

Appendix P
SR-200 & Police Lodge Rd ICE Documents

Florida Department of Transportation

Intersection Control Evaluation (ICE) Form

Stage 2: Initial Control Strategy Assessment

Intersection Control Evaluation Form 750-010-30

To fulfill the requirements of Stage 2 (Intersection Control Strategy) of FDOT's ICE procedures, complete the following form and append all supporting documentation. Completed forms are to be submitted to the District Traffic Operations Engineer (DTOE) and District Design Engineer (DDE) for the project's approval.

Project Name	SR-200 / Police Lodge Rd	FDOT Project #	22-483	Date	06/05/24
Submitted By	T. Hatcher, P.E.	Agency/Company	ETM	Email	HatcherT@etminc.com
List all viable intersection control strategies identified in Stage 1 (Screening):					
Restricted Crossing U-turn (Signalized)	Displaced Left-Turn (Partial)		Continuous Green Tee		
Thru-Cut (Signalized)					

Operational Analyses					
Summarize the results of the peak hour analysis performed for each control strategy. Select analysis year based on guidance in the ICE procedures document. Refer to Exhibit 19-8 of the <i>Highway Capacity Manual, 6th Edition</i> (HCM6) to determine the appropriate LOS based on intersection delay (<i>hover over this cell for Exhibit 19-8</i>).					
Design Vehicle	Single Unit Truck (SU)		Control Vehicle	Interstate Semitrailer (WB-67)	
Design Year	2045				
Control Strategy	Critical Peak Hour		Weekday PM Peak		
	LOS	Delay (sec.)	All Queues Accommodated?		
Restricted Crossing U-turn (Signalized)	B	11.7	Yes		
Displaced Left-Turn (Partial)	B	18.7	Yes		
Continuous Green Tee	B	18.0	Yes		
Thru-Cut (Signalized)	B	18.0	Yes		
Provide any additional discussion necessary regarding the results of the operational analysis:	Below are the resulting Net Present Value Costs of the alternatives: - RCUT: \$18,019,449 - DLT: \$22,412,616 - Continuous Green Tee: \$19,541,320 - Thru-Cut: \$20,132,465				

Safety Performance							
Enter the most recent five (5) years of crash data from the CAR System.				Most recent year of crash data available			Total
Crash Type							Total
Combined	Total	0	0	0	0	0	0
	Fatal/Injury	N/A	N/A	N/A	N/A	N/A	0
	PDO	N/A	N/A	N/A	N/A	N/A	0
Single-Vehicle	Total	0	0	0	0	0	0
	Fatal/Injury	N/A	N/A	N/A	N/A	N/A	0
	PDO	N/A	N/A	N/A	N/A	N/A	0
Multi-Vehicle	Total	0	0	0	0	0	0
	Fatal/Injury	N/A	N/A	N/A	N/A	N/A	0
	PDO	N/A	N/A	N/A	N/A	N/A	0
Vehicle-Pedestrian	Fatal/Injury	N/A	N/A	N/A	N/A	N/A	0
Vehicle-Bicycle	Fatal/Injury	N/A	N/A	N/A	N/A	N/A	0
Total	All	0	0	0	0	0	0

Apply the FDOT SPICE Tool to model anticipated safety performance of each control strategy. For intersection types not accommodated in the tool, manually apply crash modification factors detailed in the ICE procedures document or qualitatively describe anticipated safety impacts.

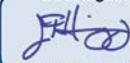
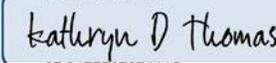
Control Strategy	Anticipated Impact on Safety Performance	Opening Year			Design Year		
		Predicted Total Crashes	Predicted Fatal+Injury Crashes	SSI Score	Predicted Total Crashes	Predicted Fatal+Injury Crashes	SSI Score
Restricted Crossing U-turn (Signalized)	RCUT has best SSI score.	3.63	0.72	95	12.71	3.10	82
Displaced Left-Turn (Partial)		3.25	0.77	92	6.85	2.12	67
Continuous Green Tee		3.55	0.74	90	7.47	2.05	66
Thru-Cut (Signalized)		3.7	0.88	90	7.78	2.41	67

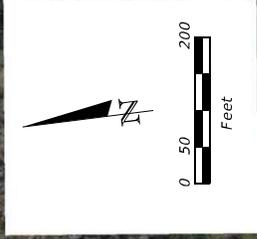
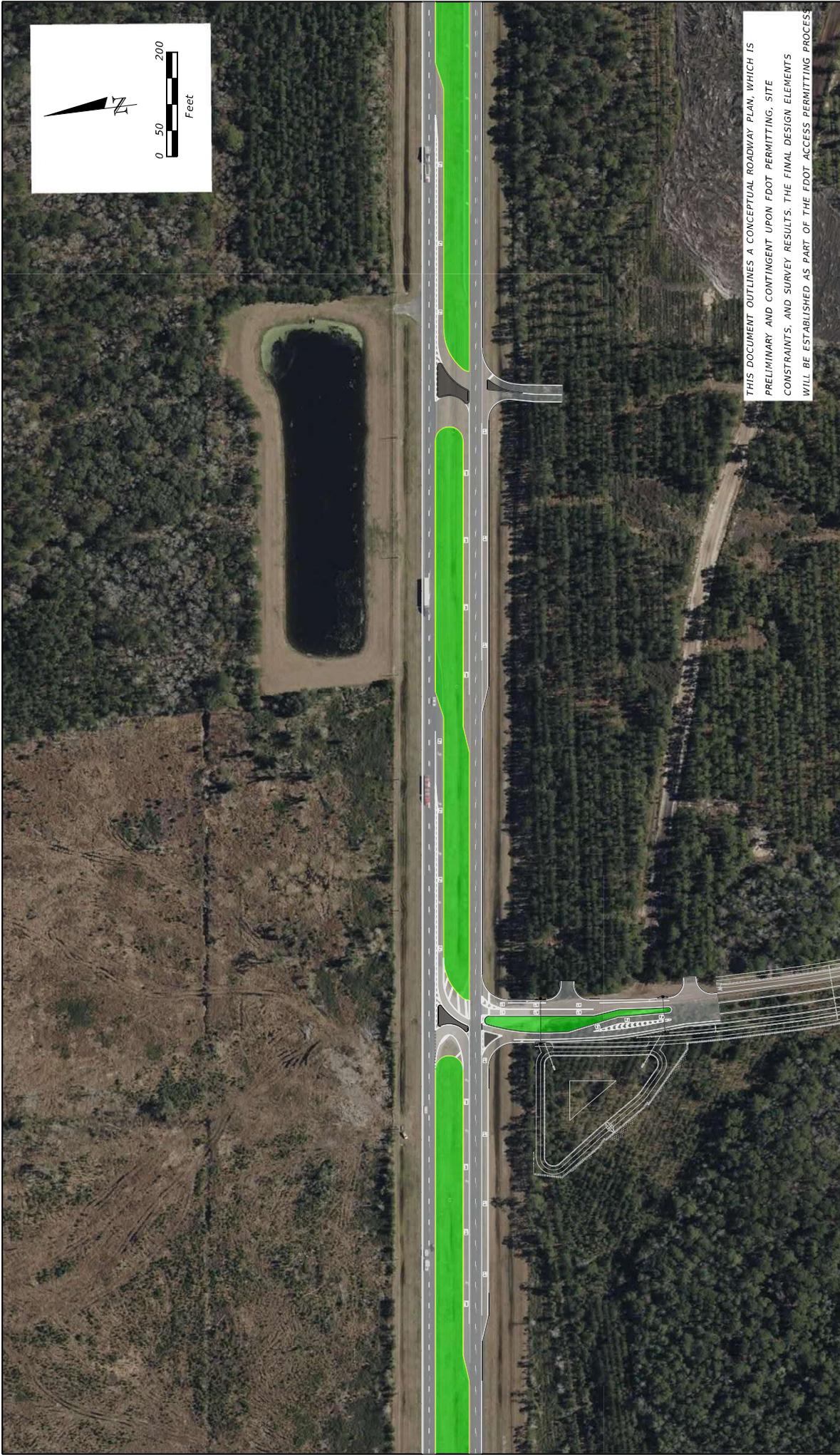
Multimodal Accommodations			
Note the existing/anticipated level of pedestrian/bicyclist activity at the study intersection during a typical day. After filling in the daily number of pedestrians crossing, the activity level field will auto-populate.			
Daily # of peds. crossing (all approaches):	1	Pedestrian Volume by Activity Level	
Daily # of bicyclists crossing (all approaches):	1	Low (0 < peds/day < 240)	
Summarize the ability of each viable control strategy to accommodate the existing/anticipated level of:			
Control Strategy	Pedestrians and Bicyclists	Transit Services	Freight Needs
Restricted Crossing U-turn (Signalized)	No change from existing.	No change from existing.	No change from existing.
Displaced Left-Turn (Partial)	No change from existing.	No change from existing.	No change from existing.
Continuous Green Tee	No change from existing.	No change from existing.	No change from existing.
Thru-Cut (Signalized)	No change from existing.	No change from existing.	No change from existing.

Environmental, Utility, and Right-of-Way Impacts	
Summarize any issues related to environmental, utility, or right-of-way (including relocation) impacts specific to each control strategy. Be sure to consider the NEPA requirements for each control type.	
Restricted Crossing U-turn (Signalized)	No impacts anticipated.
Displaced Left-Turn (Partial)	Configuration impacts the ability to access the commercial parcel in the southeast quadrant of the intersection.
Continuous Green Tee	No impacts anticipated.
Thru-Cut (Signalized)	No impacts anticipated.

Public Input/Feedback (if appropriate)
Summarize any agency or public input regarding the control strategies:
None performed to date.

Control Strategy Evaluation		
Provide a brief justification as to why each of the following is either viable or not viable. If a single control strategy is recommended, select it as the only strategy to be advanced.		
Control Strategy	Strategy to be Advanced?	Justification
Restricted Crossing U-turn (Signalized)	Yes	Lowest Net Present Value, best SSI ranking and preserves the best access to the proposed development.
Displaced Left-Turn (Partial)	No	Highest Net Present Value and restricts access to the commercial parcel.
Continuous Green Tee	No	Higher Net Present Value than RCUT.
Thru-Cut (Signalized)	No	Higher Net Present Value than RCUT.

Resolution					
To be filled out by FDOT District Traffic Operations Engineer and District Design Engineer					
Project Determination	The signalized RCUT has been selected as the control strategy.				
Comments					
DTOE Name	James Hannigan, P.E.	Signature	DocuSigned by: 	Date	06/07/2024 12:58 PM EDT
DDE Name	Kathryn Thomas, P.E.	Signature	DocuSigned by: 	Date	06/10/2024 8:50 AM EDT



THIS DOCUMENT OUTLINES A CONCEPTUAL ROADWAY PLAN, WHICH IS PRELIMINARY AND CONTINGENT UPON FOOT PERMITTING, SITE CONSTRAINTS, AND SURVEY RESULTS. THE FINAL DESIGN ELEMENTS WILL BE ESTABLISHED AS PART OF THE FOOT ACCESS PERMITTING PROCESS.

DATE	DESCRIPTION	DATE	DESCRIPTION

ETM
 ENGINEERING TECHNOLOGIES
 11111 W. US HWY 90
 SUITE 100
 FORT WORTH, TX 76134
 TEL: (817) 434-3333
 FAX: (817) 434-3333
 REGISTRY # 2884 LC-0000016

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION	PROJECT NO. 22-483
DATE JUNE 2024	COUNTY

TRIBUTARY ICE ANALYSIS
RCUT
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SHEET NO.

Appendix Q
Traffic Signal Warrant Analysis – Tributary East
Entrance and Edwards Rd

**Table Q1
Tributary DRI
Existing Volumes - Edwards Rd and River Glen Pkwy**

Time	East Entrance			River Glen Pkwy			Edwards Rd			Edwards Rd			Time	Major Street	Minor Street	TEV
	Eastbound			Westbound			Northbound			Southbound						
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right				
7:00 AM	0	0	0	0	0	147	0	64	0	30	14	0	7:00 AM	108	0	255
8:00 AM	0	0	0	1	0	123	0	77	0	29	66	0	8:00 AM	172	0	296
4:00 PM	0	0	0	1	0	81	0	43	2	144	55	0	4:00 PM	242	0	326
5:00 PM	0	0	0	1	0	79	0	47	1	162	88	0	5:00 PM	297	0	378

Hourly Distribution of Entering and Exiting Vehicle Trips by Land Use	
Source: ITE Trip Generation Manual, 11th Edition	
Land Use Code	538
Land Use	Charter School (K-12)
Setting	General Urban/Suburban
Time Period	Weekday
# Data Sites	2
% of 24-Hour Vehicle Trips	
Time	Total Entering Exiting
12:00 - 1:00 AM	0.0% 0.0% 0.0%
1:00 - 2:00 AM	0.0% 0.0% 0.0%
2:00 - 3:00 AM	0.0% 0.0% 0.0%
3:00 - 4:00 AM	0.1% 0.1% 0.1%
4:00 - 5:00 AM	0.0% 0.0% 0.0%
5:00 - 6:00 AM	0.0% 0.0% 0.0%
7:00 - 8:00 AM	30.8% 38.2% 23.3%
8:00 - 9:00 AM	14.8% 13.8% 15.8%
4:00 - 5:00 PM	11.6% 8.2% 14.9%
5:00 - 6:00 PM	2.7% 2.3% 3.2%
7:00 - 8:00 PM	0.3% 0.2% 0.3%
8:00 - 9:00 PM	0.0% 0.0% 0.3%
9:00 - 10:00 PM	0.0% 0.0% 0.0%
10:00 - 11:00 PM	0.0% 0.0% 0.0%
11:00 - 12:00 AM	0.0% 0.0% 0.0%

LUC	Students	Trips	Ent	Exit
532	1000	2480	1240	1240

Table Q2
Tributary DRI
School Hourly Project Traffic

Time	East Entrance			River Glen Pkwy			Edwards Rd			Major Street	Minor Street	TEV
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right			
Exit			21.60%	4.29%								
7:00 AM			102	20			27.08%	64.02%	3.98%			722
8:00 AM			37	7			53	125	8			347
4:00 PM			22	4			50	119	7			272
5:00 PM			6	1			11	25	2			65

**Table Q4
Tributary DRI
Buildout Traffic - Edwards Rd and River Glen Pkwy**

Time	East Entrance			River Glen Pkwy			Edwards Rd			Edwards Rd			Time	Major Street	Minor Street	TEV
	Eastbound			Westbound			Northbound			Southbound						
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right				
7:00 AM	208	11	114	20	2	147	84	249	12	30	339	41	7:00 AM	702	333	1,257
8:00 AM	178	9	47	8	2	123	60	202	8	29	183	50	8:00 AM	474	234	899
4:00 PM	154	8	31	5	5	81	69	162	9	144	125	140	4:00 PM	500	193	933
5:00 PM	153	8	15	2	5	79	29	72	3	162	108	134	5:00 PM	371	176	770

SIGNAL WARRANT ANALYSIS

Introduction

- The Signal Warrant Analysis Spreadsheets are a tool for assisting traffic engineers when evaluating the need for a traffic signal installation
- The filled spreadsheets can be used as part of the supporting documents for the signal warrant evaluation

Note: This templates are a useful resource, but it remains necessary to apply engineering judgment and to consider specific environmental, traffic, geometric, and operational conditions

Instructions

Fill in "Orange" areas only

Automated cells based on in Input Data in "orange" cells

General Information

Fill in below the general information including:

District, County (drop-down menu)

City, Engineer, Date

Major and Minor Street with corresponding number of lanes and speed limits

Enter Eight Hour Volumes

Any 8 hours of an average day. Major-street and minor-street volumes shall be for the same 8 hours; however, the 8 hours satisfied in Condition A shall **not** be required to be the same 8 hours satisfied in Condition B **for 80% columns only**. On the minor street, the higher volume shall not be required to be on the same approach during each of the 8 hours.

Enter Four Hour Volumes

Any 4 hours of an average day. Vehicles per hour on the major street (total of both approaches) and the corresponding vehicles per hour on the higher-volume minor-street approach (one direction only, not required to be on the same approach during each of the 4 hours)

Enter Pedestrian Volumes (4-hr)

Pedestrians per hour crossing the major street. The volume requirement of warrant 2 is satisfied in the existing condition.

Enter Peak Hour Volumes

Vehicular: Any four consecutive 15-minute periods of an average day

Pedestrian: Any four consecutive 15-minute periods of an average day representing the vehicles per hour on the major street (total of both approaches) and the corresponding pedestrians per hour crossing the major street (total of all crossings)

Input Data

City: Yulee
County: 74 – Nassau
District: Two

Engineer: T. Hatcher, P.E.
Date: December 18, 2024

Major Street: Edwards Rd
Minor Street: Tributary East Entrance

Lanes: 1 Major Approach Speed: 45
Lanes: 1 Minor Approach Speed: 30

Eight Hour Volumes (Condition A)		
Hours	Major Street (total of both approaches)	Minor Street (one direction only)
7:00 AM	702	333
8:00 AM	474	234
4:00 PM	500	193
5:00 PM	371	176

Eight Hour Volumes (Condition B)		
Hours	Major Street (total of both approaches)	Minor Street (one direction only)
7:00 AM	702	333
8:00 AM	474	234
4:00 PM	500	193
5:00 PM	371	176
12:00 AM	0	0

Highest Four Hour Vehicular Volumes		
Hours	Major Street (total of both approaches)	Minor Street (one direction only)
7:00 AM	702	333
8:00 AM	474	234
4:00 PM	500	193
5:00 PM	371	176

Highest Four Hour Pedestrian Volumes		
Hours	Major Street (total of both approaches)	Pedestrian Crossings on Major Street

Vehicular Peak Hour Volumes			
Peak Hour	Major Street (total of both approaches)	Minor Street (one direction only)	Total Entering Volume
7:00 AM	702	333	1035

Pedestrian Peak Hour Volumes		
Peak Hour	Major Street (total of both approaches)	Pedestrian Crossing Volumes on Major Street

State of Florida Department of Transportation
SIGNAL WARRANT ANALYSIS

City: Yulee
County: 74 – Nassau
District: Two

Engineer: T. Hatcher, P.E.
Date: December 18, 2024

Major Street: Edwards Rd Lanes: 1 Major Approach Speed: 45
Minor Street: Tributary East Entrance Lanes: 1 Minor Approach Speed: 30

MUTCD Electronic Reference to Chapter 4: <http://mutcd.fhwa.dot.gov/pdfs/2009r1r2/part4.pdf>

Volume Level Criteria

1. Is the posted speed or 85th-percentile of major street > 40 mph (70 km/h)? Yes No
2. Is the intersection in a built-up area of an isolated community with a population < 10,000? Yes No
- "70%" volume level **may** be used if Question 1 or 2 above is answered "Yes" 70% 100%

WARRANT 1 - EIGHT-HOUR VEHICULAR VOLUME

Warrant 1 is satisfied if Condition A or Condition B is "100%" satisfied for eight hours. Yes No

Warrant 1 is also satisfied if both Condition A and Condition B are "80%" satisfied (should only be applied after an adequate trial of other alternatives that could cause less delay and inconvenience to traffic has failed to solve the traffic problems). Yes No

Condition A - Minimum Vehicular Volume

Condition A is intended for application at locations where a large volume of intersecting traffic is the principal reason to consider installing a traffic control signal.

100% Satisfied: Yes No
80% Satisfied: Yes No
70% Satisfied: Yes No

Number of Lanes for moving traffic on each approach		Vehicles per hour on major-street (total of both approaches)			Vehicles per hour on minor-street (one direction only)		
Major	Minor	100% ^a	80% ^b	70% ^c	100% ^a	80% ^b	70% ^c
1	1	500	400	350	150	120	105
2 or more	1	600	480	420	150	120	105
2 or more	2 or more	600	480	420	200	160	140
1	2 or more	500	400	350	200	160	140

^a Basic Minimum hourly volume

^b Used for combination of Conditions A and B after adequate trial of other remedial measures

^c May be used when the major-street speed exceeds 40 mph or in an isolated community with a population of less than 10,000

Record 8 highest hours and the corresponding major-street and minor-street volumes in the Instructions Sheet.

Street	Eight Highest Hours							
	7:00 AM	8:00 AM	4:00 PM	5:00 PM				
Major	702	474	500	371				
Minor	333	234	193	176				

State of Florida Department of Transportation
SIGNAL WARRANT ANALYSIS

Condition B - Interruption of Continuous Traffic

Condition B is intended for application where Condition A is not satisfied and the traffic volume on a major street is so heavy that traffic on the minor intersecting street suffers excessive delay or conflict in entering or crossing the major street.

Applicable: Yes No
 100% Satisfied: Yes No
 80% Satisfied: Yes No
 70% Satisfied: Yes No

Number of Lanes for moving traffic on each approach		Vehicles per hour on major-street (total of both approaches)			Vehicles per hour on minor-street (one direction only)		
Major	Minor	100% ^a	80% ^b	70% ^c	100% ^a	80% ^b	70% ^c
1	1	750	600	525	75	60	53
2 or more	1	900	720	630	75	60	53
2 or more	2 or more	900	720	630	100	80	70
1	2 or more	750	600	525	100	80	70

^a Basic Minimum hourly volume

^b Used for combination of Conditions A and B after adequate trial of other remedial measures

^c May be used when the major-street speed exceeds 40 mph or in an isolated community with a population of less than 10,000

Record 8 highest hours and the corresponding major-street and minor-street volumes in the Instructions Sheet.

Eight Highest Hours							
Street	7:00 AM	8:00 AM	4:00 PM	5:00 PM			
Major	702	474	500	371			
Minor	333	234	193	176			

State of Florida Department of Transportation
SIGNAL WARRANT ANALYSIS

City: **Yulee**
 County: **74 – Nassau**
 District: **Two**

Engineer: **T. Hatcher, P.E.**
 Date: **December 18, 2024**

Major Street: **Edwards Rd** Lanes: **1** Major Approach Speed: **45**
 Minor Street: **Tributary East Entrance** Lanes: **1** Minor Approach Speed: **30**

MUTCD Electronic Reference to Chapter 4: <http://mutcd.fhwa.dot.gov/pdfs/2009r1r2/part4.pdf>

Volume Level Criteria

- Is the posted speed or 85th-percentile of major street > 40 mph (70 km/h)? Yes No
 - Is the intersection in a built-up area of an isolated community with a population < 10,000? Yes No
- "70%" volume level may be used if Question 1 or 2 above is answered "Yes" Yes No

WARRANT 2 - FOUR-HOUR VEHICULAR VOLUME

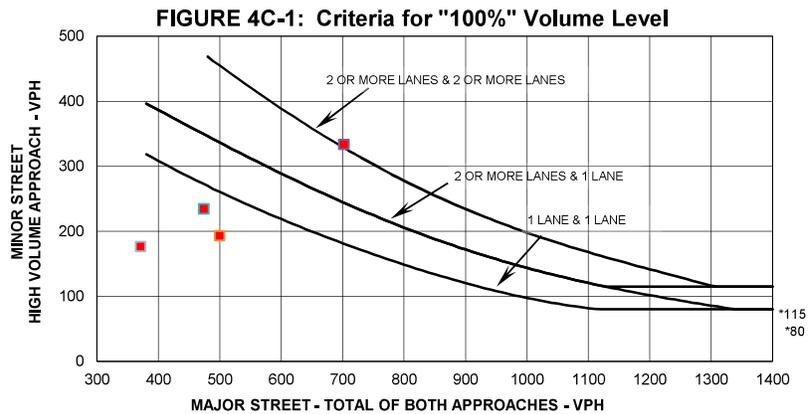
If all four points lie above the appropriate line, then the warrant is satisfied.

Applicable: Yes No
 Satisfied: Yes No

100% Volume Level

Four Highest Hours	Volumes	
	Major Street	Minor Street
7:00 AM	702	333
8:00 AM	474	234
4:00 PM	500	193
5:00 PM	371	176

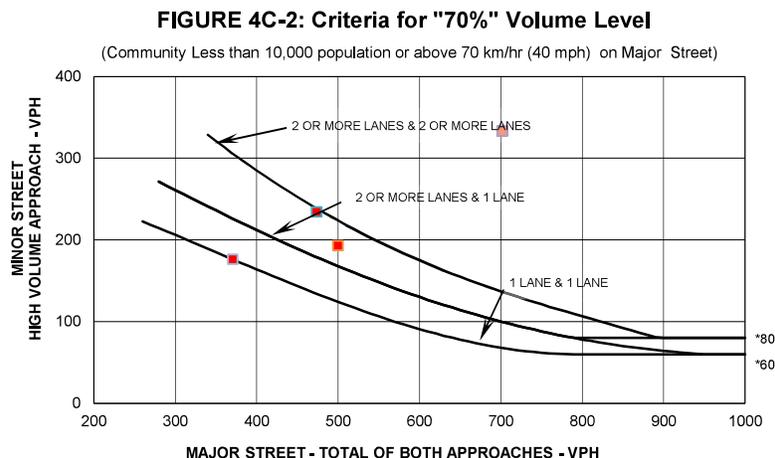
Plot four volume combinations on the applicable figure below.



* Note: 115 vph applies as the lower threshold volume for a minor street approach with two or more lanes and 80 vph applies as the lower threshold volume threshold for a minor street approach with one lane.

70% Volume Level

Four Highest Hours	Volumes	
	Major Street	Minor Street
7:00 AM	702	333
8:00 AM	474	234
4:00 PM	500	193
5:00 PM	371	176



* Note: 80 vph applies as the lower threshold volume for a minor street approach with two or more lanes and 60 vph applies as the lower threshold volume threshold for a minor street approach with one lane.

State of Florida Department of Transportation
SIGNAL WARRANT ANALYSIS

Form 750-020-01
 TRAFFIC ENGINEERING
 February 2015

City: **Yulee**
 County: **74 - Nassau**
 District: **Two**

Engineer: **T. Hatcher, P.E.**
 Date: **December 18, 2024**

Major Street: **Edwards Rd** Lanes: **1** Major Approach Speed: **45**
 Minor Street: **Tributary East Entrance** Lanes: **1** Minor Approach Speed: **30**

MUTCD Electronic Reference to Chapter 4: <http://mutcd.fhwa.dot.gov/pdfs/2009r1r2/part4.pdf>

Volume Level Criteria

1. Is the posted speed or 85th-percentile of major street > 40 mph (70 km/h)? Yes No
 2. Is the intersection in a built-up area of an isolated community with a population < 10,000? Yes No
- "70%" volume level may be used if Question 1 or 2 above is answered "Yes" 70% 100%

WARRANT 3 - PEAK HOUR

If all three criteria are fulfilled or the plotted point lies above the appropriate line, then the warrant is satisfied.

Applicable: Yes No
 Satisfied: Yes No

Unusual condition justifying use of warrant:

School traffic

Record hour when criteria are fulfilled and the corresponding delay or volume in boxes provided.

Peak Hour 100% Volume		
Time	Major Vol.	Minor Vol.
7:00 AM	702	333

Peak Hour 70% Volume		
Time	Major Vol.	Minor Vol.
7:00 AM	702	333

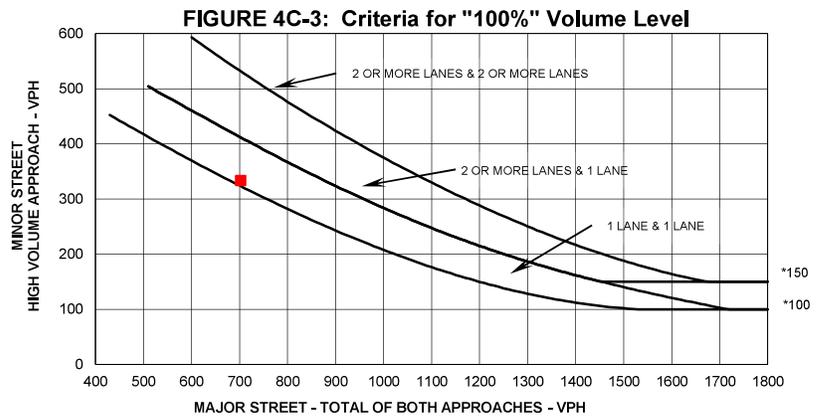
Criteria

1. Delay on Minor Approach *(vehicle-hours)		
Approach Lanes	1	2
Delay Criteria*	4.0	5.0
Delay*		
Fulfilled?:	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No

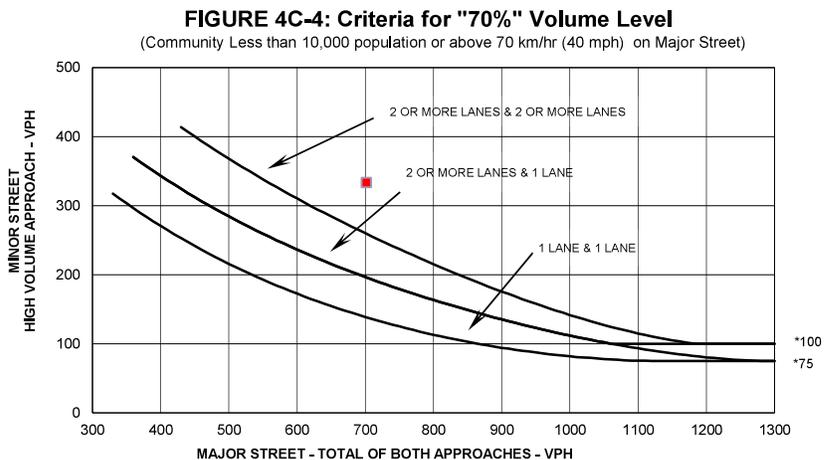
2. Volume on Minor Approach One-Direction *(vehicles per hour)		
Approach Lanes	1	2
Volume Criteria*	100	150
Volume*		333
Fulfilled?:	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No

3. Total Intersection Entering Volume *(vehicles per hour)		
No. of Approaches	3	4
Volume Criteria*	650	800
Volume*	1,035	
Fulfilled?:	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No

Plot volume combination on the applicable figure below.



* Note: 150 vph applies as the lower threshold volume for a minor street approach with two or more lanes and 100 vph applies as the lower threshold volume threshold for a minor street approach with one lane.



* Note: 100 vph applies as the lower threshold volume for a minor street approach with two or more lanes and 75 vph applies as the lower threshold volume threshold for a minor street approach with one lane.

State of Florida Department of Transportation
SIGNAL WARRANT ANALYSIS

City: **Yulee**
 County: **74 – Nassau**
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Engineer: **T. Hatcher, P.E.**
 Date: **December 18, 2024**

Major Street: **Edwards Rd** Lanes: **1** Major Approach Speed: **45**
 Minor Street: **Tributary East Entrance** Lanes: **1** Minor Approach Speed: **30**

MUTCD Electronic Reference to Chapter 4: <http://mutcd.fhwa.dot.gov/pdfs/2009r1r2/part4.pdf>

CONCLUSIONS

Remarks: **Volume requirements for warrants 2 and 3 are satisfied.**

WARRANTS SATISFIED:

<input type="checkbox"/> Warrant 1	<input type="checkbox"/> Not Applicable
<input checked="" type="checkbox"/> Warrant 2	<input type="checkbox"/> Not Applicable
<input checked="" type="checkbox"/> Warrant 3	<input type="checkbox"/> Not Applicable
<input type="checkbox"/> Warrant 4	<input checked="" type="checkbox"/> Not Applicable
<input type="checkbox"/> Warrant 5	<input checked="" type="checkbox"/> Not Applicable
<input type="checkbox"/> Warrant 6	<input checked="" type="checkbox"/> Not Applicable
<input type="checkbox"/> Warrant 7	<input checked="" type="checkbox"/> Not Applicable
<input type="checkbox"/> Warrant 8	<input checked="" type="checkbox"/> Not Applicable
<input type="checkbox"/> Warrant 9	<input checked="" type="checkbox"/> Not Applicable