

# **SAFETY STUDY**

**For**  
**State Road 424 from State Road 423 to State Road 434**  
Section 75260  
M.P. 4.211 to M.P. 4.871  
Orange County

Prepared for:

**FLORIDA DEPARTMENT OF TRANSPORTATION**  
**DISTRICT 5 TRAFFIC OPERATIONS**  
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Districtwide Community Traffic Safety Program (CTSP)  
Financial Project ID: 237995-1-32-16  
Contract No.: C-9Z24  
Consultant No.: 11128  
Task Work Order: 28

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October 2021

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On the date adjacent to the seal

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## **EXECUTIVE SUMMARY**

Traffic Engineering Data Solutions, Inc. (TEDS) was retained on behalf of the Florida Department of Transportation (FDOT) to conduct a safety study related to pedestrian safety and access management improvements on State Road (S.R.) 424, from S.R. 423 (Lee Road) to S.R. 434 (Forest City Road) in Orange County, Florida.

Over a 7-year period there were a total of 276 crashes, including ten (10) pedestrian and seven (7) bicycle crashes. The crashes resulted in one (1) fatality, 124 injuries, and \$945,020 in estimated property damage. Based on engineering judgement, a review of crash history, the location of pedestrian generators and attractors, the proximity to bus stops, adjacent signals, and field observations, the following improvements are recommended:

### Short term improvements:

- At the intersection of S.R. 424 and S.R. 434, refresh the pavement markings (crosswalks, SCHOOL pavement messages, and turn arrows).
- Construct a raised median/separator south of S.R. 434 to restrict turning movements at the Forest Edge Plaza driveway.

### Mid-term improvements

- Installing a full traffic signal at the intersection of S.R. 424 and Satel Drive/Aloha Street (sidestreet approaches are offset and would require split phasing).

### Long term improvements:

- Install a raised median/separator in place of the center two-way left-turn lane.
- Install continuous roadway lighting.

The estimated cost, benefit/cost (B/C) ratio and net present value (NPV) for the recommended improvements was calculated:

- Short term improvements - \$53,399, B/C of 16.48 and NPV of \$1,180,863
- Mid-term improvements - \$834,632, B/C of 2.25 and NPV of \$1,100,915
- Long term improvements:
  - Continuous roadway lighting: \$1,322,276, B/C of 1.94 and NPV of \$15,610,548
  - Raised median: \$16,006,756 (includes cost for right-of-way acquisition), B/C of 2.14 and NPV of \$8,573,027.

Based on the resultant B/C ratios and NPV's, the short term, mid-term and long term improvements are justified as candidate projects for federal safety funding.

## INTRODUCTION

Traffic Engineering Data Solutions, Inc. (TEDS) was retained on behalf of the Florida Department of Transportation (FDOT) to conduct a safety study related to pedestrian safety and access management improvements on S.R. 424, from S.R. 423 (Lee Road) to S.R. 434 in Orange County, Florida. The purpose of this study is to determine opportunities for the design/construction of improvements to promote/enhance pedestrian safety and reduce vehicular conflict points along the corridor. A location map of the study corridor is shown below as **Figure 1**.

The analysis methods used in completing this study are consistent with the Federal Highway Administration's Manual on Uniform Traffic Control Devices (MUTCD 2009), the American Association of State Highway and Transportation Officials' (AASHTO) Highway Safety Manual, 2010, the FDOT Design Manual and engineering judgment. This document contains existing conditions, vehicle/pedestrian/bicycle counts, crash analysis, qualitative assessment, improvement alternatives, and final recommendations.

**Figure 1**  
**General Location Map**



Source: MapQuest



## EXISTING CONDITIONS

S.R. 424 is generally a northwest to southeast arterial roadway that extends northwest from West Par Street, through the study corridor, to S.R. 434 in Orange County, FL. Within the study limits, S.R. 424 is a four-lane undivided arterial with a center two-way left turn lane, bicycle lanes, and curb and gutter. For the purposes of this study, S.R. 424 will be referred to as a north/south roadway.

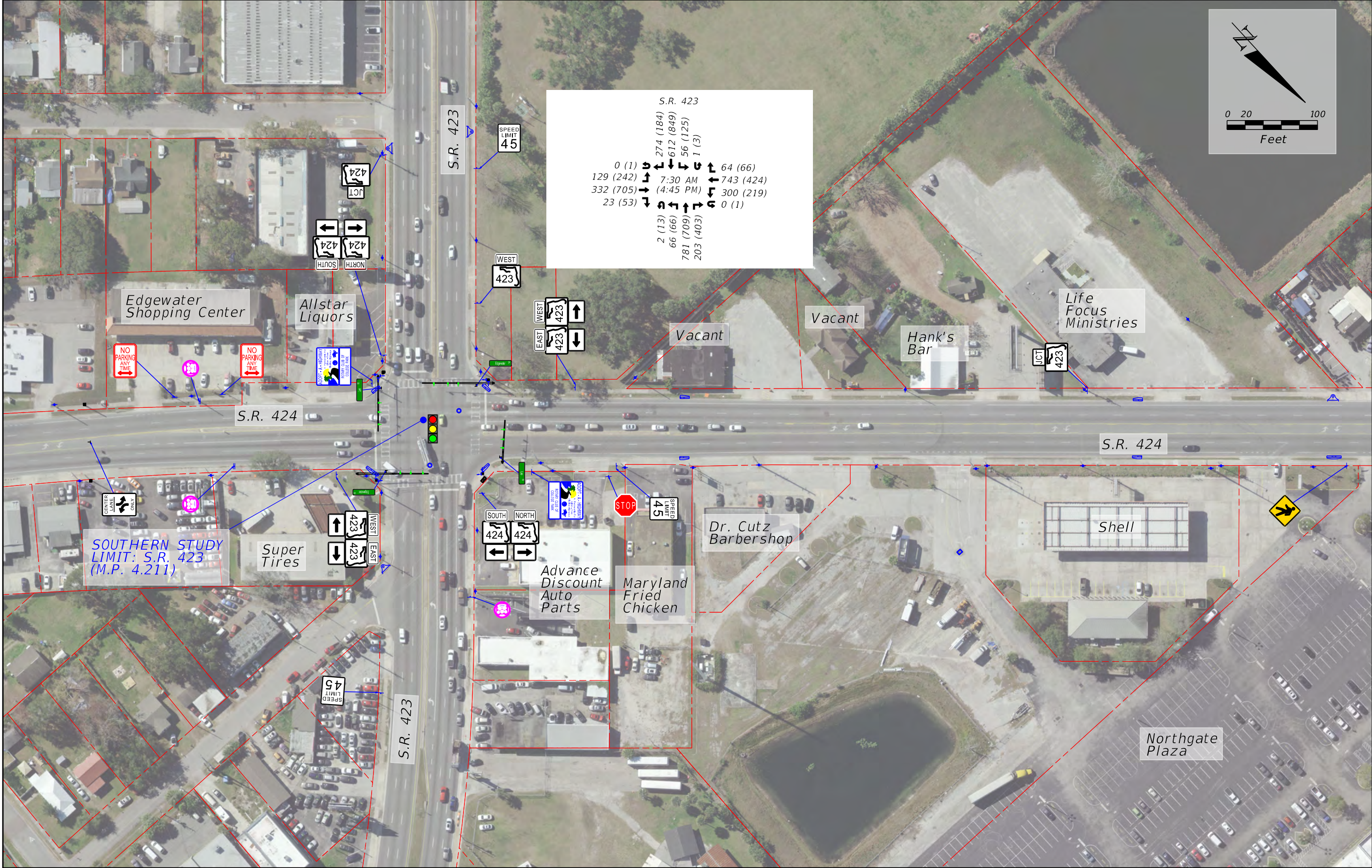
The majority of the land uses along the study corridor are comprised of commercial interests including retail shops and shopping plazas, automotive sales lots, automotive repair garages, and restaurants/bars. Residential housing (single-family unit homes) can be found in the surrounding area behind the commercial interests throughout the study corridor. Three (3) schools are within  $\frac{3}{4}$ -mile of the study corridor. These schools are shown on the previous page in **Figure 1** and include the Avalon School, the Princeton House Charter School, and Lake Weston Elementary School. Lynx, Orange County's public transit provider, has numerous bus stops along both sides of the S.R. 424 corridor (Routes 443 and 23). Route 443 provides eastbound/westbound service from the Park Promenade Superstop near the intersection of Silver Star Road at Hiawasse Road in Pine Hills, through the study corridor, to the Advent Health Hospital of Winter Park near the intersection of Lakemont Avenue at Aloma Avenue. Route 23 provides northbound/southbound service from the Winter Park Sun Rail station to the S.R. 434 at Wekiva Springs Lane stop in Seminole County.

An aerial photograph showing the existing conditions of the study corridor and the surrounding area is depicted in **Figure 2**. The morning and afternoon peak-hour turning movement counts are also included in **Figure 2**. Existing conditions for S.R. 424 are shown below in **Table 1**. A straight-line diagram is provided in **Appendix A**.

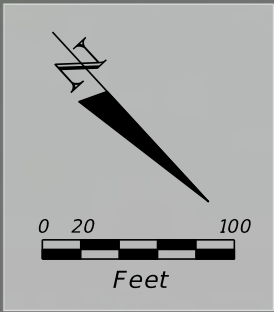
**Table 1**  
**Summary of Existing Conditions**

Feature	Description
<b>Main Line</b>	<ul style="list-style-type: none"> <li>State Road 424</li> </ul>
<b>Area Location</b>	<ul style="list-style-type: none"> <li>Orange County, Florida</li> </ul>
<b>Cross Section</b>	<ul style="list-style-type: none"> <li><u>Cross Section</u>: Four-lane undivided arterial with a two-way left-turn lane, bicycle lanes, and curb and gutter.</li> <li><u>Access</u>: Access Class 6</li> <li><u>Context Classification</u>: C3C-Suburban Commercial</li> <li><u>Posted Speed Limit</u>: 45 mph</li> <li><u>Alignment</u>: Straight</li> <li><u>2019 AADT</u>: 27,500 vehicles per day (vpd)</li> <li><u>Sidewalks</u>: Five (5) foot wide sidewalks along both sides of the roadway throughout the corridor</li> <li><u>Street Lighting</u>: Along both sides of the roadway limited to 200 feet south of S.R. 434</li> <li><u>Utilities</u>: Overhead utilities along the east side of roadway that occasionally cross diagonally over the study corridor</li> <li><u>Bus stops</u>: Multiple bus stops on both sides of the roadway throughout the study corridor (Lynx Routes 23 and 443)</li> </ul>
<b>Adjacent Land Uses</b>	<ul style="list-style-type: none"> <li>Primarily commercial (retail/service/food service) with residential housing (single family unit) in the surrounding areas</li> </ul>
<b>Signalized Intersections</b>	<ul style="list-style-type: none"> <li>S.R. 423 - M.P. 4.211</li> <li>S.R. 434 - M.P. 4.871</li> </ul>





S.R. 423			
0 (1)	274 (184)	64 (66)	
129 (242)	612 (849)	743 (424)	
332 (705)	56 (125)	300 (219)	
23 (53)	1 (3)	0 (1)	
2 (13)	66 (66)		
66 (66)	781 (709)		
	203 (403)		



- ◆ Utility Pole

● Existing Manhole
- ⚡ Traffic Sign

■ Pedestrian Signal Pole
- 🔌 Luminaire

📏 Mitred End Section
- Symbols:

🚦 Traffic Controller Cabinet

🔌 Existing Inlet

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STATE OF FLORIDA  
DEPARTMENT OF TRANSPORTATION

FIGURE 2  
EXISTING CONDITIONS DIAGRAM



MATCHLINE A

MATCHLINE B



- Utility Pole
- Traffic Sign
- Luminaire

Symbols:

- Traffic Controller Cabinet
- Existing Inlet

- Existing Manhole
- Pedestrian Signal Pole
- Mitered End Section

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STATE OF FLORIDA  
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FIGURE 2  
EXISTING CONDITIONS DIAGRAM

PAGE  
NO.

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## **TRAFFIC VOLUMES**

Eight-hour turning movement counts (TMC) were collected on a weekday from 7:00 to 9:00 a.m., 11:00 a.m. to 1:00 p.m., and 2:00 to 6:00 p.m. at the following intersections along S.R. 424:

- S.R. 423 (M.P. 4.211)
- Satel Drive/Aloha Street (M.P. 4.471)
- S.R. 434 (M.P. 4.871)

Four-hour TMC's (vehicles turning onto and off of the side streets) were collected from 2:00 to 6:00 p.m. on a weekday at the following locations along S.R. 424:

- Annandale Avenue (M.P. 4.548)
- Alpha Drive (M.P. 4.603)
- 2nd Street (M.P. 4.660)

The peak-hour volumes at the intersections listed above are shown on the Existing Conditions Diagram in **Figure 2**. Based on the eight-hour TMCs, the peak hours were 7:15 to 8:15 a.m. at Satel Drive, 7:30 to 8:30 a.m. at S.R. 423 and S.R. 434, and 4:45 to 5:45 p.m. for all three (3) intersections.

Eight-hour bicycle and pedestrian counts were obtained throughout the entire corridor during the weekday count to assist in determining the locations people are crossing. The pedestrian/bicycle crossings are summarized on an aerial in **Appendix B**. Throughout the corridor, pedestrian and bicycle activity was high. Details of pedestrian activities are summarized in the Qualitative Assessment section.

## **COLLISION ANALYSIS**

Vehicle, pedestrian, and bicycle safety was assessed along the S.R. 424 corridor through a review of crash reports and field observations. Crash data for the 84-month period between January 1, 2013 and December 31, 2019 was obtained from the FDOT's CAR database and the University of Florida's *Signal Four Analytics*. Based on a review of the data, there were 276 crashes reported within the study limits consisting of the following crash types:

- 95 rear-end;
  - 74 side-swipe;
  - 53 angle;
  - 13 left-turn;
  - Ten (10) pedestrian;
  - Eight (8) right-turn;
  - Seven (7) bicycle;
  - Five (5) fixed-object;
  - Four (4) rollover;
  - Three (3) backed-into;
  - Two (2) head-on;
  - One (1) off-road; and
  - One (1) other
- The crashes resulted in one (1) fatality, 124 injuries, and \$945,020 in estimated property damage.
- 219 crashes (79%) occurred during the day while 57 crashes (21%) occurred at night.
- 245 crashes (89%) occurred under dry pavement conditions and 31 crashes (11%) occurred under wet pavement conditions.
- One (1) fatal pedestrian crash occurred when a southbound driver struck a westbound pedestrian just south of 2<sup>nd</sup> Street. The crash occurred at night, the pedestrian was crossing without the assistance of a crosswalk (midblock), and was wearing a black blanket during the time of the crash. Lighting is not provided within this section of S.R. 424. Additionally, a toxicology report done postmortem determined the pedestrian had a blood alcohol content of 0.18.
- 74 sideswipe crashes occurred as described below:
  - 33 occurred on the southbound approach to S.R. 423 with 12 of them related to southbound drivers changing lanes from the inside through lane to the center two-way left-turn lane while a southbound left-turning vehicle occupied the center turn lane.
  - 20 crashes involved drivers changing lanes in/out of the center two-way left-turn lane.
  - Three (3) occurred when southbound vehicles crossed into the northbound lanes of traffic near Alpha Drive.
  - The remaining sideswipe crashes occurred between vehicles in adjacent through lanes throughout the corridor.
- 53 angle crashes occurred as described below:
  - 15 occurred at the Forest Edge Plaza driveway, involving westbound left-turning drivers who failed to yield to northbound vehicles.
  - 13 occurred at the Shell gas station driveways, involving westbound left-turning drivers who failed to yield to northbound/southbound vehicles.
  - 12 occurred at the Satel Drive intersection, involving westbound left-turning drivers who failed to yield to northbound/southbound vehicles.
  - Seven (7) occurred at the 2<sup>nd</sup> Street/George's Bar driveway intersection, involving eastbound/westbound left-turning drivers who failed to yield to northbound/southbound vehicles.
  - Two (2) occurred at the Hambleton Avenue intersection, involving eastbound left-turning drivers who failed to yield to northbound/southbound vehicles.

- Four (4) occurred at various driveways along the corridor, involving westbound left-turning drivers who failed to yield to northbound/southbound vehicles.
- Nine (9) pedestrian crashes occurred (in addition to the fatal pedestrian crash previously discussed as described below):
  - Six (6) occurred when pedestrians were crossing S.R. 424 (four (4) occurred during night time conditions):
    - Three (3) occurred near Satel Drive when westbound pedestrians were struck by northbound/southbound drivers.
    - A northbound driver struck an eastbound pedestrian at Annandale Drive.
    - An eastbound pedestrian in an electric wheelchair was struck by a northbound vehicle, approximately 800 feet north of S.R. 423.
    - An eastbound pedestrian was struck by a southbound driver, approximately 100 feet south of the Forest Edge Plaza driveway.
  - Two (2) occurred in the south leg crosswalk at S.R. 434.
    - A northbound right-turning driver struck a westbound pedestrian.
    - A southbound driver struck a westbound pedestrian. The driver indicated they had a green signal at the time of the collision. The pedestrian was unsure of the events surrounding the crash and could not provide crash details.
  - An eastbound left-turning driver struck a southbound pedestrian in the crosswalk at Annandale Avenue.
- Seven (7) bicycle crashes occurred as described below:
  - A northbound right-turning driver struck a northbound bicyclist crossing the Advance Discount Auto Parts driveway (150 feet north of S.R. 423).
  - An eastbound driver (exiting Hank's Bar) struck a northbound bicyclist crossing the driveway (approximately 300 feet north of S.R. 423).
  - A westbound driver (exiting the Shell gas station) struck a southbound bicyclist crossing the driveway (approximately 850 feet north of S.R. 423).
  - A southbound left-turning driver failed to yield to a southbound bicyclist in the east crosswalk at Alpha Drive.
  - A westbound driver struck a bicyclist in the east crosswalk at Alpha Drive.
  - A westbound driver struck a southbound bicyclist crossing the driveway of the Forest Edge Plaza.
  - A northbound driver struck an eastbound bicyclist, 15 feet south of 2<sup>nd</sup> street.

It should be noted the bicyclists involved in five (5) of these crashes were travelling on the sidewalk, against the direction of traffic flow for the adjacent travel lane at the time of the crash. One (1) bicycle crash occurred during night time conditions.
- Two (2) head-on collisions occurred as described below:
  - A southbound driver (attempting to access Satel Drive) struck a northbound vehicle (already established in the center two-way left turn lane to access Aloha Street).
  - A northbound driver (near Alpha Drive) failed to maintain their lane of travel and struck a southbound vehicle in the inside lane. The at-fault driver then exited their vehicle and fled on foot from the scene of the crash.
- Of the 13 left-turn crashes, 7 involved southbound/northbound drivers accessing driveways while the remaining 6 occurred at unsignalized intersections along the corridor.

A detailed collision summary specifying all of the crashes and crash types within the study corridor with its corresponding collision diagram are provided in **Appendix C**.



## **LIGHTING JUSTIFICATION ANALYSIS**

### **Warrant Analysis:**

According to Chapter 14 from the Manual on Uniform Traffic Studies (MUTS), the procedures outlined in Section 4 of the August 2012 FHWA Lighting Handbook should be followed to determine roadway lighting justification. For collectors, major arterials, and local streets, the warrant system is based on the Transportation Association of Canada (TAC) Guide for the Design of Roadway Lighting. The study corridor of S.R. 424 is a major arterial. The Lighting Geometric and Operational Factors (Form No. 750-020-20) form was used to evaluate the existing geometry, existing operational and environmental factors, as well as the ratio of night-to-day crash rate. The factors are described below for each study segment.

### **Geometric Factors:**

Geometric conditions of a roadway facility, to a large extent, determine the driving task and the information needs necessary to perform the task safely and efficiently. Included in the geometric factors are the following:

<b>Number of Lanes</b>	5-lanes
<b>Lane Width</b>	12 feet
<b>Median Openings per mile</b>	No Median
<b>Driveways and Entrances per mile</b>	46/mile
<b>Horizontal Curve Radius</b>	>1,969 feet
<b>Vertical Grades</b>	<3%
<b>Sight Distance</b>	>689 feet
<b>Parking</b>	Prohibited on both sides

### **Operational Factors:**

The operational factors are evaluated to provide an indication of how well the facility operates to satisfy its intended function. Included in the operational factors are the following:

<b>Signalized Intersections</b>	0 to 50%
<b>Left Turn Lane</b>	TWLTL
<b>Median Width</b>	11 feet
<b>Operating/Posted Speed</b>	45 mph
<b>Pedestrian Activity Level</b>	High

### **Environmental Factors:**

The environmental factors are evaluated to consider their effects on nighttime driving. Included in the environmental factors are the following:

<b>Percentage of Development</b>	>90%
<b>Area Classification</b>	Commercial
<b>Distance from Development to Roadway</b>	<50 feet
<b>Ambient Lighting</b>	Sparse
<b>Raised Curb Median</b>	None

### Crash Rates:

The desired end result of improving the nighttime driving environment is to reduce the nighttime crash rate and the potential for nighttime crashes. Therefore, historical nighttime crash analysis serves as a means of determining the need for fixed roadway lighting. This analysis evaluates the ratio of night-to-day crash rates.

Crash rates for this study were determined by utilizing the last five (5) years of crash data (January 1, 2015 to December 31, 2019) obtained from the Department's Crash Analysis Reporting System (CARS) database and University of Florida's *Signal Four Analytics*. Day and night crashes were defined in the data set by lighting conditions. The five lighting conditions are defined by CARS as daylight, dusk, dawn, dark (street light) and dark (no street light). For the purpose of this study, collisions that occurred in any other condition than daylight were considered nighttime collisions. Several of the crash times (before 7:00 p.m. and after 6:00 a.m.) were cross referenced with the sunrise and sunset information provided on the timeanddate.com website and included as nighttime crashes when appropriate.

The night-to-day crash rate is based on the percentage of traffic that occurs during dark hours (percent night AADT). For this study, the hours from 7:00 p.m. to 6:00 a.m. were used in determining the percent night AADT depending upon the time of the year. A total of 51 nighttime crashes were reported along the corridor, with 18% of the AADT occurring at nighttime, resulting in a night-to-day crash ratio of 2.04. The calculated nighttime crash rate is shown in **Table 2**.

**Table 2**  
**Night-to-day Crash Rate**

STUDY LIMITS:		From: S.R. 423 to S.R. 434						
CRASH SEGMENT LENGTH:		0.660 miles						
YEAR	2015	2016	2017	2018	2019	TOTAL	% AADT	CRASH RATE
No. of NIGHTTIME CRASHES	7	10	8	13	13	51	18%	13.58
No. of DAYTIME CRASHES	26	31	32	36	33	158	82%	6.65
AADT	28,000	29,500	29,500	30,000	27,500	-	-	-
AVG. AADT								28,900
<b>NIGHT TO DAY CRASH RATE =</b>								<b>2.04</b>
Per NCHRP 152 Lighting Installation Justifiable at rate $\geq$ 2.0								

### Conclusion:

The night-to-day crash rate of 2.04 exceeds the minimum value of 2.0. The total warranting points of 73.36 points, as shown in **Table 3**, also exceeds the minimum 60 points needed to warrant lighting; additionally, the presence of a two-way left-turn lane does warrant the need for lighting. Therefore, **the installation of continuous roadway lighting is warranted along the study segment of S.R. 424 from S.R. 423 to S.R. 434.**

**Table 3**  
**Lighting Justification Warrant Analysis**

State of Florida Department of Transportation									
LIGHTING GEOMETRIC AND OPERATIONAL FACTORS									
Item No.	Classification Factor	Rating Factor "R"					Weight "W"	Enter "R" Here	Score "R"x"W"
		1	2	3	4	5			
<b>Geometric Factors (See Note 6)</b>									
1	Number of Lanes	≤4	5	6	7	≥8	0.15	2	0.3
2	Lane Width (ft.)	>11.8	11.2 to 11.8	10.5 to 11.2	9.8 to 10.5	<9.8	0.35	1	0.35
3	Median Openings/mile	<4 or 1-way	4 to 8	8 to 12	12 to 15	>15 or No Median	1.40	5	7
4	Driveways and Entrances/mile	<32	32 to 64	64 to 97	97 to 129	>129	1.40	2	2.8
5	Horizontal Curve Radius (ft.)	>1969	1476 to 1969	738 to 1476	574 to 738	<574	5.90	1	5.9
6	Vertical Grades (%)	<3	3 to 4	4 to 5	5 to 7	>7	0.35	1	0.35
7	Sight Distance (ft.)	>689	492 to 689	295 to 492	197 to 295	<197	0.15	1	0.15
8	Parking	Prohibited	Loading	Off Peak	One Side	Both Sides	0.10	1	0.1
Subtotal Geometric Factors									16.95 G
<b>Operational Factors</b>									
9	Signalized Intersections (%)	80 to 100	70 to 80	60 to 70	50 to 60	0 to 50	0.15	5	0.75
10	Left Turn Lane	All Major Intersections or 1-way	Substantial Number of Major Intersections	Most Major Intersections	Half of the Intersections	Infrequent Number or TWTL (See Notes 1 & 3)	0.70	5	3.5
11	Median Width (ft.)	> 32	20 to 32	10 to 20	4 to 10	0 to 4	0.35	3	1.05
12	Operating or Posted Speed (mph) (See Note 5)	≤ 25	30	35	45	≥50	0.60	4	2.4
13	Pedestrian Activity Level (See Note 2)			Low	Medium	High	3.15	5	15.75
Subtotal Environmental Factors									23.45 O
<b>Environmental Factors</b>									
14	Percentage of Development Adjacent to Road (%) (See Note 4)	nil	nil to 30	30 to 60	60 to 90	>90	0.15	5	0.75
15	Area Classification	Rural	Industrial	Residential	Commercial	Downtown	0.15	4	0.6
16	Distance from Development to Roadway (ft) (See Note 4)	>200	150 to 200	100 to 150	50 to 100	<50	0.15	5	0.75
17	Ambient (off Roadway) Lighting	Nil	Sparse	Moderate	Distracting	Intense	1.38	2	2.76
18	Raised Curb Median	None	Continuous	At All Intersections (100%)	At Most Intersections (51% to 99%)	At Few Intersections (≤50%) (See Note 7)	0.35	1	0.35
Subtotal Environmental Factors									5.21 E
<b>Collision Factors</b>									
19	Night-to-Day Collision Ratio	<1	1.0 to 1.2	1.2 to 1.5	1.5 to 2.0	>2.0 (See Note 1)	5.55	5	27.75
Subtotal Collision Factors									27.75 A

Notes: 1 Lighting Warranted

2 Pedestrian Activity Level

3 Two Way Left Turn Lane

4 Development defined as Commercial, Industrial or Residential Buildings

5 85th Percentile night speed should be used if available, otherwise posted Speed Limit shall be used

6 Worst case geometric factors for a segment of roadway shall apply

7 Also includes isolated medians (non-continuous) between intersections

G + O + E + A = Total Warranting Points 73.36

Warranting Condition 60.00

Difference ± 13.36 D

Section 1:

SR 423 from U.S. 441 to S.R. 424

### Net Present Value Analysis:

Roadway lighting along the study segment on S.R. 424 from S.R. 423 to S.R. 434 (0.66 miles) is warranted; therefore, according to the MUTS, it is necessary to conduct a Net Present Value (NPV) analysis of the study segment in order to quantify the safety benefits of the lighting project versus the cost of construction, maintenance, and operation of the lighting project. Highway Safety Manual (HSM) predictive methods are available for divided multilane highways. According to the FDOT Florida Traffic Safety Portal, the study segment is not located in a high crash location (HCL).

As noted in Chapter 11 from the HSM, the predicted average crash frequency for base conditions, crash modifications factors and local calibration factors were utilized in calculating the predicted crash frequency per year. Using predicted crash frequencies and costs per crashes, a present value can be calculated for the study segment for different conditions. A sample calculation of the predicted frequency per year for no lighting/no-build conditions is shown below in **Table 4**.

**Table 4**  
**Sample Calculation of Predicted Crash Frequency**

Variable	Meaning	Equation	Equation with values	Value
Nspf	Predicted average crash frequency for base conditions	$e^{(-9.025+1.049*LN(AADT)+LN(length))}$	$e^{(-9.025+1.049*LN(26,060)+LN(1.605))}$	8.29
CMF	Crash Modification Factor (Combined)	$CMF(lane\ width)*CMF(right\ shoulder\ width)*CMF(median\ width)*CMF(lighting)*$	$1*1.09*1.02*1$	1.11
Cx	Local calibration factor	$observed\ crashes\ per\ year/(Nspf*CMF(combined)*number\ of\ years\ of\ data)$	$(75\ crashes/3\ years)/(8.29*1.11*3)$	0.90
Npredicted	Predicted crash frequency for 2017 (no-build)	$Nspf*CMF(combined)*Cx$	$8.29*1.11*0.90$	8.33

\*It should be noted that the crash modification factor (CMF) for lighting is 1.0 in this sample calculation as this sample calculation is for no lighting/no-build conditions (base conditions).

First, the total present value for roadway conditions with no lighting must be calculated (no-build conditions). The opening year of the lighting installation was assumed to be in 2022. Using the default service life of 15 years for roadway lighting, predicted crash frequencies were calculated through 2036. A review of the corridor's historical AADT indicated a decline over recent years, but a 1% growth rate was used to estimate for some growth on the study corridor. Furthermore, the FDOT KABCO costs of crashes were updated per the Plans Preparation Manual (PPM) in Chapter 23. The default distributions for crash severity level were taken from the most recent present value excel form for urban multilane roadways as posted on the MUTS website. The total present value is \$84,568,760 for no lighting/no-build conditions as shown in **Table 5** following this section.

Secondly, the total present value for roadway conditions with lighting must be calculated (build conditions). The same factors used during the no-build calculations were applied to the build calculations, with the exception of a change in the crash modification factor for lighting. In the no-build conditions, a crash modification factor of 1.0 was used as no lighting is present in the study segment's base conditions. This is different for the lighting/build conditions, as a crash modification factor of 0.8 was used in accordance with the HSM, table 13-56, for all types of nighttime crashes with all severities. The total present value is \$67,655,008 for lighted/build conditions as shown in **Table 6**.

The cost difference between the unlighted condition and the lighted condition for the corridor is \$16,913,752; this value represents the value savings the lighted project yields over 15 years. These savings are compared to the present value of the lighting project costs, which is made up of construction/installation costs, annual maintenance costs, and annual electric costs.

A cost estimate for the installation of continuous lighting of the study segment was calculated based on the current geometry of the roadway. In order to obtain the maximum effective spacing, a two-pole opposing setup with conventional poles was used, with two (2) single fixture poles stationed along the back of the sidewalk of S.R. 424 at a spacing of 200 feet from S.R. 423 to S.R. 434. This equates to 53 poles and fixtures per mile, respectively, totaling 36 poles and fixtures within the study section. Additionally, the signalized intersection of S.R. 424 at S.R. 423 does not currently contain lighting. An estimated 12 additional poles and pull boxes were added to the cost estimate to account for this. Including poles, pull boxes, conductors, conduits, load centers, and cables, the corridor installation cost is estimated at \$1,191,309 (including maintenance of traffic, mobilization, project unknowns, engineering cost, and CEI.)

An annual maintenance cost of \$150 per pole was applied to the 48 poles in the study section for an annual total maintenance cost of \$7,200. Using the default service life of 15 years for roadway lighting, the present value of annual maintenance costs is estimated to be \$80,052. The present value calculations are provided in **Appendix E**.

The annual electric costs were estimated using the U.S. Energy Information Administration's average "All Sector" cost for Florida, which was approximately \$0.1048 per kilowatt-hour in January 2021. The fixtures were assumed to use 130-watt LED lamps with a mounting height of 35 feet. The lights were estimated for 12 hours of use per day and 1.56 kilowatts for each 12 hour period. The annual electric costs for the 48 fixtures in the study section are estimated to be \$2,864. Using the default service life of 15 years for roadway lighting, the present value of annual electric costs is estimated to be \$31,843. The present value calculations are provided in **Appendix E**.

For new roadway lighting systems, the net present value (NPV) is the present value of the cost difference between the unlighted conditions and the lighted conditions (\$16,913,752) minus the installation cost (\$1,191,309), the present value of annual maintenance costs (\$80,052), and the present value of annual electric costs (\$31,843). Therefore, the NPV is \$15,610,548, which shows that the value savings are greater than the total project cost to install lighting on S.R. 424 within the study section. As the study segment is not in an HCL, the NPV should be used to rank this and other projects according to their value in benefit to the public. Those with a higher NPV offer more value than those with a lower NPV when the cost of construction, maintenance, and operation are comparable.

### **Conclusion:**

The study segment of S.R. 424 from S.R. 423 to S.R. 434 meets the lighting requirements of the MUTS along with the TAC Guide for the Design of Roadway Lighting and the AASHTO Roadway Lighting Design Guide Warranting System.

The segment from S.R. 423 to S.R. 434 has a night-to-day crash rate of 2.04, the total warranting points of 73.36 points exceeds the minimum 60 points needed, and the presence of a continuous two-way left-turn lane all warrant lighting. Additionally, the NPV of \$15,610,548 shows that the monetary savings outweigh the total project cost of installing continuous highway lighting. Therefore, **the installation of continuous roadway lighting (and pedestrian lighting at signalized intersections) is recommended along the study segment of S.R. 424 from S.R. 423 to S.R. 434.**

**Table 5**  
**Roadway Lighting Present Value – No-build Conditions**

General Information									Site Information						
Analyst: TSH			Date: 12/7/2020			Location ID: 75260			County: Orange						
Agency or Company: TEDS (FDOT District 5)						City:			M.P. - M.P. 4.211- 4.871						
Manual Input from Analysis															
Growth Rate = 1.0%		Current Year = 2021		Project Opening Year = 2022		Default Distribution for Crash Severity Level (2010-2014 Florida HSM Crash Distribution)									
Opening Year AADT = 27,500		Rate of Return = 4.0%		Analysis Period = 15		Fatality = 2.1%				Possible Injury = 20.0%					
Segment Length = 0.66		Segment Type = 5T		Analyze		Incapacitating = 3.2%				Property Damage Only = 65.2%					
Crash Data Used = No		Segment = Segment1				Non-Incapacitating = 9.5%				100.0%					
	Year	AADT	Annual Number of Crashes						Annual Cost						
			Site Specific (N <sub>predicted</sub> / expected)	Fatality	Incap.	Non-Inc.	Possible Injury	PDO	Fatality	Incap.	Non-Inc.	Possible Injury	PDO	Total Cost	Present Value
	2021	27,500		0.000	0.000	0.000	0.000	0.000	\$0	\$0	\$0	\$0	\$0	\$0	\$0
1	2022	27,775	24.0	0.505	0.770	2.285	4.810	15.680	\$5,388,727	\$671,543	\$397,576	\$510,879	\$120,737	\$7,089,462	\$6,816,790
2	2023	28,053	24.3	0.511	0.778	2.310	4.863	15.854	\$5,448,460	\$678,987	\$401,983	\$516,542	\$122,075	\$7,168,048	\$6,627,263
3	2024	28,333	24.6	0.516	0.787	2.336	4.917	16.030	\$5,508,876	\$686,516	\$406,441	\$522,270	\$123,429	\$7,247,531	\$6,443,029
4	2025	28,617	24.9	0.522	0.795	2.362	4.972	16.208	\$5,569,980	\$694,130	\$410,949	\$528,063	\$124,798	\$7,327,921	\$6,263,938
5	2026	28,903	25.1	0.528	0.804	2.388	5.027	16.387	\$5,631,783	\$701,832	\$415,509	\$533,922	\$126,183	\$7,409,229	\$6,089,846
6	2027	29,192	25.4	0.534	0.813	2.414	5.083	16.569	\$5,694,290	\$709,622	\$420,120	\$539,848	\$127,583	\$7,491,464	\$5,920,613
7	2028	29,484	25.7	0.540	0.822	2.441	5.139	16.753	\$5,757,512	\$717,501	\$424,785	\$545,842	\$129,000	\$7,574,639	\$5,756,103
8	2029	29,779	26.0	0.546	0.831	2.468	5.196	16.939	\$5,821,455	\$725,469	\$429,502	\$551,904	\$130,433	\$7,658,764	\$5,596,184
9	2030	30,076	26.3	0.552	0.841	2.496	5.254	17.127	\$5,886,129	\$733,529	\$434,274	\$558,036	\$131,882	\$7,743,850	\$5,440,726
10	2031	30,377	26.6	0.558	0.850	2.523	5.312	17.318	\$5,951,542	\$741,681	\$439,100	\$564,237	\$133,347	\$7,829,907	\$5,289,605
11	2032	30,681	26.9	0.564	0.859	2.551	5.371	17.510	\$6,017,702	\$749,925	\$443,981	\$570,509	\$134,830	\$7,916,948	\$5,142,698
12	2033	30,988	27.2	0.570	0.869	2.580	5.431	17.705	\$6,084,618	\$758,265	\$448,918	\$576,853	\$136,329	\$8,004,983	\$4,999,889
13	2034	31,298	27.5	0.577	0.879	2.608	5.491	17.902	\$6,152,299	\$766,699	\$453,912	\$583,270	\$137,845	\$8,094,025	\$4,861,062
14	2035	31,611	27.8	0.583	0.888	2.637	5.553	18.101	\$6,220,753	\$775,230	\$458,962	\$589,760	\$139,379	\$8,184,084	\$4,726,105
15	2036	31,927	28.1	0.590	0.898	2.667	5.614	18.303	\$6,289,990	\$783,858	\$464,071	\$596,324	\$140,930	\$8,275,173	\$4,594,910
Total Present Value														\$84,568,760	

**Table 6**  
**Roadway Lighting Present Value – Build Conditions**

General Information									Site Information						
Analyst: TSH			Date: 12/7/2020			Location ID: 75260			County: Orange						
Agency or Company:			TEDS (FDOT District 5)			City:			M.P. - M.P. 4.211 - 4.871						
Manual Input from Analysis															
Growth Rate = 1.0%		Current Year = 2021		Project Opening Year = 2022		Default Distribution for Crash Severity Level (2010-2014 Florida HSM Crash Distribution)									
Opening Year AADT = 27,500		Rate of Return = 4.0%		Analysis Period = 15		Fatality = 2.1%				Possible Injury = 20.0%					
Segment Length = 0.66		Segment Type = 5T		Analyze		Incapacitating = 3.2%				Property Damage Only = 65.2%					
Crash Data Used = No		Segment = Segment2				Non-Incapacitating = 9.5%				100.0%					
	Year	AADT	Annual Number of Crashes						Annual Cost						
			Site Specific (N <sub>predicted / expected</sub> )	Fatality	Incap.	Non-Inc.	Possible Injury	PDO	Fatality	Incap.	Non-Inc.	Possible Injury	PDO	Total Cost	Present Value
	2021	27,500		0.000	0.000	0.000	0.000	0.000	\$0	\$0	\$0	\$0	\$0	\$0	\$0
1	2022	27,775	19.2	0.404	0.616	1.828	3.848	12.544	\$4,310,981	\$537,234	\$318,061	\$408,703	\$96,590	\$5,671,570	\$5,453,432
2	2023	28,053	19.5	0.409	0.622	1.848	3.891	12.683	\$4,358,768	\$543,189	\$321,587	\$413,234	\$97,660	\$5,734,438	\$5,301,811
3	2024	28,333	19.7	0.413	0.629	1.868	3.934	12.824	\$4,407,101	\$549,212	\$325,152	\$417,816	\$98,743	\$5,798,025	\$5,154,423
4	2025	28,617	19.9	0.418	0.636	1.889	3.977	12.966	\$4,455,984	\$555,304	\$328,759	\$422,450	\$99,839	\$5,862,337	\$5,011,150
5	2026	28,903	20.1	0.422	0.643	1.910	4.021	13.110	\$4,505,426	\$561,466	\$332,407	\$427,138	\$100,946	\$5,927,383	\$4,871,877
6	2027	29,192	20.3	0.427	0.651	1.931	4.066	13.255	\$4,555,432	\$567,698	\$336,096	\$431,879	\$102,067	\$5,993,172	\$4,736,491
7	2028	29,484	20.6	0.432	0.658	1.953	4.111	13.403	\$4,606,010	\$574,001	\$339,828	\$436,674	\$103,200	\$6,059,711	\$4,604,883
8	2029	29,779	20.8	0.436	0.665	1.975	4.157	13.551	\$4,657,164	\$580,375	\$343,602	\$441,523	\$104,346	\$6,127,011	\$4,476,947
9	2030	30,076	21.0	0.441	0.672	1.996	4.203	13.702	\$4,708,903	\$586,823	\$347,419	\$446,429	\$105,505	\$6,195,080	\$4,352,581
10	2031	30,377	21.2	0.446	0.680	2.019	4.250	13.854	\$4,761,234	\$593,345	\$351,280	\$451,390	\$106,678	\$6,263,926	\$4,231,684
11	2032	30,681	21.5	0.451	0.688	2.041	4.297	14.008	\$4,814,162	\$599,940	\$355,185	\$456,408	\$107,864	\$6,333,558	\$4,114,159
12	2033	30,988	21.7	0.456	0.695	2.064	4.345	14.164	\$4,867,694	\$606,612	\$359,135	\$461,483	\$109,063	\$6,403,987	\$3,999,911
13	2034	31,298	22.0	0.461	0.703	2.087	4.393	14.322	\$4,921,839	\$613,359	\$363,129	\$466,616	\$110,276	\$6,475,220	\$3,888,849
14	2035	31,611	22.2	0.466	0.711	2.110	4.442	14.481	\$4,976,603	\$620,184	\$367,170	\$471,808	\$111,503	\$6,547,267	\$3,780,884
15	2036	31,927	22.5	0.472	0.719	2.133	4.491	14.642	\$5,031,992	\$627,086	\$371,256	\$477,059	\$112,744	\$6,620,139	\$3,675,928
														Total Present Value	\$67,655,008



## **QUALITATIVE ASSESSMENT**

The study corridor was observed by a registered professional engineer on a weekday during the morning and afternoon peak hours to determine the need for any improvements to enhance the safety and efficiency of the corridor.

### **Operations:**

Operations include the efficiency of operation and interaction of motor vehicles, pedestrians, and bicycles along the corridor.

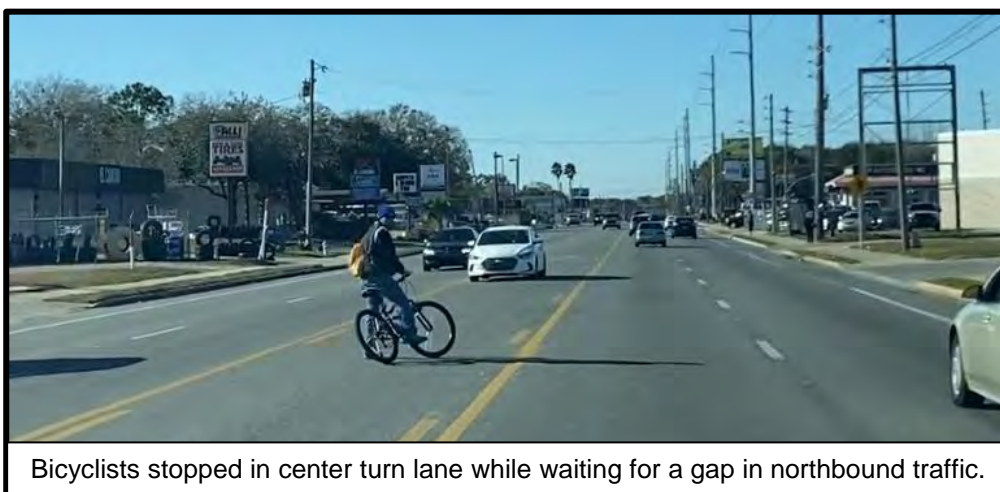
- S.R. 424 is a five-lane divided roadway (two lanes in each direction with a center two-way left-turn lane) within the study section, with sidewalks provided along both sides of the roadway. Bike lanes are provided in both directions from S.R. 423 to Hambleton Avenue and on the northbound side of the roadway from Hambleton Avenue to S.R. 434. Lighting is not provided within this section of S.R. 424.
- Vehicles traveling on S.R. 424 were generally observed to be traveling at the 45 mph posted speed limit.
- There are two signalized intersections within the study corridor; S.R. 423 and S.R. 434.
- Multiple bus stops are provided along both sides of the road throughout the study corridor (Lynx Routes 23 and 443). The bus stop locations appeared appropriate based on the surrounding land uses (apartments, restaurants and businesses).
- Several schools are within one mile of the study corridor:
  - Lake Weston Elementary School is a public school located east of the corridor. School hours are 8:14 a.m. to 3:30 p.m. (2:30 p.m. on Wednesday). The parent drop-off/pick-up loop is accessed via Satel Drive and Alpha Drive.
  - Avalon School is a private school (serving 1<sup>st</sup> through 12<sup>th</sup> grade) and is located southeast of the corridor. School hours are 8:20 a.m. to 2:20 p.m. (1:20 p.m. on Wednesday).
  - Princeton House Charter School serves children with autism in kindergarten through 5<sup>th</sup> grade and is located southeast of the corridor. School hours are 8:30 a.m. to 2:30 p.m. (1:30 p.m. on Wednesday).

No school-aged pedestrians/bicycles were observed crossing S.R. 424 throughout the study corridor.

- The area surrounding the study corridor is comprised of commercial businesses (auto sales and repair shops, retail, personal services and restaurants) and residential (both single family and multi-family housing) immediately behind the commercial properties. The varied land uses (attractors and generators) on both sides of the roadway result in pedestrian activity throughout the corridor.
- Vehicular traffic was moderate to heavy with platoons of cars created by the signalized intersections. Turning movements were generally efficient along the corridor from the center two-way left-turn lane. Conflicts were observed between northbound/southbound turning vehicles and sidestreet left-turning vehicles attempting to access the center turn lane to merge into traffic.
- A total of 30 pedestrians and 55 bicyclists crossed within the crosswalks at the signalized intersection of S.R. 424 at S.R. 423 during the 8-hour count period. At the signalized intersection of S.R. 424 at S.R. 434, 34 pedestrians and 34 bicyclists were observed crossing within the crosswalks. Crosswalks and push button pedestrian signal detection with countdown type pedestrian signal heads are provided on all legs of the signalized intersections. The current pedestrian WALK and DON'T WALK intervals were evaluated and determined to be adequate based on MUTCD guidelines and the existing

crosswalk lengths. No vehicular versus pedestrian/bicycle conflicts were observed at the signalized intersections.

- During the 8-hour count period, 99 pedestrians and 32 bicyclists were observed crossing midblock (outside of marked crosswalks). While there was not a well-defined concentration of crossings at any particular location along the corridor, the segment from south of Satel Drive to north of Alpha Drive appeared to have the most midblock crossings. Pedestrian crossing warning signs (W11-2) are installed north/south of Satel Drive for the northbound/southbound direction of travel. Overall, midblock crossings appeared to be more random with the crossing location being dependent on available gaps in approaching vehicular traffic.
- Pedestrians were observed crossing at various locations, both mid-block and at the corners of unsignalized intersections. Pedestrians were observed making two-stage crossings by first crossing one direction of traffic, and then waiting within the center two-way left-turn lane for a gap in the other direction of traffic before crossing the next two (2) lanes of traffic. Generally, pedestrians/bicyclists were observed waiting for gaps in approaching traffic to cross; however, some drivers were observed taking evasive action (braking or changing lanes) to avoid a pedestrians/bicycle conflict.
- Conflicts between vehicles and pedestrians/bicyclists crossing midblock were noted when pedestrians/bicyclists were staged in the center turn lane. The bicyclist shown in the photo below had been travelling northbound on the west sidewalk, crossed the southbound lanes and was travelling in the center turn lane while waiting for a gap in northbound traffic. When a southbound left-turning driver entered the center turn lane, the bicyclist came to a stop while waiting for a gap in northbound traffic.



Bicyclists stopped in center turn lane while waiting for a gap in northbound traffic.

### Safety:

- A review of crash data for S.R. 424 for the period between January 1, 2013 and December 31, 2019 revealed 276 crashes, resulting in one (1) fatality, 124 injuries, and \$945,020 in estimated property damage.
- Ten (10) pedestrian (1 fatal) and seven (7) bicycle crashes occurred within the study limits with the following characteristics:
  - Four (4) pedestrian and one (1) bicycle crash occurring during dark conditions.
  - Five (5) of the bicycle crashes involved drivers exiting driveways/sidestreets and striking northbound/southbound bicyclists on the sidewalk, travelling in the opposite direction of vehicular traffic.

- Seven (7) pedestrian crashes occurred when the pedestrian was crossing outside of a marked crosswalk (midblock).
  - Five (5) of these pedestrian crashes occurred within 600 feet of the Satel Drive intersection.
  - The fatal pedestrian crash occurred when a southbound driver struck a westbound pedestrian who was crossing midblock, just south of 2<sup>nd</sup> Street. The crash occurred at night, the pedestrian wearing a black blanket at the time of the crash and was noted to be under the influence (blood alcohol content of 0.18).
- Consideration was given to mid-block crosswalks throughout the study segment. Based on the locations of pedestrian/bicycle crashes, bus stop locations, and existing pedestrian crossing volumes, **a midblock crosswalk should be considered in the vicinity of Satel Drive/Aloha Street.** Further discussion regarding the midblock crosswalk is provided in a subsequent section.
- Forest Edge Plaza (shopping center) is located in the southeast quadrant of the S.R. 424 at S.R. 434 intersection, with an additional driveway connection onto Live Oak Lane (300 feet northeast of S.R. 424). During the 7-year collision analysis period, 16 angle crashes and one (1) left-turn crash have been reported at the driveway on S.R. 424. Northbound queues from the S.R. 434 signal were observed extending up to and beyond this driveway, resulting in exiting drivers attempting to navigate in between queued vehicles. A count was not conducted at this driveway however, given the crash history, observed conflicts and the alternative driveway access point for the plaza, **it is recommended a raised median/separator be constructed to restrict turning movements at this driveway as a short-term improvement.**
- Consideration was also given to a long-term improvement of installing a raised median/separator, with median openings placed at strategic locations throughout the corridor to reduce conflict points. Further discussion regarding the implementation of access management is provided in a subsequent section. The following crashes would be considered correctable with the installation of a raised median:
  - 23 of the 74 sideswipe crashes involved drivers in the center two-way left-turn lane.
  - 53 angle crashes occurred as the result of eastbound/westbound drivers failing to yield to northbound/southbound drivers. 39 occurred at various driveways throughout the corridor and 14 occurred at unsignalized intersections (12 at Satel Drive).
  - Two (2) head-on crashes.
  - Seven (7) of the 13 left-turn crashes occurred while northbound/southbound drivers were accessing driveways along S.R. 424.

#### **Maintenance:**

During the various field reviews the condition of the study corridor's asphalt, striping, signing and lighting were observed. The following are observations related to the maintenance of the study corridor based on the various field reviews:

- The signs, pavement markings, and pavement conditions along S.R. 424 generally appear to be in good condition, with the exception of the following:
  - The pavement markings (crosswalks, SCHOOL pavement messages, and turn arrows) at the intersection of S.R. 424 and S.R. 434 are worn/faded. **It is recommended the pavement markings be refreshed.**

**Midblock Pedestrian Crossing Evaluation:**

Midblock pedestrian crosswalks are utilized for the purposes of enhancing pedestrian connectivity and providing for pedestrian crossings at predictable locations in an effort to promote pedestrian/bicycle safety. The midblock pedestrian crossings were evaluated against the guidelines in section 5.2 of the FDOT Traffic Engineering Manual (TEM), revised January 2021. The chart on Figure 5.2-2 of the TEM was used to evaluate the crossing with a posted speed of 45 mph and crossing distance of 60 to 70 feet.

Based on the posted speed limit (45 mph) and the 5-lane typical section of the corridor, installation of Rectangular Rapid Flashing Beacons (RRFB's) is not recommended, however a Pedestrian Hybrid Beacon (PHB) could be considered. Due to the closely spaced intersections along S.R. 424 and frequent driveways, there does not appear to be a location to properly accommodate a PHB, while maintaining 100 foot spacing from sidestreets or driveways. Therefore, a PHB is not recommended.

Based on a preliminary screening of the signal warrants for Satel Drive/Aloha Street, the existing westbound approach volumes (single lane approach to include left and right-turn movements) meets Warrant 1B (Interruption of Continuous Traffic, 56% threshold) and Warrant 2 (4-hour Vehicular Volume). Satel Drive provides access to Lake Weston Elementary School (parent and employee access), the large shopping center east of S.R. 424 (south of Satel Drive) and several smaller commercial services. Satel Drive also connects to Alpha Drive, which appears to be the main access roadway to Lake Weston Elementary School. During the 7-year collision analysis period, 12 angle crashes and three (3) left-turn crashes have been reported at Satel Drive that would be considered correctable with the installation of a traffic signal.

A signal at this location, along with the adjacent traffic signals (0.26 miles south and 0.40 miles north) could collectively provide a progressive operation and create larger gaps to allow other sidestreet turning movements to occur with less conflict; therefore Warrant 6 (Coordinated Signal System) would also be met.

Based on the existing corridor characteristics, the surrounding residential neighborhoods, pedestrian generators/attractors, the potential for locally redirected vehicular and pedestrian/bicycle movements, the limitations of providing an RRFB or a PHB at this intersection, the preliminary signal warrant screening and engineering judgement, **consideration should be given to installing a full traffic signal at the intersection of S.R. 424 and Satel Drive/Aloha Street (sidestreet approaches are offset and would require split phasing).** A traffic signal at Satel Drive/Aloha Street would:

- Provide a location for pedestrians to safely cross S.R. 424.
- Reduce pedestrian delay for crossing S.R. 424.
- Reduce the frequency of pedestrians standing in the two-way left-turn lane while waiting for gaps in traffic.
- In conjunction with adjacent traffic signals, provide a progressive operation and creates larger gaps for other sidestreet turning movements.

**Conceptual Access Management Assessment:**

As a long-term improvement, consideration should be given to installing a raised median/separator in place of the center two-way left-turn lane. It should be noted that due to the existing constrained typical section (62 feet curb-to-curb), a raised median will likely require significant reconstruction outside of the existing curbline, resulting in right-of-way and utility impacts. The existing right-of-way appears to vary from 82 to 100 feet, per the Orange County Property Appraiser's GIS mapping tool. The intent is to provide a conceptual access management improvement plan and the proposed typical section, along with a probable cost/benefit analysis for the associated improvements.

The FDOT Access Management Guidebook, November 2019 provides guidance on median opening placement and spacing. S.R. 424 is Access Class 6, which pertains to a roadway without a restrictive median. Should a median be constructed, Access Class 5 guidelines would be appropriate for the corridor, requiring a spacing of 1,320 feet between full median openings and signals and 660 feet between Restricted Crossing U-turn (RCUT) median openings.

Based on the access management guidelines, full median openings would be provided only at signalized intersections (S.R. 423, Satel Drive/Aloha Street, and S.R. 434) and RCUTs would be recommended at the following locations:

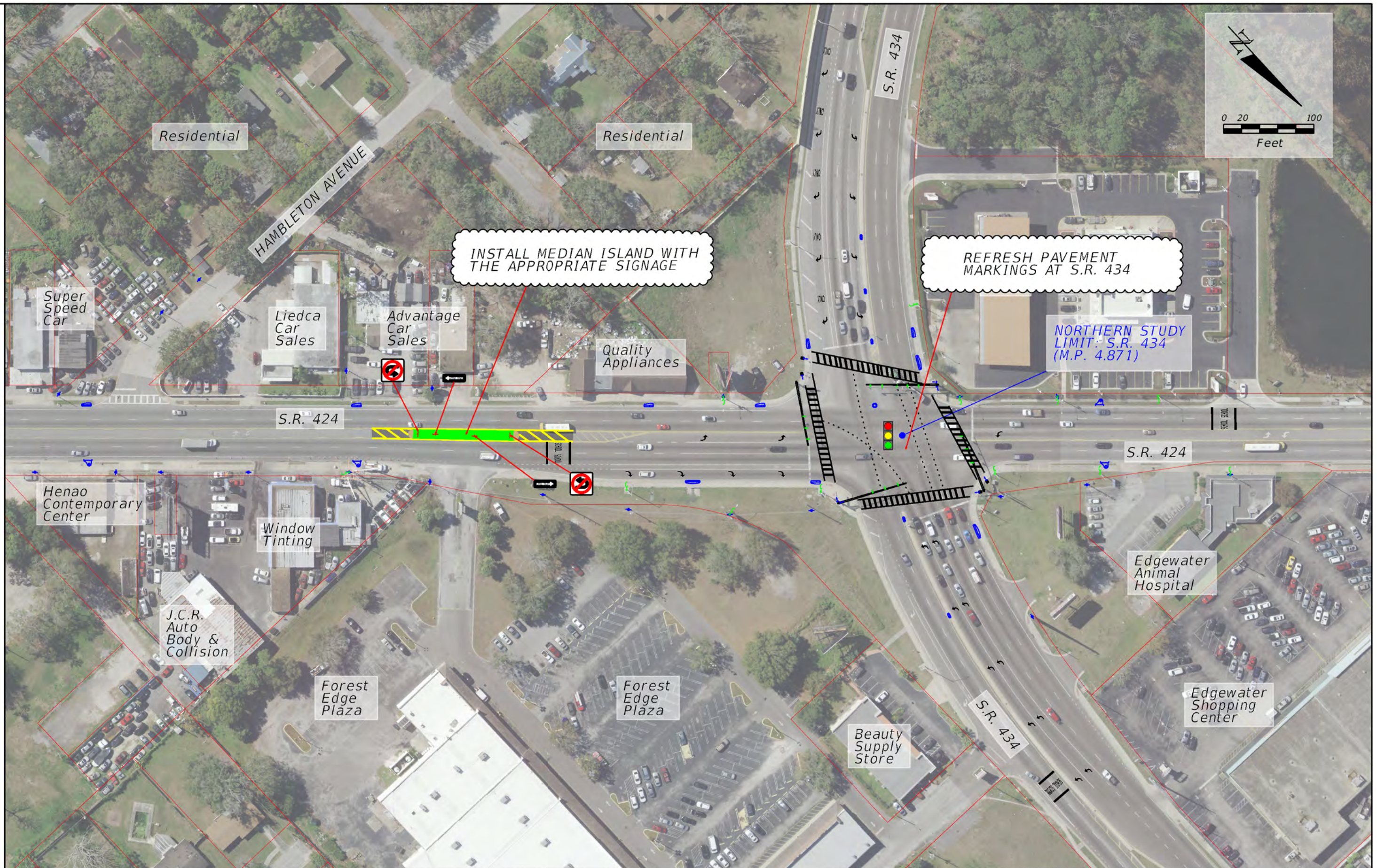
- 820 feet north of S.R. 423 - northbound RCUT
- 550 feet south of Aloha Street – southbound RCUT
- Alpha Drive – northbound/southbound RCUT
- Hambleton Avenue – northbound RCUT

Side street connectivity was reviewed and the surrounding street network appears to provide adequate alternate routes to access signalized intersections and to accommodate a more restrictive median along the corridor. The proposed typical section for S.R. 424 is a four-lane divided roadway and given the surrounding roadway grid, U-turn movements are anticipated to be low. However, given the roadway width, U-turn aprons are likely to be needed and should be evaluated during the design phase.

The recommended short-term, mid-term and long-term improvements are depicted **Figures 3, 4 and 5**, respectively.



MATCHLINE B



- Utility Pole
- Traffic Sign
- Luminaire

- Symbols:
- Traffic Controller Cabinet
  - Existing Inlet

- Existing Manhole
- Pedestrian Signal Pole
- Mitered End Section

Traffic Engineering Data Solutions, Inc.  
80 Spring Vista Drive Phone: 386.753.0558  
DeBary, FL 32713 Fax: 386.753.0778

STATE OF FLORIDA  
DEPARTMENT OF TRANSPORTATION

FIGURE 3  
SHORT-TERM IMPROVEMENTS DIAGRAM

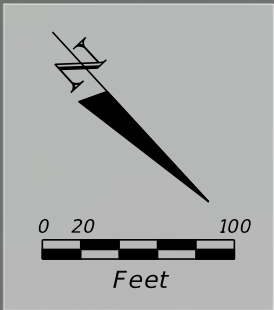
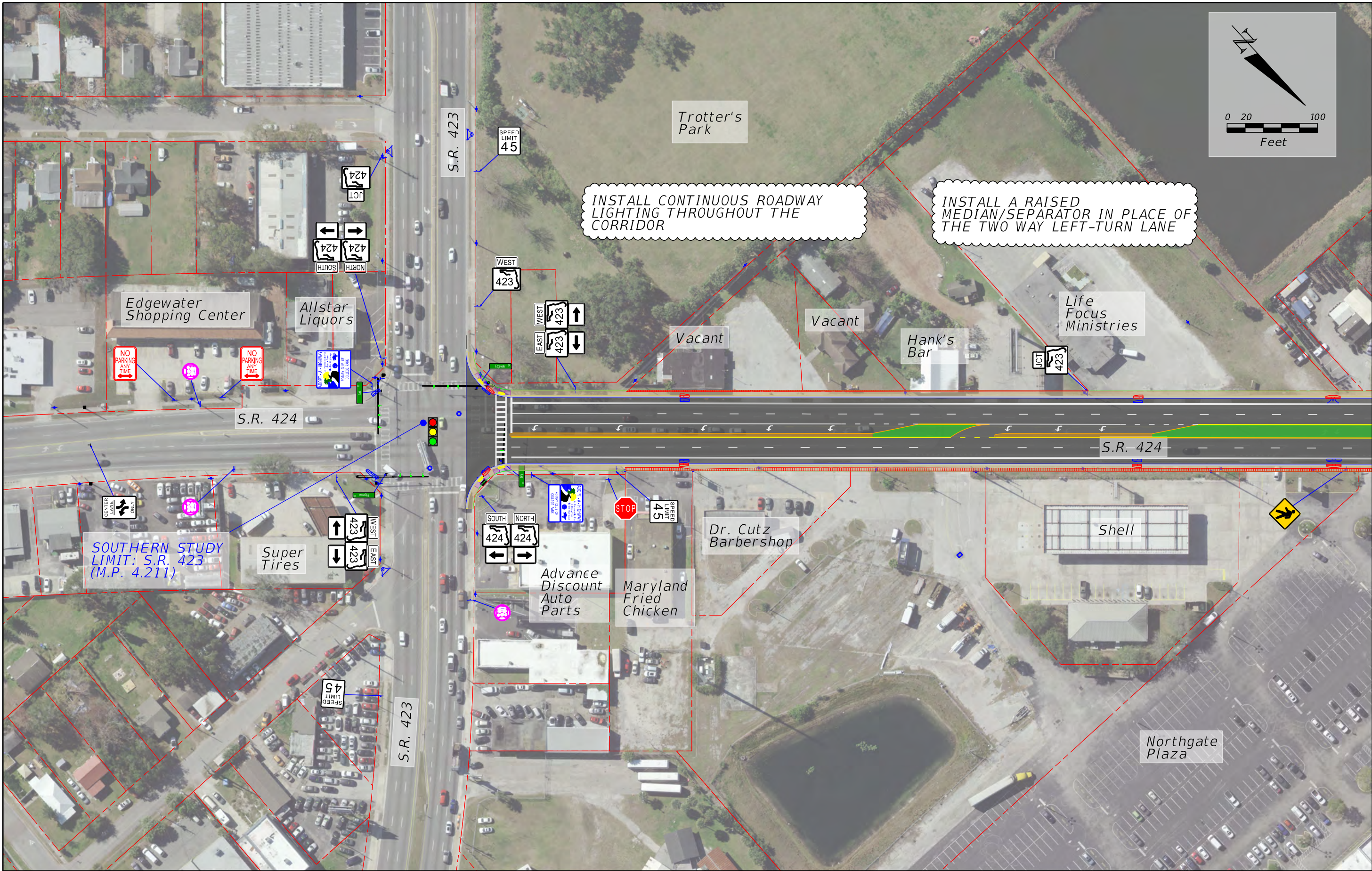
PAGE  
NO.

22









MATCHLINE A

- Utility Pole
- Traffic Sign
- Proposed Luminaire

- Symbols:
- Traffic Controller Cabinet
  - Existing Inlet
  - Proposed Inlet

- Existing Manhole
- Pedestrian Signal Pole
- Possible R-O-W Acquisition

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DEPARTMENT OF TRANSPORTATION

FIGURE 5  
LONG TERM IMPROVEMENTS DIAGRAM

PAGE  
NO.

24





MATCHLINE A

MATCHLINE B

<p>Utility Pole</p> <p>Traffic Sign</p> <p>Proposed Luminaire</p>	<p><b>Symbols:</b></p> <p>Traffic Controller Cabinet</p> <p>Existing Inlet</p> <p>Proposed Inlet</p> <p>Existing Manhole</p> <p>Pedestrian Signal Pole</p> <p>Possible R-O-W Acquisition</p>	<p><i>Traffic Engineering Data Solutions, Inc.</i></p> <p>80 Spring Vista Drive DeBary, FL 32713</p> <p>Phone: 386.753.0558 Fax: 386.753.0778</p>	<p>STATE OF FLORIDA</p> <p>DEPARTMENT OF TRANSPORTATION</p>	<p>FIGURE 5</p> <p>LONG TERM IMPROVEMENTS DIAGRAM</p>	<p>PAGE NO.</p> <p>25</p>
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MATCHLINE B



- Utility Pole
- Traffic Sign
- Proposed Luminaire

- Symbols:
- Traffic Controller Cabinet
  - Existing Inlet
  - Proposed Inlet

- Existing Manhole
- Pedestrian Signal Pole
- Possible R-O-W Acquisition

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FIGURE 5  
LONG TERM IMPROVEMENTS DIAGRAM



## **INTERSECTION CONTROL EVALUATION**

Based on the previous recommendation to install a traffic signal at the intersection of S.R. 424 at Satel Drive/Aloha Street, the Stage I Intersection Control Evaluation (ICE) Analysis was initiated. Per FDOT's Manual of Intersection Control Evaluation, a Stage 1 ICE analysis needs to be undertaken to determine if other traffic control alternatives should be given preference over a traffic signal

A Stage 1 ICE Analysis is a screening analysis that is performed during the project's initial stage, allocating time to study which types of intersection control alternatives could work at the study intersection. The Stage I ICE Analysis is comprised of a Capacity Analysis for Planning of Junctions (CAP-X) and a Level I Safety Performance of Intersection Control Evaluations (SPICE) in order to assess intersection control alternatives.

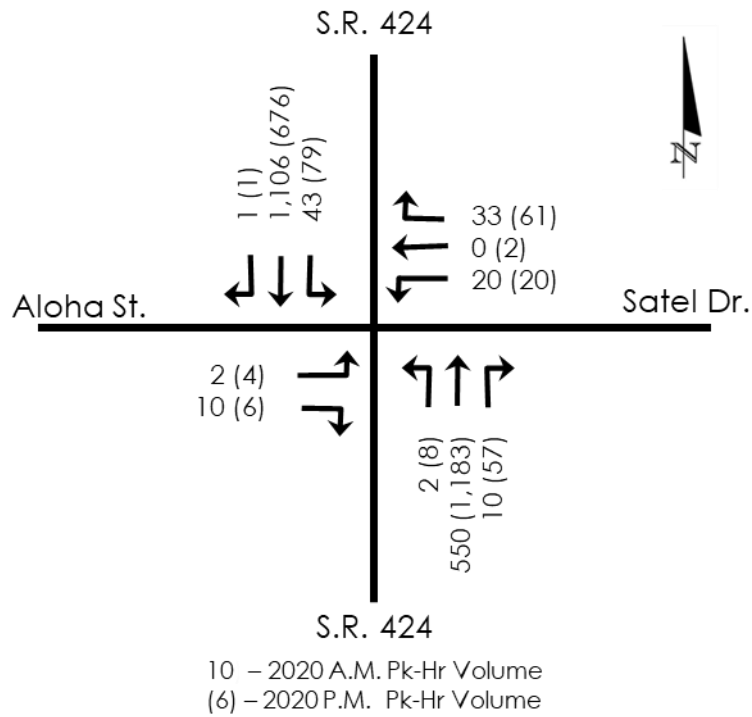
**Methodology:** The existing intersection for S.R. 424 at Satel Drive/Aloha Street is an off-set two-way STOP-controlled intersection with a full median opening. Alternatives considered include a traffic signal with a full median opening, a two-lane roundabout (two (2) N/S lanes and one (1) E/W lane) and an unsignalized RCUT.

All-Way STOP-control was not included in the analysis because the major street peak hour volumes exceed the capacity recommended for a multi-lane all-way STOP condition. Furthermore, a signalized RCUT was not included due to low minor street demand from Satel Drive and Aloha Street. Additionally, it was determined that other alternatives including a jughandle, quadrant roadway system, and displaced left-turn (DLT) would not be feasible for the intersection because these alternatives would require significant right-of-way acquisition.

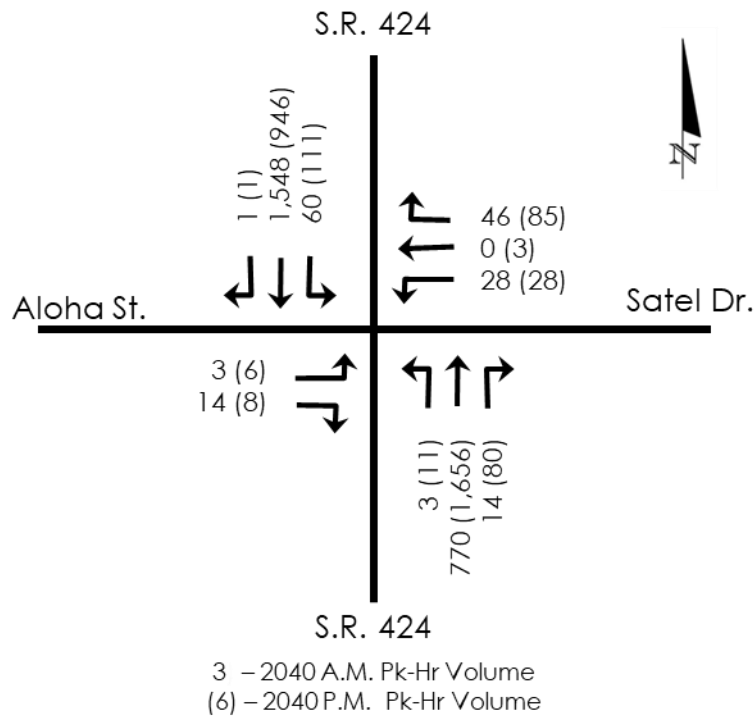
**Evaluation Volumes:** The A.M. and P.M. peak hour traffic volumes for an opening year (2020) and design year (2040) were used within this analysis. The 2020 volumes used are the A.M. and P.M. peak hour volumes obtained during the 8-hour turning movement count (TMC), as provided in the **Appendix**. The 2040 peak- hour volumes are the 2020 existing volumes with an applied growth rate over a 20 year period. A seasonal factor was not applied to the volumes because it is under 1.0 for the date of the 8-hour TMC and would have reduced the volumes. The historical traffic data obtained from one (1) count station on S.R. 424 showed a respectable average growth trend and resulted in strong Trend R-squared values thus a 2.0 % average growth rate was deemed appropriate for S.R. 424. Furthermore, given the high connectivity of the side streets and the location of Lake Weston Elementary School that is serviced by Satel Drive, a 2.0% average growth rate was deemed appropriate for Satel Drive and Aloha Street as well to account for growth of the area as a whole.

Using the trend growth rates, 2040 year turning movement projections for the A.M. and P.M. peak hour were calculated. The turning movement worksheets displaying the calculated projections are provided in the **Appendix**. Additionally, the 2020 and 2040 A.M. and P.M. peak hour volumes are displayed on the following page in **Figure 6** and **Figure 7**.

**Figure 6**  
**2020 Peak Hour Volumes**



**Figure 7**  
**Projected 2040 Peak Hour Volumes**



**CAP-X & Level 1 SPICE Analysis:** A Stage 1 Screening analysis using CAP-X and SPICE was conducted for a two-way stop controlled intersection, a traffic signal, a two-lane roundabout, and unsignalized RCUT for an opening year 2020 and design year 2040. The results from CAP-X are displayed below in **Table 7** followed by the SPICE results in **Table 8**.

**Table 7**  
**Summary of CAP-X Volume to Capacity (V/C) Ratios**

S.R. 424 at Satel Drive/Aloha Street				
Intersection Control	CAP-X V/C Ratio			
	Year 2020		Year 2040	
	AM Peak	PM Peak	AM Peak	PM Peak
Two-Way STOP	0.72	1.92	3.05	11.68
Traffic Signal	0.37	0.47	0.51	0.65
Roundabout	0.47	0.53	0.67	0.76
Unsignalized RCUT	0.12	0.49	0.23	1.45

**Table 8**  
**Summary of SPICE Rankings and Fatal/Injury Crashes**

S.R. 424 at Satel Drive/Aloha Street				
Intersection Control	SPICE RANKING	Fatal & Injury Crashes		Multimodal Score
		Design Year	Total Life Cycle	
Two-Way STOP	2	1.83	32.20	3.7
Traffic Signal	4	4.37	76.52	4.8
Roundabout	3	2.78	47.99	5.6
Unsignalized RCUT	1	0.88	16.43	4.4

Presented below is an individual discussion for each intersection alternative that takes into account CAP-X V/C ratios, SPICE safety rankings, multimodal scores, and engineering judgement. Recommendations as for whether an intersection alternative should receive additional analysis are provided in each discussion.

- **Two-Way STOP Control:** The existing two-way STOP control ranks last with V/C ratios for any of the alternatives regardless of the analysis year or time of day. Further examination indicates that the existing two-way STOP control is projected to operate with a V/C ratio over 1.0 for three (3) of the four (4) analysis periods including a projected V/C ratio of 11.68 for the 2040 p.m. peak hour. Thus given its high V/C ratios, it is recommended to discontinue the analysis of the existing two-way STOP control.
- **Unsignalized RCUT:** The unsignalized RCUT ranks as the safest alternative according to the SPICE rankings, but is projected to operate over capacity, in the 2040 p.m. peak hour. Additionally, the unsignalized RCUT's multimodal score is 4.4, the second lowest amongst the alternatives. It provides "fair" accommodations for transit, pedestrians, and bicyclists. However, under further examination, this alternative does not provide an east/west crossing across S.R. 424. Thus, given its V/C ratios and lack of pedestrian and bicycle accommodations, it is recommended to discontinue the analysis of the unsignalized RCUT.

- **Roundabout:** The two-lane roundabout alternative ranked well within CAP-X but projects to operate less efficiently than a traffic signal. Furthermore, right-of-way throughout the corridor is limited in which existing businesses and driveways are established at the intersection. It is unclear if the footprint for a two-lane roundabout would fit within the right-of-way given the businesses and may be further complicated with the offset between Satel Drive and Aloha Street. Thus, given possible right-of-way constraints and impacts to existing businesses, it is recommended to discontinue the analysis of the two-lane roundabout.
- **Traffic Signal:** The traffic signal alternative consistently produced low V/C ratios regardless of the analysis year or time of day. Additionally, with a 4.8 multimodal score, a traffic signal provides “good” transit accommodations for vehicles and “fair” accommodations for pedestrians and bicyclists. Most importantly a traffic signal would provide a signalized crossing opportunity for pedestrians and bicyclists to cross S.R. 424 at a location other than the S.R. 423 and S.R. 434 intersections. Furthermore, while the offset nature of Satel Drive and Aloha Street provide challenges for other alternatives, a traffic signal can operate within the limited right-of-way and can handle the intersection’s existing footprint but would require split-phasing. Thus, given its excellent V/C ratios and its ability to provide a signalized crossing across S.R. 424 for pedestrians and bicyclists alike, **it is recommended that a traffic signal be installed at the intersection of S.R. 424 at Satel Drive/Aloha Street.**



## **SUMMARY OF RECOMMENDATIONS**

Traffic Engineering Data Solutions, Inc. (TEDS) was retained on behalf of the Florida Department of Transportation (FDOT) to conduct a safety study related to pedestrian safety and access management improvements on S.R. 424, from S.R. 423 to S.R. 434 in Orange County, Florida. The purpose of this study is to determine opportunities for the design/construction of improvements to promote/enhance pedestrian safety and reduce vehicular conflict points along the corridor

Based on engineering judgement, a review of crash history, the location of pedestrian generators and attractors, the proximity to bus stops, adjacent signals, and field observations, the following improvements are recommended:

### Short term improvements:

- At the intersection of S.R. 424 and S.R. 434, refresh the pavement markings (crosswalks, SCHOOL pavement messages, and turn arrows).
- Construct a raised median/separator south of S.R. 434 to restrict turning movements at the Forest Edge Plaza driveway.

### Mid-term improvements

- Install a full traffic signal at the intersection of S.R. 424 and Satel Drive/Aloha Street (sidestreet approaches are offset and would require split phasing).

### Long term improvements:

- Install a raised median/separator in place of the center two-way left-turn lane.
- Install continuous roadway lighting.

## **BENEFIT/COST ANALYSIS**

The overall improvement costs were estimated based on the FDOT 12-month moving average prices from June 1, 2020 to May 31, 2021. The costs (engineering, construction, and CEI) of the proposed improvements are estimated to be:

- Short term improvements - \$53,399
- Mid-term improvements: Traffic Signal - \$834,632
- Long term improvements:
  - Continuous Lighting - \$1,322,276
  - Raised Median - \$16,006,756 (includes right-of-way acquisition costs)

The “Engineer’s Opinion of Probable Costs” tables are provided in **Appendix D**.

A benefit-cost analysis was conducted for the proposed improvements to determine if the project is justified based on criteria outlined in the Highway Safety Improvement Program Manual. The benefit of the improvement is determined as the cost associated with any crash susceptible to correction by the improvements.

Based on the Federal Highway Administration’s (FHWA) Highway Safety Manual (HSM) a crash modification factor (CMF) was identified for each of the improvements and applied to collisions reported from January 1, 2013 to December 31, 2019:

- Short term improvements – A CMF of 0.45 (applied to angle crashes only) was identified and applied to 10 long-form angle crashes at the Forest Edge shopping plaza, resulting in a reduction of 0.79 crashes per year.
- Mid-term improvements - A CMF of 0.61 was identified for the installation of a traffic signal and applied to 23 long-form crashes in the signal’s possible vicinity, resulting in a reduction of 1.28 crashes per year.
- Long term improvements – A CMF of 0.68 was identified for the installation of lighting and applied to all long-form nighttime crashes throughout the corridor, resulting in a reduction of 1.87 crashes per year. A CMF of 0.29 was identified for the installation of a Raised Median (applied to all crash types) and was applied to all long-form crashes throughout the corridor minus those already used with the traffic signal, resulting in a reduction of 16.23 crashes per year.

Based on FDOT’s Crash Analysis Reporting System, S.R. 424 falls under crash category 22, an urban 4-5-lane two-way undivided roadway with an average statewide cost-per-crash of \$115,588. As summarized in **Tables 7, 8, 9, and 10** the resulting benefit-cost ratios are 16.48, 2.25 (signal), 1.94 (lighting), and 2.14 (raised median) for the short term, mid-term and long-term improvements, respectively. The net present value (NPV) for the improvements (including engineering and CEI) was estimated at approximately \$1,180,863 and \$1,100,915 for short-term projects and the mid-term traffic signal, respectively. As previously discussed, the NPV for the continuous lighting is \$15,610,548. Additionally, the NPV for a raised median is \$8,573,027. The NPV calculations are provided in **Appendix E**.

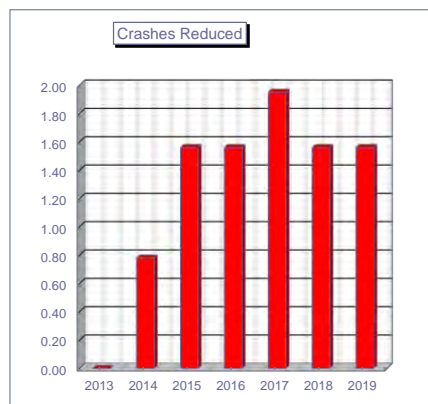
**Table 7**  
**Short Term Improvements Benefit-Cost Ratio**

1. SUBMITTED BY	TEDS			5. SAFETY PRIORITY																																																												
2. DATE SUBMITTED				ENV. STUDY																																																												
3. PROJECT NO.	237995-1-32-16 TWO: 28			SKID (ID)																																																												
4. ALTERNATIVE NO.	1			SN 75260	SPEED 45																																																											
6. DISTRICT	5	COUNTY Orange	SECTION 75260	SR 424	U.S. ROAD N/A																																																											
7. BEGIN MILE POST	4.211	END MILE POST 4.871		LENGTH 0.660	NODE N/A																																																											
10. PROPOSED IMPROVEMENTS (LIST AND DISCUSS):																																																																
Install a median island at the entrance to the Forest Edge shopping plaza.																																																																
11. YEAR		2013	2014	2015	2016	2017	2018	2019	AVG																																																							
12. Benefit: Install a Raised Median [CMF= 0.45]	NO. OF CRASHES (Angle)	0	1	0	2	1	1	5	1.4																																																							
	NO. CRASHES POTENTIALLY REDUCED BY PROJECT	0.00	0.55	0.00	1.10	0.55	0.55	2.75	0.79																																																							
<div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <table border="1" style="margin-top: 10px;"> <caption>Crashes Reduced Data</caption> <thead> <tr> <th>Year</th> <th>Crashes Reduced</th> </tr> </thead> <tbody> <tr><td>2013</td><td>0.00</td></tr> <tr><td>2014</td><td>0.55</td></tr> <tr><td>2015</td><td>0.00</td></tr> <tr><td>2016</td><td>1.10</td></tr> <tr><td>2017</td><td>0.55</td></tr> <tr><td>2018</td><td>0.55</td></tr> <tr><td>2019</td><td>2.75</td></tr> </tbody> </table> </div> <div style="width: 50%;"> 14. CRASH INFORMATION FOR FACILITY:  COST/CRASH \$115,588.00  CRASH CLEANUP \$ -\$100.00  INTEREST RATE 4% </div> </div>										Year	Crashes Reduced	2013	0.00	2014	0.55	2015	0.00	2016	1.10	2017	0.55	2018	0.55	2019	2.75																																							
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16. BENEFIT					\$90,819																																																											
17. BENEFIT / COST					16.48																																																											
PREPARED BY:		APPROVED BY:		DATE:																																																												

• Cost per crash based on Category 22- Statewide Urban 4-5 Lane 2 Way Undivided (\$115,588) as obtained from the Segment Based crash Rate Statistics for FDOT.  
 • Installation of a raised median has a CMF of 0.45 applied to only long form angle crashes.

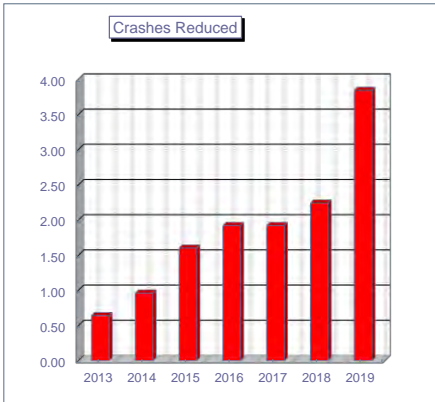
**Table 8**  
**Mid-Term Improvements Benefit-Cost Ratio - Signal**

1. SUBMITTED BY	TEDS				5. SAFETY PRIORITY																																																											
2. DATE SUBMITTED					ENV. STUDY																																																											
3. PROJECT NO.	237995-1-32-16 TWO: 28				SKID (ID)																																																											
4. ALTERNATIVE NO.	1				SN 75260	SPEED	45																																																									
6. DISTRICT	5	COUNTY	Orange	SECTION	75260	SR	424	U.S. ROAD	N/A																																																							
7. BEGIN MILE POST	4.211	END MILE POST	4.871			LENGTH	0.660	NODE	N/A																																																							
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11. YEAR		2013	2014	2015	2016	2017	2018	2019	AVG																																																							
12. Benefit: Install a Traffic Signal [CMF= 0.61]	NO. OF CRASHES (All Crashes)	0	2	4	4	5	4	4	3.3																																																							
	NO. CRASHES POTENTIALLY REDUCED BY PROJECT	0.00	0.78	1.56	1.56	1.95	1.56	1.56	1.28																																																							
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**Table 9**  
**Long-Term Improvements Benefit-Cost Ratio – Continuous Corridor Lighting**

1. SUBMITTED BY	TEDS					5. SAFETY PRIORITY					
2. DATE SUBMITTED						ENV. STUDY					
3. PROJECT NO.	237995-1-32-16 TWO: 28					SKID (ID)					
4. ALTERNATIVE NO.	1					SN 75260	SPEED	45			
6. DISTRICT	5	COUNTY	Orange	SECTION	5260	SR	424	U.S. ROAD	N/A		
7. BEGIN MILE POST	4.211	END MILE POST	4.871	LENGTH	0.660	NODE	N/A				
10. PROPOSED IMPROVEMENTS (LIST AND DISCUSS):											
Install lighting throughout the corridor.											
11. YEAR		2013	2014	2015	2016	2017	2018	2019	AVG		
12. NO. OF CRASHES (All Crashes - Night)		2	3	5	6	6	7	12	5.9		
Benefit: Install Lighting [CMF= 0.68]	NO. CRASHES POTENTIALLY REDUCED BY PROJECT	0.64	0.96	1.60	1.92	1.92	2.24	3.84	1.87		



15.	TYPE	COST	LIFE	CRF	AN/L COST
	A. R-O-W	\$ -	50	0.0466	\$0
	B. PECEI	\$ 492,605.21	20	0.0736	\$36,256
	C. STRUCTURAL	\$ -	50	0.0466	\$0
	D. SIGNAL	\$ -	20	0.0736	\$0
	E. SIGNING & STRIPING	\$ -	8	0.1485	\$0
	F. ROADWAY	\$ -	20	0.0736	\$0
	H. LIGHTING	\$ 829,671.20	15	0.0899	\$74,587
	G. SUBTOTAL	\$ 1,322,276.41			\$36,256
	I. CRASH CLEANUP				\$586
	J. TOTAL				\$111,429

16.	BENEFIT	\$216,645
17.	BENEFIT / COST	1.94

PREPARED BY:

APPROVED BY:

DATE:

• Cost per crash based on Category 22- Statewide Urban 4-5 Lane 2 Way Undivided (\$115,588) as obtained from the Segment Based crash Rate Statistics for FDOT.

• Installation of lighting has a CMF of 0.68 applied to all long form crashes that occurred during night-time hours.

**Table 10**  
**Long Term Improvements Benefit-Cost Ratio – Raised Median**

1. SUBMITTED BY	TEDS				5. SAFETY PRIORITY																																																																											
2. DATE SUBMITTED					ENV. STUDY																																																																											
3. PROJECT NO.	237995-1-32-16 TWO: 28				SKID (ID)																																																																											
4. ALTERNATIVE NO.	1				SN 75260	SPEED	45																																																																									
6. DISTRICT	5	COUNTY	Orange	SECTION	75260	SR	424	U.S. ROAD	N/A																																																																							
7. BEGIN MILE POST	4.211	END MILE POST	4.871			LENGTH	0.660	NODE	N/A																																																																							
10. PROPOSED IMPROVEMENTS (LIST AND DISCUSS):																																																																																
Install a raised median throughout the corridor.																																																																																
11. YEAR		2013	2014	2015	2016	2017	2018	2019	AVG																																																																							
12. Benefit: Install a Raised Median [CMF= 0.29]	NO. OF CRASHES (All Crashes)	21	19	17	20	19	23	41	22.9																																																																							
	NO. CRASHES POTENTIALLY REDUCED BY PROJECT	14.91	13.49	12.07	14.20	13.49	16.33	29.11	16.23																																																																							
14. CRASH INFORMATION FOR FACILITY:																																																																																
COST/CRASH \$115,588.00																																																																																
CRASH CLEANUP \$ -\$100.00																																																																																
INTEREST RATE 4%																																																																																
<div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <table border="1" style="margin-top: 10px;"> <caption>Crashes Reduced Data</caption> <thead> <tr> <th>Year</th> <th>Crashes Reduced</th> </tr> </thead> <tbody> <tr><td>2013</td><td>14.91</td></tr> <tr><td>2014</td><td>13.49</td></tr> <tr><td>2015</td><td>12.07</td></tr> <tr><td>2016</td><td>14.20</td></tr> <tr><td>2017</td><td>13.49</td></tr> <tr><td>2018</td><td>16.33</td></tr> <tr><td>2019</td><td>29.11</td></tr> </tbody> </table> </div> <div style="width: 50%;"> <table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th>TYPE</th> <th>COST</th> <th>LIFE</th> <th>CRF</th> <th>AN/L COST</th> </tr> <tr> <td>A. R-O-W</td> <td>\$ 11,568,000.00</td> <td>50</td> <td>0.0466</td> <td>\$539,069</td> </tr> <tr> <td>B. PECEI</td> <td>\$ 1,658,716.31</td> <td>20</td> <td>0.0736</td> <td>\$122,082</td> </tr> <tr> <td>C. STRUCTURAL</td> <td>\$ -</td> <td>50</td> <td>0.0466</td> <td>\$0</td> </tr> <tr> <td>D. SIGNAL</td> <td>\$ 379,834.23</td> <td>20</td> <td>0.0736</td> <td>\$27,956</td> </tr> <tr> <td>E. SIGNING &amp; STRIPING</td> <td>\$ 52,035.76</td> <td>8</td> <td>0.1485</td> <td>\$7,727</td> </tr> <tr> <td>F. ROADWAY</td> <td>\$ 1,958,441.10</td> <td>20</td> <td>0.0736</td> <td>\$144,141</td> </tr> <tr> <td>H. LIGHTING</td> <td>\$ 389,728.34</td> <td>15</td> <td>0.0899</td> <td>\$35,037</td> </tr> <tr> <td>G. SUBTOTAL</td> <td>\$ 16,006,755.75</td> <td></td> <td></td> <td>\$840,975</td> </tr> <tr> <td>I. CRASH CLEANUP</td> <td></td> <td></td> <td></td> <td>\$2,286</td> </tr> <tr> <td>J. TOTAL</td> <td></td> <td></td> <td></td> <td>\$878,297</td> </tr> </table> </div> </div>										Year	Crashes Reduced	2013	14.91	2014	13.49	2015	12.07	2016	14.20	2017	13.49	2018	16.33	2019	29.11	TYPE	COST	LIFE	CRF	AN/L COST	A. R-O-W	\$ 11,568,000.00	50	0.0466	\$539,069	B. PECEI	\$ 1,658,716.31	20	0.0736	\$122,082	C. STRUCTURAL	\$ -	50	0.0466	\$0	D. SIGNAL	\$ 379,834.23	20	0.0736	\$27,956	E. SIGNING & STRIPING	\$ 52,035.76	8	0.1485	\$7,727	F. ROADWAY	\$ 1,958,441.10	20	0.0736	\$144,141	H. LIGHTING	\$ 389,728.34	15	0.0899	\$35,037	G. SUBTOTAL	\$ 16,006,755.75			\$840,975	I. CRASH CLEANUP				\$2,286	J. TOTAL				\$878,297
Year	Crashes Reduced																																																																															
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I. CRASH CLEANUP				\$2,286																																																																												
J. TOTAL				\$878,297																																																																												
16. BENEFIT \$1,875,828																																																																																
17. BENEFIT / COST 2.14																																																																																
PREPARED BY: _____ APPROVED BY: _____ DATE: _____																																																																																
<ul style="list-style-type: none"> <li>• Cost per crash based on Category 22- Statewide Urban 4-5 Lane 2 Way Undivided (\$115,588) as obtained from the Segment Based crash Rate Statistics for FDOT.</li> <li>• Installation of a raised median has a CMF of 0.29 and was used for all long form crashes throughout the corridor other than those previously applied to the traffic signal at Satel Drive.</li> </ul>																																																																																

## **APPENDIX**

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## **APPENDIX A**

# **STRAIGHT LINE DIAGRAM**





Read Only Mode

## Roadway Characteristics Inventory

Help

Login

5/26/2020 12:34PM EST

Main

Feat/Char

Roadway ID

Routes

Reports

History

Other

Find

Feature Type List

Add Characteristics

Mass Delete Features

## Feature and Characteristics List

**Roadway ID:** 75260000 **Man-Dist:** 05 **Geo-Dist:** 05 **County:** ORANGE **Beg. MP:** 0.000 **End. MP:** 6.983 **Net Length:** 6.983 **Overall Status:** ACTIVE WITH COMBINATION  
**Description:** SR-424/SR-434 [VideoLog](#) [Enterprise GIS](#)

Validate

Show Details

Previous

Next

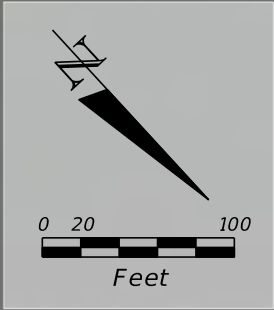
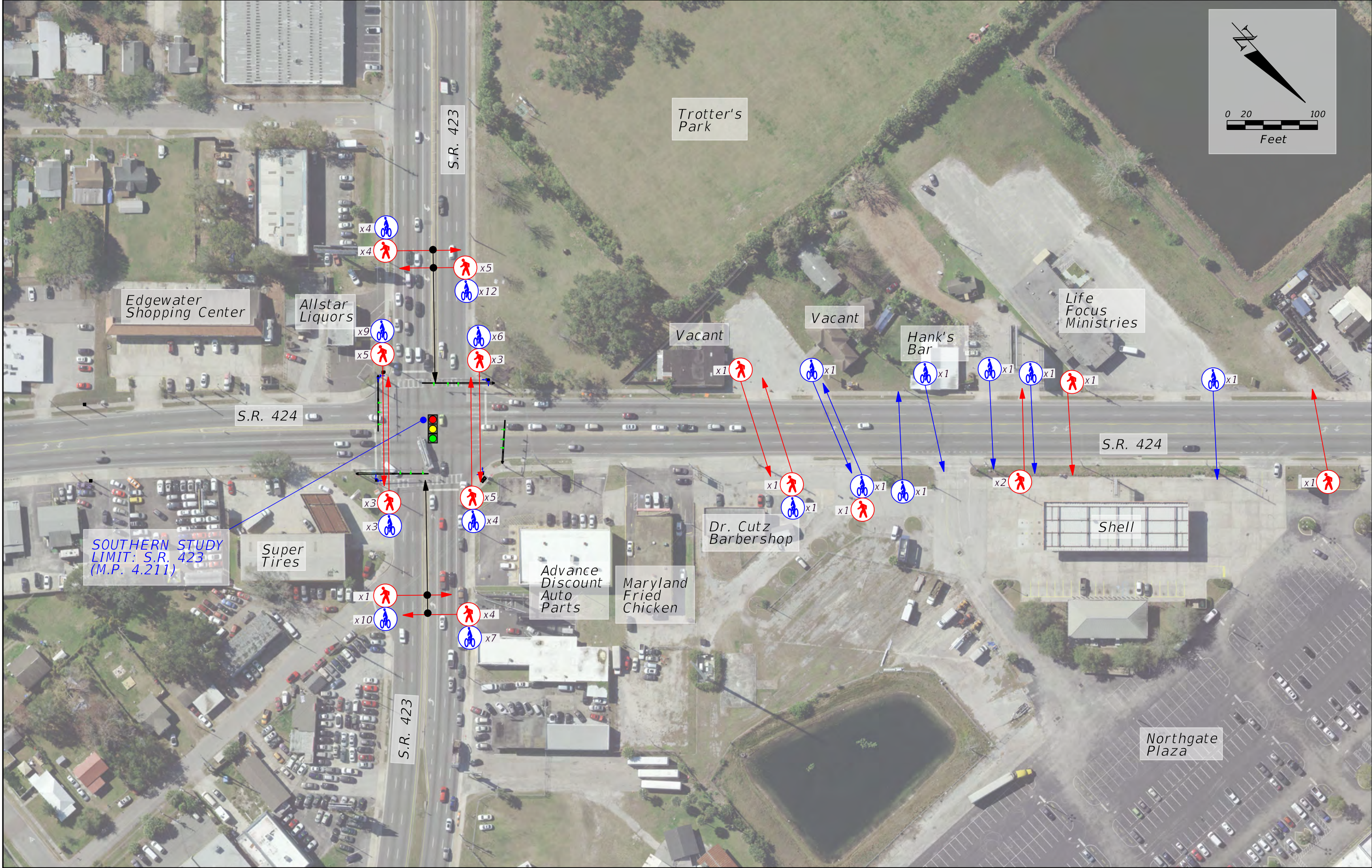
Feature 126 - PRELIMINARY CONTEXT CLASS					LENGTH/INTERLOCKING		
Beg. MP	End. MP	Characteristic	Value	Unit	Side	Offset	Char. Updated
0.000	2.026	<u>PRELIM CURRENT CONTEXT CLASS</u>	C4 - URBAN GENERAL	CD	C		PL934TH 08/14/2019
		<u>PRELIM CURRENT CONTEXT DATE</u>	08/06/2019	DA	C		PL934TH 08/14/2019
2.026	2.864	<u>PRELIM CURRENT CONTEXT CLASS</u>	C3C - SUBURBAN COMMERCIAL	CD	C		PL934TH 08/14/2019
		<u>PRELIM CURRENT CONTEXT DATE</u>	08/06/2019	DA	C		PL934TH 08/14/2019
2.864	3.485	<u>PRELIM CURRENT CONTEXT CLASS</u>	C3R - SUBURBAN RESIDENTIAL	CD	C		PL934TH 08/14/2019
		<u>PRELIM CURRENT CONTEXT DATE</u>	08/06/2019	DA	C		PL934TH 08/14/2019
3.485	3.829	<u>PRELIM CURRENT CONTEXT CLASS</u>	C3C - SUBURBAN COMMERCIAL	CD	C		PL934TH 08/14/2019
		<u>PRELIM CURRENT CONTEXT DATE</u>	08/06/2019	DA	C		PL934TH 08/14/2019
3.829	4.216	<u>PRELIM CURRENT CONTEXT CLASS</u>	C4 - URBAN GENERAL	CD	C		PL934TH 08/14/2019
		<u>PRELIM CURRENT CONTEXT DATE</u>	08/06/2019	DA	C		PL934TH 08/14/2019
4.216	4.781	<u>PRELIM CURRENT CONTEXT CLASS</u>	C3C - SUBURBAN COMMERCIAL	CD	C		PL934TH 08/14/2019
		<u>PRELIM CURRENT CONTEXT DATE</u>	08/06/2019	DA	C		PL934TH 08/14/2019
4.781	6.208	<u>PRELIM CURRENT CONTEXT CLASS</u>	C3C - SUBURBAN COMMERCIAL	CD	C		PL934TH 08/14/2019
		<u>PRELIM CURRENT CONTEXT DATE</u>	08/06/2019	DA	C		PL934TH 08/14/2019
6.208	6.941	<u>PRELIM CURRENT CONTEXT CLASS</u>	C4 - URBAN GENERAL	CD	C		PL934TH 08/14/2019
		<u>PRELIM CURRENT CONTEXT DATE</u>	08/06/2019	DA	C		PL934TH 08/14/2019
6.941	6.974	<u>PRELIM CURRENT CONTEXT CLASS</u>	C4 - URBAN GENERAL	CD	C		PL934TH 08/14/2019
		<u>PRELIM CURRENT CONTEXT DATE</u>	08/06/2019	DA	C		PL934TH 08/14/2019

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## **APPENDIX B**

# **VEHICLE / PEDESTRIAN / BICYCLE COUNTS**





Observed Pedestrian Movement



Observed Bicycle Movement

x7

Movement Volume

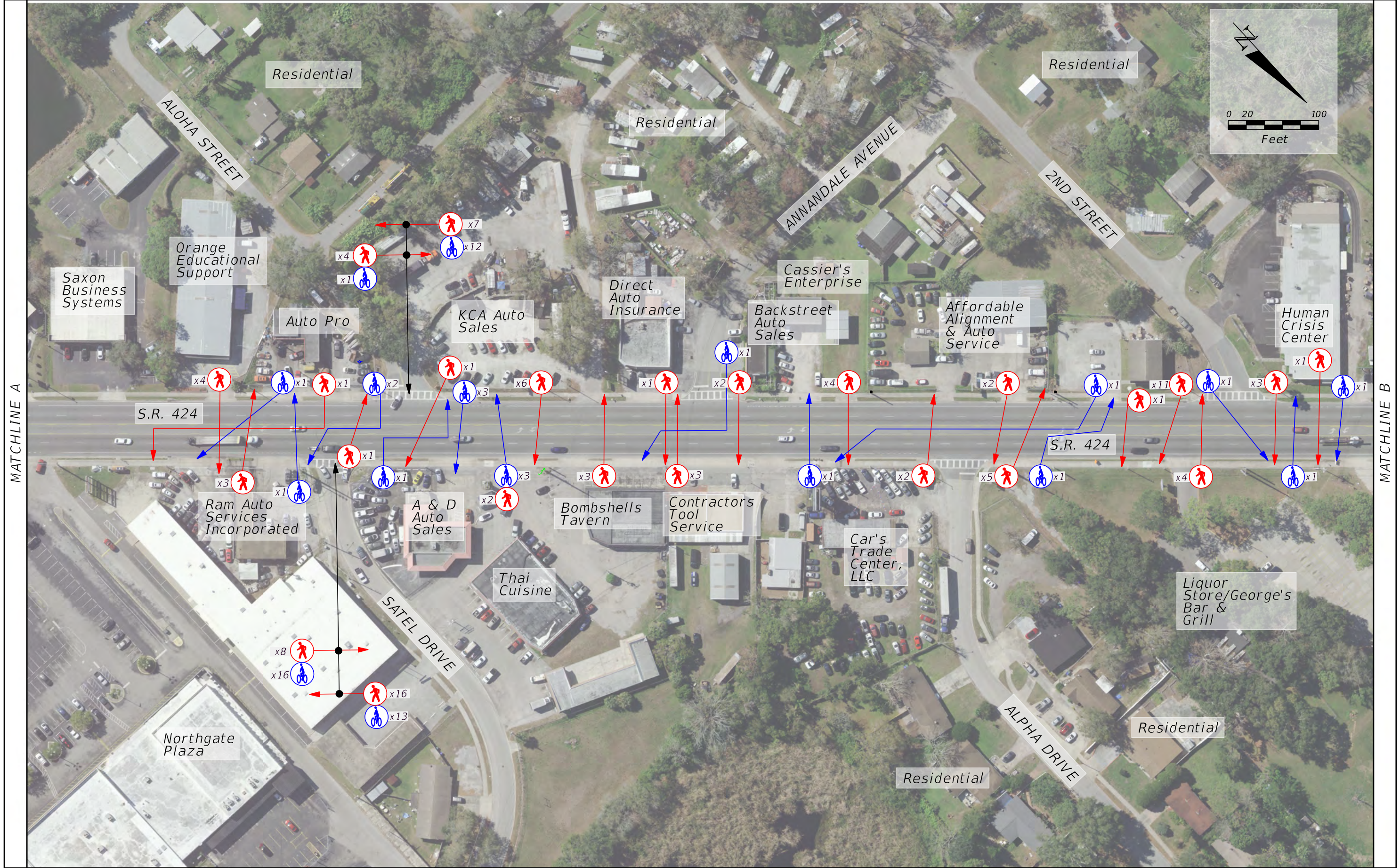
Traffic Engineering Data Solutions, Inc.  
80 Spring Vista Drive Phone: 386.753.0558  
DeBary, FL 32713 Fax: 386.753.0778

STATE OF FLORIDA  
DEPARTMENT OF TRANSPORTATION

PEDESTRIAN CROSSING DIAGRAM  
(8-HOUR COUNT PERIOD)  
PAGE 1 OF 3

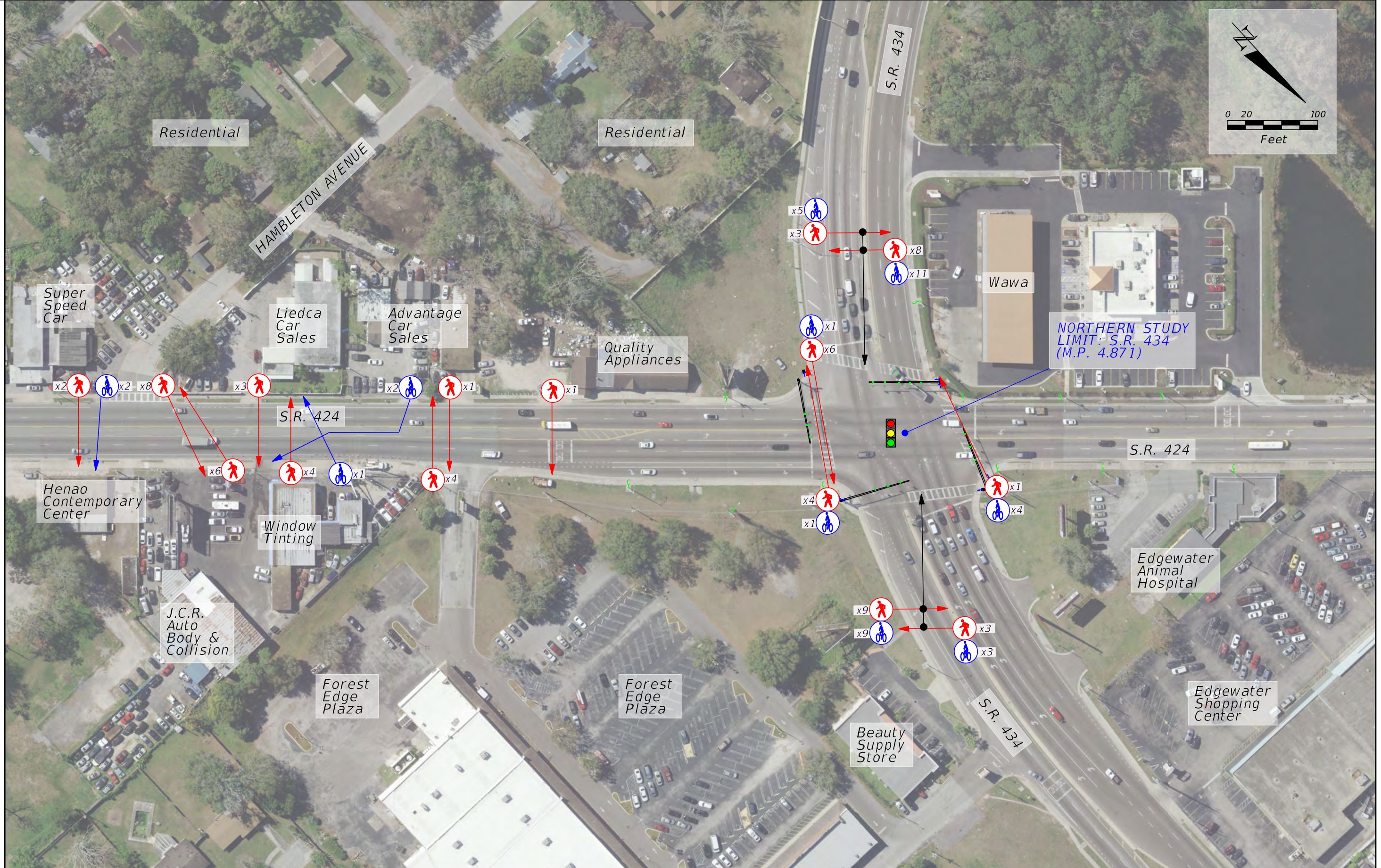
PAGE  
NO.







MATCHLINE B



Observed Pedestrian Movement



Symbols:

Observed Bicycle Movement

x7

Movement Volume

Traffic Engineering Data Solutions, Inc.  
80 Spring Vista Drive Phone: 386.753.0558  
DeBary, FL 32713 Fax: 386.753.0778

STATE OF FLORIDA  
DEPARTMENT OF TRANSPORTATION

PEDESTRIAN CROSSING DIAGRAM  
(8-HOUR COUNT PERIOD)  
PAGE 3 OF 3

PAGE  
NO.

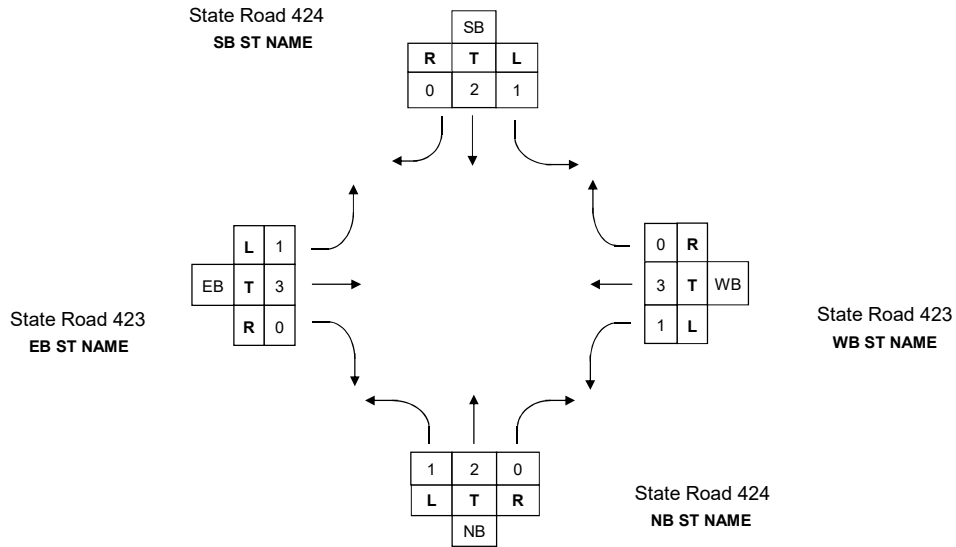


FLORIDA DEPARTMENT OF TRANSPORTATION

SUMMARY OF VEHICLE MOVEMENTS

SECTION 75260000 CITY Orlando COUNTY Orange  
 STATE ROUTE State Road 424 INTERSECTING ROUTE State Road 423  
 OBSERVER TEDS DATE 10/20/2020 MILEPOST 4.211  
 WEATHER Sunny ROAD CONDITION Good  
 REMARKS

FORM COMPLETED BY CML DATE 12/02/20



TIME	NORTHBOUND					SOUTHBOUND					TOTAL	EASTBOUND					WESTBOUND					TOTAL
BEGIN/END	L	T	R	U	TOT	L	T	R	U	TOT	N/S	L	T	R	U	TOT	L	T	R	U	TOT	E/W
7:00 - 8:00	123	352	32	0	507	239	797	59	0	1,095	1,602	61	521	261	1	844	57	665	148	1	871	1,715
8:00 - 9:00	115	278	28	0	421	288	635	61	0	984	1,405	65	718	236	0	1,019	64	665	234	1	964	1,983
11:00 - 12:00	124	314	88	2	528	266	382	72	0	720	1,248	92	599	149	3	843	75	532	329	9	945	1,788
12:00 - 1:00	137	355	75	2	569	266	387	83	3	739	1,308	131	551	191	0	873	82	574	354	8	1,018	1,891
2:00 - 3:00	179	423	71	1	674	242	424	84	1	751	1,425	116	612	218	1	947	81	626	421	8	1,136	2,083
3:00 - 4:00	225	633	65	1	924	260	434	85	0	779	1,703	143	716	171	0	1,030	99	699	392	7	1,197	2,227
4:00 - 5:00	216	643	62	1	922	261	440	73	1	775	1,697	125	866	175	3	1,169	63	635	369	10	1,077	2,246
5:00 - 6:00	232	641	47	1	921	220	400	59	1	680	1,601	129	837	186	2	1,154	66	738	411	13	1,228	2,382
TOTAL	1,351	3,639	468	8	5,466	2,042	3,899	576	6	6,523	11,989	862	5,420	1,587	10	7,879	587	5,134	2,658	57	8,436	16,315

Percentage	25%	67%	9%	0%		31%	60%	9%	0%			11%	69%	20%	0%		7%	61%	32%	1%		
Average	169	455	59	1	683	255	487	72	1	815		108	678	198	1	985	73	642	332	7	1,055	
Maximum	232	643	88	2		288	797	85	3			143	866	261	3		99	738	421	13		
Minimum	115	278	28	0		220	382	59	0			61	521	149	0		57	532	148	1		

FLORIDA DEPARTMENT OF TRANSPORTATION

**PEDESTRIAN MOVEMENT SUMMARY**

<b>SECTION</b>	75260000	<b>CITY</b> Orlando	<b>COUNTY</b> Orange
<b>STATE ROUTE</b>	State Road 424	<b>INTERSECTING ROUTE</b>	State Road 423
<b>OBSERVER</b>	TEDS	<b>DATE</b>	10/20/2020

**REMARKS** \_\_\_\_\_

**FORM COMPLETED BY** CML      **DATE** 12/02/20

H O U R S	West side of			East side of			North side of			South side of			GRAND TOTAL
	State Road 423			State Road 423			State Road 424			State Road 424			
	NB	SB	TOTAL	NB	SB	TOTAL	EB	WB	TOTAL	EB	WB	TOTAL	
7:00 - 8:00	0	0	0	0	0	0	0	1	1	0	0	0	1
8:00 - 9:00	0	0	0	0	0	0	0	0	0	1	0	1	1
11:00 - 12:00	0	1	1	0	1	1	0	0	0	0	0	0	2
12:00 - 1:00	1	0	1	1	0	1	2	2	4	2	1	3	9
2:00 - 3:00	1	2	3	0	1	1	0	1	1	0	0	0	5
3:00 - 4:00	0	0	0	0	0	0	1	1	2	0	1	1	3
4:00 - 5:00	0	1	1	0	1	1	0	0	0	1	1	2	4
5:00 - 6:00	2	1	3	0	1	1	0	0	0	1	0	1	5
TOTAL	4	5	9	1	4	5	3	5	8	5	3	8	30



FLORIDA DEPARTMENT OF TRANSPORTATION

BICYCLE MOVEMENT SUMMARY

SECTION 75260000 CITY Orlando COUNTY Orange  
 STATE ROUTE State Road 424 INTERSECTING ROUTE State Road 423  
 OBSERVER TEDS DATE 10/20/2020

REMARKS \_\_\_\_\_

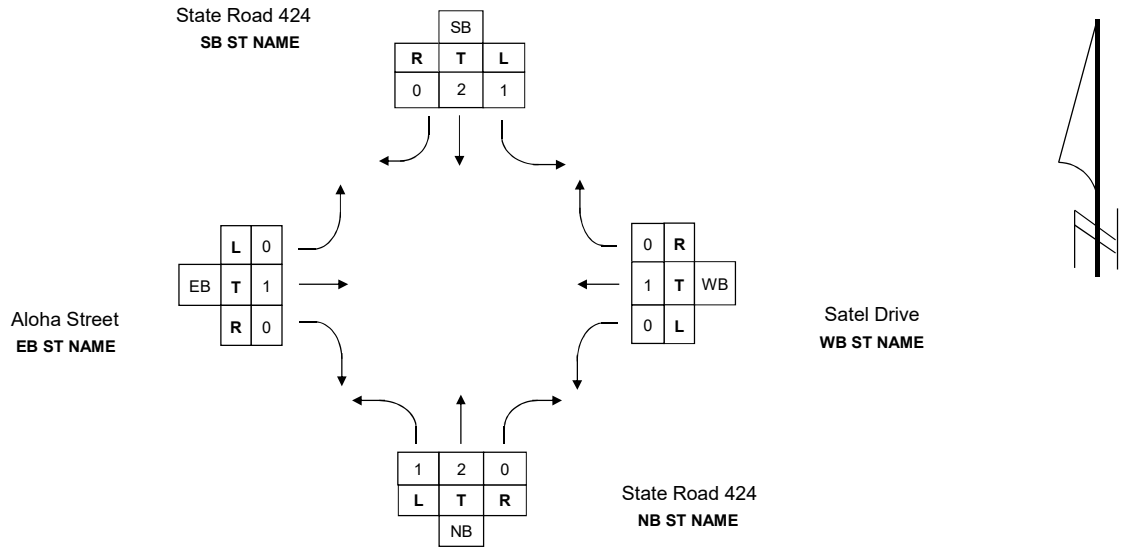
FORM COMPLETED BY CML DATE 12/02/20

H O U R S	West side of			East side of			North side of			South side of			GRAND TOTAL
	State Road 423			State Road 423			State Road 424			State Road 424			
	NB	SB	TOTAL	NB	SB	TOTAL	EB	WB	TOTAL	EB	WB	TOTAL	
7:00 - 8:00	0	1	1	2	0	2	0	3	3	0	1	1	7
8:00 - 9:00	2	2	4	2	0	2	0	0	0	1	0	1	7
11:00 - 12:00	0	0	0	2	0	2	0	0	0	1	2	3	5
12:00 - 1:00	1	2	3	1	0	1	1	1	2	2	1	3	9
2:00 - 3:00	1	2	3	1	1	2	0	1	1	0	0	0	6
3:00 - 4:00	2	0	2	2	2	4	0	0	0	0	1	1	7
4:00 - 5:00	1	2	3	1	0	1	1	3	4	0	0	0	8
5:00 - 6:00	0	1	1	1	1	2	1	1	2	0	1	1	6
TOTAL	7	10	17	12	4	16	3	9	12	4	6	10	55

**FLORIDA DEPARTMENT OF TRANSPORTATION**

**SUMMARY OF VEHICLE MOVEMENTS**

<b>SECTION</b>	75260000	<b>CITY</b> Orlando	<b>COUNTY</b> Orange
<b>STATE ROUTE</b>	State Road 424	<b>INTERSECTING ROUTE</b>	Satel Drive
<b>OBSERVER</b>	TEDS	<b>DATE</b>	10/20/2020
<b>WEATHER</b>	Sunny	<b>ROAD CONDITION</b>	Good
<b>REMARKS</b>	<div style="border-bottom: 1px solid black; height: 1.2em; margin-bottom: 2px;"></div> <div style="border-bottom: 1px solid black; height: 1.2em; margin-bottom: 2px;"></div>		
<b>FORM COMPLETED BY</b> CML		<b>DATE</b> 12/02/20	



TIME	NORTHBOUND					SOUTHBOUND					TOTAL	EASTBOUND					WESTBOUND					TOTAL
BEGIN/END	L	T	R	U	TOT	L	T	R	U	TOT	N/S	L	T	R	U	TOT	L	T	R	U	TOT	E/W
7:00 - 8:00	3	527	11	0	541	36	1,035	2	0	1,073	1,614	2	0	5	0	7	22	0	31	0	53	60
8:00 - 9:00	2	568	17	0	587	38	979	0	0	1,017	1,604	0	0	10	0	10	18	0	43	0	61	71
11:00 - 12:00	8	689	34	2	733	40	699	5	0	744	1,477	0	0	4	0	4	22	0	39	0	61	65
12:00 - 1:00	10	826	26	4	866	56	745	2	0	803	1,669	3	0	8	0	11	16	0	45	0	61	72
2:00 - 3:00	7	918	29	0	954	59	727	2	1	789	1,743	2	0	11	0	13	19	2	59	0	80	93
3:00 - 4:00	13	1,119	44	2	1,178	65	750	3	0	818	1,996	0	1	13	0	14	21	0	56	0	77	91
4:00 - 5:00	6	1,102	37	0	1,145	70	755	6	0	831	1,976	5	1	12	0	18	18	1	59	0	78	96
5:00 - 6:00	9	1,140	57	0	1,206	80	646	1	0	727	1,933	3	0	5	0	8	26	2	58	0	86	94
TOTAL	58	6,889	255	8	7,210	444	6,336	21	1	6,802	14,012	15	2	68	0	85	162	5	390	0	557	642

Percentage	1%	96%	4%	0%		7%	93%	0%	0%			18%	2%	80%	0%		29%	1%	70%	0%		
Average	7	861	32	1	901	56	792	3	0	850		2	0	9	0	11	20	1	49	0	70	
Maximum	13	1140	57	4		80	1035	6	1			5	1	13	0		26	2	59	0		
Minimum	2	527	11	0		36	646	0	0			0	0	4	0		16	0	31	0		

## PEDESTRIAN MOVEMENT SUMMARY

**DATE** 12/02/20

H O U R S	West side of			East side of			North side of			South side of			GRAND TOTAL
	Satel Drive			Satel Drive			State Road 424			State Road 424			
	NB	SB	TOTAL	NB	SB	TOTAL	EB	WB	TOTAL	EB	WB	TOTAL	
7:00 - 8:00	0	0	0	0	2	2	0	0	0	0	0	0	2
8:00 - 9:00	0	1	1	1	3	4	0	0	0	0	0	0	5
11:00 - 12:00	1	2	3	1	1	2	0	0	0	0	0	0	5
12:00 - 1:00	1	0	1	2	2	4	0	0	0	0	0	0	5
2:00 - 3:00	0	1	1	1	1	2	0	0	0	0	0	0	3
3:00 - 4:00	2	0	2	1	2	3	0	0	0	0	0	0	5
4:00 - 5:00	0	1	1	1	1	2	0	0	0	0	0	0	3
5:00 - 6:00	0	2	2	1	4	5	0	0	0	0	0	0	7
TOTAL	4	7	11	8	16	24	0	0	0	0	0	0	35

## BICYCLE MOVEMENT SUMMARY

**DATE** 12/02/20

H O U R S	West side of			East side of			North side of			South side of			GRAND TOTAL
	Satel Drive			Satel Drive			State Road 424			State Road 424			
	NB	SB	TOTAL	NB	SB	TOTAL	EB	WB	TOTAL	EB	WB	TOTAL	
7:00 - 8:00	0	2	2	2	0	2	0	0	0	0	0	0	4
8:00 - 9:00	3	2	5	2	0	2	0	0	0	0	0	0	7
11:00 - 12:00	1	1	2	2	0	2	0	0	0	0	0	0	4
12:00 - 1:00	1	0	1	1	0	1	0	0	0	0	0	0	2
2:00 - 3:00	1	3	4	2	0	2	0	0	0	0	0	0	6
3:00 - 4:00	2	1	3	1	0	1	0	0	0	0	0	0	4
4:00 - 5:00	4	3	7	1	1	2	0	0	0	0	0	0	9
5:00 - 6:00	1	4	5	1	0	1	0	0	0	0	0	0	6
TOTAL	13	16	29	12	1	13	0	0	0	0	0	0	42

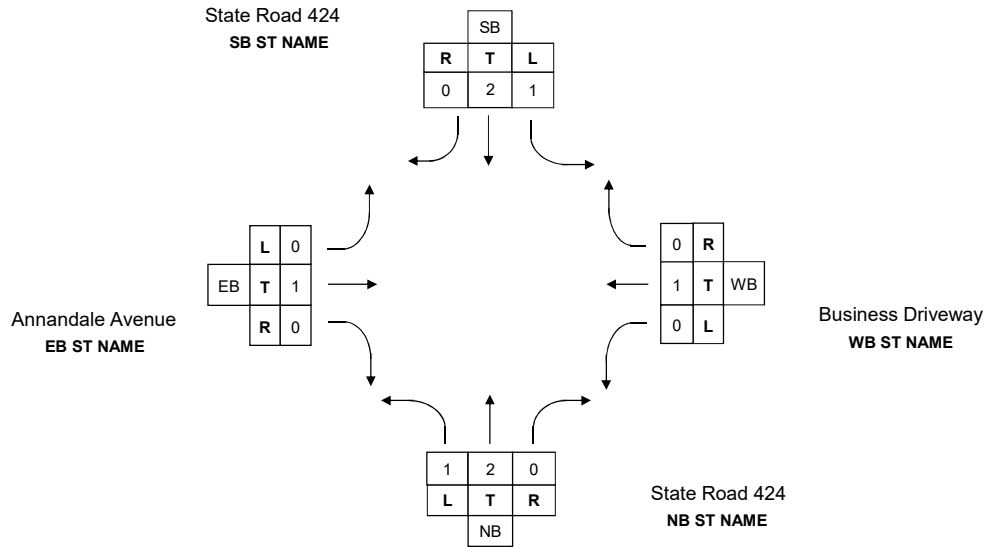


FLORIDA DEPARTMENT OF TRANSPORTATION

SUMMARY OF VEHICLE MOVEMENTS

SECTION 75260000 CITY Orlando COUNTY Orange  
 STATE ROUTE State Road 424 INTERSECTING ROUTE Annandale Avenue  
 OBSERVER TEDS DATE 10/20/2020 MILEPOST 4.548  
 WEATHER Sunny ROAD CONDITION Good  
 REMARKS

FORM COMPLETED BY CML DATE 12/02/20



TIME	NORTHBOUND					SOUTHBOUND					TOTAL	EASTBOUND					WESTBOUND					TOTAL
BEGIN/END	L	T	R	U	TOT	L	T	R	U	TOT	N/S	L	T	R	U	TOT	L	T	R	U	TOT	E/W
2:00 - 3:00	7	981	0	0	988	0	779	3	0	782	1,770	2	0	7	0	9	0	0	0	0	0	9
3:00 - 4:00	7	1,161	0	0	1,168	0	814	1	0	815	1,983	1	0	6	0	7	0	0	0	0	0	7
4:00 - 5:00	6	1,159	0	0	1,165	0	834	2	0	836	2,001	3	0	7	0	10	0	0	0	0	0	10
5:00 - 6:00	4	1,201	0	0	1,205	0	729	4	0	733	1,938	3	0	4	0	7	0	0	0	0	0	7
TOTAL	24	4,502	0	0	4,526	0	3,156	10	0	3,166	7,692	9	0	24	0	33	0	0	0	0	0	33

Percentage	1%	99%	0%	0%		0%	100%	0%	0%			27%	0%	73%	0%		0%	0%	0%	0%		
Average	6	1,126	0	0	1,132	0	789	3	0	792		2	0	6	0	8	0	0	0	0	0	
Maximum	7	1201	0	0		0	834	4	0			3	0	7	0		0	0	0	0		
Minimum	4	981	0	0		0	729	1	0			1	0	4	0		0	0	0	0		

## PEDESTRIAN MOVEMENT SUMMARY

REMARKS \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_[illegible]

FLORIDA DEPARTMENT OF TRANSPORTATION

BICYCLE MOVEMENT SUMMARY

SECTION 75260000 CITY Orlando COUNTY Orange  
 STATE ROUTE State Road 424 INTERSECTING ROUTE Annandale Avenue  
 OBSERVER TEDS DATE 10/20/2020

REMARKS \_\_\_\_\_

FORM COMPLETED BY CML DATE 12/02/20

H O U R S	West side of			East side of			North side of			South side of			GRAND TOTAL
	<u>Annandale Avenue</u>			<u>Annandale Avenue</u>			<u>State Road 424</u>			<u>State Road 424</u>			
	NB	SB	TOTAL	NB	SB	TOTAL	EB	WB	TOTAL	EB	WB	TOTAL	
2:00 - 3:00	0	0	0	1	0	1	0	0	0	0	0	0	1
3:00 - 4:00	0	0	0	3	0	3	0	0	0	0	0	0	3
4:00 - 5:00	0	0	0	2	0	2	0	0	0	0	0	0	2
5:00 - 6:00	0	0	0	2	1	3	0	0	0	0	0	0	3
TOTAL	0	0	0	8	1	9	0	0	0	0	0	0	9

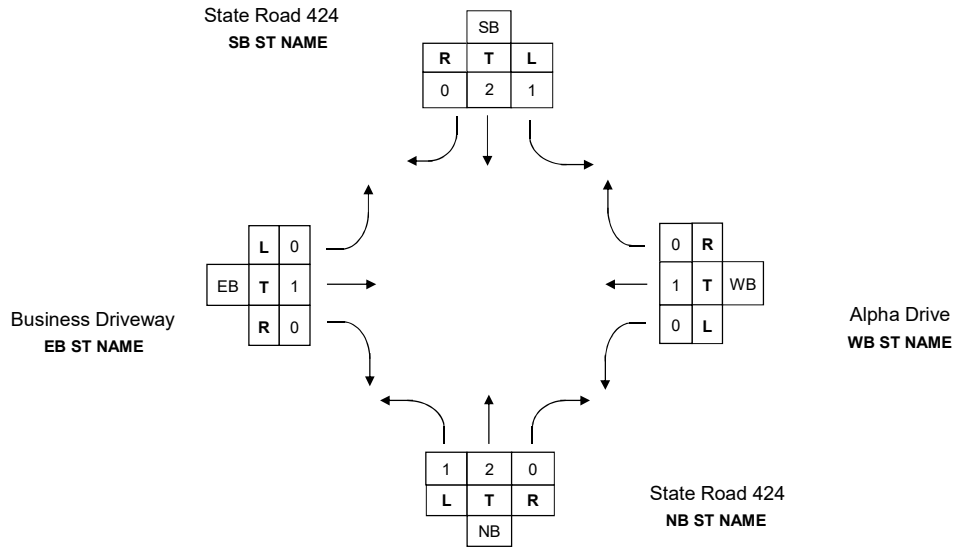


FLORIDA DEPARTMENT OF TRANSPORTATION

SUMMARY OF VEHICLE MOVEMENTS

SECTION 75260000 CITY Orlando COUNTY Orange  
 STATE ROUTE State Road 424 INTERSECTING ROUTE Alpha Drive  
 OBSERVER TEDS DATE 10/20/2020 MILEPOST 4.603  
 WEATHER Sunny ROAD CONDITION Good  
 REMARKS

FORM COMPLETED BY CML DATE 02/11/21



TIME	NORTHBOUND					SOUTHBOUND					TOTAL	EASTBOUND					WESTBOUND					TOTAL
BEGIN/END	L	T	R	U	TOT	L	T	R	U	TOT	N/S	L	T	R	U	TOT	L	T	R	U	TOT	E/W
2:00 - 3:00	1	977	5	0	983	34	784	0	0	818	1,801	0	0	0	0	0	6	0	44	0	50	50
3:00 - 4:00	0	1,152	16	0	1,168	52	805	0	0	857	2,025	0	0	0	0	0	16	0	86	0	102	102
4:00 - 5:00	0	1,159	2	0	1,161	42	836	0	0	878	2,039	0	0	0	0	0	5	0	45	0	50	50
5:00 - 6:00	0	1,202	15	0	1,217	33	736	0	0	769	1,986	0	0	0	0	0	1	0	36	0	37	37
TOTAL	1	4,490	38	0	4,529	161	3,161	0	0	3,322	7,851	0	0	0	0	0	28	0	211	0	239	239

Percentage	0%	99%	1%	0%		5%	95%	0%	0%			0%	0%	0%	0%		12%	0%	88%	0%		
Average	0	1,123	10	0	1,132	40	790	0	0	831		0	0	0	0	0	7	0	53	0	60	
Maximum	1	1202	16	0		52	836	0	0			0	0	0	0		16	0	86	0		
Minimum	0	977	2	0		33	736	0	0			0	0	0	0		1	0	36	0		

FLORIDA DEPARTMENT OF TRANSPORTATION

PEDESTRIAN MOVEMENT SUMMARY

SECTION 75260000 CITY Orlando COUNTY Orange  
 STATE ROUTE State Road 424 INTERSECTING ROUTE Alpha Drive  
 OBSERVER TEDS DATE 10/20/2020

REMARKS \_\_\_\_\_

FORM COMPLETED BY CML DATE 02/11/21

H O U R S	West side of			East side of			North side of			South side of			GRAND TOTAL
	Alpha Drive			Alpha Drive			State Road 424			State Road 424			
	NB	SB	TOTAL	NB	SB	TOTAL	EB	WB	TOTAL	EB	WB	TOTAL	
2:00 - 3:00	0	0	0	1	0	1	0	0	0	0	0	0	1
3:00 - 4:00	0	0	0	1	1	2	0	0	0	0	0	0	2
4:00 - 5:00	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 - 6:00	0	0	0	0	2	2	0	0	0	0	0	0	2
TOTAL	0	0	0	2	3	5	0	0	0	0	0	0	5

## BICYCLE MOVEMENT SUMMARY

**DATE** 02/11/21

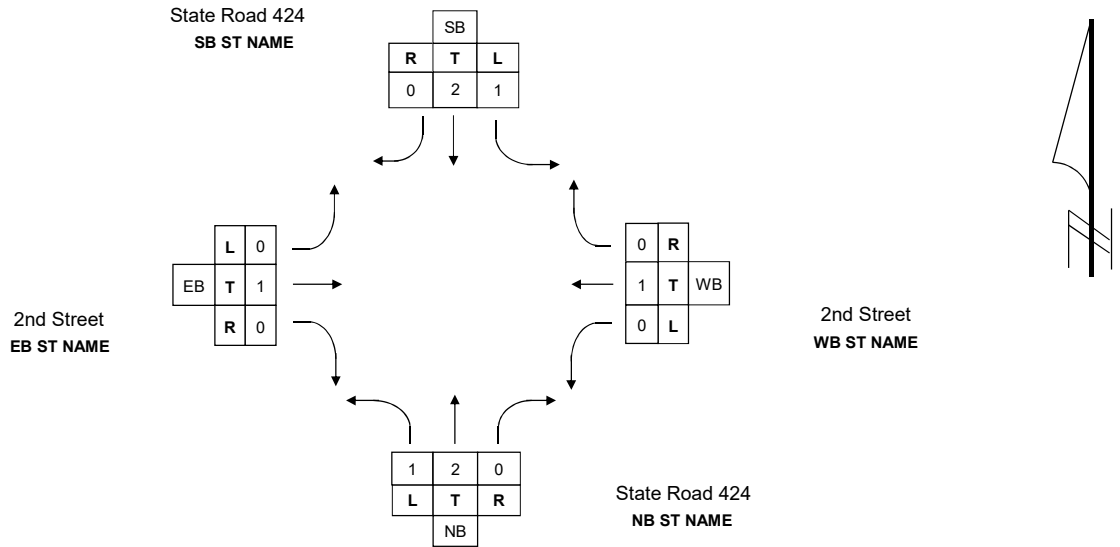
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FLORIDA DEPARTMENT OF TRANSPORTATION

SUMMARY OF VEHICLE MOVEMENTS

SECTION	75260000	CITY	Orlando	COUNTY	Orange
STATE ROUTE	State Road 424	INTERSECTING ROUTE	2nd Street		
OBSERVER	TEDS	DATE	10/20/2020	MILEPOST	4.660
WEATHER	Sunny	ROAD CONDITION	Good		
REMARKS					
FORM COMPLETED BY CML DATE 02/11/21					



TIME	NORTHBOUND					SOUTHBOUND					TOTAL	EASTBOUND					WESTBOUND					TOTAL
BEGIN/END	L	T	R	U	TOT	L	T	R	U	TOT	N/S	L	T	R	U	TOT	L	T	R	U	TOT	E/W
2:00 - 3:00	10	1,007	0	0	1,017	0	795	16	0	811	1,828	18	0	15	0	33	0	0	0	0	0	33
3:00 - 4:00	10	1,229	1	0	1,240	0	852	17	0	869	2,109	17	0	9	0	26	0	0	0	0	0	26
4:00 - 5:00	8	1,192	0	0	1,200	0	859	15	0	874	2,074	18	0	15	0	33	0	0	0	0	0	33
5:00 - 6:00	8	1,216	0	0	1,224	0	753	11	0	764	1,988	8	0	10	0	18	0	0	0	0	0	18
TOTAL	36	4,644	1	0	4,681	0	3,259	59	0	3,318	7,999	61	0	49	0	110	0	0	0	0	0	110

Percentage	1%	99%	0%	0%		0%	98%	2%	0%			55%	0%	45%	0%		0%	0%	0%	0%		
Average	9	1,161	0	0	1,170	0	815	15	0	830		15	0	12	0	28	0	0	0	0	0	
Maximum	10	1229	1	0		0	859	17	0			18	0	15	0		0	0	0	0		
Minimum	8	1007	0	0		0	753	11	0			8	0	9	0		0	0	0	0		

## PEDESTRIAN MOVEMENT SUMMARY

FORM COMPLETED BY CML DATE 02/11/21

[illegible]

FLORIDA DEPARTMENT OF TRANSPORTATION

BICYCLE MOVEMENT SUMMARY

SECTION 75260000 CITY Orlando COUNTY Orange  
 STATE ROUTE State Road 424 INTERSECTING ROUTE 2nd Street  
 OBSERVER TEDS DATE 10/20/2020

REMARKS \_\_\_\_\_

FORM COMPLETED BY CML DATE 02/11/21

H O U R S	West side of			East side of			North side of			South side of			GRAND TOTAL
	<u>2nd Street</u>			<u>2nd Street</u>			<u>State Road 424</u>			<u>State Road 424</u>			
	NB	SB	TOTAL	NB	SB	TOTAL	EB	WB	TOTAL	EB	WB	TOTAL	
2:00 - 3:00	0	0	0	1	1	2	0	0	0	0	0	0	2
3:00 - 4:00	0	0	0	2	0	2	0	0	0	0	0	0	2
4:00 - 5:00	0	0	0	1	0	1	0	0	0	0	0	0	1
5:00 - 6:00	0	0	0	2	1	3	0	0	0	0	0	0	3
TOTAL	0	0	0	6	2	8	0	0	0	0	0	0	8

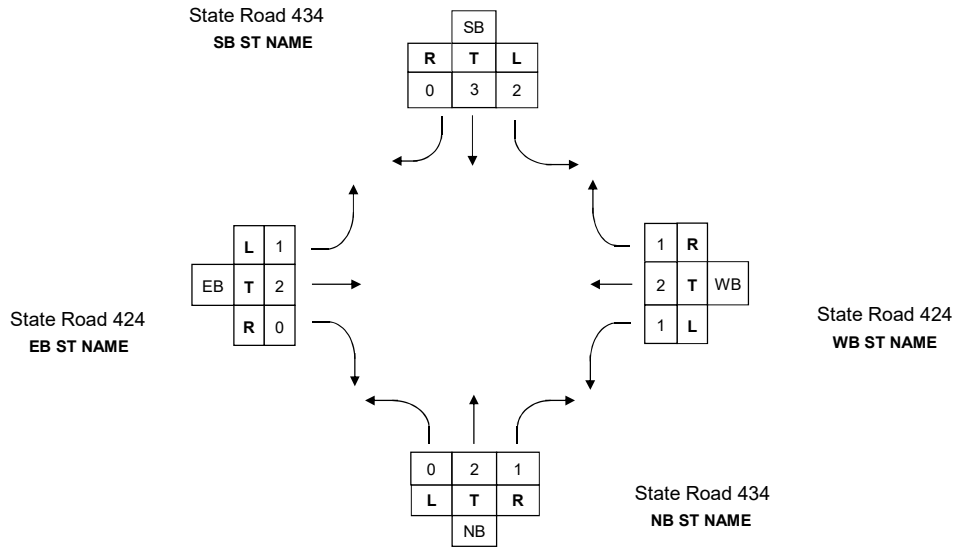


FLORIDA DEPARTMENT OF TRANSPORTATION

SUMMARY OF VEHICLE MOVEMENTS

SECTION 75260000 CITY Orlando COUNTY Orange  
 STATE ROUTE State Road 424 INTERSECTING ROUTE State Road 434  
 OBSERVER TEDS DATE 10/20/2020 MILEPOST 3.476  
 WEATHER Sunny ROAD CONDITION Good  
 REMARKS

FORM COMPLETED BY CML DATE 12/02/20



TIME	NORTHBOUND					SOUTHBOUND					TOTAL	EASTBOUND					WESTBOUND					TOTAL
BEGIN/END	L	T	R	U	TOT	L	T	R	U	TOT	N/S	L	T	R	U	TOT	L	T	R	U	TOT	E/W
7:00 - 8:00	32	393	43	11	479	388	733	31	7	1,159	1,638	89	707	44	0	840	56	320	197	0	573	1,413
8:00 - 9:00	41	414	47	6	508	396	635	40	14	1,085	1,593	86	605	38	0	729	57	310	284	0	651	1,380
11:00 - 12:00	49	330	24	5	408	293	399	54	9	755	1,163	83	441	39	0	563	57	414	306	0	777	1,340
12:00 - 1:00	67	386	53	7	513	364	410	51	21	846	1,359	113	421	41	0	575	72	434	387	1	894	1,469
2:00 - 3:00	77	443	34	5	559	325	430	61	15	831	1,390	107	453	38	0	598	63	507	453	0	1,023	1,621
3:00 - 4:00	74	579	51	6	710	400	548	69	19	1,036	1,746	114	437	43	0	594	78	672	474	1	1,225	1,819
4:00 - 5:00	88	672	42	11	813	368	520	64	22	974	1,787	131	481	43	0	655	70	684	471	2	1,227	1,882
5:00 - 6:00	83	773	34	7	897	346	632	64	29	1,071	1,968	124	422	37	0	583	59	740	461	1	1,261	1,844
TOTAL	511	3,990	328	58	4,887	2,880	4,307	434	136	7,757	12,644	847	3,967	323	0	5,137	512	4,081	3,033	5	7,631	12,768

Percentage	10%	82%	7%	1%		37%	56%	6%	2%			16%	77%	6%	0%		7%	53%	40%	0%		
Average	64	499	41	7	611	360	538	54	17	970		106	496	40	0	642	64	510	379	1	954	
Maximum	88	773	53	11		400	733	69	29			131	707	44	0		78	740	474	2		
Minimum	32	330	24	5		293	399	31	7			83	421	37	0		56	310	197	0		

FLORIDA DEPARTMENT OF TRANSPORTATION

PEDESTRIAN MOVEMENT SUMMARY

SECTION 75260000 CITY Orlando COUNTY Orange  
 STATE ROUTE State Road 424 INTERSECTING ROUTE State Road 434  
 OBSERVER TEDS DATE 10/20/2020

REMARKS \_\_\_\_\_

FORM COMPLETED BY CML DATE 12/02/20

H O U R S	West side of			East side of			North side of			South side of			GRAND TOTAL
	State Road 434			State Road 434			State Road 424			State Road 424			
	NB	SB	TOTAL	NB	SB	TOTAL	EB	WB	TOTAL	EB	WB	TOTAL	
7:00 - 8:00	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 - 9:00	0	0	0	2	1	3	0	4	4	2	1	3	10
11:00 - 12:00	0	0	0	0	1	1	0	1	1	1	0	1	3
12:00 - 1:00	0	0	0	1	1	2	2	1	3	2	0	2	7
2:00 - 3:00	0	0	0	0	0	0	0	1	1	0	0	0	1
3:00 - 4:00	0	0	0	0	0	0	1	1	2	0	0	0	2
4:00 - 5:00	0	0	0	2	1	3	0	0	0	2	2	4	7
5:00 - 6:00	0	1	1	1	0	1	0	1	1	1	0	1	4
TOTAL	0	1	1	6	4	10	3	9	12	8	3	11	34

FLORIDA DEPARTMENT OF TRANSPORTATION

BICYCLE MOVEMENT SUMMARY

SECTION 75260000 CITY Orlando COUNTY Orange  
 STATE ROUTE State Road 424 INTERSECTING ROUTE State Road 434  
 OBSERVER TEDS DATE 10/20/2020

REMARKS \_\_\_\_\_

FORM COMPLETED BY CML DATE 12/02/20

H O U R S	West side of			East side of			North side of			South side of			GRAND TOTAL
	State Road 434			State Road 434			State Road 424			State Road 424			
	NB	SB	TOTAL	NB	SB	TOTAL	EB	WB	TOTAL	EB	WB	TOTAL	
7:00 - 8:00	0	1	1	0	0	0	0	1	1	1	2	3	5
8:00 - 9:00	0	0	0	0	0	0	1	1	2	0	2	2	4
11:00 - 12:00	0	0	0	0	1	1	0	0	0	3	0	3	4
12:00 - 1:00	0	0	0	0	0	0	0	2	2	0	0	0	2
2:00 - 3:00	0	2	2	0	0	0	0	0	0	1	1	2	4
3:00 - 4:00	0	0	0	1	0	1	1	2	3	3	0	3	7
4:00 - 5:00	0	0	0	0	0	0	0	1	1	1	0	1	2
5:00 - 6:00	0	1	1	0	0	0	1	2	3	2	0	2	6
TOTAL	0	4	4	1	1	2	3	9	12	11	5	16	34



# Traffic Engineering Data Solutions Inc.

File Name : SR 424 at SR 423 TMC (8-hr)  
 Site Code : 00000000  
 Start Date : 10/20/2020  
 Page No : 1

## Groups Printed- Passenger Vehicles - Heavy Trucks

	STATE ROAD 424 Northbound					STATE ROAD 424 Southbound					STATE ROAD 423 Eastbound					STATE ROAD 423 Westbound					
Start Time	Left	Thru	Right	U-Turns	App. Total	Left	Thru	Right	U-Turns	App. Total	Left	Thru	Right	U-Turns	App. Total	Left	Thru	Right	U-Turns	App. Total	Int. Total
07:00 AM	19	78	5	0	102	43	182	9	0	234	11	78	50	0	139	18	129	21	0	168	643
07:15 AM	31	78	13	0	122	68	214	12	0	294	23	149	75	0	247	8	145	39	0	192	855
07:30 AM	31	99	6	0	136	57	218	25	0	300	10	147	60	1	218	12	207	43	1	263	917
07:45 AM	42	97	8	0	147	71	183	13	0	267	17	147	76	0	240	19	184	45	0	248	902
Total	123	352	32	0	507	239	797	59	0	1095	61	521	261	1	844	57	665	148	1	871	3317
08:00 AM	33	52	5	0	90	73	132	17	0	222	17	171	66	0	254	19	205	53	1	278	844
08:15 AM	23	84	4	0	111	99	210	9	0	318	12	147	72	0	231	16	185	62	0	263	923
08:30 AM	32	80	10	0	122	62	156	22	0	240	13	217	50	0	280	11	113	66	0	190	832
08:45 AM	27	62	9	0	98	54	137	13	0	204	23	183	48	0	254	18	162	53	0	233	789
Total	115	278	28	0	421	288	635	61	0	984	65	718	236	0	1019	64	665	234	1	964	3388
*** BREAK ***																					
11:00 AM	20	78	28	0	126	63	87	19	0	169	24	160	36	1	221	17	133	69	1	220	736
11:15 AM	35	87	25	1	148	61	107	15	0	183	26	133	33	0	192	17	127	73	3	220	743
11:30 AM	38	75	15	1	129	75	104	19	0	198	18	151	38	2	209	18	140	107	3	268	804
11:45 AM	31	74	20	0	125	67	84	19	0	170	24	155	42	0	221	23	132	80	2	237	753
Total	124	314	88	2	528	266	382	72	0	720	92	599	149	3	843	75	532	329	9	945	3036
12:00 PM	33	87	19	1	140	69	92	19	2	182	32	129	42	0	203	18	136	82	2	238	763
12:15 PM	39	79	22	0	140	78	81	18	0	177	41	141	49	0	231	28	163	99	3	293	841
12:30 PM	27	101	20	1	149	43	96	20	1	160	28	168	46	0	242	23	142	68	2	235	786
12:45 PM	38	88	14	0	140	76	118	26	0	220	30	113	54	0	197	13	133	105	1	252	809
Total	137	355	75	2	569	266	387	83	3	739	131	551	191	0	873	82	574	354	8	1018	3199
*** BREAK ***																					
02:00 PM	39	102	12	0	153	68	117	28	1	214	29	129	50	1	209	11	139	84	1	235	811
02:15 PM	45	89	17	0	151	60	88	26	0	174	25	152	53	0	230	22	170	111	4	307	862
02:30 PM	43	113	19	1	176	54	114	21	0	189	23	160	53	0	236	21	156	103	2	282	883
02:45 PM	52	119	23	0	194	60	105	9	0	174	39	171	62	0	272	27	161	123	1	312	952
Total	179	423	71	1	674	242	424	84	1	751	116	612	218	1	947	81	626	421	8	1136	3508
03:00 PM	57	161	16	0	234	66	133	22	0	221	32	188	41	0	261	30	174	96	2	302	1018
03:15 PM	47	166	10	1	224	62	117	25	0	204	40	178	38	0	256	33	218	97	0	348	1032
03:30 PM	52	150	16	0	218	57	85	21	0	163	44	191	52	0	287	24	144	105	2	275	943
03:45 PM	69	156	23	0	248	75	99	17	0	191	27	159	40	0	226	12	163	94	3	272	937
Total	225	633	65	1	924	260	434	85	0	779	143	716	171	0	1030	99	699	392	7	1197	3930
04:00 PM	48	140	20	0	208	64	109	23	0	196	24	193	34	1	252	24	193	108	2	327	983
04:15 PM	46	166	12	0	224	66	87	14	0	167	38	268	49	0	355	14	157	97	3	271	1017
04:30 PM	62	135	12	1	210	78	123	17	1	219	32	224	48	1	305	13	126	85	2	226	960
04:45 PM	60	202	18	0	280	53	121	19	0	193	31	181	44	1	257	12	159	79	3	253	983
Total	216	643	62	1	922	261	440	73	1	775	125	866	175	3	1169	63	635	369	10	1077	3943
05:00 PM	62	154	11	1	228	41	92	18	0	151	31	273	37	0	341	17	224	108	2	351	1071
05:15 PM	61	172	7	0	240	50	96	23	1	170	34	231	57	1	323	18	153	106	5	282	1015
05:30 PM	59	177	17	0	253	75	115	6	0	196	29	164	46	1	240	19	173	110	3	305	994
05:45 PM	50	138	12	0	200	54	97	12	0	163	35	169	46	0	250	12	188	87	3	290	903
Total	232	641	47	1	921	220	400	59	1	680	129	837	186	2	1154	66	738	411	13	1228	3983
Grand Total	1351	3639	468	8	5466	2042	3899	576	6	6523	862	5420	1587	10	7879	587	5134	2658	57	8436	28304
Apprch %	24.7	66.6	8.6	0.1		31.3	59.8	8.8	0.1		10.9	68.8	20.1	0.1		7	60.9	31.5	0.7		
Total %	4.8	12.9	1.7	0	19.3	7.2	13.8	2	0	23	3	19.1	5.6	0	27.8	2.1	18.1	9.4	0.2	29.8	
Passenger Vehicles	1319	3550	452	8	5329	1993	3795	558	6	6352	848	5228	1554	10	7640	581	4893	2602	57	8133	27454
% Passenger Vehicles	97.6	97.6	96.6	100	97.5	97.6	97.3	96.9	100	97.4	98.4	96.5	97.9	100	97	99	95.3	97.9	100	96.4	97
Heavy Trucks	32	89	16	0	137	49	104	18	0	171	14	192	33	0	239	6	241	56	0	303	850
% Heavy Trucks	2.4	2.4	3.4	0	2.5	2.4	2.7	3.1	0	2.6	1.6	3.5	2.1	0	3	1	4.7	2.1	0	3.6	3

# Traffic Engineering Data Solutions Inc.

File Name : SR 424 at SR 423 TMC (8-hr)

Site Code : 00000000

Start Date : 10/20/2020

Page No : 2

	STATE ROAD 424 Northbound					STATE ROAD 424 Southbound					STATE ROAD 423 Eastbound					STATE ROAD 423 Westbound					
Start Time	Left	Thru	Right	U-Turns	App. Total	Left	Thru	Right	U-Turns	App. Total	Left	Thru	Right	U-Turns	App. Total	Left	Thru	Right	U-Turns	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 09:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30 AM																					
07:30 AM	31	<b>99</b>	6	0	136	57	<b>218</b>	<b>25</b>	<b>0</b>	<b>300</b>	<b>10</b>	<b>147</b>	<b>60</b>	<b>1</b>	<b>218</b>	<b>12</b>	<b>207</b>	43	<b>1</b>	<b>263</b>	<b>917</b>
<b>07:45 AM</b>	<b>42</b>	<b>97</b>	<b>8</b>	<b>0</b>	<b>147</b>	71	183	13	0	267	<b>17</b>	<b>147</b>	<b>76</b>	<b>0</b>	<b>240</b>	<b>19</b>	<b>184</b>	<b>45</b>	<b>0</b>	<b>248</b>	<b>902</b>
<b>08:00 AM</b>	<b>33</b>	<b>52</b>	<b>5</b>	<b>0</b>	<b>90</b>	<b>73</b>	<b>132</b>	<b>17</b>	<b>0</b>	<b>222</b>	<b>17</b>	<b>171</b>	66	0	<b>254</b>	19	205	53	1	<b>278</b>	844
08:15 AM	23	84	4	0	111	<b>99</b>	<b>210</b>	<b>9</b>	<b>0</b>	<b>318</b>	12	147	72	0	231	16	185	<b>62</b>	<b>0</b>	<b>263</b>	<b>923</b>
Total Volume	129	332	23	0	484	300	743	64	0	1107	56	612	274	1	943	66	781	203	2	1052	3586
% App. Total	26.7	68.6	4.8	0		27.1	67.1	5.8	0		5.9	64.9	29.1	0.1		6.3	74.2	19.3	0.2		
PHF	.768	.838	.719	.000	.823	.758	.852	.640	.000	.870	.824	.895	.901	.250	.928	.868	.943	.819	.500	.946	.971
Passenger Vehicles	126	326	22	0	474	289	716	61	0	1066	54	567	266	1	888	66	753	197	2	1018	3446
% Passenger Vehicles	97.7	98.2	95.7	0	97.9	96.3	96.4	95.3	0	96.3	96.4	92.6	97.1	100	94.2	100	96.4	97.0	100	96.8	96.1
Heavy Trucks	3	6	1	0	10	11	27	3	0	41	2	45	8	0	55	0	28	6	0	34	140
% Heavy Trucks	2.3	1.8	4.3	0	2.1	3.7	3.6	4.7	0	3.7	3.6	7.4	2.9	0	5.8	0	3.6	3.0	0	3.2	3.9

Peak Hour Analysis From 07:00 AM to 09:45 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	07:00 AM					07:30 AM					08:00 AM					07:30 AM				
+0 mins.	19	78	5	0	102	57	<b>218</b>	<b>25</b>	<b>0</b>	<b>300</b>	<b>17</b>	<b>171</b>	<b>66</b>	<b>0</b>	<b>254</b>	<b>12</b>	<b>207</b>	43	<b>1</b>	<b>263</b>
<b>+15 mins.</b>	<b>31</b>	<b>78</b>	<b>13</b>	<b>0</b>	<b>122</b>	<b>71</b>	<b>183</b>	<b>13</b>	<b>0</b>	<b>267</b>	<b>12</b>	<b>147</b>	<b>72</b>	<b>0</b>	<b>231</b>	<b>19</b>	<b>184</b>	<b>45</b>	<b>0</b>	<b>248</b>
<b>+30 mins.</b>	<b>31</b>	<b>99</b>	6	0	136	73	132	17	0	222	13	<b>217</b>	50	0	<b>280</b>	19	205	53	1	<b>278</b>
<b>+45 mins.</b>	<b>42</b>	<b>97</b>	<b>8</b>	<b>0</b>	<b>147</b>	<b>99</b>	<b>210</b>	<b>9</b>	<b>0</b>	<b>318</b>	<b>23</b>	<b>183</b>	<b>48</b>	<b>0</b>	<b>254</b>	<b>16</b>	<b>185</b>	<b>62</b>	<b>0</b>	<b>263</b>
Total Volume	123	352	32	0	507	300	743	64	0	1107	65	718	236	0	1019	66	781	203	2	1052
% App. Total	24.3	69.4	6.3	0		27.1	67.1	5.8	0		6.4	70.5	23.2	0		6.3	74.2	19.3	0.2	
PHF	.732	.889	.615	.000	.862	.758	.852	.640	.000	.870	.707	.827	.819	.000	.910	.868	.943	.819	.500	.946
Passenger Vehicles	119	340	31	0	490	289	716	61	0	1066	62	672	231	0	965	66	753	197	2	1018
% Passenger Vehicles	96.7	96.6	96.9	0	96.6	96.3	96.4	95.3	0	96.3	95.4	93.6	97.9	0	94.7	100	96.4	97	100	96.8
Heavy Trucks	4	12	1	0	17	11	27	3	0	41	3	46	5	0	54	0	28	6	0	34
% Heavy Trucks	3.3	3.4	3.1	0	3.4	3.7	3.6	4.7	0	3.7	4.6	6.4	2.1	0	5.3	0	3.6	3	0	3.2

Peak Hour Analysis From 10:00 AM to 01:45 PM - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 12:00 PM

12:00 PM	33	87	19	1	140	69	92	19	2	182	32	129	42	0	203	18	136	82	2	238	763
12:15 PM	39	79	22	0	140	78	81	18	0	177	41	141	49	0	231	28	163	99	3	293	841
12:30 PM	27	101	20	1	149	43	96	20	1	160	28	168	46	0	242	23	142	68	2	235	786
12:45 PM	38	88	14	0	140	76	118	26	0	220	30	113	54	0	197	13	133	105	1	252	809
Total Volume	137	355	75	2	569	266	387	83	3	739	131	551	191	0	873	82	574	354	8	1018	3199
% App. Total	24.1	62.4	13.2	0.4		36	52.4	11.2	0.4		15	63.1	21.9	0		8.1	56.4	34.8	0.8		
PHF	.878	.879	.852	.500	.955	.853	.820	.798	.375	.840	.799	.820	.884	.000	.902	.732	.880	.843	.667	.869	.951
Passenger Vehicles	133	342	72	2	549	260	375	80	3	718	129	531	185	0	845	81	549	347	8	985	3097
% Passenger Vehicles	97.1	96.3	96.0	100	96.5	97.7	96.9	96.4	100	97.2	98.5	96.4	96.9	0	96.8	98.8	95.6	98.0	100	96.8	96.8
Heavy Trucks	4	13	3	0	20	6	12	3	0	21	2	20	6	0	28	1	25	7	0	33	102
% Heavy Trucks	2.9	3.7	4.0	0	3.5	2.3	3.1	3.6	0	2.8	1.5	3.6	3.1	0	3.2	1.2	4.4	2.0	0	3.2	3.2

Peak Hour Analysis From 10:00 AM to 01:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	12:00 PM					12:00 PM					11:45 AM					11:30 AM				
+0 mins.	33	87	19	<b>1</b>	<b>140</b>	<b>69</b>	<b>92</b>	<b>19</b>	<b>2</b>	<b>182</b>	<b>24</b>	<b>155</b>	<b>42</b>	<b>0</b>	<b>221</b>	<b>18</b>	<b>140</b>	<b>107</b>	<b>3</b>	<b>268</b>
<b>+15 mins.</b>	<b>39</b>	<b>79</b>	<b>22</b>	<b>0</b>	<b>140</b>	<b>78</b>	<b>81</b>	<b>18</b>	<b>0</b>	<b>177</b>	<b>32</b>	<b>129</b>	<b>42</b>	<b>0</b>	<b>203</b>	<b>23</b>	<b>132</b>	<b>80</b>	<b>2</b>	<b>237</b>
<b>+30 mins.</b>	<b>27</b>	<b>101</b>	20	1	<b>149</b>	43	96	20	1	160	<b>41</b>	<b>141</b>	<b>49</b>	<b>0</b>	<b>231</b>	<b>18</b>	<b>136</b>	<b>82</b>	<b>2</b>	<b>238</b>
<b>+45 mins.</b>	<b>38</b>	<b>88</b>	<b>14</b>	<b>0</b>	<b>140</b>	<b>76</b>	<b>118</b>	<b>26</b>	<b>0</b>	<b>220</b>	28	<b>168</b>	46	0	<b>242</b>	<b>28</b>	<b>163</b>	99	3	<b>293</b>
Total Volume	137	355	75	2	569	266	387	83	3	739	125	593	179	0	897	87	571	368	10	1036
% App. Total	24.1	62.4	13.2	0.4		36	52.4	11.2	0.4		13.9	66.1	20	0		8.4	55.1	35.5	1	
PHF	.878	.879	.852	.500	.955	.853	.820	.798	.375	.840	.762	.882	.913	.000	.927	.777	.876	.860	.833	.884
Passenger Vehicles	133	342	72	2	549	260	375	80	3	718	122	562	173	0	857	87	537	359	10	993
% Passenger Vehicles	97.1	96.3	96	100	96.5	97.7	96.9	96.4	100	97.2	97.6	94.8	96.6	0	95.5	100	94	97.6	100	95.8
Heavy Trucks	4	13	3	0	20	6	12	3	0	21	3	31	6	0	40	0	34	9	0	43
% Heavy Trucks	2.9	3.7	4	0	3.5	2.3	3.1	3.6	0	2.8	2.4	5.2	3.4	0	4.5	0	6	2.4	0	4.2

Traffic Engineering Data Solutions Inc.

File Name : SR 424 at SR 423 TMC (8-hr)

Site Code : 00000000

Start Date : 10/20/2020

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	STATE ROAD 424 Northbound					STATE ROAD 424 Southbound					STATE ROAD 423 Eastbound					STATE ROAD 423 Westbound					
Start Time	Left	Thru	Right	U-Turns	App. Total	Left	Thru	Right	U-Turns	App. Total	Left	Thru	Right	U-Turns	App. Total	Left	Thru	Right	U-Turns	App. Total	Int. Total
Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:45 PM																					
04:45 PM	60	202	18	0	280	53	121	19	0	193	31	181	44	1	257	12	159	79	3	253	983
05:00 PM	62	154	11	1	228	41	92	18	0	151	31	273	37	0	341	17	224	108	2	351	1071
05:15 PM	61	172	7	0	240	50	96	23	1	170	34	231	57	1	323	18	153	106	5	282	1015
05:30 PM	59	177	17	0	253	75	115	6	0	196	29	164	46	1	240	19	173	110	3	305	994
Total Volume	242	705	53	1	1001	219	424	66	1	710	125	849	184	3	1161	66	709	403	13	1191	4063
% App. Total	24.2	70.4	5.3	0.1		30.8	59.7	9.3	0.1		10.8	73.1	15.8	0.3		5.5	59.5	33.8	1.1		
PHF	.976	.873	.736	.250	.894	.730	.876	.717	.250	.906	.919	.777	.807	.750	.851	.868	.791	.916	.650	.848	.948
Passenger Vehicles	240	700	53	1	994	217	421	65	1	704	125	845	183	3	1156	66	685	400	13	1164	4018
% Passenger Vehicles	99.2	99.3	100	100	99.3	99.1	99.3	98.5	100	99.2	100	99.5	99.5	100	99.6	100	96.6	99.3	100	97.7	98.9
Heavy Trucks	2	5	0	0	7	2	3	1	0	6	0	4	1	0	5	0	24	3	0	27	45
% Heavy Trucks	0.8	0.7	0	0	0.7	0.9	0.7	1.5	0	0.8	0	0.5	0.5	0	0.4	0	3.4	0.7	0	2.3	1.1

Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	04:45 PM					02:30 PM					04:15 PM					02:30 PM				
+0 mins.	60	202	18	0	280	54	114	21	0	189	38	268	49	0	355	21	156	103	2	282
+15 mins.	62	154	11	1	228	60	105	9	0	174	32	224	48	1	305	27	161	123	1	312
+30 mins.	61	172	7	0	240	66	133	22	0	221	31	181	44	1	257	30	174	96	2	302
+45 mins.	59	177	17	0	253	62	117	25	0	204	31	273	37	0	341	33	218	97	0	348
Total Volume	242	705	53	1	1001	242	469	77	0	788	132	946	178	2	1258	111	709	419	5	1244
% App. Total	24.2	70.4	5.3	0.1		30.7	59.5	9.8	0		10.5	75.2	14.1	0.2		8.9	57	33.7	0.4	
PHF	.976	.873	.736	.250	.894	.917	.882	.770	.000	.891	.868	.866	.908	.500	.886	.841	.813	.852	.625	.894
Passenger Vehicles	240	700	53	1	994	238	456	74	0	768	132	932	175	2	1241	109	674	409	5	1197
% Passenger Vehicles	99.2	99.3	100	100	99.3	98.3	97.2	96.1	0	97.5	100	98.5	98.3	100	98.6	98.2	95.1	97.6	100	96.2
Heavy Trucks	2	5	0	0	7	4	13	3	0	20	0	14	3	0	17	2	35	10	0	47
% Heavy Trucks	0.8	0.7	0	0	0.7	1.7	2.8	3.9	0	2.5	0	1.5	1.7	0	1.4	1.8	4.9	2.4	0	3.8



Traffic Engineering Data Solutions Inc.

File Name : SR 424 at SR 423 TMC (8-hr)

Site Code : 00000000

Start Date : 10/20/2020

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Groups Printed- Heavy Trucks

	STATE ROAD 424 Northbound					STATE ROAD 424 Southbound					STATE ROAD 423 Eastbound					STATE ROAD 423 Westbound					
Start Time	Left	Thru	Right	U-Turns	App. Total	Left	Thru	Right	U-Turns	App. Total	Left	Thru	Right	U-Turns	App. Total	Left	Thru	Right	U-Turns	App. Total	Int. Total
07:00 AM	1	5	0	0	6	2	3	0	0	5	0	10	0	0	10	1	11	0	0	12	33
07:15 AM	1	3	1	0	5	0	3	0	0	3	0	12	4	0	16	0	8	2	0	10	34
07:30 AM	0	3	0	0	3	5	3	1	0	9	1	12	2	0	15	0	9	1	0	10	37
07:45 AM	2	1	0	0	3	2	5	1	0	8	0	11	1	0	12	0	7	3	0	10	33
Total	4	12	1	0	17	9	14	2	0	25	1	45	7	0	53	1	35	6	0	42	137
08:00 AM	1	0	0	0	1	2	6	1	0	9	1	9	1	0	11	0	8	1	0	9	30
08:15 AM	0	2	1	0	3	2	13	0	0	15	0	13	4	0	17	0	4	1	0	5	40
08:30 AM	1	5	1	0	7	2	4	0	0	6	2	14	0	0	16	0	4	4	0	8	37
08:45 AM	2	6	0	0	8	2	4	1	0	7	0	10	0	0	10	0	8	2	0	10	35
Total	4	13	2	0	19	8	27	2	0	37	3	46	5	0	54	0	24	8	0	32	142
*** BREAK ***																					
11:00 AM	2	4	0	0	6	1	6	1	0	8	1	6	0	0	7	0	8	2	0	10	31
11:15 AM	1	1	2	0	4	2	5	0	0	7	0	4	0	0	4	0	11	5	0	16	31
11:30 AM	2	3	1	0	6	3	1	0	0	4	0	8	1	0	9	0	10	3	0	13	32
11:45 AM	0	4	1	0	5	3	3	1	0	7	1	14	2	0	17	0	12	2	0	14	43
Total	5	12	4	0	21	9	15	2	0	26	2	32	3	0	37	0	41	12	0	53	137
12:00 PM	2	1	1	0	4	2	5	2	0	9	0	5	2	0	7	0	6	2	0	8	28
12:15 PM	0	3	1	0	4	1	2	0	0	3	1	4	2	0	7	0	6	2	0	8	22
12:30 PM	0	5	1	0	6	0	2	0	0	2	1	8	0	0	9	0	5	0	0	5	22
12:45 PM	2	4	0	0	6	3	3	1	0	7	0	3	2	0	5	1	8	3	0	12	30
Total	4	13	3	0	20	6	12	3	0	21	2	20	6	0	28	1	25	7	0	33	102
*** BREAK ***																					
02:00 PM	2	1	1	0	4	0	4	0	0	4	1	5	2	0	8	1	10	0	0	11	27
02:15 PM	1	2	1	0	4	0	2	1	0	3	1	4	0	0	5	0	11	1	0	12	24
02:30 PM	1	6	2	0	9	0	2	1	0	3	0	7	1	0	8	0	6	3	0	9	29
02:45 PM	0	2	1	0	3	2	3	0	0	5	1	1	1	0	3	2	9	1	0	12	23
Total	4	11	5	0	20	2	11	2	0	15	3	17	4	0	24	3	36	5	0	44	103
03:00 PM	0	2	0	0	2	2	2	1	0	5	0	5	2	0	7	0	11	3	0	14	28
03:15 PM	2	4	0	0	6	0	6	1	0	7	1	6	0	0	7	0	9	3	0	12	32
03:30 PM	0	3	0	0	3	2	2	1	0	5	1	2	1	0	4	0	11	0	0	11	23
03:45 PM	2	4	0	0	6	3	1	0	0	4	0	2	1	0	3	0	10	3	0	13	26
Total	4	13	0	0	17	7	11	3	0	21	2	15	4	0	21	0	41	9	0	50	109
04:00 PM	3	2	1	0	6	3	2	1	0	6	1	1	1	0	3	1	6	2	0	9	24
04:15 PM	0	5	0	0	5	1	4	1	0	6	0	6	2	0	8	0	4	1	0	5	24
04:30 PM	1	2	0	0	3	1	3	1	0	5	0	6	0	0	6	0	3	2	0	5	19
04:45 PM	1	2	0	0	3	1	0	1	0	2	0	1	0	0	1	0	5	0	0	5	11
Total	5	11	1	0	17	6	9	4	0	19	1	14	3	0	18	1	18	5	0	24	78
05:00 PM	0	1	0	0	1	0	0	0	0	0	0	1	1	0	2	0	7	1	0	8	11
05:15 PM	1	2	0	0	3	0	2	0	0	2	0	1	0	0	1	0	4	1	0	5	11
05:30 PM	0	0	0	0	0	1	1	0	0	2	0	1	0	0	1	0	8	1	0	9	12
05:45 PM	1	1	0	0	2	1	2	0	0	3	0	0	0	0	0	0	2	1	0	3	8
Total	2	4	0	0	6	2	5	0	0	7	0	3	1	0	4	0	21	4	0	25	42
Grand Total	32	89	16	0	137	49	104	18	0	171	14	192	33	0	239	6	241	56	0	303	850
Apprch %	23.4	65	11.7	0		28.7	60.8	10.5	0		5.9	80.3	13.8	0		2	79.5	18.5	0		
Total %	3.8	10.5	1.9	0	16.1	5.8	12.2	2.1	0	20.1	1.6	22.6	3.9	0	28.1	0.7	28.4	6.6	0	35.6	

Traffic Engineering Data Solutions Inc.

File Name : SR 424 at SR 423 TMC (8-hr)

Site Code : 00000000

Start Date : 10/20/2020

Page No : 2

	STATE ROAD 424 Northbound					STATE ROAD 424 Southbound					STATE ROAD 423 Eastbound					STATE ROAD 423 Westbound					
Start Time	Left	Thru	Right	U-Turns	App. Total	Left	Thru	Right	U-Turns	App. Total	Left	Thru	Right	U-Turns	App. Total	Left	Thru	Right	U-Turns	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 09:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:00 AM																					
08:00 AM	1	0	0	0	1	2	6	1	0	9	1	9	1	0	11	0	8	1	0	9	30
08:15 AM	0	2	1	0	3	2	13	0	0	15	0	13	4	0	17	0	4	1	0	5	40
08:30 AM	1	5	1	0	7	2	4	0	0	6	2	14	0	0	16	0	4	4	0	8	37
08:45 AM	2	6	0	0	8	2	4	1	0	7	0	10	0	0	10	0	8	2	0	10	35
Total Volume	4	13	2	0	19	8	27	2	0	37	3	46	5	0	54	0	24	8	0	32	142
% App. Total	21.1	68.4	10.5	0		21.6	73	5.4	0		5.6	85.2	9.3	0		0	75	25	0		
PHF	.500	.542	.500	.000	.594	1.00	.519	.500	.000	.617	.375	.821	.313	.000	.794	.000	.750	.500	.000	.800	.888

Peak Hour Analysis From 07:00 AM to 09:45 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	08:00 AM					07:30 AM					07:45 AM					07:00 AM				
+0 mins.	1	0	0	0	1	5	3	1	0	9	0	11	1	0	12	1	11	0	0	12
+15 mins.	0	2	1	0	3	2	5	1	0	8	1	9	1	0	11	0	8	2	0	10
+30 mins.	1	5	1	0	7	2	6	1	0	9	0	13	4	0	17	0	9	1	0	10
+45 mins.	2	6	0	0	8	2	13	0	0	15	2	14	0	0	16	0	7	3	0	10
Total Volume	4	13	2	0	19	11	27	3	0	41	3	47	6	0	56	1	35	6	0	42
% App. Total	21.1	68.4	10.5	0		26.8	65.9	7.3	0		5.4	83.9	10.7	0		2.4	83.3	14.3	0	
PHF	.500	.542	.500	.000	.594	.550	.519	.750	.000	.683	.375	.839	.375	.000	.824	.250	.795	.500	.000	.875

Peak Hour Analysis From 10:00 AM to 01:45 PM - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 11:00 AM

11:00 AM	2	4	0	0	6	1	6	1	0	8	1	6	0	0	7	0	8	2	0	10	31
11:15 AM	1	1	2	0	4	2	5	0	0	7	0	4	0	0	4	0	11	5	0	16	31
11:30 AM	2	3	1	0	6	3	1	0	0	4	0	8	1	0	9	0	10	3	0	13	32
11:45 AM	0	4	1	0	5	3	3	1	0	7	1	14	2	0	17	0	12	2	0	14	43
Total Volume	5	12	4	0	21	9	15	2	0	26	2	32	3	0	37	0	41	12	0	53	137
% App. Total	23.8	57.1	19	0		34.6	57.7	7.7	0		5.4	86.5	8.1	0		0	77.4	22.6	0		
PHF	.625	.750	.500	.000	.875	.750	.625	.500	.000	.813	.500	.571	.375	.000	.544	.000	.854	.600	.000	.828	.797

Peak Hour Analysis From 10:00 AM to 01:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	11:00 AM					11:15 AM					11:30 AM					11:00 AM				
+0 mins.	2	4	0	0	6	2	5	0	0	7	0	8	1	0	9	0	8	2	0	10
+15 mins.	1	1	2	0	4	3	1	0	0	4	1	14	2	0	17	0	11	5	0	16
+30 mins.	2	3	1	0	6	3	3	1	0	7	0	5	2	0	7	0	10	3	0	13
+45 mins.	0	4	1	0	5	2	5	2	0	9	1	4	2	0	7	0	12	2	0	14
Total Volume	5	12	4	0	21	10	14	3	0	27	2	31	7	0	40	0	41	12	0	53
% App. Total	23.8	57.1	19	0		37	51.9	11.1	0		5	77.5	17.5	0		0	77.4	22.6	0	
PHF	.625	.750	.500	.000	.875	.833	.700	.375	.000	.750	.500	.554	.875	.000	.588	.000	.854	.600	.000	.828

Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 02:30 PM

02:30 PM	1	6	2	0	9	0	2	1	0	3	0	7	1	0	8	0	6	3	0	9	29
02:45 PM	0	2	1	0	3	2	3	0	0	5	1	1	1	0	3	2	9	1	0	12	23
03:00 PM	0	2	0	0	2	2	2	1	0	5	0	5	2	0	7	0	11	3	0	14	28
03:15 PM	2	4	0	0	6	0	6	1	0	7	1	6	0	0	7	0	9	3	0	12	32
Total Volume	3	14	3	0	20	4	13	3	0	20	2	19	4	0	25	2	35	10	0	47	112
% App. Total	15	70	15	0		20	65	15	0		8	76	16	0		4.3	74.5	21.3	0		
PHF	.375	.583	.375	.000	.556	.500	.542	.750	.000	.714	.500	.679	.500	.000	.781	.250	.795	.833	.000	.839	.875

Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	03:15 PM					02:45 PM					02:30 PM					03:00 PM				
+0 mins.	2	4	0	0	6	2	3	0	0	5	0	7	1	0	8	0	11	3	0	14
+15 mins.	0	3	0	0	3	2	2	1	0	5	1	1	1	0	3	0	9	3	0	12
+30 mins.	2	4	0	0	6	0	6	1	0	7	0	5	2	0	7	0	11	0	0	11
+45 mins.	3	2	1	0	6	2	2	1	0	5	1	6	0	0	7	0	10	3	0	13
Total Volume	7	13	1	0	21	6	13	3	0	22	2	19	4	0	25	0	41	9	0	50
% App. Total	33.3	61.9	4.8	0		27.3	59.1	13.6	0		8	76	16	0		0	82	18	0	
PHF	.583	.813	.250	.000	.875	.750	.542	.750	.000	.786	.500	.679	.500	.000	.781	.000	.932	.750	.000	.893

# Traffic Engineering Data Solutions Inc.

File Name : SR 424 at Satel Dr TMC (8-hr)  
 Site Code : 00000000  
 Start Date : 10/20/2020  
 Page No : 1

## Groups Printed- Passenger Vehicles - Heavy Trucks

	STATE ROAD 424 Northbound					STATE ROAD 424 Southbound					ALOHA STREET Eastbound					SATEL DRIVE Westbound					
Start Time	Left	Thru	Right	U-Turns	App. Total	Left	Thru	Right	U-Turns	App. Total	Left	Thru	Right	U-Turns	App. Total	Left	Thru	Right	U-Turns	App. Total	Int. Total
07:00 AM	1	101	3	0	105	4	197	1	0	202	0	0	1	0	1	6	0	7	0	13	321
07:15 AM	2	134	2	0	138	9	321	0	0	330	1	0	1	0	2	3	0	6	0	9	479
07:30 AM	0	141	4	0	145	8	292	0	0	300	1	0	3	0	4	5	0	8	0	13	462
07:45 AM	0	151	2	0	153	15	225	1	0	241	0	0	0	0	0	8	0	10	0	18	412
Total	3	527	11	0	541	36	1035	2	0	1073	2	0	5	0	7	22	0	31	0	53	1674
08:00 AM	0	124	2	0	126	11	268	0	0	279	0	0	6	0	6	4	0	9	0	13	424
08:15 AM	1	154	3	0	158	8	268	0	0	276	0	0	1	0	1	2	0	12	0	14	449
08:30 AM	1	151	8	0	160	10	227	0	0	237	0	0	0	0	0	4	0	8	0	12	409
08:45 AM	0	139	4	0	143	9	216	0	0	225	0	0	3	0	3	8	0	14	0	22	393
Total	2	568	17	0	587	38	979	0	0	1017	0	0	10	0	10	18	0	43	0	61	1675
*** BREAK ***																					
11:00 AM	1	170	5	0	176	14	174	1	0	189	0	0	1	0	1	2	0	11	0	13	379
11:15 AM	3	183	8	1	195	7	179	3	0	189	0	0	1	0	1	6	0	13	0	19	404
11:30 AM	4	178	15	1	198	9	174	1	0	184	0	0	2	0	2	8	0	8	0	16	400
11:45 AM	0	158	6	0	164	10	172	0	0	182	0	0	0	0	0	6	0	7	0	13	359
Total	8	689	34	2	733	40	699	5	0	744	0	0	4	0	4	22	0	39	0	61	1542
12:00 PM	3	186	9	1	199	11	194	2	0	207	1	0	1	0	2	3	0	11	0	14	422
12:15 PM	2	218	9	1	230	17	188	0	0	205	2	0	3	0	5	3	0	9	0	12	452
12:30 PM	2	208	4	1	215	17	153	0	0	170	0	0	1	0	1	4	0	12	0	16	402
12:45 PM	3	214	4	1	222	11	210	0	0	221	0	0	3	0	3	6	0	13	0	19	465
Total	10	826	26	4	866	56	745	2	0	803	3	0	8	0	11	16	0	45	0	61	1741
*** BREAK ***																					
02:00 PM	1	192	5	0	198	12	172	1	0	185	0	0	7	0	7	5	1	14	0	20	410
02:15 PM	1	223	11	0	235	10	182	0	1	193	0	0	0	0	0	9	1	19	0	29	457
02:30 PM	2	235	6	0	243	18	198	0	0	216	0	0	1	0	1	3	0	7	0	10	470
02:45 PM	3	268	7	0	278	19	175	1	0	195	2	0	3	0	5	2	0	19	0	21	499
Total	7	918	29	0	954	59	727	2	1	789	2	0	11	0	13	19	2	59	0	80	1836
03:00 PM	1	253	9	0	263	15	198	1	0	214	0	0	3	0	3	5	0	15	0	20	500
03:15 PM	4	302	12	0	318	10	207	1	0	218	0	0	6	0	6	4	0	19	0	23	565
03:30 PM	3	289	11	1	304	19	179	0	0	198	0	1	4	0	5	6	0	11	0	17	524
03:45 PM	5	275	12	1	293	21	166	1	0	188	0	0	0	0	0	6	0	11	0	17	498
Total	13	1119	44	2	1178	65	750	3	0	818	0	1	13	0	14	21	0	56	0	77	2087
04:00 PM	1	276	3	0	280	20	181	2	0	203	1	0	2	0	3	6	0	11	0	17	503
04:15 PM	2	292	6	0	300	17	185	3	0	205	0	0	2	0	2	6	0	12	0	18	525
04:30 PM	1	249	9	0	259	16	206	1	0	223	3	1	7	0	11	5	0	19	0	24	517
04:45 PM	2	285	19	0	306	17	183	0	0	200	1	0	1	0	2	1	1	17	0	19	527
Total	6	1102	37	0	1145	70	755	6	0	831	5	1	12	0	18	18	1	59	0	78	2072
05:00 PM	2	294	11	0	307	24	164	0	0	188	1	0	2	0	3	4	0	9	0	13	511
05:15 PM	0	316	16	0	332	17	158	1	0	176	0	0	2	0	2	9	0	15	0	24	534
05:30 PM	4	288	11	0	303	21	171	0	0	192	2	0	1	0	3	6	1	20	0	27	525
05:45 PM	3	242	19	0	264	18	153	0	0	171	0	0	0	0	0	7	1	14	0	22	457
Total	9	1140	57	0	1206	80	646	1	0	727	3	0	5	0	8	26	2	58	0	86	2027
Grand Total	58	6889	255	8	7210	444	6336	21	1	6802	15	2	68	0	85	162	5	390	0	557	14654
Apprch %	0.8	95.5	3.5	0.1		6.5	93.1	0.3	0		17.6	2.4	80	0		29.1	0.9	70	0		
Total %	0.4	47	1.7	0.1	49.2	3	43.2	0.1	0	46.4	0.1	0	0.5	0	0.6	1.1	0	2.7	0	3.8	
Passenger Vehicles	57	6741	252	8	7058	434	6176	20	1	6631	15	2	66	0	83	157	5	385	0	547	14319
% Passenger Vehicles	98.3	97.9	98.8	100	97.9	97.7	97.5	95.2	100	97.5	100	100	97.1	0	97.6	96.9	100	98.7	0	98.2	97.7
Heavy Trucks	1	148	3	0	152	10	160	1	0	171	0	0	2	0	2	5	0	5	0	10	335
% Heavy Trucks	1.7	2.1	1.2	0	2.1	2.3	2.5	4.8	0	2.5	0	0	2.9	0	2.4	3.1	0	1.3	0	1.8	2.3



# Traffic Engineering Data Solutions Inc.

File Name : SR 424 at Satel Dr TMC (8-hr)

Site Code : 00000000

Start Date : 10/20/2020

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	STATE ROAD 424 Northbound					STATE ROAD 424 Southbound					ALOHA STREET Eastbound					SATEL DRIVE Westbound					
Start Time	Left	Thru	Right	U-Turns	App. Total	Left	Thru	Right	U-Turns	App. Total	Left	Thru	Right	U-Turns	App. Total	Left	Thru	Right	U-Turns	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 09:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:15 AM																					
07:15 AM	2	134	2	0	138	9	321	0	0	330	1	0	1	0	2	3	0	6	0	9	479
07:30 AM	0	141	4	0	145	8	292	0	0	300	1	0	3	0	4	5	0	8	0	13	462
<b>07:45 AM</b>	<b>0</b>	<b>151</b>	<b>2</b>	<b>0</b>	<b>153</b>	<b>15</b>	<b>225</b>	<b>1</b>	<b>0</b>	<b>241</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>8</b>	<b>0</b>	<b>10</b>	<b>0</b>	<b>18</b>	412
08:00 AM	0	124	2	0	126	11	268	0	0	279	0	0	6	0	6	4	0	9	0	13	424
Total Volume	2	550	10	0	562	43	1106	1	0	1150	2	0	10	0	12	20	0	33	0	53	1777
% App. Total	0.4	97.9	1.8	0		3.7	96.2	0.1	0		16.7	0	83.3	0		37.7	0	62.3	0		
PHF	.250	.911	.625	.000	.918	.717	.861	.250	.000	.871	.500	.000	.417	.000	.500	.625	.000	.825	.000	.736	.927
Passenger Vehicles	2	532	10	0	544	41	1078	1	0	1120	2	0	10	0	12	19	0	33	0	52	1728
% Passenger Vehicles	100	96.7	100	0	96.8	95.3	97.5	100	0	97.4	100	0	100	0	100	95.0	0	100	0	98.1	97.2
Heavy Trucks	0	18	0	0	18	2	28	0	0	30	0	0	0	0	0	1	0	0	0	1	49
% Heavy Trucks	0	3.3	0	0	3.2	4.7	2.5	0	0	2.6	0	0	0	0	0	5.0	0	0	0	1.9	2.8

Peak Hour Analysis From 07:00 AM to 09:45 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	07:45 AM					07:15 AM					07:15 AM					08:00 AM				
+0 mins.	0	151	2	0	153	9	321	0	0	330	1	0	1	0	2	4	0	9	0	13
<b>+15 mins.</b>	<b>0</b>	<b>124</b>	<b>2</b>	<b>0</b>	<b>126</b>	<b>8</b>	<b>292</b>	<b>0</b>	<b>0</b>	<b>300</b>	<b>1</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>4</b>	<b>2</b>	<b>0</b>	<b>12</b>	<b>0</b>	<b>14</b>
<b>+30 mins.</b>	<b>1</b>	<b>154</b>	<b>3</b>	<b>0</b>	<b>158</b>	<b>15</b>	<b>225</b>	<b>1</b>	<b>0</b>	<b>241</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>4</b>	<b>0</b>	<b>8</b>	<b>0</b>	<b>12</b>
<b>+45 mins.</b>	<b>1</b>	<b>151</b>	<b>8</b>	<b>0</b>	<b>160</b>	<b>11</b>	<b>268</b>	<b>0</b>	<b>0</b>	<b>279</b>	<b>0</b>	<b>0</b>	<b>6</b>	<b>0</b>	<b>6</b>	<b>8</b>	<b>0</b>	<b>14</b>	<b>0</b>	<b>22</b>
Total Volume	2	580	15	0	597	43	1106	1	0	1150	2	0	10	0	12	18	0	43	0	61
% App. Total	0.3	97.2	2.5	0		3.7	96.2	0.1	0		16.7	0	83.3	0		29.5	0	70.5	0	
PHF	.500	.942	.469	.000	.933	.717	.861	.250	.000	.871	.500	.000	.417	.000	.500	.563	.000	.768	.000	.693
Passenger Vehicles	2	555	15	0	572	41	1078	1	0	1120	2	0	10	0	12	18	0	42	0	60
% Passenger Vehicles	100	95.7	100	0	95.8	95.3	97.5	100	0	97.4	100	0	100	0	100	100	0	97.7	0	98.4
Heavy Trucks	0	25	0	0	25	2	28	0	0	30	0	0	0	0	0	0	0	1	0	1
% Heavy Trucks	0	4.3	0	0	4.2	4.7	2.5	0	0	2.6	0	0	0	0	0	0	0	2.3	0	1.6

Peak Hour Analysis From 10:00 AM to 01:45 PM - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 12:00 PM

12:00 PM	3	186	9	1	199	11	194	2	0	207	1	0	1	0	2	3	0	11	0	14	422
<b>12:15 PM</b>	<b>2</b>	<b>218</b>	<b>9</b>	<b>1</b>	<b>230</b>	<b>17</b>	<b>188</b>	<b>0</b>	<b>0</b>	<b>205</b>	<b>2</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>5</b>	<b>3</b>	<b>0</b>	<b>9</b>	<b>0</b>	<b>12</b>	452
12:30 PM	2	208	4	1	215	17	153	0	0	170	0	0	1	0	1	4	0	12	0	16	402
12:45 PM	3	214	4	1	222	11	210	0	0	221	0	0	3	0	3	6	0	13	0	19	465
Total Volume	10	826	26	4	866	56	745	2	0	803	3	0	8	0	11	16	0	45	0	61	1741
% App. Total	1.2	95.4	3	0.5		7	92.8	0.2	0		27.3	0	72.7	0		26.2	0	73.8	0		
PHF	.833	.947	.722	1.00	.941	.824	.887	.250	.000	.908	.375	.000	.667	.000	.550	.667	.000	.865	.000	.803	.936
Passenger Vehicles	10	805	26	4	845	55	724	2	0	781	3	0	8	0	11	15	0	45	0	60	1697
% Passenger Vehicles	100	97.5	100	100	97.6	98.2	97.2	100	0	97.3	100	0	100	0	100	93.8	0	100	0	98.4	97.5
Heavy Trucks	0	21	0	0	21	1	21	0	0	22	0	0	0	0	0	1	0	0	0	1	44
% Heavy Trucks	0	2.5	0	0	2.4	1.8	2.8	0	0	2.7	0	0	0	0	0	6.3	0	0	0	1.6	2.5

Peak Hour Analysis From 10:00 AM to 01:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	12:00 PM					12:00 PM					12:00 PM					11:15 AM				
+0 mins.	3	186	9	1	199	11	194	2	0	207	1	0	1	0	2	6	0	13	0	19
<b>+15 mins.</b>	<b>2</b>	<b>218</b>	<b>9</b>	<b>1</b>	<b>230</b>	<b>17</b>	<b>188</b>	<b>0</b>	<b>0</b>	<b>205</b>	<b>2</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>5</b>	<b>8</b>	<b>0</b>	<b>8</b>	<b>0</b>	<b>16</b>
<b>+30 mins.</b>	<b>2</b>	<b>208</b>	<b>4</b>	<b>1</b>	<b>215</b>	<b>17</b>	<b>153</b>	<b>0</b>	<b>0</b>	<b>170</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>6</b>	<b>0</b>	<b>7</b>	<b>0</b>	<b>13</b>
<b>+45 mins.</b>	<b>3</b>	<b>214</b>	<b>4</b>	<b>1</b>	<b>222</b>	<b>11</b>	<b>210</b>	<b>0</b>	<b>0</b>	<b>221</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>3</b>	<b>3</b>	<b>0</b>	<b>11</b>	<b>0</b>	<b>14</b>
Total Volume	10	826	26	4	866	56	745	2	0	803	3	0	8	0	11	23	0	39	0	62
% App. Total	1.2	95.4	3	0.5		7	92.8	0.2	0		27.3	0	72.7	0		37.1	0	62.9	0	
PHF	.833	.947	.722	1.000	.941	.824	.887	.250	.000	.908	.375	.000	.667	.000	.550	.719	.000	.750	.000	.816
Passenger Vehicles	10	805	26	4	845	55	724	2	0	781	3	0	8	0	11	15	0	45	0	60
% Passenger Vehicles	100	97.5	100	100	97.6	98.2	97.2	100	0	97.3	100	0	100	0	100	95.7	0	100	0	98.4
Heavy Trucks	0	21	0	0	21	1	21	0	0	22	0	0	0	0	0	1	0	0	0	1
% Heavy Trucks	0	2.5	0	0	2.4	1.8	2.8	0	0	2.7	0	0	0	0	0	4.3	0	0	0	1.6

# Traffic Engineering Data Solutions Inc.

File Name : SR 424 at Satel Dr TMC (8-hr)

Site Code : 00000000

Start Date : 10/20/2020

Page No : 3

	STATE ROAD 424 Northbound					STATE ROAD 424 Southbound					ALOHA STREET Eastbound					SATEL DRIVE Westbound					
Start Time	Left	Thru	Right	U-Turns	App. Total	Left	Thru	Right	U-Turns	App. Total	Left	Thru	Right	U-Turns	App. Total	Left	Thru	Right	U-Turns	App. Total	Int. Total
Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:45 PM																					
04:45 PM	2	285	19	0	306	17	183	0	0	200	1	0	1	0	2	1	1	17	0	19	527
05:00 PM	2	294	11	0	307	24	164	0	0	188	1	0	2	0	3	4	0	9	0	13	511
05:15 PM	0	316	16	0	332	17	158	1	0	176	0	0	2	0	2	9	0	15	0	24	534
05:30 PM	4	288	11	0	303	21	171	0	0	192	2	0	1	0	3	6	1	20	0	27	525
Total Volume	8	1183	57	0	1248	79	676	1	0	756	4	0	6	0	10	20	2	61	0	83	2097
% App. Total	0.6	94.8	4.6	0		10.4	89.4	0.1	0		40	0	60	0		24.1	2.4	73.5	0		
PHF	.500	.936	.750	.000	.940	.823	.923	.250	.000	.945	.500	.000	.750	.000	.833	.556	.500	.763	.000	.769	.982
Passenger Vehicles	8	1178	57	0	1243	79	671	1	0	751	4	0	6	0	10	19	2	61	0	82	2086
% Passenger Vehicles	100	99.6	100	0	99.6	100	99.3	100	0	99.3	100	0	100	0	100	95.0	100	100	0	98.8	99.5
Heavy Trucks	0	5	0	0	5	0	5	0	0	5	0	0	0	0	0	1	0	0	0	1	11
% Heavy Trucks	0	0.4	0	0	0.4	0	0.7	0	0	0.7	0	0	0	0	0	5.0	0	0	0	1.2	0.5

Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	04:45 PM					02:30 PM					02:45 PM					05:00 PM				
+0 mins.	2	285	19	0	306	18	198	0	0	216	2	0	3	0	5	4	0	9	0	13
+15 mins.	2	294	11	0	307	19	175	1	0	195	0	0	3	0	3	9	0	15	0	24
+30 mins.	0	316	16	0	332	15	198	1	0	214	0	0	6	0	6	6	1	20	0	27
+45 mins.	4	288	11	0	303	10	207	1	0	218	0	1	4	0	5	7	1	14	0	22
Total Volume	8	1183	57	0	1248	62	778	3	0	843	2	1	16	0	19	26	2	58	0	86
% App. Total	0.6	94.8	4.6	0		7.4	92.3	0.4	0		10.5	5.3	84.2	0		30.2	2.3	67.4	0	
PHF	.500	.936	.750	.000	.940	.816	.940	.750	.000	.967	.250	.250	.667	.000	.792	.722	.500	.725	.000	.796
Passenger Vehicles	8	1178	57	0	1243	60	762	3	0	825	2	1	16	0	19	25	2	58	0	85
% Passenger Vehicles	100	99.6	100	0	99.6	96.8	97.9	100	0	97.9	100	100	100	0	100	96.2	100	100	0	98.8
Heavy Trucks	0	5	0	0	5	2	16	0	0	18	0	0	0	0	0	1	0	0	0	1
% Heavy Trucks	0	0.4	0	0	0.4	3.2	2.1	0	0	2.1	0	0	0	0	0	3.8	0	0	0	1.2

Traffic Engineering Data Solutions Inc.

File Name : SR 424 at Satel Dr TMC (8-hr)

Site Code : 00000000

Start Date : 10/20/2020

Page No : 1

Groups Printed- Heavy Trucks

	STATE ROAD 424 Northbound					STATE ROAD 424 Southbound					ALOHA STREET Eastbound					SATEL DRIVE Westbound					
Start Time	Left	Thru	Right	U-Turns	App. Total	Left	Thru	Right	U-Turns	App. Total	Left	Thru	Right	U-Turns	App. Total	Left	Thru	Right	U-Turns	App. Total	Int. Total
07:00 AM	0	3	0	0	3	0	6	0	0	6	0	0	0	0	0	0	0	1	0	1	10
07:15 AM	0	5	0	0	5	0	4	0	0	4	0	0	0	0	0	0	0	0	0	0	9
07:30 AM	0	4	0	0	4	0	12	0	0	12	0	0	0	0	0	1	0	0	0	1	17
07:45 AM	0	5	0	0	5	1	4	0	0	5	0	0	0	0	0	0	0	0	0	0	10
Total	0	17	0	0	17	1	26	0	0	27	0	0	0	0	0	1	0	1	0	2	46
08:00 AM	0	4	0	0	4	1	8	0	0	9	0	0	0	0	0	0	0	0	0	0	13
08:15 AM	0	3	0	0	3	1	15	0	0	16	0	0	0	0	0	0	0	0	0	0	19
08:30 AM	0	13	0	0	13	0	5	0	0	5	0	0	0	0	0	0	0	1	0	1	19
08:45 AM	0	8	0	0	8	0	9	0	0	9	0	0	0	0	0	0	0	0	0	0	17
Total	0	28	0	0	28	2	37	0	0	39	0	0	0	0	0	0	0	1	0	1	68
*** BREAK ***																					
11:00 AM	0	9	0	0	9	1	4	0	0	5	0	0	0	0	0	0	0	0	0	0	14
11:15 AM	0	7	0	0	7	1	7	1	0	9	0	0	0	0	0	0	0	0	0	0	16
11:30 AM	0	6	1	0	7	0	6	0	0	6	0	0	0	0	0	0	0	0	0	0	13
11:45 AM	0	6	0	0	6	0	5	0	0	5	0	0	0	0	0	0	0	0	0	0	11
Total	0	28	1	0	29	2	22	1	0	25	0	0	0	0	0	0	0	0	0	0	54
12:00 PM	0	3	0	0	3	0	7	0	0	7	0	0	0	0	0	1	0	0	0	1	11
12:15 PM	0	5	0	0	5	0	4	0	0	4	0	0	0	0	0	0	0	0	0	0	9
12:30 PM	0	7	0	0	7	1	2	0	0	3	0	0	0	0	0	0	0	0	0	0	10
12:45 PM	0	6	0	0	6	0	8	0	0	8	0	0	0	0	0	0	0	0	0	0	14
Total	0	21	0	0	21	1	21	0	0	22	0	0	0	0	0	1	0	0	0	1	44
*** BREAK ***																					
02:00 PM	0	1	0	0	1	1	3	0	0	4	0	0	0	0	0	0	0	0	0	0	5
02:15 PM	0	3	0	0	3	0	3	0	0	3	0	0	0	0	0	0	0	1	0	1	7
02:30 PM	0	8	0	0	8	1	3	0	0	4	0	0	0	0	0	0	0	1	0	1	13
02:45 PM	0	3	0	0	3	1	4	0	0	5	0	0	0	0	0	1	0	1	0	2	10
Total	0	15	0	0	15	3	13	0	0	16	0	0	0	0	0	1	0	3	0	4	35
03:00 PM	0	3	0	0	3	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	6
03:15 PM	0	8	1	0	9	0	6	0	0	6	0	0	0	0	0	1	0	0	0	1	16
03:30 PM	0	5	1	0	6	0	6	0	0	6	0	0	0	0	0	0	0	0	0	0	12
03:45 PM	0	6	0	0	6	0	5	0	0	5	0	0	0	0	0	0	0	0	0	0	11
Total	0	22	2	0	24	0	20	0	0	20	0	0	0	0	0	1	0	0	0	1	45
04:00 PM	1	3	0	0	4	0	6	0	0	6	0	0	0	0	0	0	0	0	0	0	10
04:15 PM	0	5	0	0	5	1	4	0	0	5	0	0	1	0	1	0	0	0	0	0	11
04:30 PM	0	3	0	0	3	0	3	0	0	3	0	0	1	0	1	0	0	0	0	0	7
04:45 PM	0	2	0	0	2	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	3
Total	1	13	0	0	14	1	14	0	0	15	0	0	2	0	2	0	0	0	0	0	31
05:00 PM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
05:15 PM	0	1	0	0	1	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	4
05:30 PM	0	1	0	0	1	0	1	0	0	1	0	0	0	0	0	1	0	0	0	1	3
05:45 PM	0	1	0	0	1	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	4
Total	0	4	0	0	4	0	7	0	0	7	0	0	0	0	0	1	0	0	0	1	12
Grand Total	1	148	3	0	152	10	160	1	0	171	0	0	2	0	2	5	0	5	0	10	335
Apprch %	0.7	97.4	2	0		5.8	93.6	0.6	0		0	0	100	0		50	0	50	0		
Total %	0.3	44.2	0.9	0	45.4	3	47.8	0.3	0	51	0	0	0.6	0	0.6	1.5	0	1.5	0	3	



# Traffic Engineering Data Solutions Inc.

File Name : SR 424 at Satel Dr TMC (8-hr)

Site Code : 00000000

Start Date : 10/20/2020

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	STATE ROAD 424 Northbound					STATE ROAD 424 Southbound					ALOHA STREET Eastbound					SATEL DRIVE Westbound					
Start Time	Left	Thru	Right	U-Turns	App. Total	Left	Thru	Right	U-Turns	App. Total	Left	Thru	Right	U-Turns	App. Total	Left	Thru	Right	U-Turns	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 09:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:00 AM																					
08:00 AM	0	4	0	0	4	1	8	0	0	9	0	0	0	0	0	0	0	0	0	0	13
08:15 AM	0	3	0	0	3	1	15	0	0	16	0	0	0	0	0	0	0	0	0	0	19
08:30 AM	0	13	0	0	13	0	5	0	0	5	0	0	0	0	0	0	0	1	0	1	19
08:45 AM	0	8	0	0	8	0	9	0	0	9	0	0	0	0	0	0	0	0	0	0	17
Total Volume	0	28	0	0	28	2	37	0	0	39	0	0	0	0	0	0	0	1	0	1	68
% App. Total	0	100	0	0		5.1	94.9	0	0		0	0	0	0		0	0	100	0		
PHF	.000	.538	.000	.000	.538	.500	.617	.000	.000	.609	.000	.000	.000	.000	.000	.000	.000	.250	.000	.250	.895

Peak Hour Analysis From 07:00 AM to 09:45 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	08:00 AM					07:30 AM					07:00 AM					07:00 AM				
+0 mins.	0	4	0	0	4	0	12	0	0	12	0	0	0	0	0	0	0	1	0	1
+15 mins.	0	3	0	0	3	1	4	0	0	5	0	0	0	0	0	0	0	0	0	0
+30 mins.	0	13	0	0	13	1	8	0	0	9	0	0	0	0	0	1	0	0	0	1
+45 mins.	0	8	0	0	8	1	15	0	0	16	0	0	0	0	0	0	0	0	0	0
Total Volume	0	28	0	0	28	3	39	0	0	42	0	0	0	0	0	1	0	1	0	2
% App. Total	0	100	0	0		7.1	92.9	0	0		0	0	0	0		50	0	50	0	
PHF	.000	.538	.000	.000	.538	.750	.650	.000	.000	.656	.000	.000	.000	.000	.000	.250	.000	.250	.000	.500

Peak Hour Analysis From 10:00 AM to 01:45 PM - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 11:00 AM

11:00 AM	0	9	0	0	9	1	4	0	0	5	0	0	0	0	0	0	0	0	0	0	14
11:15 AM	0	7	0	0	7	1	7	1	0	9	0	0	0	0	0	0	0	0	0	0	16
11:30 AM	0	6	1	0	7	0	6	0	0	6	0	0	0	0	0	0	0	0	0	0	13
11:45 AM	0	6	0	0	6	0	5	0	0	5	0	0	0	0	0	0	0	0	0	0	11
Total Volume	0	28	1	0	29	2	22	1	0	25	0	0	0	0	0	0	0	0	0	0	54
% App. Total	0	96.6	3.4	0		8	88	4	0		0	0	0	0		0	0	0	0		
PHF	.000	.778	.250	.000	.806	.500	.786	.250	.000	.694	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.844

Peak Hour Analysis From 10:00 AM to 01:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	11:00 AM					11:15 AM					10:00 AM					11:15 AM				
+0 mins.	0	9	0	0	9	1	7	1	0	9	0	0	0	0	0	0	0	0	0	0
+15 mins.	0	7	0	0	7	0	6	0	0	6	0	0	0	0	0	0	0	0	0	0
+30 mins.	0	6	1	0	7	0	5	0	0	5	0	0	0	0	0	0	0	0	0	0
+45 mins.	0	6	0	0	6	0	7	0	0	7	0	0	0	0	0	1	0	0	0	1
Total Volume	0	28	1	0	29	1	25	1	0	27	0	0	0	0	0	1	0	0	0	1
% App. Total	0	96.6	3.4	0		3.7	92.6	3.7	0		0	0	0	0		100	0	0	0	
PHF	.000	.778	.250	.000	.806	.250	.893	.250	.000	.750	.000	.000	.000	.000	.000	.250	.000	.000	.000	.250

Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 03:15 PM

03:15 PM	0	8	1	0	9	0	6	0	0	6	0	0	0	0	0	1	0	0	0	1	16
03:30 PM	0	5	1	0	6	0	6	0	0	6	0	0	0	0	0	0	0	0	0	0	12
03:45 PM	0	6	0	0	6	0	5	0	0	5	0	0	0	0	0	0	0	0	0	0	11
04:00 PM	1	3	0	0	4	0	6	0	0	6	0	0	0	0	0	0	0	0	0	0	10
Total Volume	1	22	2	0	25	0	23	0	0	23	0	0	0	0	0	1	0	0	0	1	49
% App. Total	4	88	8	0		0	100	0	0		0	0	0	0		100	0	0	0		
PHF	.250	.688	.500	.000	.694	.000	.958	.000	.000	.958	.000	.000	.000	.000	.000	.250	.000	.000	.000	.250	.766

Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	03:15 PM					03:15 PM					03:45 PM					02:00 PM				
+0 mins.	0	8	1	0	9	0	6	0	0	6	0	0	0	0	0	0	0	0	0	0
+15 mins.	0	5	1	0	6	0	6	0	0	6	0	0	0	0	0	0	0	1	0	1
+30 mins.	0	6	0	0	6	0	5	0	0	5	0	0	1	0	1	0	0	1	0	1
+45 mins.	1	3	0	0	4	0	6	0	0	6	0	0	1	0	1	1	0	1	0	2
Total Volume	1	22	2	0	25	0	23	0	0	23	0	0	2	0	2	1	0	3	0	4
% App. Total	4	88	8	0		0	100	0	0		0	0	100	0		25	0	75	0	
PHF	.250	.688	.500	.000	.694	.000	.958	.000	.000	.958	.000	.000	.500	.000	.500	.250	.000	.750	.000	.500

Traffic Engineering Data Solutions Inc.

File Name : SR 424 at Annandale Ave TMC (4-hr)

Site Code : 00000000

Start Date : 10/20/2020

Page No : 1

### Groups Printed- Passenger Vehicles - Heavy Trucks

	STATE ROAD 424 Northbound					STATE ROAD 424 Southbound					ANNANDALE AVENUE Eastbound					BUSINESS DRIVEWAY Westbound					
Start Time	Left	Thru	Right	U-Turns	App. Total	Left	Thru	Right	U-Turns	App. Total	Left	Thru	Right	U-Turns	App. Total	Left	Thru	Right	U-Turns	App. Total	Int. Total
*** BREAK ***																					
02:00 PM	1	201	0	0	202	0	183	1	0	184	1	0	0	0	1	0	0	0	0	0	387
02:15 PM	3	243	0	0	246	0	195	0	0	195	1	0	2	0	3	0	0	0	0	0	444
02:30 PM	1	243	0	0	244	0	219	1	0	220	0	0	2	0	2	0	0	0	0	0	466
02:45 PM	2	294	0	0	296	0	182	1	0	183	0	0	3	0	3	0	0	0	0	0	482
Total	7	981	0	0	988	0	779	3	0	782	2	0	7	0	9	0	0	0	0	0	1779
03:00 PM	1	268	0	0	269	0	214	0	0	214	0	0	3	0	3	0	0	0	0	0	486
03:15 PM	1	310	0	0	311	0	216	0	0	216	0	0	2	0	2	0	0	0	0	0	529
03:30 PM	3	301	0	0	304	0	199	1	0	200	0	0	1	0	1	0	0	0	0	0	505
03:45 PM	2	282	0	0	284	0	185	0	0	185	1	0	0	0	1	0	0	0	0	0	470
Total	7	1161	0	0	1168	0	814	1	0	815	1	0	6	0	7	0	0	0	0	0	1990
04:00 PM	1	286	0	0	287	0	204	2	0	206	0	0	2	0	2	0	0	0	0	0	495
04:15 PM	1	301	0	0	302	0	210	0	0	210	1	0	2	0	3	0	0	0	0	0	515
04:30 PM	4	272	0	0	276	0	217	0	0	217	1	0	1	0	2	0	0	0	0	0	495
04:45 PM	0	300	0	0	300	0	203	0	0	203	1	0	2	0	3	0	0	0	0	0	506
Total	6	1159	0	0	1165	0	834	2	0	836	3	0	7	0	10	0	0	0	0	0	2011
05:00 PM	0	308	0	0	308	0	183	1	0	184	2	0	1	0	3	0	0	0	0	0	495
05:15 PM	2	327	0	0	329	0	178	1	0	179	0	0	1	0	1	0	0	0	0	0	509
05:30 PM	2	306	0	0	308	0	195	1	0	196	1	0	1	0	2	0	0	0	0	0	506
05:45 PM	0	260	0	0	260	0	173	1	0	174	0	0	1	0	1	0	0	0	0	0	435
Total	4	1201	0	0	1205	0	729	4	0	733	3	0	4	0	7	0	0	0	0	0	1945
Grand Total	24	4502	0	0	4526	0	3156	10	0	3166	9	0	24	0	33	0	0	0	0	0	7725
Apprch %	0.5	99.5	0	0		0	99.7	0.3	0		27.3	0	72.7	0		0	0	0	0		
Total %	0.3	58.3	0	0	58.6	0	40.9	0.1	0	41	0.1	0	0.3	0	0.4	0	0	0	0	0	
Passenger Vehicles	24	4442	0	0	4466	0	3094	9	0	3103	9	0	23	0	32	0	0	0	0	0	7601
% Passenger Vehicles	100	98.7	0	0	98.7	0	98	90	0	98	100	0	95.8	0	97	0	0	0	0	0	98.4
Heavy Trucks	0	60	0	0	60	0	62	1	0	63	0	0	1	0	1	0	0	0	0	0	124
% Heavy Trucks	0	1.3	0	0	1.3	0	2	10	0	2	0	0	4.2	0	3	0	0	0	0	0	1.6

[illegible]

Traffic Engineering Data Solutions Inc.

File Name : SR 424 at Annandale Ave TMC (4-hr)

Site Code : 00000000

Start Date : 10/20/2020

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	STATE ROAD 424 Northbound					STATE ROAD 424 Southbound					ANNANDALE AVENUE Eastbound					BUSINESS DRIVEWAY Westbound					
Start Time	Left	Thru	Right	U-Turns	App. Total	Left	Thru	Right	U-Turns	App. Total	Left	Thru	Right	U-Turns	App. Total	Left	Thru	Right	U-Turns	App. Total	Int. Total
Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Each Approach Begins at:																					
	04:45 PM					04:00 PM					02:15 PM					02:00 PM					
+0 mins.	0	300	0	0	300	0	204	2	0	206	1	0	2	0	3	0	0	0	0	0	0
+15 mins.	0	308	0	0	308	0	210	0	0	210	0	0	2	0	2	0	0	0	0	0	0
+30 mins.	2	327	0	0	329	0	217	0	0	217	0	0	3	0	3	0	0	0	0	0	0
<b>+45 mins.</b>	<b>2</b>	<b>306</b>	<b>0</b>	<b>0</b>	<b>308</b>	<b>0</b>	<b>203</b>	<b>0</b>	<b>0</b>	<b>203</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Total Volume	4	1241	0	0	1245	0	834	2	0	836	1	0	10	0	11	0	0	0	0	0	0
% App. Total	0.3	99.7	0	0		0	99.8	0.2	0		9.1	0	90.9	0		0	0	0	0		
PHF	.500	.949	.000	.000	.946	.000	.961	.250	.000	.963	.250	.000	.833	.000	.917	.000	.000	.000	.000	.000	
Passenger Vehicles	4	123	0	0	1240	0	819	2	0	821	1	0	9	0	10	0	0	0	0	0	0
% Passenger Vehicles	100	99.6	0	0	99.6	0	98.2	100	0	98.2	100	0	90	0	90.9	0	0	0	0	0	0
Heavy Trucks	0	5	0	0	5	0	15	0	0	15	0	0	1	0	1	0	0	0	0	0	0
% Heavy Trucks	0	0.4	0	0	0.4	0	1.8	0	0	1.8	0	0	10	0	9.1	0	0	0	0	0	0



# Traffic Engineering Data Solutions Inc.

File Name : SR 424 at Annandale Ave TMC (4-hr)

Site Code : 00000000

Start Date : 10/20/2020

Page No : 1

## Groups Printed- Heavy Trucks

	STATE ROAD 424 Northbound					STATE ROAD 424 Southbound					ANNANDALE AVENUE Eastbound					BUSINESS DRIVEWAY Westbound					
Start Time	Left	Thru	Right	U-Turns	App. Total	Left	Thru	Right	U-Turns	App. Total	Left	Thru	Right	U-Turns	App. Total	Left	Thru	Right	U-Turns	App. Total	Int. Total
*** BREAK ***																					
02:00 PM	0	1	0	0	1	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	4
02:15 PM	0	3	0	0	3	0	4	0	0	4	0	0	0	0	0	0	0	0	0	0	7
02:30 PM	0	9	0	0	9	0	3	1	0	4	0	0	1	0	1	0	0	0	0	0	14
02:45 PM	0	4	0	0	4	0	7	0	0	7	0	0	0	0	0	0	0	0	0	0	11
Total	0	17	0	0	17	0	17	1	0	18	0	0	1	0	1	0	0	0	0	0	36
03:00 PM	0	4	0	0	4	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	7
03:15 PM	0	10	0	0	10	0	6	0	0	6	0	0	0	0	0	0	0	0	0	0	16
03:30 PM	0	4	0	0	4	0	6	0	0	6	0	0	0	0	0	0	0	0	0	0	10
03:45 PM	0	7	0	0	7	0	6	0	0	6	0	0	0	0	0	0	0	0	0	0	13
Total	0	25	0	0	25	0	21	0	0	21	0	0	0	0	0	0	0	0	0	0	46
04:00 PM	0	4	0	0	4	0	6	0	0	6	0	0	0	0	0	0	0	0	0	0	10
04:15 PM	0	4	0	0	4	0	5	0	0	5	0	0	0	0	0	0	0	0	0	0	9
04:30 PM	0	4	0	0	4	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	7
04:45 PM	0	2	0	0	2	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	3
Total	0	14	0	0	14	0	15	0	0	15	0	0	0	0	0	0	0	0	0	0	29
05:00 PM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
05:15 PM	0	1	0	0	1	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	4
05:30 PM	0	1	0	0	1	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	4
05:45 PM	0	1	0	0	1	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	4
Total	0	4	0	0	4	0	9	0	0	9	0	0	0	0	0	0	0	0	0	0	13
Grand Total	0	60	0	0	60	0	62	1	0	63	0	0	1	0	1	0	0	0	0	0	124
Apprch %	0	100	0	0		0	98.4	1.6	0		0	0	100	0		0	0	0	0		
Total %	0	48.4	0	0	48.4	0	50	0.8	0	50.8	0	0	0.8	0	0.8	0	0	0	0	0	

	STATE ROAD 424 Northbound					STATE ROAD 424 Southbound					ANNANDALE AVENUE Eastbound					BUSINESS DRIVEWAY Westbound					
Start Time	Left	Thru	Right	U-Turns	App. Total	Left	Thru	Right	U-Turns	App. Total	Left	Thru	Right	U-Turns	App. Total	Left	Thru	Right	U-Turns	App. Total	Int. Total
Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 03:15 PM																					
03:15 PM	0	10	0	0	10	0	6	0	0	6	0	0	0	0	0	0	0	0	0	0	16
03:30 PM	0	4	0	0	4	0	6	0	0	6	0	0	0	0	0	0	0	0	0	0	10
03:45 PM	0	7	0	0	7	0	6	0	0	6	0	0	0	0	0	0	0	0	0	0	13
04:00 PM	0	4	0	0	4	0	6	0	0	6	0	0	0	0	0	0	0	0	0	0	10
Total Volume	0	25	0	0	25	0	24	0	0	24	0	0	0	0	0	0	0	0	0	0	49
% App. Total	0	100	0	0		0	100	0	0		0	0	0	0		0	0	0	0		
PHF	.000	.625	.000	.000	.625	.000	1.00	.000	.000	1.00	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.766

Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	02:30 PM					03:15 PM					02:00 PM					02:00 PM				
+0 mins.	0	9	0	0	9	0	6	0	0	6	0	0	0	0	0	0	0	0	0	0
+15 mins.	0	4	0	0	4	0	6	0	0	6	0	0	0	0	0	0	0	0	0	0
+30 mins.	0	4	0	0	4	0	6	0	0	6	0	0	1	0	1	0	0	0	0	0
+45 mins.	0	10	0	0	10	0	6	0	0	6	0	0	0	0	0	0	0	0	0	0
Total Volume	0	27	0	0	27	0	24	0	0	24	0	0	1	0	1	0	0	0	0	0
% App. Total	0	100	0	0		0	100	0	0		0	0	100	0		0	0	0	0	
PHF	.000	.675	.000	.000	.675	.000	1.000	.000	.000	1.000	.000	.000	.250	.000	.250	.000	.000	.000	.000	.000

# Traffic Engineering Data Solutions Inc.

File Name : SR 424 at Alpha Dr TMC (4-hr)

Site Code : 00000000

Start Date : 10/20/2020

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## Groups Printed- Passenger Vehicles - Heavy Trucks

	STATE ROAD 424 Northbound					STATE ROAD 424 Southbound					BUSINESS DRIVEWAY Eastbound					ALPHA DRIVE Westbound					
Start Time	Left	Thru	Right	U-Turns	App. Total	Left	Thru	Right	U-Turns	App. Total	Left	Thru	Right	U-Turns	App. Total	Left	Thru	Right	U-Turns	App. Total	Int. Total
*** BREAK ***																					
02:00 PM	0	198	0	0	198	8	186	0	0	194	0	0	0	0	0	1	0	8	0	9	401
02:15 PM	1	245	2	0	248	6	196	0	0	202	0	0	0	0	0	0	0	7	0	7	457
02:30 PM	0	241	1	0	242	12	218	0	0	230	0	0	0	0	0	3	0	12	0	15	487
02:45 PM	0	293	2	0	295	8	184	0	0	192	0	0	0	0	0	2	0	17	0	19	506
Total	1	977	5	0	983	34	784	0	0	818	0	0	0	0	0	6	0	44	0	50	1851
03:00 PM	0	261	6	0	267	12	211	0	0	223	0	0	0	0	0	3	0	9	0	12	502
03:15 PM	0	305	7	0	312	14	217	0	0	231	0	0	0	0	0	4	0	11	0	15	558
03:30 PM	0	304	3	0	307	16	195	0	0	211	0	0	0	0	0	7	0	40	0	47	565
03:45 PM	0	282	0	0	282	10	182	0	0	192	0	0	0	0	0	2	0	26	0	28	502
Total	0	1152	16	0	1168	52	805	0	0	857	0	0	0	0	0	16	0	86	0	102	2127
04:00 PM	0	280	0	0	280	12	206	0	0	218	0	0	0	0	0	0	0	18	0	18	516
04:15 PM	0	311	1	0	312	19	210	0	0	229	0	0	0	0	0	3	0	11	0	14	555
04:30 PM	0	273	0	0	273	7	216	0	0	223	0	0	0	0	0	0	0	6	0	6	502
04:45 PM	0	295	1	0	296	4	204	0	0	208	0	0	0	0	0	2	0	10	0	12	516
Total	0	1159	2	0	1161	42	836	0	0	878	0	0	0	0	0	5	0	45	0	50	2089
05:00 PM	0	312	3	0	315	8	185	0	0	193	0	0	0	0	0	0	0	9	0	9	517
05:15 PM	0	325	5	0	330	5	181	0	0	186	0	0	0	0	0	1	0	8	0	9	525
05:30 PM	0	311	3	0	314	13	195	0	0	208	0	0	0	0	0	0	0	8	0	8	530
05:45 PM	0	254	4	0	258	7	175	0	0	182	0	0	0	0	0	0	0	11	0	11	451
Total	0	1202	15	0	1217	33	736	0	0	769	0	0	0	0	0	1	0	36	0	37	2023
Grand Total	1	4490	38	0	4529	161	3161	0	0	3322	0	0	0	0	0	28	0	211	0	239	8090
Apprch %	0	99.1	0.8	0		4.8	95.2	0	0		0	0	0	0		11.7	0	88.3	0		
Total %	0	55.5	0.5	0	56	2	39.1	0	0	41.1	0	0	0	0	0	0.3	0	2.6	0	3	
Passenger Vehicles	1	4433	38	0	4472	159	3099	0	0	3258	0	0	0	0	0	28	0	209	0	237	7967
% Passenger Vehicles	100	98.7	100	0	98.7	98.8	98	0	0	98.1	0	0	0	0	0	100	0	99.1	0	99.2	98.5
Heavy Trucks	0	57	0	0	57	2	62	0	0	64	0	0	0	0	0	0	0	2	0	2	123
% Heavy Trucks	0	1.3	0	0	1.3	1.2	2	0	0	1.9	0	0	0	0	0	0	0	0.9	0	0.8	1.5

	STATE ROAD 424 Northbound					STATE ROAD 424 Southbound					BUSINESS DRIVEWAY Eastbound					ALPHA DRIVE Westbound					
Start Time	Left	Thru	Right	U-Turns	App. Total	Left	Thru	Right	U-Turns	App. Total	Left	Thru	Right	U-Turns	App. Total	Left	Thru	Right	U-Turns	App. Total	Int. Total
Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 03:15 PM																					
03:15 PM	0	<b>305</b>	<b>7</b>	<b>0</b>	<b>312</b>	<b>14</b>	<b>217</b>	<b>0</b>	<b>0</b>	<b>231</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>4</b>	<b>0</b>	<b>11</b>	<b>0</b>	<b>15</b>	<b>558</b>
03:30 PM	0	304	3	0	307	<b>16</b>	<b>195</b>	<b>0</b>	<b>0</b>	<b>211</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>7</b>	<b>0</b>	<b>40</b>	<b>0</b>	<b>47</b>	<b>565</b>
03:45 PM	0	282	0	0	282	10	182	0	0	192	0	0	0	0	0	2	0	26	0	28	502
04:00 PM	0	280	0	0	280	12	206	0	0	218	0	0	0	0	0	0	0	18	0	18	516
Total Volume	0	1171	10	0	1181	52	800	0	0	852	0	0	0	0	0	13	0	95	0	108	2141
% App. Total	0	99.2	0.8	0		6.1	93.9	0	0		0	0	0	0		12	0	88	0		
PHF	.000	.960	.357	.000	.946	.813	.922	.000	.000	.922	.000	.000	.000	.000	.000	.464	.000	.594	.000	.574	.947
Passenger Vehicles	0	1149	10	0	1159	51	776	0	0	827	0	0	0	0	0	13	0	94	0	107	2093
% Passenger Vehicles	0	98.1	100	0	98.1	98.1	97.0	0	0	97.1	0	0	0	0	0	100	0	98.9	0	99.1	97.8
Heavy Trucks	0	22	0	0	22	1	24	0	0	25	0	0	0	0	0	0	0	1	0	1	48
% Heavy Trucks	0	1.9	0	0	1.9	1.9	3.0	0	0	2.9	0	0	0	0	0	0	0	1.1	0	0.9	2.2

Traffic Engineering Data Solutions Inc.

File Name : SR 424 at Alpha Dr TMC (4-hr)

Site Code : 00000000

Start Date : 10/20/2020

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	STATE ROAD 424 Northbound					STATE ROAD 424 Southbound					BUSINESS DRIVEWAY Eastbound					ALPHA DRIVE Westbound					
Start Time	Left	Thru	Right	U-Turns	App. Total	Left	Thru	Right	U-Turns	App. Total	Left	Thru	Right	U-Turns	App. Total	Left	Thru	Right	U-Turns	App. Total	Int. Total
Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Each Approach Begins at:																					
	04:45 PM					04:00 PM					02:00 PM					03:15 PM					
+0 mins.	0	295	1	0	296	12	206	0	0	218	0	0	0	0	0	4	0	11	0	15	
+15 mins.	0	312	3	0	315	<b>19</b>	<b>210</b>	<b>0</b>	<b>0</b>	<b>229</b>	0	0	0	0	0	<b>7</b>	<b>0</b>	<b>40</b>	<b>0</b>	<b>47</b>	
+30 mins.	0	<b>325</b>	<b>5</b>	<b>0</b>	<b>330</b>	7	<b>216</b>	0	0	223	0	0	0	0	0	2	0	26	0	28	
+45 mins.	0	311	3	0	314	4	204	0	0	208	0	0	0	0	0	0	0	18	0	18	
Total Volume	0	1243	12	0	1255	42	836	0	0	878	0	0	0	0	0	13	0	95	0	108	
% App. Total	0	99	1	0		4.8	95.2	0	0		0	0	0	0		12	0	88	0		
PHF	.000	.956	.600	.000	.951	.553	.968	.000	.000	.959	.000	.000	.000	.000	.000	.464	.000	.594	.000	.574	
Passenger Vehicles	0	1238	12	0	1250	42	821	0	0	863	0	0	0	0	0	13	0	94	0	107	
% Passenger Vehicles	0	99.6	100	0	99.6	100	98.2	0	0	98.3	0	0	0	0	0	100	0	98.9	0	99.1	
Heavy Trucks	0	5	0	0	5	0	15	0	0	15	0	0	0	0	0	0	0	1	0	1	
% Heavy Trucks	0	0.4	0	0	0.4	0	1.8	0	0	1.7	0	0	0	0	0	0	0	1.1	0	0.9	



# Traffic Engineering Data Solutions Inc.

File Name : SR 424 at Alpha Dr TMC (4-hr)

Site Code : 00000000

Start Date : 10/20/2020

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## Groups Printed- Heavy Trucks

	STATE ROAD 424 Northbound					STATE ROAD 424 Southbound					BUSINESS DRIVEWAY Eastbound					ALPHA DRIVE Westbound					
Start Time	Left	Thru	Right	U-Turns	App. Total	Left	Thru	Right	U-Turns	App. Total	Left	Thru	Right	U-Turns	App. Total	Left	Thru	Right	U-Turns	App. Total	Int. Total
*** BREAK ***																					
02:00 PM	0	1	0	0	1	0	3	0	0	3	0	0	0	0	0	0	0	1	0	1	5
02:15 PM	0	3	0	0	3	1	4	0	0	5	0	0	0	0	0	0	0	0	0	0	8
02:30 PM	0	9	0	0	9	0	5	0	0	5	0	0	0	0	0	0	0	0	0	0	14
02:45 PM	0	5	0	0	5	0	4	0	0	4	0	0	0	0	0	0	0	0	0	0	9
Total	0	18	0	0	18	1	16	0	0	17	0	0	0	0	0	0	0	1	0	1	36
03:00 PM	0	3	0	0	3	0	4	0	0	4	0	0	0	0	0	0	0	0	0	0	7
03:15 PM	0	9	0	0	9	0	6	0	0	6	0	0	0	0	0	0	0	0	0	0	15
03:30 PM	0	4	0	0	4	1	7	0	0	8	0	0	0	0	0	0	0	1	0	1	13
03:45 PM	0	6	0	0	6	0	6	0	0	6	0	0	0	0	0	0	0	0	0	0	12
Total	0	22	0	0	22	1	23	0	0	24	0	0	0	0	0	0	0	1	0	1	47
04:00 PM	0	3	0	0	3	0	5	0	0	5	0	0	0	0	0	0	0	0	0	0	8
04:15 PM	0	4	0	0	4	0	5	0	0	5	0	0	0	0	0	0	0	0	0	0	9
04:30 PM	0	4	0	0	4	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	7
04:45 PM	0	2	0	0	2	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	4
Total	0	13	0	0	13	0	15	0	0	15	0	0	0	0	0	0	0	0	0	0	28
05:00 PM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
05:15 PM	0	1	0	0	1	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	4
05:30 PM	0	1	0	0	1	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	3
05:45 PM	0	1	0	0	1	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	4
Total	0	4	0	0	4	0	8	0	0	8	0	0	0	0	0	0	0	0	0	0	12
Grand Total	0	57	0	0	57	2	62	0	0	64	0	0	0	0	0	0	0	2	0	2	123
Apprch %	0	100	0	0		3.1	96.9	0	0		0	0	0	0		0	0	100	0		
Total %	0	46.3	0	0	46.3	1.6	50.4	0	0	52	0	0	0	0		0	0	1.6	0	1.6	

	STATE ROAD 424 Northbound					STATE ROAD 424 Southbound					BUSINESS DRIVEWAY Eastbound					ALPHA DRIVE Westbound					
Start Time	Left	Thru	Right	U-Turns	App. Total	Left	Thru	Right	U-Turns	App. Total	Left	Thru	Right	U-Turns	App. Total	Left	Thru	Right	U-Turns	App. Total	Int. Total
Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 03:15 PM																					
03:15 PM	0	<b>9</b>	0	0	<b>9</b>	0	6	0	0	6	0	0	0	0	0	0	0	0	0	0	<b>15</b>
03:30 PM	0	4	0	0	4	<b>1</b>	<b>7</b>	0	0	<b>8</b>	0	0	0	0	0	0	0	<b>1</b>	<b>0</b>	<b>1</b>	13
03:45 PM	0	6	0	0	6	0	6	0	0	6	0	0	0	0	0	0	0	0	0	0	12
04:00 PM	0	3	0	0	3	0	5	0	0	5	0	0	0	0	0	0	0	0	0	0	8
Total Volume	0	22	0	0	22	1	24	0	0	25	0	0	0	0	0	0	0	1	0	1	48
% App. Total	0	100	0	0		4	96	0	0		0	0	0	0		0	0	100	0		
PHF	.000	.611	.000	.000	.611	.250	.857	.000	.000	.781	.000	.000	.000	.000	.000	.000	.000	.250	.000	.250	.800

Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	02:30 PM					03:15 PM					02:00 PM					02:00 PM				
+0 mins.	0	<b>9</b>	0	0	<b>9</b>	0	6	0	0	6	0	0	0	0	0	0	0	<b>1</b>	<b>0</b>	<b>1</b>
+15 mins.	0	5	0	0	5	<b>1</b>	<b>7</b>	0	0	<b>8</b>	0	0	0	0	0	0	0	0	0	0
+30 mins.	0	3	0	0	3	0	6	0	0	6	0	0	0	0	0	0	0	0	0	0
+45 mins.	0	9	0	0	9	0	5	0	0	5	0	0	0	0	0	0	0	0	0	0
Total Volume	0	26	0	0	26	1	24	0	0	25	0	0	0	0	0	0	0	1	0	1
% App. Total	0	100	0	0		4	96	0	0		0	0	0	0		0	0	100	0	
PHF	.000	.722	.000	.000	.722	.250	.857	.000	.000	.781	.000	.000	.000	.000	.000	.000	.000	.250	.000	.250

# Traffic Engineering Data Solutions Inc.

File Name : SR 424 at 2nd St TMC (4-hr)

Site Code : 00000000

Start Date : 10/20/2020

Page No : 1

## Groups Printed- Passenger Vehicles - Heavy Trucks

	STATE ROAD 424 Northbound					STATE ROAD 424 Southbound					2ND STREET Eastbound					BUSINESS DRIVEWAY Westbound					
Start Time	Left	Thru	Right	U-Turns	App. Total	Left	Thru	Right	U-Turns	App. Total	Left	Thru	Right	U-Turns	App. Total	Left	Thru	Right	U-Turns	App. Total	Int. Total
*** BREAK ***																					
02:00 PM	3	206	0	0	209	0	191	2	0	193	4	0	5	0	9	0	0	0	0	0	411
02:15 PM	2	250	0	0	252	0	196	9	0	205	7	0	4	0	11	0	0	0	0	0	468
02:30 PM	0	250	0	0	250	0	225	4	0	229	3	0	3	0	6	0	0	0	0	0	485
02:45 PM	5	301	0	0	306	0	183	1	0	184	4	0	3	0	7	0	0	0	0	0	497
Total	10	1007	0	0	1017	0	795	16	0	811	18	0	15	0	33	0	0	0	0	0	1861
03:00 PM	4	271	0	0	275	0	226	4	0	230	4	0	3	0	7	0	0	0	0	0	512
03:15 PM	2	310	0	0	312	0	217	5	0	222	8	0	4	0	12	0	0	0	0	0	546
03:30 PM	2	342	1	0	345	0	216	5	0	221	2	0	1	0	3	0	0	0	0	0	569
03:45 PM	2	306	0	0	308	0	193	3	0	196	3	0	1	0	4	0	0	0	0	0	508
Total	10	1229	1	0	1240	0	852	17	0	869	17	0	9	0	26	0	0	0	0	0	2135
04:00 PM	0	295	0	0	295	0	207	2	0	209	1	0	6	0	7	0	0	0	0	0	511
04:15 PM	4	311	0	0	315	0	220	5	0	225	5	0	3	0	8	0	0	0	0	0	548
04:30 PM	1	283	0	0	284	0	224	6	0	230	5	0	3	0	8	0	0	0	0	0	522
04:45 PM	3	303	0	0	306	0	208	2	0	210	7	0	3	0	10	0	0	0	0	0	526
Total	8	1192	0	0	1200	0	859	15	0	874	18	0	15	0	33	0	0	0	0	0	2107
05:00 PM	2	315	0	0	317	0	191	7	0	198	1	0	1	0	2	0	0	0	0	0	517
05:15 PM	3	332	0	0	335	0	179	2	0	181	2	0	2	0	4	0	0	0	0	0	520
05:30 PM	1	314	0	0	315	0	207	1	0	208	2	0	4	0	6	0	0	0	0	0	529
05:45 PM	2	255	0	0	257	0	176	1	0	177	3	0	3	0	6	0	0	0	0	0	440
Total	8	1216	0	0	1224	0	753	11	0	764	8	0	10	0	18	0	0	0	0	0	2006
Grand Total	36	4644	1	0	4681	0	3259	59	0	3318	61	0	49	0	110	0	0	0	0	0	8109
Apprch %	0.8	99.2	0	0		0	98.2	1.8	0		55.5	0	44.5	0		0	0	0	0		
Total %	0.4	57.3	0	0	57.7	0	40.2	0.7	0	40.9	0.8	0	0.6	0	1.4	0	0	0	0	0	
Passenger Vehicles	36	4582	1	0	4619	0	3201	58	0	3259	60	0	49	0	109	0	0	0	0	0	7987
% Passenger Vehicles	100	98.7	100	0	98.7	0	98.2	98.3	0	98.2	98.4	0	100	0	99.1	0	0	0	0	0	98.5
Heavy Trucks	0	62	0	0	62	0	58	1	0	59	1	0	0	0	1	0	0	0	0	0	122
% Heavy Trucks	0	1.3	0	0	1.3	0	1.8	1.7	0	1.8	1.6	0	0	0	0.9	0	0	0	0	0	1.5

	STATE ROAD 424 Northbound					STATE ROAD 424 Southbound					2ND STREET Eastbound					BUSINESS DRIVEWAY Westbound					
Start Time	Left	Thru	Right	U-Turns	App. Total	Left	Thru	Right	U-Turns	App. Total	Left	Thru	Right	U-Turns	App. Total	Left	Thru	Right	U-Turns	App. Total	Int. Total
Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 03:30 PM																					
03:30 PM	2	<b>342</b>	<b>1</b>	<b>0</b>	<b>345</b>	0	216	<b>5</b>	<b>0</b>	<b>221</b>	<b>2</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>569</b>
03:45 PM	2	306	0	0	308	0	193	3	0	196	3	0	1	0	4	0	0	0	0	0	508
04:00 PM	0	295	0	0	295	0	207	2	0	209	1	0	<b>6</b>	<b>0</b>	<b>7</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>511</b>
<b>04:15 PM</b>	<b>4</b>	<b>311</b>	<b>0</b>	<b>0</b>	<b>315</b>	<b>0</b>	<b>220</b>	<b>5</b>	<b>0</b>	<b>225</b>	<b>5</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>8</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>548</b>
Total Volume	8	1254	1	0	1263	0	836	15	0	851	11	0	11	0	22	0	0	0	0	0	2136
% App. Total	0.6	99.3	0.1	0		0	98.2	1.8	0		50	0	50	0		0	0	0	0		
PHF	.500	.917	.250	.000	.915	.000	.950	.750	.000	.946	.550	.000	.458	.000	.688	.000	.000	.000	.000	.000	.938
Passenger Vehicles	8	1234	1	0	1243	0	814	15	0	829	10	0	11	0	21	0	0	0	0	0	2093
% Passenger Vehicles	100	98.4	100	0	98.4	0	97.4	100	0	97.4	90.9	0	100	0	95.5	0	0	0	0	0	98.0
Heavy Trucks	0	20	0	0	20	0	22	0	0	22	1	0	0	0	1	0	0	0	0	0	43
% Heavy Trucks	0	1.6	0	0	1.6	0	2.6	0	0	2.6	9.1	0	0	0	4.5	0	0	0	0	0	2.0

File Name : SR 424 at 2nd St TMC (4-hr)  
Site Code : 00000000  
Start Date : 10/20/2020  
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[illegible]



# Traffic Engineering Data Solutions Inc.

File Name : SR 424 at 2nd St TMC (4-hr)

Site Code : 00000000

Start Date : 10/20/2020

Page No : 1

## Groups Printed- Heavy Trucks

	STATE ROAD 424 Northbound					STATE ROAD 424 Southbound					2ND STREET Eastbound					BUSINESS DRIVEWAY Westbound					
Start Time	Left	Thru	Right	U-Turns	App. Total	Left	Thru	Right	U-Turns	App. Total	Left	Thru	Right	U-Turns	App. Total	Left	Thru	Right	U-Turns	App. Total	Int. Total
*** BREAK ***																					
02:00 PM	0	3	0	0	3	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	6
02:15 PM	0	3	0	0	3	0	4	0	0	4	0	0	0	0	0	0	0	0	0	0	7
02:30 PM	0	9	0	0	9	0	5	0	0	5	0	0	0	0	0	0	0	0	0	0	14
02:45 PM	0	4	0	0	4	0	4	0	0	4	0	0	0	0	0	0	0	0	0	0	8
Total	0	19	0	0	19	0	16	0	0	16	0	0	0	0	0	0	0	0	0	0	35
03:00 PM	0	4	0	0	4	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	7
03:15 PM	0	9	0	0	9	0	6	0	0	6	0	0	0	0	0	0	0	0	0	0	15
03:30 PM	0	5	0	0	5	0	7	0	0	7	0	0	0	0	0	0	0	0	0	0	12
03:45 PM	0	7	0	0	7	0	5	0	0	5	0	0	0	0	0	0	0	0	0	0	12
Total	0	25	0	0	25	0	21	0	0	21	0	0	0	0	0	0	0	0	0	0	46
04:00 PM	0	4	0	0	4	0	6	0	0	6	0	0	0	0	0	0	0	0	0	0	10
04:15 PM	0	4	0	0	4	0	4	0	0	4	1	0	0	0	1	0	0	0	0	0	9
04:30 PM	0	4	0	0	4	0	3	1	0	4	0	0	0	0	0	0	0	0	0	0	8
04:45 PM	0	2	0	0	2	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	3
Total	0	14	0	0	14	0	14	1	0	15	1	0	0	0	1	0	0	0	0	0	30
05:00 PM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
05:15 PM	0	1	0	0	1	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	4
05:30 PM	0	1	0	0	1	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	2
05:45 PM	0	1	0	0	1	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	4
Total	0	4	0	0	4	0	7	0	0	7	0	0	0	0	0	0	0	0	0	0	11
Grand Total	0	62	0	0	62	0	58	1	0	59	1	0	0	0	1	0	0	0	0	0	122
Apprch %	0	100	0	0		0	98.3	1.7	0		100	0	0	0		0	0	0	0		
Total %	0	50.8	0	0	50.8	0	47.5	0.8	0	48.4	0.8	0	0	0	0.8	0	0	0	0	0	

	STATE ROAD 424 Northbound					STATE ROAD 424 Southbound					2ND STREET Eastbound					BUSINESS DRIVEWAY Westbound					
Start Time	Left	Thru	Right	U-Turns	App. Total	Left	Thru	Right	U-Turns	App. Total	Left	Thru	Right	U-Turns	App. Total	Left	Thru	Right	U-Turns	App. Total	Int. Total
Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 03:15 PM																					
03:15 PM	0	9	0	0	9	0	6	0	0	6	0	0	0	0	0	0	0	0	0	0	15
03:30 PM	0	5	0	0	5	0	7	0	0	7	0	0	0	0	0	0	0	0	0	0	12
03:45 PM	0	7	0	0	7	0	5	0	0	5	0	0	0	0	0	0	0	0	0	0	12
04:00 PM	0	4	0	0	4	0	6	0	0	6	0	0	0	0	0	0	0	0	0	0	10
Total Volume	0	25	0	0	25	0	24	0	0	24	0	0	0	0	0	0	0	0	0	0	49
% App. Total	0	100	0	0		0	100	0	0		0	0	0	0		0	0	0	0		
PHF	.000	.694	.000	.000	.694	.000	.857	.000	.000	.857	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.817

Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	02:30 PM					03:15 PM					03:30 PM					02:00 PM				
+0 mins.	0	9	0	0	9	0	6	0	0	6	0	0	0	0	0	0	0	0	0	0
+15 mins.	0	4	0	0	4	0	7	0	0	7	0	0	0	0	0	0	0	0	0	0
+30 mins.	0	4	0	0	4	0	5	0	0	5	0	0	0	0	0	0	0	0	0	0
+45 mins.	0	9	0	0	9	0	6	0	0	6	1	0	0	0	1	0	0	0	0	0
Total Volume	0	26	0	0	26	0	24	0	0	24	1	0	0	0	1	0	0	0	0	0
% App. Total	0	100	0	0		0	100	0	0		100	0	0	0		0	0	0	0	
PHF	.000	.722	.000	.000	.722	.000	.857	.000	.000	.857	.250	.000	.000	.000	.250	.000	.000	.000	.000	.000

# Traffic Engineering Data Solutions Inc.

File Name : SR 424 at SR 434 TMC (8-hr)  
 Site Code : 00000000  
 Start Date : 10/20/2020  
 Page No : 1

## Groups Printed- Passenger Vehicles - Heavy Trucks

	STATE ROAD 424 Northbound					STATE ROAD 424 Southbound					STATE ROAD 434 Eastbound					STATE ROAD 434 Westbound					
Start Time	Left	Thru	Right	U-Turns	App. Total	Left	Thru	Right	U-Turns	App. Total	Left	Thru	Right	U-Turns	App. Total	Left	Thru	Right	U-Turns	App. Total	Int. Total
07:00 AM	13	61	30	0	104	14	154	12	0	180	8	65	7	1	81	62	143	5	1	211	576
07:15 AM	13	75	37	0	125	28	180	11	0	219	11	111	10	3	135	130	193	7	4	334	813
07:30 AM	22	95	54	0	171	29	221	9	0	259	5	87	14	2	108	103	198	5	0	306	844
07:45 AM	8	89	76	0	173	18	152	12	0	182	8	130	12	5	155	93	199	14	2	308	818
Total	56	320	197	0	573	89	707	44	0	840	32	393	43	11	479	388	733	31	7	1159	3051
08:00 AM	14	73	57	0	144	15	152	8	0	175	13	110	19	1	143	122	202	8	3	335	797
08:15 AM	15	80	89	0	184	23	177	8	0	208	12	101	10	1	124	98	122	12	3	235	751
08:30 AM	15	78	73	0	166	28	133	14	0	175	10	108	9	2	129	89	169	9	5	272	742
08:45 AM	13	79	65	0	157	20	143	8	0	171	6	95	9	2	112	87	142	11	3	243	683
Total	57	310	284	0	651	86	605	38	0	729	41	414	47	6	508	396	635	40	14	1085	2973
*** BREAK ***																					
11:00 AM	8	108	77	0	193	21	105	4	0	130	11	89	1	0	101	72	97	15	2	186	610
11:15 AM	17	112	73	0	202	24	110	7	0	141	10	77	9	0	96	80	107	11	4	202	641
11:30 AM	14	107	78	0	199	16	111	14	0	141	12	86	6	3	107	72	96	10	1	179	626
11:45 AM	18	87	78	0	183	22	115	14	0	151	16	78	8	2	104	69	99	18	2	188	626
Total	57	414	306	0	777	83	441	39	0	563	49	330	24	5	408	293	399	54	9	755	2503
12:00 PM	12	104	96	1	213	24	105	7	0	136	17	93	17	1	128	95	104	14	6	219	696
12:15 PM	25	114	101	0	240	27	135	13	0	175	14	91	11	3	119	88	103	14	7	212	746
12:30 PM	21	97	92	0	210	34	70	13	0	117	15	107	14	3	139	86	102	15	3	206	672
12:45 PM	14	119	98	0	231	28	111	8	0	147	21	95	11	0	127	95	101	8	5	209	714
Total	72	434	387	1	894	113	421	41	0	575	67	386	53	7	513	364	410	51	21	846	2828
*** BREAK ***																					
02:00 PM	13	115	90	0	218	34	111	5	0	150	19	98	6	2	125	84	96	20	2	202	695
02:15 PM	18	127	105	0	250	23	104	16	0	143	16	109	10	1	136	84	110	16	9	219	748
02:30 PM	13	116	126	0	255	31	134	9	0	174	25	112	9	1	147	86	105	13	2	206	782
02:45 PM	19	149	132	0	300	19	104	8	0	131	17	124	9	1	151	71	119	12	2	204	786
Total	63	507	453	0	1023	107	453	38	0	598	77	443	34	5	559	325	430	61	15	831	3011
03:00 PM	24	145	95	0	264	30	110	13	0	153	10	124	19	2	155	109	123	13	0	245	817
03:15 PM	17	191	117	0	325	23	128	17	0	168	20	120	12	0	152	88	110	14	3	215	860
03:30 PM	20	174	142	0	336	27	110	4	0	141	24	172	13	2	211	99	162	16	8	285	973
03:45 PM	17	162	120	1	300	34	89	9	0	132	20	163	7	2	192	104	153	26	8	291	915
Total	78	672	474	1	1225	114	437	43	0	594	74	579	51	6	710	400	548	69	19	1036	3565
04:00 PM	19	164	121	1	305	30	119	9	0	158	22	163	16	0	201	86	119	16	10	231	895
04:15 PM	11	190	128	1	330	28	110	10	0	148	30	163	8	6	207	98	137	15	4	254	939
04:30 PM	22	151	107	0	280	37	147	12	0	196	23	187	8	2	220	82	143	16	3	244	940
04:45 PM	18	179	115	0	312	36	105	12	0	153	13	159	10	3	185	102	121	17	5	245	895
Total	70	684	471	2	1227	131	481	43	0	655	88	672	42	11	813	368	520	64	22	974	3669
05:00 PM	13	212	123	0	348	32	117	7	0	156	21	209	8	3	241	83	149	21	9	262	1007
05:15 PM	16	180	118	0	314	32	93	7	0	132	25	248	9	3	285	94	163	13	4	274	1005
05:30 PM	18	174	119	1	312	32	114	9	0	155	27	180	9	0	216	99	186	19	7	311	994
05:45 PM	12	174	101	0	287	28	98	14	0	140	10	136	8	1	155	70	134	11	9	224	806
Total	59	740	461	1	1261	124	422	37	0	583	83	773	34	7	897	346	632	64	29	1071	3812
Grand Total	512	4081	3033	5	7631	847	3967	323	0	5137	511	3990	328	58	4887	2880	4307	434	136	7757	25412
Apprch %	6.7	53.5	39.7	0.1		16.5	77.2	6.3	0		10.5	81.6	6.7	1.2		37.1	55.5	5.6	1.8		
Total %	2	16.1	11.9	0	30	3.3	15.6	1.3	0	20.2	2	15.7	1.3	0.2	19.2	11.3	16.9	1.7	0.5	30.5	
Passenger Vehicles	491	3985	2994	5	7475	816	3846	281	0	4943	457	3897	307	58	4719	2852	4165	401	136	7554	24691
% Passenger Vehicles	95.9	97.6	98.7	100	98	96.3	96.9	87	0	96.2	89.4	97.7	93.6	100	96.6	99	96.7	92.4	100	97.4	97.2
Heavy Trucks	21	96	39	0	156	31	121	42	0	194	54	93	21	0	168	28	142	33	0	203	721
% Heavy Trucks	4.1	2.4	1.3	0	2	3.7	3.1	13	0	3.8	10.6	2.3	6.4	0	3.4	1	3.3	7.6	0	2.6	2.8

# Traffic Engineering Data Solutions Inc.

File Name : SR 424 at SR 434 TMC (8-hr)

Site Code : 00000000

Start Date : 10/20/2020

Page No : 2

	STATE ROAD 424 Northbound					STATE ROAD 424 Southbound					STATE ROAD 434 Eastbound					STATE ROAD 434 Westbound					
Start Time	Left	Thru	Right	U-Turns	App. Total	Left	Thru	Right	U-Turns	App. Total	Left	Thru	Right	U-Turns	App. Total	Left	Thru	Right	U-Turns	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 09:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:15 AM																					
07:15 AM	13	75	37	0	125	28	180	11	0	219	11	111	10	3	135	130	193	7	4	334	813
07:30 AM	22	95	54	0	171	29	221	9	0	259	5	87	14	2	108	103	198	5	0	306	844
07:45 AM	8	89	76	0	173	18	152	12	0	182	8	130	12	5	155	93	199	14	2	308	818
08:00 AM	14	73	57	0	144	15	152	8	0	175	13	110	19	1	143	122	202	8	3	335	797
Total Volume	57	332	224	0	613	90	705	40	0	835	37	438	55	11	541	448	792	34	9	1283	3272
% App. Total	9.3	54.2	36.5	0		10.8	84.4	4.8	0		6.8	81	10.2	2		34.9	61.7	2.7	0.7		
PHF	.648	.874	.737	.000	.886	.776	.798	.833	.000	.806	.712	.842	.724	.550	.873	.862	.980	.607	.563	.957	.969
Passenger Vehicles	57	322	218	0	597	82	684	33	0	799	33	413	52	11	509	445	778	31	9	1263	3168
% Passenger Vehicles	100	97.0	97.3	0	97.4	91.1	97.0	82.5	0	95.7	89.2	94.3	94.5	100	94.1	99.3	98.2	91.2	100	98.4	96.8
Heavy Trucks	0	10	6	0	16	8	21	7	0	36	4	25	3	0	32	3	14	3	0	20	104
% Heavy Trucks	0	3.0	2.7	0	2.6	8.9	3.0	17.5	0	4.3	10.8	5.7	5.5	0	5.9	0.7	1.8	8.8	0	1.6	3.2

Peak Hour Analysis From 07:00 AM to 09:45 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	07:30 AM					07:00 AM					07:45 AM					07:15 AM				
+0 mins.	22	95	54	0	171	14	154	12	0	180	8	130	12	5	155	130	193	7	4	334
+15 mins.	8	89	76	0	173	28	180	11	0	219	13	110	19	1	143	103	198	5	0	306
+30 mins.	14	73	57	0	144	29	221	9	0	259	12	101	10	1	124	93	199	14	2	308
+45 mins.	15	80	89	0	184	18	152	12	0	182	10	108	9	2	129	122	202	8	3	335
Total Volume	59	337	276	0	672	89	707	44	0	840	43	449	50	9	551	448	792	34	9	1283
% App. Total	8.8	50.1	41.1	0		10.6	84.2	5.2	0		7.8	81.5	9.1	1.6		34.9	61.7	2.7	0.7	
PHF	.670	.887	.775	.000	.913	.767	.800	.917	.000	.811	.827	.863	.658	.450	.889	.862	.980	.607	.563	.957
Passenger Vehicles	59	329	268	0	656	80	682	38	0	800	34	430	45	9	518	445	778	31	9	1263
% Passenger Vehicles	100	97.6	97.1	0	97.6	89.9	96.5	86.4	0	95.2	79.1	95.8	90	100	94	99.3	98.2	91.2	100	98.4
Heavy Trucks	0	8	8	0	16	9	25	6	0	40	9	19	5	0	33	3	14	3	0	20
% Heavy Trucks	0	2.4	2.9	0	2.4	10.1	3.5	13.6	0	4.8	20.9	4.2	10	0	6	0.7	1.8	8.8	0	1.6

Peak Hour Analysis From 10:00 AM to 01:45 PM - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 12:00 PM

12:00 PM	12	104	96	1	213	24	105	7	0	136	17	93	17	1	128	95	104	14	6	219	696
12:15 PM	25	114	101	0	240	27	135	13	0	175	14	91	11	3	119	88	103	14	7	212	746
12:30 PM	21	97	92	0	210	34	70	13	0	117	15	107	14	3	139	86	102	15	3	206	672
12:45 PM	14	119	98	0	231	28	111	8	0	147	21	95	11	0	127	95	101	8	5	209	714
Total Volume	72	434	387	1	894	113	421	41	0	575	67	386	53	7	513	364	410	51	21	846	2828
% App. Total	8.1	48.5	43.3	0.1		19.7	73.2	7.1	0		13.1	75.2	10.3	1.4		43	48.5	6	2.5		
PHF	.720	.912	.958	.250	.931	.831	.780	.788	.000	.821	.798	.902	.779	.583	.923	.958	.986	.850	.750	.966	.948
Passenger Vehicles	69	422	383	1	875	110	408	37	0	555	55	372	48	7	482	361	395	49	21	826	2738
% Passenger Vehicles	95.8	97.2	99.0	100	97.9	97.3	96.9	90.2	0	96.5	82.1	96.4	90.6	100	94.0	99.2	96.3	96.1	100	97.6	96.8
Heavy Trucks	3	12	4	0	19	3	13	4	0	20	12	14	5	0	31	3	15	2	0	20	90
% Heavy Trucks	4.2	2.8	1.0	0	2.1	2.7	3.1	9.8	0	3.5	17.9	3.6	9.4	0	6.0	0.8	3.7	3.9	0	2.4	3.2

Peak Hour Analysis From 10:00 AM to 01:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	12:00 PM					11:30 AM					12:00 PM					12:00 PM				
+0 mins.	12	104	96	1	213	16	111	14	0	141	17	93	17	1	128	95	104	14	6	219
+15 mins.	25	114	101	0	240	22	115	14	0	151	14	91	11	3	119	88	103	14	7	212
+30 mins.	21	97	92	0	210	24	105	7	0	136	15	107	14	3	139	86	102	15	3	206
+45 mins.	14	119	98	0	231	27	135	13	0	175	21	95	11	0	127	95	101	8	5	209
Total Volume	72	434	387	1	894	89	466	48	0	603	67	386	53	7	513	364	410	51	21	846
% App. Total	8.1	48.5	43.3	0.1		14.8	77.3	8	0		13.1	75.2	10.3	1.4		43	48.5	6	2.5	
PHF	.720	.912	.958	.250	.931	.824	.863	.857	.000	.861	.798	.902	.779	.583	.923	.958	.986	.850	.750	.966
Passenger Vehicles	69	422	383	1	875	87	453	38	0	578	55	372	48	7	482	361	395	49	21	826
% Passenger Vehicles	95.8	97.2	99	100	97.9	97.8	97.2	79.2	0	95.9	82.1	96.4	90.6	100	94	99.2	96.3	96.1	100	97.6
Heavy Trucks	3	12	4	0	19	2	13	10	0	25	12	14	5	0	31	3	15	2	0	20
% Heavy Trucks	4.2	2.8	1	0	2.1	2.2	2.8	20.8	0	4.1	17.9	3.6	9.4	0	6	0.8	3.7	3.9	0	2.4



# Traffic Engineering Data Solutions Inc.

File Name : SR 424 at SR 434 TMC (8-hr)

Site Code : 00000000

Start Date : 10/20/2020

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	STATE ROAD 424 Northbound					STATE ROAD 424 Southbound					STATE ROAD 434 Eastbound					STATE ROAD 434 Westbound					
Start Time	Left	Thru	Right	U-Turns	App. Total	Left	Thru	Right	U-Turns	App. Total	Left	Thru	Right	U-Turns	App. Total	Left	Thru	Right	U-Turns	App. Total	Int. Total
Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:45 PM																					
04:45 PM	<b>18</b>	<b>179</b>	<b>115</b>	<b>0</b>	<b>312</b>	<b>36</b>	<b>105</b>	<b>12</b>	<b>0</b>	<b>153</b>	<b>13</b>	<b>159</b>	<b>10</b>	<b>3</b>	<b>185</b>	<b>102</b>	<b>121</b>	<b>17</b>	<b>5</b>	<b>245</b>	<b>895</b>
<b>05:00 PM</b>	<b>13</b>	<b>212</b>	<b>123</b>	<b>0</b>	<b>348</b>	32	<b>117</b>	7	0	<b>156</b>	21	209	8	3	241	83	149	<b>21</b>	<b>9</b>	<b>262</b>	<b>1007</b>
05:15 PM	16	180	118	0	314	32	93	7	0	132	25	<b>248</b>	9	3	<b>285</b>	94	163	13	4	274	1005
05:30 PM	18	174	119	<b>1</b>	<b>312</b>	<b>32</b>	<b>114</b>	<b>9</b>	<b>0</b>	<b>155</b>	<b>27</b>	<b>180</b>	<b>9</b>	<b>0</b>	<b>216</b>	<b>99</b>	<b>186</b>	19	7	<b>311</b>	994
Total Volume	65	745	475	1	1286	132	429	35	0	596	86	796	36	9	927	378	619	70	25	1092	3901
% App. Total	5.1	57.9	36.9	0.1		22.1	72	5.9	0		9.3	85.9	3.9	1		34.6	56.7	6.4	2.3		
PHF	.903	.879	.965	.250	.924	.917	.917	.729	.000	.955	.796	.802	.900	.750	.813	.926	.832	.833	.694	.878	.968
Passenger Vehicles	64	741	475	1	1281	131	424	31	0	586	82	790	36	9	917	378	607	66	25	1076	3860
% Passenger Vehicles	98.5	99.5	100	100	99.6	99.2	98.8	88.6	0	98.3	95.3	99.2	100	100	98.9	100	98.1	94.3	100	98.5	98.9
Heavy Trucks	1	4	0	0	5	1	5	4	0	10	4	6	0	0	10	0	12	4	0	16	41
% Heavy Trucks	1.5	0.5	0	0	0.4	0.8	1.2	11.4	0	1.7	4.7	0.8	0	0	1.1	0	1.9	5.7	0	1.5	1.1

Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	04:45 PM					04:00 PM					04:30 PM					04:45 PM				
+0 mins.	<b>18</b>	<b>179</b>	<b>115</b>	<b>0</b>	<b>312</b>	<b>30</b>	<b>119</b>	<b>9</b>	<b>0</b>	<b>158</b>	<b>23</b>	<b>187</b>	<b>8</b>	<b>2</b>	<b>220</b>	<b>102</b>	<b>121</b>	<b>17</b>	<b>5</b>	<b>245</b>
<b>+15 mins.</b>	<b>13</b>	<b>212</b>	<b>123</b>	<b>0</b>	<b>348</b>	28	110	10	0	148	13	159	<b>10</b>	<b>3</b>	<b>185</b>	<b>83</b>	<b>149</b>	<b>21</b>	<b>9</b>	<b>262</b>
<b>+30 mins.</b>	<b>16</b>	<b>180</b>	<b>118</b>	<b>0</b>	<b>314</b>	<b>37</b>	<b>147</b>	<b>12</b>	<b>0</b>	<b>196</b>	21	209	8	3	241	94	163	13	4	274
+45 mins.	18	174	119	<b>1</b>	<b>312</b>	<b>36</b>	<b>105</b>	<b>12</b>	<b>0</b>	<b>153</b>	<b>25</b>	<b>248</b>	9	3	<b>285</b>	<b>99</b>	<b>186</b>	19	7	<b>311</b>
Total Volume	65	745	475	1	1286	131	481	43	0	655	82	803	35	11	931	378	619	70	25	1092
% App. Total	5.1	57.9	36.9	0.1		20	73.4	6.6	0		8.8	86.3	3.8	1.2		34.6	56.7	6.4	2.3	
PHF	.903	.879	.965	.250	.924	.885	.818	.896	.000	.835	.820	.809	.875	.917	.817	.926	.832	.833	.694	.878
Passenger Vehicles	64	741	475	1	1281	126	472	40	0	638	78	796	35	11	920	378	607	66	25	1076
% Passenger Vehicles	98.5	99.5	100	100	99.6	96.2	98.1	93	0	97.4	95.1	99.1	100	100	98.8	100	98.1	94.3	100	98.5
Heavy Trucks	1	4	0	0	5	5	9	3	0	17	4	7	0	0	11	0	12	4	0	16
% Heavy Trucks	1.5	0.5	0	0	0.4	3.8	1.9	7	0	2.6	4.9	0.9	0	0	1.2	0	1.9	5.7	0	1.5

Traffic Engineering Data Solutions Inc.

File Name : SR 424 at SR 434 TMC (8-hr)

Site Code : 00000000

Start Date : 10/20/2020

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Groups Printed- Heavy Trucks

	STATE ROAD 424 Northbound					STATE ROAD 424 Southbound					STATE ROAD 434 Eastbound					STATE ROAD 434 Westbound					
Start Time	Left	Thru	Right	U-Turns	App. Total	Left	Thru	Right	U-Turns	App. Total	Left	Thru	Right	U-Turns	App. Total	Left	Thru	Right	U-Turns	App. Total	Int. Total
07:00 AM	0	4	0	0	4	2	7	1	0	10	2	2	0	0	4	0	2	1	0	3	21
07:15 AM	0	4	0	0	4	3	1	1	0	5	0	10	1	0	11	0	3	0	0	3	23
07:30 AM	0	2	1	0	3	1	12	1	0	14	0	4	0	0	4	0	4	0	0	4	25
07:45 AM	0	4	3	0	7	3	5	3	0	11	0	5	0	0	5	0	5	0	0	5	28
Total	0	14	4	0	18	9	25	6	0	40	2	21	1	0	24	0	14	1	0	15	97
08:00 AM	0	0	2	0	2	1	3	2	0	6	4	6	2	0	12	3	2	3	0	8	28
08:15 AM	0	2	2	0	4	2	14	0	0	16	4	6	2	0	12	2	4	2	0	8	40
08:30 AM	0	9	3	0	12	0	1	3	0	4	1	2	1	0	4	1	6	1	0	8	28
08:45 AM	2	4	3	0	9	0	10	2	0	12	2	5	1	0	8	1	4	1	0	6	35
Total	2	15	10	0	27	3	28	7	0	38	11	19	6	0	36	7	16	7	0	30	131
*** BREAK ***																					
11:00 AM	3	5	2	0	10	1	5	1	0	7	1	4	0	0	5	1	8	3	0	12	34
11:15 AM	1	4	2	0	7	1	6	2	0	9	2	0	1	0	3	1	5	0	0	6	25
11:30 AM	1	4	1	0	6	0	3	1	0	4	4	1	1	0	6	0	3	0	0	3	19
11:45 AM	2	3	1	0	6	0	3	6	0	9	2	3	0	0	5	1	6	1	0	8	28
Total	7	16	6	0	29	2	17	10	0	29	9	8	2	0	19	3	22	4	0	29	106
12:00 PM	0	3	0	0	3	1	3	3	0	7	2	8	2	0	12	2	4	1	0	7	29
12:15 PM	1	1	1	0	3	1	4	0	0	5	3	3	0	0	6	0	3	0	0	3	17
12:30 PM	1	5	2	0	8	1	0	1	0	2	5	1	2	0	8	0	2	1	0	3	21
12:45 PM	1	3	1	0	5	0	6	0	0	6	2	2	1	0	5	1	6	0	0	7	23
Total	3	12	4	0	19	3	13	4	0	20	12	14	5	0	31	3	15	2	0	20	90
*** BREAK ***																					
02:00 PM	0	2	1	0	3	2	4	2	0	8	4	1	0	0	5	0	1	2	0	3	19
02:15 PM	0	3	1	0	4	1	2	1	0	4	1	6	1	0	8	0	3	0	0	3	19
02:30 PM	0	3	5	0	8	0	4	2	0	6	1	3	1	0	5	1	5	1	0	7	26
02:45 PM	1	4	0	0	5	0	3	1	0	4	2	3	1	0	6	0	10	0	0	10	25
Total	1	12	7	0	20	3	13	6	0	22	8	13	3	0	24	1	19	3	0	23	89
03:00 PM	2	0	1	0	3	3	0	1	0	4	1	3	1	0	5	2	4	1	0	7	19
03:15 PM	0	7	3	0	10	0	4	2	0	6	0	1	0	0	1	2	8	0	0	10	27
03:30 PM	1	2	2	0	5	1	3	0	0	4	1	4	2	0	7	2	10	2	0	14	30
03:45 PM	2	5	0	0	7	1	3	0	0	4	1	0	1	0	2	1	4	4	0	9	22
Total	5	14	6	0	25	5	10	3	0	18	3	8	4	0	15	7	26	7	0	40	98
04:00 PM	1	2	0	0	3	4	2	2	0	8	2	2	0	0	4	3	7	3	0	13	28
04:15 PM	0	2	1	0	3	1	5	0	0	6	2	0	0	0	2	1	5	1	0	7	18
04:30 PM	1	5	1	0	7	0	1	0	0	1	1	2	0	0	3	2	5	1	0	8	19
04:45 PM	1	0	0	0	1	0	1	1	0	2	2	1	0	0	3	0	3	0	0	3	9
Total	3	9	2	0	14	5	9	3	0	17	7	5	0	0	12	6	20	5	0	31	74
05:00 PM	0	2	0	0	2	1	0	0	0	1	0	2	0	0	2	0	3	3	0	6	11
05:15 PM	0	1	0	0	1	0	3	1	0	4	1	2	0	0	3	0	2	0	0	2	10
05:30 PM	0	1	0	0	1	0	1	2	0	3	1	1	0	0	2	0	4	1	0	5	11
05:45 PM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	1	1	0	0	2	4
Total	0	4	0	0	4	1	6	3	0	10	2	5	0	0	7	1	10	4	0	15	36
Grand Total	21	96	39	0	156	31	121	42	0	194	54	93	21	0	168	28	142	33	0	203	721
Apprch %	13.5	61.5	25	0		16	62.4	21.6	0		32.1	55.4	12.5	0		13.8	70	16.3	0		
Total %	2.9	13.3	5.4	0	21.6	4.3	16.8	5.8	0	26.9	7.5	12.9	2.9	0	23.3	3.9	19.7	4.6	0	28.2	

Traffic Engineering Data Solutions Inc.

File Name : SR 424 at SR 434 TMC (8-hr)

Site Code : 00000000

Start Date : 10/20/2020

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	STATE ROAD 424 Northbound					STATE ROAD 424 Southbound					STATE ROAD 434 Eastbound					STATE ROAD 434 Westbound					
Start Time	Left	Thru	Right	U-Turns	App. Total	Left	Thru	Right	U-Turns	App. Total	Left	Thru	Right	U-Turns	App. Total	Left	Thru	Right	U-Turns	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 09:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:00 AM																					
08:00 AM	0	0	2	0	2	1	3	2	0	6	4	6	2	0	12	3	2	3	0	8	28
08:15 AM	0	2	2	0	4	2	14	0	0	16	4	6	2	0	12	2	4	2	0	8	40
08:30 AM	0	9	3	0	12	0	1	3	0	4	1	2	1	0	4	1	6	1	0	8	28
08:45 AM	2	4	3	0	9	0	10	2	0	12	2	5	1	0	8	1	4	1	0	6	35
Total Volume	2	15	10	0	27	3	28	7	0	38	11	19	6	0	36	7	16	7	0	30	131
% App. Total	7.4	55.6	37	0		7.9	73.7	18.4	0		30.6	52.8	16.7	0		23.3	53.3	23.3	0		
PHF	.250	.417	.833	.000	.563	.375	.500	.583	.000	.594	.688	.792	.750	.000	.750	.583	.667	.583	.000	.938	.819

Peak Hour Analysis From 07:00 AM to 09:45 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	08:00 AM					07:30 AM					08:00 AM					08:00 AM				
+0 mins.	0	0	2	0	2	1	12	1	0	14	4	6	2	0	12	3	2	3	0	8
+15 mins.	0	2	2	0	4	3	5	3	0	11	4	6	2	0	12	2	4	2	0	8
+30 mins.	0	9	3	0	12	1	3	2	0	6	1	2	1	0	4	1	6	1	0	8
+45 mins.	2	4	3	0	9	2	14	0	0	16	2	5	1	0	8	1	4	1	0	6
Total Volume	2	15	10	0	27	7	34	6	0	47	11	19	6	0	36	7	16	7	0	30
% App. Total	7.4	55.6	37	0		14.9	72.3	12.8	0		30.6	52.8	16.7	0		23.3	53.3	23.3	0	
PHF	.250	.417	.833	.000	.563	.583	.607	.500	.000	.734	.688	.792	.750	.000	.750	.583	.667	.583	.000	.938

Peak Hour Analysis From 10:00 AM to 01:45 PM - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 11:00 AM

11:00 AM	3	5	2	0	10	1	5	1	0	7	1	4	0	0	5	1	8	3	0	12	34
11:15 AM	1	4	2	0	7	1	6	2	0	9	2	0	1	0	3	1	5	0	0	6	25
11:30 AM	1	4	1	0	6	0	3	1	0	4	4	1	1	0	6	0	3	0	0	3	19
11:45 AM	2	3	1	0	6	0	3	6	0	9	2	3	0	0	5	1	6	1	0	8	28
Total Volume	7	16	6	0	29	2	17	10	0	29	9	8	2	0	19	3	22	4	0	29	106
% App. Total	24.1	55.2	20.7	0		6.9	58.6	34.5	0		47.4	42.1	10.5	0		10.3	75.9	13.8	0		
PHF	.583	.800	.750	.000	.725	.500	.708	.417	.000	.806	.563	.500	.500	.000	.792	.750	.688	.333	.000	.604	.779

Peak Hour Analysis From 10:00 AM to 01:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	11:00 AM					11:00 AM					11:45 AM					11:00 AM				
+0 mins.	3	5	2	0	10	1	5	1	0	7	2	3	0	0	5	1	8	3	0	12
+15 mins.	1	4	2	0	7	1	6	2	0	9	2	8	2	0	12	1	5	0	0	6
+30 mins.	1	4	1	0	6	0	3	1	0	4	3	3	0	0	6	0	3	0	0	3
+45 mins.	2	3	1	0	6	0	3	6	0	9	5	1	2	0	8	1	6	1	0	8
Total Volume	7	16	6	0	29	2	17	10	0	29	12	15	4	0	31	3	22	4	0	29
% App. Total	24.1	55.2	20.7	0		6.9	58.6	34.5	0		38.7	48.4	12.9	0		10.3	75.9	13.8	0	
PHF	.583	.800	.750	.000	.725	.500	.708	.417	.000	.806	.600	.469	.500	.000	.646	.750	.688	.333	.000	.604

Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 03:15 PM

03:15 PM	0	7	3	0	10	0	4	2	0	6	0	1	0	0	1	2	8	0	0	10	27
03:30 PM	1	2	2	0	5	1	3	0	0	4	1	4	2	0	7	2	10	2	0	14	30
03:45 PM	2	5	0	0	7	1	3	0	0	4	1	0	1	0	2	1	4	4	0	9	22
04:00 PM	1	2	0	0	3	4	2	2	0	8	2	2	0	0	4	3	7	3	0	13	28
Total Volume	4	16	5	0	25	6	12	4	0	22	4	7	3	0	14	8	29	9	0	46	107
% App. Total	16	64	20	0		27.3	54.5	18.2	0		28.6	50	21.4	0		17.4	63	19.6	0		
PHF	.500	.571	.417	.000	.625	.375	.750	.500	.000	.688	.500	.438	.375	.000	.500	.667	.725	.563	.000	.821	.892

Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	02:30 PM					02:00 PM					02:00 PM					03:15 PM				
+0 mins.	0	3	5	0	8	2	4	2	0	8	4	1	0	0	5	2	8	0	0	10
+15 mins.	1	4	0	0	5	1	2	1	0	4	1	6	1	0	8	2	10	2	0	14
+30 mins.	2	0	1	0	3	0	4	2	0	6	1	3	1	0	5	1	4	4	0	9
+45 mins.	0	7	3	0	10	0	3	1	0	4	2	3	1	0	6	3	7	3	0	13
Total Volume	3	14	9	0	26	3	13	6	0	22	8	13	3	0	24	8	29	9	0	46
% App. Total	11.5	53.8	34.6	0		13.6	59.1	27.3	0		33.3	54.2	12.5	0		17.4	63	19.6	0	
PHF	.375	.500	.450	.000	.650	.375	.813	.750	.000	.688	.500	.542	.750	.000	.750	.667	.725	.563	.000	.821



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## **APPENDIX C**

# **COLLISION SUMMARIES & DIAGRAMS**

# FLORIDA DEPARTMENT OF TRANSPORTATION

## COLLISION SUMMARY

Section: 75260				State Road: 424						County: Orange			
Intersecting route:		S.R. 423 / S.R. 434				Milepost: 4.211 - 4.871				Data by: BWT			
Study period:		1/1/2013 to 12/31/2019				Date: 2/24/2020							
NO.	DATE	DAY	TIME	FATAL	INJURY	INJURY SEVERITY	PROPERTY DAMAGE	HARMFUL EVENT	Form	DUI	DAY / NIGHT	WET / DRY	CONTRIBUTING CAUSE
1	02/02/13	Saturday	17:45	0	1	4-Incapacitating	\$4,500	Rear-End	Long	No	Day	Dry	Careless Driving
2	02/12/13	Tuesday	13:50	0	1	2-Possible	\$3,000	Side-Swipe	Long	No	Day	Dry	Improper Lane Change
3	02/14/13	Thursday	8:09	0	1	2-Possible	\$5,000	Angle	Long	No	Day	Dry	FTYROW
4	03/09/13	Saturday	0:15	0	0	1-None	\$3,000	Angle	Long	No	Night	Dry	FTYROW
5	03/19/13	Tuesday	16:02	0	1	2-Possible	\$4,000	Side-Swipe	Long	No	Day	Dry	Improper Lane Change
6	03/27/13	Wednesday	11:59	0	0	1-None	\$5,000	Side-Swipe	Short	No	Day	Dry	Improper Lane Change
7	04/10/13	Wednesday	7:41	0	2	2-Possible	\$3,500	Rear-End	Long	No	Day	Dry	Careless Driving
8	04/22/13	Monday	16:30	0	0	1-None	\$5,000	Side-Swipe	Long	No	Day	Dry	Improper Lane Change
9	05/04/13	Saturday	0:25	0	0	1-None	\$3,500	Left-Turn	Long	No	Night	Wet	FTYROW
10	05/05/13	Sunday	15:00	0	0	1-None	\$5,000	Right-Turn	Long	No	Day	Dry	FTYROW
11	05/13/13	Monday	16:24	0	1	2-Possible	\$5,700	Side-Swipe	Long	No	Day	Dry	Improper Lane Change
12	06/11/13	Tuesday	17:00	0	1	2-Possible	\$4,000	Angle	Long	No	Day	Wet	FTYROW
13	06/18/13	Tuesday	12:05	0	0	1-None	\$1,850	Side-Swipe	Short	No	Day	Dry	Improper Lane Change
14	07/03/13	Wednesday	19:30	0	1	4-Incapacitating	\$2,800	Side-Swipe	Long	Yes	Day	Wet	DUI
15	07/17/13	Wednesday	14:50	0	1	4-Incapacitating	\$20,000	Left-Turn	Long	No	Day	Dry	FTYROW
16	07/18/13	Thursday	9:36	0	1	2-Possible	\$3,000	Rear-End	Long	No	Day	Dry	Careless Driving
17	07/18/13	Thursday	14:25	0	0	1-None	\$5,000	Rear-End	Short	No	Day	Dry	Careless Driving
18	07/24/13	Wednesday	16:50	0	0	1-None	\$1,800	Rear-End	Long	No	Day	Dry	Careless Driving
19	08/30/13	Friday	13:00	0	0	1-None	\$2,000	Side-Swipe	Short	No	Day	Dry	Improper Lane Change
20	09/06/13	Friday	10:30	0	0	1-None	\$4,000	Side-Swipe	Long	No	Day	Dry	Improper Lane Change
21	09/09/13	Monday	13:38	0	0	1-None	\$1,600	Rear-End	Short	No	Day	Dry	Careless Driving
22	09/12/13	Thursday	7:55	0	1	2-Possible	\$5,700	Left-Turn	Long	No	Day	Dry	FTYROW
23	10/05/13	Saturday	11:21	0	3	4-Incapacitating	\$3,500	Fixed-Object	Long	No	Day	Dry	Lost Control
24	10/14/13	Monday	16:40	0	0	1-None	\$5,000	Angle	Short	No	Day	Dry	FTYROW
25	10/30/13	Wednesday	8:30	0	0	1-None	\$2,000	Side-Swipe	Short	No	Day	Dry	Improper Lane Change
26	11/06/13	Wednesday	16:15	0	2	4-Incapacitating	\$5,000	Angle	Long	No	Day	Dry	FTYROW
27	11/08/13	Friday	14:43	0	0	1-None	\$3,300	Side-Swipe	Short	No	Day	Dry	Improper Lane Change
28	11/20/13	Wednesday	8:25	0	0	1-None	\$4,000	Side-Swipe	Short	No	Day	Dry	Improper Lane Change
29	11/26/13	Tuesday	8:30	0	0	1-None	\$2,000	Side-Swipe	Long	No	Day	Wet	Improper Lane Change
30	12/04/13	Wednesday	15:40	0	1	2-Possible	\$1,600	Angle	Long	No	Day	Dry	FTYROW
31	12/23/13	Monday	20:50	0	0	1-None	\$3,000	Rear-End	Short	No	Night	Dry	Careless Driving
32	02/03/14	Monday	12:30	0	0	1-None	\$3,500	Angle	Long	No	Day	Dry	FTYROW
33	02/07/14	Friday	15:30	0	0	1-None	\$800	Rear-End	Short	No	Day	Wet	Careless Driving
34	02/09/14	Sunday	11:40	0	1	2-Possible	\$0	Bicycle	Long	No	Day	Dry	FTYROW
35	02/10/14	Monday	17:50	0	0	1-None	\$2,700	Rear-End	Short	No	Day	Dry	Careless Driving
36	02/21/14	Friday	18:51	0	0	1-None	\$5,000	Side-Swipe	Long	No	Night	Dry	Careless Driving
37	03/03/14	Monday	12:19	0	0	1-None	\$1,300	Angle	Short	No	Day	Dry	FTYROW
38	03/18/14	Tuesday	19:10	0	0	1-None	\$4,000	Side-Swipe	Short	No	Day	Dry	Improper Lane Change
39	03/21/14	Friday	15:47	0	0	1-None	\$100	Rear-End	Short	No	Day	Dry	Careless Driving
40	03/27/14	Thursday	16:40	0	0	1-None	\$4,500	Right-Turn	Long	No	Day	Dry	FTYROW
41	04/04/14	Friday	14:30	0	1	2-Possible	\$1,800	Rear-End	Long	No	Day	Dry	Careless Driving
42	04/10/14	Thursday	17:25	0	2	2-Possible	\$11,000	Rear-End	Long	No	Day	Dry	Careless Driving
43	04/14/14	Monday	16:59	0	1	2-Possible	\$2,100	Angle	Long	No	Day	Dry	FTYROW
44	04/18/14	Friday	22:20	0	0	1-None	\$5,000	Left-Turn	Long	No	Night	Dry	FTYROW
45	05/12/14	Monday	17:35	0	1	4-Incapacitating	\$11,600	Rear-End	Long	No	Day	Dry	Careless Driving
46	05/19/14	Monday	17:11	0	0	1-None	\$1,550	Rear-End	Short	No	Day	Dry	Careless Driving
47	05/20/14	Tuesday	17:10	0	0	1-None	\$5,000	Angle	Short	No	Day	Dry	FTYROW
48	05/25/14	Sunday	12:00	0	0	1-None	\$2,500	Rear-End	Short	No	Day	Dry	Careless Driving
49	05/28/14	Wednesday	8:25	0	0	1-None	\$1,700	Side-Swipe	Long	No	Day	Dry	Improper Lane Change
50	06/04/14	Wednesday	17:21	0	0	1-None	\$700	Side-Swipe	Long	No	Day	Dry	Improper Lane Change
51	06/09/14	Monday	13:50	0	0	1-None	\$100	Other	Long	No	Day	Dry	Mechanical
52	07/19/14	Saturday	9:30	0	0	1-None	\$1,500	Backed-Into	Short	Yes	Day	Dry	Improper Backing
53	08/11/14	Monday	10:35	0	0	1-None	\$5,000	Rear-End	Short	No	Day	Dry	Careless Driving
54	08/11/14	Monday	11:55	0	1	4-Incapacitating	\$1,000	Bicycle	Long	No	Day	Dry	FTYROW
55	08/29/14	Friday	17:27	0	0	1-None	\$3,000	Right-Turn	Long	No	Day	Wet	FTYROW
56	09/12/14	Friday	18:52	0	0	1-None	\$950	Rear-End	Short	No	Day	Dry	Careless Driving
57	09/19/14	Friday	18:20	0	0	1-None	\$13,000	Rear-End	Long	No	Day	Wet	Careless Driving
58	09/20/14	Saturday	14:55	0	0	1-None	\$2,000	Rear-End	Short	No	Day	Dry	Careless Driving
59	10/17/14	Friday	17:17	0	0	1-None	\$1,300	Side-Swipe	Short	No	Day	Dry	Improper Lane Change
60	10/18/14	Saturday	19:58	0	0	1-None	\$1,800	Angle	Long	No	Night	Drv	FTYROW

COLLISION SUMMARY													
Section: 75260				State Road: 424				County: Orange					
Intersecting route: S.R. 423 / S.R. 434				Milepost: 4.211 - 4.871				Data by: BWT					
Study period: 1/1/2013 to 12/31/2019				Date: 2/24/2020									
NO.	DATE	DAY	TIME	FATAL	INJURY	INJURY SEVERITY	PROPERTY DAMAGE	HARMFUL EVENT	Form	DUI	DAY / NIGHT	WET / DRY	CONTRIBUTING CAUSE
61	10/24/14	Friday	7:58	0	0	1-None	\$500	Side-Swipe	Short	No	Day	Dry	Improper Lane Change
62	11/01/14	Saturday	17:10	0	1	3-Non-Incapacitating	\$9,000	Side-Swipe	Long	No	Day	Dry	Improper Turn
63	11/07/14	Friday	10:38	0	1	4-Incapacitating	\$7,000	Rear-End	Long	No	Day	Dry	Careless Driving
64	11/14/14	Friday	17:05	0	0	1-None	\$2,500	Angle	Short	No	Day	Dry	FTYROW
65	11/17/14	Monday	14:37	0	0	1-None	\$1,000	Rear-End	Long	No	Day	Wet	Careless Driving
66	11/21/14	Friday	13:20	0	1	3-Non-Incapacitating	\$0	Pedestrian	Long	No	Day	Dry	Ped-FTYROW
67	12/22/14	Monday	14:15	0	1	4-Incapacitating	\$8,400	Side-Swipe	Long	No	Day	Dry	Improper Turn
68	01/06/15	Tuesday	10:03	0	0	1-None	\$9,000	Side-Swipe	Short	No	Day	Dry	Improper Lane Change
69	01/17/15	Saturday	23:45	0	0	1-None	\$6,200	Rear-End	Long	No	Night	Dry	Careless Driving
70	02/12/15	Thursday	18:40	0	0	1-None	\$2,000	Rear-End	Short	No	Night	Dry	Careless Driving
71	04/08/15	Wednesday	7:40	0	0	1-None	\$8,500	Side-Swipe	Long	No	Day	Dry	Improper Lane Change
72	04/08/15	Wednesday	18:50	0	2	4-Incapacitating	\$1,000	Rear-End	Long	No	Day	Dry	Careless Driving
73	04/24/15	Friday	23:05	0	0	1-None	\$600	Angle	Long	No	Night	Dry	FTYROW
74	04/28/15	Tuesday	7:20	0	0	1-None	\$4,000	Rear-End	Short	No	Day	Wet	Careless Driving
75	05/02/15	Saturday	12:00	0	0	1-None	\$6,800	Side-Swipe	Long	No	Day	Dry	Improper Lane Change
76	05/13/15	Wednesday	18:24	0	0	1-None	\$3,800	Angle	Short	No	Day	Dry	FTYROW
77	06/05/15	Friday	0:06	0	1	4-Incapacitating	\$5,000	Left-Turn	Long	No	Night	Dry	FTYROW
78	06/05/15	Friday	16:25	0	2	2-Possible	\$4,000	Side-Swipe	Long	No	Day	Dry	Improper Turn
79	06/05/15	Friday	16:55	0	0	1-None	\$7,000	Rear-End	Short	No	Day	Dry	Careless Driving
80	06/22/15	Monday	14:50	0	0	1-None	\$1,300	Rear-End	Short	No	Day	Dry	Careless Driving
81	06/25/15	Thursday	13:12	0	0	1-None	\$1,000	Side-Swipe	Short	No	Day	Dry	Improper Lane Change
82	07/01/15	Wednesday	14:35	0	0	1-None	\$1,500	Side-Swipe	Short	No	Day	Dry	Improper Lane Change
83	07/19/15	Sunday	20:27	0	0	1-None	\$50	Rear-End	Long	No	Night	Dry	Careless Driving
84	07/23/15	Thursday	11:10	0	0	1-None	\$550	Rear-End	Short	No	Day	Dry	Careless Driving
85	08/03/15	Monday	5:43	0	0	1-None	\$3,800	Left-Turn	Long	No	Night	Dry	FTYROW
86	08/18/15	Tuesday	6:42	0	0	1-None	\$300	Side-Swipe	Long	No	Day	Dry	Improper Lane Change
87	08/18/15	Tuesday	6:42	0	0	1-None	\$300	Side-Swipe	Long	No	Day	Dry	Improper Lane Change
88	08/21/15	Friday	18:50	0	0	1-None	\$3,800	Rear-End	Short	No	Day	Dry	Careless Driving
89	08/24/15	Monday	13:08	0	0	1-None	\$4,500	Right-Turn	Long	No	Day	Dry	FTYROW
90	08/28/15	Friday	18:12	0	2	2-Possible	\$150	Rear-End	Long	No	Day	Wet	Careless Driving
91	09/04/15	Friday	12:42	0	1	2-Possible	\$7,000	Side-Swipe	Long	No	Day	Dry	Improper Lane Change
92	09/16/15	Wednesday	8:51	0	0	1-None	\$4,000	Angle	Long	No	Day	Dry	Disregarded Traffic Control
93	09/29/15	Tuesday	18:20	0	1	2-Possible	\$1,600	Rear-End	Long	No	Day	Wet	Careless Driving
94	09/30/15	Wednesday	9:56	0	0	1-None	\$3,500	Angle	Long	No	Day	Dry	FTYROW
95	10/06/15	Tuesday	13:40	0	2	2-Possible	\$13,000	Angle	Long	No	Day	Dry	FTYROW
96	10/11/15	Sunday	19:25	0	0	1-None	\$700	Backed-Into	Short	No	Night	Dry	Improper Backing
97	10/14/15	Wednesday	15:23	0	1	2-Possible	\$6,000	Rollover	Long	No	Day	Dry	Careless Driving
98	11/30/15	Monday	8:14	0	0	1-None	\$5,000	Rear-End	Long	No	Day	Dry	Careless Driving
99	12/05/15	Saturday	7:47	0	1	2-Possible	\$800	Rollover	Long	No	Day	Wet	Careless Driving
100	12/29/15	Tuesday	17:00	0	0	1-None	\$450	Rear-End	Short	No	Day	Dry	Careless Driving
101	01/04/16	Monday	8:46	0	0	1-None	\$2,225	Rear-End	Short	No	Day	Dry	Careless Driving
102	01/08/16	Friday	19:00	0	1	2-Possible	\$3,000	Pedestrian	Long	No	Night	Dry	Ped-FTYROW
103	01/14/16	Thursday	15:15	0	1	4-Incapacitating	\$1,100	Bicycle	Long	No	Day	Dry	FTYROW
104	01/20/16	Wednesday	17:30	0	2	3-Non-Incapacitating	\$3,700	Angle	Long	No	Day	Dry	FTYROW
105	02/04/16	Thursday	18:19	0	0	1-None	\$1,000	Rear-End	Short	No	Day	Wet	Careless Driving
106	02/08/16	Monday	16:16	0	0	1-None	\$2,200	Rear-End	Short	No	Day	Dry	Careless Driving
107	02/15/16	Monday	21:20	0	0	1-None	\$1,600	Rear-End	Short	No	Night	Wet	Careless Driving
108	02/22/16	Monday	19:00	0	0	1-None	\$1,200	Side-Swipe	Short	No	Night	Dry	Improper Lane Change
109	03/02/16	Wednesday	22:15	1	0	5-Fatal	\$5,000	Pedestrian	Long	No	Night	Dry	Ped-FTYROW
110	03/04/16	Friday	12:00	0	0	1-None	\$15	Rear-End	Long	No	Day	Dry	Careless Driving
111	03/28/16	Monday	22:35	0	0	1-None	\$3,000	Rear-End	Short	No	Night	Dry	Careless Driving
112	04/13/16	Wednesday	18:23	0	0	1-None	\$350	Angle	Long	No	Day	Dry	Disregarded Traffic Control
113	04/26/16	Tuesday	16:20	0	0	1-None	\$3,800	Side-Swipe	Long	No	Day	Dry	Improper Lane Change
114	04/28/16	Thursday	18:10	0	0	1-None	\$20,500	Side-Swipe	Long	No	Day	Wet	Improper Lane Change
115	05/02/16	Monday	8:38	0	2	2-Possible	\$8,800	Rear-End	Long	No	Day	Dry	Careless Driving
116	05/18/16	Wednesday	18:37	0	0	1-None	\$1,000	Side-Swipe	Long	No	Day	Dry	Improper Lane Change
117	05/22/16	Sunday	15:38	0	0	1-None	\$1,500	Side-Swipe	Short	No	Day	Dry	Improper Lane Change
118	05/23/16	Monday	0:55	0	1	2-Possible	\$5,000	Fixed-Object	Long	No	Night	Dry	Careless Driving
119	05/23/16	Monday	20:03	0	0	1-None	\$600	Rear-End	Long	No	Day	Dry	Careless Driving
120	06/03/16	Friday	13:32	0	3	3-Non-Incapacitating	\$15,000	Left-Turn	Long	No	Day	Dry	FTYROW
121	06/07/16	Tuesday	15:21	0	0	1-None	\$500	Side-Swipe	Short	No	Day	Dry	Improper Lane Change
122	06/13/16	Monday	15:00	0	0	1-None	\$900	Angle	Short	No	Day	Dry	Disregarded Traffic Control

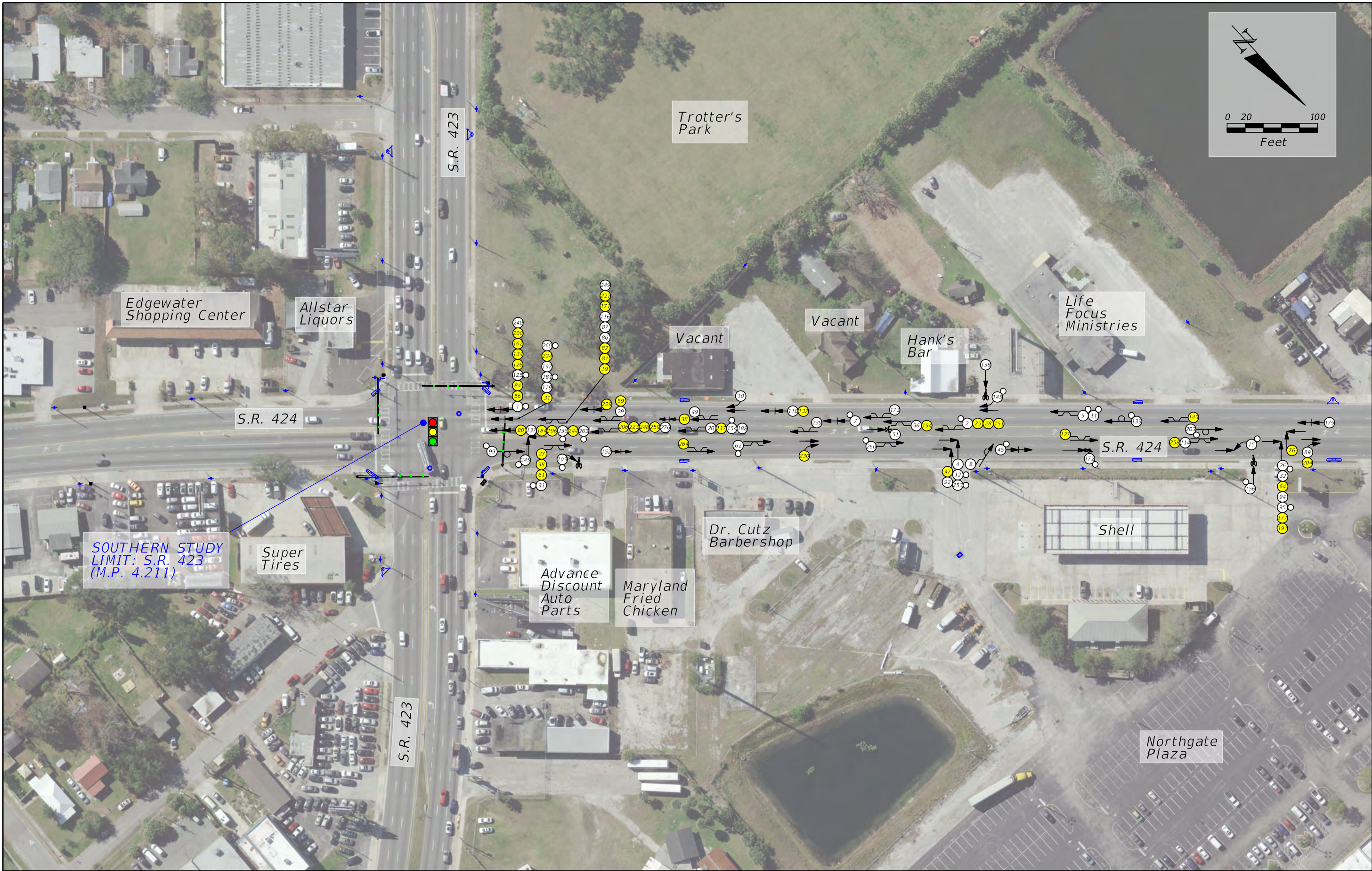
COLLISION SUMMARY													
Section: 75260				State Road: 424				County: Orange					
Intersecting route: S.R. 423 / S.R. 434				Milepost: 4.211 - 4.871				Data by: BWT					
Study period: 1/1/2013 to 12/31/2019				Date: 2/24/2020									
NO.	DATE	DAY	TIME	FATAL	INJURY	INJURY SEVERITY	PROPERTY DAMAGE	HARMFUL EVENT	Form	DUI	DAY / NIGHT	WET / DRY	CONTRIBUTING CAUSE
123	07/09/16	Saturday	9:00	0	0	1-None	\$0	Rear-End	Long	No	Day	Dry	Careless Driving
124	08/04/16	Thursday	16:25	0	0	1-None	\$19,800	Angle	Long	No	Day	Wet	FTYROW
125	08/09/16	Tuesday	14:30	0	1	2-Possible	\$550	Rear-End	Long	No	Day	Dry	Careless Driving
126	08/09/16	Tuesday	15:22	0	0	1-None	\$500	Rear-End	Short	No	Day	Dry	Careless Driving
127	08/12/16	Friday	10:48	0	0	1-None	\$1,250	Side-Swipe	Short	No	Day	Dry	Improper Lane Change
128	08/22/16	Monday	17:51	0	0	1-None	\$500	Angle	Short	No	Day	Dry	FTYROW
129	08/31/16	Wednesday	20:40	0	1	2-Possible	\$2,800	Side-Swipe	Long	No	Night	Wet	Improper Lane Change
130	09/05/16	Monday	14:40	0	0	1-None	\$8,100	Side-Swipe	Long	No	Day	Wet	Careless Driving
131	09/09/16	Friday	21:18	0	1	4-Incapacitating	\$1,000	Side-Swipe	Long	No	Night	Dry	Reckless Driving
132	10/08/16	Saturday	19:20	0	0	1-None	\$1,100	Rear-End	Short	No	Day	Dry	Careless Driving
133	10/10/16	Monday	9:45	0	1	4-Incapacitating	\$1,500	Rollover	Long	No	Day	Dry	Careless Driving
134	10/23/16	Sunday	13:05	0	0	1-None	\$500	Rear-End	Short	No	Day	Dry	Careless Driving
135	11/21/16	Monday	18:00	0	0	1-None	\$600	Side-Swipe	Short	No	Day	Dry	Improper Lane Change
136	11/29/16	Tuesday	15:10	0	0	1-None	\$600	Angle	Short	No	Day	Dry	FTYROW
137	12/02/16	Friday	12:04	0	0	1-None	\$1,500	Rear-End	Long	No	Day	Dry	Careless Driving
138	12/17/16	Saturday	15:02	0	0	1-None	\$100	Bicycle	Long	No	Day	Dry	FTYROW
139	12/19/16	Monday	18:55	0	0	1-None	\$500	Rear-End	Short	No	Night	Dry	Careless Driving
140	12/20/16	Tuesday	23:35	0	0	1-None	\$500	Off-Road	Long	No	Night	Dry	Careless Driving
141	12/23/16	Friday	14:44	0	0	1-None	\$3,500	Fixed-Object	Long	No	Day	Dry	Lost Control
142	01/23/17	Monday	17:46	0	0	1-None	\$1,000	Left-Turn	Long	No	Day	Dry	FTYROW
143	01/25/17	Wednesday	13:50	0	0	1-None	\$1,800	Side-Swipe	Short	No	Day	Dry	Improper Lane Change
144	01/27/17	Friday	19:02	0	1	2-Possible	\$4,500	Angle	Long	No	Night	Dry	FTYROW
145	02/05/17	Sunday	15:04	0	1	2-Possible	\$1,000	Right-Turn	Long	No	Day	Dry	FTYROW
146	02/22/17	Wednesday	15:45	0	0	1-None	\$300	Rear-End	Long	No	Day	Wet	Careless Driving
147	03/22/17	Wednesday	17:18	0	0	1-None	\$1,500	Angle	Long	No	Day	Dry	FTYROW
148	03/25/17	Saturday	19:03	0	0	1-None	\$980	Rear-End	Short	No	Day	Dry	Careless Driving
149	03/27/17	Monday	19:52	0	3	4-Incapacitating	\$10,000	Angle	Long	No	Night	Dry	FTYROW
150	04/04/17	Tuesday	7:52	0	0		1-None	\$1,550	Side-Swipe	Short	No	Day	Dry
151	04/11/17	Tuesday	7:45	0	0	1-None	\$2,000	Side-Swipe	Short	No	Day	Dry	Improper Lane Change
152	04/13/17	Thursday	18:20	0	0	1-None	\$300	Rear-End	Long	No	Day	Dry	Careless Driving
153	04/16/17	Sunday	23:06	0	0	1-None	\$1,800	Side-Swipe	Short	No	Night	Dry	Reckless Driving
154	04/18/17	Tuesday	16:48	0	2	4-Incapacitating	\$500	Side-Swipe	Long	No	Day	Dry	FTYROW
155	04/24/17	Monday	2:24	0	0	1-None	\$1,000	Rear-End	Short	No	Night	Dry	Careless Driving
156	04/26/17	Wednesday	17:43	0	1	3-Non-Incapacitating	\$20	Bicycle	Long	No	Day	Dry	FTYROW
157	05/09/17	Tuesday	17:03	0	0	1-None	\$50	Side-Swipe	Long	No	Day	Dry	Improper Lane Change
158	05/16/17	Tuesday	17:00	0	1	2-Possible	\$4,800	Angle	Long	No	Day	Dry	FTYROW
159	05/19/17	Friday	10:15	0	1	2-Possible	\$0	Rear-End	Long	No	Day	Wet	Careless Driving
160	05/21/17	Sunday	20:50	0	0	1-None	\$6,000	Left-Turn	Long	No	Night	Dry	FTYROW
161	06/28/17	Wednesday	17:35	0	0	1-None	\$2,000	Rear-End	Short	No	Day	Dry	Careless Driving
162	07/07/17	Friday	8:10	0	0	1-None	\$2,000	Rear-End	Short	No	Day	Dry	Careless Driving
163	07/17/17	Monday	17:31	0	0	1-None	\$800	Rear-End	Short	No	Day	Wet	Careless Driving
164	08/06/17	Sunday	16:09	0	0	1-None	\$700	Side-Swipe	Long	No	Day	Dry	Reckless Driving
165	08/23/17	Wednesday	18:30	0	0	1-None	\$3,800	Left-Turn	Long	No	Day	Dry	FTYROW
166	09/21/17	Thursday	12:19	0	0	1-None	\$950	Angle	Short	No	Day	Dry	FTYROW
167	09/26/17	Tuesday	0:28	0	1	2-Possible	\$0	Pedestrian	Long	No	Night	Dry	Ped-FTYROW
168	10/02/17	Monday	14:00	0	0	1-None	\$700	Rear-End	Short	No	Day	Dry	Careless Driving
169	10/12/17	Thursday	15:30	0	0	1-None	\$1,500	Rear-End	Short	No	Day	Dry	Careless Driving
170	10/16/17	Monday	17:13	0	0	1-None	\$4,000	Side-Swipe	Short	No	Day	Dry	Improper Lane Change
171	10/19/17	Thursday	10:55	0	0	1-None	\$100	Side-Swipe	Short	No	Day	Dry	Careless Driving
172	10/19/17	Thursday	21:20	0	1	4-Incapacitating	\$2,500	Pedestrian	Long	No	Night	Dry	Ped-FTYROW
173	10/22/17	Sunday	13:00	0	0	1-None	\$7,000	Side-Swipe	Long	No	Day	Dry	Improper Turn
174	11/13/17	Monday	18:28	0	0	1-None	\$800	Angle	Short	No	Day	Dry	FTYROW
175	11/27/17	Monday	13:14	0	0	1-None	\$32,000	Side-Swipe	Long	No	Day	Dry	Improper Lane Change
176	12/07/17	Thursday	15:48	0	0	1-None	\$1,650	Rear-End	Long	No	Day	Dry	Careless Driving
177	12/09/17	Saturday	16:55	0	0	1-None	\$900	Angle	Short	No	Day	Dry	FTYROW
178	12/11/17	Monday	16:21	0	3	2-Possible	\$12,000	Rear-End	Long	No	Day	Dry	Careless Driving
179	12/12/17	Tuesday	18:00	0	0	1-None	\$3,800	Rear-End	Long	No	Night	Dry	Careless Driving
180	12/19/17	Tuesday	7:36	0	0	1-None	\$300	Rear-End	Long	No	Day	Dry	Careless Driving
181	12/30/17	Saturday	10:20	0	2	2-Possible	\$6,000	Rear-End	Long	No	Day	Dry	Careless Driving
182	01/15/18	Monday	19:30	0	0	1-None	\$2,500	Angle	Short	No	Night	Dry	FTYROW
183	01/20/18	Saturday	12:49	0	0	1-None	\$2,500	Rear-End	Long	No	Day	Dry	Careless Driving
184	01/29/18	Monday	7:30	0	0	1-None	\$6,000	Rear-End	Short	No	Day	Wet	Careless Driving



COLLISION SUMMARY													
Section: 75260				State Road: 424				County: Orange					
Intersecting route: S.R. 423 / S.R. 434				Milepost: 4.211 - 4.871				Data by: BWT					
Study period: 1/1/2013 to 12/31/2019				Date: 2/24/2020									
NO.	DATE	DAY	TIME	FATAL	INJURY	INJURY SEVERITY	PROPERTY DAMAGE	HARMFUL EVENT	Form	DUI	DAY / NIGHT	WET / DRY	CONTRIBUTING CAUSE
185	01/30/18	Tuesday	17:05	0	0	1-None	\$1,500	Angle	Short	No	Day	Dry	FTYROW
186	02/13/18	Tuesday	14:51	0	1	2-Possible	\$6,000	Angle	Long	No	Day	Dry	FTYROW
187	02/14/18	Wednesday	18:23	0	0	1-None	\$9,200	Angle	Short	No	Day	Dry	FTYROW
188	02/20/18	Tuesday	12:32	0	0	1-None	\$3,000	Side-Swipe	Long	No	Day	Dry	Improper Lane Change
189	02/24/18	Saturday	14:28	0	0	1-None	\$20,000	Angle	Long	No	Day	Dry	FTYROW
190	02/27/18	Tuesday	13:37	0	0	1-None	\$700	Head-On	Long	No	Day	Dry	Careless Driving
191	03/01/18	Thursday	20:30	0	0	1-None	\$3,500	Angle	Short	No	Night	Dry	FTYROW
192	03/04/18	Sunday	16:23	0	0	1-None	\$100	Rear-End	Long	No	Day	Dry	Careless Driving
193	03/07/18	Wednesday	17:16	0	0	1-None	\$2,000	Angle	Short	No	Day	Dry	FTYROW
194	03/09/18	Friday	19:12	0	0	1-None	\$5,000	Side-Swipe	Short	No	Night	Dry	Improper Lane Change
195	03/15/18	Thursday	16:14	0	1	2-Possible	\$0	Pedestrian	Long	No	Day	Dry	FTYROW
196	03/19/18	Monday	23:18	0	0	1-None	\$600	Rear-End	Short	No	Night	Wet	Careless Driving
197	03/26/18	Monday	16:45	0	1	2-Possible	\$3,100	Rear-End	Long	No	Day	Dry	Careless Driving
198	03/29/18	Thursday	11:30	0	0	1-None	\$2,250	Rear-End	Long	No	Day	Dry	Careless Driving
199	04/01/18	Sunday	5:19	0	0	1-None	\$10,500	Fixed-Object	Long	Yes	Night	Dry	DUI
200	04/09/18	Monday	23:05	0	0	1-None	\$1,200	Rear-End	Short	No	Night	Wet	Careless Driving
201	04/10/18	Tuesday	0:48	0	0	1-None	\$3,500	Fixed-Object	Long	No	Night	Wet	Reckless Driving
202	04/13/18	Friday	17:00	0	0	1-None	\$700	Rear-End	Short	No	Day	Dry	Careless Driving
203	04/18/18	Wednesday	16:07	0	1	2-Possible	\$300	Rollover	Long	No	Day	Dry	Lost Control
204	04/28/18	Saturday	9:30	0	0	1-None	\$1,600	Right-Turn	Short	No	Day	Dry	FTYROW
205	05/03/18	Thursday	17:56	0	1	2-Possible	\$750	Angle	Long	No	Day	Dry	FTYROW
206	05/05/18	Saturday	10:40	0	0	1-None	\$2,000	Side-Swipe	Short	No	Day	Dry	Improper Lane Change
207	05/12/18	Saturday	18:25	0	0	1-None	\$2,100	Angle	Long	No	Day	Dry	Disregarded Traffic Control
208	05/17/18	Thursday	13:01	0	1	2-Possible	\$0	Pedestrian	Long	No	Day	Wet	FTYROW
209	05/24/18	Thursday	12:30	0	0	1-None	\$1,500	Angle	Short	No	Day	Dry	FTYROW
210	06/07/18	Thursday	21:40	0	1	2-Possible	\$400	Rear-End	Long	No	Night	Dry	Careless Driving
211	06/28/18	Thursday	10:30	0	0	1-None	\$5,000	Rear-End	Long	No	Day	Dry	Careless Driving
212	08/12/18	Sunday	19:42	0	0	1-None	\$250	Rear-End	Long	No	Night	Wet	Careless Driving
213	08/15/18	Wednesday	6:20	0	0	1-None	\$500	Rear-End	Short	No	Day	Dry	Careless Driving
214	08/19/18	Sunday	21:35	0	2	3-Non-Incapacitating	\$5,000	Rear-End	Long	No	Night	Dry	Careless Driving
215	08/31/18	Friday	6:50	0	0	1-None	\$1,600	Side-Swipe	Short	No	Day	Dry	Improper Lane Change
216	09/01/18	Saturday	21:50	0	0	1-None	\$900	Side-Swipe	Long	No	Night	Dry	Improper Lane Change
217	10/19/18	Friday	14:47	0	1	2-Possible	\$2,500	Left-Turn	Long	No	Day	Dry	FTYROW
218	10/22/18	Monday	8:03	0	0	1-None	\$3,500	Side-Swipe	Long	No	Day	Dry	Improper Lane Change
219	10/23/18	Tuesday	7:20	0	0	1-None	\$500	Rear-End	Long	No	Day	Dry	Careless Driving
220	10/24/18	Wednesday	8:00	0	0	1-None	\$6,500	Side-Swipe	Long	No	Day	Dry	Careless Driving
221	10/24/18	Wednesday	9:30	0	0	1-None	\$1,000	Side-Swipe	Short	No	Day	Dry	Careless Driving
222	10/29/18	Monday	17:10	0	0	1-None	\$5,000	Angle	Short	No	Day	Dry	FTYROW
223	10/30/18	Tuesday	7:45	0	0	1-None	\$1,050	Side-Swipe	Short	No	Day	Dry	Improper Lane Change
224	10/31/18	Wednesday	11:28	0	0	1-None	\$400	Rear-End	Short	No	Day	Dry	Careless Driving
225	11/07/18	Wednesday	18:01	0	0	1-None	\$1,000	Angle	Long	No	Day	Dry	FTYROW
226	11/30/18	Friday	8:02	0	0	1-None	\$800	Angle	Long	No	Day	Dry	FTYROW
227	11/30/18	Friday	18:07	0	0	1-None	\$15,200	Rear-End	Short	No	Night	Dry	Careless Driving
228	12/05/18	Wednesday	18:13	0	3	3-Non-Incapacitating	\$13,500	Rear-End	Long	No	Night	Dry	Careless Driving
229	12/14/18	Friday	8:04	0	0	1-None	\$250	Rear-End	Short	No	Day	Dry	Careless Driving
230	12/20/18	Thursday	15:10	0	0	1-None	\$3,500	Right-Turn	Short	No	Day	Wet	FTYROW
231	01/08/19	Tuesday	17:42	0	0	1-None	\$1,500	Rear-End	Short	No	Night	Dry	Careless Driving
232	01/15/19	Tuesday	17:50	0	3	2-Possible	\$7,000	Side-Swipe	Long	No	Night	Dry	Improper Turn
233	01/23/19	Wednesday	16:49	0	0	1-None	\$9,000	Angle	Short	No	Day	Dry	FTYROW
234	01/25/19	Friday	23:52	0	2	3-Non-Incapacitating	\$38,500	Left-Turn	Long	No	Night	Dry	FTYROW
235	01/30/19	Wednesday	17:50	0	3	3-Non-Incapacitating	\$5,000	Right-Turn	Long	No	Night	Dry	FTYROW
236	02/02/19	Saturday	11:26	0	1	2-Possible	\$2,000	Rear-End	Long	No	Day	Dry	Careless Driving
237	02/11/19	Monday	11:16	0	0	1-None	\$4,000	Side-Swipe	Short	No	Day	Dry	Improper Lane Change
238	02/12/19	Tuesday	18:39	0	3	2-Possible	\$4,000	Head-On	Long	No	Night	Dry	Careless Driving
239	02/19/19	Tuesday	7:53	0	0	1-None	\$1,230	Side-Swipe	Long	No	Day	Dry	Improper Lane Change
240	02/20/19	Wednesday	19:45	0	0	1-None	\$4,700	Rear-End	Long	No	Night	Dry	Careless Driving
241	02/21/19	Thursday	16:20	0	3	2-Possible	\$5,000	Angle	Long	No	Day	Dry	FTYROW
242	02/22/19	Friday	21:59	0	0	1-None	\$100	Backed-Into	Long	No	Night	Dry	Improper Backing
243	03/19/19	Tuesday	21:08	0	1	4-Incapacitating	\$2,000	Pedestrian	Long	No	Night	Wet	Disregarded Traffic Control
244	03/29/19	Friday	9:00	0	0	1-None	\$1,000	Rear-End	Short	No	Day	Dry	Careless Driving
245	04/01/19	Monday	1:56	0	1	3-Non-Incapacitating	\$6,000	Angle	Long	No	Night	Wet	Careless Driving
246	04/01/19	Monday	4:52	0	0	1-None	\$550	Rear-End	Long	No	Night	Dry	Careless Driving

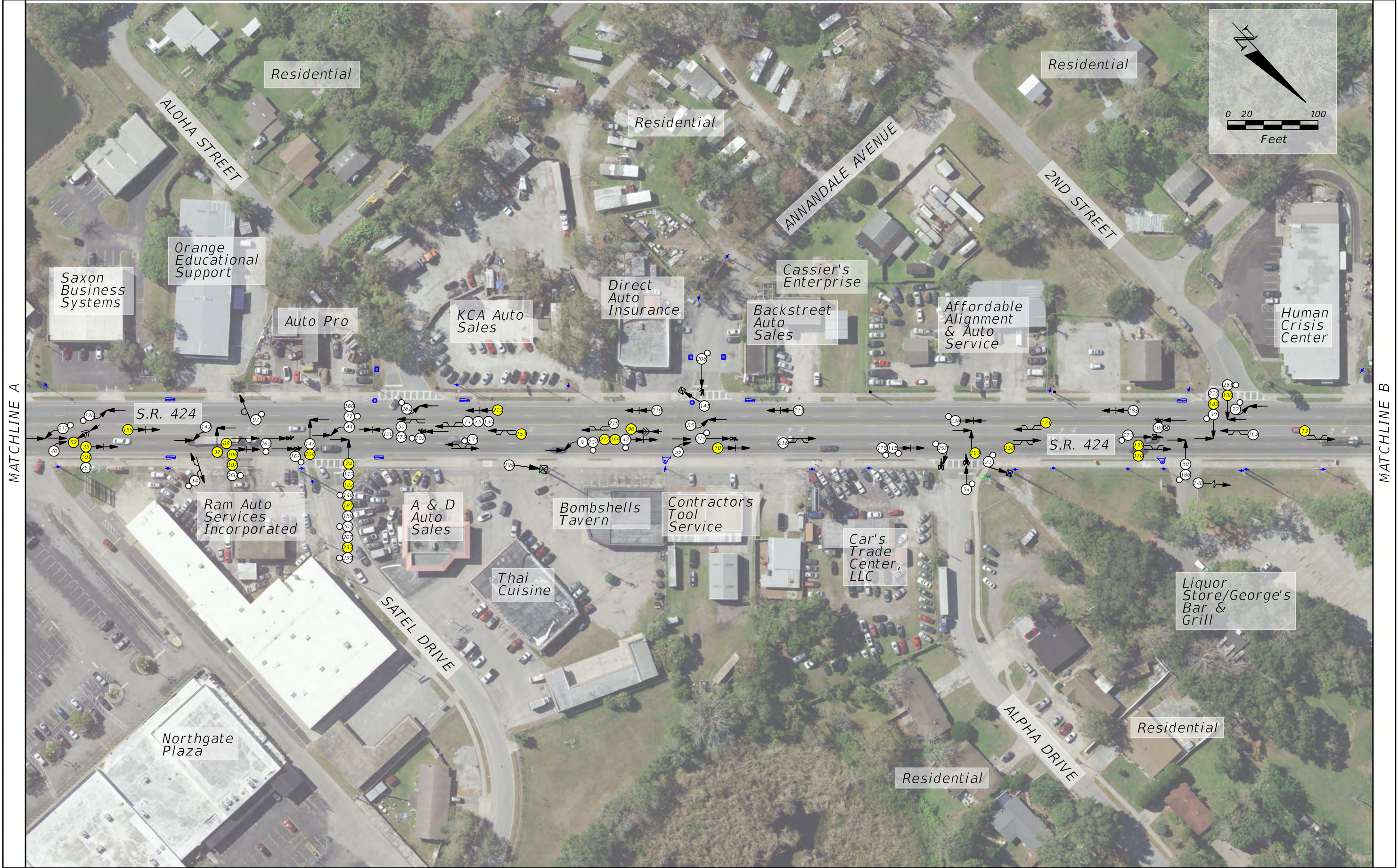
COLLISION SUMMARY																	
Section: 75260				State Road: 424								County: Orange					
Intersecting route: S.R. 423 / S.R. 434				Milepost: 4.211 - 4.871								Data by: BWT					
Study period: 1/1/2013 to 12/31/2019				Date: 2/24/2020													
NO.	DATE	DAY	TIME	FATAL	INJURY	INJURY SEVERITY		PROPERTY DAMAGE	HARMFUL EVENT		Form	DUI	DAY / NIGHT	WET / DRY	CONTRIBUTING CAUSE		
247	04/09/19	Tuesday	15:31	0	3	2-Possible		\$8,000	Angle		Long	No	Day	Dry	FTYROW		
248	04/16/19	Tuesday	17:09	0	0	1-None		\$4,200	Side-Swipe		Short	No	Day	Dry	Improper Lane Change		
249	04/22/19	Monday	11:54	0	0	1-None		\$50	Side-Swipe		Long	No	Day	Dry	Improper Lane Change		
250	05/07/19	Tuesday	17:57	0	2	2-Possible		\$5,000	Angle		Long	No	Day	Dry	Disregarded Traffic Control		
251	05/09/19	Thursday	17:35	0	1	2-Possible		\$1,000	Angle		Long	No	Day	Dry	FTYROW		
252	05/15/19	Wednesday	16:55	0	1	2-Possible		\$500	Bicycle		Long	No	Day	Dry	FTYROW		
253	05/15/19	Wednesday	17:08	0	1	2-Possible		\$500	Angle		Long	No	Day	Dry	FTYROW		
254	05/23/19	Thursday	17:58	0	3	2-Possible		\$4,500	Rear-End		Long	No	Day	Dry	Careless Driving		
255	05/27/19	Monday	19:50	0	0	1-None		\$1,000	Side-Swipe		Short	No	Day	Dry	Improper Lane Change		
256	06/10/19	Monday	15:10	0	0	1-None		\$2,500	Angle		Long	No	Day	Wet	FTYROW		
257	06/27/19	Thursday	11:49	0	0	1-None		\$100	Rear-End		Short	No	Day	Dry	Careless Driving		
258	07/02/19	Tuesday	16:47	0	0	1-None		\$500	Side-Swipe		Short	No	Day	Dry	Improper Lane Change		
259	07/08/19	Monday	8:51	0	0	1-None		\$500	Side-Swipe		Short	No	Day	Dry	Improper Lane Change		
260	07/15/19	Monday	15:22	0	1	2-Possible		\$2,000	Side-Swipe		Long	No	Day	Dry	Improper Lane Change		
261	07/20/19	Saturday	13:00	0	0	1-None		\$13,000	Rear-End		Long	No	Day	Dry	Careless Driving		
262	07/21/19	Sunday	10:55	0	1	2-Possible		\$1,500	Left-Turn		Long	No	Day	Dry	FTYROW		
263	07/29/19	Monday	19:24	0	1	2-Possible		\$2,050	Rear-End		Long	No	Day	Dry	Careless Driving		
264	08/08/19	Thursday	16:17	0	0	1-None		\$400	Side-Swipe		Short	No	Day	Dry	Improper Lane Change		
265	08/21/19	Wednesday	9:48	0	1	4-Incapacitating		\$1,300	Pedestrian		Long	No	Day	Dry	Ped-FTYROW		
266	09/12/19	Thursday	17:50	0	1	2-Possible		\$4,800	Rear-End		Long	No	Day	Dry	Careless Driving		
267	10/01/19	Tuesday	21:27	0	0	1-None		\$1,500	Side-Swipe		Long	No	Night	Dry	Improper Lane Change		
268	10/04/19	Friday	16:00	0	1	2-Possible		\$1,000	Angle		Long	No	Day	Dry	FTYROW		
269	10/08/19	Tuesday	6:49	0	2	2-Possible		\$6,000	Rear-End		Long	No	Day	Dry	Careless Driving		
270	10/17/19	Thursday	8:50	0	0	1-None		\$600	Rear-End		Short	No	Day	Dry	Careless Driving		
271	11/06/19	Wednesday	11:05	0	0	1-None		\$2,000	Side-Swipe		Short	No	Day	Dry	Improper Lane Change		
272	11/13/19	Wednesday	8:00	0	0	1-None		\$600	Rear-End		Short	No	Day	Dry	Careless Driving		
273	11/13/19	Wednesday	20:55	0	1	3-Non-Incapacitating		\$550	Bicycle		Long	No	Night	Dry	Bike-FTYROW		
274	11/22/19	Friday	15:36	0	0	1-None		\$2,400	Angle		Long	No	Day	Dry	FTYROW		
275	12/25/19	Wednesday	21:54	0	1	3-Non-Incapacitating		\$500	Pedestrian		Long	No	Night	Dry	Ped-FTYROW		
276	12/29/19	Sunday	11:00	0	0	1-None		\$6,500	Side-Swipe		Long	No	Day	Dry	Improper Lane Change		
TOTAL						1	124		\$945,020								
TOTAL NO.	Injury Severity				Angle	Backed-Into	Off-Road	Fixed-Object	Side-Swipe	Rear-End	Pedestrian	Bicycle	Other	Left-Turn	Right-Turn	Rollover	Head-on
	Property Damage Only	Injury	Fatality														
276	188		87	1	53	3	1	5	74	95	10	7	1	13	8	4	2
Percent	68%		32%	0%	19%	1%	0%	2%	27%	34%	4%	3%	0%	5%	3%	1%	1%
CONTRIB-CAUSE	Time of Day		Pavement Cond.		DUI	Improper Lane Change	Disregarded Traffic Control	Careless Driving	Bike-FTYROW	Ped-FTYROW	FTYROW	Reckless Driving	Lost Control	Mechanical	Improper Backing	Improper Turn	
	Day	Night	Dry	Wet													
Total	219	57	245	31	2	59	6	108	1	7	77	4	3	1	3	5	
Percent	79%	21%	89%	11%	1%	21%	2%	39%	0%	3%	28%	1%	1%	0%	1%	2%	





MATCHLINE A







MATCHLINE B



SYMBOLS:		ALL OTHER COLLISION	ANGLE COLLISION	REAR END COLLISION
○ PERSONAL INJURY	⊗ FATALITY	↔ BACKED INTO COLLISION	↔ LEFT TURN COLLISION	↔ HEAD-ON COLLISION
⊙ LONG FORM	⦿ SHORT FORM	↔ PEDESTRIAN COLLISION	↔ SIDE SWIPE COLLISION	⊗ FIXED-OBJECT COLLISION
		↔ BICYCLE COLLISION	↔ RIGHT TURN COLLISION	↔ OVERTURNED VEHICLE
				↔ OFFROAD COLLISION

Traffic Engineering Data Solutions, Inc.  
80 Spring Vista Drive Phone: 386.753.0558  
DeBary, FL 32713 Fax: 386.753.0778

STATE OF FLORIDA  
DEPARTMENT OF TRANSPORTATION

COLLISION DIAGRAM  
(1/1/13 TO 12/31/19)  
PAGE 3 OF 3

PAGE  
NO.



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**APPENDIX D**

**COST ESTIMATES**

**ENGINEER'S OPINION OF PROBABLE COSTS**  
**Short-Term Improvements - S.R. 424 from S.R. 423 to S.R. 434**

PAY ITEM	PAY ITEM DESCRIPTION	UNITS	QUANTITY	UNIT PRICE	TOTAL
0104 18	INLET PROTECTION SYSTEM	EA	4	\$ 116.81	\$467.24
0327 70 1	MILLING EXISTING ASPHALT PAVEMENT, 1" AVG DEPTH	SY	163	\$ 1.85	\$301.55
0337 7 82	ASPHALT CONCRETE FRICTION COURSE,TRAFFIC C, FC-9.5, PG 76-22	TN	9.0	\$ 128.90	\$1,160.10
0520 2 2	CONCRETE CURB, TYPE B	LF	260	\$ 25.15	\$6,539.00
0522 2	CONCRETE SIDEWALK AND DRIVEWAYS, 6" THICK	SY	9	\$ 58.08	\$522.72
0570 1 2	PERFORMANCE TURF, SOD	SY	120	\$ 2.69	\$322.80
ROADWAY SUBTOTAL					\$9,313.41
0700 1 11	SINGLE POST SIGN, F&I GROUND MOUNT, UP TO 12 SF	AS	4	\$ 350.61	\$1,402.44
SIGNING SUBTOTAL					\$1,402.44
0711 11125	THERMOPLASTIC, STANDARD, WHITE, SOLID, 24" FOR STOP LINE AND CROSSWALK	LF	910.0	\$ 4.61	\$4,195.10
0711 11141	THERMOPLASTIC, STANDARD, WHITE, 2-4 DOTTED GUIDELINE/ 6-10 GAP EXTENSION, 6"	GM	0.1	\$ 1,958.61	\$195.86
0711 11123	THERMOPLASTIC, STANDARD, WHITE, SOLID, 12" FOR CROSSWALK AND ROUNDABOUT	LF	920.0	\$ 2.41	\$2,217.20
0711 12170	THERMOPLASTIC, REFURBISH, WHITE, ARROWS	EA	26.0	\$ 78.50	\$2,041.00
0711 11224	THERMOPLASTIC, STANDARD, YELLOW, SOLID, 18" FOR DIAGONAL OR CHEVRON	LF	140.0	\$ 3.55	\$497.00
0711 15201	THERMOPLASTIC, STANDARD-OPEN GRADED ASPHALT SURFACES, YELLOW, SOLID, 6"	GM	0.2	\$ 4,515.33	\$767.61
0711 17 1	THERMOPLASTIC, REMOVE EXISTING THERMOPLASTIC PAVEMENT MARKINGS- SURFACE TO REMAIN	SF	2340.0	\$ 1.04	\$2,433.60
SIGNING & STRIPING SUBTOTAL					\$12,347.37
SUBTOTAL					\$23,063.22
0102 1	MAINTENANCE OF TRAFFIC (10%)				\$2,306.32
0101 1	MOBILIZATION (10%)				\$2,536.95
	SUBTOTAL				\$27,906.49
	PROJECT UNKNOWN (10%)				\$2,790.65
	SUBTOTAL				\$30,697.14
	CONTINGENCY (5%, max \$50,000)				\$1,534.86
	CONSTRUCTION TOTAL				\$32,232.00
	ENGINEERING (50%)				\$16,116.00
	CEI (21.9%)				\$5,050.84
	RIGHT-OF-WAY ACQUISITION				\$0.00
PROJECT TOTAL					\$53,398.84



**ENGINEER'S OPINION OF PROBABLE COSTS**  
**Mid Term Traffic Signal Alternative - S.R. 424 from S.R. 423 to S.R. 434**

PAY ITEM	PAY ITEM DESCRIPTION	UNITS	QUANTITY	UNIT PRICE	TOTAL
0110 1 1	CLEARING & GRUBBING	AC	0.02	\$ 20,015.84	\$400.32
0110 4 10	REMOVAL OF EXISTING CONCRETE	SY	2	\$ 18.82	\$37.64
0104 18	INLET PROTECTION SYSTEM	EA	2	\$ 116.81	\$233.62
0527 2	DETECTABLE WARNINGS	SF	16	\$ 29.71	\$475.36
0570 1 2	PERFORMANCE TURF, SOD	SY	100	\$ 2.69	\$269.00
ROADWAY SUBTOTAL				\$1,415.94	
0630 2 11	CONDUIT, FURNISH & INSTALL, OPEN TRENCH	LF	200	\$ 9.41	\$1,882.00
0630 2 12	CONDUIT, FURNISH & INSTALL, DIRECTIONAL BORE	LF	300	\$ 22.52	\$6,756.00
0632 7 1	SIGNAL CABLE- NEW OR RECONSTRUCTED INTERSECTION, FURNISH & INSTALL	PI	1	\$ 6,155.41	\$6,155.41
0635 2 11	PULL & SPLICE BOX, F&I, 13" x 24" COVER SIZE	EA	12	\$ 759.96	\$9,119.52
0639 1122	ELECTRICAL POWER SERVICE, F&I, UNDERGROUND, METER PURCHASED BY CONTRACTOR	AS	1	\$ 3,511.72	\$3,511.72
0646 1 11	ALUMINUM SIGNALS POLE, PEDESTAL	EA	6	\$ 1,601.65	\$9,609.90
0649 21 5	STEEL MAST ARM ASSEMBLY, FURNISH AND INSTALL, DOUBLE ARM 40'-40'	EA	2	\$ 62,629.49	\$125,258.98
0650 1 14	VEHICULAR TRAFFIC SIGNAL, FURNISH & INSTALL ALUMINUM, 3 SECTION, 1 WAY	AS	8	\$ 1,034.17	\$8,273.36
0650 1 19	VEHICULAR TRAFFIC SIGNAL, FURNISH & INSTALL ALUMINUM, 5 SECTION CLUSTER, 1 WAY	AS	2	\$ 1,650.11	\$3,300.22
0653 1 11	PEDESTRIAN SIGNAL, FURNISH & INSTALL LED COUNTDOWN, 1 WAY	AS	6	\$ 886.28	\$4,117.68
0660 4 11	VEHICLE DETECTION SYSTEM- VIDEO, FURNISH & INSTALL CABINET EQUIPMENT	EA	1	\$ 7,224.68	\$7,224.68
0660 4 12	VEHICLE DETECTION SYSTEM- VIDEO, FURNISH & INSTALL ABOVE GROUND EQUIPMENT	EA	8	\$ 5,093.52	\$40,748.16
0663 1111	SIGNAL PRIORITY AND PREEMPTION SYSTEM, F&I, OPTICAL, CABINET ELECTRONICS	EA	1	\$ 5,395.90	\$5,395.90
0663 1112	SIGNAL PRIORITY AND PREEMPTION SYSTEM, F&I, OPTICAL, DETECTOR	EA	4	\$ 2,320.78	\$9,283.12
0665 1 11	PEDESTRIAN DETECTOR, FURNISH & INSTALL, STANDARD	EA	6	\$ 306.84	\$1,841.04
0670 5111	TRAFFIC CONTROLLER ASSEMBLY, F&I, NEMA, 1 PREEMPTION	AS	1	\$ 28,839.54	\$28,839.54
SIGNAL SUBTOTAL				\$271,317.23	
0630 2 11	CONDUIT, FURNISH & INSTALL, OPEN TRENCH	LF	200	\$ 9.41	\$1,882.00
0630 2 12	CONDUIT, FURNISH & INSTALL, DIRECTIONAL BORE	LF	300	\$ 22.52	\$6,756.00
0635 2 11	PULL & SPLICE BOX, F&I, 13" x 24" COVER SIZE	EA	10	\$ 759.96	\$7,599.60
0639 1112	ELECTRICAL POWER SERVICE, F&I, OVERHEAD METER PURCHASED BY CONTRACTOR FROM POWER COMPANY	AS	1	\$ 3,290.95	\$3,290.95
0639 2 1	ELECTRICAL SERVICE WIRE, FURNISH & INSTALL	LF	50	\$ 5.65	\$282.50
0641 2 12	PRESTRESSED CONCRETE POLE, F&I, TYPE P-II SERVICE POLE	EA	1	\$ 1,567.70	\$1,567.70
0715 1 13	LIGHTING CONDUCTORS, F&I, INSULATED, NO 4 TO NO 2	LF	1,800	\$ 2.39	\$4,302.00
0715 4 12	LIGHT POLE COMPLETE, FURNISH & INSTALL STANDARD POLE STANDARD FOUNDATION, 35' MOUNTING HEIGHT	EA	5	\$ 6,553.85	\$32,769.25
0715 5 31	LUMINAIRE & BRACKET ARM- ALUMINUM, FURNISH & INSTALL NEW LUMINAIRE AND ARM ON NEW/EXISTING POLE	EA	2	\$ 1,821.90	\$3,643.80
0715 7 11	LOAD CENTER, F&I, SECONDARY VOLTAGE	EA	1	\$ 15,395.74	\$15,395.74
0715500 1	POLE CABLE DISTRIBUTION SYSTEM, FURNISH AND INSTALL, CONVENTIONAL	EA	7	\$ 611.98	\$4,283.86
LIGHTING SUBTOTAL				\$81,773.40	
0700 1 11	SINGLE POST SIGN, F&I GROUND MOUNT, UP TO 12 SF	AS	2	\$ 350.61	\$701.22
0700 1 60	SINGLE POST SIGN, REMOVE	AS	2	\$ 33.55	\$67.10
0700 5 22	INTERNALLY ILLUMINATED SIGN, FURNISH & INSTALL, OVERHEAD MOUNT, 12-18 SF	EA	4	\$ 3,993.45	\$15,973.80
SIGNING SUBTOTAL				\$16,742.12	
0711 11123	THERMOPLASTIC, STANDARD, WHITE, SOLID, 12" FOR CROSSWALK AND ROUNDABOUT	LF	130	\$ 2.41	\$313.30
0711 11125	THERMOPLASTIC, STANDARD, WHITE, SOLID, 24" FOR STOP LINE AND CROSSWALK	LF	185	\$ 4.61	\$852.85
0711 11170	THERMOPLASTIC, STANDARD, WHITE, ARROW	EA	2	\$ 61.98	\$123.96
0711 16101	THERMOPLASTIC, STANDARD-OTHER SURFACES, WHITE, SOLID, 6"	GM	0.06	\$ 4,082.95	\$244.98
0711 16201	THERMOPLASTIC, STANDARD-OTHER SURFACES, YELLOW, SOLID, 6"	GM	0.092	\$ 4,129.88	\$379.95
0711 17 1	THERMOPLASTIC, REMOVE EXISTING THERMOPLASTIC PAVEMENT MARKINGS- SURFACE TO REMAIN	SF	1,500	\$ 1.04	\$1,560.00
SIGNING & STRIPING SUBTOTAL				\$3,475.04	
SUBTOTAL					\$374,723.72
0102 1	MAINTENANCE OF TRAFFIC (10%)				\$37,472.37
0101 1	MOBILIZATION (10%)				\$41,219.61
	SUBTOTAL				\$453,415.70
	PROJECT UNKNOWNNS (10%)				\$45,341.57
	SUBTOTAL				\$498,757.27
	CONTINGENCY (5%, max \$50,000)				\$24,937.86
	CONSTRUCTION TOTAL				\$523,695.14
	ENGINEERING (50%)				\$261,847.57
	CEI (13.1%)				\$49,088.81
	RIGHT-OF-WAY ACQUISITION				\$0.00
PROJECT TOTAL					\$834,631.52

**ENGINEER'S OPINION OF PROBABLE COSTS**  
**Long Term Improvement: Continuous Lighting - S.R. 424 from S.R. 423 to S.R. 434**

PAY ITEM	PAY ITEM DESCRIPTION	UNITS	QUANTITY	UNIT PRICE	TOTAL
0630 2 11	CONDUIT, FURNISH & INSTALL, OPEN TRENCH	LF	6,800	\$ 9.41	\$63,988.00
0630 2 12	CONDUIT, FURNISH & INSTALL, DIRECTIONAL BORE	LF	2,000	\$ 22.52	\$45,040.00
0635 2 11	PULL & SPLICE BOX, F&I, 13" x 24" COVER SIZE	EA	57	\$ 759.96	\$43,317.72
0639 1112	ELECTRICAL POWER SERVICE, F&I, OVERHEAD METER PURCHASED BY CONTRACTOR FROM POWER COMPANY	AS	1	\$ 3,290.95	\$3,290.95
0639 2 1	ELECTRICAL SERVICE WIRE, FURNISH & INSTALL	LF	50	\$ 5.65	\$282.50
0641 2 12	PRESTRESSED CONCRETE POLE, F&I, TYPE P-II SERVICE POLE	EA	1	\$ 1,567.70	\$1,567.70
0715 1 13	LIGHTING CONDUCTORS, F&I, INSULATED, NO 4 TO NO 2	LF	25,700	\$ 2.39	\$61,423.00
0715 4 12	LIGHT POLE COMPLETE, FURNISH & INSTALL STANDARD POLE STANDARD FOUNDATION, 35' MOUNTING HEIGHT	EA	48	\$ 6,553.85	\$314,584.80
0715 7 11	LOAD CENTER, F&I, SECONDARY VOLTAGE	EA	2	\$ 15,395.74	\$30,791.48
0715500 1	POLE CABLE DISTRIBUTION SYSTEM, FURNISH AND INSTALL, CONVENTIONAL	EA	48	\$ 611.98	\$29,375.04
LIGHTING SUBTOTAL					\$593,661.19
SUBTOTAL					\$593,661.19
0102 1	MAINTENANCE OF TRAFFIC (10%)				\$59,366.12
0101 1	MOBILIZATION (10%)				\$65,302.73
	SUBTOTAL				\$718,330.04
	PROJECT UNKNOWNNS (10%)				\$71,833.00
	SUBTOTAL				\$790,163.04
	CONTINGENCY (5%, max \$50,000)				\$39,508.15
	CONSTRUCTION TOTAL				\$829,671.20
	ENGINEERING (50%)				\$414,835.60
	CEI (13.1%)				\$77,769.62
	RIGHT-OF-WAY ACQUISITION				\$0.00
PROJECT TOTAL					\$1,322,276.41

**ENGINEER'S OPINION OF PROBABLE COSTS**  
**Long Term Median Alternative - S.R. 424 from S.R. 423 to S.R. 434**

PAY ITEM	PAY ITEM DESCRIPTION	UNITS	QUANTITY	UNIT PRICE	TOTAL
0104 10 3	SEDIMENT BARRIER	LF	6,400.00	\$ 1.51	\$9,664.00
0104 18	INLET PROTECTION SYSTEM	EA	44.00	\$ 116.81	\$5,139.64
0110 1 1	CLEARING & GRUBBING	AC	2.37	\$ 20,015.84	\$47,385.53
0110 4 10	REMOVAL OF EXISTING CONCRETE	SY	5,444	\$ 18.82	\$102,464.44
0104 18	INLET PROTECTION SYSTEM	EA	44	\$ 116.81	\$5,139.64
0120 1	REGULAR EXCAVATION	CY	1,003	\$ 6.90	\$6,919.17
0160 4	TYPE B STABILIZATION	SY	6,017	\$ 6.56	\$39,469.33
285709	OPTIONAL BASE, BASE GROUP 09	SY	6,017	\$ 18.95	\$114,015.83
0327 70 6	MILLING EXISTING ASPHALT PAVEMENT, 1 1/2" AVG DEPTH	SY	23,591	\$ 1.81	\$42,699.91
0334 1 53	SUPERPAVE ASPHALTIC CONCRETE, TRAFFIC C, PG76-22	TN	661.8	\$ 100.38	\$66,434.83
0337 7 83	ASPHALT CONCRETE FRICTION COURSE, TRAFFIC C, FC-12.5, PG 76-22	TN	2,443	\$ 113.96	\$278,363.44
0425 1351	INLETS, CURB, TYPE P-5, <10'	EA	20	\$ 5,156.24	\$103,124.80
0425 1361	INLETS, CURB, TYPE P-6, <10'	EA	2	\$ 5,769.15	\$11,538.30
0425 2 43	MANHOLES, P-7, PARTIAL	EA	18	\$ 2,659.46	\$47,870.28
430174118	PIPE CULVERT, OPTIONAL MATERIAL, ROUND, 18"SD	LF	30	\$ 82.91	\$2,487.30
0520 1 10	CONCRETE CURB & GUTTER, TYPE F	LF	5,911	\$ 25.66	\$151,676.26
0520 2 2	CONCRETE CURB, TYPE B	LF	1,934	\$ 25.15	\$48,640.10
0520 5 11	TRAFFIC SEPARATOR CONCRETE-TYPE I, 4' WIDE	LF	2,065	\$ 51.90	\$107,173.50
0520 70	CONCRETE TRAFFIC SEPARATOR, SPECIAL- VARIABLE WIDTH	SY	744	\$ 90.23	\$67,131.12
0522 1	CONCRETE SIDEWALK AND DRIVEWAYS, 4" THICK	SY	3,740	\$ 43.19	\$161,511.40
0522 2	CONCRETE SIDEWALK AND DRIVEWAYS, 6" THICK	SY	258	\$ 58.08	\$15,004.00
0527 2	DETECTABLE WARNINGS	SF	270	\$ 29.71	\$8,021.70
0570 1 2	PERFORMANCE TURF, SOD	SY	1,140	\$ 2.69	\$3,067.50
ROADWAY SUBTOTAL					\$1,444,942.03
0630 2 11	CONDUIT, FURNISH & INSTALL, OPEN TRENCH	LF	400	\$ 9.41	\$3,764.00
0630 2 12	CONDUIT, FURNISH & INSTALL, DIRECTIONAL BORE	LF	600	\$ 22.52	\$13,512.00
0632 7 4	SIGNAL CABLE, ADJUST	PI	2	\$ 6,200.00	\$12,400.00
0635 2 11	PULL & SPLICE BOX, F&I, 13" x 24" COVER SIZE	EA	12	\$ 759.96	\$9,119.52
0641 2 80	PRESTRESSED CONCRETE POLE, COMPLETE POLE REMOVAL- POLE 30' AND GREATER	EA	1	\$ 5,882.67	\$5,882.67
0646 1 11	ALUMINUM SIGNALS POLE, PEDESTAL	EA	5	\$ 1,601.65	\$8,008.25
0646 1 60	ALUMINUM SIGNALS POLE, REMOVE	EA	2	\$ 282.34	\$564.68
0649 21 6	STEEL MAST ARM ASSEMBLY, FURNISH AND INSTALL, SINGLE ARM 50'	EA	1	\$ 40,657.61	\$40,657.61
0649 21 10	STEEL MAST ARM ASSEMBLY, FURNISH AND INSTALL, SINGLE ARM 60'	EA	1	\$ 45,379.53	\$45,379.53
0649 21 15	STEEL MAST ARM ASSEMBLY, FURNISH AND INSTALL, SINGLE ARM 70'	EA	1	\$ 53,510.36	\$53,510.36
0649 26 5	STEEL MAST ARM ASSEMBLY, REMOVE, DEEP FOUNDATION- BOLT ON ATTACHMENT	EA	3	\$ 11,357.40	\$34,072.20
0650 1 14	VEHICULAR TRAFFIC SIGNAL, FURNISH & INSTALL ALUMINUM, 3 SECTION, 1 WAY	AS	6	\$ 1,034.17	\$6,205.02
0650 1 16	VEHICULAR TRAFFIC SIGNAL, FURNISH & INSTALL ALUMINUM, 4 SECTION, 1 WAY	AS	3	\$ 1,245.62	\$3,736.86
0653 4 11	PEDESTRIAN SIGNAL, FURNISH & INSTALL LED COUNTDOWN, 1 WAY	AS	5	\$ 686.28	\$3,431.40
0660 4 41	VEHICLE DETECTION SYSTEM- VIDEO, RELOCATE CABINET EQUIPMENT	EA	1	\$ 940.75	\$940.75
0660 4 12	VEHICLE DETECTION SYSTEM- VIDEO, FURNISH & INSTALL ABOVE GROUND EQUIPMENT	EA	6	\$ 5,093.52	\$30,561.12
0663 1112	SIGNAL PRIORITY AND PREEMPTION SYSTEM, F&I, OPTICAL, DETECTOR	EA	3	\$ 2,320.78	\$6,962.34
0665 1 11	PEDESTRIAN DETECTOR, FURNISH & INSTALL, STANDARD	EA	5	\$ 306.84	\$1,534.20
SIGNAL SUBTOTAL					\$280,242.51
0715 4 12	LIGHT POLE COMPLETE, FURNISH & INSTALL STANDARD POLE STANDARD FOUNDATION, 35' MOUNTING HEIGHT	EA	40	\$ 6,553.85	\$262,154.00
0715 4 70	LIGHT POLE COMPLETE, REMOVE POLE AND FOUNDATION	EA	40	\$ 634.71	\$25,388.40
LIGHTING SUBTOTAL					\$287,542.40
0700 1 50	SINGLE POST SIGN, RELOCATE	AS	19	\$ 205.08	\$3,896.52
0700 5 22	INTERNALLY ILLUMINATED SIGN, FURNISH & INSTALL, OVERHEAD MOUNT, 12-18 SF	EA	4	\$ 3,993.45	\$15,973.80
SIGNING SUBTOTAL					\$19,870.32
0711 11123	THERMOPLASTIC, STANDARD, WHITE, SOLID, 12" FOR CROSSWALK AND ROUNDABOUT	LF	130	\$ 2.41	\$313.30
0711 11125	THERMOPLASTIC, STANDARD, WHITE, SOLID, 24" FOR STOP LINE AND CROSSWALK	LF	185	\$ 4.61	\$852.85
0711 11141	THERMOPLASTIC, STANDARD, WHITE, 2-4 DOTTED GUIDELINE/ 6-10 GAP EXTENSION, 6"	GM	0.525	\$ 1,958.61	\$1,027.53
0711 11241	THERMOPLASTIC, STANDARD, YELLOW, 2-4 DOTTED GUIDE LINE /6-10 DOTTED EXTENSION LINE, 6"	GM	0.032	\$ 1,988.21	\$64.01
0711 11170	THERMOPLASTIC, STANDARD, WHITE, ARROW	EA	20	\$ 61.98	\$1,239.60
0711 16131	THERMOPLASTIC, STANDARD-OTHER SURFACES, WHITE, SKIP, 6", 10-30 SKIP OR 3-9 LANE DROP	GM	1.143	\$ 1,528.78	\$1,747.67
0711 16101	THERMOPLASTIC, STANDARD-OTHER SURFACES, WHITE, SOLID, 6"	GM	2.495	\$ 4,082.95	\$10,186.50
0711 16201	THERMOPLASTIC, STANDARD-OTHER SURFACES, YELLOW, SOLID, 6"	GM	0.698	\$ 4,129.88	\$2,882.31
0711 17 1	THERMOPLASTIC, REMOVE EXISTING THERMOPLASTIC PAVEMENT MARKINGS- SURFACE TO REMAIN	SF	200	\$ 1.04	\$208.00
SIGNING & STRIPING SUBTOTAL					\$18,521.77
SUBTOTAL					\$2,051,119.03
0102 1	MAINTENANCE OF TRAFFIC (10%)				\$205,111.90
0101 1	MOBILIZATION (10%)				\$225,623.09
SUBTOTAL					\$2,481,854.03
PROJECT UNKNOWN (10%)					\$248,185.40
SUBTOTAL					\$2,730,039.43
CONTINGENCY (5%, max \$50,000)					\$50,000.00
CONSTRUCTION TOTAL					\$2,780,039.43
ENGINEERING (50%)					\$1,390,019.72
CEI (10.32%)					\$268,696.59
RIGHT-OF-WAY ACQUISITION					\$11,568,000.00
PROJECT TOTAL					\$16,006,755.75



<b>FDOT DISTRICT FIVE RIGHT OF WAY COST ESTIMATE</b>			
<b>CONSIDERED EXEMPT FROM PUBLIC DISCLOSURE UNDER F. S. 119.0711 AND/OR F. S. 337.168</b> <b>*** THIS DOCUMENT IS A BUDGETARY TOOL AND NOT AN ESTIMATE OF VALUE ***</b>			
<b>FM #:</b> 2379951 CSC <b>County:</b> Orange <b>State Rd.</b> 424 Edgewater DR <b>From:</b> SR423 Lee Road		<b>Estimate Reference:</b> <b>Special</b> <b>DATE:</b> 7/8/21 <b>ESTIMATE TYPE:</b> Special <b>TO:</b> SR434 Forest City Road	
<b>NUMBER OF PARCELS</b>	<b>Business</b> 14 <b>Residential</b> 0 <b>Unimproved</b> 0 <b>Total</b> 14	<b>Business</b> 1 <b>Residential</b> 0 <b>Special</b> 2 <b>Total</b> 3	<b>NUMBER OF RELOCATEES</b>
<b>R/W OPERATIONS (PHASE 4B)</b>			
1. Appraisal Fees 2. Business Damage CPA Fees 3. Court Reporter And Witness Fees 4. Demolition Contracts 5. Move Cost Estimate Fees 6. Attorney Fees (Outside Counsel) \$6,000 per project 7. Title Search 8. Hazardous Waste Investigations 9. Other - (Including Aerial Photos) 10. Total (Lines 1 through 10)			
11. Direct Labor Costs		<b>R/W SUPPORT COSTS (PHASE 41)</b>	
12. Total Contract Amount		<b>R/W ACQUISITION CONSULTANT COSTS (PHASE 42)</b>	
<b>R/W LAND COSTS (PHASE 43)</b>			
13. Land, Improvements, Severance Damages (excl. billboards) 14. Billboards 15. Subtotal (Line 9 + 10) _____ 16. Admin. Settlements 17. Litigation Awards 18. Business Damages 19. Owner Appraisal Fees 20. Owner CPA Fees 21. Defendant Attorney Fees 22. Other Condemnation Costs 23. Other Costs (With No Factors) 24. Subtotal (Lines 12 through 19) _____ 25. Total (Lines 9 through 20) <b>TOTAL PHASE 43</b> _____			
<b>RELOCATION COSTS (PHASE 45)</b>			
<u>Replacement Housing Costs:</u> 26. Owner 27. Tenant (No entry) <u>Move Costs:</u> 28. Residential 29. Non-Residential 30. Landlord 31. Non-Categorized Relocation and Move Cost Settlements _____ 32. Total (Lines 26 through 31) <b>TOTAL PHASE 45</b> _____			
<b>TOTAL - ALL PHASES</b>			<b>\$11,568,000</b>
Ver. 10.26.20			

**FDOT DISTRICT FIVE R/W COST ESTIMATE**

**CONSIDERED EXEMPT FROM PUBLIC DISCLOSURE UNDER F. S. 119.0711 AND/OR F. S. 337.168 \*\*\* THIS DOCUMENT IS A BUDGETARY TOOL AND NOT AN ESTIMATE OF VALUE \*\*\***

**FM #:** 2379951 CSC **Estimate Reference:** Special

Page 2 of 3

**ESTIMATED BY:** Michael Dollery

**DATE:** 7/8/2021

**REVIEWED BY:** Bill Marchese

**DATE:** 7/12/2021

**ESTIMATE TYPE:** Special

**CONFIDENCE LEVEL**

**The Confidence Level for this Cost Estimate is:**

E - Poor level of confidence – Plans or aerial maps usually lack any identified parcels and have only approximate R/W widths or take areas to work from. Market data and processing time are inadequate to produce a more reliable estimate.

**PROJECT SPECIFIC COMMENTS**

This Special Estimate is in the amount of \$11,568,000. The Cost Estimate Spreadsheet and Right-of-Way Visual (3 Pages) dated 6/14/21 were provided by Traffic Engineering Data Solutions, Inc. on 6/14/21 along with a request for a budget estimate to assist with the on-going Safety Study under the CSC FM2379951 for SR424 Edgewater Drive. A detail right of way map of existing SR424 was not available on the GIS Portal or from Orange County. But based on research of the corridor and after speaking with TEDS this estimate has been performed based on the limited information available and the impacts may be greater than what is shown on the spreadsheet and Right-of-Way Visual submitted. The Orange County Property Appraiser Site, Loop Net and other data was used for this estimate.

Aerial Maps Dated: 6/14/21

Spreadsheet/Requirements Dated: 6/14/21

	\$ Amount	Percentage
Change from Last Est.:	N/A	N/A
Last Estimate:	None	

RWMS Reason for Change:

RWMS Reason for Change:

% of Change

DocuSigned by:

*Kevin Marquez*

Reviewed by:

Project Manager:

Print Name: Kevin Marquez

Date:

7/12/2021 | 4:00 PM EDT

cc: Working File

**THIS DOCUMENT IS NOT AN APPRAISAL**

This estimate is not nor are any components thereof considered an appraisal. This document has been prepared solely for the internal use of the Florida Department of Transportation for budgeting and scheduling purposes. It does not nor is it intended to meet the development and reporting requirements of the Uniform Standards of Professional Appraisal Practice (USPAP) as promulgated by the Appraisal foundation.

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**APPENDIX E**

**NET PRESENT VALUE**



Project Name	SR 424
Project Category	Short-Term Improvements
Current Year	2021
Project Completion	2022
Project Life	20
Project Ends	2041
Discount Rate	0.04

Project Description
Install a Median at the entrance to the Forest City Shopping Plaza
<b>NPV</b>
<b>\$1,180,863</b>

Costs / Benefits			
Year #	Calendar Year	Estimated Cost	Estimated Benefits
0	2021	\$53,399	\$0
1	2022	\$0	\$90,819
2	2023	\$0	\$90,819
3	2024	\$0	\$90,819
4	2025	\$0	\$90,819
5	2026	\$0	\$90,819
6	2027	\$0	\$90,819
7	2028	\$0	\$90,819
8	2029	\$0	\$90,819
9	2030	\$0	\$90,819
10	2031	\$0	\$90,819
11	2032	\$0	\$90,819
12	2033	\$0	\$90,819
13	2034	\$0	\$90,819
14	2035	\$0	\$90,819
15	2036	\$0	\$90,819
16	2037	\$0	\$90,819
17	2038	\$0	\$90,819
18	2039	\$0	\$90,819
19	2040	\$0	\$90,819
20	2041	\$0	\$90,819

Calculation		
Discount Factor	Discounted Cost	Discounted Benefits
1.000	(\$53,399)	\$0
0.962	\$0	\$87,326
0.925	\$0	\$83,967
0.889	\$0	\$80,738
0.855	\$0	\$77,633
0.822	\$0	\$74,647
0.790	\$0	\$71,776
0.760	\$0	\$69,015
0.731	\$0	\$66,361
0.703	\$0	\$63,808
0.676	\$0	\$61,354
0.650	\$0	\$58,994
0.625	\$0	\$56,725
0.601	\$0	\$54,544
0.577	\$0	\$52,446
0.555	\$0	\$50,429
0.534	\$0	\$48,489
0.513	\$0	\$46,624
0.494	\$0	\$44,831
0.475	\$0	\$43,107
0.456	\$0	\$41,449

Project Name	SR 424
Project Category	Mid-Term Improvements
Current Year	2021
Project Completion	2023
Project Life	20
Project Ends	2042
Discount Rate	0.04

Project Description
Install a Traffic Signal at Satel Drive
<b>NPV</b>
<b>\$1,100,915</b>

Costs / Benefits			
Year #	Calendar Year	Estimated Cost	Estimated Benefits
0	2021	\$834,632	\$0
0	2022	\$0	\$0
1	2023	\$0	\$148,118
2	2024	\$0	\$148,118
3	2025	\$0	\$148,118
4	2026	\$0	\$148,118
5	2027	\$0	\$148,118
6	2028	\$0	\$148,118
7	2029	\$0	\$148,118
8	2030	\$0	\$148,118
9	2031	\$0	\$148,118
10	2032	\$0	\$148,118
11	2033	\$0	\$148,118
12	2034	\$0	\$148,118
13	2035	\$0	\$148,118
14	2036	\$0	\$148,118
15	2037	\$0	\$148,118
16	2038	\$0	\$148,118
17	2039	\$0	\$148,118
18	2040	\$0	\$148,118
19	2041	\$0	\$148,118
20	2042	\$0	\$148,118

Calculation		
Discount Factor	Discounted Cost	Discounted Benefits
1.000	(\$834,632)	\$0
0.962	\$0	\$0
0.925	\$0	\$136,943
0.889	\$0	\$131,676
0.855	\$0	\$126,612
0.822	\$0	\$121,742
0.790	\$0	\$117,060
0.760	\$0	\$112,557
0.731	\$0	\$108,228
0.703	\$0	\$104,066
0.676	\$0	\$100,063
0.650	\$0	\$96,214
0.625	\$0	\$92,514
0.601	\$0	\$88,956
0.577	\$0	\$85,534
0.555	\$0	\$82,245
0.534	\$0	\$79,081
0.513	\$0	\$76,040
0.494	\$0	\$73,115
0.475	\$0	\$70,303
0.456	\$0	\$67,599
0.439	\$0	\$64,999

Project Name	S.R. 424 Safety
Project Category	Lighting - Maintenance
Current Year	2021
Project Completion	2022
Project Life	15
Project Ends	2036
Discount Rate	0.04

Project Description
Maintenance cost for 48 Luminaires
<b>NPV - Maintenance</b>
<b>\$80,052</b>

Costs / Benefits			
Year #	Calendar Year	Estimated Cost	Estimated Benefits
0	2021	\$0	\$0
1	2022	\$7,200	\$0
2	2023	\$7,200	\$0
3	2024	\$7,200	\$0
4	2025	\$7,200	\$0
5	2026	\$7,200	\$0
6	2027	\$7,200	\$0
7	2028	\$7,200	\$0
8	2029	\$7,200	\$0
9	2030	\$7,200	\$0
10	2031	\$7,200	\$0
11	2032	\$7,200	\$0
12	2033	\$7,200	\$0
13	2034	\$7,200	\$0
14	2035	\$7,200	\$0
15	2036	\$7,200	\$0

Calculation		
Discount Factor	Discounted Cost	Discounted Benefits
1.000	\$0	\$0
0.962	\$6,923	\$0
0.925	\$6,657	\$0
0.889	\$6,401	\$0
0.855	\$6,155	\$0
0.822	\$5,918	\$0
0.790	\$5,690	\$0
0.760	\$5,471	\$0
0.731	\$5,261	\$0
0.703	\$5,059	\$0
0.676	\$4,864	\$0
0.650	\$4,677	\$0
0.625	\$4,497	\$0
0.601	\$4,324	\$0
0.577	\$4,158	\$0
0.555	\$3,998	\$0

Project Name	S.R. 424 Safety
Project Category	Lighting - Maintenance
Current Year	2021
Project Completion	2022
Project Life	15
Project Ends	2036
Discount Rate	0.04

Project Description
Electrical Cost for 48 Luminaires
<b>NPV - Electricity</b>
<b>\$31,843</b>

Costs / Benefits			
Year #	Calendar Year	Estimated Cost	Estimated Benefits
0	2021	\$0	\$0
1	2022	\$2,864	\$0
2	2023	\$2,864	\$0
3	2024	\$2,864	\$0
4	2025	\$2,864	\$0
5	2026	\$2,864	\$0
6	2027	\$2,864	\$0
7	2028	\$2,864	\$0
8	2029	\$2,864	\$0
9	2030	\$2,864	\$0
10	2031	\$2,864	\$0
11	2032	\$2,864	\$0
12	2033	\$2,864	\$0
13	2034	\$2,864	\$0
14	2035	\$2,864	\$0
15	2036	\$2,864	\$0

Calculation		
Discount Factor	Discounted Cost	Discounted Benefits
1.000	\$0	\$0
0.962	\$2,754	\$0
0.925	\$2,648	\$0
0.889	\$2,546	\$0
0.855	\$2,448	\$0
0.822	\$2,354	\$0
0.790	\$2,263	\$0
0.760	\$2,176	\$0
0.731	\$2,093	\$0
0.703	\$2,012	\$0
0.676	\$1,935	\$0
0.650	\$1,860	\$0
0.625	\$1,789	\$0
0.601	\$1,720	\$0
0.577	\$1,654	\$0
0.555	\$1,590	\$0





**Table 5.6.A. Average Price of Electricity to Ultimate Customers by End-Use Sector,**

by State, January 2021 and 2020 (Cents per Kilowatthour)

	Residential		Commercial		Industrial		Transportation		All Sectors	
Census Division and State	January 2021	January 2020	January 2021	January 2020	January 2021	January 2020	January 2021	January 2020	January 2021	January 2020
<b>New England</b>	<b>21.00</b>	<b>21.60</b>	<b>15.95</b>	<b>16.26</b>	<b>13.09</b>	<b>12.47</b>	<b>8.48</b>	<b>11.88</b>	<b>17.91</b>	<b>18.09</b>
Connecticut	21.29	22.10	16.37	17.01	13.25	14.02	13.92	16.81	18.63	19.24
Maine	16.50	16.81	12.75	12.70	9.58	9.15	--	--	13.86	13.86
Massachusetts	22.32	22.90	16.27	16.47	14.30	13.07	6.01	9.18	18.61	18.62
New Hampshire	18.93	19.90	15.34	16.03	13.92	13.19	--	--	16.88	17.35
Rhode Island	23.41	24.23	16.67	17.14	16.33	15.56	21.96	16.90	19.74	20.01
Vermont	18.38	19.27	15.91	16.08	11.11	10.77	--	--	15.83	16.04
<b>Middle Atlantic</b>	<b>15.56</b>	<b>15.41</b>	<b>12.10</b>	<b>11.59</b>	<b>6.31</b>	<b>6.40</b>	<b>11.03</b>	<b>10.97</b>	<b>12.45</b>	<b>12.02</b>
New Jersey	16.18	15.43	12.35	11.66	10.59	9.76	9.50	8.37	13.98	12.93
New York	18.27	17.55	14.09	13.11	5.56	5.40	11.63	11.87	14.70	13.85
Pennsylvania	13.09	13.63	8.26	8.59	6.10	6.28	8.72	7.88	9.72	9.87
<b>East North Central</b>	<b>13.17</b>	<b>13.00</b>	<b>10.08</b>	<b>9.88</b>	<b>6.59</b>	<b>6.54</b>	<b>6.25</b>	<b>7.05</b>	<b>10.15</b>	<b>9.94</b>
Illinois	12.30	12.63	8.96	8.69	6.84	6.50	6.05	6.96	9.53	9.37
Indiana	12.25	11.91	11.13	10.74	6.44	6.59	8.83	10.10	9.64	9.52
Michigan	16.92	15.74	11.96	11.28	7.25	7.12	11.38	10.70	12.62	11.69
Ohio	11.83	11.72	9.05	9.15	5.93	5.73	6.55	6.15	9.21	9.08
Wisconsin	14.05	14.31	10.35	10.65	7.12	7.44	15.04	13.97	10.70	10.94
<b>West North Central</b>	<b>10.29</b>	<b>10.25</b>	<b>10.21</b>	<b>10.20</b>	<b>7.23</b>	<b>7.20</b>	<b>7.29</b>	<b>7.20</b>	<b>7.26</b>	<b>7.26</b>
<b>Census Division</b>	<b>January</b>	<b>January</b>	<b>January</b>	<b>January</b>	<b>January</b>	<b>January</b>	<b>January</b>	<b>January</b>	<b>January</b>	<b>January</b>
<b>West North Central</b>	<b>2021</b>	<b>2020</b>	<b>2021</b>	<b>2020</b>	<b>2021</b>	<b>2020</b>	<b>2021</b>	<b>2020</b>	<b>2021</b>	<b>2020</b>

Central										
Iowa	10.87	11.72	8.97	9.47	5.56	6.04	--	--	8.04	8.76
Kansas	11.87	11.82	9.82	9.72	6.91	6.79	--	--	9.76	9.64
Minnesota	12.48	12.49	9.69	9.66	7.32	7.28	9.05	9.10	10.09	10.03
Missouri	9.38	9.52	7.69	7.94	6.10	6.02	6.19	6.19	8.32	8.47
Nebraska	9.41	9.59	8.44	8.52	7.09	6.93	--	--	8.37	8.42
North Dakota	9.44	9.01	8.63	8.27	6.63	7.87	--	--	7.94	8.32
South Dakota	10.99	10.67	9.14	9.03	7.70	7.50	--	--	9.65	9.46
South Atlantic	11.36	11.62	8.96	9.10	6.00	5.98	7.91	7.64	9.67	9.74
Delaware	11.77	12.17	8.99	9.25	7.08	6.72	--	--	10.07	10.11
District of Columbia	12.26	12.38	11.66	11.94	7.46	8.13	9.67	9.73	11.68	11.91
Florida	11.65	11.72	9.35	9.26	7.44	7.36	8.12	7.85	10.48	10.37
Georgia	10.94	10.87	9.96	9.45	5.55	5.00	5.13	4.44	9.46	9.04
Maryland	12.61	13.42	9.91	10.00	8.09	7.96	7.61	7.18	11.24	11.54
North Carolina	10.60	11.01	7.90	8.50	5.75	5.94	7.42	7.73	8.88	9.21
South Carolina	11.99	12.26	10.03	9.97	5.61	5.63	--	--	9.48	9.53
Virginia	11.05	11.68	7.36	7.89	6.05	6.62	8.37	8.10	8.91	9.42
West Virginia	11.20	10.89	9.02	8.86	5.86	5.96	--	--	8.73	8.43
East South Central	10.97	11.26	10.70	10.78	5.49	5.49	--	--	9.29	9.33
Alabama	12.38	12.38	11.77	11.59	5.83	5.61	--	--	9.94	9.59
Kentucky	10.46	10.62	10.11	9.97	5.30	5.07	--	--	8.55	8.47
Mississippi	10.88	11.33	10.70	10.89	5.62	5.83	--	--	9.22	9.29
Tennessee	10.36	10.84	10.37	10.71	5.13	5.57	--	--	9.34	9.79
West South Central	10.69	10.86	7.87	7.70	4.92	4.93	6.81	6.73	8.02	7.96
Census Division	Residential		Commercial		Industrial		Transportation		All Sectors	
and State	January 2021	January 2020	January 2021	January 2020	January 2021	January 2020	January 2021	January 2020	January 2021	January 2020
Louisiana	9.58	9.05	9.49	8.83	5.14	4.74	10.88	9.46	7.80	7.24

Oklahoma	8.92	9.05	7.70	7.11	4.32	4.25	--	--	7.11	6.92
Texas	11.39	11.73	7.58	7.57	4.88	5.13	6.55	6.55	8.22	8.32
<b>Mountain</b>	<b>11.37</b>	<b>11.32</b>	<b>8.92</b>	<b>8.89</b>	<b>5.92</b>	<b>5.66</b>	<b>9.34</b>	<b>8.94</b>	<b>9.00</b>	<b>8.80</b>
Arizona	11.70	11.68	9.34	9.32	5.63	5.35	8.11	8.28	9.67	9.56
Colorado	12.14	11.74	9.71	9.39	7.43	6.82	8.76	8.32	10.03	9.49
Idaho	10.05	9.91	7.60	7.26	5.41	5.21	--	--	8.13	7.90
Montana	10.72	11.15	10.39	10.17	5.27	5.13	--	--	9.14	9.30
Nevada	11.53	11.98	7.23	7.89	4.86	4.86	10.39	7.76	7.90	8.08
New Mexico	12.53	12.08	9.79	9.49	5.33	5.01	--	--	9.05	8.63
Utah	10.04	10.09	7.60	7.76	5.64	5.44	10.62	10.63	7.84	7.77
Wyoming	10.47	10.49	9.43	9.15	6.76	6.50	--	--	8.20	7.89
<b>Pacific Contiguous</b>	<b>16.43</b>	<b>15.56</b>	<b>14.08</b>	<b>13.35</b>	<b>9.45</b>	<b>8.77</b>	<b>9.92</b>	<b>8.70</b>	<b>14.21</b>	<b>13.38</b>
California	21.43	19.93	16.54	15.40	13.00	11.87	9.92	8.55	17.92	16.53
Oregon	11.01	10.69	8.93	8.77	5.76	5.91	9.76	9.09	9.06	9.02
Washington	9.76	9.43	9.01	8.78	5.36	4.70	9.94	9.56	8.62	8.16
<b>Pacific Noncontiguous</b>	<b>26.40</b>	<b>27.22</b>	<b>23.72</b>	<b>24.85</b>	<b>22.43</b>	<b>23.75</b>	<b>--</b>	<b>--</b>	<b>24.30</b>	<b>25.34</b>
Alaska	21.32	22.59	18.34	19.93	15.44	17.99	--	--	18.89	20.60
Hawaii	30.55	31.70	29.30	30.12	25.29	25.99	--	--	28.28	29.03
<b>U.S. Total</b>	<b>12.69</b>	<b>12.79</b>	<b>10.31</b>	<b>10.23</b>	<b>6.35</b>	<b>6.34</b>	<b>9.64</b>	<b>9.67</b>	<b>10.35</b>	<b>10.28</b>

See Technical notes for additional information on the Commercial, Industrial, and Transportation sectors.

Notes: - See Glossary for definitions. - Values are preliminary estimates based on a cutoff model sample.

See Technical Notes for a discussion of the sample design for the Form EIA-826.

Utilities and energy service providers may classify commercial and industrial customers based on either NAICS codes or demands or usage falling within specified limits by rate schedule. Changes from year to year in consumer counts, sales and revenues, particularly involving the commercial and industrial consumer sectors, may result from respondent implementation of changes in the definitions of consumers, and reclassifications.

Totals may not equal sum of components because of independent rounding.

Source: U.S. Energy Information Administration, Form EIA-861M (formerly EIA-826), Monthly Electric Power Industry Report.



Project Name	SR 424
Project Category	Long-Term Improvements
Current Year	2021
Project Completion	2025
Project Life	20
Project Ends	2044
Discount Rate	0.04

Project Description
Install a median/separator throughout the corridor
<b>NPV</b>
<b>\$8,573,027</b>

Costs / Benefits			
Year #	Calendar Year	Estimated Cost	Estimated Benefits
0	2021	\$16,006,756	\$0
0	2022	\$0	\$0
0	2023	\$0	\$0
0	2024	\$0	\$0
1	2025	\$0	\$1,875,828
2	2026	\$0	\$1,875,828
3	2027	\$0	\$1,875,828
4	2028	\$0	\$1,875,828
5	2029	\$0	\$1,875,828
6	2030	\$0	\$1,875,828
7	2031	\$0	\$1,875,828
8	2032	\$0	\$1,875,828
9	2033	\$0	\$1,875,828
10	2034	\$0	\$1,875,828
11	2035	\$0	\$1,875,828
12	2036	\$0	\$1,875,828
13	2037	\$0	\$1,875,828
14	2038	\$0	\$1,875,828
15	2039	\$0	\$1,875,828
16	2040	\$0	\$1,875,828
17	2041	\$0	\$1,875,828
18	2042	\$0	\$1,875,828
19	2043	\$0	\$1,875,828
20	2044	\$0	\$1,875,828

Calculation		
Discount Factor	Discounted Cost	Discounted Benefits
1.000	(\$16,006,756)	\$0
1.000	\$0	\$0
1.000	\$0	\$0
0.962	\$0	\$0
0.925	\$0	\$1,734,309
0.889	\$0	\$1,667,604
0.855	\$0	\$1,603,466
0.822	\$0	\$1,541,794
0.790	\$0	\$1,482,494
0.760	\$0	\$1,425,475
0.731	\$0	\$1,370,649
0.703	\$0	\$1,317,932
0.676	\$0	\$1,267,242
0.650	\$0	\$1,218,502
0.625	\$0	\$1,171,637
0.601	\$0	\$1,126,574
0.577	\$0	\$1,083,244
0.555	\$0	\$1,041,581
0.534	\$0	\$1,001,520
0.513	\$0	\$963,000
0.494	\$0	\$925,962
0.475	\$0	\$890,348
0.475	\$0	\$890,348
0.456	\$0	\$856,103

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## **APPENDIX F**

# **CRASH MODIFICATION FACTORS (CMFs)**



## CMF / CRF Details

CMF ID: 2220

Install raised median

Description:

Prior Condition: *No Prior Condition(s)*

Category: Access management

Study: [Correlating Access Management to Crash Rate, Severity, and Collision Type, Schultz et al., 2008](#)

Star Quality Rating:



[\[View score details\]](#)

### Crash Modification Factor (CMF)

Value:

0.45

Adjusted Standard Error:

Unadjusted Standard Error:

0.125

### Crash Reduction Factor (CRF)

Value:

55.43 (This value indicates a **decrease** in crashes)

Adjusted Standard Error:



<b>Unadjusted Standard Error:</b>	12.51
<b>Applicability</b>	
<b>Crash Type:</b>	Angle
<b>Crash Severity:</b>	All
<b>Roadway Types:</b>	Principal Arterial Other
<b>Number of Lanes:</b>	
<b>Road Division Type:</b>	
<b>Speed Limit:</b>	
<b>Area Type:</b>	Urban
<b>Traffic Volume:</b>	1390 to 51200 <i>Average Daily Traffic (ADT)</i>
<b>Time of Day:</b>	All
<i>If countermeasure is intersection-based</i>	
<b>Intersection Type:</b>	
<b>Intersection Geometry:</b>	
<b>Traffic Control:</b>	
<b>Major Road Traffic Volume:</b>	
<b>Minor Road Traffic Volume:</b>	
<b>Development Details</b>	
<b>Date Range of Data Used:</b>	2002 to 2004
<b>Municipality:</b>	
<b>State:</b>	UT

<b>Country:</b>	
<b>Type of Methodology Used:</b>	7
<b>Sample Size Used:</b>	525 Sites

Other Details	
<b>Included in Highway Safety Manual?</b>	No
<b>Date Added to Clearinghouse:</b>	Dec-01-2009
<b>Comments:</b>	

---

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## CMF / CRF Details

**CMF ID: 7848**

**Install a traffic signal**

**Description:**

**Prior Condition: Stop-Controlled Intersections**

**Category: Intersection traffic control**

**Study:** [\*Validation and Application of Highway Safety Manual \(Part D\) in Florida, Abdel-Aty et al., 2014\*](#)

**Star Quality Rating:**



[\[View score details\]](#)

### Crash Modification Factor (CMF)

**Value:**

0.61

**Adjusted Standard Error:**

**Unadjusted Standard Error:**

0.06

### Crash Reduction Factor (CRF)

**Value:**

39 (This value indicates a **decrease** in crashes)

**Adjusted Standard Error:**



<b>Unadjusted Standard Error:</b>	6
-----------------------------------	---

Applicability	
<b>Crash Type:</b>	All
<b>Crash Severity:</b>	All
<b>Roadway Types:</b>	Not specified
<b>Number of Lanes:</b>	
<b>Road Division Type:</b>	
<b>Speed Limit:</b>	
<b>Area Type:</b>	Urban
<b>Traffic Volume:</b>	
<b>Time of Day:</b>	All
<i>If countermeasure is intersection-based</i>	
<b>Intersection Type:</b>	Not specified
<b>Intersection Geometry:</b>	4-leg
<b>Traffic Control:</b>	Stop-controlled
<b>Major Road Traffic Volume:</b>	
<b>Minor Road Traffic Volume:</b>	

Development Details	
<b>Date Range of Data Used:</b>	2005 to 2009
<b>Municipality:</b>	
<b>State:</b>	FL

<b>Country:</b>	USA
<b>Type of Methodology Used:</b>	2
<b>Sample Size Used:</b>	

Other Details	
<b>Included in Highway Safety Manual?</b>	No
<b>Date Added to Clearinghouse:</b>	Mar-08-2016
<b>Comments:</b>	The number of crashes in the after period were not reported in this study, however, they have been recorded as 300 to give 10 points as a benefit of doubt for one or more of the following: (1) number of miles/sites in the reference/treatment group, (2) number of crashes in the references/treatment group, (3) reporting AADTs for the aggregate dataset but not for the disaggregate dataset used for CMF development.

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## CMF / CRF Details

**CMF ID: 7776**

**Install lighting**

**Description:**

**Prior Condition: Roadways without street lighting**

**Category: Highway lighting**

**Study:** [\*Validation and Application of Highway Safety Manual \(Part D\) in Florida, Abdel-Aty et al., 2014\*](#)

**Star Quality Rating:**



[\[View score details\]](#)

### Crash Modification Factor (CMF)

**Value:**

0.68

**Adjusted Standard Error:**

**Unadjusted Standard Error:**

0.09

### Crash Reduction Factor (CRF)

**Value:**

32 (This value indicates a **decrease** in crashes)

**Adjusted Standard Error:**

Unadjusted Standard Error:	9
Applicability	
Crash Type:	All
Crash Severity:	All
Roadway Types:	All
Number of Lanes:	
Road Division Type:	All
Speed Limit:	
Area Type:	All
Traffic Volume:	
Time of Day:	Night
If countermeasure is intersection-based	
Intersection Type:	
Intersection Geometry:	
Traffic Control:	
Major Road Traffic Volume:	
Minor Road Traffic Volume:	
Development Details	
Date Range of Data Used:	2006 to 2010
Municipality:	
State:	FL



<b>Country:</b>	USA
<b>Type of Methodology Used:</b>	2
<b>Sample Size Used:</b>	

Other Details	
<b>Included in Highway Safety Manual?</b>	No
<b>Date Added to Clearinghouse:</b>	Mar-08-2016
<b>Comments:</b>	CMFs of adding lighting on all roads types with all number of lanes. The number of crashes in the after period were not reported in this study, however, they have been recorded as 300 to give 10 points as a benefit of doubt for one or more of the following: (1) number of miles/sites in the reference/treatment group, (2) number of crashes in the references/treatment group, (3) reporting AADTs for the aggregate dataset but not for the disaggregate dataset used for CMF development.

---

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## CMF / CRF Details

**CMF ID: 2219**

**Install raised median**

**Description:**

**Prior Condition:** *No Prior Condition(s)*

**Category:** Access management

**Study:** [Correlating Access Management to Crash Rate, Severity, and Collision Type, Schultz et al., 2008](#)

**Star Quality Rating:**



[\[View score details\]](#)

### Crash Modification Factor (CMF)

**Value:**

0.29

**Adjusted Standard Error:**

**Unadjusted Standard Error:**

0.184

### Crash Reduction Factor (CRF)

**Value:**

70.77 (This value indicates a **decrease** in crashes)

**Adjusted Standard Error:**

<b>Unadjusted Standard Error:</b>	18.37
<b>Applicability</b>	
<b>Crash Type:</b>	All
<b>Crash Severity:</b>	All
<b>Roadway Types:</b>	Principal Arterial Other
<b>Number of Lanes:</b>	
<b>Road Division Type:</b>	
<b>Speed Limit:</b>	
<b>Area Type:</b>	Urban
<b>Traffic Volume:</b>	1390 to 51200 <i>Average Daily Traffic (ADT)</i>
<b>Time of Day:</b>	All
<i>If countermeasure is intersection-based</i>	
<b>Intersection Type:</b>	
<b>Intersection Geometry:</b>	
<b>Traffic Control:</b>	
<b>Major Road Traffic Volume:</b>	
<b>Minor Road Traffic Volume:</b>	
<b>Development Details</b>	
<b>Date Range of Data Used:</b>	2002 to 2004
<b>Municipality:</b>	
<b>State:</b>	UT

<b>Country:</b>	
<b>Type of Methodology Used:</b>	7
<b>Sample Size Used:</b>	525 Site-years

Other Details	
<b>Included in Highway Safety Manual?</b>	No
<b>Date Added to Clearinghouse:</b>	Dec-01-2009
<b>Comments:</b>	

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**APPENDIX G**

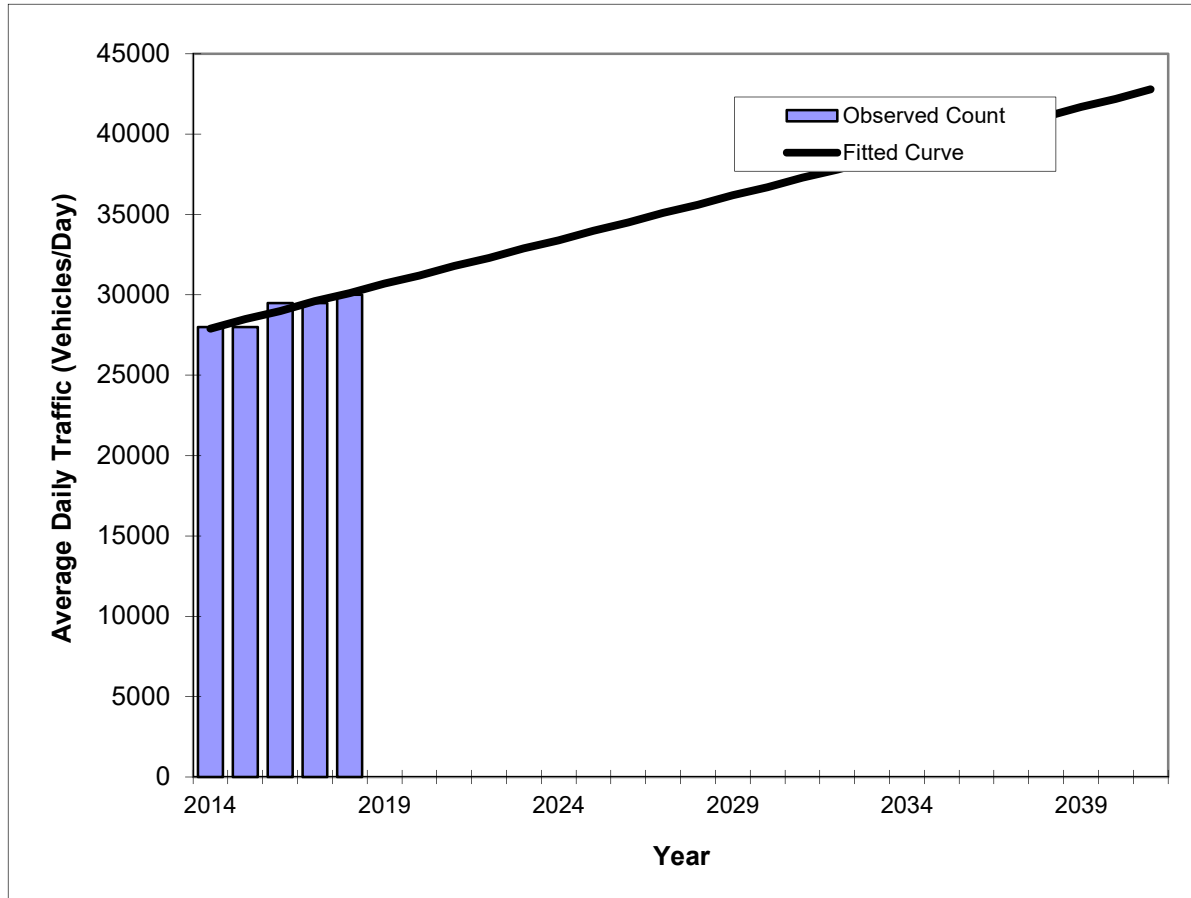
**PROJECTED VOLUMES**

# Traffic Trends - V03.a

## S.R. 424 --

FIN#	1234
Location	1

County:	Orange (75)
Station #:	5218
Highway:	S.R. 424



Year	Traffic (ADT/AADT)	
	Count*	Trend**
2014	28000	27900
2015	28000	28500
2016	29500	29000
2017	29500	29600
2018	30000	30100
2021 Opening Year Trend		
2021	N/A	31800
2031 Mid-Year Trend		
2031	N/A	37300
2041 Design Year Trend		
2041	N/A	42800
TRANPLAN Forecasts/Trends		

** Annual Trend Increase:	550
Trend R-squared:	86.43%
Trend Annual Historic Growth Rate:	1.97%
Trend Growth Rate (2018 to Design Year):	1.83%
Printed:	14-Jun-21
Straight Line Growth Option	

\*Axle-Adjusted

FLORIDA DEPARTMENT OF TRANSPORTATION  
TRANSPORTATION STATISTICS OFFICE  
2020 HISTORICAL AADT REPORT

COUNTY: 75 - ORANGE

SITE: 5218 - ON SR-424, 0.138 MI. N OF SR-423 (UVL)

YEAR	AADT		DIRECTION 1	DIRECTION 2	*K FACTOR	D FACTOR	T FACTOR
----	-----		-----	-----	-----	-----	-----
2020	26500 F	N	14500	S 12000	9.00	53.00	10.40
2019	27500 C	N	15000	S 12500	9.00	52.60	10.40
2018	30000 C	N	15500	S 14500	9.00	53.20	6.70
2017	29500 C	N	16000	S 13500	9.00	52.60	6.80
2016	29500 C	N	15000	S 14500	9.00	52.50	5.60
2015	28000 C	N	14500	S 13500	9.00	53.20	5.10
2014	28000 C	N	14500	S 13500	9.00	53.20	4.90
2013	31500 C	N	16000	S 15500	9.00	53.30	3.60
2012	31000 C	N	16000	S 15000	9.00	52.90	4.20
2011	31000 C	N	16000	S 15000	9.00	52.70	12.70
2010	31500 C	N	16500	S 15000	8.87	52.83	3.80
2009	32500 C	N	17000	S 15500	8.79	53.70	3.40
2008	32000 C	N	16500	S 15500	8.80	53.99	5.20
2007	35000 C	N	18000	S 17000	8.63	54.08	4.50
2006	35000 C	N	18000	S 17000	8.59	53.01	8.40
2005	36000 C	N	18500	S 17500	8.60	54.10	7.60

AADT FLAGS: C = COMPUTED; E = MANUAL ESTIMATE; F = FIRST YEAR ESTIMATE  
S = SECOND YEAR ESTIMATE; T = THIRD YEAR ESTIMATE; R = FOURTH YEAR ESTIMATE  
V = FIFTH YEAR ESTIMATE; 6 = SIXTH YEAR ESTIMATE; X = UNKNOWN  
\*K FACTOR: STARTING WITH YEAR 2011 IS STANDARDK, PRIOR YEARS ARE K30 VALUES

2020 PEAK SEASON FACTOR CATEGORY REPORT - REPORT TYPE: ALL  
 CATEGORY: 7500 ORANGE COUNTYWIDE

WEEK	DATES	SF	MOCF: 0.91 PSCF
=====			
* 1	01/01/2020 - 01/04/2020	0.98	1.08
* 2	01/05/2020 - 01/11/2020	0.92	1.01
* 3	01/12/2020 - 01/18/2020	0.86	0.95
* 4	01/19/2020 - 01/25/2020	0.85	0.93
* 5	01/26/2020 - 02/01/2020	0.85	0.93
* 6	02/02/2020 - 02/08/2020	0.84	0.92
* 7	02/09/2020 - 02/15/2020	0.84	0.92
* 8	02/16/2020 - 02/22/2020	0.87	0.96
* 9	02/23/2020 - 02/29/2020	0.90	0.99
*10	03/01/2020 - 03/07/2020	0.93	1.02
*11	03/08/2020 - 03/14/2020	0.96	1.05
*12	03/15/2020 - 03/21/2020	0.99	1.09
*13	03/22/2020 - 03/28/2020	1.10	1.21
14	03/29/2020 - 04/04/2020	1.21	1.33
15	04/05/2020 - 04/11/2020	1.31	1.44
16	04/12/2020 - 04/18/2020	1.42	1.56
17	04/19/2020 - 04/25/2020	1.35	1.48
18	04/26/2020 - 05/02/2020	1.27	1.40
19	05/03/2020 - 05/09/2020	1.19	1.31
20	05/10/2020 - 05/16/2020	1.11	1.22
21	05/17/2020 - 05/23/2020	1.10	1.21
22	05/24/2020 - 05/30/2020	1.08	1.19
23	05/31/2020 - 06/06/2020	1.06	1.16
24	06/07/2020 - 06/13/2020	1.04	1.14
25	06/14/2020 - 06/20/2020	1.03	1.13
26	06/21/2020 - 06/27/2020	1.03	1.13
27	06/28/2020 - 07/04/2020	1.04	1.14
28	07/05/2020 - 07/11/2020	1.04	1.14
29	07/12/2020 - 07/18/2020	1.05	1.15
30	07/19/2020 - 07/25/2020	1.03	1.13
31	07/26/2020 - 08/01/2020	1.02	1.12
32	08/02/2020 - 08/08/2020	1.01	1.11
33	08/09/2020 - 08/15/2020	1.00	1.10
34	08/16/2020 - 08/22/2020	1.00	1.10
35	08/23/2020 - 08/29/2020	1.00	1.10
36	08/30/2020 - 09/05/2020	1.00	1.10
37	09/06/2020 - 09/12/2020	1.00	1.10
38	09/13/2020 - 09/19/2020	1.00	1.10
39	09/20/2020 - 09/26/2020	0.99	1.09
40	09/27/2020 - 10/03/2020	0.98	1.08
41	10/04/2020 - 10/10/2020	0.97	1.07
42	10/11/2020 - 10/17/2020	0.97	1.07
43	10/18/2020 - 10/24/2020	0.97	1.07
44	10/25/2020 - 10/31/2020	0.97	1.07
45	11/01/2020 - 11/07/2020	0.98	1.08
46	11/08/2020 - 11/14/2020	0.98	1.08
47	11/15/2020 - 11/21/2020	0.99	1.09
48	11/22/2020 - 11/28/2020	0.99	1.09
49	11/29/2020 - 12/05/2020	0.98	1.08
50	12/06/2020 - 12/12/2020	0.98	1.08
51	12/13/2020 - 12/19/2020	0.98	1.08
52	12/20/2020 - 12/26/2020	0.92	1.01
53	12/27/2020 - 12/31/2020	0.86	0.95

\* PEAK SEASON

27-FEB-2021 10:30:05

830UPD

5\_7500\_PKSEASON.TXT



## Turning Movement Worksheet - S.R. 424 at Satel Drive

S.R. 424 at Satel Drive - A.M. Peak Hour (2040 Projections)

	Aloha Street			Satel Drive			S.R. 424			S.R. 424		
	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
<b>Existing</b>												
Existing Volume	2	0	10	20	0	33	2	550	10	43	1,106	1
Count year	2020	2020	2020	2020	2020	2020	2020	2020	2020	2020	2020	2020
Seasonal 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
Adjust Exist Volume	2	0	10	20	0	33	2	550	10	43	1,106	1
<b>Future</b>												
Growth (%)	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Growth (year)	2040	2040	2040	2040	2040	2040	2040	2040	2040	2040	2040	2040
Calculated Growth	1	0	4	8	0	13	1	220	4	17	442	0
Projected Volume	3	0	14	28	0	46	3	770	14	60	1,548	1
<b>Total</b>												
Projected Movement Totals	3	0	14	28	0	46	3	770	14	60	1,548	1

## Turning Movement Worksheet - S.R. 424 at Satel Drive

S.R. 424 at Satel Drive - P.M. Peak Hour (2040 Projections)

	Aloha Street			Satel Drive			S.R. 424			S.R. 424		
	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
<b>Existing</b>												
Existing Volume	4	0	6	20	2	61	8	1,183	57	79	676	1
Count year	2020	2020	2020	2020	2020	2020	2020	2020	2020	2020	2020	2020
Seasonal 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
Adjust Exist Volume	4	0	6	20	2	61	8	1,183	57	79	676	1
<b>Future</b>												
Growth (%)	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Growth (year)	2040	2040	2040	2040	2040	2040	2040	2040	2040	2040	2040	2040
Calculated Growth	2	0	2	8	1	24	3	473	23	32	270	0
Projected Volume	6	0	8	28	3	85	11	1,656	80	111	946	1
<b>Total</b>												
Projected Movement Totals	6	0	8	28	3	85	11	1,656	80	111	946	1

---





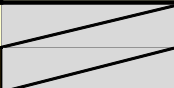
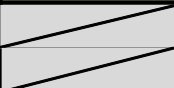
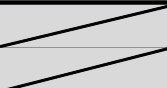
## **APPENDIX H**

# **CAP-X & SPICE ANALYSIS**

## Capacity Analysis for Planning of Junctions

Summary Report - Page 1 of 2

<b>Project Name:</b>	S.R. 424
<b>Project Number:</b>	11265 TWO 45: Study #3
<b>Location:</b>	Orlando, FL
<b>Date:</b>	2020 A.M.
<b>Number of Intersection Legs:</b>	4
<b>Major Street Direction</b>	North-South

Traffic Volume Demand						
	Volume (Veh/hr)				Percent (%)	
	U-Turn 	Left 	Thru 	Right 	Heavy Vehicles	Volume Growth
Eastbound	0	2	0	10	0.00%	0.00%
Westbound	0	20	0	33	1.90%	0.00%
Southbound	0	43	1106	1	2.60%	0.00%
Northbound	0	2	550	10	3.20%	0.00%
Adjustment Factor	0.80	0.95		0.85		
Suggested	<b>0.80</b>	<b>0.95</b>		<b>0.85</b>		
Truck to PCE Factor				<b>Suggested = 2.00</b>		2.00
FDOT Context Zone		<b>C3C-Suburban Commercial</b>				
Critical Lane Volume Threshold		2-phase signal		<b>Suggested = 1800</b>		<b>1800</b>
		3-phase signal		<b>Suggested = 1750</b>		<b>1750</b>
		4-phase signal		<b>Suggested = 1700</b>		<b>1700</b>

## Capacity Analysis for Planning of Junctions

Summary Report - Page 2 of 2





[illegible]



## Capacity Analysis for Planning of Junctions

Summary Report - Page 1 of 2

<b>Project Name:</b>	ICE: S.R. 424 at Satel Drive
<b>Project Number:</b>	11265 TWO 45: Study #3
<b>Location:</b>	Orlando, FL
<b>Date:</b>	2020 P.M.
<b>Number of Intersection Legs:</b>	4
<b>Major Street Direction</b>	North-South

Traffic Volume Demand						
	Volume (Veh/hr)				Percent (%)	
	U-Turn 	Left 	Thru 	Right 	Heavy Vehicles	Volume Growth
Eastbound	0	4	0	6	0.00%	0.00%
Westbound	0	20	2	61	1.20%	0.00%
Southbound	0	79	676	1	0.70%	0.00%
Northbound	0	8	1183	57	0.40%	0.00%
Adjustment Factor	0.80	0.95		0.85		
Suggested	<b>0.80</b>	<b>0.95</b>		<b>0.85</b>		
Truck to PCE Factor				<b>Suggested = 2.00</b>	2.00	
FDOT Context Zone		<b>C3C-Suburban Commercial</b>				
Critical Lane Volume Threshold		2-phase signal		<b>Suggested = 1800</b>	<b>1800</b>	
		3-phase signal		<b>Suggested = 1750</b>	<b>1750</b>	
		4-phase signal		<b>Suggested = 1700</b>	<b>1700</b>	

## Capacity Analysis for Planning of Junctions





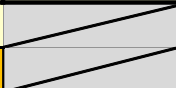
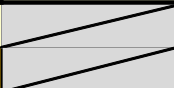
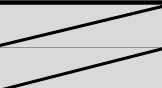
Summary Report - Page 2 of 2

[illegible]

## Capacity Analysis for Planning of Junctions

Summary Report - Page 1 of 2

<b>Project Name:</b>	S.R. 424
<b>Project Number:</b>	11265 TWO 45: Study #3
<b>Location:</b>	Orlando, FL
<b>Date:</b>	2040 A.M.
<b>Number of Intersection Legs:</b>	4
<b>Major Street Direction</b>	North-South

Traffic Volume Demand						
	Volume (Veh/hr)				Percent (%)	
	U-Turn 	Left 	Thru 	Right 	Heavy Vehicles	Volume Growth
Eastbound	0	3	0	14	0.00%	0.00%
Westbound	0	28	0	46	1.90%	0.00%
Southbound	0	60	1548	1	2.60%	0.00%
Northbound	0	3	770	14	3.20%	0.00%
Adjustment Factor	0.80	0.95		0.85		
Suggested	0.80	0.95		0.85		
Truck to PCE Factor				Suggested = 2.00		2.00
FDOT Context Zone		C3C-Suburban Commercial				
Critical Lane Volume Threshold		2-phase signal		Suggested = 1800		1800
		3-phase signal		Suggested = 1750		1750
		4-phase signal		Suggested = 1700		1700

## Capacity Analysis for Planning of Junctions





Summary Report - Page 2 of 2

[illegible]

## Capacity Analysis for Planning of Junctions

Summary Report - Page 1 of 2

<b>Project Name:</b>	ICE: S.R. 424 at Satel Drive
<b>Project Number:</b>	11265 TWO 45: Study #3
<b>Location:</b>	Orlando, FL
<b>Date:</b>	2040 P.M.
<b>Number of Intersection Legs:</b>	4
<b>Major Street Direction</b>	North-South

Traffic Volume Demand						
	Volume (Veh/hr)				Percent (%)	
	U-Turn 	Left 	Thru 	Right 	Heavy Vehicles	Volume Growth
Eastbound	0	6	0	8	0.00%	0.00%
Westbound	0	28	3	85	1.20%	0.00%
Southbound	0	111	946	1	0.70%	0.00%
Northbound	0	11	1656	80	0.40%	0.00%
Adjustment Factor	0.80	0.95		0.85		
Suggested	0.80	0.95		0.85		
Truck to PCE Factor				Suggested = 2.00		2.00
FDOT Context Zone		C3C-Suburban Commercial				
Critical Lane Volume Threshold		2-phase signal		Suggested = 1800		1800
		3-phase signal		Suggested = 1750		1750
		4-phase signal		Suggested = 1700		1700

## Capacity Analysis for Planning of Junctions

Summary Report - Page 2 of 2

[illegible]

Intersection Configuration inputs				
Which legs exist?	Westbound / East Leg	Eastbound / West Leg	Southbound / North Leg	Northbound / South Leg
	Yes	Yes	Yes	Yes

Select Major Street Direction

N-S

Eastbound  
Westbound  
Southbound  
Northbound

Opening Year									
AM Peak Hour					PM Peak Hour				
U	L	T	R	HV	U	L	T	R	HV
0	2	0	10	0.00%	0	4	0	6	0.00%
0	20	0	33	1.90%	0	20	2	61	1.20%
0	43	1106	1	2.60%	0	79	676	1	0.70%
0	2	550	10	3.20%	0	8	1183	57	0.40%

Eastbound  
Westbound  
Southbound  
Northbound

Design Year									
AM Peak Hour					PM Peak Hour				
U	L	T	R	HV	U	L	T	R	HV
0	3	0	14	0.00%	0	6	0	8	0.00%
0	28	0	46	1.90%	0	28	3	85	1.20%
0	60	1548	1	2.60%	0	111	946	1	0.70%
0	3	770	14	3.20%	0	11	1656	80	0.40%

Computations only beyond this point, do not alter

West Leg	South Leg	East Leg	North Leg	West Leg	South Leg	East Leg	North Leg	West Leg	South Leg	East Leg	North Leg
P1	P2	P3	P4	P1	P2	P3	P4	P1	P2	P3	P4
15	1,698	106	1,735	21	1,950	219	2,004	0	0	0	0

West Leg	South Leg	East Leg	North Leg	West Leg	South Leg	East Leg	North Leg	West Leg	South Leg	East Leg	North Leg
P1	P2	P3	P4	P1	P2	P3	P4	P1	P2	P3	P4
21	2,377	148	2,428	29	2,729	307	2,805	0	0	0	0

Volume Summary

		Opening Year		Design Year	
		Input	Adjusted	Input	Adjusted
AM Peak		1,777	1,836	2,487	2,570
PM Peak		2,097	2,167	2,935	3,033
Wknd Peak					
Projected AADT	--	25,396	--	35,544	--
Truck %	1.64%	--	1.64%	--	--

SPICE Volume Breakdown				
Profile Scale %	15.25%	AM	PM	Daily
Opening Year	Major Street AADT	1,717	1,977	24,213
	Minor Street AADT	61	120	1,183
Design Year	Major Street AADT	2,403	2,767	33,889
	Minor Street AADT	85	168	1,655

Values in this table break down the AADTs into major and minor street values, which can be used with the SPICE tool.



Control Strategy Selection and Inputs

Specify the Facility Level Inputs and the Control Strategies to be included in the SPICE Analysis.

Intersection Type	At-Grade Intersections	For more information on how to determine these values, see the "Definitions" worksheet
Analysis Year	Opening and Design Year	
Opening Year	2020	
Design Year	2040	
Facility Type	On Urban and Suburban Arterial	
Number of Legs	4-leg	
1-Way/2-Way	2-way Intersecting 2-way	
# of Major Street Lanes (both directions)	5 or fewer	
Major Street Approach Speed	Less than 55 mph	
Opening Year - Major Road AADT	24,213	
Opening Year - Minor Road AADT	1,183	
Design Year - Major Road AADT	33,889	
Design Year - Minor Road AADT	1,655	

Control Strategy	Include	Base Intersection			
Traffic Signal	Yes	--	Opening Year AADT Outside of SPF Development Range Design Year AADT Outside of SPF Development Range	Design Year AADT Outside of SPF Development Range	
Traffic Signal (Alternative Configuration)	No	--			
Minor Road Stop	Yes	--			
All Way Stop	No	--			
1-Lane Roundabout	No	--			
2-Lane Roundabout	Yes	--			
Displaced Left Turn (DLT)	No	Traffic Signal			
Median U-Turn (MUT)	No	Traffic Signal			
Signalized Restricted Crossing U-Turn (RCUT)	No	--			
Unsignalized Restricted Crossing U-Turn (RCUT)	Yes	--			
Continuous Green-T Intersection	No	Traffic Signal			
Jughandle	No	Traffic Signal			
Other 1	No	Traffic Signal			*Please Select
Other 2	No	Minor Road Stop			*Please Select

**At-Grade Intersection Inputs**

Provide inputs needed to compute and apply Part C CMFs.

Input		Control Strategy				
		Traffic Signal	Minor Road Stop	2-lane Roundabout	Unsignalized RCUT	
Opening Year Major Road AADT	Optional AADT Overrides	24213	24213	24213	24213	All strategies will have the same AADT as the Base Conditions unless overridden by user.
Opening Year Minor Road AADT		1183	1183	1183	1183	
Design Year Major Road AADT		33889	33889	33889	33889	
Design Year Minor Road AADT		1655	1655	1655	1655	
Number of Approaches with Left-Turn Lanes	Additional Required Control Strategy Inputs	2				Do not include stop controlled approaches for minor stop
Number of Approaches with Right-Turn Lanes		0				
Number of Uncontrolled Approaches with Left-Turn Lanes			2			
Number of Uncontrolled Approaches with Right-Turn Lanes			0			

Keep default values below here for planning-level analysis, override with actual values for full HSM Analysis

	Part C CMFS Optional For Stage 1 ICE, Required for Stage 2 ICE					
		N/A	0	N/A		
Skew Angle	A yellow cell indicates the value may be used in the SPF computation	Yes	No		Scroll Down for Unsignalized RCUT SPF Inputs	All yellow cells will be automatically populated by a macro. If users want to do a planning-level analysis, they can leave the automatic inputs as-is
Lighting Present		0				
# of Approaches Permissive LT Signal Phasing		2				
# of Approaches Perm/Prot LT Signal Phasing		2				
# of Approaches Protected LT Signal Phasing		0				
Number of Approaches with Right-Turn-on-Red Prohibited		No				
Red Light Cameras Present		0				
Number of Major Street Through Lanes		0				
Number of Minor Street Lanes		0				
# of Major St Approaches w/ Right-Turn Channelization		0				
Number of Approaches with U-Turn Prohibited		Med High (1500)				
Pedestrian Volume by Activity Level		1500				
User Specified Sum of all daily pedestrian crossing volumes		5				
Max # of Lanes Crossed by Pedestrians		5				
Number of Bus Stops within 1000' of Intersection		No				
Schools within 1000' of intersection		3				
Number of Alcohol Sales Establishments within 1000' of Intersection						

Roundabout CMF Inputs				
Inscribed Circle Diameter (ft)				
Leg 1 (Major Leg #1)	Leg 1 (Major Leg #1)			
Opening Year Entering AADT			12,107	
Leg has Right-Turn Bypass			No	
# of Access Points within 250' of Yield Line				
Entering Width (ft)			29	
# of Entering Lanes			2	
# of Circulating Lanes			2	
Leg 2 (Major Leg #2)	Leg 2 (Major Leg #2)			
Opening Year Entering AADT			12,107	
Leg has Right-Turn Bypass			No	
# of Access Points within 250' of Yield Line				
Entering Width (ft)			29	
# of Entering Lanes			2	
# of Circulating Lanes			2	
Leg 3 (Minor Leg #1)	Leg 3 (Minor Leg #1)			
Opening Year Entering AADT			591.5	
Leg has Right-Turn Bypass			No	
# of Access Points within 250' of Yield Line				
Entering Width (ft)			29	
# of Entering Lanes			2	
# of Circulating Lanes			2	
Leg 4 (Minor Leg #2)	Leg 4 (Minor Leg #2)			
Opening Year Entering AADT			592	
Leg has Right-Turn Bypass			No	
# of Access Points within 250' of Yield Line				
Entering Width (ft)			29	
# of Entering Lanes			2	
# of Circulating Lanes			2	
# U-Turns				Restricted Crossing U-2
# of Major Roadway Lanes				
# of Minor Roadway Lanes				
Total Offset Distance (ft)				1450
Number of Driveways				10
Total Deceleration Lane Length (ft)				750
Total Acceleration Lane Length (ft)				750
Number of Left-Turn Lanes From Major Road				
Major Road Speed Limit (mph)				
Total Median Width (ft)				
Maximum Median Width (ft)				15

## Historical Crash Data Input

*Note: In order to use Empirical Bayes (EB), the historical intersection type must be a traffic signal or a minor road stop. Additionally, this alternative must be selected to be included in the analysis, and the historical intersection specified below. Up to 10 years of historical data can be used to perform the EB adjustment.*

Is historical crash data available?

Yes

Number of years available:

7

(Up to 10)

First Year Data is available:

2013

Historical Intx Type:

4ST

Historical Crash Counts		Year										Total
		2013	2014	2015	2016	2017	2018	2019	--	--	--	
Combined	Total											
	Fatal/Injury											
	PDO											
Single-Vehicle	Total	0	0	1	0	0	0	0	--	--	--	1
	Fatal/Injury	0	0	1	0	0	0	0				1
	PDO	0	0	0	0	0	0	0				0
Multiple-Vehicle	Total	0	2	3	3	4	4	3	--	--	--	19
	Fatal/Injury	0	0	1	1	1	1	3				7
	PDO	0	2	2	2	3	3	0				12
Veh-Ped	Fatal/Injury	0	0	0	1	1	0	1				3
Veh-Bike	Fatal/Injury	0	0	0	0	0	0	0				0
Total	All	0	2	4	4	5	4	4	--	--	--	23

One or more years has 0 total crashes.

One or more years has 0 total crashes.

Federal Highway Administration (FHWA)							
Safety Performance for Intersection Control Evaluation Tool							
Results							
Summary of crash prediction results for each alternative							
Project Information							
Project Name:	S.R. 424 Pedestrian Safety Study			Intersection Type		At-Grade Intersections	
Intersection:	S.R. 424 at Satel Drive/Aloha Street			Opening Year		2020	
Agency:	Traffic Engineering Data Solutions, Inc.			Design Year		2040	
Project Reference:				Facility Type		On Urban and Suburban Arterial	
City:	Orlando			Number of Legs		4-leg	
State:	Florida			1-Way/2-Way		2-way Intersecting 2-way	
Date:	6/15/2021			# of Major Street Lanes (both directions)		5 or fewer	
Analyst:	TSH			Major Street Approach Speed		Less than 55 mph	
Crash Prediction Summary							
Control Strategy	Crash Type	Opening Year	Design Year	Total Project Life Cycle	Rank	AADT Within Prediction Range?	Source of Prediction
Traffic Signal	Total	7.22	10.85	189.13	4	Yes	Calibrated SPF
	Fatal & Injury	2.94	4.37	76.52			
Minor Road Stop	Total	3.18	4.48	80.38	2	Yes	Calibrated SPF w/ EB
	Fatal & Injury	1.25	1.83	32.20			
2-lane Roundabout	Total	10.16	14.99	263.63	3	No	Uncalibrated SPF
	Fatal & Injury	1.81	2.78	47.99			
Unsignalized RCUT	Total	2.46	3.38	61.04	1	Yes	Uncalibrated SPF
	Fatal & Injury	0.68	0.88	16.43			



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# **APPENDIX I**

# **ICE FORM**

# Florida Department of Transportation

## Intersection Control Evaluation (ICE) Form

### Stage 1: Screening

Intersection Control Evaluation Form 750-010-003

To fulfill the requirements of Stage 1 (Screening) of FDOT's ICE procedures, complete the following form and append all supporting documentation. Completed forms can be submitted to the District Traffic Operations Engineer (DTOE) and District Design Engineer (DDE) for the project's approval.

Project Name	Satel Drive Intersection Control Evaluation		FDOT Project #	237974-1-32-17 WO #45		
Submitted By	Colleen Jarrell	Agency/Company	TEDS, Inc.		Date	6/16/2021
Email	<a href="mailto:cjarrell@teds-fl.com">cjarrell@teds-fl.com</a>		FDOT District	District 5	County	Orange
Project Locality (City/Town/Village)	Orlando		Project Type	Safety Improvement Project		
Project Funding Source	Federal	FDOT Context Classification	C3C - Suburban Commercial			
Project Purpose (What is the catalyst for this project and why is it being undertaken?)	TEDS was retained on behalf of the FDOT to conduct a pedestrian safety study/access management analysis for the corridor of S.R. 424 from S.R. 423 to S.R. 434. In an effort to improve pedestrian safety and vehicle efficiency within the corridor, a recommendation was made to signalize the intersection of S.R. 424 at Satel Drive/Aloha Street initiating this ICE analysis.					
Project Setting Description (Describe the area surrounding the intersection)	The area surrounding the intersection and the corridor is suburban/commercial. Retail shopping centers, gas stations, automotive garages, and restaurants/bars exist throughout the corridor. Single family unit housing exists throughout the corridor behind the commercial interests especially at Satel Drive/Aloha Street.					
Multimodal Context (Describe the pedestrian, bicycle, and transit activity in the area and the potential for activity based on surrounding land uses and development patterns)	Pedestrian and bicycle activity throughout the corridor is medium to high. Sidewalks are provided along both sides of S.R. 424 but the only crosswalks currently available to cross S.R. 424 (5-lane roadway) are located at the signalized intersections of S.R. 423 and S.R. 434. Most pedestrians and bicyclists currently cross S.R. 424 midblock. Transit services are well provided for with multiple Lynx bus stops (inbound and outbound) located throughout the corridor and near the study intersection.					

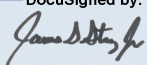
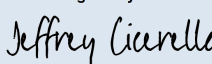
Major Street Information									
Route #:	S.R. 424	Route Name(s)	Edgewater Drive				Milepost	4.471/4.485	
Existing Control Type	Two-way Stop-Control		Existing AADT	26,500		Design Year AADT	33,889		
Design Vehicle	Interstate Semitrailer (WB-62)		Control Vehicle	Interstate Semitrailer (WB-67)					
Primary Functional Classification			Urban Minor Arterial			Design Speed (mph)		45	
Secondary Functional Classification (if app.)						Target Speed (mph) [if app.]			
Approach #1	Direction	Northbound		Number of Lanes		Study Period #1 Traffic Volumes		Study Period #2 Traffic Volumes	
	Sidewalks along	Both sides of the approach		Left-Turn	1	Weekday AM Peak		Weekday PM Peak	
	Crosswalk on Approach?	No		Left-Through	0	Left	2	Left	8
	On-Street Bike Facilities?	Yes		Through	1	Through	550	Through	1,183
	Multi-Use Path?	No		Left-Through-Right	0	Right	10	Right	57
	Scheduled Bus Service?	Yes		Through-Right	1	Daily Truck %		2.1%	
	Bus Stop on Approach?	Yes		Right-Turn	0				
Approach #2	Direction	Southbound		Number of Lanes		Study Period #1 Traffic Volumes		Study Period #2 Traffic Volumes	
	Sidewalks along:	Both sides of the approach		Left-Turn	1	Weekday AM Peak		Weekday PM Peak	
	Crosswalk on Approach?	No		Left-Through	0	Left	43	Left	79
	On-Street Bike Facilities?	Yes		Through	1	Through	1,106	Through	676
	Multi-Use Path?	No		Left-Through-Right	0	Right	1	Right	1
	Scheduled Bus Service?	Yes		Through-Right	1	Daily Truck %		2.5%	
	Bus Stop on Approach?	Yes		Right-Turn	0				

Minor Street Information										
Route #:		Route Name(s)		Satel Drive/Aloha Street			Milepost (if app.)			
Existing Control Type		Two-way Stop-Control		Existing AADT		1,183		Design Year AADT		
Design Vehicle		Passenger car (P)		Control Vehicle		Single Unit Truck (SU)				
Primary Functional Classification			Urban Local			Design Speed (mph)		25		
Secondary Functional Classification (if app.)						Target Speed (mph) [if app.]				
Approach #1	Direction		Eastbound		Number of Lanes		Study Period #1 Traffic Volumes		Study Period #2 Traffic Volumes	
	Sidewalks along:		Neither side of the approach		Left-Turn		0			
	Crosswalk on Approach?		Yes		Left-Through		0		Weekday AM Peak	
	On-Street Bike Facilities?		No		Through		0		Left	
	Multi-Use Path?		No		Left-Through-Right		1		Through	
	Scheduled Bus Service?		No		Through-Right		0		Right	
	Bus Stop on Approach?		No		Right-Turn		0		Daily Truck %	
Approach #2	Direction		Westbound		Number of Lanes		Study Period #1 Traffic Volumes		Study Period #2 Traffic Volumes	
	Sidewalks along:		One side of the approach		Left-Turn		0			
	Crosswalk on Approach?		Yes		Left-Through		0		Weekday AM Peak	
	On-Street Bike Facilities?		No		Through		0		Left	
	Multi-Use Path?		No		Left-Through-Right		1		Through	
	Scheduled Bus Service?		No		Through-Right		0		Right	
	Bus Stop on Approach?		No		Right-Turn		0		Daily Truck %	
Approach #3	Direction				Number of Lanes		Study Period #1 Traffic Volumes		Study Period #2 Traffic Volumes	
	Sidewalks along:				Left-Turn					
	Crosswalk on Approach?				Left-Through				Weekday AM Peak	
	On-Street Bike Facilities?				Through				Left	
	Multi-Use Path?				Left-Through-Right				Through	
	Scheduled Bus Service?				Through-Right				Right	
	Bus Stop on Approach?				Right-Turn				Daily Truck %	

Crash History (Existing Intersections Only)	
<p>Append the most recent five-years of crash data for the intersection from the CAR System. If the crash data evidences any issues relating to safety performance, discuss briefly here:</p> <p>For the intersection at Satel Drive, 23 crashes were recorded including seven (7) angle crashes, five (5) same direction side-swipes, four (4) left-turn crashes, three (3) pedestrian crashes, one (1) head-on crash, one (1) rear-end, one (1) rollover, and one (1) opposite direction sideswipe where the southbound vehicle crossed into the northbound lanes of travel. Of particular interest to this study are the seven (7) angle crashes where the at-fault drivers failed to yield to northbound and southbound vehicles in their attempt to travel southbound on S.R. 424 exiting Satel Drive. Three (3) pedestrian crashes also occurred where the pedestrians all suffered injuries. These crashes occurred when the pedestrians attempted to cross S.R. 424 midblock in the area of Satel Drive and Aloha Street.</p>	

Control Strategy Evaluation						
Provide a brief justification as to why each of the following control strategies should be advanced or not. Justification should consider potential environmental impacts.						
Control Strategy	CAP-X Outputs			SPICE Ranking	Strategy to Be Advanced?	Justification
	V/C Ratio		Multimodal Score			
	Weekday AM Peak	Weekday PM Peak				
Two-Way Stop-Controlled	0.72 / 3.05	1.92 / 11.68	3.7	2	No	This alternative is not to be advanced due to V/C ratios above 1.0.
All-Way Stop-Controlled	N/A	N/A	N/A	N/A	No	This alternative was not analyzed because the major street volumes exceed an all-way STOP's capacity.
Signalized Control	0.37 / 0.51	0.47 / 0.65	4.8	4	Yes	Recommended alternative because of its consistently low V/C ratios and its ability to provide a signalized crosswalk across S.R. 424.
Roundabout	0.47 / 0.67	0.53 / 0.76	5.6	3	No	This alternative is not to be advanced due to its V/C ratios being higher than the traffic signal's and possible right-of-way restrictions.
Median U-Turn	N/A	N/A	N/A	N/A	No	This alternative was not analyzed because of its full restriction on left-turns at the study intersection.
RCUT (Signalized)	N/A	N/A	N/A	N/A	No	This alternative was not analyzed due to the low demand from the sidestreets.
RCUT (Unsignalized)	0.12 / 0.23	0.49 / 1.45	4.4	1	No	This alternative is not to be advanced due to the 2040 V/C ratio over 1.0 and the lack of a signalized pedestrian crossing over S.R. 424.
Jughandle				N/A	No	This alternative was not analyzed due to right of way acquisition required.
Displaced Left-Turn	N/A	N/A	N/A	N/A	No	This alternative was not analyzed due to right of way acquisition required.
Continuous Green Tee	N/A	N/A	N/A	N/A	No	This alternative is not applicable as the study intersection is not a T-intersection.
Quadrant Roadway	N/A	N/A	N/A		No	This alternative was not analyzed due to right of way acquisition required.
Partial MUT	N/A	N/A	N/A	N/A	No	This alternative was not analyzed due to its restriction on left-turns from S.R. 424.
Other 2 (Type)	N/A	N/A	N/A	N/A	No	N/A

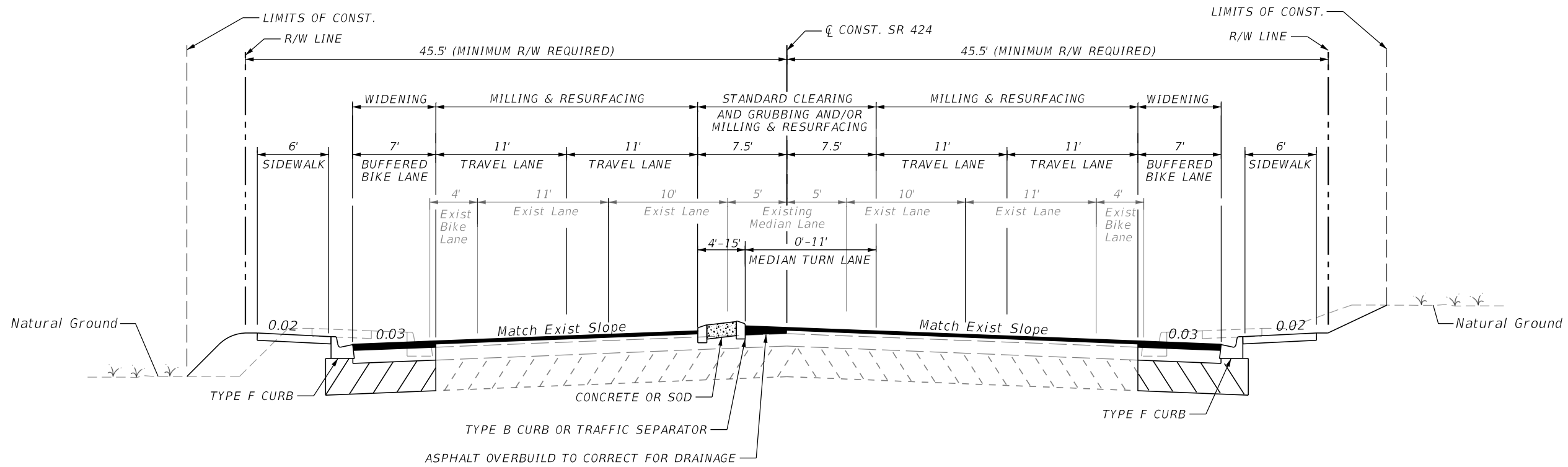


Resolution					
To be filled out by FDOT District Traffic Operations Engineer and District Design Engineer					
Project Determination		Identified Control Strategy Approved			
Comments					
DTOE Name	Jim Stroz	Signature	DocuSigned by: 	Date	8/30/2021   7:47
DDE Name	Jeffrey Cicerello	Signature	DocuSigned by: 	Date	8/30/2021   1:55

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## **APPENDIX J**

# **PROPOSED TYPICAL SECTION**



6/24/2021 8:06:06 AM Merlym S:\Workspaces\DOT\Worksets\FDOT\Push BUTTON Roadway\TWO 28 SR 424\TYPESRD01.dgn

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

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STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 424	ORANGE	

TYPICAL SECTIONS		SHEET NO.
		TS-1