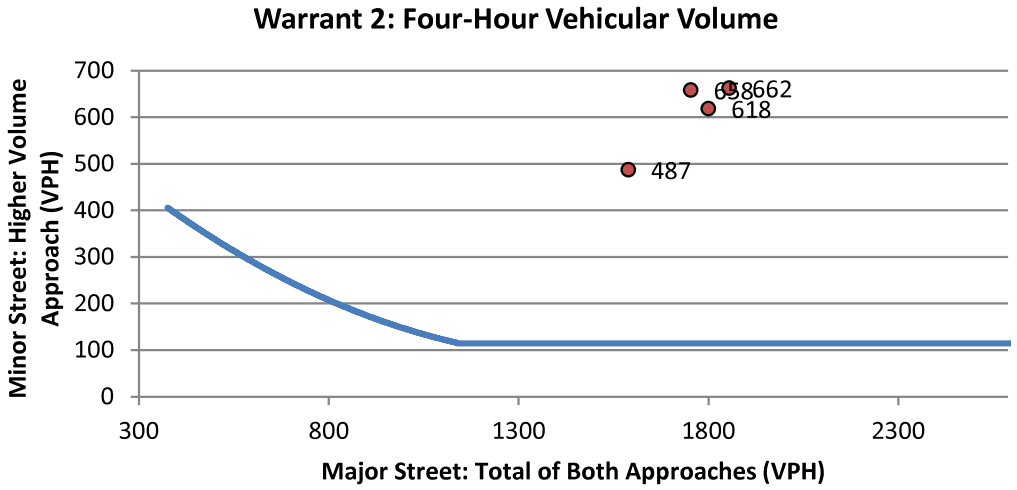
Condition B - Interruption of Continuous Traffic

Time Period		Major Street		Minor Street		Meets
START	END	Epps Mill Rd	>750	I-24 S Ramp	>100	Condition?
5:15 PM	6:15 PM	1855	Y	662	Y	**Y**
3:00 PM	4:00 PM	1754	Y	658	Y	**Y**
4:15 PM	5:15 PM	1800	Y	618	Y	**Y**
2:00 PM	3:00 PM	1589	Y	487	Y	**Y**
12:30 PM	1:30 PM	1280	Y	428	Y	**Y**
6:15 PM	7:15 PM	878	Y	427	Y	**Y**
10:00 AM	11:00 AM	1122	Y	417	Y	**Y**
8:45 AM	9:45 AM	1146	Y	382	Y	**Y**

Warrant 1 is met by satisfying the requirements of Conidtions A & B.

Warrant 2 - Four Hour Vehicular Volume

1 Major & 2 Minor



Time Period		Major Street Vol.	Minor Street Vol.	Total Volume	Above
Start	End	(both approaches)	(higher approach)	(all approaches)	Curve?
2:00 PM	3:00 PM	1589	487	2076	YES
3:00 PM	4:00 PM	1754	658	2412	YES
4:15 PM	5:15 PM	1800	618	2418	YES
5:15 PM	6:15 PM	1855	662	2517	YES

Warrant 3 - Peak Hour Volume

PART A: Peak Hour Delay

NOTE: Requirements 1 - 3 must ***ALL*** be met for the ***SAME*** hour for Part A of warrant to be met

1. Stopped Delay

1 Lane Approach	
Stopped Delay: (veh*hr)	**1**
Requirement Met:	**NO**

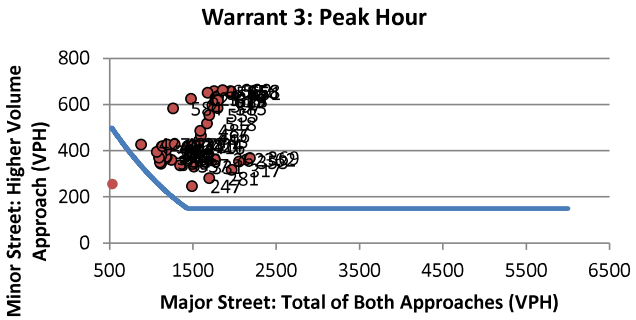
2. Minor Approach Volume

1 Moving Lane	
Approach Volume (veh/hr)	**10**
Requirement Met:	**NO**

3. Total Entering Volume Serviced

3 Approaches	
Intersection Volume (veh/hr)	**342**
Requirement Met:	**NO**

PART B: Peak Hour Volume



Warrant 3 is met based on the requirements of PART B

TIME PERIOD START	TIME PERIOD END	Major Street (both approaches)	Minor Street (higher approach)	Above Curve?
6:00 AM	7:00 AM	1487	247	YES
6:15 AM	7:15 AM	1695	281	YES
6:30 AM	7:30 AM	1963	317	YES
6:45 AM	7:45 AM	2140	362	YES
7:00 AM	8:00 AM	2183	369	YES
7:15 AM	8:15 AM	2052	353	YES
7:30 AM	8:30 AM	1766	362	YES
7:45 AM	8:45 AM	1512	331	YES
8:00 AM	9:00 AM	1344	337	YES
8:15 AM	9:15 AM	1243	360	YES
8:30 AM	9:30 AM	1183	373	YES
8:45 AM	9:45 AM	1146	382	YES
9:00 AM	10:00 AM	1168	373	YES
9:15 AM	10:15 AM	1151	386	YES
9:30 AM	10:30 AM	1166	365	YES
9:45 AM	10:45 AM	1171	373	YES
10:00 AM	11:00 AM	1122	417	YES
10:15 AM	11:15 AM	1177	403	YES
10:30 AM	11:30 AM	1124	396	YES
10:45 AM	11:45 AM	1120	379	YES
11:00 AM	12:00 PM	1114	344	YES
11:15 AM	12:15 PM	1102	350	YES
11:30 AM	12:30 PM	1092	370	YES
11:45 AM	12:45 PM	1065	395	YES
12:00 PM	1:00 PM	1134	420	YES
12:15 PM	1:15 PM	1193	427	YES
12:30 PM	1:30 PM	1280	428	YES
12:45 PM	1:45 PM	1434	420	YES
1:00 PM	2:00 PM	1533	416	YES
1:15 PM	2:15 PM	1509	424	YES
1:30 PM	2:30 PM	1574	443	YES
1:45 PM	2:45 PM	1594	466	YES

Traffic Signal Warrant Summary

Epps Mill Rd and Capital Way

Date: 24-May-24

Analyst: STV Inc.

Warrant 1	Condition A	NO
	Condition B	NO
Warrant 2	Four Hour Vehicular Volume	NO
Warrant 3	A - Peak Hour Delay	NO
	B - Peak Hour Volume	NO
Warrant 4	Pedestrian Volume	NO
Warrant 5	School Crossing	N/A
Warrant 6	Coordinated Signal System	NO
Warrant 7	Crash Experience	NO
Warrant 8	Roadway network	N/A
Warrant 9	Intersection Near a grade Crossing	N/A

MUTCD Reference:

http://mutcd.fhwa.dot.gov/htm/2009/part4/part4c.htm#section4C02

TIME PERIOD		Epps Mill Rd					Epps Mill Rd					Dollar General Driveway					Capital Way				
		RTR:	1	DIRECTION:		EB	RTR:	1	DIRECTION:		WB	RTR:	1	DIRECTION:		NB	RTR:	1	DIRECTION:		SB
START	END	Major Street					Major Street					Minor Street					Minor Street				
		L	T	R	PED	B	L	T	R	PED	B	L	T	R	PED	B	L	T	R	PED	B
6:00 AM	6:15 AM	0	15	0	0	0	0	15	5	0	0	0	0	0	0	0	3	0	0	0	0
6:15 AM	6:30 AM	0	21	0	0	0	0	10	8	0	0	0	0	0	0	0	5	0	0	0	0
6:30 AM	6:45 AM	0	28	0	0	0	0	18	10	0	0	0	0	0	0	0	3	0	5	0	0
6:45 AM	7:00 AM	0	21	0	0	0	8	10	8	0	0	0	3	5	0	0	3	0	3	0	0
7:00 AM	7:15 AM	0	15	0	0	0	0	3	13	0	0	0	0	3	0	0	5	3	0	0	0
7:15 AM	7:30 AM	3	28	3	0	0	3	23	21	0	0	3	0	8	0	0	8	0	0	0	0
7:30 AM	7:45 AM	3	21	5	0	0	10	15	31	0	0	3	0	13	0	0	10	0	0	0	0
7:45 AM	8:00 AM	0	21	3	0	0	5	33	15	0	0	0	0	10	0	0	5	0	0	0	0
8:00 AM	8:15 AM	3	18	3	0	0	10	23	18	0	0	8	0	8	0	0	8	3	3	0	0
8:15 AM	8:30 AM	3	26	3	0	0	3	23	10	0	0	3	0	5	0	0	10	0	3	0	0
8:30 AM	8:45 AM	0	13	0	0	0	3	13	15	0	0	0	0	5	0	0	13	0	0	0	0
8:45 AM	9:00 AM	3	13	0	0	0	3	21	10	0	0	0	0	3	0	0	0	3	0	0	0
9:00 AM	9:15 AM	3	18	3	0	0	3	41	10	0	0	3	0	5	0	0	13	0	0	0	0
9:15 AM	9:30 AM	0	46	3	0	0	3	21	18	0	0	0	3	0	0	0	10	3	3	0	0
9:30 AM	9:45 AM	0	36	3	0	0	8	26	18	0	0	0	3	5	0	0	8	0	3	0	0
9:45 AM	10:00 AM	0	41	0	0	0	3	41	8	0	0	3	0	5	0	0	5	0	3	0	0
10:00 AM	10:15 AM	0	51	0	0	0	8	28	13	0	0	0	0	5	0	0	15	0	0	0	0
10:15 AM	10:30 AM	0	38	0	0	0	21	21	23	0	0	5	0	13	0	0	10	0	0	0	0
10:30 AM	10:45 AM	5	41	8	0	0	13	33	13	0	0	15	0	10	0	0	10	3	8	0	0
10:45 AM	11:00 AM	0	62	5	0	0	13	33	10	0	0	5	0	10	0	0	10	3	3	0	0
11:00 AM	11:15 AM	3	51	3	0	0	5	38	15	0	0	8	0	5	0	0	15	0	3	0	0
11:15 AM	11:30 AM	0	72	5	0	0	5	36	3	0	0	0	0	5	0	0	18	0	0	0	0
11:30 AM	11:45 AM	3	46	3	0	0	10	54	5	0	0	3	0	8	0	0	3	0	0	0	0
11:45 AM	12:00 PM	0	64	3	0	0	8	62	8	0	0	5	3	13	0	0	13	0	0	0	0
12:00 PM	12:15 PM	0	77	3	0	0	8	54	10	0	0	0	0	8	0	0	3	0	3	0	0
12:15 PM	12:30 PM	0	56	0	0	0	18	36	18	0	0	15	0	3	0	0	15	0	3	0	0
12:30 PM	12:45 PM	0	67	8	0	0	8	62	26	0	0	10	0	10	0	0	21	0	0	0	0
12:45 PM	1:00 PM	0	54	3	0	0	5	54	8	0	0	3	0	8	0	0	21	0	0	0	0
1:00 PM	1:15 PM	5	72	5	0	0	8	54	13	0	0	5	3	8	0	0	13	0	5	0	0
1:15 PM	1:30 PM	3	62	5	0	0	10	72	15	0	0	5	0	3	0	0	18	3	0	0	0
1:30 PM	1:45 PM	0	72	3	0	0	3	59	8	0	0	10	0	8	0	0	5	0	0	0	0
1:45 PM	2:00 PM	3	67	8	0	0	3	54	8	0	0	8	0	5	0	0	8	0	0	0	0
2:00 PM	2:15 PM	0	90	15	0	0	5	82	10	0	0	5	0	8	0	0	10	3	3	0	0
2:15 PM	2:30 PM	0	92	5	0	0	5	64	13	0	0	8	0	10	0	0	10	0	3	0	0
2:30 PM	2:45 PM	0	51	10	0	0	5	56	8	0	0	5	0	13	0	0	8	0	3	0	0
2:45 PM	3:00 PM	3	67	5	0	0	13	79	10	0	0	15	0	5	0	0	10	0	0	0	0
3:00 PM	3:15 PM	8	64	3	0	0	10	97	13	0	0	3	0	8	0	0	10	0	3	0	0
3:15 PM	3:30 PM	3	56	15	0	0	3	113	5	0	0	8	3	5	0	0	13	0	3	0	0
3:30 PM	3:45 PM	3	74	8	0	0	15	128	8	0	0	5	0	13	0	0	8	0	3	0	0
3:45 PM	4:00 PM	3	74	5	0	0	18	149	5	0	0	3	0	21	0	0	13	0	3	0	0
4:00 PM	4:15 PM	0	92	3	0	0	5	92	0	0	0	5	0	10	0	0	18	0	0	0	0
4:15 PM	4:30 PM	5	100	10	0	0	10	120	13	0	0	8	0	5	0	0	15	0	3	0	0
4:30 PM	4:45 PM	3	85	3	0	0	18	138	10	5	0	8	0	13	0	0	15	3	0	0	0
4:45 PM	5:00 PM	0	82	8	0	0	13	138	10	0	0	15	3	8	0	0	10	0	3	0	0
5:00 PM	5:15 PM	0	120	10	0	0	15	141	3	0	0	13	0	10	0	0	28	0	8	0	0
5:15 PM	5:30 PM	0	51	5	0	0	23	136	13	0	0	8	0	15	0	0	15	0	10	0	0
5:30 PM	5:45 PM	3	74	8	0	0	13	128	18	0	0	10	0	13	0	0	15	3	0	0	0
5:45 PM	6:00 PM	0	87	8	0	0	8	113	5	0	0	15	0	8	0	0	5	0	0	0	0
6:00 PM	6:15 PM	0	56	5	0	0	23	128	10	0	0	8	0	8	0	0	18	3	0	0	0
6:15 PM	6:30 PM	0	62	5	0	0	23	108	13	0	0	21	0	10	0	0	8	0	0	0	0
6:30 PM	6:45 PM	0	64	13	0	0	8	87	3	0	0	10	0	18	0	0	23	0	10	0	0

Warrant 1- Eight Hour Vehicular Volume

Condition A - Minimum Vehicular Volume

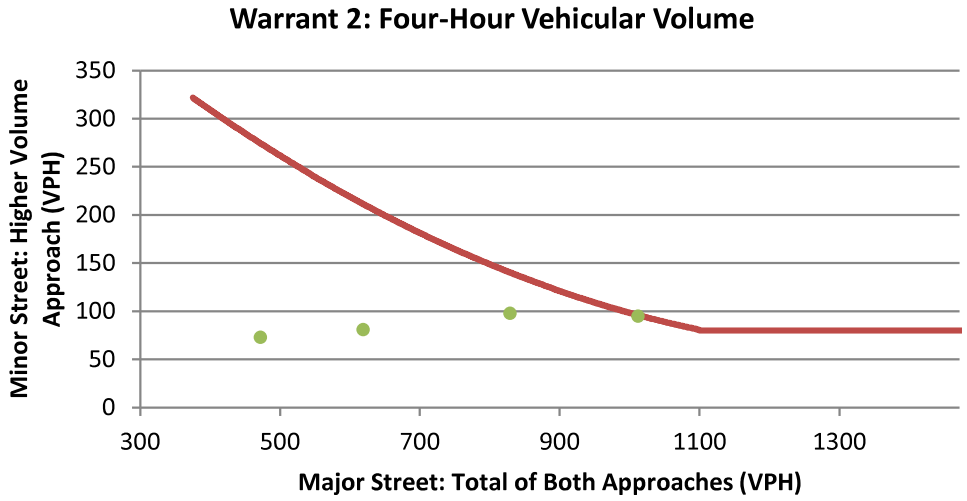
Time Period		Major Street		Minor Street		Meets
START	END	Epps Mill Rd	>500	Capital Way	>150	Condition?
5:45 PM	6:45 PM	829	Y	98	N	N
4:45 PM	5:45 PM	1012	Y	95	N	N
12:30 PM	1:30 PM	619	Y	81	N	N
10:30 AM	11:30 AM	472	N	73	N	N
3:15 PM	4:15 PM	877	Y	73	N	N
2:00 PM	3:00 PM	688	Y	69	N	N
11:30 AM	12:30 PM	546	Y	58	N	N
7:15 AM	8:15 AM	318	N	53	N	N

Condition B - Interruption of Continuous Traffic

Time Period		Major Street		Minor Street		Meets
START	END	Epps Mill Rd	>750	Capital Way	>75	Condition?
5:45 PM	6:45 PM	829	Y	98	Y	**Y**
4:45 PM	5:45 PM	1012	Y	95	Y	**Y**
12:30 PM	1:30 PM	619	N	81	Y	N
10:30 AM	11:30 AM	472	N	73	N	N
3:15 PM	4:15 PM	877	Y	73	N	N
2:00 PM	3:00 PM	688	N	69	N	N
11:30 AM	12:30 PM	546	N	58	N	N
7:15 AM	8:15 AM	318	N	53	N	N

Warrant 2 - Four Hour Vehicular Volume

1 Major & 1 Minor



Time Period		Major Street Vol.	Minor Street Vol.	Total Volume	Above
Start	End	(both approaches)	(higher approach)	(all approaches)	Curve?
10:30 AM	11:30 AM	472	73	545	NO
12:30 PM	1:30 PM	619	81	700	NO
4:45 PM	5:45 PM	1012	95	1107	NO
5:45 PM	6:45 PM	829	98	927	NO

Warrant 3 - Peak Hour Volume

PART A: Peak Hour Delay

NOTE: Requirements 1 - 3 must ***ALL*** be met for the ***SAME*** hour for Part A of warrant to be met

1. Stopped Delay

1 Lane Approach	
Stopped Delay: (veh*hr)	**1**
Requirement Met:	**NO**

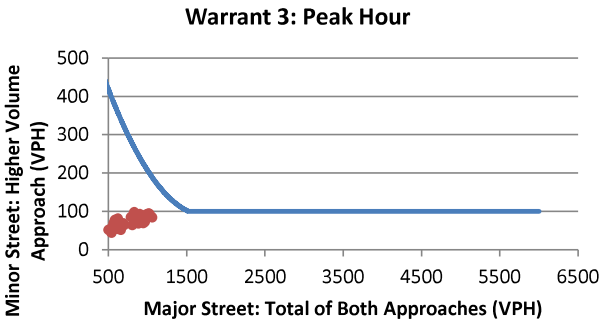
2. Minor Approach Volume

1 Moving Lane	
Approach Volume (veh/hr)	**10**
Requirement Met:	**NO**

3. Total Entering Volume Serviced

3 Approaches	
Intersection Volume (veh/hr)	**342**
Requirement Met:	**NO**

PART B: Peak Hour Volume



TIME PERIOD START	TIME PERIOD END	Major Street (both approaches)	Minor Street (higher approach)	Above Curve?
6:00 AM	7:00 AM	177	22	NO
6:15 AM	7:15 AM	173	27	NO
6:30 AM	7:30 AM	215	30	NO
6:45 AM	7:45 AM	244	38	NO
7:00 AM	8:00 AM	274	40	NO
7:15 AM	8:15 AM	318	53	NO
7:30 AM	8:30 AM	305	50	NO
7:45 AM	8:45 AM	264	45	NO
8:00 AM	9:00 AM	237	43	NO
8:15 AM	9:15 AM	240	42	NO
8:30 AM	9:30 AM	263	45	NO
8:45 AM	9:45 AM	310	43	NO
9:00 AM	10:00 AM	353	48	NO
9:15 AM	10:15 AM	375	50	NO
9:30 AM	10:30 AM	387	44	NO
9:45 AM	10:45 AM	409	56	NO
10:00 AM	11:00 AM	439	63	NO
10:15 AM	11:15 AM	454	71	NO
10:30 AM	11:30 AM	472	73	NO
10:45 AM	11:45 AM	480	55	NO
11:00 AM	12:00 PM	502	52	NO
11:15 AM	12:15 PM	539	45	NO
11:30 AM	12:30 PM	546	58	NO
11:45 AM	12:45 PM	596	67	NO
12:00 PM	1:00 PM	575	66	NO
12:15 PM	1:15 PM	580	78	NO
12:30 PM	1:30 PM	619	81	NO
12:45 PM	1:45 PM	593	65	NO
1:00 PM	2:00 PM	612	55	NO
1:15 PM	2:15 PM	657	52	NO
1:30 PM	2:30 PM	669	62	NO
1:45 PM	2:45 PM	654	62	NO

Initial Risk Assessment

Large ROW Impacts to the Northwest quadrant of currently vacant land could slow down project delivery and be a risk item going forward for the design build teams. FHWA is currently willing to accept A Safety and Operational Analysis Report (SOAR) in lieu of an Interstate Access Request (IAR) report but this could change at any point during the project cycle including during the Design Build Procurement due to alternative technical concepts (ATC). This document is covered by 23 USC 407 and its production pursuant to fulfilling public planning requirements does not waive the provisions of 407.