Transmittal

PROJECT:	TO 11_Fayette Co -Tyrone Rd @ Flat Creek 1230145	DATE:	5/25/2023
SUBJECT:	Fayette County - Tyrone Road at Flat Creek Trail - Revised TE Report	TRANSMITTAL ID:	00003
PURPOSE:	For your review and comment	VIA:	Info Exchange

FROM

NAME	COMPANY	EMAIL	PHONE
Zach Puckett	Pond & Company	puckettz@pondco.com	1-404-748-4774

TO

NAME	COMPANY	EMAIL	PHONE
Paola Kimbell 115 McDonough Rd Fayetteville, GA 30214	Fayette County	akimbell@fayettecountyga.gov	404-984-1974

REMARKS:

Good afternoon Paola,

Please see the attached revised TE Report for the Tyrone Road at Flat Creek Trail intersection. Please review and let us know if you have any questions and/or need anything additional.

Thanks,

Zach Puckett, P.E., IMSA Level II
Senior Project Manager | Transportation Planning & Engineering | Associate Principal

Pond | **p** 678.336.7740 | **f** 678.336.7744 | **direct** 404.748.4774 | **mobile** 404.534.8679 |
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DESCRIPTION OF CONTENTS

QTY	DATED	TITLE	NOTES
1	5/24/2023	Tyrone Rd at Flat Creek Trail - TE Report - 5.24.2023.pdf	

Transmittal

DATE: 5/25/2023
TRANSMITTAL ID: 00003

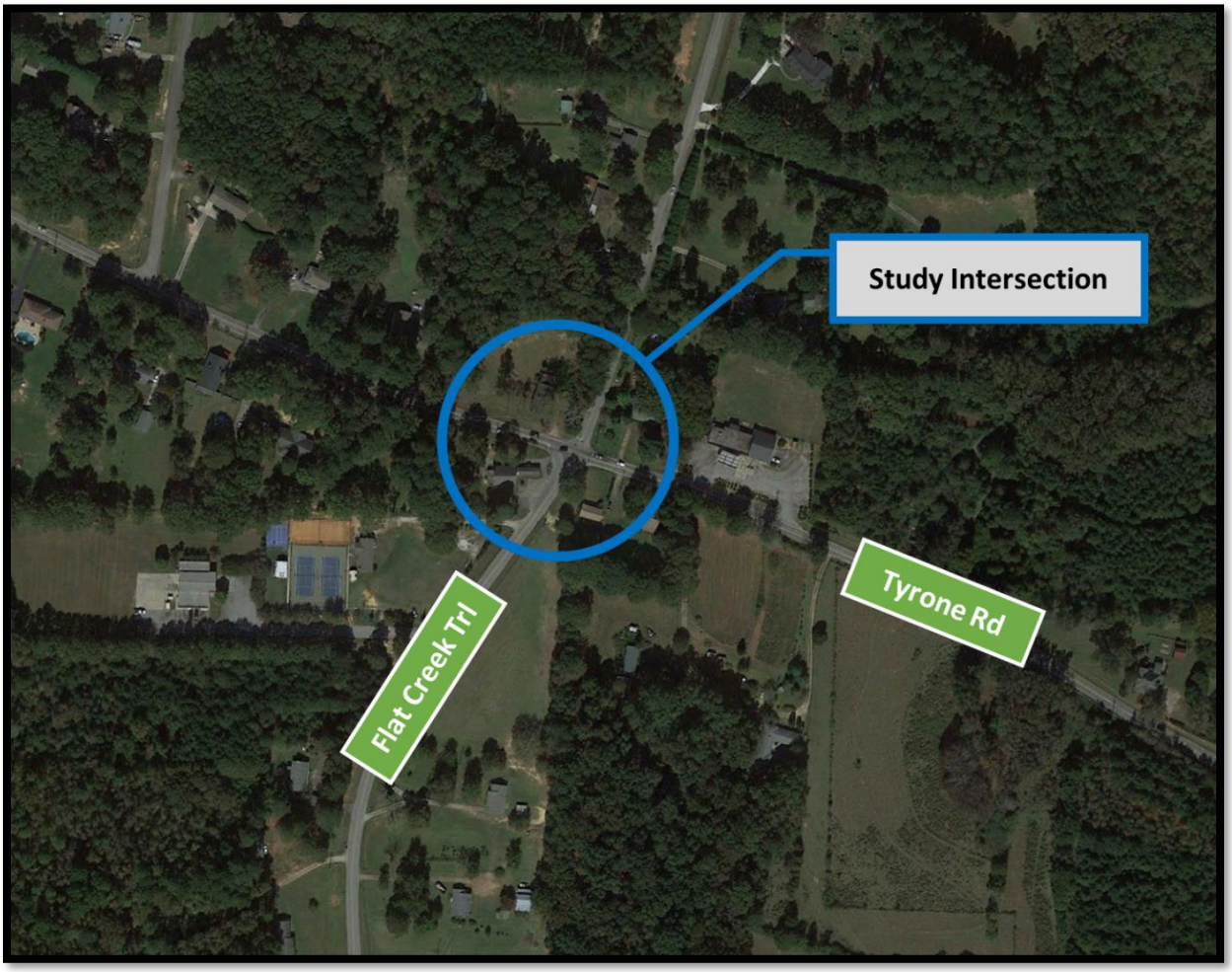
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Patrick McArdle	(Pond & Company)
Zach Puckett	(Pond & Company)

APPROVED
06/28/2023 8:53:19 AM

TRAFFIC ENGINEERING STUDY

For the Intersection of Tyrone Road at Flat Creek Trail
Fayette County, GA



Report Prepared For:
Fayette County

Report Prepared By:
Pond & Company
3500 Parkway Lane, Suite 500
Peachtree Corners, GA 30092
Telephone Number: (*678) 336-7740*
Date Report Prepared: May 2023

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1. INTRODUCTION

Pond has been tasked with developing recommendations, including appropriate intersection control, at the intersection of Tyrone Road at Flat Creek Trail, in order to improve operations, reduce delay, and reduce crash risk. This report documents this process, including crash analysis, volume development, capacity analysis, the utilization of the Georgia Department of Transportation's (GDOT) Intersection Control Evaluation (ICE) process, and recommendations at the intersection.

2. PROJECT BACKGROUND AND EXISTING CONDITIONS

2.1 Project Location

The study intersection is located within the Fayette County, Georgia north of GA-54. The location is presented in **Figures 2-1 and 2-2**.

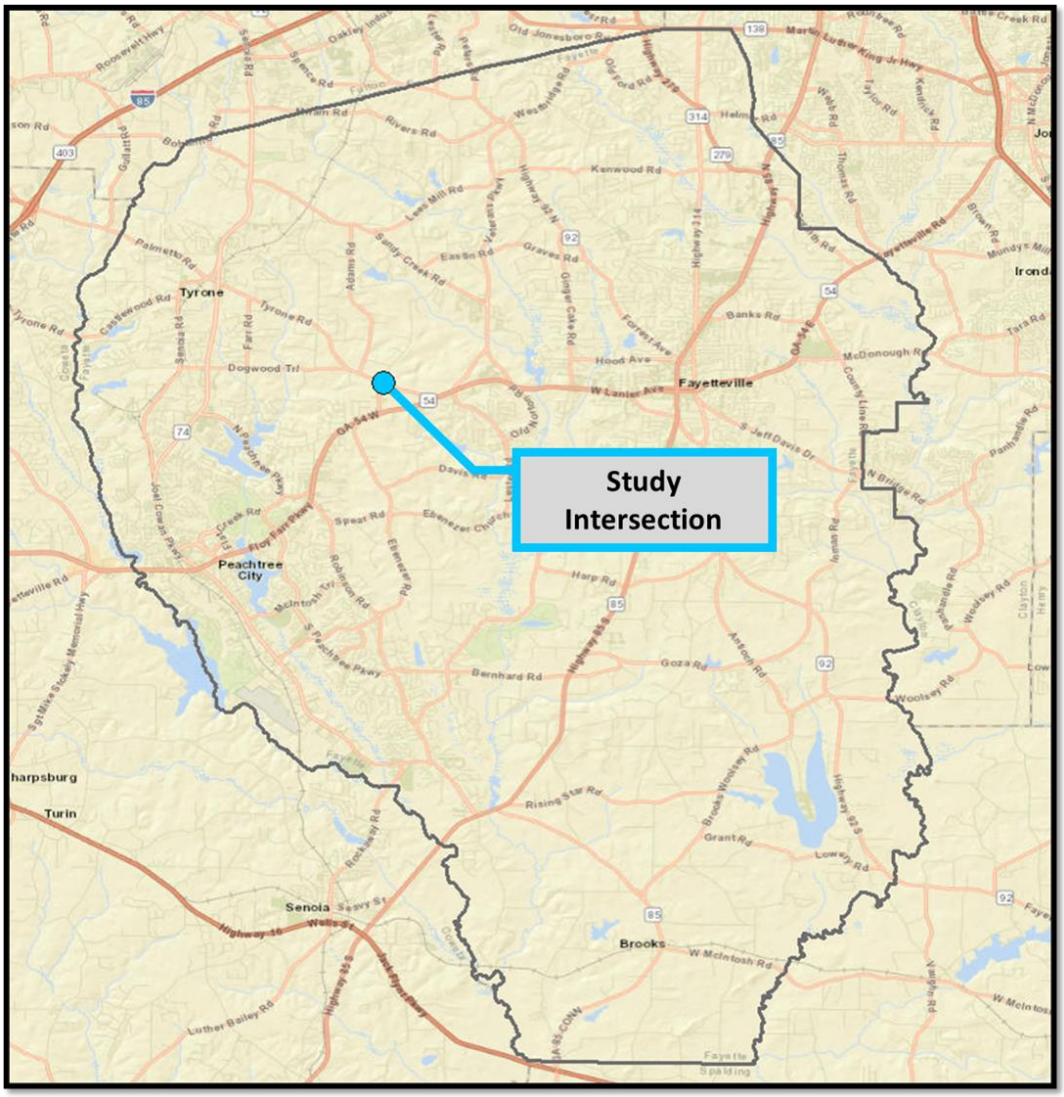


Figure 2-1: Project Location

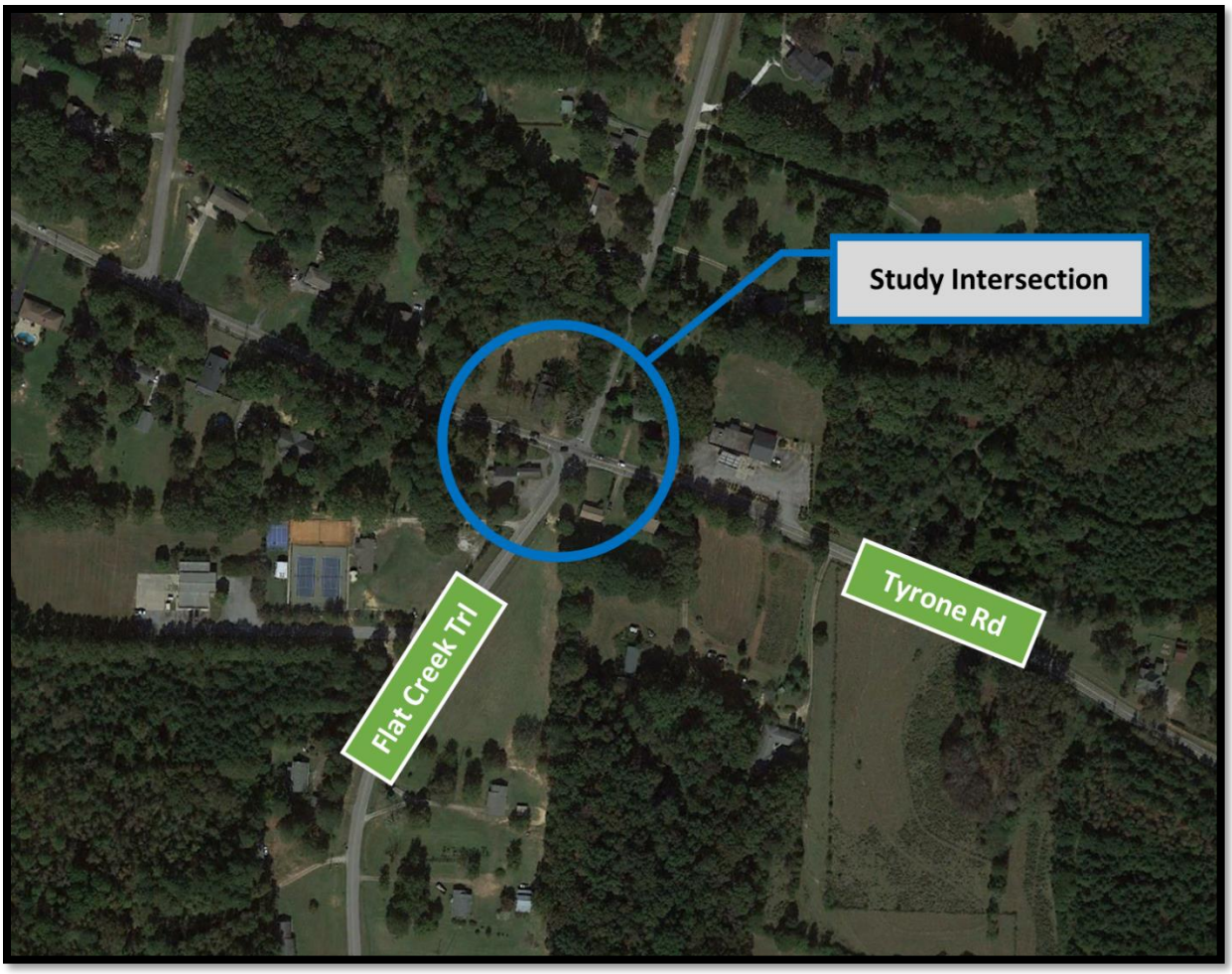


Figure 2-2: Study Intersection

2.2 Existing Transportation Facilities

This section provides a description of the existing roadways within the study area. The study intersection currently operates under all-way stop control, with Tyrone Road as the major street.

- **Tyrone Road**
  Tyrone Road is a two-lane undivided highway with an east/west orientation at the study intersection. The posted speed limit of the facility is 40 MPH. The roadway section is rural. GDOT classifies the roadway as a Minor Arterial. There are no bicycle or pedestrian facilities along either side of the facility. No turn lanes are present along the roadway at the study intersection.

- **Flat Creek Trail**
  Flat Creek Trail is a two-lane undivided roadway with a posted speed limit of 40 MPH. The roadway section is rural. GDOT classifies the roadway as a Local Road. There are no bicycle or pedestrian facilities along either side of the facility. No turn lanes are present along the roadway at the study intersection.

2.3 Traffic Volumes

Traffic count data was collected on Tuesday, April 12, 2022. The traffic count program consisted of (1) 12-HR (7:00 AM – 7:00 PM) Turning Movement Count (TMC) at the study intersection. The program also included (1) 24-HR ADT Volume Count along Tyrone Rd south of Arthur Court. Daily vehicular volumes along Tyrone Rd was recorded as 12,376 vehicles per day. Traffic count data is included in **Appendix A**.

2.4 Crash History

Crash data at the study intersection for the years 2017-2021 was extracted from GDOT's Numetric database. A summary of this data is presented in **Table 2-1**.

Crash Type	K (Fatality Crash)	A (Serious Injury Crash)	B (Visible Injury Crash)	C (Complaint Injury Crash)	O (PDO Crash)	Total	Percentage of Total Crashes
Angle (Other)	0	0	0	0	2	2	20.0%
Head On	0	0	0	0	0	0	0.0%
Left Angle Crash	0	0	0	0	3	3	30.0%
Not a Collision with Motor Vehicle	0	0	0	0	1	1	10.0%
Rear End	0	0	0	0	2	2	20.0%
Right Angle Crash	0	0	0	0	0	0	0.0%
Sideswipe-Opposite Direction	0	0	0	0	0	0	0.0%
Sideswipe-Same Direction	0	0	0	0	1	1	10.0%
Other/Unspecified	0	0	0	0	1	1	10.0%
Total	0	0	0	0	10	10	100.0%
Pedestrian Crashes	0	0	0	0	0	0	0.0%
Bicycle Crashes	0	0	0	0	0	0	0.0%
Commercial Vehicle Crashes	0	0	0	0	0	0	0.0%

Table 2-1: Summary of Crash History from Years 2017-2021

The most common manner of collision was the left angle crash, with rear end and other angle crashes as the second most frequent crash type(s). No fatality crashes, injury crashes, pedestrian crashes, bicycle crashes, or commercial vehicle crashes were observed at the study intersection.

2.5 Existing Conditions Capacity Analysis

Capacity analysis was performed utilizing collected traffic count data and existing roadway conditions in Synchro software with Highway Capacity Manual (HCM) 6th Edition Methodology. Capacity analysis evaluated traffic operations for weekday AM and PM peak hours, calculating delay and Level of Service (LOS). For an all way stop-controlled intersection, delay and LOS results total intersection are reported. Acceptable LOS is typically defined as LOS D or better. Existing conditions capacity analysis results are presented in **Table 2-2**. All capacity analysis outputs are included in **Appendix B**.

Existing Conditions			
AM		PM	
LOS	Delay, s	LOS	Delay, s
C	19.9	E	38.3

Table 2-2: Existing Conditions Capacity Analysis Results

The results demonstrate that in the PM peak hour, the intersection operates at LOS E and indicate the need for operational improvements at the study intersection.

2.6 Field Investigation

A field investigation was performed at the study intersection on Thursday, April 14, 2023 from 5:00 PM – 5:45 PM. Notable observations from the observation include:

- Westbound vehicles along Tyrone Rd experienced high delays, with a queue extending 890 feet from the stop bar.
- Heavy vehicles were observed approaching the intersection from both Tyrone Rd and Flat Creek Trl.
- Pavement is degraded in the southwest intersection quadrant.

Select photographs taken at the site are presented in **Figures 2-3**, **2-4, and 2-5**. Additional photographs are presented in **Appendix E**.



Figure 2-3: Westbound Queue along Tyrone Rd



Figure 2-4: Heavy Vehicle along Flat Creek Trl



Figure 2-4: Pavement in Southeast Intersection Quadrant

3. SIGNAL WARRANT ANALYSIS

In order to determine if the potential installation of a traffic signal at this location would be appropriate, a signal warrant analysis was performed. This process consisted of analyzing turning movement volumes over a 12-hour period to determine if any of the Manual on Uniform Traffic Control Devices (MUTCD) signal warrants were met. The warrants analyzed as a part of this study were:

- Warrant 1: 8-Hour Vehicular Volume
- Warrant 2: 4-Hour Vehicular Volume
- Warrant 3: Peak Hour Vehicular Volume

Weekday TMC data was utilized for this analysis. This analysis was performed with the northbound approach along Flat Creek Trail designated as the minor street and Tyrone Road designated as the major street. Northbound right turn volumes along Flat Creek Trail were included in the analysis as no right turn lane is currently present for the minor street approach.

3.1 Warrant 1, Eight-Hour Vehicular Volumes

Warrant 1 provides three separate conditions that can be met which indicate that the intersection being studied is suitable for a traffic signal. Condition A, the Minimum Vehicular Volume, is intended for locations where a large volume of intersecting traffic is the principal reason to consider a traffic signal. Condition B, the Interruption of Continuous Traffic, is intended for locations where Condition A is not satisfied, and where the traffic volume on the major street is so heavy that the traffic on the minor intersecting street suffers excessive delay or conflict in entering or crossing the major street. If neither Condition is met for a full eight hours of the day, then the volume thresholds for each condition can be reduced by 20% and the intersection can be reevaluated with these reduced volumes. This method of combining Conditions A and B with a 20% reduction should only be applied after adequate trial of other alternatives that could cause less delay and inconvenience to traffic have failed to solve traffic problems. **Figure 3-1** is an illustration from the MUTCD of the volume thresholds used with each Condition.

Condition A—Minimum Vehicular Volume

Number of lanes for moving traffic on each approach		Vehicles per hour on major street (total of both approaches)				Vehicles per hour on higher-volume minor-street approach (one direction only)			
Major Street	Minor Street	100%[a]	80%[b]	70%[c]	56%[d]	100%[a]	80%[b]	70%[c]	56%[d]
1	1	500	400	350	280	150	120	105	84
2 or more	1	600	480	420	336	150	120	105	84
2 or more	2 or more	600	480	420	336	200	160	140	112
1	2 or more	500	400	350	280	200	160	140	112

Condition B—Interruption of Continuous Traffic

Number of lanes for moving traffic on each approach		Vehicles per hour on major street (total of both approaches)				Vehicles per hour on higher-volume minor-street approach (one direction only)			
Major Street	Minor Street	100%[a]	80%[b]	70%[c]	56%[d]	100%[a]	80%[b]	70%[c]	56%[d]
1	1	750	600	525	420	75	60	53	42
2 or more	1	900	720	630	504	75	60	53	42
2 or more	2 or more	900	720	630	504	100	80	70	56
1	2 or more	750	600	525	420	100	80	70	56

[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
[d] May be used for combination of Conditions A and B after adequate trial of other remedial measures when the major-street speed exceeds 40 mph or in an isolated community with a population of less than 10,000

Figure 3-1: MUTCD Warrant 1 Volume Thresholds

Intersection volumes satisfy these criteria for 9 of the 8 required hours and utilizing the alternate method volumes satisfy the criteria for 0 out of 8 hours. Therefore, Warrant 1 is satisfied.

3.2 Warrant 2, Four-Hour Vehicular Volumes

Warrant 2 is applied where intersecting volume is the principal reason to install a signal. It provides a series of curves that should be used to evaluate the intersecting volume of major and minor streets. The selected curve is based on the number of lanes on each road. **Figure 3-2** below illustrates those curves and the corresponding X/Y coordinate system.

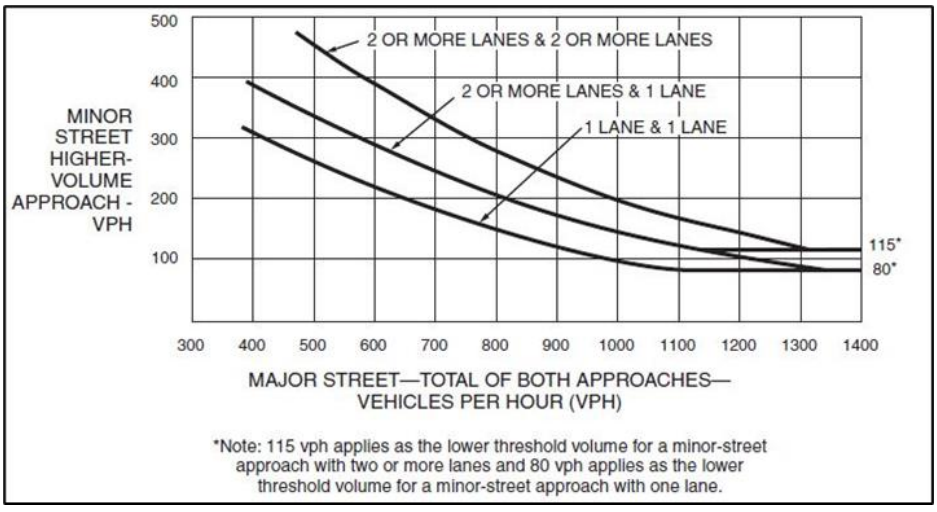


Figure 3-2: MUTCD Warrant 2 Volume Thresholds

Intersection volumes satisfy these criteria for 4 of the 4 required. Therefore, Warrant 2 is satisfied.

3.3 Warrant 3, Peak-Hour Vehicular Volumes

Warrant 3 is intended for use at locations where traffic conditions are such that for a minimum of one hour of an average day, the minor street suffers undue delay when entering or crossing the major street. It provides a series of curves that should be used to evaluate the intersecting volume of major and minor streets during a single peak hour of the day. The selected curve is based on the number of lanes on each road. **Figure 3-3** below illustrates those curves and the corresponding X/Y coordinate system.

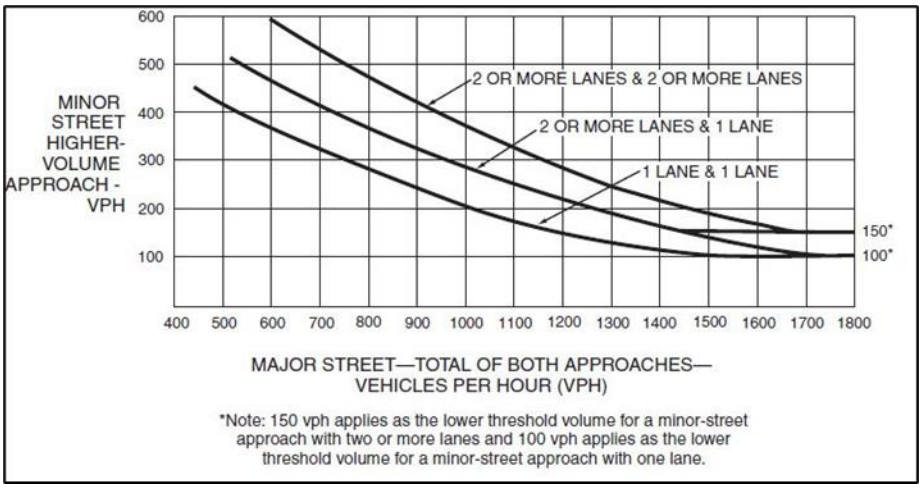


Figure 3-3: MUTCD Warrant 3 Volume Thresholds

Intersection volumes do not satisfy these criteria for any hour. Therefore, Warrant 3 is not satisfied.

3.4 Vehicular Warrant Analysis Summary

These warrants are based solely on vehicular volumes, using turning movement count data collected for this analysis. These warrants look at total intersecting volume and also consider difficulty that cars from the minor street may have crossing or turning into intersection traffic. Results from the signal warrant analysis are presented in **Table 3-1**. Signal warrant analysis spreadsheets are included in **Appendix C** on Page 64.

Warrant 1		Warrant 2		Warrant 3		Signal Warranted
Hours Met	Hours Required	Hours Met	Hours Required	Hours Met	Hours Required	
9	8	4	4	0	1	**YES**

Table 3-1: Signal Warrant Analysis Summary

The results of the signal warrant analysis demonstrate two of the three volume warrants were met. Therefore, a traffic signal is an appropriate alternative to consider for intersection control at this location.

4. VOLUME DEVELOPMENT

In order to evaluate traffic operations in future conditions, forecasting was performed. The forecasting process assumed an opening year of 2027 and a design year of 2047. Future traffic volumes were calculated by applying short-term and long-term annual growth rates to existing TMC data. Forecasted traffic volumes are included in **Appendix F**.

4.1 Short-Term Growth Rate

The short-term growth rate utilized in this study was determined from an analysis of historical traffic count data obtained from GDOT's TADA database. A compound annual growth rate was calculated from available count data at locations near the study intersection over a 15-year period, and the weighted average of these locations calculated as the historical growth rate. **Table 4-1** presents the historical growth rate calculation.

TC	Location	AADT															CAGR
		2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	
113-0178	Tyrone Rd N/O SR 54				8870				9679			11517				11189	2.39%
113-7204	Dogwood Trl E/O Tyrone Rd					3202				3834			3580				1.77%
113-0172	Ebenezer Rd S/O SR 54					3718				5177			4704				3.69%
														Weighted Average:			2.59%

Table 4-1: Historical Growth Rate Calculation

The historical growth rate was calculated to be 2.59%. This growth rate was applied to existing traffic count data to calculate 2027 traffic volumes.

4.2 Long Term Growth Rate

The long-term growth rate was calculated utilizing the Atlanta Regional Commission (ARC) Travel Demand Model (TDM). While historical growth trends are effective for forecasting short term traffic volume growth, the TDM includes future roadway and other mobility projects, future land use, demographic projections, and TDM outputs are typically more appropriate than historical trends for estimating long-term growth. The TDM growth rate was calculated by comparing study area volumes from 2020 and 2050 model scenarios. The calculation of the TDM growth rate is presented in **Table 4-2**.

Location	AADT		CAGR
	2020	2050	
Flat Creek Trl N/O Tyrone Rd	5166	8696	1.75%
Flat Creek Trl S/O Tyrone Rd	6745	8728	0.86%
Tyrone Rd E/O Flat Creek Trl	9988	12153	0.66%
Tyrone Rd W/O Flat Creek Trl	15490	18705	0.63%
Total			**0.86%**

Table 4-2: TDM Growth Rate Calculation

The TDM growth rate was calculated to be 0.86%. This growth rate was applied to calculated 2027 traffic volumes to determine 2047 traffic volumes.

4.3 Growth Rate Analysis Summary

The calculated short- and long-term growth rates, as well as the years of growth and resulting growth factor to be applied to existing and opening year volumes to calculate opening and design year volumes, respectively are presented in **Table 4-3**.

Period	CAGR	Years of Growth	Growth Factor
2022-2027 Growth (GDOT Historical Data)	2.59%	5	1.1365
2027-2047 Growth (ARC TDM)	0.86%	20	1.1858

Table 4-3: Traffic Forecasting Summary

4.4 DRI 3776

A Development of Regional Impact (DRI), DRI 3776—Trilith Expansion, Notice of Decision December 08, 2022, was identified that is expected to generate traffic affecting the study intersection. Generated AM and PM peak hour turning movements from the DRI at the study intersection were provided by Fayette County. These turning movements were added to opening and design year traffic volumes generated utilizing background growth in order to determine future volumes for analysis. DRI volume generation is included in **Appendix G**.

5. NO BUILD CAPACITY ANALYSIS

No build capacity analysis was performed utilizing forecasting count data and existing roadway conditions in Synchro software with Highway Capacity Manual (HCM) 6th Edition Methodology. Capacity analysis evaluated traffic operations for weekday AM and PM peak hours under opening and design year conditions, calculating delay and Level of Service (LOS). No build capacity analysis results are presented in **Table 5-1**.

No Build Conditions							
2027				2047			
AM		PM		AM		PM	
LOS	Delay, s	LOS	Delay, s	LOS	Delay, s	LOS	Delay, s
F	61.7	F	108.7	F	135.1	F	210.8

Table 5-1: No Build Conditions Capacity Analysis Results

The results indicate the intersection operates at LOS F in both peak hours of the opening and design years, with the PM peak hour of the opening year and both peak hours of the design year experiencing delay over twice the threshold for LOS F at stop-controlled intersections of 50 seconds. These results demonstrate a clear need for operational improvements at the study intersection.

6. INTERSECTION CONTROL EVALUATION

GDOT's Intersection Control Evaluation (ICE) process was utilized to determine the appropriate form of intersection control/operational improvements at this location to most effectively meet the operational and safety needs. This process includes Stage 1 and Stage 2. Stage 1 is a qualitative screening process in which feasible alternative intersection controls are selected for evaluation. Stage 2 of the process includes capacity analysis of each alternative in the AM and PM peak hours of the design year and evaluates intersection delay/volume to capacity, potential crash reduction, potential environmental impacts, and costs for each alternative selected in Stage 1 to calculate a score for each alternative. The highest scoring alternative is typically selected as the recommended control type.

6.1 Stage 1

Stage 1 of the ICE process is a screening of all potential intersection control configurations to select feasible alternatives for Stage 2 analysis. The alternatives selected for Stage 2 are listed below:

- Single Lane Roundabout
- Add Right Turn Lanes
- Traffic Signal (With Turn Lane Improvements)
- Traffic Signal (With No Turn Lane Improvements)

6.2 Stage 2

The alternatives selected in Stage 1 of the ICE process were analyzed in Stage 2 utilizing GDOT's ICE Tool. ICE Stage 2 requires capacity analysis of all alternatives in the design year. HMC 6th Edition methodology was utilized for unsignalized alternatives, while Synchro methodology was utilized to analyze signalized conditions. The results of this analysis are presented in **Table 6-1**.

Single Lane Roundabout				Add Right Turn Lanes				Traffic Signal (with Turn Lanes)				Traffic Signal (with no Turn Lanes)			
AM		PM		AM		PM		AM		PM		AM		PM	
LOS	Delay, s	LOS	Delay, s	LOS	Delay, s	LOS	Delay, s	LOS	Delay, s	LOS	Delay, s	LOS	Delay, s	LOS	Delay, s
B	11.9	B	14.3	F	76.2	F	160.3	B	14.3	B	17.1	C	22.7	C	24.9

Table 6-1: Stage 2 ICE Alternative Capacity Analysis Results

The Turn Lane Addition alternative results in failing LOS and is therefore not a desirable alternative. The final Stage 2 scores for each alternative are listed below:

- Single Lane Roundabout (6.4)
- Add Right Turn Lanes (2.3)
- Traffic Signal with Turn Lane Improvements (6.3)
- Traffic Signal with No Turn Lane Improvements (5.7)

The results of the ICE process lead to the selection of an single lane roundabout as the preferred alternative at the study intersection, with both traffic signal alternatives (with and without turn lane improvements) also scoring well and operating acceptably. The turn lane alternative, however operates at LOS F and therefore scores far lower than the other three alternatives. The signal and roundabout

alternatives result in acceptable traffic operations under design year conditions, as well as a significant reduction of crash risk relative to existing conditions. Crash Reduction Factors (CRFs) for alternatives are presented in **Table 6-2**.

	Alternative			
	Single Lane Roundabout	**Add Right Turn Lanes**	**Traffic Signal (with Turn Lanes)**	**Traffic Signal (with No Turn Lanes)**
Crash Reduction Factor (PDO)	-3%	20%	39%	28%
Crash Reduction Factor (Injury/Fatality)	88%	13%	40%	28%

Table 6-2: Stage 2 ICE Alternative Crash Reduction Factors

ICE outputs including further detail such as Stage 1 decision justification, crash reduction analysis, and costs are included in **Appendix D**. It is important to note that Stage 2 ICE analysis utilizes a cost estimation tool that may differ significantly from the actual project cost. While the results of the analysis performed in this study resulted in the selection of the roundabout as the preferred alternative, either traffic signal alternative would also result in acceptable conditions if impacts, costs, and schedule for a roundabout are determined to be to high for construction to be feasible.

7. BUILD CONDITIONS CAPACITY ANALYSIS

Build conditions capacity analysis was performed utilizing forecasting count data and preferred alternative roadway conditions in Synchro software with Highway Capacity Manual (HCM) 6th Edition Methodology. Capacity analysis evaluated traffic operations for weekday AM and PM peak hours under opening and design year conditions, calculating delay and Level of Service (LOS). Build capacity analysis results are presented in **Table 7-1**.

Build Conditions							
2027				2047			
AM		PM		AM		PM	
LOS	Delay, s	LOS	Delay, s	LOS	Delay, s	LOS	Delay, s
A	9.2	B	10.3	B	11.9	B	14.3

Table 7-1: Build Conditions Capacity Analysis Results

The results indicate that all approaches of the intersection operate at LOS B or better in both peak hours of the opening and design years under the preferred alternative conditions. Therefore, it can be concluded that the installation of an single lane roundabout will result in acceptable traffic operations and provide a significant delay reduction relative to no build conditions.

8. CONCLUSION AND RECOMMENDATIONS

The intersection of Tyrone Road at Flat Creek Trail operates at LOS E under existing conditions, and is expected to operate with delays at over twice the threshold for LOS F under no build conditions. As a result, it was determined that operational improvements are necessary at the intersection. GDOT's ICE process was utilized to determine the appropriate treatment at this intersection, which was found to be the installation of a single lane roundabout. Recommendations developed from this study are listed below:

- Install a single lane roundabout at the intersection of Tyrone Road and Flat Creek Trail OR Install a traffic signal with left turn lanes along all approaches and an eastbound right turn lane.
- If costs, impacts, and schedule for either alternative are determined to be unacceptable in the design process, consider installing a traffic signal with no turn lane improvements as an interim improvement.

Appendix

A. Traffic Count Data

B. Capacity Analysis Outputs

C. Signal Warrant Analysis

D. GDOT ICE Tool Outputs

E. Field Investigation Photographs

F. Traffic Volume Summary

G. DRI Generated Volumes

APPENDIX A

National Data & Surveying Services Intersection Turning Movement Count

Location: Flat Creek Trail & Tyrone Rd
City: Fayetteville
Control: 4-Way Stop

Project ID: 22-180062-001
Date: 4/12/2022

Data - Total

NS/EW Streets: Flat Creek Trail | Flat Creek Trail | Tyrone Rd | Tyrone Rd

AM

	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND								
	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0					
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL	EBA	WBA	MSA	NBA
7:00 AM	17	8	1	0	4	3	6	0	1	50	13	0	0	56	0	0	159	426	278	704	150
7:15 AM	33	9	2	0	1	7	1	0	2	77	20	0	1	67	2	0	222				
7:30 AM	31	12	0	0	2	9	6	0	3	108	12	0	1	75	1	0	260				
7:45 AM	31	6	0	0	1	16	6	0	2	101	37	0	0	74	1	0	275				
8:00 AM	32	12	0	0	4	16	9	0	9	94	39	0	0	72	0	0	287	531	308	839	172
8:15 AM	44	11	0	0	0	16	8	0	7	81	41	0	1	58	0	0	267				
8:30 AM	24	9	1	0	1	19	6	0	8	97	31	0	1	85	1	0	283				
8:45 AM	28	8	3	0	1	21	8	0	3	80	41	0	8	81	1	0	283				
9:00 AM	24	12	1	0	4	12	3	0	5	67	37	0	1	61	3	0	230	360	258	618	127
9:15 AM	22	11	2	0	2	9	5	0	2	48	27	0	1	61	0	0	190				
9:30 AM	23	5	1	0	3	8	3	0	7	54	17	0	0	59	3	0	183				
9:45 AM	21	4	1	0	2	12	3	0	0	72	24	0	2	66	1	0	208				
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL				
TOTAL VOLUMES :	330	107	12	0	25	148	64	0	49	929	339	0	16	815	13	0	2847				
APPROACH %'s :	73.50%	23.83%	2.67%	0.00%	10.55%	62.45%	27.00%	0.00%	3.72%	70.54%	25.74%	0.00%	1.90%	96.56%	1.54%	0.00%					
PEAK HR :	08:00 AM - 09:00 AM																TOTAL				
PEAK HR VOL :	128	40	4	0	6	72	31	0	27	352	152	0	10	296	2	0	1120				
PEAK HR FACTOR :	0.727	0.833	0.333	0.000	0.375	0.857	0.861	0.000	0.750	0.907	0.927	0.000	0.313	0.871	0.500	0.000	0.976				
	0.782				0.908				0.935				0.856								

NOON

	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND								
	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0					
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL				
10:00 AM	27	6	2	0	2	5	2	0	3	68	21	0	2	56	1	0	195	339	252	591	117
10:15 AM	20	6	0	0	1	3	2	0	3	47	19	0	1	73	1	0	176				
10:30 AM	21	8	1	0	0	9	4	0	3	58	28	0	0	68	0	0	200				
10:45 AM	18	7	1	0	2	14	1	0	2	71	16	0	1	48	1	0	182				
11:00 AM	19	4	2	0	1	8	5	0	6	54	34	0	1	58	0	0	192	343	250	593	121
11:15 AM	27	6	0	0	1	10	4	0	3	61	23	0	1	57	1	0	194				
11:30 AM	17	9	0	0	2	5	6	0	2	45	20	0	1	71	2	0	180				
11:45 AM	26	8	3	0	0	8	0	0	4	65	26	0	4	53	1	0	198				
12:00 PM	26	12	4	0	1	6	5	0	3	52	19	0	1	69	0	0	198	345	228	573	147
12:15 PM	27	4	3	0	0	6	8	0	4	70	16	0	0	51	0	0	189				
12:30 PM	20	4	1	0	0	11	3	0	5	76	19	0	0	43	1	0	183				
12:45 PM	36	8	2	0	0	17	6	0	8	56	17	0	2	59	2	0	213				
1:00 PM	18	10	1	0	0	9	5	0	2	62	28	0	1	62	3	0	201	372	273	645	134
1:15 PM	28	8	0	0	1	6	5	0	10	61	25	0	0	68	1	0	213				
1:30 PM	26	5	2	0	2	11	3	0	7	63	27	0	1	75	0	0	222				
1:45 PM	28	6	2	0	2	23	7	0	6	60	21	0	1	60	1	0	217				
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL				
TOTAL VOLUMES :	384	111	24	0	15	151	66	0	71	969	359	0	17	971	15	0	3153				
APPROACH %'s :	73.99%	21.39%	4.62%	0.00%	6.47%	65.09%	28.45%	0.00%	5.08%	69.26%	25.66%	0.00%	1.69%	96.81%	1.50%	0.00%					
PEAK HR :	01:00 PM - 02:00 PM																TOTAL				
PEAK HR VOL :	100	29	5	0	5	49	20	0	25	246	101	0	3	265	5	0	853				
PEAK HR FACTOR :	0.893	0.725	0.625	0.000	0.625	0.533	0.714	0.000	0.625	0.976	0.902	0.000	0.750	0.883	0.417	0.000	0.961				
	0.931				0.578				0.959				0.898								

PM

	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND								
	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0					
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL				
2:00 PM	21	9	0	0	1	10	4	0	2	75	22	0	2	74	1	0	221	423	324	747	143
2:15 PM	26	3	0	0	1	12	4	0	2	61	28	0	1	78	5	0	221				
2:30 PM	33	6	1	0	3	8	5	0	6	79	28	0	1	78	2	0	250				
2:45 PM	36	8	0	0	1	8	6	0	8	82	30	0	3	79	0	0	261				
3:00 PM	22	9	2	0	4	9	2	0	6	66	39	0	2	85	3	0	249	472	398	870	177
3:15 PM	37	18	2	0	0	12	7	0	6	71	34	0	1	94	1	0	283				
3:30 PM	38	4	3	0	0	13	7	0	3	82	45	0	1	101	2	0	299				
3:45 PM	34	8	0	0	0	20	10	0	7	72	41	0	1	106	1	0	300				
4:00 PM	34	7	1	0	1	11	3	0	2	72	32	0	1	103	1	0	268	496	449	945	188
4:15 PM	37	14	1	0	1	14	3	0	6	79	45	0	1	104	3	0	308				
4:30 PM	43	10	2	0	1	17	11	0	4	87	32	0	0	113	1	0	321				
4:45 PM	31	6	2	0	0	17	7	0	5	91	41	0	2	120	0	0	322				
5:00 PM	48	20	3	0	3	22	5	0	4	80	42	0	0	95	0	0	322	511	405	916	223
5:15 PM	42	18	5	0	5	16	9	0	4	90	38	0	1	118	1	0	347				
5:30 PM	29	18	4	0	2	21	10	0	5	95	28	0	1	89	3	0	305				
5:45 PM	17	16	3	0	3	21	9	0	3	82	40	0	0	95	2	0	291				
6:00 PM	18	9	0	0	0	8	15	0	3	61	21	0	2	62	0	0	199	385	241	626	121
6:15 PM	22	11	2	0	3	15	6	0	7	68	33	0	1	64	2	0	234				
6:30 PM	27	4	2	0	0	10	5	0	7	66	32	0	2	59	2	0	216				
6:45 PM	14	9	3	0	3	11	14	0	1	55	31	0	2	45	0	0	188				
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL				
TOTAL VOLUMES :	609	207	36	0	32	275	142	0	91	1514	682	0	25	1762	30	0	5405				
APPROACH %'s :	71.48%	24.30%	4.23%	0.00%	7.13%	61.25%	31.63%	0.00%	3.98%	66.20%	29.82%	0.00%	1.38%	96.97%	1.65%	0.00%					
PEAK HR :	04:30 PM - 05:30 PM																TOTAL				
PEAK HR VOL :	164	54	12	0	9	72	32	0	17	348	153	0	3	446	2	0	1312				
PEAK HR FACTOR :	0.854	0.675	0.600	0.000	0.450	0.818	0.727	0.000	0.850	0.956	0.911	0.000	0.375	0.929	0.500	0.000	0.945				
	0.810				0.942				0.945				0.924								

National Data & Surveying Services Intersection Turning Movement Count

Location: Flat Creek Trail & Tyrone Rd
City: Fayetteville
Control: 4-Way Stop

Project ID: 22-180062-001
Date: 4/12/2022

Data - Cars

NS/EW Streets:	Flat Creek Trail				Flat Creek Trail				Tyrone Rd				Tyrone Rd				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	17	8	1	0	2	3	6	0	1	47	13	0	0	50	0	0	148
7:15 AM	33	9	2	0	1	7	1	0	2	74	19	0	1	60	2	0	211
7:30 AM	30	11	0	0	2	9	6	0	3	108	12	0	1	71	1	0	254
7:45 AM	30	6	0	0	1	16	6	0	2	95	35	0	0	70	1	0	262
8:00 AM	32	12	0	0	3	16	8	0	9	91	35	0	0	69	0	0	275
8:15 AM	42	8	0	0	0	15	8	0	6	78	34	0	1	53	0	0	245
8:30 AM	22	9	1	0	1	19	6	0	8	95	29	0	1	82	1	0	274
8:45 AM	27	8	2	0	1	20	7	0	3	69	35	0	8	74	1	0	255
9:00 AM	23	12	1	0	4	12	3	0	5	63	33	0	1	56	3	0	216
9:15 AM	19	11	2	0	2	9	5	0	2	42	26	0	1	56	0	0	175
9:30 AM	21	5	1	0	3	7	3	0	7	51	16	0	0	56	3	0	173
9:45 AM	18	3	1	0	2	12	1	0	0	63	21	0	2	64	1	0	188
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	314	102	11	0	22	145	60	0	48	876	308	0	16	761	13	0	2676
APPROACH %'s :	73.54%	23.89%	2.58%	0.00%	9.69%	63.88%	26.43%	0.00%	3.90%	71.10%	25.00%	0.00%	2.03%	96.33%	1.65%	0.00%	
PEAK HR :	08:00 AM - 09:00 AM																TOTAL
PEAK HR VOL :	123	37	3	0	5	70	29	0	26	333	133	0	10	278	2	0	1049
PEAK HR FACTOR :	0.732	0.771	0.375	0.000	0.417	0.875	0.906	0.000	0.722	0.876	0.950	0.000	0.313	0.848	0.500	0.000	0.954
		0.815				0.929				0.911				0.863			

NOON	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
10:00 AM	25	6	2	0	2	5	1	0	3	64	19	0	1	53	1	0	182
10:15 AM	18	6	0	0	1	3	2	0	2	43	18	0	1	71	1	0	166
10:30 AM	20	8	1	0	0	9	4	0	3	55	26	0	0	65	0	0	191
10:45 AM	16	7	0	0	2	14	1	0	2	68	14	0	1	46	1	0	172
11:00 AM	17	4	2	0	1	8	5	0	6	45	31	0	1	53	0	0	173
11:15 AM	24	6	0	0	1	10	3	0	3	55	23	0	1	51	1	0	178
11:30 AM	16	8	0	0	2	5	5	0	2	44	19	0	1	67	1	0	170
11:45 AM	25	8	3	0	0	8	0	0	4	64	24	0	3	51	0	0	190
12:00 PM	23	12	4	0	1	6	5	0	2	47	19	0	0	68	0	0	187
12:15 PM	26	4	3	0	0	5	8	0	4	68	15	0	0	49	0	0	182
12:30 PM	19	4	1	0	0	11	3	0	4	76	14	0	0	41	1	0	174
12:45 PM	35	8	2	0	0	17	6	0	6	52	15	0	2	56	2	0	201
1:00 PM	17	10	1	0	0	9	4	0	2	59	25	0	1	58	3	0	189
1:15 PM	27	7	0	0	0	6	5	0	10	58	24	0	0	61	0	0	198
1:30 PM	26	5	2	0	2	11	2	0	6	56	26	0	1	69	0	0	206
1:45 PM	28	6	1	0	2	22	6	0	6	58	21	0	1	56	1	0	208
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	362	109	22	0	14	149	60	0	65	912	333	0	14	915	12	0	2967
APPROACH %'s :	73.43%	22.11%	4.46%	0.00%	6.28%	66.82%	26.91%	0.00%	4.96%	69.62%	25.42%	0.00%	1.49%	97.24%	1.28%	0.00%	
PEAK HR :	01:00 PM - 02:00 PM																TOTAL
PEAK HR VOL :	98	28	4	0	4	48	17	0	24	231	96	0	3	244	4	0	801
PEAK HR FACTOR :	0.875	0.700	0.500	0.000	0.500	0.545	0.708	0.000	0.600	0.979	0.923	0.000	0.750	0.884	0.333	0.000	0.963
		0.929				0.575				0.954				0.896			

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
2:00 PM	20	9	0	0	1	10	4	0	2	66	22	0	1	73	1	0	209
2:15 PM	25	3	0	0	0	12	4	0	1	55	27	0	1	75	3	0	206
2:30 PM	29	5	1	0	3	8	5	0	5	73	27	0	0	73	2	0	231
2:45 PM	34	8	0	0	1	7	6	0	7	79	30	0	2	73	0	0	247
3:00 PM	22	9	2	0	3	9	2	0	6	64	37	0	2	80	3	0	239
3:15 PM	34	17	2	0	0	11	7	0	6	68	32	0	1	92	1	0	271
3:30 PM	36	4	3	0	0	13	7	0	3	80	43	0	1	99	2	0	291
3:45 PM	34	6	0	0	0	20	10	0	7	70	41	0	1	103	1	0	293
4:00 PM	33	7	1	0	1	10	2	0	2	65	31	0	1	99	1	0	253
4:15 PM	35	13	1	0	1	13	3	0	6	76	44	0	1	100	2	0	295
4:30 PM	41	9	2	0	1	17	11	0	4	83	32	0	0	109	1	0	310
4:45 PM	30	6	2	0	0	17	7	0	5	89	41	0	2	116	0	0	315
5:00 PM	48	20	3	0	3	22	5	0	3	77	41	0	0	92	0	0	314
5:15 PM	42	17	5	0	5	15	9	0	4	88	37	0	1	118	1	0	342
5:30 PM	28	18	4	0	2	21	10	0	5	94	27	0	1	87	3	0	300
5:45 PM	17	16	2	0	3	21	8	0	3	79	40	0	0	93	1	0	283
6:00 PM	18	9	0	0	0	8	15	0	3	60	20	0	2	61	0	0	196
6:15 PM	22	11	2	0	3	15	6	0	7	67	33	0	1	61	2	0	230
6:30 PM	26	4	2	0	0	10	5	0	7	64	32	0	2	58	2	0	212
6:45 PM	14	9	3	0	3	11	14	0	1	52	31	0	2	43	0	0	183
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	588	200	35	0	30	270	140	0	87	1449	668	0	22	1705	26	0	5220
APPROACH %'s :	71.45%	24.30%	4.25%	0.00%	6.82%	61.36%	31.82%	0.00%	3.95%	65.74%	30.31%	0.00%	1.25%	97.26%	1.48%	0.00%	
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	161	52	12	0	9	71	32	0	16	337	151	0	3	435	2	0	1281
PEAK HR FACTOR :	0.839	0.650	0.600	0.000	0.450	0.807	0.727	0.000	0.800	0.947	0.921	0.000	0.375	0.922	0.500	0.000	0.936
		0.792				0.933				0.933				0.917			

National Data & Surveying Services Intersection Turning Movement Count

Location: Flat Creek Trail & Tyrone Rd
City: Fayetteville
Control: 4-Way Stop

Project ID: 22-180062-001
Date: 4/12/2022

Data - HT

AM

NS/EW Streets:	Flat Creek Trail				Flat Creek Trail				Tyrone Rd				Tyrone Rd				
	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	0	0	0	2	0	0	0	0	3	0	0	0	6	0	0	11
7:15 AM	0	0	0	0	0	0	0	0	0	3	1	0	0	7	0	0	11
7:30 AM	1	1	0	0	0	0	0	0	0	0	0	0	0	4	0	0	6
7:45 AM	1	0	0	0	0	0	0	0	0	6	2	0	0	4	0	0	13
8:00 AM	0	0	0	0	1	0	1	0	0	3	4	0	0	3	0	0	12
8:15 AM	2	3	0	0	0	1	0	0	1	3	7	0	0	5	0	0	22
8:30 AM	2	0	0	0	0	0	0	0	0	2	2	0	0	3	0	0	9
8:45 AM	1	0	1	0	0	1	1	0	0	11	6	0	0	7	0	0	28
9:00 AM	1	0	0	0	0	0	0	0	0	4	4	0	0	5	0	0	14
9:15 AM	3	0	0	0	0	0	0	0	0	6	1	0	0	5	0	0	15
9:30 AM	2	0	0	0	0	1	0	0	0	3	1	0	0	3	0	0	10
9:45 AM	3	1	0	0	0	0	2	0	0	9	3	0	0	2	0	0	20
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	16	5	1	0	3	3	4	0	1	53	31	0	0	54	0	0	171
APPROACH %'s :	72.73%	22.73%	4.55%	0.00%	30.00%	30.00%	40.00%	0.00%	1.18%	62.35%	36.47%	0.00%	0.00%	100.00%	0.00%	0.00%	
PEAK HR :	08:00 AM - 09:00 AM																TOTAL
PEAK HR VOL :	5	3	1	0	1	2	2	0	1	19	19	0	0	18	0	0	71
PEAK HR FACTOR :	0.625	0.250	0.250	0.000	0.250	0.500	0.500	0.000	0.250	0.432	0.679	0.000	0.000	0.643	0.000	0.000	0.634
	0.450				0.625				0.574				0.643				

NOON

	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
10:00 AM	2	0	0	0	0	0	1	0	0	4	2	0	1	3	0	0	13
10:15 AM	2	0	0	0	0	0	0	0	1	4	1	0	0	2	0	0	10
10:30 AM	1	0	0	0	0	0	0	0	0	3	2	0	0	3	0	0	9
10:45 AM	2	0	1	0	0	0	0	0	0	3	2	0	0	2	0	0	10
11:00 AM	2	0	0	0	0	0	0	0	0	9	3	0	0	5	0	0	19
11:15 AM	3	0	0	0	0	0	1	0	0	6	0	0	0	6	0	0	16
11:30 AM	1	1	0	0	0	0	1	0	0	1	1	0	0	4	1	0	10
11:45 AM	1	0	0	0	0	0	0	0	0	1	2	0	1	2	1	0	8
12:00 PM	3	0	0	0	0	0	0	0	1	5	0	0	1	1	0	0	11
12:15 PM	1	0	0	0	0	1	0	0	0	2	1	0	0	2	0	0	7
12:30 PM	1	0	0	0	0	0	0	0	1	0	5	0	0	2	0	0	9
12:45 PM	1	0	0	0	0	0	0	0	2	4	2	0	0	3	0	0	12
1:00 PM	1	0	0	0	0	0	1	0	0	3	3	0	0	4	0	0	12
1:15 PM	1	1	0	0	1	0	0	0	0	3	1	0	0	7	1	0	15
1:30 PM	0	0	0	0	0	0	1	0	1	7	1	0	0	6	0	0	16
1:45 PM	0	0	1	0	0	1	1	0	0	2	0	0	0	4	0	0	9
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	22	2	2	0	1	2	6	0	6	57	26	0	3	56	3	0	186
APPROACH %'s :	84.62%	7.69%	7.69%	0.00%	11.11%	22.22%	66.67%	0.00%	6.74%	64.04%	29.21%	0.00%	4.84%	90.32%	4.84%	0.00%	
PEAK HR :	01:00 PM - 02:00 PM																TOTAL
PEAK HR VOL :	2	1	1	0	1	1	3	0	1	15	5	0	0	21	1	0	52
PEAK HR FACTOR :	0.500	0.250	0.250	0.000	0.250	0.250	0.750	0.000	0.250	0.536	0.417	0.000	0.000	0.750	0.250	0.000	0.813
	0.500				0.625				0.583				0.688				

PM

	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
2:00 PM	1	0	0	0	0	0	0	0	0	9	0	0	1	1	0	0	12
2:15 PM	1	0	0	0	1	0	0	0	1	6	1	0	0	3	2	0	15
2:30 PM	4	1	0	0	0	0	0	0	1	6	1	0	1	5	0	0	19
2:45 PM	2	0	0	0	0	1	0	0	1	3	0	0	1	6	0	0	14
3:00 PM	0	0	0	0	1	0	0	0	0	2	2	0	0	5	0	0	10
3:15 PM	3	1	0	0	0	1	0	0	0	3	2	0	0	2	0	0	12
3:30 PM	2	0	0	0	0	0	0	0	0	2	2	0	0	2	0	0	8
3:45 PM	0	2	0	0	0	0	0	0	0	2	0	0	0	3	0	0	7
4:00 PM	1	0	0	0	0	1	1	0	0	7	1	0	0	4	0	0	15
4:15 PM	2	1	0	0	0	1	0	0	0	3	1	0	0	4	1	0	13
4:30 PM	2	1	0	0	0	0	0	0	0	4	0	0	0	4	0	0	11
4:45 PM	1	0	0	0	0	0	0	0	0	2	0	0	0	4	0	0	7
5:00 PM	0	0	0	0	0	0	0	0	1	3	1	0	0	3	0	0	8
5:15 PM	0	1	0	0	0	1	0	0	0	2	1	0	0	0	0	0	5
5:30 PM	1	0	0	0	0	0	0	0	0	1	1	0	0	2	0	0	5
5:45 PM	0	0	1	0	0	0	1	0	0	3	0	0	0	2	1	0	8
6:00 PM	0	0	0	0	0	0	0	0	0	1	1	0	0	1	0	0	3
6:15 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	3	0	0	4
6:30 PM	1	0	0	0	0	0	0	0	0	2	0	0	0	1	0	0	4
6:45 PM	0	0	0	0	0	0	0	0	0	3	0	0	0	2	0	0	5
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	21	7	1	0	2	5	2	0	4	65	14	0	3	57	4	0	185
APPROACH %'s :	72.41%	24.14%	3.45%	0.00%	22.22%	55.56%	22.22%	0.00%	4.82%	78.31%	16.87%	0.00%	4.69%	89.06%	6.25%	0.00%	
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	3	2	0	0	0	1	0	0	1	11	2	0	0	11	0	0	31
PEAK HR FACTOR :	0.375	0.500	0.000	0.000	0.000	0.250	0.000	0.000	0.250	0.688	0.500	0.000	0.000	0.688	0.000	0.000	0.705
	0.417				0.250				0.700				0.688				

National Data & Surveying Services Intersection Turning Movement Count

Location: Flat Creek Trail & Tyrone Rd
City: Fayetteville
Control: 4-Way Stop

Project ID: 22-180062-001
Date: 4/12/2022

Data - Bikes

NS/EW Streets: Flat Creek Trail | Flat Creek Trail | Tyrone Rd | Tyrone Rd

AM

	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
APPROACH %'s :																	
PEAK HR :	08:00 AM - 09:00 AM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	

NOON

	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	2
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:30 PM	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
1:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	1	1	0	0	0	1	0	0	3
APPROACH %'s :									50.00%	50.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	
PEAK HR :	01:00 PM - 02:00 PM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250
										0.250							

PM

	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:00 PM	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
6:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
APPROACH %'s :									100.00%	0.00%	0.00%	0.00%					
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	

National Data & Surveying Services Intersection Turning Movement Count

Location: Flat Creek Trail & Tyrone Rd
City: Fayetteville
Project ID: 22-180062-001
Date: 4/12/2022

Data - Pedestrians (Crosswalks)

NS/EW Streets:	Flat Creek Trail		Flat Creek Trail		Tyrone Rd		Tyrone Rd		
AM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
7:00 AM	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0
9:00 AM	0	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0	0
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0
APPROACH %'s :									
PEAK HR :	08:00 AM - 09:00 AM								TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0
PEAK HR FACTOR :									

NOON	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
10:00 AM	0	0	0	0	0	0	0	0	0
10:15 AM	0	0	0	0	0	0	0	0	0
10:30 AM	0	0	0	0	0	0	0	0	0
10:45 AM	0	0	0	0	0	0	0	0	0
11:00 AM	0	0	0	0	0	0	0	0	0
11:15 AM	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	0	0	0	0
12:00 PM	0	0	0	0	0	0	0	0	0
12:15 PM	0	0	0	0	0	0	0	0	0
12:30 PM	0	0	0	0	0	0	0	0	0
12:45 PM	0	0	0	0	0	0	0	0	0
1:00 PM	0	0	0	0	0	0	0	0	0
1:15 PM	0	0	0	0	0	0	0	0	0
1:30 PM	0	0	0	0	0	0	0	0	0
1:45 PM	0	0	0	0	0	0	0	0	0
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0
APPROACH %'s :									
PEAK HR :	01:00 PM - 02:00 PM								TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0
PEAK HR FACTOR :									

PM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
2:00 PM	0	0	0	0	0	0	0	0	0
2:15 PM	0	0	0	0	0	0	0	0	0
2:30 PM	0	0	0	0	0	0	0	0	0
2:45 PM	0	0	0	0	0	0	0	0	0
3:00 PM	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0
4:00 PM	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0
6:00 PM	0	0	0	0	0	0	0	0	0
6:15 PM	0	0	0	0	0	0	0	0	0
6:30 PM	0	0	0	0	0	0	0	0	0
6:45 PM	0	0	0	0	0	0	0	0	0
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0
APPROACH %'s :									
PEAK HR :	04:30 PM - 05:30 PM								TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0
PEAK HR FACTOR :									

Prepared by National Data & Surveying Services

Flat Creek Trail & Tyrone Rd

Peak Hour Turning Movement Count

ID: 22-180062-001
City: Fayetteville

Day: Tuesday
Date: 4/12/2022

PEAK HOURS

AM	08:00 AM - 09:00 AM
NOON	01:00 PM - 02:00 PM
PM	04:30 PM - 05:30 PM

COUNT PERIODS

AM	7:00 AM - 10:00 AM
NOON	10:00 AM - 02:00 PM
PM	2:00 PM - 07:00 PM

SOUTHBOUND — Flat Creek Trail

AM	31	72	6	0	69	AM
NOON	20	49	5	0	59	NOON
PM	32	72	9	0	73	PM

EASTBOUND — Tyrone Rd

AM	NOON	PM		
455	385	642	⇦	
0	0	0	↶	0
27	25	17	↰	0
352	246	348	→	1
152	101	153	↱	0
AM	NOON	PM		

WESTBOUND — Tyrone Rd

PM	NOON	AM		
2	5	2	↷	0
446	265	296	←	1
3	3	10	↶	0
0	0	0	↷	0
369	256	362	⇨	
PM	NOON	AM		

NORTHBOUND — Flat Creek Trail

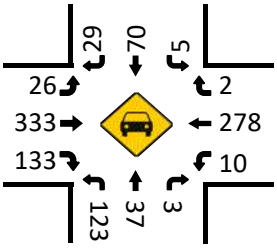
PM	228	0	164	54	12	PM
NOON	153	0	100	29	5	NOON
AM	234	0	128	40	4	AM

0 1 0 0 — 0 0 1 0

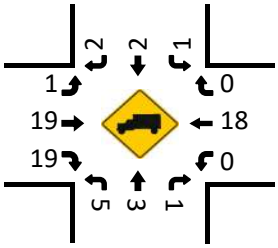
CONTROL: 4-Way Stop

TEV	1120 AM	853 NOON	1312 PM
PHF	0.98	0.96	0.95

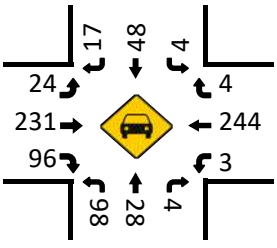
Cars (AM)



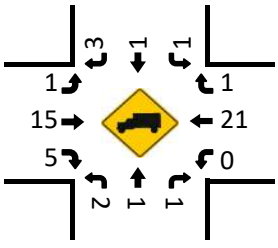
HT (AM)



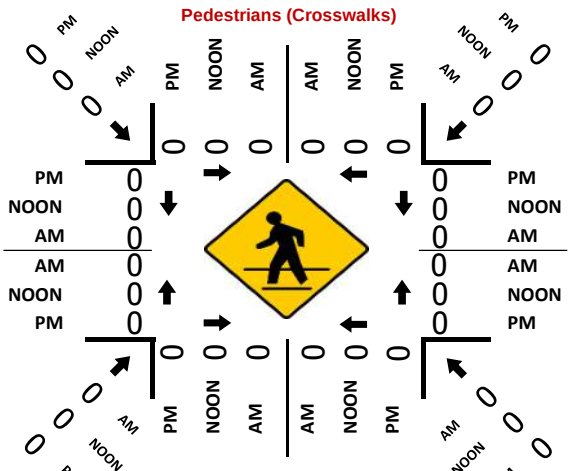
Cars (NOON)



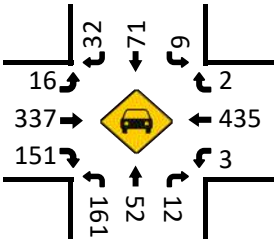
HT (NOON)



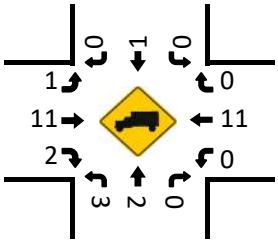
Pedestrians (Crosswalks)



Cars (PM)



HT (PM)



Project ID: 22-180062-001
Location: Flat Creek Trail & Tyrone Rd
City: Fayetteville

Day: Tuesday
Date: 4/12/2022

Groups Printed - Cars, PU, Vans - Heavy Trucks

	Flat Creek Trail Northbound						Flat Creek Trail Southbound						Tyrone Rd Eastbound						Tyrone Rd Westbound						
Start Time	Left	Thru	Rgt	Uturn	Peds	App. Total	Left	Thru	Rgt	Uturn	Peds	App. Total	Left	Thru	Rgt	Uturn	Peds	App. Total	Left	Thru	Rgt	Uturn	Peds	App. Total	Int. Total
7:00 AM	17	8	1	0	0	26	4	3	6	0	0	13	1	50	13	0	0	64	0	56	0	0	0	56	159
7:15 AM	33	9	2	0	0	44	1	7	1	0	0	9	2	77	20	0	0	99	1	67	2	0	0	70	222
7:30 AM	31	12	0	0	0	43	2	9	6	0	0	17	3	108	12	0	0	123	1	75	1	0	0	77	260
7:45 AM	31	6	0	0	0	37	1	16	6	0	0	23	2	101	37	0	0	140	0	74	1	0	0	75	275
Total	112	35	3	0	0	150	8	35	19	0	0	62	8	336	82	0	0	426	2	272	4	0	0	278	916
8:00 AM	32	12	0	0	0	44	4	16	9	0	0	29	9	94	39	0	0	142	0	72	0	0	0	72	287
8:15 AM	44	11	0	0	0	55	0	16	8	0	0	24	7	81	41	0	0	129	1	58	0	0	0	59	267
8:30 AM	24	9	1	0	0	34	1	19	6	0	0	26	8	97	31	0	0	136	1	85	1	0	0	87	283
8:45 AM	28	8	3	0	0	39	1	21	8	0	0	30	3	80	41	0	0	124	8	81	1	0	0	90	283
Total	128	40	4	0	0	172	6	72	31	0	0	109	27	352	152	0	0	531	10	296	2	0	0	308	1120
9:00 AM	24	12	1	0	0	37	4	12	3	0	0	19	5	67	37	0	0	109	1	61	3	0	0	65	230
9:15 AM	22	11	2	0	0	35	2	9	5	0	0	16	2	48	27	0	0	77	1	61	0	0	0	62	190
9:30 AM	23	5	1	0	0	29	3	8	3	0	0	14	7	54	17	0	0	78	0	59	3	0	0	62	183
9:45 AM	21	4	1	0	0	26	2	12	3	0	0	17	0	72	24	0	0	96	2	66	1	0	0	69	208
Total	90	32	5	0	0	127	11	41	14	0	0	66	14	241	105	0	0	360	4	247	7	0	0	258	811
BREAK																									
10:00 AM	27	6	2	0	0	35	2	5	2	0	0	9	3	68	21	0	0	92	2	56	1	0	0	59	195
10:15 AM	20	6	0	0	0	26	1	3	2	0	0	6	3	47	19	0	0	69	1	73	1	0	0	75	176
10:30 AM	21	8	1	0	0	30	0	9	4	0	0	13	3	58	28	0	0	89	0	68	0	0	0	68	200
10:45 AM	18	7	1	0	0	26	2	14	1	0	0	17	2	71	16	0	0	89	1	48	1	0	0	50	182
Total	86	27	4	0	0	117	5	31	9	0	0	45	11	244	84	0	0	339	4	245	3	0	0	252	753
11:00 AM	19	4	2	0	0	25	1	8	5	0	0	14	6	54	34	0	0	94	1	58	0	0	0	59	192
11:15 AM	27	6	0	0	0	33	1	10	4	0	0	15	3	61	23	0	0	87	1	57	1	0	0	59	194
11:30 AM	17	9	0	0	0	26	2	5	6	0	0	13	2	45	20	0	0	67	1	71	2	0	0	74	180
11:45 AM	26	8	3	0	0	37	0	8	0	0	0	8	4	65	26	0	0	95	4	53	1	0	0	58	198
Total	89	27	5	0	0	121	4	31	15	0	0	50	15	225	103	0	0	343	7	239	4	0	0	250	764
12:00 PM	26	12	4	0	0	42	1	6	5	0	0	12	3	52	19	0	0	74	1	69	0	0	0	70	198
12:15 PM	27	4	3	0	0	34	0	6	8	0	0	14	4	70	16	0	0	90	0	51	0	0	0	51	189
12:30 PM	20	4	1	0	0	25	0	11	3	0	0	14	5	76	19	0	0	100	0	43	1	0	0	44	183
12:45 PM	36	8	2	0	0	46	0	17	6	0	0	23	8	56	17	0	0	81	2	59	2	0	0	63	213
Total	109	28	10	0	0	147	1	40	22	0	0	63	20	254	71	0	0	345	3	222	3	0	0	228	783
1:00 PM	18	10	1	0	0	29	0	9	5	0	0	14	2	62	28	0	0	92	1	62	3	0	0	66	201
1:15 PM	28	8	0	0	0	36	1	6	5	0	0	12	10	61	25	0	0	96	0	68	1	0	0	69	213
1:30 PM	26	5	2	0	0	33	2	11	3	0	0	16	7	63	27	0	0	97	1	75	0	0	0	76	222
1:45 PM	28	6	2	0	0	36	2	23	7	0	0	32	6	60	21	0	0	87	1	60	1	0	0	62	217
Total	100	29	5	0	0	134	5	49	20	0	0	74	25	246	101	0	0	372	3	265	5	0	0	273	853
BREAK																									
2:00 PM	21	9	0	0	0	30	1	10	4	0	0	15	2	75	22	0	0	99	2	74	1	0	0	77	221
2:15 PM	26	3	0	0	0	29	1	12	4	0	0	17	2	61	28	0	0	91	1	78	5	0	0	84	221
2:30 PM	33	6	1	0	0	40	3	8	5	0	0	16	6	79	28	0	0	113	1	78	2	0	0	81	250
2:45 PM	36	8	0	0	0	44	1	8	6	0	0	15	8	82	30	0	0	120	3	79	0	0	0	82	261
Total	116	26	1	0	0	143	6	38	19	0	0	63	18	297	108	0	0	423	7	309	8	0	0	324	953
3:00 PM	22	9	2	0	0	33	4	9	2	0	0	15	6	66	39	0	0	111	2	85	3	0	0	90	249
3:15 PM	37	18	2	0	0	57	0	12	7	0	0	19	6	71	34	0	0	111	1	94	1	0	0	96	283
3:30 PM	38	4	3	0	0	45	0	13	7	0	0	20	3	82	45	0	0	130	1	101	2	0	0	104	299
3:45 PM	34	8	0	0	0	42	0	20	10	0	0	30	7	72	41	0	0	120	1	106	1	0	0	108	300
Total	131	39	7	0	0	177	4	54	26	0	0	84	22	291	159	0	0	472	5	386	7	0	0	398	1131
4:00 PM	34	7	1	0	0	42	1	11	3	0	0	15	2	72	32	0	0	106	1	103	1	0	0	105	268
4:15 PM	37	14	1	0	0	52	1	14	3	0	0	18	6	79	45	0	0	130	1	104	3	0	0	108	308
4:30 PM	43	10	2	0	0	55	1	17	11	0	0	29	4	87	32	0	0	123	0	113	1	0	0	114	321
4:45 PM	31	6	2	0	0	39	0	17	7	0	0	24	5	91	41	0	0	137	2	120	0	0	0	122	322
Total	145	37	6	0	0	188	3	59	24	0	0	86	17	329	150	0	0	496	4	440	5	0	0	449	1219
5:00 PM	48	20	3	0	0	71	3	22	5	0	0	30	4	80	42	0	0	126	0	95	0	0	0	95	322
5:15 PM	42	18	5	0	0	65	5	16	9	0	0	30	4	90	38	0	0	132	1	118	1	0	0	120	347
5:30 PM	29	18	4	0	0	51	2	21	10	0	0	33	5	95	28	0	0	128	1	89	3	0	0	93	305
5:45 PM	17	16	3	0	0	36	3	21	9	0	0	33	3	82	40	0	0	125	0	95	2	0	0	97	291
Total	136	72	15	0	0	223	13	80	33	0	0	126	16	347	148	0	0	511	2	397	6	0	0	405	1265
6:00 PM	18	9	0	0	0	27	0	8	15	0	0	23	3	61	21	0	0	85	2	62	0	0	0	64	199
6:15 PM	22	11	2	0	0	35	3	15	6	0	0	24	7	68	33	0	0	108	1	64	2	0	0	67	234
6:30 PM	27	4	2	0	0	33	0	10	5	0	0	15	7	66	32	0	0	105	2	59	2	0	0	63	216
6:45 PM	14	9	3	0	0	26	3	11	14	0	0	28	1	55	31	0	0	87	2	45	0	0	0	47	188
Total	81	33	7	0	0	121	6	44	40	0	0	90	18	250	117	0	0	385	7	230	4	0	0	241	837
Grand Total	1323	425	72	0	0	1820	72	574	272	0	0	918	211	3412	1380	0	0	5003	58	3548	58	0	0	3664	11405
Apprch %	72.7	23.4	4.0	0.0	0.0		7.8	62.5	29.6	0.0	0.0		4.2	68.2	27.6	0.0	0.0		1.6	96.8	1.6	0.0	0.0		
Total %	11.6	3.7	0.6	0.0	0.0	16.0	0.6	5.0	2.4	0.0	0.0	8.0	1.9	29.9	12.1	0.0	0.0	43.9	0.5	31.1	0.5	0.0	0.0	32.1	
Cars, PU, Vans	1264	411	68	0		1743	66	564	260	0		890	200	3237	1309	0		4746	52	3381	51	0		3484	10863
% Cars, PU, Vans	95.5	96.7	94.4	0.0		95.8	91.7	98.3	95.6	0.0		96.9	94.8	94.9	94.9	0.0		94.9	89.7	95.3	87.9	0.0		95.1	95.2
Heavy trucks	59	14	4	0		77	6	10	12	0		28	11	175	71	0		257	6	167	7	0		180	542

%Heavy trucks	4.5	3.3	5.6	0.0		4.2	8.3	1.7	4.4	0.0		3.1	5.2	5.1	5.1	0.0		5.1	10.3	4.7	12.1	0.0		4.9	4.8

Project ID: 22-180062-001
Location: Flat Creek Trail & Tyrone Rd
City: Fayetteville

PEAK HOURS

Day: Tuesday
Date: 4/12/2022

AM

	Flat Creek Trail Northbound					Flat Creek Trail Southbound					Tyrone Rd Eastbound					Tyrone Rd Westbound					
Start Time	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Int. Total
Peak Hour Analysis from 07:00 AM - 10:00 AM																					
Peak Hour for Entire Intersection Begins at 08:00 AM																					
8:00 AM	32	12	0	0	44	4	16	9	0	29	9	94	39	0	142	0	72	0	0	72	287
8:15 AM	44	11	0	0	55	0	16	8	0	24	7	81	41	0	129	1	58	0	0	59	267
8:30 AM	24	9	1	0	34	1	19	6	0	26	8	97	31	0	136	1	85	1	0	87	283
8:45 AM	28	8	3	0	39	1	21	8	0	30	3	80	41	0	124	8	81	1	0	90	283
Total Volume	128	40	4	0	172	6	72	31	0	109	27	352	152	0	531	10	296	2	0	308	1120
% App. Total	74.4	23.3	2.3	0.0	100	5.5	66.1	28.4	0.0	100	5.1	66.3	28.6	0.0	100	3.2	96.1	0.6	0.0	100	
PHF					0.782					0.908					0.935					0.856	0.976
Cars, PU, Vans	123	37	3	0	163	5	70	29	0	104	26	333	133	0	492	10	278	2	0	290	1049
% Cars, PU, Vans	96.1	92.5	75.0	0.0	94.8	83.3	97.2	93.5	0.0	95.4	96.3	94.6	87.5	0.0	92.7	100.0	93.9	100.0	0.0	94.2	93.7
Heavy trucks	5	3	1	0	9	1	2	2	0	5	1	19	19	0	39	0	18	0	0	18	71
%Heavy trucks	3.9	7.5	25.0	0.0	5.2	16.7	2.8	6.5	0.0	4.6	3.7	5.4	12.5	0.0	7.3	0.0	6.1	0.0	0.0	5.8	6.3

NOON

	Flat Creek Trail Northbound					Flat Creek Trail Southbound					Tyrone Rd Eastbound					Tyrone Rd Westbound					
Start Time	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Int. Total
Peak Hour Analysis from 10:00 AM - 02:00 PM																					
Peak Hour for Entire Intersection Begins at 01:00 PM																					
1:00 PM	18	10	1	0	29	0	9	5	0	14	2	62	28	0	92	1	62	3	0	66	201
1:15 PM	28	8	0	0	36	1	6	5	0	12	10	61	25	0	96	0	68	1	0	69	213
1:30 PM	26	5	2	0	33	2	11	3	0	16	7	63	27	0	97	1	75	0	0	76	222
1:45 PM	28	6	2	0	36	2	23	7	0	32	6	60	21	0	87	1	60	1	0	62	217
Total Volume	100	29	5	0	134	5	49	20	0	74	25	246	101	0	372	3	265	5	0	273	853
% App. Total	74.6	21.6	3.7	0.0	100	6.8	66.2	27.0	0.0	100	6.7	66.1	27.2	0.0	100	1.1	97.1	1.8	0.0	100	
PHF					0.931					0.578					0.959					0.898	0.961
Cars, PU, Vans	98	28	4	0	130	4	48	17	0	69	24	231	96	0	351	3	244	4	0	251	801
% Cars, PU, Vans	98.0	96.6	80.0	0.0	97.0	80.0	98.0	85.0	0.0	93.2	96.0	93.9	95.0	0.0	94.4	100.0	92.1	80.0	0.0	91.9	93.9
Heavy trucks	2	1	1	0	4	1	1	3	0	5	1	15	5	0	21	0	21	1	0	22	52
%Heavy trucks	2.0	3.4	20.0	0.0	3.0	20.0	2.0	15.0	0.0	6.8	4.0	6.1	5.0	0.0	5.6	0.0	7.9	20.0	0.0	8.1	6.1

PM

	Flat Creek Trail Northbound					Flat Creek Trail Southbound					Tyrone Rd Eastbound					Tyrone Rd Westbound					
Start Time	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Int. Total
Peak Hour Analysis from 02:00 PM - 07:00 PM																					
Peak Hour for Entire Intersection Begins at 04:30 PM																					
4:30 PM	43	10	2	0	55	1	17	11	0	29	4	87	32	0	123	0	113	1	0	114	321
4:45 PM	31	6	2	0	39	0	17	7	0	24	5	91	41	0	137	2	120	0	0	122	322
5:00 PM	48	20	3	0	71	3	22	5	0	30	4	80	42	0	126	0	95	0	0	95	322
5:15 PM	42	18	5	0	65	5	16	9	0	30	4	90	38	0	132	1	118	1	0	120	347
Total Volume	164	54	12	0	230	9	72	32	0	113	17	348	153	0	518	3	446	2	0	451	1312
% App. Total	71.3	23.5	5.2	0.0	100	8.0	63.7	28.3	0.0	100	3.3	67.2	29.5	0.0	100	0.7	98.9	0.4	0.0	100	
PHF					0.810					0.942					0.945					0.924	0.945
Cars, PU, Vans	161	52	12	0	225	9	71	32	0	112	16	337	151	0	504	3	435	2	0	440	1281
% Cars, PU, Vans	98.2	96.3	100.0	0.0	97.8	100.0	98.6	100.0	0.0	99.1	94.1	96.8	98.7	0.0	97.3	100.0	97.5	100.0	0.0	97.6	97.6
Heavy trucks	3	2	0	0	5	0	1	0	0	1	1	11	2	0	14	0	11	0	0	11	31
%Heavy trucks	1.8	3.7	0.0	0.0	2.2	0.0	1.4	0.0	0.0	0.9	5.9	3.2	1.3	0.0	2.7	0.0	2.5	0.0	0.0	2.4	2.4

Prepared by National Data & Surveying Services

VOLUME

Tyrone Rd E/O Arthur Ct

Day: Tuesday
Date: 4/12/2022

City: Fayetteville
Project #: GA22_180063_001

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	6,104	6,272	12,376

AM Period	NB	SB	EB		WB		TOTAL		PM Period	NB	SB	EB		WB		TOTAL	
00:00			6		6		12		12:00			77		96		173	
00:15			6		2		8		12:15			85		91		176	
00:30			1		4		5		12:30			102		73		175	
00:45			10	23	4	16	14	39	12:45			79	343	95	355	174	698
01:00			5		4		9		13:00			87		90		177	
01:15			3		3		6		13:15			95		98		193	
01:30			1		1		2		13:30			98		102		200	
01:45			3	12	0	8	3	20	13:45			92	372	95	385	187	757
02:00			3		1		4		14:00			97		95		192	
02:15			4		1		5		14:15			92		107		199	
02:30			2		1		3		14:30			108		108		216	
02:45			1	10	0	3	1	13	14:45			118	415	113	423	231	838
03:00			1		1		2		15:00			113		118		231	
03:15			2		3		5		15:15			114		131		245	
03:30			4		1		5		15:30			131		143		274	
03:45			2	9	5	10	7	19	15:45			120	478	147	539	267	1017
04:00			4		5		9		16:00			109		140		249	
04:15			4		9		13		16:15			135		137		272	
04:30			10		9		19		16:30			125		161		286	
04:45			10	28	19	42	29	70	16:45			139	508	158	596	297	1104
05:00			11		10		21		17:00			130		148		278	
05:15			20		17		37		17:15			123		164		287	
05:30			15		30		45		17:30			128		122		250	
05:45			32	78	28	85	60	163	17:45			120	501	127	561	247	1062
06:00			21		34		55		18:00			88		99		187	
06:15			53		56		109		18:15			103		98		201	
06:30			62		56		118		18:30			108		93		201	
06:45			80	216	76	222	156	438	18:45			90	389	79	369	169	758
07:00			67		79		146		19:00			81		70		151	
07:15			108		98		206		19:15			71		80		151	
07:30			130		121		251		19:30			58		84		142	
07:45			138	443	118	416	256	859	19:45			52	262	67	301	119	563
08:00			144		113		257		20:00			45		66		111	
08:15			134		109		243		20:15			50		64		114	
08:30			130		114		244		20:30			46		50		96	
08:45			120	528	111	447	231	975	20:45			33	174	55	235	88	409
09:00			99		87		186		21:00			47		61		108	
09:15			83		82		165		21:15			33		42		75	
09:30			83		83		166		21:30			34		31		65	
09:45			90	355	86	338	176	693	21:45			28	142	12	146	40	288
10:00			94		77		171		22:00			21		17		38	
10:15			69		88		157		22:15			27		19		46	
10:30			91		96		187		22:30			20		14		34	
10:45			85	339	69	330	154	669	22:45			16	84	14	64	30	148
11:00			85		79		164		23:00			16		22		38	
11:15			90		83		173		23:15			13		10		23	
11:30			73		81		154		23:30			16		11		27	
11:45			92	340	86	329	178	669	23:45			10	55	9	52	19	107
TOTALS				2381		2246		4627	TOTALS				3723		4026		7749
SPLIT %				51.5%		48.5%		37.4%	SPLIT %				48.0%		52.0%		62.6%

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	6,104	6,272	12,376

AM Peak Hour			07:30	07:30	07:30		PM Peak Hour			16:15	16:30	16:30
AM Pk Volume			546	461	1007		PM Pk Volume			529	631	1148
Pk Hr Factor			0.948	0.952	0.980		Pk Hr Factor			0.951	0.962	0.966
7 - 9 Volume	0	0	971	863	1834		4 - 6 Volume	0	0	1009	1157	2166
7 - 9 Peak Hour			07:30	07:30	07:30		4 - 6 Peak Hour			16:15	16:30	16:30
7 - 9 Pk Volume	0	0	546	461	1007		4 - 6 Pk Volume	0	0	529	631	1148
Pk Hr Factor	0.000	0.000	0.948	0.952	0.980		Pk Hr Factor	0.000	0.000	0.951	0.962	0.966

Prepared by National Data & Surveying Services

VOLUME

Tyrone Rd E/O Arthur Ct

Day: Tuesday
Date: 4/12/2022

City: Fayetteville
Project #: GA22_180063_001

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	5,827	6,011	11,838

AM Period	NB	SB	EB		WB		TOTAL		PM Period	NB	SB	EB		WB		TOTAL	
00:00			6		6		12		12:00			72		90		162	
00:15			6		2		8		12:15			82		86		168	
00:30			1		4		5		12:30			98		68		166	
00:45			10	23	4	16	14	39	12:45			76	328	92	336	168	664
01:00			4		4		8		13:00			83		83		166	
01:15			2		3		5		13:15			90		89		179	
01:30			1		1		2		13:30			91		93		184	
01:45			1	8	0	8	1	16	13:45			89	353	88	353	177	706
02:00			3		1		4		14:00			88		91		179	
02:15			4		1		5		14:15			86		101		187	
02:30			2		1		3		14:30			100		103		203	
02:45			1	10	0	3	1	13	14:45			112	386	109	404	221	790
03:00			1		1		2		15:00			109		110		219	
03:15			2		3		5		15:15			108		128		236	
03:30			4		1		5		15:30			124		140		264	
03:45			2	9	5	10	7	19	15:45			116	457	145	523	261	980
04:00			4		4		8		16:00			102		138		240	
04:15			4		9		13		16:15			130		132		262	
04:30			9		9		18		16:30			122		158		280	
04:45			10	27	19	41	29	68	16:45			136	490	150	578	286	1068
05:00			10		10		20		17:00			125		142		267	
05:15			20		16		36		17:15			122		163		285	
05:30			15		29		44		17:30			126		120		246	
05:45			32	77	27	82	59	159	17:45			118	491	122	547	240	1038
06:00			20		33		53		18:00			86		96		182	
06:15			49		56		105		18:15			102		94		196	
06:30			61		53		114		18:30			106		93		199	
06:45			74	204	72	214	146	418	18:45			88	382	75	358	163	740
07:00			65		72		137		19:00			78		68		146	
07:15			101		93		194		19:15			70		80		150	
07:30			126		114		240		19:30			55		83		138	
07:45			135	427	112	391	247	818	19:45			52	255	66	297	118	552
08:00			135		106		241		20:00			44		64		108	
08:15			122		106		228		20:15			50		62		112	
08:30			126		108		234		20:30			45		50		95	
08:45			106	489	105	425	211	914	20:45			33	172	54	230	87	402
09:00			96		78		174		21:00			45		61		106	
09:15			75		78		153		21:15			32		41		73	
09:30			78		75		153		21:30			33		31		64	
09:45			81	330	83	314	164	644	21:45			28	138	12	145	40	283
10:00			90		74		164		22:00			21		17		38	
10:15			66		86		152		22:15			27		18		45	
10:30			85		89		174		22:30			20		14		34	
10:45			78	319	66	315	144	634	22:45			15	83	14	63	29	146
11:00			78		72		150		23:00			16		22		38	
11:15			85		75		160		23:15			13		9		22	
11:30			67		79		146		23:30			15		11		26	
11:45			86	316	81	307	167	623	23:45			9	53	9	51	18	104
TOTALS				2239		2126		4365	TOTALS				3588		3885		7473
SPLIT %				51.3%		48.7%		36.9%	SPLIT %				48.0%		52.0%		63.1%

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	5,827	6,011	11,838

AM Peak Hour				07:30		07:30		07:30	PM Peak Hour				16:15		16:30		16:30
AM Pk Volume				518		438		956	PM Pk Volume				513		613		1118
Pk Hr Factor				0.959		0.961		0.968	Pk Hr Factor				0.943		0.940		0.977
7 - 9 Volume	0	0		916		816		1732	4 - 6 Volume	0	0		981		1125		2106
7 - 9 Peak Hour				07:30		07:30		07:30	4 - 6 Peak Hour				16:15		16:30		16:30
7 - 9 Pk Volume	0	0		518		438		956	4 - 6 Pk Volume	0	0		513		613		1118
Pk Hr Factor	0.000	0.000		0.959		0.961		0.968	Pk Hr Factor	0.000	0.000		0.943		0.940		0.977

Prepared by National Data & Surveying Services

VOLUME

Tyrone Rd E/O Arthur Ct

Day: Tuesday
Date: 4/12/2022

City: Fayetteville
Project #: GA22_180063_001

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	215	200	415

AM Period	NB	SB	EB		WB		TOTAL		PM Period	NB	SB	EB		WB		TOTAL	
00:00			0		0		0		12:00			4		3		7	
00:15			0		0		0		12:15			2		5		7	
00:30			0		0		0		12:30			4		2		6	
00:45			0		0		0		12:45			2	12	2	12	4	24
01:00			1		0		1		13:00			1		6		7	
01:15			1		0		1		13:15			5		5		10	
01:30			0		0		0		13:30			6		8		14	
01:45			1	3	0		1	3	13:45			3	15	5	24	8	39
02:00			0		0		0		14:00			7		3		10	
02:15			0		0		0		14:15			6		6		12	
02:30			0		0		0		14:30			4		5		9	
02:45			0		0		0		14:45			6	23	4	18	10	41
03:00			0		0		0		15:00			2		6		8	
03:15			0		0		0		15:15			4		3		7	
03:30			0		0		0		15:30			6		2		8	
03:45			0		0		0		15:45			4	16	2	13	6	29
04:00			0		1		1		16:00			7		1		8	
04:15			0		0		0		16:15			4		5		9	
04:30			1		0		1		16:30			1		3		4	
04:45			0	1	0	1	0	2	16:45			3	15	4	13	7	28
05:00			1		0		1		17:00			4		5		9	
05:15			0		0		0		17:15			1		1		2	
05:30			0		0		0		17:30			1		1		2	
05:45			0	1	1	1	1	2	17:45			1	7	3	10	4	17
06:00			0		1		1		18:00			2		3		5	
06:15			3		0		3		18:15			0		4		4	
06:30			1		3		4		18:30			1		0		1	
06:45			5	9	4	8	9	17	18:45			1	4	3	10	4	14
07:00			2		4		6		19:00			3		2		5	
07:15			4		4		8		19:15			1		0		1	
07:30			2		7		9		19:30			3		1		4	
07:45			3	11	2	17	5	28	19:45			0	7	1	4	1	11
08:00			7		4		11		20:00			1		1		2	
08:15			10		3		13		20:15			0		2		2	
08:30			3		6		9		20:30			1		0		1	
08:45			12	32	2	15	14	47	20:45			0	2	0	3	0	5
09:00			3		9		12		21:00			1		0		1	
09:15			5		4		9		21:15			0		0		0	
09:30			3		7		10		21:30			1		0		1	
09:45			9	20	2	22	11	42	21:45			0	2	0		0	2
10:00			4		3		7		22:00			0		0		0	
10:15			2		2		4		22:15			0		0		0	
10:30			5		4		9		22:30			0		0		0	
10:45			4	15	1	10	5	25	22:45			0		0		0	
11:00			5		7		12		23:00			0		0		0	
11:15			3		7		10		23:15			0		0		0	
11:30			6		1		7		23:30			0		0		0	
11:45			5	19	4	19	9	38	23:45			1	1	0		1	1
TOTALS				111		93		204	TOTALS				104		107		211
SPLIT %				54.4%		45.6%		49.2%	SPLIT %				49.3%		50.7%		50.8%

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	215	200	415

AM Peak Hour			08:00	08:45	08:15	PM Peak Hour			14:00	13:00	13:30
AM Pk Volume			32	22	48	PM Pk Volume			23	24	44
Pk Hr Factor			0.667	0.611	0.857	Pk Hr Factor			0.821	0.750	0.786
7 - 9 Volume	0	0	43	32	75	4 - 6 Volume	0	0	22	23	45
7 - 9 Peak Hour			08:00	07:00	08:00	4 - 6 Peak Hour			16:00	16:15	16:15
7 - 9 Pk Volume	0	0	32	17	47	4 - 6 Pk Volume	0	0	15	17	29
Pk Hr Factor	0.000	0.000	0.667	0.607	0.839	Pk Hr Factor	0.000	0.000	0.536	0.850	0.806

Prepared by National Data & Surveying Services

VOLUME

Tyrone Rd E/O Arthur Ct

Day: Tuesday
Date: 4/12/2022

City: Fayetteville
Project #: GA22_180063_001

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	62	61	123

AM Period	NB		SB		EB		WB		TOTAL		PM Period	NB		SB		EB		WB		TOTAL	
00:00					0		0		0		12:00					1		3		4	
00:15					0		0		0		12:15					1		0		1	
00:30					0		0		0		12:30					0		3		3	
00:45					0		0		0		12:45					1	3	1	7	2	10
01:00					0		0		0		13:00					3		1		4	
01:15					0		0		0		13:15					0		4		4	
01:30					0		0		0		13:30					1		1		2	
01:45					1	1	0		1	1	13:45					0	4	2	8	2	12
02:00					0		0		0		14:00					2		1		3	
02:15					0		0		0		14:15					0		0		0	
02:30					0		0		0		14:30					4		0		4	
02:45					0		0		0		14:45					0	6	0	1	0	7
03:00					0		0		0		15:00					2		2		4	
03:15					0		0		0		15:15					2		0		2	
03:30					0		0		0		15:30					1		1		2	
03:45					0		0		0		15:45					0	5	0	3	0	8
04:00					0		0		0		16:00					0		1		1	
04:15					0		0		0		16:15					1		0		1	
04:30					0		0		0		16:30					2		0		2	
04:45					0		0		0		16:45					0	3	4	5	4	8
05:00					0		0		0		17:00					1		1		2	
05:15					0		1		1		17:15					0		0		0	
05:30					0		1		1		17:30					1		1		2	
05:45					0		0	2	0	2	17:45					1	3	2	4	3	7
06:00					1		0		1		18:00					0		0		0	
06:15					1		0		1		18:15					1		0		1	
06:30					0		0		0		18:30					1		0		1	
06:45					1	3	0		1	3	18:45					1	3	1	1	2	4
07:00					0		3		3		19:00					0		0		0	
07:15					3		1		4		19:15					0		0		0	
07:30					2		0		2		19:30					0		0		0	
07:45					0	5	4	8	4	13	19:45					0		0		0	
08:00					2		3		5		20:00					0		1		1	
08:15					2		0		2		20:15					0		0		0	
08:30					1		0		1		20:30					0		0		0	
08:45					2	7	4	7	6	14	20:45					0		1	2	1	2
09:00					0		0		0		21:00					1		0		1	
09:15					3		0		3		21:15					1		1		2	
09:30					2		1		3		21:30					0		0		0	
09:45					0	5	1	2	1	7	21:45					0	2	0	1	0	3
10:00					0		0		0		22:00					0		0		0	
10:15					1		0		1		22:15					0		1		1	
10:30					1		3		4		22:30					0		0		0	
10:45					3	5	2	5	5	10	22:45					1	1	0	1	1	2
11:00					2		0		2		23:00					0		0		0	
11:15					2		1		3		23:15					0		1		1	
11:30					0		1		1		23:30					1		0		1	
11:45					1	5	1	3	2	8	23:45					0	1	0	1	0	2
TOTALS						31		27		58	TOTALS						31		34		65
SPLIT %						53.4%		46.6%		47.2%	SPLIT %						47.7%		52.3%		52.8%

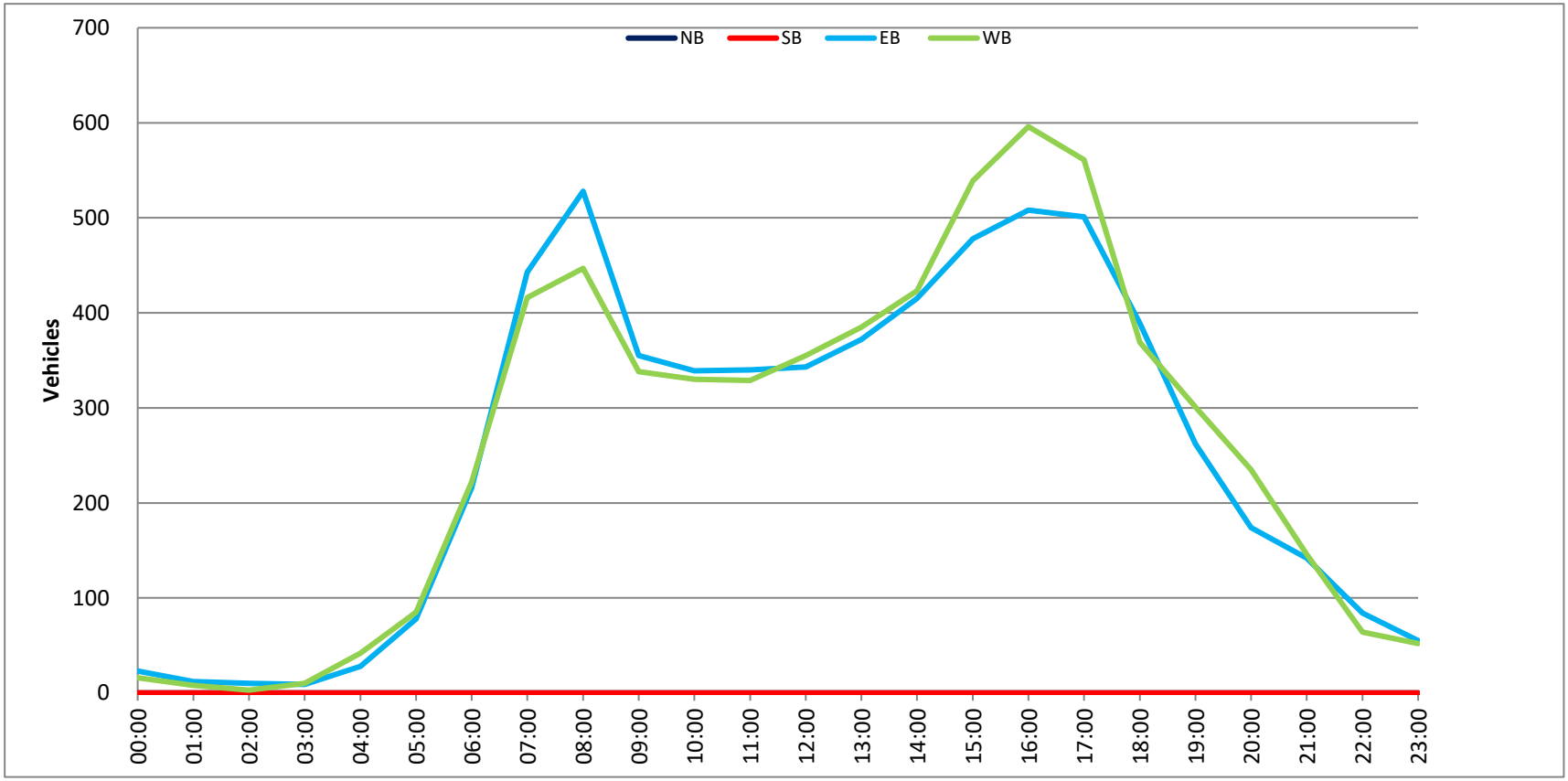
DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	62	61	123

AM Peak Hour			10:30	07:00	07:15	PM Peak Hour			14:30	12:30	12:30
AM Pk Volume			8	8	15	PM Pk Volume			8	9	13
Pk Hr Factor			0.667	0.500	0.750	Pk Hr Factor			0.500	0.563	0.813
7 - 9 Volume	0	0	12	15	27	4 - 6 Volume	0	0	6	9	15
7 - 9 Peak Hour			07:15	07:00	07:15	4 - 6 Peak Hour			16:15	16:45	16:15
7 - 9 Pk Volume	0	0	7	8	15	4 - 6 Pk Volume	0	0	4	6	9
Pk Hr Factor	0.000	0.000	0.583	0.500	0.750	Pk Hr Factor	0.000	0.000	0.500	0.375	0.563

Prepared by National Data & Surveying Services

Project #: GA22_180063_001 **City:** Fayetteville

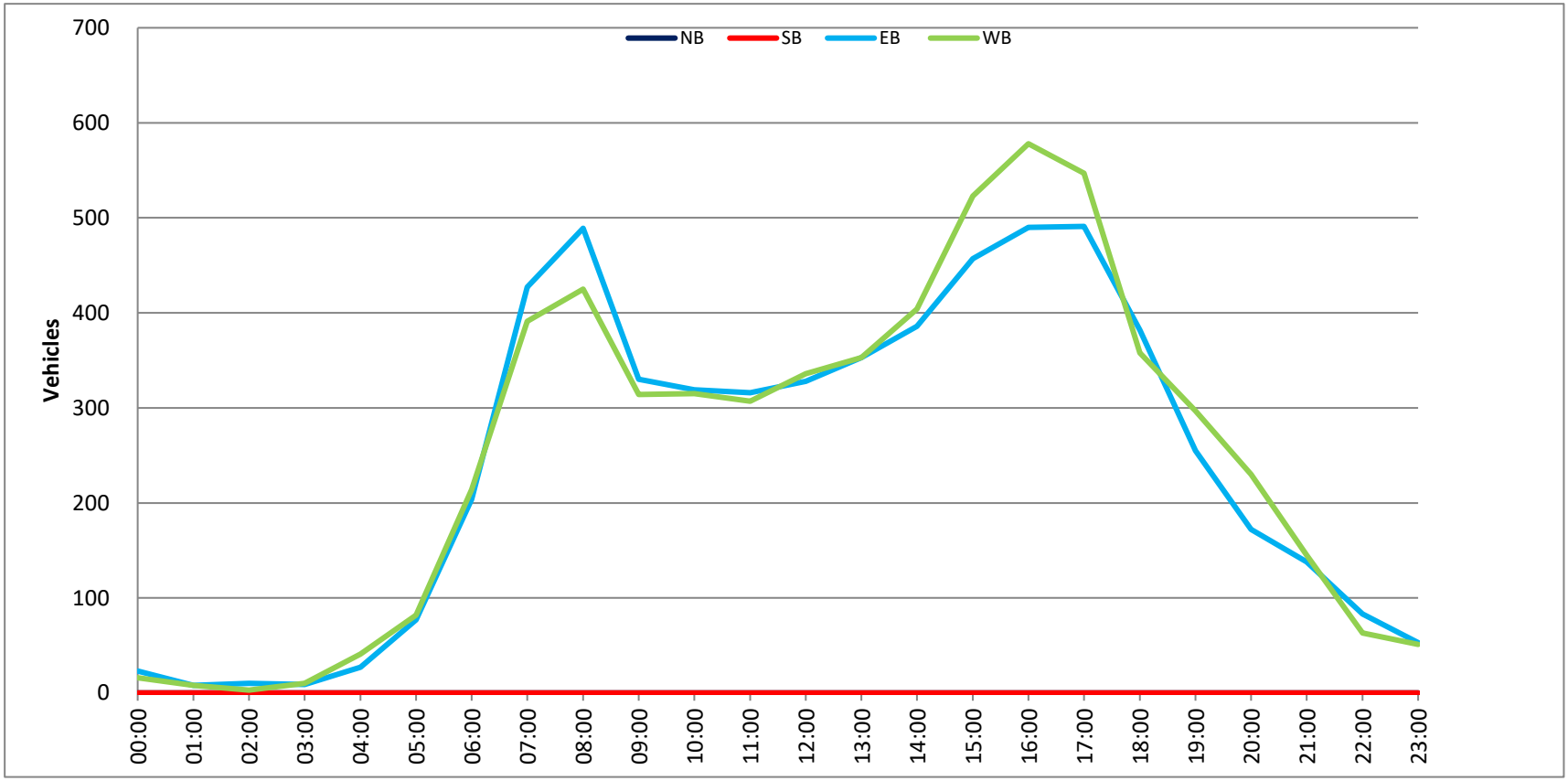
Location: Tyrone Rd E/O Arthur Ct **Date:** 4/12/2022



Prepared by National Data & Surveying Services

Project #: GA22_180063_001 **City:** Fayetteville

Location: Tyrone Rd E/O Arthur Ct **Date:** 4/12/2022



Prepared by National Data & Surveying Services

Project #: GA22_180063_001 **City:** Fayetteville

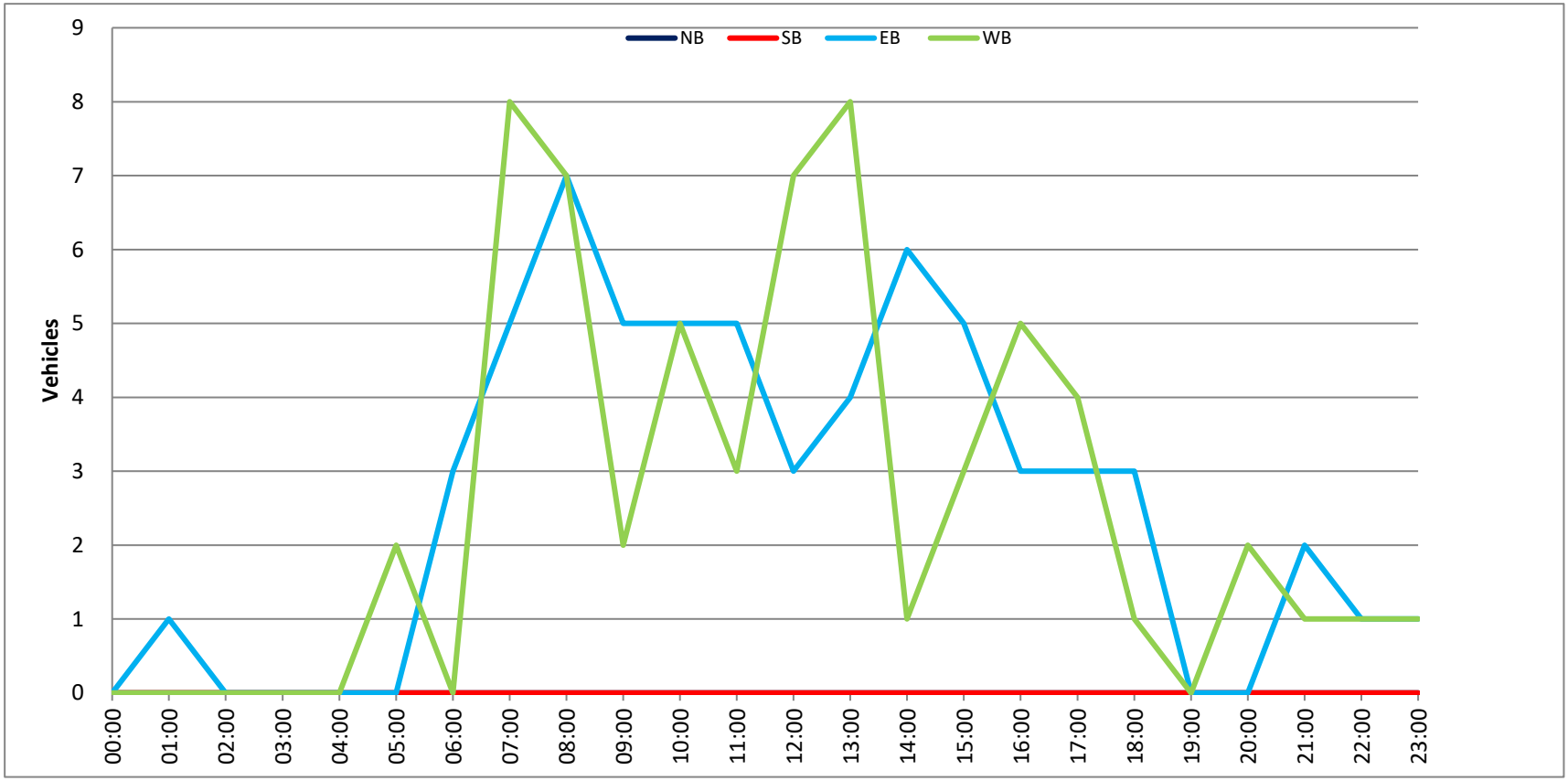
Location: Tyrone Rd E/O Arthur Ct **Date:** 4/12/2022



Prepared by National Data & Surveying Services

Project #: GA22_180063_001 **City:** Fayetteville

Location: Tyrone Rd E/O Arthur Ct **Date:** 4/12/2022



APPENDIX B

Intersection	
Intersection Delay, s/veh	19.9
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	27	352	152	10	296	2	128	40	4	5	70	29
Future Vol, veh/h	27	352	152	10	296	2	128	40	4	5	70	29
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles, %	7	7	7	6	6	6	5	5	5	5	5	5
Mvmt Flow	28	359	155	10	302	2	131	41	4	5	71	30
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	26.7	15	13.1	11.4
HCM LOS	D	B	B	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	74%	5%	3%	5%
Vol Thru, %	23%	66%	96%	67%
Vol Right, %	2%	29%	1%	28%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	172	531	308	104
LT Vol	128	27	10	5
Through Vol	40	352	296	70
RT Vol	4	152	2	29
Lane Flow Rate	176	542	314	106
Geometry Grp	1	1	1	1
Degree of Util (X)	0.329	0.802	0.515	0.197
Departure Headway (Hd)	6.757	5.326	5.895	6.69
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	534	672	616	538
Service Time	4.777	3.422	3.895	4.715
HCM Lane V/C Ratio	0.33	0.807	0.51	0.197
HCM Control Delay	13.1	26.7	15	11.4
HCM Lane LOS	B	D	B	B
HCM 95th-tile Q	1.4	8.1	3	0.7

Intersection	
Intersection Delay, s/veh	38.3
Intersection LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	17	348	153	3	446	2	164	54	12	9	72	32
Future Vol, veh/h	17	348	153	3	446	2	164	54	12	9	72	32
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	3	3	3	2	2	2	2	2	2	1	1	1
Mvmt Flow	18	366	161	3	469	2	173	57	13	9	76	34
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	52.3	38.6	18.5	13.8
HCM LOS	F	E	C	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	71%	3%	1%	8%
Vol Thru, %	23%	67%	99%	64%
Vol Right, %	5%	30%	0%	28%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	230	518	451	113
LT Vol	164	17	3	9
Through Vol	54	348	446	72
RT Vol	12	153	2	32
Lane Flow Rate	242	545	475	119
Geometry Grp	1	1	1	1
Degree of Util (X)	0.512	0.955	0.867	0.261
Departure Headway (Hd)	7.613	6.304	6.573	7.907
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	472	578	551	452
Service Time	5.682	4.326	4.596	5.996
HCM Lane V/C Ratio	0.513	0.943	0.862	0.263
HCM Control Delay	18.5	52.3	38.6	13.8
HCM Lane LOS	C	F	E	B
HCM 95th-tile Q	2.9	12.8	9.5	1

Intersection	
Intersection Delay, s/veh	61.7
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	31	491	173	11	355	2	145	45	5	6	80	33
Future Vol, veh/h	31	491	173	11	355	2	145	45	5	6	80	33
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles, %	7	7	7	6	6	6	5	5	5	5	5	5
Mvmt Flow	32	501	177	11	362	2	148	46	5	6	82	34
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	104.4	21.2	15.8	13.3
HCM LOS	F	C	C	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	74%	4%	3%	5%
Vol Thru, %	23%	71%	96%	67%
Vol Right, %	3%	25%	1%	28%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	195	695	368	119
LT Vol	145	31	11	6
Through Vol	45	491	355	80
RT Vol	5	173	2	33
Lane Flow Rate	199	709	376	121
Geometry Grp	1	1	1	1
Degree of Util (X)	0.402	1.142	0.655	0.246
Departure Headway (Hd)	7.705	5.799	6.591	7.77
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	470	624	552	465
Service Time	5.705	3.873	4.591	5.77
HCM Lane V/C Ratio	0.423	1.136	0.681	0.26
HCM Control Delay	15.8	104.4	21.2	13.3
HCM Lane LOS	C	F	C	B
HCM 95th-tile Q	1.9	22.5	4.7	1

Intersection	
Intersection Delay, s/veh	108.7
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	19	435	174	3	594	2	186	61	14	10	82	36
Future Vol, veh/h	19	435	174	3	594	2	186	61	14	10	82	36
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	3	3	3	2	2	2	2	2	2	1	1	1
Mvmt Flow	20	458	183	3	625	2	196	64	15	11	86	38
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	141.8	130.5	24.4	16.8
HCM LOS	F	F	C	C

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	71%	3%	1%	8%
Vol Thru, %	23%	69%	99%	64%
Vol Right, %	5%	28%	0%	28%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	261	628	599	128
LT Vol	186	19	3	10
Through Vol	61	435	594	82
RT Vol	14	174	2	36
Lane Flow Rate	275	661	631	135
Geometry Grp	1	1	1	1
Degree of Util (X)	0.604	1.226	1.194	0.314
Departure Headway (Hd)	8.816	7.145	7.337	9.476
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	412	516	498	381
Service Time	6.816	5.145	5.337	7.476
HCM Lane V/C Ratio	0.667	1.281	1.267	0.354
HCM Control Delay	24.4	141.8	130.5	16.8
HCM Lane LOS	C	F	F	C
HCM 95th-tile Q	3.8	23.9	21.9	1.3

Intersection	
Intersection Delay, s/veh	135.1
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	37	566	205	13	418	2	172	53	6	7	95	39
Future Vol, veh/h	37	566	205	13	418	2	172	53	6	7	95	39
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles, %	7	7	7	6	6	6	5	5	5	5	5	5
Mvmt Flow	38	578	209	13	427	2	176	54	6	7	97	40
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	242.1	35.7	20.1	16.1
HCM LOS	F	E	C	C

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	74%	5%	3%	5%
Vol Thru, %	23%	70%	97%	67%
Vol Right, %	3%	25%	0%	28%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	231	808	433	141
LT Vol	172	37	13	7
Through Vol	53	566	418	95
RT Vol	6	205	2	39
Lane Flow Rate	236	824	442	144
Geometry Grp	1	1	1	1
Degree of Util (X)	0.5	1.476	0.815	0.315
Departure Headway (Hd)	8.727	6.444	7.474	8.977
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	417	569	490	403
Service Time	6.727	4.456	5.474	6.977
HCM Lane V/C Ratio	0.566	1.448	0.902	0.357
HCM Control Delay	20.1	242.1	35.7	16.1
HCM Lane LOS	C	F	E	C
HCM 95th-tile Q	2.7	40.8	7.8	1.3

Intersection	
Intersection Delay, s/veh	210.8
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	23	509	207	4	689	2	221	72	17	12	97	43
Future Vol, veh/h	23	509	207	4	689	2	221	72	17	12	97	43
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	3	3	3	2	2	2	2	2	2	1	1	1
Mvmt Flow	24	536	218	4	725	2	233	76	18	13	102	45
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	281.2	255.1	36.6	21.3
HCM LOS	F	F	E	C

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	71%	3%	1%	8%
Vol Thru, %	23%	69%	99%	64%
Vol Right, %	5%	28%	0%	28%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	310	739	695	152
LT Vol	221	23	4	12
Through Vol	72	509	689	97
RT Vol	17	207	2	43
Lane Flow Rate	326	778	732	160
Geometry Grp	1	1	1	1
Degree of Util (X)	0.735	1.553	1.49	0.388
Departure Headway (Hd)	10.115	8.167	8.418	11.336
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	362	451	439	320
Service Time	8.115	6.167	6.418	9.336
HCM Lane V/C Ratio	0.901	1.725	1.667	0.5
HCM Control Delay	36.6	281.2	255.1	21.3
HCM Lane LOS	E	F	F	C
HCM 95th-tile Q	5.6	37.3	33.4	1.8

Intersection	
Intersection Delay, s/veh	11.9
Intersection LOS	B

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	825	442	236	144
Demand Flow Rate, veh/h	883	469	248	151
Vehicles Circulating, veh/h	123	283	666	652
Vehicles Exiting, veh/h	680	631	340	100
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	14.7	9.0	10.1	7.8
Approach LOS	B	A	B	A

Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	883	469	248	151
Cap Entry Lane, veh/h	1217	1034	700	710
Entry HV Adj Factor	0.934	0.943	0.953	0.955
Flow Entry, veh/h	825	442	236	144
Cap Entry, veh/h	1137	975	667	677
V/C Ratio	0.725	0.454	0.354	0.213
Control Delay, s/veh	14.7	9.0	10.1	7.8
LOS	B	A	B	A
95th %tile Queue, veh	7	2	2	1

Intersection	
Intersection Delay, s/veh	14.3
Intersection LOS	B

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	778	731	327	160
Demand Flow Rate, veh/h	802	746	334	161
Vehicles Circulating, veh/h	120	341	590	981
Vehicles Exiting, veh/h	1022	583	332	105
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	11.9	18.7	10.9	12.0
Approach LOS	B	C	B	B

Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	802	746	334	161
Cap Entry Lane, veh/h	1221	975	756	507
Entry HV Adj Factor	0.970	0.981	0.980	0.994
Flow Entry, veh/h	778	731	327	160
Cap Entry, veh/h	1184	956	741	504
V/C Ratio	0.657	0.766	0.442	0.317
Control Delay, s/veh	11.9	18.7	10.9	12.0
LOS	B	C	B	B
95th %tile Queue, veh	5	8	2	1

Intersection	
Intersection Delay, s/veh	76.2
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	37	566	205	13	418	2	172	53	6	7	95	39
Future Vol, veh/h	37	566	205	13	418	2	172	53	6	7	95	39
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles, %	7	7	7	6	6	6	5	5	5	5	5	5
Mvmt Flow	38	578	209	13	427	2	176	54	6	7	97	40
Number of Lanes	0	1	1	0	1	1	0	1	1	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	2
HCM Control Delay	117.1	49.2	21.9	14.2
HCM LOS	F	E	C	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	76%	0%	6%	0%	3%	0%	7%	0%
Vol Thru, %	24%	0%	94%	0%	97%	0%	93%	0%
Vol Right, %	0%	100%	0%	100%	0%	100%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	225	6	603	205	431	2	102	39
LT Vol	172	0	37	0	13	0	7	0
Through Vol	53	0	566	0	418	0	95	0
RT Vol	0	6	0	205	0	2	0	39
Lane Flow Rate	230	6	615	209	440	2	104	40
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.546	0.013	1.252	0.382	0.904	0.004	0.25	0.088
Departure Headway (Hd)	9.107	7.981	7.325	6.576	7.829	7.092	9.253	8.485
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	399	451	498	550	466	508	390	425
Service Time	6.807	5.681	5.025	4.276	5.529	4.792	6.953	6.185
HCM Lane V/C Ratio	0.576	0.013	1.235	0.38	0.944	0.004	0.267	0.094
HCM Control Delay	22.2	10.8	152.4	13.3	49.4	9.8	15	12
HCM Lane LOS	C	B	F	B	E	A	B	B
HCM 95th-tile Q	3.2	0	24.8	1.8	10	0	1	0.3

Intersection	
Intersection Delay, s/veh	160.3
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	23	509	207	4	689	2	221	72	17	12	97	43
Future Vol, veh/h	23	509	207	4	689	2	221	72	17	12	97	43
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	3	3	3	2	2	2	2	2	2	1	1	1
Mvmt Flow	24	536	218	4	725	2	233	76	18	13	102	45
Number of Lanes	0	1	1	0	1	1	0	1	1	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	2
HCM Control Delay	108.7	301.7	36.4	16.8
HCM LOS	F	F	E	C

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	75%	0%	4%	0%	1%	0%	11%	0%
Vol Thru, %	25%	0%	96%	0%	99%	0%	89%	0%
Vol Right, %	0%	100%	0%	100%	0%	100%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	293	17	532	207	693	2	109	43
LT Vol	221	0	23	0	4	0	12	0
Through Vol	72	0	509	0	689	0	97	0
RT Vol	0	17	0	207	0	2	0	43
Lane Flow Rate	308	18	560	218	729	2	115	45
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.754	0.038	1.214	0.429	1.602	0.004	0.294	0.107
Departure Headway (Hd)	10.041	8.903	8.88	8.126	8.335	7.606	10.832	10.027
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	364	405	414	447	445	473	334	360
Service Time	7.741	6.603	6.58	5.826	6.035	5.306	8.532	7.727
HCM Lane V/C Ratio	0.846	0.044	1.353	0.488	1.638	0.004	0.344	0.125
HCM Control Delay	37.8	12	144.4	16.8	302.5	10.3	18	13.9
HCM Lane LOS	E	B	F	C	F	B	C	B
HCM 95th-tile Q	6	0.1	20	2.1	39.1	0	1.2	0.4

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	37	566	205	13	418	2	172	53	6	7	95	39
Future Volume (vph)	37	566	205	13	418	2	172	53	6	7	95	39
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		200	200		200	200		200	200		0
Storage Lanes	1		1	1		0	1		0	1		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			0.850		0.999			0.985			0.956	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1687	1776	1509	1703	1791	0	1719	1782	0	1719	1730	0
Flt Permitted	0.422			0.275			0.436			0.718		
Satd. Flow (perm)	749	1776	1509	493	1791	0	789	1782	0	1299	1730	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			209					6			36	
Link Speed (mph)		40			40			40			40	
Link Distance (ft)		305			314			325			286	
Travel Time (s)		5.2			5.4			5.5			4.9	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	7%	7%	7%	6%	6%	6%	5%	5%	5%	5%	5%	5%
Adj. Flow (vph)	38	578	209	13	427	2	176	54	6	7	97	40
Shared Lane Traffic (%)												
Lane Group Flow (vph)	38	578	209	13	429	0	176	60	0	7	137	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
Number of Detectors	1	2	1	1	2		1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100	20	20	100		20	100		20	100	
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	20	6		20	6		20	6	
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	Perm	NA		pm+pt	NA		Perm	NA	
Protected Phases		4			8		5	2			6	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	4		4	8			2			6		
Detector Phase	4	4	4	8	8		5	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5		9.5	22.5		22.5	22.5	
Total Split (s)	27.0	27.0	27.0	27.0	27.0		9.5	33.0		23.5	23.5	
Total Split (%)	45.0%	45.0%	45.0%	45.0%	45.0%		15.8%	55.0%		39.2%	39.2%	
Maximum Green (s)	22.5	22.5	22.5	22.5	22.5		5.0	28.5		19.0	19.0	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5		4.5	4.5		4.5	4.5	
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	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None		None	Min		Min	Min	
Walk Time (s)	7.0	7.0	7.0	7.0	7.0			7.0		7.0	7.0	
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0			11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0	0	0	0			0		0	0	
Act Effct Green (s)	19.7	19.7	19.7	19.7	19.7		15.4	15.4		8.4	8.4	
Actuated g/C Ratio	0.44	0.44	0.44	0.44	0.44		0.34	0.34		0.19	0.19	
v/c Ratio	0.12	0.74	0.27	0.06	0.54		0.46	0.10		0.03	0.39	
Control Delay	9.8	19.1	2.8	9.5	13.3		15.2	9.7		16.9	17.3	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	9.8	19.1	2.8	9.5	13.3		15.2	9.7		16.9	17.3	
LOS	A	B	A	A	B		B	A		B	B	
Approach Delay		14.5			13.2			13.8			17.3	
Approach LOS		B			B			B			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 60			
Actuated Cycle Length: 44.7			
Natural Cycle: 60			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.74			
Intersection Signal Delay: 14.3		Intersection LOS: B	
Intersection Capacity Utilization 58.9%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 3:

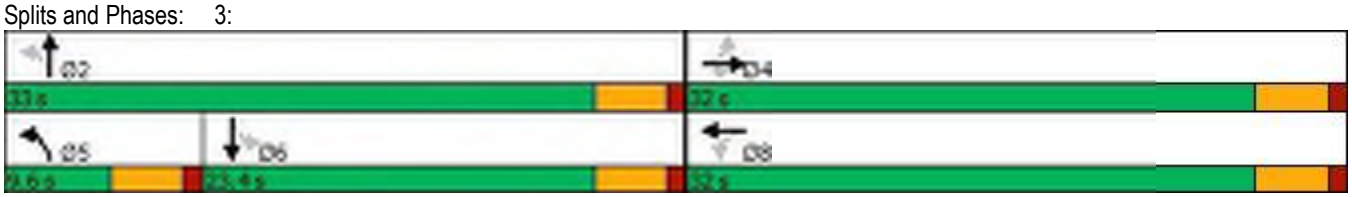


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	23	509	207	4	689	2	221	72	17	12	97	43
Future Volume (vph)	23	509	207	4	689	2	221	72	17	12	97	43
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		200	200		200	200		200	200		0
Storage Lanes	1		1	1		0	1		0	1		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			0.850					0.971			0.954	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1752	1845	1568	1770	1863	0	1770	1809	0	1787	1795	0
Flt Permitted	0.171			0.332			0.439			0.696		
Satd. Flow (perm)	315	1845	1568	618	1863	0	818	1809	0	1309	1795	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			218					18			34	
Link Speed (mph)		40			40			40			40	
Link Distance (ft)		305			314			325			286	
Travel Time (s)		5.2			5.4			5.5			4.9	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	3%	3%	3%	2%	2%	2%	2%	2%	2%	1%	1%	1%
Adj. Flow (vph)	24	536	218	4	725	2	233	76	18	13	102	45
Shared Lane Traffic (%)												
Lane Group Flow (vph)	24	536	218	4	727	0	233	94	0	13	147	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
Number of Detectors	1	2	1	1	2		1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100	20	20	100		20	100		20	100	
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	20	6		20	6		20	6	
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	Perm	NA		pm+pt	NA		Perm	NA	
Protected Phases		4			8		5	2			6	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	4		4	8			2			6		
Detector Phase	4	4	4	8	8		5	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5		9.5	22.5		22.5	22.5	
Total Split (s)	32.0	32.0	32.0	32.0	32.0		9.6	33.0		23.4	23.4	
Total Split (%)	49.2%	49.2%	49.2%	49.2%	49.2%		14.8%	50.8%		36.0%	36.0%	
Maximum Green (s)	27.5	27.5	27.5	27.5	27.5		5.1	28.5		18.9	18.9	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5		4.5	4.5		4.5	4.5	
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	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None		None	Min		Min	Min	
Walk Time (s)	7.0	7.0	7.0	7.0	7.0			7.0		7.0	7.0	
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0			11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0	0	0	0			0		0	0	
Act Effct Green (s)	25.2	25.2	25.2	25.2	25.2		18.5	18.5		8.8	8.8	
Actuated g/C Ratio	0.48	0.48	0.48	0.48	0.48		0.35	0.35		0.17	0.17	
v/c Ratio	0.16	0.61	0.25	0.01	0.82		0.61	0.15		0.06	0.45	
Control Delay	11.8	14.1	2.5	8.2	22.2		21.8	11.1		19.5	21.0	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	11.8	14.1	2.5	8.2	22.2		21.8	11.1		19.5	21.0	
LOS	B	B	A	A	C		C	B		B	C	
Approach Delay		10.8			22.2			18.7			20.9	
Approach LOS		B			C			B			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 65			
Actuated Cycle Length: 52.8			
Natural Cycle: 65			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.82			
Intersection Signal Delay: 17.1		Intersection LOS: B	
Intersection Capacity Utilization 67.6%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 3:

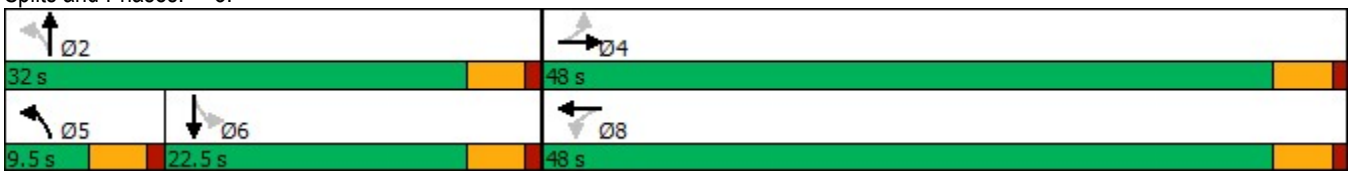


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	37	566	205	13	418	2	172	53	6	7	95	39
Future Volume (vph)	37	566	205	13	418	2	172	53	6	7	95	39
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		200	200		200	200		200	200		0
Storage Lanes	0		0	0		0	0		0	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		0.966			0.999			0.997			0.962	
Flt Protected		0.998			0.999			0.964			0.998	
Satd. Flow (prot)	0	1712	0	0	1789	0	0	1739	0	0	1737	0
Flt Permitted		0.968			0.975			0.707			0.985	
Satd. Flow (perm)	0	1660	0	0	1746	0	0	1275	0	0	1715	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		33						2			22	
Link Speed (mph)		40			40			40			40	
Link Distance (ft)		305			314			325			286	
Travel Time (s)		5.2			5.4			5.5			4.9	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	7%	7%	7%	6%	6%	6%	5%	5%	5%	5%	5%	5%
Adj. Flow (vph)	38	578	209	13	427	2	176	54	6	7	97	40
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	825	0	0	442	0	0	236	0	0	144	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)		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	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	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	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	
Detector 1 Queue (s)	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	
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		pm+pt	NA		Perm	NA	
Protected Phases		4			8		5	2			6	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		5	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	22.5	22.5		22.5	22.5		9.5	22.5		22.5	22.5	
Total Split (s)	48.0	48.0		48.0	48.0		9.5	32.0		22.5	22.5	
Total Split (%)	60.0%	60.0%		60.0%	60.0%		11.9%	40.0%		28.1%	28.1%	
Maximum Green (s)	43.5	43.5		43.5	43.5		5.0	27.5		18.0	18.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		4.5			4.5			4.5			4.5	
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		3.0	3.0	
Recall Mode	None	None		None	None		None	Min		Min	Min	
Walk Time (s)	7.0	7.0		7.0	7.0			7.0		7.0	7.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0			11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0			0		0	0	
Act Effct Green (s)		37.3			37.3			20.7			20.7	
Actuated g/C Ratio		0.55			0.55			0.31			0.31	
v/c Ratio		0.89			0.46			0.60			0.27	
Control Delay		27.8			11.8			28.2			17.8	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		27.8			11.8			28.2			17.8	
LOS		C			B			C			B	
Approach Delay		27.8			11.8			28.2			17.8	
Approach LOS		C			B			C			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 80			
Actuated Cycle Length: 67.6			
Natural Cycle: 80			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.89			
Intersection Signal Delay: 22.7		Intersection LOS: C	
Intersection Capacity Utilization 90.7%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 3:

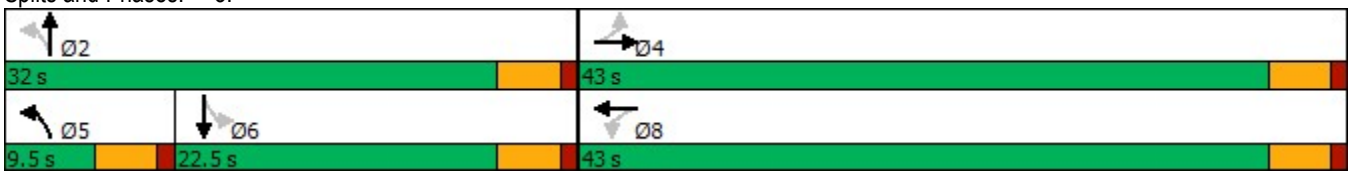


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	23	509	207	4	689	2	221	72	17	12	97	43
Future Volume (vph)	23	509	207	4	689	2	221	72	17	12	97	43
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		200	200		200	200		200	200		0
Storage Lanes	0		0	0		0	0		0	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		0.962						0.993			0.962	
Flt Protected		0.998						0.966			0.996	
Satd. Flow (prot)	0	1771	0	0	1863	0	0	1787	0	0	1802	0
Flt Permitted		0.971			0.997			0.708			0.966	
Satd. Flow (perm)	0	1723	0	0	1857	0	0	1310	0	0	1748	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		38						4			25	
Link Speed (mph)		40			40			40			40	
Link Distance (ft)		305			314			325			286	
Travel Time (s)		5.2			5.4			5.5			4.9	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	3%	3%	3%	2%	2%	2%	2%	2%	2%	1%	1%	1%
Adj. Flow (vph)	24	536	218	4	725	2	233	76	18	13	102	45
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	778	0	0	731	0	0	327	0	0	160	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)		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	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	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	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	
Detector 1 Queue (s)	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	
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		pm+pt	NA		Perm	NA	
Protected Phases		4			8		5	2			6	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		5	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	22.5	22.5		22.5	22.5		9.5	22.5		22.5	22.5	
Total Split (s)	43.0	43.0		43.0	43.0		9.5	32.0		22.5	22.5	
Total Split (%)	57.3%	57.3%		57.3%	57.3%		12.7%	42.7%		30.0%	30.0%	
Maximum Green (s)	38.5	38.5		38.5	38.5		5.0	27.5		18.0	18.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		4.5			4.5			4.5			4.5	
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		3.0	3.0	
Recall Mode	None	None		None	None		None	Min		Min	Min	
Walk Time (s)	7.0	7.0		7.0	7.0			7.0		7.0	7.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0			11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0			0		0	0	
Act Effct Green (s)		33.1			33.1			23.7			23.7	
Actuated g/C Ratio		0.50			0.50			0.36			0.36	
v/c Ratio		0.88			0.79			0.70			0.25	
Control Delay		28.6			21.6			28.3			15.0	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		28.6			21.6			28.3			15.0	
LOS		C			C			C			B	
Approach Delay		28.6			21.6			28.3			15.0	
Approach LOS		C			C			C			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 75			
Actuated Cycle Length: 66.2			
Natural Cycle: 75			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.88			
Intersection Signal Delay: 24.9		Intersection LOS: C	
Intersection Capacity Utilization 92.6%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 3:



Intersection	
Intersection Delay, s/veh	9.2
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	710	375	199	122
Demand Flow Rate, veh/h	759	398	208	128
Vehicles Circulating, veh/h	104	237	576	551
Vehicles Exiting, veh/h	575	547	287	84
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	10.9	7.4	8.1	6.6
Approach LOS	B	A	A	A

Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	759	398	208	128
Cap Entry Lane, veh/h	1241	1084	767	787
Entry HV Adj Factor	0.935	0.943	0.955	0.952
Flow Entry, veh/h	710	375	199	122
Cap Entry, veh/h	1161	1022	733	749
V/C Ratio	0.612	0.367	0.271	0.163
Control Delay, s/veh	10.9	7.4	8.1	6.6
LOS	B	A	A	A
95th %tile Queue, veh	4	2	1	1

Intersection	
Intersection Delay, s/veh	10.3
Intersection LOS	B

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	661	630	275	135
Demand Flow Rate, veh/h	681	643	280	136
Vehicles Circulating, veh/h	101	286	504	840
Vehicles Exiting, veh/h	875	498	278	88
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	9.3	12.4	8.4	9.2
Approach LOS	A	B	A	A

Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	681	643	280	136
Cap Entry Lane, veh/h	1245	1031	825	586
Entry HV Adj Factor	0.971	0.981	0.981	0.994
Flow Entry, veh/h	661	630	275	135
Cap Entry, veh/h	1209	1011	810	582
V/C Ratio	0.547	0.624	0.339	0.232
Control Delay, s/veh	9.3	12.4	8.4	9.2
LOS	A	B	A	A
95th %tile Queue, veh	3	5	2	1

Intersection	
Intersection Delay, s/veh	11.9
Intersection LOS	B

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	825	442	236	144
Demand Flow Rate, veh/h	883	469	248	151
Vehicles Circulating, veh/h	123	283	666	652
Vehicles Exiting, veh/h	680	631	340	100
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	14.7	9.0	10.1	7.8
Approach LOS	B	A	B	A

Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	883	469	248	151
Cap Entry Lane, veh/h	1217	1034	700	710
Entry HV Adj Factor	0.934	0.943	0.953	0.955
Flow Entry, veh/h	825	442	236	144
Cap Entry, veh/h	1137	975	667	677
V/C Ratio	0.725	0.454	0.354	0.213
Control Delay, s/veh	14.7	9.0	10.1	7.8
LOS	B	A	B	A
95th %tile Queue, veh	7	2	2	1

Intersection	
Intersection Delay, s/veh	14.3
Intersection LOS	B

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	778	731	327	160
Demand Flow Rate, veh/h	802	746	334	161
Vehicles Circulating, veh/h	120	341	590	981
Vehicles Exiting, veh/h	1022	583	332	105
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	11.9	18.7	10.9	12.0
Approach LOS	B	C	B	B

Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	802	746	334	161
Cap Entry Lane, veh/h	1221	975	756	507
Entry HV Adj Factor	0.970	0.981	0.980	0.994
Flow Entry, veh/h	778	731	327	160
Cap Entry, veh/h	1184	956	741	504
V/C Ratio	0.657	0.766	0.442	0.317
Control Delay, s/veh	11.9	18.7	10.9	12.0
LOS	B	C	B	B
95th %tile Queue, veh	5	8	2	1

APPENDIX C

Traffic Signal Warrant Analysis

Based on 2009 MUTCD

CASE 1

Date: 4/11/2023

Intersection: Tyrone Rd at Flat Creek Trl

Major Street: Tyrone Rd

Major Street number of approach lanes: 1

Minor Street: Flat Creek Trl

Minor Street number of approach lanes: 1

Isolated Community with population less than 10,000 (Y or N): N

85th persentile speed greater than 40 MPH on major street (Y or N): N *per GDOT policy to use 100% volumes

	Major St Both Approaches	Minor St Highest Approach
Warrant 1: Eight-Hour Vehicular Volume		
Condition A	500	150
Condition B	750	75
Condition C-1 and	400	120
Condition C-2 (needs to meet both)	600	60

Note: Minor Street volumes include right-turn volumes

Warrant 2: Four-Hour Vehicular Volume
see Figure 4C-2

Warrant 3: Peak Hour
see Figure 4C-4

Time	Major St	Minor St	Eight Hour Warrants			Four Hour Warrant	Peak Hour Warrant
			Condition A	Condition B	Condition C		
7:00 am to 8:00 am	704	150	Y		Y		
8:00 am to 9:00 am	839	172	Y	Y	Y	Y	
9:00 am to 10:00 am	618	127			Y		
10:00 am to 11:00 am	591	117					
11:00 am to 12:00 pm	593	121					
12:00 pm to 1:00 pm	573	147					
1:00 pm to 2:00 pm	645	134			Y		
2:00 pm to 3:00 pm	747	143			Y		
3:00 pm to 4:00 pm	870	177	Y	Y	Y	Y	
4:00 pm to 5:00 pm	945	188	Y	Y	Y	Y	
5:00 pm to 6:00 pm	916	223	Y	Y	Y	Y	
6:00 pm to 7:00 pm	626	121			Y		
Total			5	4	9	4	0
Required			8	8	8	4	1
Signal Warrant Met?			No	No	Yes	Yes	No

APPENDIX D

GDOT INTERSECTION CONTROL EVALUATION (ICE) TOOL

ICE Version 2.22 | Revised 5/6/2022

GDOT PI#: N/A Request By: Pond

County: Fayette GDOT District: 3 - Thomaston

Major Road: Tyrone Rd Road Class: Minor Arterial Speed Limit: 40 mph

Crossing Road: Flat Creek Tr Road Class: Local Speed Limit: 40 mph

Major Rd Direction: East/West Area Type: Suburb/Transition

Intersection Control: Conventional (All-Way Stop) Project ID: 1

Prepared By: PM Date: 4/11/2023

Project Purpose: Improve operations and reduce delay at the study intersection

Existing Data Year:	2022
Project Opening Year:	2027
Project Design Year:	2047
Annual Growth Rate:	1.0%
K Factor*:	10%

* K Factor = Proportion of average annual daily traffic occurring in the highest one hour of the day

APPROACH SPLITS:

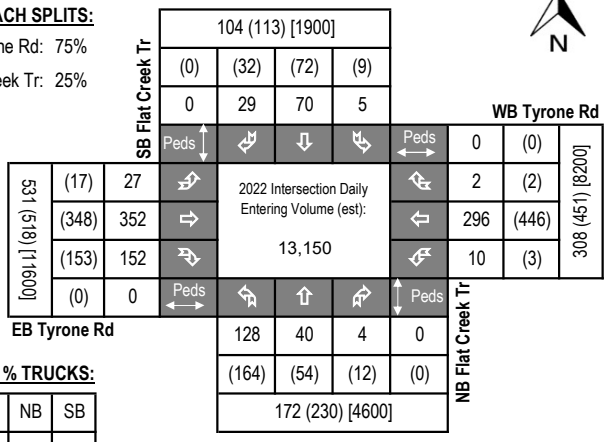
Tyrone Rd: 75%

Flat Creek Tr: 25%

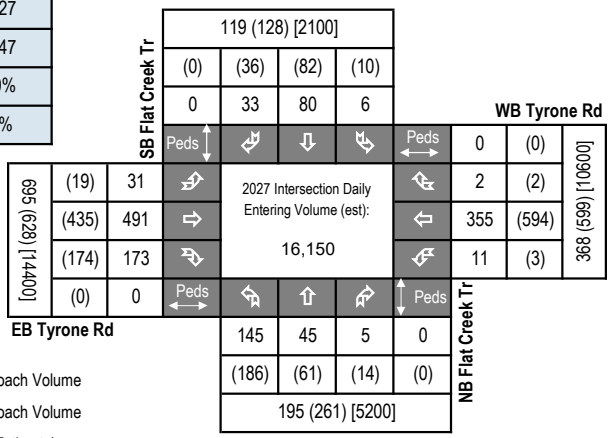
PEAK HR % TRUCKS:

EB	WB	NB	SB
7%	6%	5%	5%

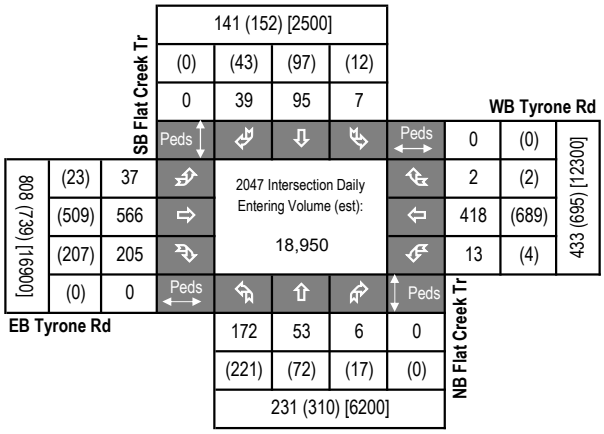
2022 EXISTING YEAR VOLUMES



2027 OPENING YEAR VOLUMES



2047 DESIGN YEAR VOLUMES



LEGEND:

000 = AM Peak Approach Volume

(000) = PM Peak Approach Volume

[000] = ADT Volume (Estimate)

Introduction: In 2005, SAFETEA-LU established the Highway Safety Improvement Program (HSIP) and mandated that each state prepare a Strategic Highway Safety Plan (SHSP) to prioritize safety funding investments. Intersections quickly became a common component of most states' SHSP emphasis areas and HSIP project lists, including Georgia's SHSP. Intersection Control Evaluation (ICE) policies and procedures represent a traceable and transparent procedure to streamline the evaluation of intersection control alternatives, and further leverage safety advancements for intersection improvements beyond just the safety program. Approximately one-third of all traffic fatalities and roughly seventy five percent of all traffic crashes in Georgia occur at or adjacent to intersections. Accordingly, the Georgia SHSP includes an emphasis on enhancing intersection safety to advance the *Toward Zero Deaths* vision embraced by the Georgia Governor's Office of Highway Safety (GOHS). This ICE tool was developed to support the ICE policy, developed and adopted to help ensure that intersection investments across the entire Georgia highway system are selected, prioritized and implemented with defensible benefits for safety towards those ends.

Tool Goal: The goal of this ICE tool is to provide a simplified and consistent way of importing traffic, safety, cost, environmental impact and stakeholder posture data to assess and quantify intersection control improvement benefits. The tool supports the ICE policy and procedures to provide traceability, transparency, consistency and accountability when identifying and selecting an intersection control solution that both meets project purpose and reflects overall best value in terms of specific performance-based criteria.

Requirements: An ICE is required for any intersection improvement (e.g. new or modified intersection, widening/reconstruction or corridor project, or work accomplished through a driveway or encroachment permit that affects an intersection) where: **1)** the intersection includes at least one roadway designated as a State Route (State Highway System) or as part of the National Highway System; or **2)** the intersection will be designed or constructed using State or Federal funding. In certain circumstances where an ICE would otherwise be required, the requirement may be waived based on appropriate evidence presented with a written request. (See the "**Waiver**" tab to review criteria that may make a project waiver eligible and for instructions to submit a waiver request to the Department). An ICE is not required when the proposed work does not include any changes to the intersection design, involves only routine traffic signal timing and equipment maintenance, or for driveway permits where the driveway is not a new leg to an already existing intersection on either 1) a divided, multi-lane highway with a closed median and only right-in/right-out access or 2) an undivided roadway where the development is not required to construct left and/or right turn lanes (as per the Driveway Manual and District Traffic Engineer).

Two-Stage Process: A complete ICE process consists of two (2) distinct stages, and it is expected that the respective level of effort for completing both stages of ICE will correspond to the magnitude and complexity of the intersection. Prior to starting an ICE, the District Traffic Engineer and/or State Traffic Engineer should be consulted for advice on an appropriate level of effort. The Stage 1 and Stage 2 ICE forms are designed minimize required data inputs using drop-down menu choices and limiting text entry. All fields shaded grey include drop down menu choices and all fields shaded blue require data entry. All other cells in the worksheet are locked.

Stage 1: Screening Decision Record Stage 1 should be conducted early in the project development process and is intended to inform which alternatives are worthy of further evaluation in Stage 2. Stage 1 serves as a screening effort meant to *eliminate* non-competitive options and identify which alternatives merit further considerations based on their practical feasibility. Users should use good engineering judgement in responding to the seven policy questions by selecting "Yes" or "No" in the drop-down boxes. Alternatives should not be summarily eliminated without due consideration, and reasons for eliminating or advancing an alternative should be documented in the "Screening Decision Justification" column.

Stage 2: Alternative Selection Decision Record Stage 2 involves a more detailed and familiar evaluation of the alternatives identified in Stage 1 in order to support the selection of a preferred alternative that may be advanced to detailed design. Stage 2 data entry may require the use of external analysis tools to determine costs, operations and/or safety data that, combined with environmental and stakeholder posture data, form the basis of the ICE evaluation. A separate "CostEst" worksheet tab helps users develop pre-planning-level cost estimates for each Stage 2 alternative evaluated, and a separate Users Guide has been prepared to give guidance on Stage 1 and Stage 2 data entry. Once all data is entered, each alternative is scored and ranked, with the results reported at the bottom of the Stage 2 worksheet to inform on the best of the intersection controls evaluated for project recommendation.

Documentation: A complete ICE document consists of the combination of the outputs from either a completed and signed waiver form or both Stage 1 and Stage 2 worksheets (along with supporting costing and/or environmental documentation), to be included in the approved project Concept Report (or equivalent) or as a stand-alone document.

GDOT ICE STAGE 1: SCREENING DECISION RECORD

ICE Version 2.22 | Revised 5/6/2022

GDOT PI #	N/A
Project Location:	Tyrone Rd @ Flat Creek Tr
Existing Control:	Conventional (All-Way Stop)
Prepared by:	PM
Date:	4/11/2023

Answer "Yes" or "No" to each policy question for each control type to identify which alternatives should be evaluated in the Stage 2 Decision Record; enter justification in the rightmost column

Note: Up to 5 alternatives may be selected and evaluated; Use this ICE Stage 1 to screen 5 or fewer alternatives to evaluate in Stage 2

	Intersection Alternative (see "Intersections" tab for detailed description of intersection/interchange type)	1. Does alternative address the project need in a balanced manner and in scale with the project?	2. Does alternative improve safety performance in terms of reducing severe crashes?	3. Does alternative incorporate safety, convenience and accessibility for pedestrians and/or bicyclists?	4. Does alternative improve (or preserve) traffic operations (congestion, delay, reliability, etc.)?	5. Does alternative appear feasible given the site characteristics, constrains & location context?	6. Does alternative appear feasible with respect to other project factors?	7. Overall feasible alternative (select alternative for further evaluation in Stage 2)?	**Screening Decision Justification:**
Unsignalized Intersections	Conventional (Minor Stop)	No	No	No	No	No	No	No	Not appropriate due to high volume of left turning vehicles
	Conventional (All-Way Stop)	No	No	No	No	No	No	No	Existing Conditions, Fails
	Mini Roundabout	No	**Yes**	No	**Yes**	No	No	No	Not appropriate, must accommodate trucks
	Single Lane Roundabout	**Yes**	**Yes**	**No**	**Yes**	**Yes**	**Yes**	**Yes**	Selected for Stage 2
	Multilane Roundabout	No	**Yes**	No	**Yes**	No	No	No	Not appropriate for the scale of the intersection
	RCUT (stop control)	No	**Yes**	No	**Yes**	No	No	No	No appropriate U-turn locations, high volume of minor street LTs
	RIRO w/down stream U-Turn	No	**Yes**	No	**Yes**	No	No	No	No appropriate U-turn locations, high volume of minor street LTs
	High-T (unsignalized)	No	No	No	No	No	No	No	Not a T intersection
	Offset-T Intersections	No	No	No	No	No	No	No	Not applicable
	Diamond Interch (Stop Control)	No	**Yes**	No	**Yes**	No	No	No	Not appropriate for the scale of the intersection
	Diamond Interch (RAB Control)	No	**Yes**	No	**Yes**	No	No	No	Not appropriate for the scale of the intersection
	No LT Lane Improvements Add RT Lanes on Both Roads	**Yes**	**No**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	Selected for Stage 2
	Other unsignalized (provide description):	No	No	No	No	No	No	No	N/A
Signalized Intersections	Traffic Signal	**Yes**	**No**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	Selected for Stage 2
	Median U-Turn (Indirect Left)	**Yes**	No	**Yes**	No	No	No	No	Not appropriate for the scale of the intersection
	RCUT (signalized)	**Yes**	No	**Yes**	No	No	No	No	No appropriate U-turn locations, high volume of minor street LTs
	Displaced Left Turn (CFI)	**Yes**	No	**Yes**	No	No	No	No	Not appropriate for the scale of the intersection
	Continuous Green-T	No	No	No	No	No	No	No	Not a T intersection
	Jughandle	**Yes**	No	**Yes**	No	No	No	No	Not appropriate for the scale of the intersection
	Quadrant Roadway	**Yes**	No	**Yes**	No	No	No	No	Not appropriate for the scale of the intersection
	Diamond Interch (Signal Control)	**Yes**	No	**Yes**	No	No	No	No	Not appropriate for the scale of the intersection
	Diverging Diamond	**Yes**	No	**Yes**	No	No	No	No	Not appropriate for the scale of the intersection
	Single Point Interchange	**Yes**	No	**Yes**	No	No	No	No	Not appropriate for the scale of the intersection
	No LT Lane Improvements No RT Lane Improvements	**Yes**	No	**Yes**	No	No	No	No	Included with the traffic signal alternative
	Traffic Signal w/ No Turn Lanes	**Yes**	**No**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	Traffic Signal with No Turn Lanes

▭ = Intersection type selected for more detailed analysis in Stage 2 Alternative Selection Decision Record

GDOT ICE STAGE 2: ALTERNATIVE SELECTION DECISION RECORD

ICE Version 2.22 | Revised 5/6/2022

Project Location: Tyrone Rd @ Flat Creek Tr
Existing Intersection Control: Conventional (All-Way Stop)
Type of Analysis: Conventional Non-Safety Funded Project

District: 3 - Thomaston
County: Fayette
Area: Suburb/Transitic

GDOT PI #: N/A
Prepared by: PM
Date: 4/11/2023

Opening / Design Year Traffic Operations

Intersection meets signal/AWS warrants?	Meets Signal Warrants	
Traffic Analysis Measure of Effectiveness	Intersection Delay	
Traffic Analysis Software Used	Synchro	
Analysis Time Period	AM Peak Hr	PM Peak Hr
2027 Opening Yr No-Build Peak Hr Intersection Delay	61.7 sec	108.7 sec
2027 Opening Yr No-Build Peak Hr Intersection V/C	1.14	1.28
2047 Design Yr No-Build Peak Hr Intersection Delay	135.1 sec	210.8 sec
2047 Design Yr No-Build Peak Hr Intersection V/C	1.45	1.73

Complete Streets Warrants Met?
- ☐ PEDESTRIANS
- ☐ BICYCLES
- ☐ TRANSIT

Crash Data: Enter most recent 5 years of crash data	Crash Severity K*	A*	B*	C*	O	Years: 5
Angle	0	0	0	0	6	60%
Head-On	0	0	0	0	0	0%
Rear End	0	0	0	0	2	20%
Sideswipe - same	0	0	0	0	1	10%
Sideswipe - opposite	0	0	0	0	0	0%
Not Collision w/Motor Veh	0	0	0	0	1	10%
TOTALS:	0	0	0	0	10	10

Crash Type

* Number of crashes resulting in injuries / fatalities, not number of persons

Alternatives Analysis:

	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5
Proposed Control Type/Improvement:	Single Lane Roundabout	Add Right Turn Lanes	Traffic Signal	Traffic Signal w/ No Turn Lanes	N/A
Project Cost: (From CostEst Worksheet)	*Additional description here*	*Additional description here*	*Add LT bays all approaches*	*Additional description here*	*Additional description here*
Construction Cost	$1,107,000	$490,000	$353,000	$300,000	
ROW Cost	$113,000	$0	$0	$0	
Environmental Cost	$0	$0	$0	$0	
Reimbursable Utility Cost	$13,000	$7,000	$7,000	$1,000	
Design & Contingency Cost	$401,000	$157,000	$158,000	$32,000	
Cost Adjustment (justification req'd)	0%	0%	0%	0%	
Total Cost	$1,634,000	$654,000	$518,000	$333,000	

Traffic Operations:

	Alternative 1		Alternative 2		Alternative 3		Alternative 4		Alternative 5	
Traffic Analysis Software Used	Synchro		Synchro		Synchro		Synchro			
Analysis Period	AM Peak Hr	PM Peak Hr	AM Peak Hr	PM Peak Hr	AM Peak Hr	PM Peak Hr	AM Peak Hr	PM Peak Hr		
2047 Design Yr Build Intersection Delay	11.9 sec	14.3 sec	76.2 sec	160.3 sec	14.3 sec	17.1 sec	22.7 sec	24.9 sec		
2047 Design Yr Build Intersection V/C	0.89	0.77	1.24	1.64	0.74	0.82	0.89	0.88		

User Cost Override

Safety Analysis:

	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5
Predefined CRF: PDO	-3%	20%	39%	0%	
Predefined CRF: Fatal/Inj	88%	13%	40%	0%	
Predefined CRF Source:	FHWA Clearinghouse #s 242 / 210	FHWA Clearinghouse #s 285 / 288	FHWA Clearinghouse #s 7982 / 7984	CRF unavailable; provide user defined CRF below	
User Defined CRF: PDO				28%	
User Defined CRF: Fatal/Inj				28%	
User Defined CRF Source (write in if applicable):				CMF ID 7981	

Environmental Impacts:[1]

	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5
Historic District/Property	None	None	None	None	
Archaeology Resources	None	None	None	None	
Graveyard	None	None	None	None	
Stream	None	None	None	None	
Underground Tank/Hazmat	None	None	None	None	
Park Land	None	None	None	None	
EJ Community	None	None	None	None	
Wooded Area	None	None	None	None	
Wetland	None	None	None	None	

*Note: If environmental impact is significant (**RED**), provide justification impact won't jeopardize project delivery using "Env" worksheet*
[1] Environmental impacts are only preliminary estimates; detailed environmental impact documentation will be included with project concept

Stakeholder Posture:

	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5
Local Community Support	Unknown	Unknown	Unknown	Unknown	
GDOT Support	Unknown	Unknown	Unknown	Unknown	

	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5
Final ICE Stage 2 Score:	6.4	2.2	6.3	5.7	
Rank of Control Type Alternatives:	1	4	2	3	

Final Intersection Control Selection: **1 - Single Lane Roundabout**

Note: Stage 2 score is not given (shown as "-") if signal or AWS is selected as control type but respective warrants are not met

Provide additional comments and/or explain any unique analysis inputs, or results (as necessary):

GDOT ICE Stage 2 Analysis Computation Sheet

ICE Version 2.22 | Revised 5/6/2022

	Alternative:	Single Lane Roundabout	Add Right Turn Lanes	Traffic Signal	Traffic Signal w/ No Turn Lanes	N/A
Cost Estimates	Average Cost = $784,750	$1,634,000	$654,000	$518,000	$333,000	$0
	<50% of Avg Costs:	$ 392,375	10 pts			
	>200% of Avg Costs:	> $ 1,569,500	0 pts			
	Cost Score:	**0.00**	**7.78**	**8.93**	**10.00**	**0.00**
Operations	Delay & V/C	Intersection Delay (50%)			V/C Ratio (50%)	
	Min Delay:	0.0	10 pts	Min V/C:	0.25	10 pts
	Worst Operations:	80.0	0 pts	Max Capacity	1.00	0 pts
	Max Delay:	240.0	-10 pts	Max V/C:	2.00	-10 pts
	Delay Score (Avg AM/PM):	8.36	-2.39	8.04	7.03	0.00
	V/C Score (Avg AM/PM):	2.27	-4.40	2.93	1.53	0.00
	Delay, V/C Ops Score:	5.31	-3.40	5.49	4.28	0.00
	Network Delay (avg AM/PM)	13.1	118.3	15.7	23.80	0.0
	Average of Network Delay:	42.71				
	<50% of Avg Network Delay:	21.4	10 pts			
	>200% of Avg Network Delay:	85.4	0 pts			
	Network Ops Score:	**10.00**	**0.00**	**10.00**	**9.62**	**0.00**
Safety	CRF ID Look-Up:	204	298	212	200	200
	CMF Source:	FHWA	FHWA	FHWA	CRF	CRF
	CMF Clearinghouse ID_{PDO}	242	285	7982	N/A	N/A
	CMF Clearhouse $ID_{FATAL/INJ}$	210	288	7984	N/A	N/A
	Clearinghouse CRF_{PDO}	-0.03	0.20	0.39	0.00	0.00
	Clearinghouse $CRF_{FATAL/INJ}$	0.88	0.13	0.40	0.00	0.00
	Used CRF_{PDO}	-0.03	0.20	0.39	0.28	0.00
	Used $CRF_{FATAL/INJ}$	0.88	0.13	0.40	0.28	0.00
	Weighted Crash Remain:	-3.0	71.9	45.1	56.6	85.0
	Total Weighted Crashes:	85.0	0 pts			
	No crashes:	0.0	10 pts			
	Safety Score:	**10.35**	**1.54**	**4.69**	**3.34**	**0.00**
Environmental	Historic	0	0	0	0	0
	Archaeology	0	0	0	0	0
	Graveyard	0	0	0	0	0
	Stream	0	0	0	0	0
	UST/Hazmat	0	0	0	0	0
	Park Land	0	0	0	0	0
	EJ Community	0	0	0	0	0
	Wooded Area	0	0	0	0	0
	Wetland	0	0	0	0	0
	Environmental Score:	**10.0**	**10.0**	**10.0**	**10.0**	**0.0**
Support	Local Citizen Support	5	5	5	5	5
	GDOT Central Support	5	5	5	5	5
	Project Support Score:	**5.0**	**5.0**	**5.0**	**5.0**	**0.0**

Evaluation Totals	Alternative:	Single Lane Roundabout	Add Right Turn Lanes	Traffic Signal	Traffic Signal w/ No Turn Lanes	N/A
	Cost Estimates - 20%	0.00	1.56	1.79	2.00	0.00
	Operations - 32%	1.70	-1.09	1.76	1.37	0.00
	Safety - 33%	3.42	0.51	1.55	1.10	0.00
	Environmental -10%	1.00	1.00	1.00	1.00	0.00
	Project Support - 5%	0.25	0.25	0.25	0.25	0.00
	Total Score:	**6.37**	**2.23**	**6.34**	**5.72**	**0.00**

Crash Benefit-Costs						
	K: (0)	0	0	0	0	0
	A: (0)	0	0	0	0	0
	B: (0)	0	0	0	0	0
	C: (0)	0	0	0	0	0
	O: (10)	10	10	10	10	10
	F/INJ weighted crash cost:	$0	$0	$0	$0	$0
	Annual Safety Benefit:	-$1,638	$10,931	$21,076	$15,506	$0
	Annual Operations Benefit	$1,073,178	$225,079	$1,049,053	$995,413	$1,156,645
	Annual Cost	$162,158	$76,898	$65,066	$48,971	$20,000
	Operations B/C Ratio:	6.62	2.93	16.12	20.33	57.83
	Safety B/C Ratio:	0.0	0.1	0.3	0.3	0.0
	Weighted B/C (100% Safety)	**0.0**	**0.1**	**0.3**	**0.3**	**0.0**

GDOT ICE TOOL: COST ESTIMATING AID

ICE Version 2.22 | Revised 5/6/2022

Project Information

Location:	Tyrone Rd @ Flat Creek Tr	County:	Fayette	Project#:	N/A
Existing Intersection Control:	Conventional (All-Way Stop)	GDOT District:	3 - Thomaston	Date:	4/11/2023
Type of Analysis:	Conventional Non-Safety Funded Project	Area Type:	Suburb/Transition	Preparer:	PM

Table 1: Existing Conditions

	EB Tyrone Rd			WB Tyrone Rd			NB Flat Creek Tr			SB Flat Creek Tr		
Movement	Left Turn	Thru	Right Turn	Left Turn	Thru	Right Turn	Left Turn	Thru	Right Turn	Left Turn	Thru	Right Turn
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0
Lane Widths*	0'	12'	0'	0'	12'	0'	0'	12'	0'	0'	12'	0'
Bay Length**	0'		0'	0'		0'	0'		0'	0'		0'
Median Width		2'			2'			2'			2'	
Right-of-Way	30'						30'					

Table 2: Proposed Conditions

	Single Lane Roundabout	Add Right Turn Lanes	Traffic Signal	Traffic Signal w/ No Turn Lanes	N/A
Proposed Pavement Type	F.D. Asphalt	F.D. Asphalt	F.D. Asphalt	F.D. Asphalt	F.D. Asphalt
Reimbursable Utility:	Minimal	Minimal	Minimal	Minimal	Minimal
# of Driveway(s) Impacted	0	0	0	0	0
Modify/Replace Traffic Signal*	0	0	0	1	0
Lighting Poles (ea)	0	0	0	0	0
Flashing Beacons (ea)	0	0	0	0	0
RFB/PHB Ped Crossings (ea)	0	0	0	0	0
New/Replace Sidewalks (LF)	0'	0'	0'	0'	0'
New/Replace Cross Drains (LF)	0'	0'	0'	0'	0'
New/Replace Guardrail (LF)	0'	0'	0'	0'	0'
New Retaining Wall (LF)	0'	0'	0'	0'	0'
Bridge:New/Widen/Replace (sqft)	0	0	0	0	0
Add'l ROW/Easements/Demolition	$0	$0	$0	$0	$0

Site Context

Topography:	Rolling
Traffic Mgmt Plan:	Maintain Traffic
Project Size:	Single Intersection

Intersections

Signal Poles	Wood Pole
Design Vehicle	WB-67
Existing Interchange?	No

Roundabouts

Inscribed DIA - Mini	80
Inscribed DIA - Single	140
Inscribed DIA - Multi	200
Circulating Lane Width	18

Cost Multipliers

Grading Complete:	20%
Reimbursable Utility:	2%
Traffic Control:	20%
Project Size:	0%
Prelim Engineering:	15%
Project Contingency:	30%

ROW Costs

Prevalent ROW Type:	Mixed (Average)
ROW Cost/Acre:	$183,413
ROW Multiplier:	1.6

Table 3: Control Type Cost Breakdown

Pay Item	Per Ln Mi Unit Cost	Unit Cost	Single Lane Roundabout		Add Right Turn Lanes		Traffic Signal		Traffic Signal w/ No Turn Lanes		N/A	
			Quantity	Cost	Quantity	Cost	Quantity	Cost	Quantity	Cost	Quantity	Cost
New Construction (Base & Pave)	$500K/LM	$9.47/sqft	27,699	$354,112	16,800	$159,091	16,000	$151,515	0	$0		
Roadway Mill and Overlay	$64K/LM	$1.21/sqft	0	$0	0	$0	0	$0	0	$0		
Urban C&G/Drainage - both sides	441-6720	$22.00/LF	2767	$82,168	3,800	$83,600	4,000	$88,000	0	$0		
Rural Typ Drainage - both sides	$150K/LM	$2.84/LF	0	$0	0	$0	0	$0	0	$0		
Concrete Island (sqyd)	n/a	$75.49/syd	480	$48,918	0	$0	0	$0	0	$0		
Median Landscaping	$100K/LM	$1.89/LF	3000	$7,670	0	$0	0	$0	0	$0		
Typical Driveways Impacted (ea)	n/a	$7,500 ea	0	$0	0	$0	0	$0	0	$0		
Typical E&S Control Temp/Perm	$150K/LM	$34.09/LF	1000	$46,023	1,900	$64,773	2,000	$68,182	0	$0		
Roundabout Truck Apron (sqft)	n/a	$23.00/sqft	2953	$91,700	0	$0	0	$0	0	$0		
Signing & Marking	$0	$22.73/LF	1,000	$30,686	1,900	$43,187	2,000	$45,460	0	$0		
Flashing Beacon (ea)	n/a	$20,000 ea	0	$0	0	$0	0	$0	0	$0		
New Traffic Signal (Wood Poles)	674-1000	$73,030	0	$0	0	$0	0	$0	1	$73,030		
Lighting (per pole)	n/a	$4,700 ea	0	$0	0	$0	0	$0	0	$0		
Signalized Ped Crossings (ea)	n/a	$5,782 ea	0	$0	0	$0	0	$0	0	$0		
6' Sidewalk (LF)	n/a	$41.95/LF	0	$0	0	$0	0	$0	0	$0		
New/replace cross drains (LF)	n/a	$56.37/LF	0	$0	0	$0	0	$0	0	$0		
Typical Guardrail (LF)	n/a	$70.00/LF	0	$0	0	$0	0	$0	0	$0		
Retaining Wall (LF)	n/a	$633.25/LF	0	$0	0	$0	0	$0	0	$0		
Bridge widen/replace (SF)	n/a	$210/sqft	0	$0	0	$0	0	$0	0	$0		
Env Costs (from Stage 2 impacts)	n/a	n/a	0	$0	0	$0	0	$0	0	$0		
Grading Complete - 20%	n/a	n/a		$267,817		$70,130		$0		$14,606		
Traffic Control - 20%	n/a	n/a		$178,544		$70,130		$0		$14,606		
Reimbursable Utility	n/a	n/a		$13,226		$7,013		$7,063		$1,461		
Preliminary Engineering - 15%	n/a	n/a		$133,908		$52,598		$52,974		$10,955		
Contigency - 30%	n/a	n/a		$267,817		$105,195		$105,947		$21,909		
ROW Cost/Acre: Mixed (Average)	n/a	$183,413ac		$71,159		$0		$0		$0		
Add'l ROW / Displacement / Demo	n/a	n/a		$0		$0		$0		$0		
ROW Multiplier - 1.6	n/a	n/a		$42,695		$0		$0		$0		
Project Scale Reduction - 0.0%	n/a	n/a		$0		$0		$0		$0		
Grand Total Costs				**$1,636,000**		**$656,000**		**$519,000**		**$137,000**		

Table 4: Assumption Adjustments/Quantity Overrides

Alternative Evaluated	Assumptions:	Pavement	Calculated ROW (ac)	User Override*	Calculated Pavement	User Override*	Major ST Const Limits	User Override*	Minor ST Const Limits	User Override*
Single Lane Roundabout	--select one--	F.D. Asphalt	0.39	0.0	27,699	0.0	500	0.0	500	0.0
Add Right Turn Lanes	N/A	F.D. Asphalt	0.00	0.0	16,800	0.0	1,000	0.0	900	0.0
Traffic Signal	--select one--	F.D. Asphalt	0.00	0.0	16,000	0.0	1,000	0.0	1,000	0.0
Traffic Signal w/ No Turn Lanes	N/A	F.D. Asphalt	0.00	0.0	0	0.0	0	0.0	0	0.0
N/A	#N/A	F.D. Asphalt	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A

APPENDIX E

Tyrone Rd
Flat Creek Tr
STOP


STO
















Flat Creek Tr






Tyrone Rd
Flat Creek Tr
STOP


Tyrone Rd
Flat Creek Tr




















FEET
IN.
0 8 9 0 0









APPENDIX F

2022 Existing Conditions																							
AM Peak Hour												PM Peak Hour											
NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
128	40	4	5	70	29	27	352	152	10	296	2	164	54	12	9	72	32	17	348	153	3	446	2
2027 Background Growth Volumes																							
AM Peak Hour												PM Peak Hour											
NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
145	45	5	6	80	33	31	400	173	11	336	2	186	61	14	10	82	36	19	395	174	3	507	2
2047 Background Growth Volumes																							
AM Peak Hour												PM Peak Hour											
NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
172	53	6	7	95	39	37	475	205	13	399	2	221	72	17	12	97	43	23	469	207	4	602	2
Business Tech Park DRI Generated Trips																							
AM Peak Hour												PM Peak Hour											
NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
							91			19									40			87	
2027 Volumes																							
AM Peak Hour												PM Peak Hour											
NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
145	45	5	6	80	33	31	491	173	11	355	2	186	61	14	10	82	36	19	435	174	3	594	2
2047 Volumes																							
AM Peak Hour												PM Peak Hour											
NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
172	53	6	7	95	39	37	566	205	13	418	2	221	72	17	12	97	43	23	509	207	4	689	2

Location	SR 54 E/O Tyrone Rd
Year of Historical ADT	2018
Historical ADT	11517
Short-term Growth Rate	2.59%
2022 ADT	12376
Theoretical 2022 ADT	12757
COVID-19 Factor	**1.03**

* As the COVID-19 adjusted volumes would be within 5% of collected volumes, it was not applied

APPENDIX G

INTERSECTION VOLUME DEVELOPMENT

INTERSECTION #3

Tyrone Rd (West)/Tyrone Rd (East) at Flat Creek Trail (South)/Flat Creek Trail (North)

AM PEAK HOUR

	Flat Creek Trail (South) Northbound				Flat Creek Trail (North) Southbound				Tyrone Rd (West) Eastbound				Tyrone Rd (East) Westbound			
	U-Turn	Left	Through	Right	U-Turn	Left	Through	Right	U-Turn	Left	Through	Right	U-Turn	Left	Through	Right
Observed 2022 Traffic Volumes	0	103	27	4	0	14	66	19	0	24	425	112	0	1	290	2
Count Balancing																
Pedestrians		0				0				0				0		
Conflicting Pedestrians		0		0		0		0		0		0		0		0
Heavy Vehicles	0	2	1	1	0	0	1	1	0	1	22	10	0	0	9	0
Heavy Vehicle %	2%	2%	4%	25%	2%	2%	2%	5%	2%	4%	5%	9%	2%	2%	3%	2%
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adjustment Factor	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Adjusted 2022 Volumes	**0**	**103**	**27**	**4**	**0**	**14**	**66**	**19**	**0**	**24**	**425**	**112**	**0**	**1**	**290**	**2**
Annual Growth Rate	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
Growth Factor	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
Background Growth Trips	0	11	3	0	0	1	7	2	0	3	44	12	0	0	30	0
DRI #3628 Highway 74 Business Tech Park: Development Trips																
2032 No-Build Traffic	**0**	**114**	**30**	**4**	**0**	**15**	**73**	**21**	**0**	**27**	**469**	**124**	**0**	**1**	**320**	**2**
2032 No-Build Heavy Vehicle %	**2%**	**2%**	**4%**	**25%**	**2%**	**2%**	**2%**	**5%**	**2%**	**4%**	**5%**	**9%**	**2%**	**2%**	**3%**	**2%**
Trip Distribution IN											5.0%					
Trip Distribution OUT															5.0%	
Balancing Adjustment																
Warehouse Car Trips	0	0	0	0	0	0	0	0	0	0	18	0	0	0	5	0
Trip Distribution IN																
Trip Distribution OUT																
Balancing Adjustment																
Residential Trips	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Trip Distribution IN																
Trip Distribution OUT																
Balancing Adjustment																
Hotel Trips	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Trip Distribution IN											5.0%					
Trip Distribution OUT															5.0%	
Balancing Adjustment																
Office Trips	0	0	0	0	0	0	0	0	0	0	55	0	0	0	6	0
Trip Distribution IN											5.0%					
Trip Distribution OUT															5.0%	
Balancing Adjustment																
Retail Trips	0	0	0	0	0	0	0	0	0	0	7	0	0	0	5	0
Trip Distribution IN											5.0%					
Trip Distribution OUT															5.0%	
Balancing Adjustment																
Other Non-Residential Trips	0	0	0	0	0	0	0	0	0	0	11	0	0	0	3	0
Total Primary Site Trips	0	0	0	0	0	0	0	0	0	0	91	0	0	0	19	0
Pass-By Distribution REDUCTION																
Pass-By Distribution IN																
Pass-By Distribution OUT																
Balancing Adjustment																
Pass-By Trips	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Vehicular Project Trips	0	0	0	0	0	0	0	0	0	0	91	0	0	0	19	0
2032 Build Traffic	**0**	**114**	**30**	**4**	**0**	**15**	**73**	**21**	**0**	**27**	**560**	**124**	**0**	**1**	**339**	**2**
2032 Build Heavy Vehicle %	**2%**	**2%**	**4%**	**25%**	**2%**	**2%**	**2%**	**5%**	**2%**	**4%**	**5%**	**9%**	**2%**	**2%**	**3%**	**2%**

PM PEAK HOUR

	Flat Creek Trail (South) Northbound				Flat Creek Trail (North) Southbound				Tyrone Rd (West) Eastbound				Tyrone Rd (East) Westbound			
	U-Turn	Left	Through	Right	U-Turn	Left	Through	Right	U-Turn	Left	Through	Right	U-Turn	Left	Through	Right
Observed 2022 Traffic Volumes	0	164	58	11	0	9	68	33	0	20	369	127	0	3	430	9
Count Balancing																
Pedestrians		0				0				0				0		
Conflicting Pedestrians		0		0		0		0		0		0		0		0
Heavy Vehicles	0	5	1	0	0	2	1	1	0	1	8	1	0	0	11	0
Heavy Vehicle %	2%	3%	2%	2%	2%	22%	2%	3%	2%	5%	2%	2%	2%	2%	3%	2%
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Adjustment Factor	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Adjusted 2022 Volumes	**0**	**164**	**58**	**11**	**0**	**9**	**68**	**33**	**0**	**20**	**369**	**127**	**0**	**3**	**430**	**9**
Annual Growth Rate	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
Growth Factor	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
Background Growth Trips	0	17	6	1	0	1	7	3	0	2	39	13	0	0	45	1
DRI #3628 Highway 74 Business Tech Park: Development Trips																
2032 No-Build Traffic	**0**	**181**	**64**	**12**	**0**	**10**	**75**	**36**	**0**	**22**	**408**	**140**	**0**	**3**	**475**	**10**
2032 No-Build Heavy Vehicle %	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Trip Distribution IN											5.0%					
Trip Distribution OUT															5.0%	
Balancing Adjustment																
Warehouse Car Trips	0	0	0	0	0	0	0	0	0	0	7	0	0	0	17	0
Trip Distribution IN																
Trip Distribution OUT																
Balancing Adjustment																
Residential Trips	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Trip Distribution IN																
Trip Distribution OUT																
Balancing Adjustment																
Hotel Trips	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Trip Distribution IN											5.0%					
Trip Distribution OUT															5.0%	
Balancing Adjustment																
Office Trips	0	0	0	0	0	0	0	0	0	0	10	0	0	0	48	0
Trip Distribution IN											5.0%					
Trip Distribution OUT															5.0%	
Balancing Adjustment																
Retail Trips	0	0	0	0	0	0	0	0	0	0	19	0	0	0	18	0
Trip Distribution IN											5.0%					
Trip Distribution OUT															5.0%	
Balancing Adjustment																
Other Non-Residential Trips	0	0	0	0	0	0	0	0	0	0	4	0	0	0	4	0
Total Primary Site Trips	0	0	0	0	0	0	0	0	0	0	40	0	0	0	87	0
Pass-By Distribution REDUCTION																
Pass-By Distribution IN																
Pass-By Distribution OUT																
Balancing Adjustment																
Pass-By Trips	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Vehicular Project Trips		0	0	0	0	0	0	0	0	0	40	0	0	0	87	0
2032 Build Traffic	**0**	**181**	**64**	**12**	**0**	**10**	**75**	**36**	**0**	**22**	**448**	**140**	**0**	**3**	**562**	**10**
2032 Build Heavy Vehicle %	**2%**	**3%**	**2%**	**2%**	**2%**	**22%**	**2%**	**3%**	**2%**	**5%**	**2%**	**2%**	**2%**	**2%**	**3%**	**2%**