TRAFFIC IMPACT ANALYSIS

NEW HOPE PUD

DELTONA, FLORIDA

MARCH 2024

PREPARED BY:

WALSH TRAFFIC ENGINEERING, LLC

285 PALMETTO SPRINGS STREET

DEBARY, FLORIDA 32713

PHONE – 386.668.0062

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INTRODUCTION

Walsh Traffic Engineering, LLC (Walsh Traffic) was retained to conduct a traffic impact analysis for the proposed New Hope PUD located on Lake Helen Osteen Road, south of Haulover Boulevard in Deltona, Florida (see ***Figure 1***). The subject property straddles both sides of Lake Helen Osteen Road. The property on the west side is vacant. The property on the east side includes a 15,726 square-foot building that serves as a church and can accommodate up to 648 seats. Additionally, this building is used as a daycare facility and is licensed/certified for up to 85 students, operating from 6:30 AM to 6:00 PM with child drop offs/pick-ups occurring continuously throughout the day. The development is proposed to include the following:

West side of Lake Helen Osteen Road

- 120-dwelling unit multi-family development

East side of Lake Helen Osteen Road

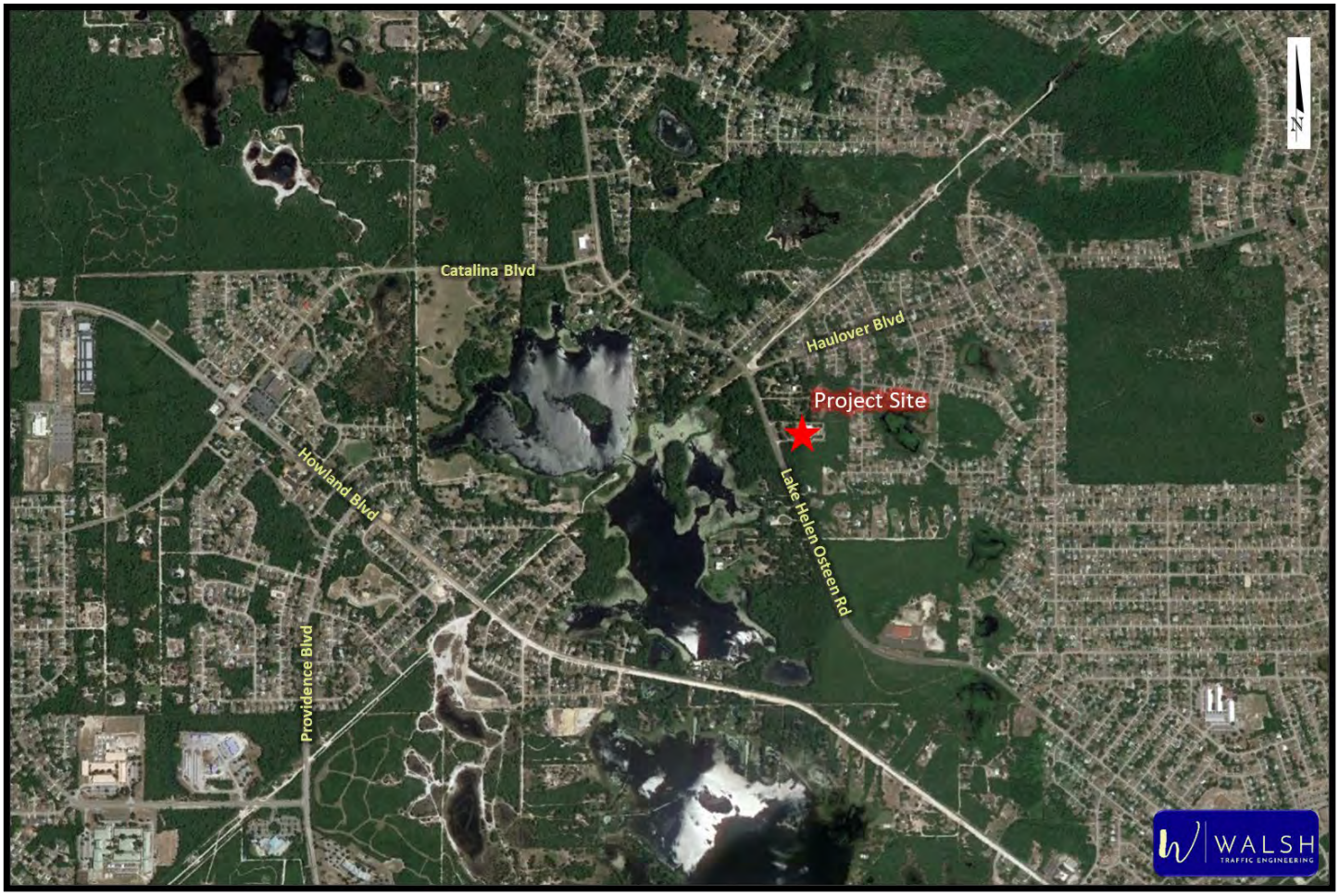
- 10,000 square-foot daycare building for 115 students
- 15,000 square-foot community center building
- 31,291 square-foot church (expansion of the existing church)

A copy of the preliminary development plan is included in ***Appendix A***. Additionally, the development is proposed to have a build out date of 2029. This study, which evaluates the overall impact of the development on the adjacent roadway network, was prepared for the City of Deltona's transportation concurrency requirements and Volusia County's TIA requirements for the driveway connection permit. The study was conducted in accordance with the approved methodology as included in ***Appendix B***.

Access

Access to the development (on the east side) is currently provided via two driveways with the northern driveway (exit only) located approximately 650 feet south of Haulover Boulevard and the southern driveway (entrance only) located approximately 900 feet south of Haulover Boulevard. Both driveways will be maintained for the eastern portion of the development, however the southern driveway will be converted to bi-directional. The multi-family development on the west side will have a single driveway that aligns with the southern driveway.

Figure 1 - Site Location Map



Study Area

Based on the River to Sea TPO TIA Guidelines and as included in the approved methodology, the study area includes those roadways where the project impact consumes 3% or more of a roadway's two-way peak-hour generalized service volume. Additionally, the study area includes any critical/near critical roadway segments located within three miles. The study roadway segments and intersections are summarized below:

Study Roadway Segments

- Lake Helen Osteen Road – from Howland Blvd to Elkcam Blvd
- Lake Helen Osteen Road – from Elkcam Blvd to Project
- Lake Helen Osteen Road – from Project to Haulover Blvd
- Lake Helen Osteen Road – from Haulover Blvd to Catalina Blvd
- Catalina Boulevard – from Howland Blvd to Lake Helen Osteen Rd
- Howland Boulevard – from Catalina Blvd to Wolf Pack Run
- Howland Boulevard – from Wolf Pack Run to I-4

Study Intersections

- Lake Helen Osteen Rd at Elkcam Blvd
- Lake Helen Osteen Rd at Project Driveways
- Lake Helen Osteen Rad at Catalina Blvd
- Catalina Blvd at Howland Blvd

EXISTING CONDITIONS

Existing Volumes

For purposes of this study, AM and PM peak-period turning movement counts, from 7:00 AM to 9:00 AM and 4:00 PM to 6:00 PM, were conducted at the study intersections. ***Figure 2*** and ***Figure 3*** summarize the existing AM and PM peak-hour turning movement volumes at the study intersections. Based on FDOT's Peak Season Factor Category Report for Volusia County, a seasonal factor of 1.02 for January 18th (the date of the turning movement counts) was applied to the turning movement counts. Printouts of the traffic counts are provided in ***Appendix C***.

Existing Roadway Segment Conditions

The existing PM peak-hour two-way volumes on the roadway segments were obtained from Volusia County where available. Since data was not available on Catalina Boulevard, the PM peak-hour two-way volumes were based on the average approach/departure volumes from the PM peak-hour turning movement counts at the Howland Boulevard/Catalina Boulevard and Lake Helen Osteen Road/Catalina Boulevard intersections. The resulting volumes were then compared against the generalized service volume for each study roadway segment. The generalized peak-hour two-way service volume for each roadway segment was obtained from Volusia County's 2022 Average Annual Daily Traffic & Historical Counts based on the adopted level of service standards. ***Table 1*** shows the adopted level of service and generalized service volume under the adopted level of service for each study roadway segment. As shown in ***Table 1***, the existing PM peak-hour two-way volumes for all of the study roadway segments are below the generalized service volume with the exception of the volumes on Providence Boulevard from Fort Smith Boulevard to Elkcam Boulevard. This indicates that all roadway segments currently have acceptable operating conditions with the exception of the study segment of Providence Boulevard.

Figure 2 - Existing AM Peak-Hour Volumes (Year 2024)

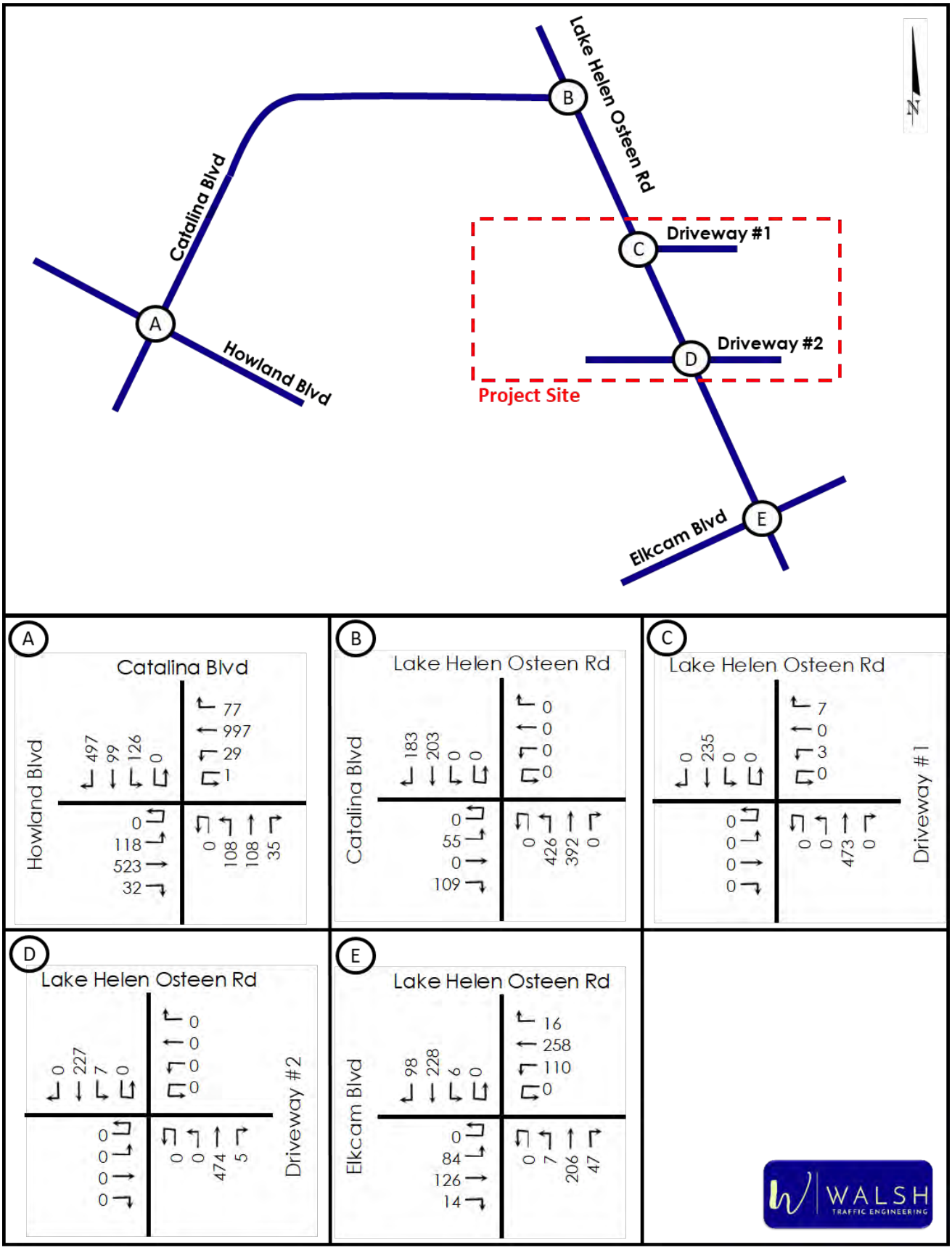


Figure 3 - Existing PM Peak-Hour Volumes (Year 2024)

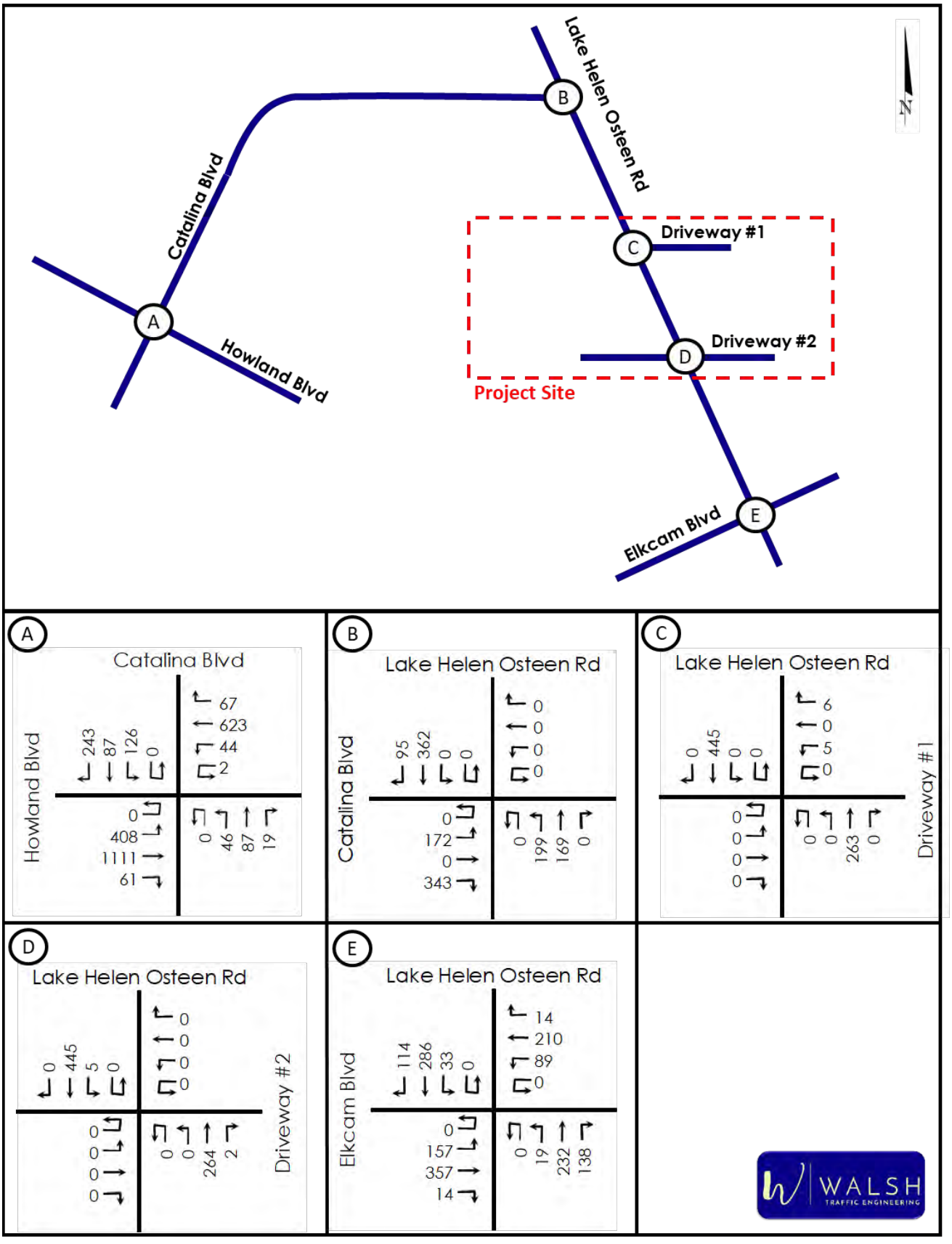


Table 1 - Existing Roadway Segment Operating Conditions (PM Peak Hour)

Roadway Segment	# of Lanes	Adopted LOS	Service Volume	Existing Volume			
				Existing Volume	Year	Source	Volume Exceeds Svc Vol?
Lake Helen Osteen Road							
Howland Blvd to Elkcam Blvd	2	E	1,020	770	2022	VC	no
Elkcam Blvd to Project	2	E	1,230	865	2022	VC	no
Project to Haulover Blvd	2	E	1,230	865	2022	VC	no
Haulover Blvd to Catalina Blvd	2	E	1,230	1,170	2022	VC	no
Catalina Boulevard							
Howland Blvd to Lake Helen Osteen Rd	2	E	1,230	1,018	2024	TMC	no
Howland Boulevard							
Catalina Blvd to Wolf Pack Run	4	E	3,410	2,125	2022	VC	no
Wolf Pack Run to I-4	4	E	3,410	2,410	2022	VC	no
Providence Boulevard							
Fort Smith Blvd to Elkcam Blvd	2	E	1,020	1,075	2022	VC	yes

Note: VC = Volusia County 2022 Counts, TMC = Turning Movement Counts

Existing Intersection Conditions

The AM and PM peak-hour existing operating conditions of the study intersections were evaluated using *Highway Capacity Manual (HCM), 6th Edition* methodologies with the Synchro 11 software. The existing AM and PM peak-hour turning movement volumes, existing roadway geometry, and existing signal timings (where applicable) were utilized in the analyses. ***Table 2*** summarizes the results of the intersection operational analyses. All movements at the unsignalized driveway intersections on Lake Helen Osteen Road currently operate well at LOS B or better.

As for the signalized intersections, all three study locations currently have overall acceptable levels of service (LOS) of D or better. The only noted existing deficiency is the southbound right-turn movement at the Howland Boulevard/Catalina Boulevard intersection. This deficiency can be addressed through the optimization of signal timings (signal timing optimization analysis is provided in the buildout conditions analysis). Printouts of the operational analyses are provided in ***Appendix D***.

Table 2 - Existing Intersection Operating Conditions (Year 2024)

		Eastbound				Westbound				Northbound				Southbound				Overall
		L/U	T	R	App	L/U	T	R	App	L/U	T	R	App	L/U	T	R	App	Intxn
Howland Blvd at Catalina Blvd - Signalized																		
AM Peak	**Delay (sec/veh)**	32.6	29.0	-	29.6	24.4	47.7	-	47.0	32.1	28.7	-	30.1	41.3	38.7	129.2	99.4	54.2
	LOS	C	C	-	C	C	D	-	D	C	C	-	C	D	D	F	F	D
	V/C	0.61	0.4	-	-	0.09	0.82	-	-	0.33	0.22	-	-	0.35	0.21	1.12	-	-
	Queue (ft)	63	-	-	-	15	-	-	-	68	-	-	-	93	-	588	-	-
	Storage (ft)	315	-	-	-	225	-	-	-	135	-	-	-	190	-	375	-	-
PM Peak	**Delay (sec/veh)**	29.1	24.9	-	25.9	21.7	30.4	-	29.9	39.1	36.0	-	36.9	48.7	45.1	55.8	51.3	31.1
	LOS	C	C	-	C	C	C	-	C	D	D	-	D	D	D	E	D	C
	V/C	0.83	0.66	-	-	0.2	0.52	-	-	0.2	0.25	-	-	0.51	0.31	0.83	-	-
	Queue (ft)	188	-	-	-	20	-	-	-	30	-	-	-	95	-	160	-	-
	Storage (ft)	315	-	-	-	225	-	-	-	135	-	-	-	190	-	375	-	-
Lake Helen Osteen Rd at Catalina Blvd - Signalized																		
AM Peak	**Delay (sec/veh)**	22.7	-	27.7	26.0	-	-	-	-	12.9	4.5	-	8.9	-	20.0	-	20.0	14.1
	LOS	C	-	C	C	-	-	-	-	B	A	-	A	-	C	-	C	B
	V/C	0.3	-	0.69	-	-	-	-	-	0.79	0.36	-	-	-	0.81	-	-	-
	Queue (ft)	18	-	-	-	-	-	-	-	58	-	-	-	-	-	-	-	-
	Storage (ft)	145	-	-	-	-	-	-	-	215	-	-	-	-	-	-	-	-
PM Peak	**Delay (sec/veh)**	20.0	-	37.4	31.6	-	-	-	-	15.6	7.9	-	-	-	26.5	-	26.5	24.5
	LOS	B	-	B	C	-	-	-	-	B	A	-	-	-	C	-	C	C
	V/C	0.39	-	0.88	-	-	-	-	-	0.59	0.18	-	-	-	0.85	-	-	-
	Queue (ft)	55	-	-	-	-	-	-	-	40	-	-	-	-	-	-	-	-
	Storage (ft)	145	-	-	-	-	-	-	-	215	-	-	-	-	-	-	-	-
		Eastbound				**Westbound**				**Northbound**				**Southbound**				**Overall**
		L	T	R	App	L	T	R	App	L/U	T	R	App	L	T	R	App	Intxn
Lake Helen Osteen Rd at Driveway #1 - 1-Way STOP Control																		
AM Peak	**Delay (sec/veh)**	-	-	-	-	-	13.1	-	13.1	-	-	-	-	-	-	-	-	-
	LOS	-	-	-	-	-	B	-	B	-	-	-	-	-	-	-	-	-
	V/C	-	-	-	-	-	0.026	-	-	-	-	-	-	-	-	-	-	-
	Queue (ft)	-	-	-	-	-	3	-	-	-	-	-	-	-	-	-	-	-
	Storage (ft)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PM Peak	**Delay (sec/veh)**	-	-	-	-	-	12.8	-	12.8	-	-	-	-	-	-	-	-	-
	LOS	-	-	-	-	-	B	-	B	-	-	-	-	-	-	-	-	-
	V/C	-	-	-	-	-	0.027	-	-	-	-	-	-	-	-	-	-	-
	Queue (ft)	-	-	-	-	-	3	-	-	-	-	-	-	-	-	-	-	-
	Storage (ft)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lake Helen Osteen Rd at Driveway #2 - 1-Way STOP Control																		
AM Peak	**Delay (sec/veh)**	-	-	-	-	-	-	-	-	-	-	-	-	-	8.6	-	0.3	-
	LOS	-	-	-	-	-	-	-	-	-	-	-	-	-	A	-	-	-
	V/C	-	-	-	-	-	-	-	-	-	-	-	-	-	0.008	-	-	-
	Queue (ft)	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	-
	Storage (ft)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PM Peak	**Delay (sec/veh)**	-	-	-	-	-	-	-	-	-	-	-	-	-	7.9	-	0.1	-
	LOS	-	-	-	-	-	-	-	-	-	-	-	-	-	A	-	-	-
	V/C	-	-	-	-	-	-	-	-	-	-	-	-	-	0.005	-	-	-
	Queue (ft)	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	-
	Storage (ft)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lake Helen Osteen Rd at Elkcam Blvd - Signalized																		
AM Peak	**Delay (sec/veh)**	22.0	25.9	-	24.5	20.9	30.1	-	27.5	19.8	27.8	-	27.7	20.4	24.1	-	24.0	26.2
	LOS	C	C	-	C	C	C	-	C	B	C	-	C	C	C	-	C	C
	V/C	0.33	0.45	-	-	0.31	0.79	-	-	0.02	0.8	-	-	0.04	0.6	-	-	-
	Queue (ft)	28	-	-	-	35	-	-	-	3	-	-	-	3	-	-	-	-
	Storage (ft)	140	-	-	-	60	-	-	-	115	-	-	-	60	-	-	-	-
PM Peak	**Delay (sec/veh)**	24.2	42.6	-	37.1	26.5	32.3	-	30.6	23.2	32.8	-	32.0	23.5	32.8	-	32.3	33.5
	LOS	C	D	-	D	C	C	-	C	C	C	-	C	C	C	-	C	C
	V/C	0.46	0.87	-	-	0.41	0.63	-	-	0.17	0.85	-	-	0.11	0.83	-	-	-
	Queue (ft)	63	-	-	-	38	-	-	-	13	-	-	-	8	-	-	-	-
	Storage (ft)	140	-	-	-	60	-	-	-	115	-	-	-	60	-	-	-	-

FUTURE CONDITIONS

As previously conveyed, the proposed development will have a buildout date of 2029. Therefore, future background volumes and project trips were calculated and combined to arrive at the future total PM peak-hour segment volumes and the AM and PM peak-hour turning movement counts.

Future Background Conditions

ROADWAY SEGMENTS

Future background traffic is the non-project-related traffic projected to utilize the study roadways and intersections. For the purposes of this analysis, the future background traffic was estimated in accordance with Volusia County's Segment Growth Rates and Vested Trips Instruction Policy. For purposes of this process historical traffic counts for the study roadway segments, where available, were obtained. It should be noted that neither the City of Deltona nor Volusia County have vested trip information available for the study roadways/intersections. The resulting growth rate calculations are summarized in ***Appendix E*** along with the historical annual volumes and historical trend worksheets. ***Table 3*** below shows the resulting future background PM peak-hour two-way volumes on the study roadway segments. Additionally, ***Table 3*** below demonstrates that the resulting future background PM peak-hour two-way volumes are projected to be below the generalized service volumes with the exception of those volumes on Lake Helen Osteen Road from Haulover Canal to Catalina Boulevard and on Providence Boulevard from Fort Smith Boulevard to Elkcam Boulevard. Therefore, both of these roadway segments need to be widened to four lanes to accommodate future background traffic.

Table 3 - Future Background PM Peak-Hour Volumes (Year 2029) for Roadway Segments

Roadway Segment	Existing Pk Hr Volume	Applied Annual Growth Rate	Existing Year	Buildout Year	Based on Growth Rate	Vested Trips	Applied Volume Growth	Total Background Volume	Service Volume	Bckgrnd Volume Exceeds Svc Vol?
Lake Helen Osteen Road										
Howland Blvd to Elkcam Blvd	770	3.5%	2022	2029	189	0	189	959	1,020	no
Elkcam Blvd to Project	865	1.0%	2022	2029	61	0	61	926	1,230	no
Project to Haulover Blvd	865	1.0%	2022	2029	61	0	61	926	1,230	no
Haulover Blvd to Catalina Blvd	1,170	1.0%	2022	2029	82	0	82	1,252	1,230	yes
Catalina Boulevard										
Howland Blvd to Lake Helen Osteen Rd	1,018	1.0%	2024	2029	51	0	51	1,069	1,230	no
Howland Boulevard										
Catalina Blvd to Wolf Pack Run	2,125	1.0%	2022	2029	149	0	149	2,274	3,410	no
Wolf Pack Run to I-4	2,410	1.0%	2022	2029	169	0	169	2,579	3,410	no
Providence Boulevard										
Fort Smith Blvd to Elkcam Blvd	1,075	1.0%	2022	2029	75	0	75	1,150	1,020	yes

INTERSECTIONS

With regards to the future background turning movements, the annual growth rates as established through Volusia County's Segment Growth Rates and Vested Trips Instruction Policy and summarized in ***Appendix E***, were applied to existing turning movement volumes. The resulting future background AM and PM peak-hour turning movement volumes are provided in ***Figure 4*** and ***Figure 5.*** Turning movement worksheets are provided in ***Appendix F***.

Figure 4 - Future Background AM Peak-Hour Volumes (Year 2029)

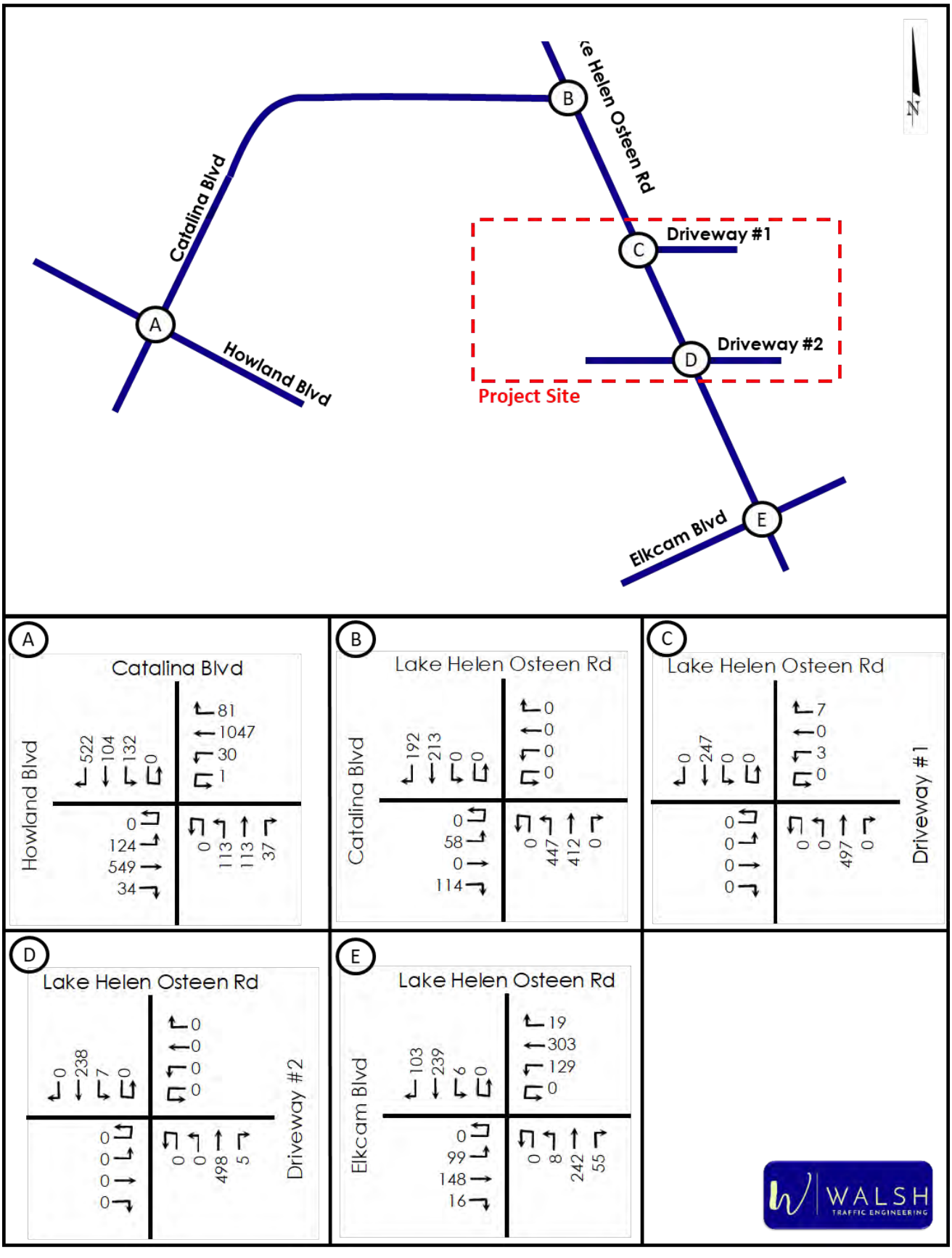
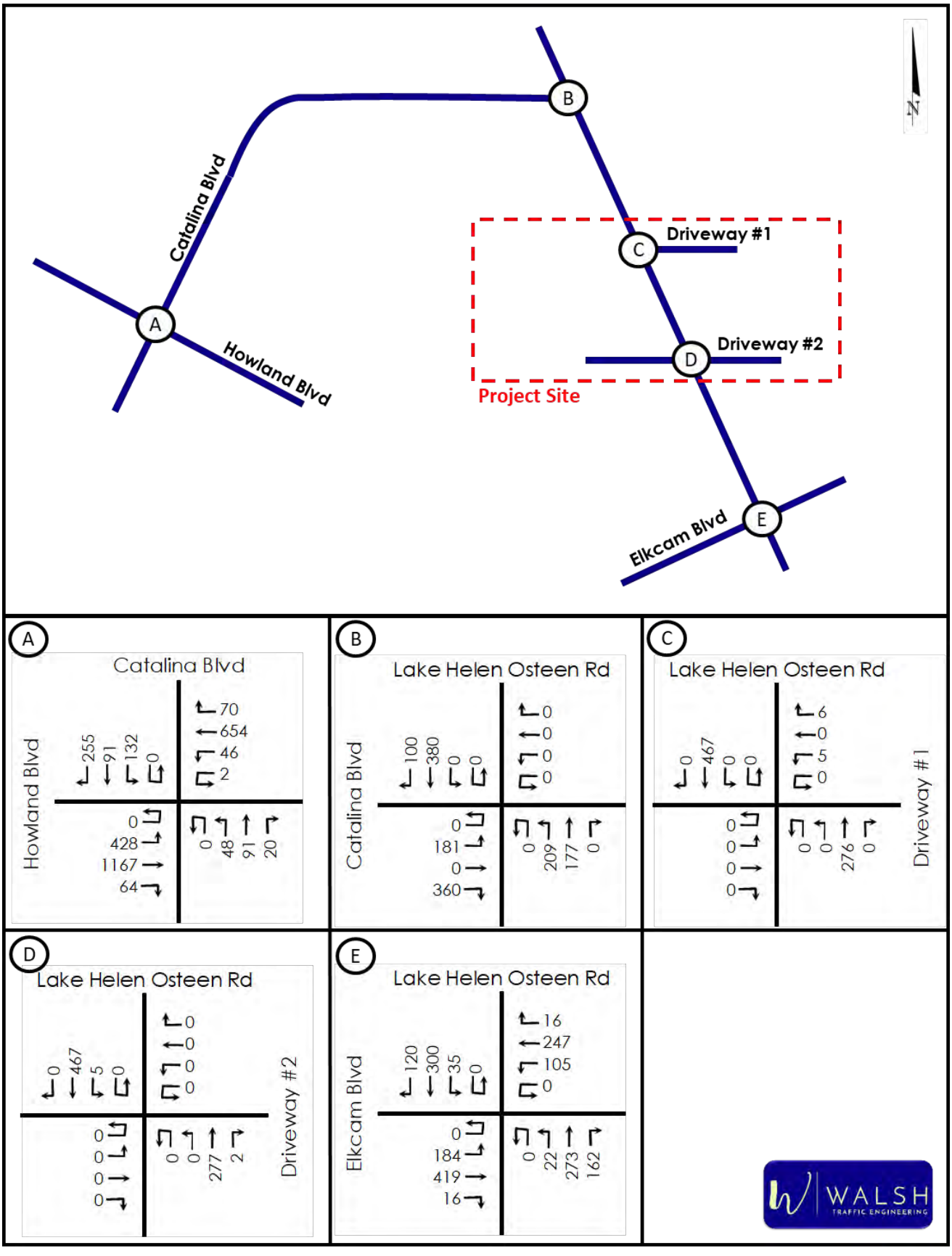


Figure 5 - Future Background PM Peak-Hour Volumes (Year 2029)



Project Trips

TRIP GENERATION

The total daily, AM peak-hour, and PM peak-hour trip generation proposed development is provided below based on trip generation equations/rates provided in the Institute of Transportation Engineer's (ITE) *Trip Generation Manual, 11th Edition*. As summarized below in ***Table 4***, and as included in the approved methodology, the proposed development is projected to generate 1,763 total daily trips, 193 total AM peak-hour trips (97 in, 96 out), and 212 total PM peak-hour trips (101 in, 111 out).

Table 4 – Total Trip Generation Summary for Proposed Development

Land Use	ITE Land Use Code	Intensity	Daily Total Trips		
			In	Out	Total
Multi-Family (Low-Rise)	220	120 DU	422	423	845
Church	560	31.29 KSF	119	119	238
Day Care Center	565	115 Students	228	229	457
General Office (Community Center)	710	15.0 KSF	111	112	223
Total			880	883	1,763

Land Use	ITE Land Use Code	Intensity	AM Peak Hour Total Trips		
			In	Out	Total
Multi-Family (Low-Rise)	220	120 DU	14	46	60
Church	560	31.29 KSF	6	4	10
Day Care Center	565	115 Students	48	42	90
General Office (Community Center)	710	15.0 KSF	29	4	33
Total			97	96	193

Land Use	ITE Land Use Code	Intensity	PM Peak Hour Total Trips		
			In	Out	Total
Multi-Family (Low-Rise)	220	120 DU	45	27	72
Church	560	31.29 KSF	7	8	15
Day Care Center	565	115 Students	43	48	91
General Office (Community Center)	710	15.0 KSF	6	28	34
Total			101	111	212

ITE provides a PM peak-hour pass-by rate of 44% for the daycare facility. The pass-by trips were thus calculated and the resulting new external trips identified. Pass-by trips were compared against 14% of the future background traffic on the adjacent section of Lake Helen Osteen Road and, per the River to Sea TPO's TIA Guidelines, determined to be acceptable. As summarized in ***Table 5*** below, and as included in the approved methodology, the proposed development is projected to generate 193 new external AM peak-hour trips (97 in, 96 out) and 172 new external PM peak-hour trips (82 in, 90 out).

Table 5 – New External Trip Generation Summary for Proposed Development

Land Use	ITE Land Use Code	Intensity	AM Peak Hour									
			Total Trips			Pass-By Trips				Net New External Trips		
			In	Out	Total	%	In	Out	Total	In	Out	Total
Multi-Family (Low-Rise)	220	120 DU	14	46	60	0.0%	0	0	0	14	46	60
Church	560	31.29 KSF	6	4	10	0.0%	0	0	0	6	4	10
Day Care Center	565	115 Students	48	42	90	0.0%	0	0	0	48	42	90
General Office (Community Center)	710	15.0 KSF	29	4	33	0.0%	0	0	0	29	4	33
Total			97	96	193	0.0%	0	0	0	97	96	193

Land Use	ITE Land Use Code	Intensity	PM Peak Hour									
			Total Trips			Pass-By Trips				Net New External Trips		
			In	Out	Total	%	In	Out	Total	In	Out	Total
Multi-Family (Low-Rise)	220	120 DU	45	27	72	0.0%	0	0	0	45	27	72
Church	560	31.29 KSF	7	8	15	0.0%	0	0	0	7	8	15
Day Care Center	565	115 Students	43	48	91	44.0%	19	21	40	24	27	51
General Office (Community Center)	710	15.0 KSF	6	28	34	0.0%	0	0	0	6	28	34
Total			101	111	212	18.9%	19	21	40	82	90	172

Trip generation was then calculated for the existing development on the eastern portion of the subject property. It is important to note that the existing building currently serves as both a church and a day-care facility. For purposes of calculating trip generation, trips were first calculated based on the 85-student daycare facility. Based on the proposed development, a 10,000 square-foot daycare accommodates 115 students. This equates to approximately 87 square feet required per student. Applying this same ratio to the 85 students, it is estimated that approximately 7,395 square feet of the existing building serves as daycare during the weekdays. Thus, the remaining 8,300 square feet of the existing building is used as a church. As summarized on the following page in ***Table 6***, and as included in the approved methodology, the existing development therefore generates 1,195 total daily trips, 69 total AM peak-hour trips (37 in, 32 out) and 71 total PM peak-hour trips (34 in, 37 out).

Similar to the proposed development, pass-by trips were calculated for the existing daycare facility and the resulting new external trips identified. As summarized in ***Table 7*** on the following page, and as included in the approved methodology, the proposed development is projected to generate 69 new external AM peak-hour trips (37 in, 32 out) and 42 new external PM peak-hour trips (20 in, 22 out).

Table 6 – Total Trip Generation Summary for Existing Development

Land Use	ITE Land Use Code	Intensity	Daily Total Trips		
			In	Out	Total
Church	560	8.30 KSF	32	32	63
Day Care Center	565	85 Students	175	175	350
Total			207	207	413

Land Use	ITE Land Use Code	Intensity	AM Peak Hour Total Trips		
			In	Out	Total
Church	560	8.30 KSF	2	1	3
Day Care Center	565	85 Students	35	31	66
Total			37	32	69

Land Use	ITE Land Use Code	Intensity	PM Peak Hour Total Trips		
			In	Out	Total
Church	560	8.30 KSF	2	2	4
Day Care Center	565	85 Students	32	35	67
Total			34	37	71

Table 7 – New External Trip Generation Summary (Existing Development)

Land Use	ITE Land Use Code	Intensity	AM Peak Hour									
			Total Trips			Pass-By Trips				Net New External Trips		
			In	Out	Total	%	In	Out	Total	In	Out	Total
Church	560	8.30 KSF	2	1	3	0.0%	0	0	0	2	1	3
Day Care Center	565	85 Students	35	31	66	0.0%	0	0	0	35	31	66
Total			37	32	69	0.0%	0	0	0	37	32	69

Land Use	ITE Land Use Code	Intensity	PM Peak Hour									
			Total Trips			Pass-By Trips				Net New External Trips		
			In	Out	Total	%	In	Out	Total	In	Out	Total
Church	560	8.30 KSF	2	2	4	0.0%	0	0	0	2	2	4
Day Care Center	565	85 Students	32	35	67	44.0%	14	15	29	18	20	38
Total			34	37	71	40.8%	14	15	29	20	22	42

Recognizing that the existing development is vested, the difference between the existing and proposed development was then calculated. As summarized below in ***Table 8***, and as included in the approved methodology, the proposed development modification will increase the AM peak-hour external trips by 124 trips (60 in, 64 out) and the new external PM peak-hour trips by 130 (62 in, 68 out).

Table 8 – New External Trip Generation Increase of Proposed Development

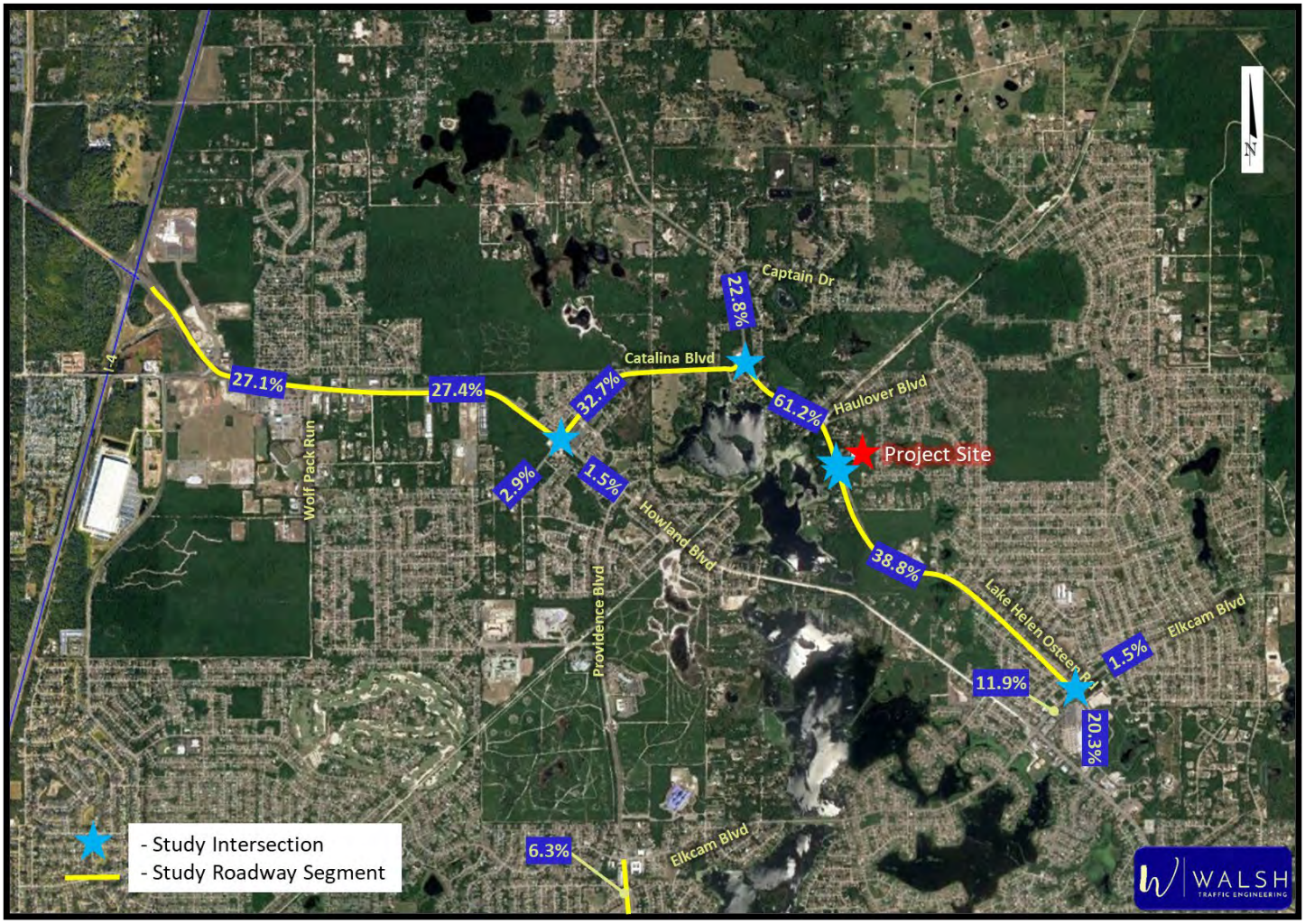
Land Use	AM Peak Hour Total Trips		
	In	Out	Total
Proposed Development	97	96	193
Existing Development	37	32	69
Additonal Trips from Proposed Development	60	64	124

Land Use	PM Peak Hour Total Trips		
	In	Out	Total
Proposed Development	82	90	172
Existing Development	20	22	42
Additonal Trips from Proposed Development	62	68	130

TRIP DISTRIBUTION

The trip distribution pattern defines the primary corridors that will be traveled by the traffic generated by the project. The trip distribution for the new external trips, as included in the approved methodology, is shown in ***Figure 6***.

Figure 6 – New External Trip Distribution



TRIP ASSIGNMENT

The new external trip generation increase in AM and PM peak-hour project trips from ***Table 10*** were then assigned to the study roadways and non-access intersections based on the trip distribution. ***Figure 7*** and ***Figure 8*** show the AM and PM peak-hour new external trips, assigned to the non-access study intersections.

For the access-related intersections, the turning projections were developed by first removing exiting trips turning into and out of the development. Then, the total new external trips and pass-by trips from Table 5 were assigned to the driveways. When assigning exiting trips from the eastern portion of the development, approximately 50% of the daycare exiting trips destined to the north on Lake Helen Osteen Road and 33% of the daycare exiting trips destined to the south on Lake Helen Osteen Road were assigned to Driveway #1 (northern driveway). All other exiting trips were assigned to Driveway #2. AM and PM peak-hour turning movement projections at the access-related intersections are summarized in ***Figure 9*** and ***Figure 10***.

Figure 7 - AM Peak-Hour Project Trips at Non-Access Intersections (New External)

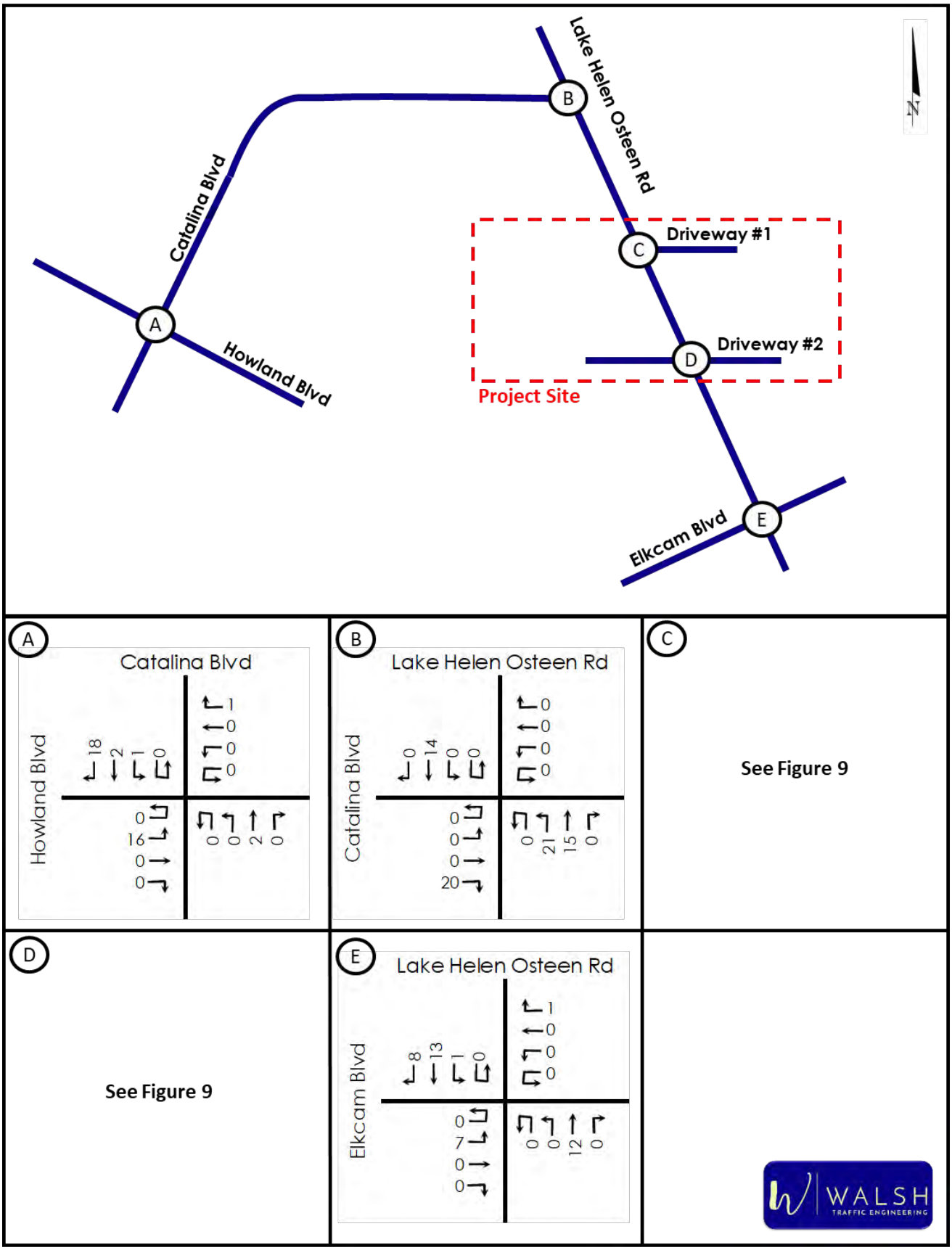


Figure 8 - PM Peak-Hour Project Trips at Non-Access Intersections (New External)

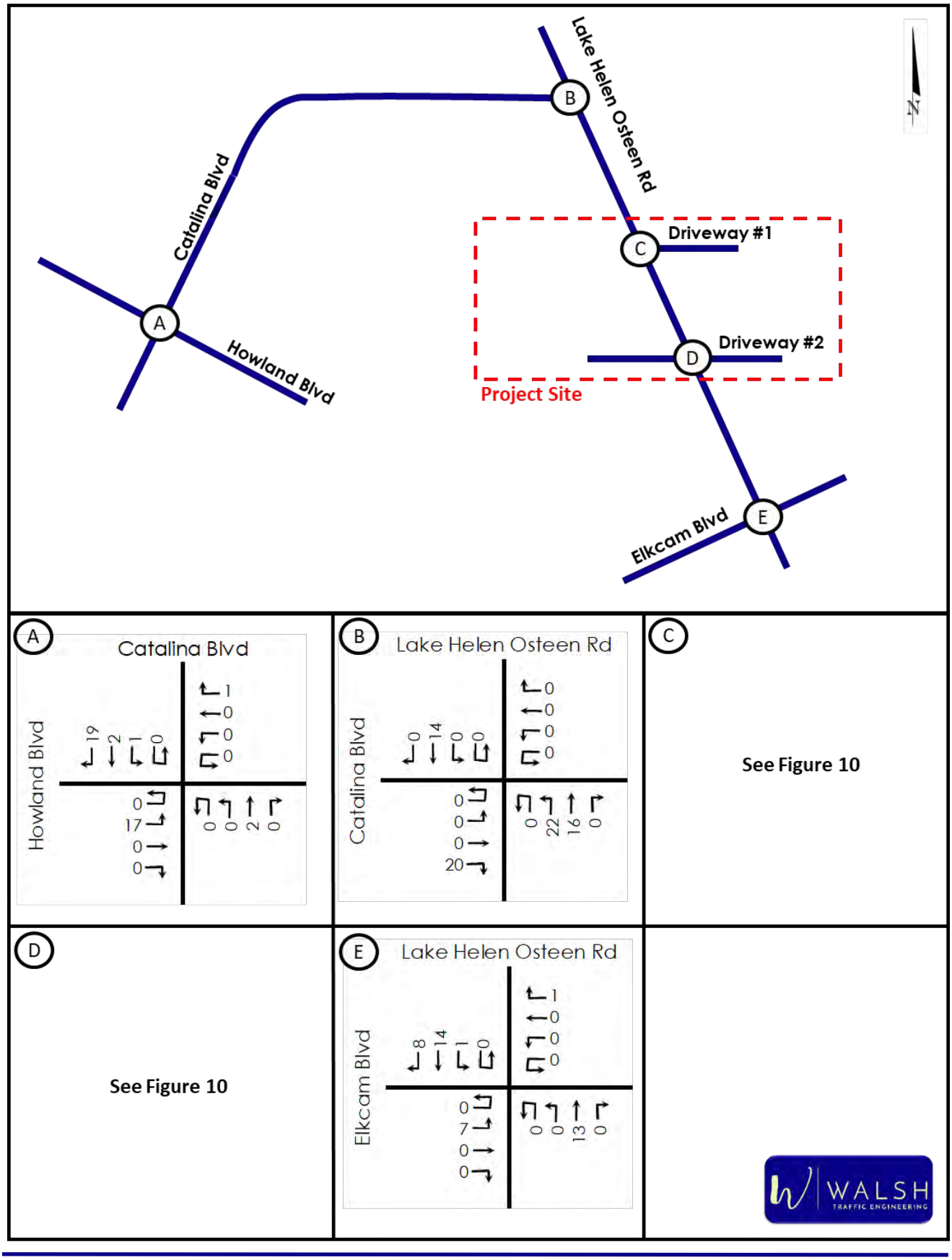


Figure 9 - AM Peak-Hour Project Trips at Access Intersections

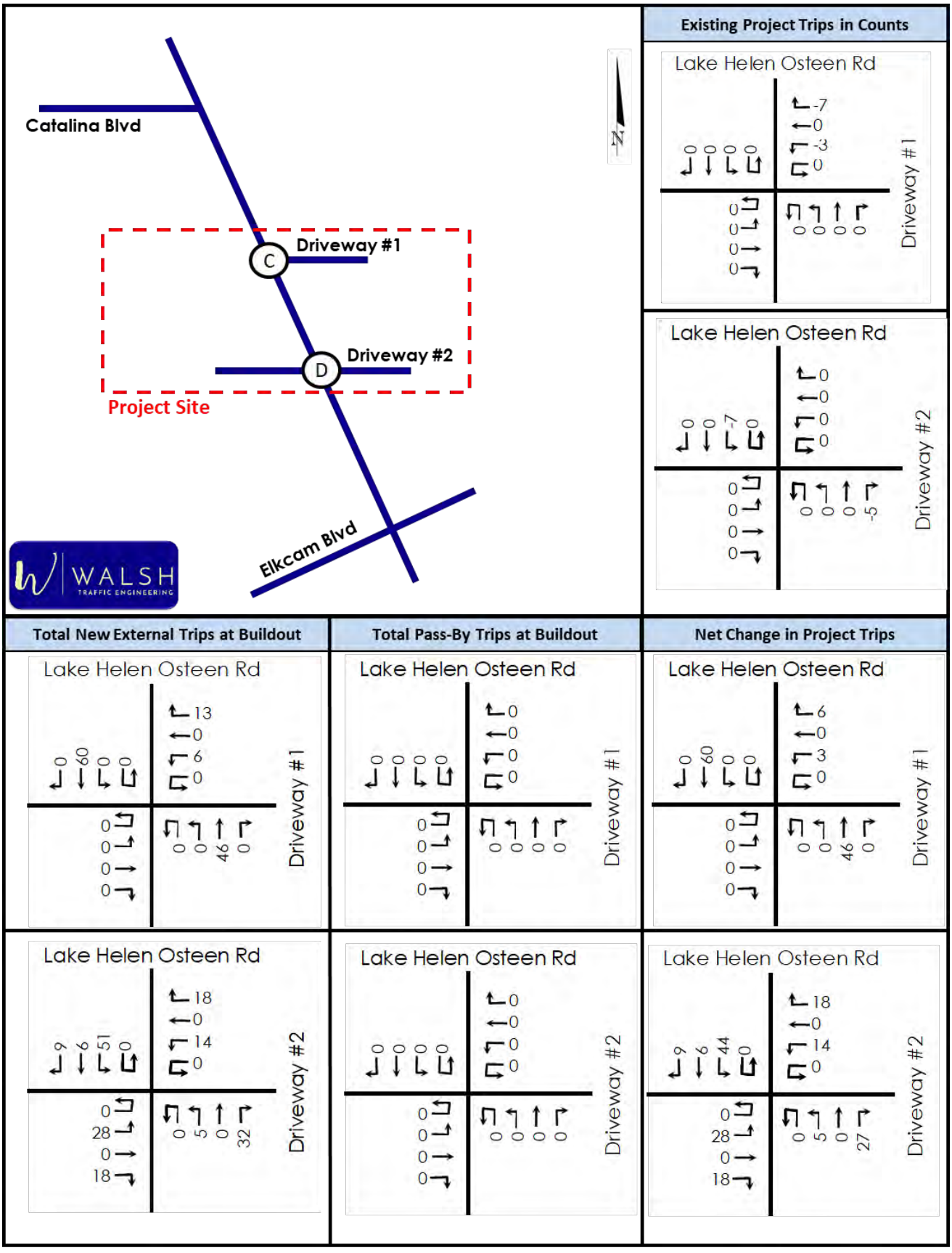
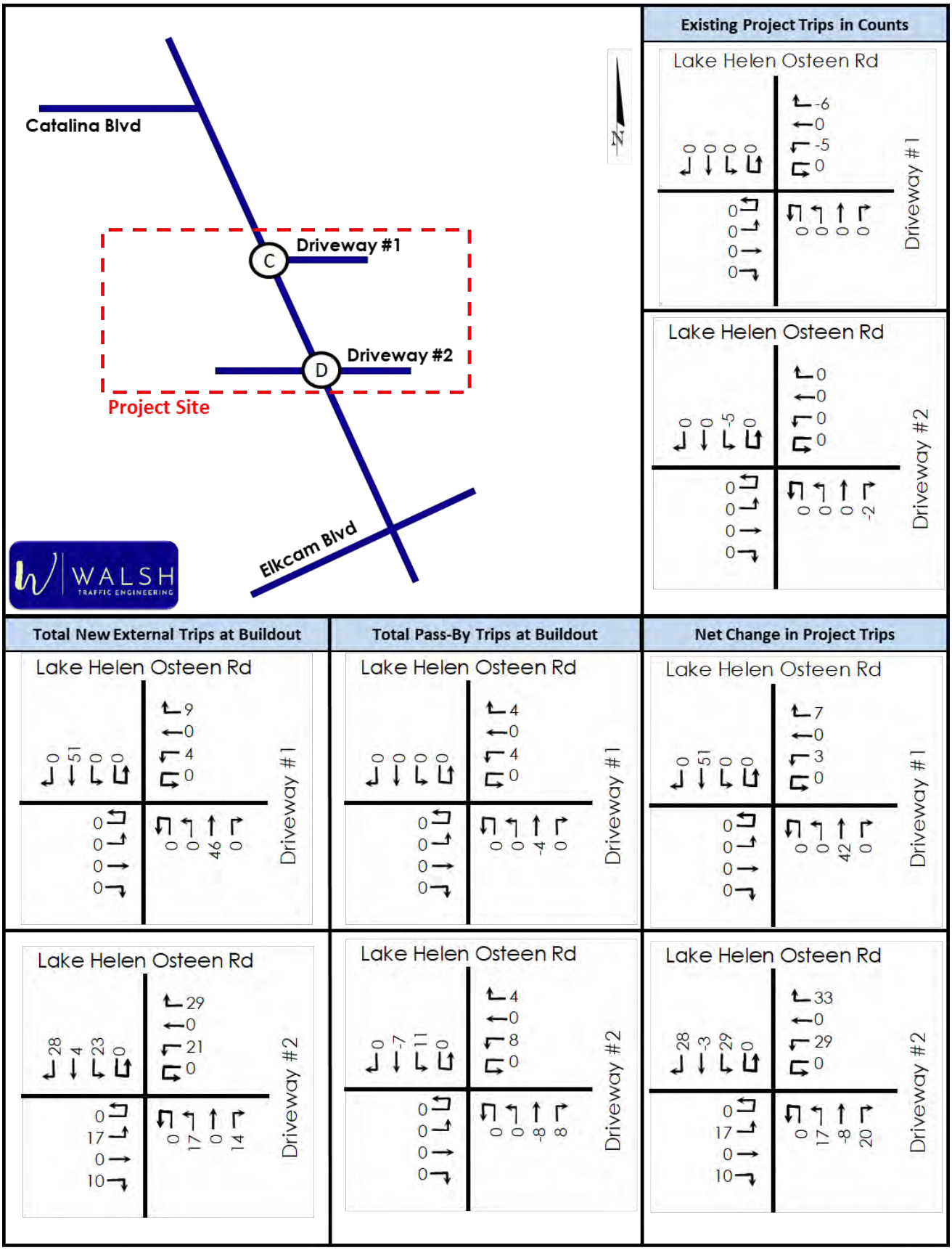


Figure 10 - PM Peak-Hour Project Trips at Access Intersections



Future Buildout Conditions

ROADWAY SEGMENTS

The total projected PM peak-hour two-way segment volumes for the study roadway segments were calculated by adding the new external trip increase for the project to the future background volume projections. The PM peak-hour operating conditions of the study roadway segments were then analyzed by comparing total projected PM peak-hour two-way segment volumes to each roadway segment's generalized service volume. *Table 9* summarizes the total PM peak-hour two-way volumes in year 2029 on the roadway segments at build out of the development. Consistent with the future background conditions analysis, the buildout PM peak-hour two-way volumes are projected to be below the generalized service volumes with the exception of those volumes on Lake Helen Osteen Road from Haulover Canal to Catalina Boulevard and on Providence Boulevard from Fort Smith Boulevard to Elkcam Boulevard. Therefore, consistent with the future background analyses, both of these roadway segments need to be widened to four lanes to accommodate traffic at buildout of the development.

Table 9 - Year 2029 Roadway Segment Operating Conditions (PM Peak Hour)

Roadway Segment	# of Lanes	Adopted LOS	Total Background Volume	Project Trips		Total Buildout Volume	Service Volume	Bldout Volume Exceeds Svc Vol?
				% Assign.	Volume			
Lake Helen Osteen Road								
Howland Blvd to Elkcam Blvd	2	E	959	20.3%	26	985	1,020	no
Elkcam Blvd to Project	2	E	926	38.8%	50	976	1,230	no
Project to Haulover Blvd	2	E	926	61.2%	80	1,006	1,230	no
Haulover Blvd to Catalina Blvd	2	E	1,252	55.6%	72	1,324	1,230	yes
Catalina Boulevard								
Howland Blvd to Lake Helen Osteen Rd	2	E	1,069	32.7%	43	1,112	1,230	no
Howland Boulevard								
Catalina Blvd to Wolf Pack Run	4	E	2,274	27.4%	36	2,310	3,410	no
Wolf Pack Run to I-4	4	E	2,579	27.1%	35	2,614	3,410	no
Providence Boulevard								
Fort Smith Blvd to Elkcam Blvd	2	E	1,150	6.3%	8	1,158	1,020	yes

It is important to note that all improvements identified are the same improvements as those needed to address the future background deficiencies. Per Florida Statutes 163.3180(5)(h)4:

> *A "transportation deficiency" means a facility or facilities on which the adopted level of service standard is exceeded by the existing, committed, and vested trips, plus additional projected background trips from any source other than the development project under review…*

Further, it is conveyed under F.S. 163.3180(5)(h)2b:

> *If any road is determined to be transportation deficient without the project traffic under review, the costs of correcting that deficiency shall be removed from the project's proportionate-share calculation and the necessary transportation improvements to correct that deficiency shall be considered to be in place for purposes of the proportionate-share calculation. The improvement necessary to correct the transportation deficiency is the funding responsibility of the entity that has maintenance responsibility for the facility. The development's proportionate share shall be calculated only for the needed transportation improvements that are greater than the identified deficiency.*

Therefore, because the needed improvements for buildout are the same as those needed to mitigate deficiencies that are projected without the project, the development is not responsible to mitigate impacts to these roadway segments.

INTERSECTIONS

For purposes of analyzing the study intersections at buildout of the development, AM and PM peak-hour turning movement projections were calculated by adding the adding the future background volume projections and the project trips. The resulting total AM and PM peak-hour turning movement projections at buildout of the development are summarized in ***Figures 11*** and ***12*** on the following pages.

The AM and PM peak-hour operating conditions for the study intersections were analyzed at build out of the proposed development in year 2029 using the projected turning movements, existing roadway geometry, and existing signal timings (where applicable). ***Table 10*** summarizes the results of the future buildout intersection operational analyses in 2029. All movements at the unsignalized driveway intersections on Lake Helen Osteen Road are projected to operate acceptably at LOS C or better.

As for the signalized intersections, all three study locations are projected to have overall acceptable levels of service (LOS) of E or better. Consistent with the existing conditions analysis, the only noted projected deficiency is the southbound right-turn movement at the Howland Boulevard/Catalina Boulevard intersection. With the optimization of signal timings, the same improvement needed to address the existing deficiency, this intersection and all movements are projected to operate acceptably. Printouts of the operational analyses are provided in ***Appendix G***.

Similar to the roadway segment improvements, because the needed intersection improvement for buildout is the same as that needed to mitigate a deficiency that currently exists without the project, per Florida Statutes 163.3180 the development is not responsible to mitigate impacts to these roadway segments.

Figure 11 – Buildout (Year 2029) AM Peak-Hour Volumes

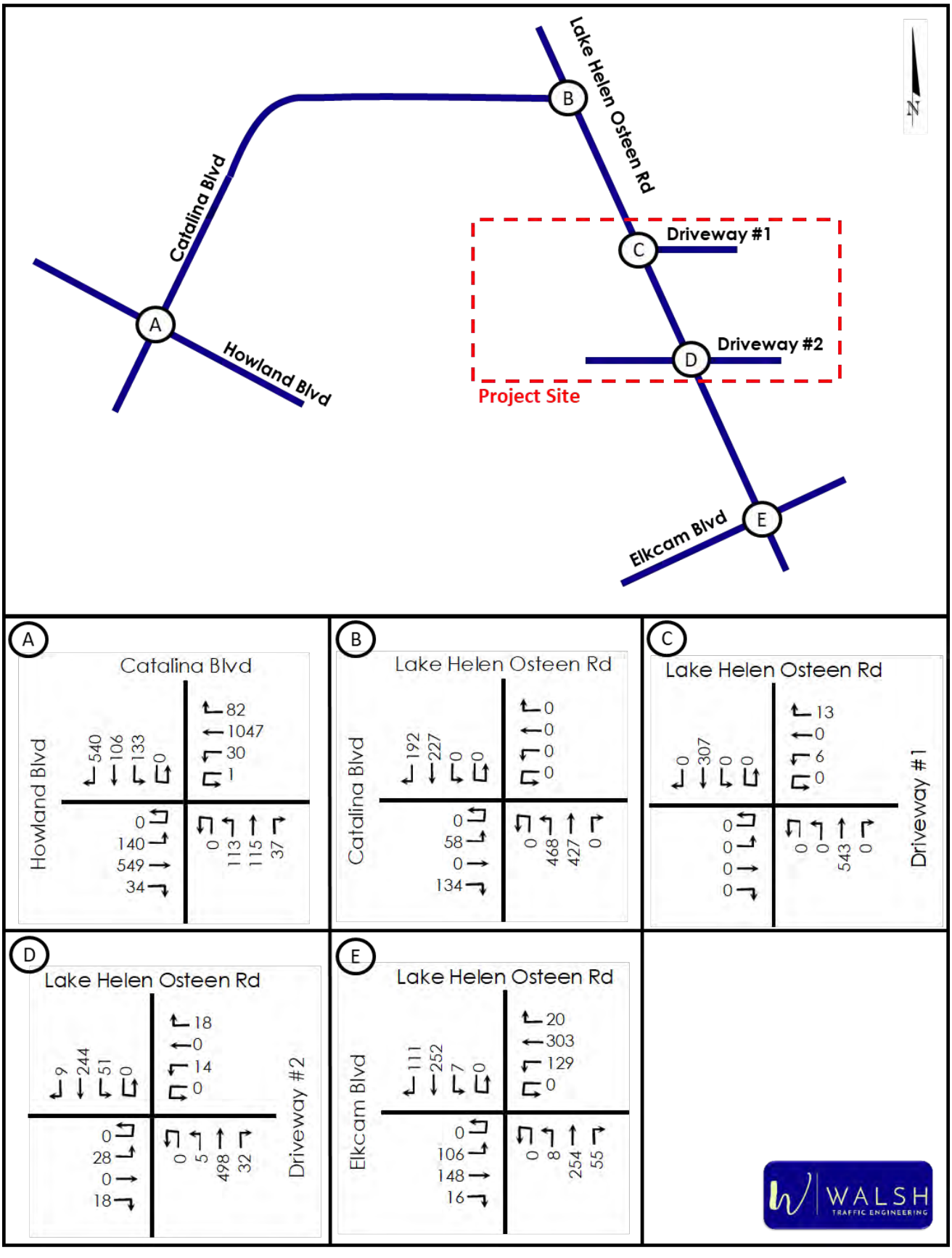


Figure 12 - Buildout (Year 2029) PM Peak-Hour Volumes

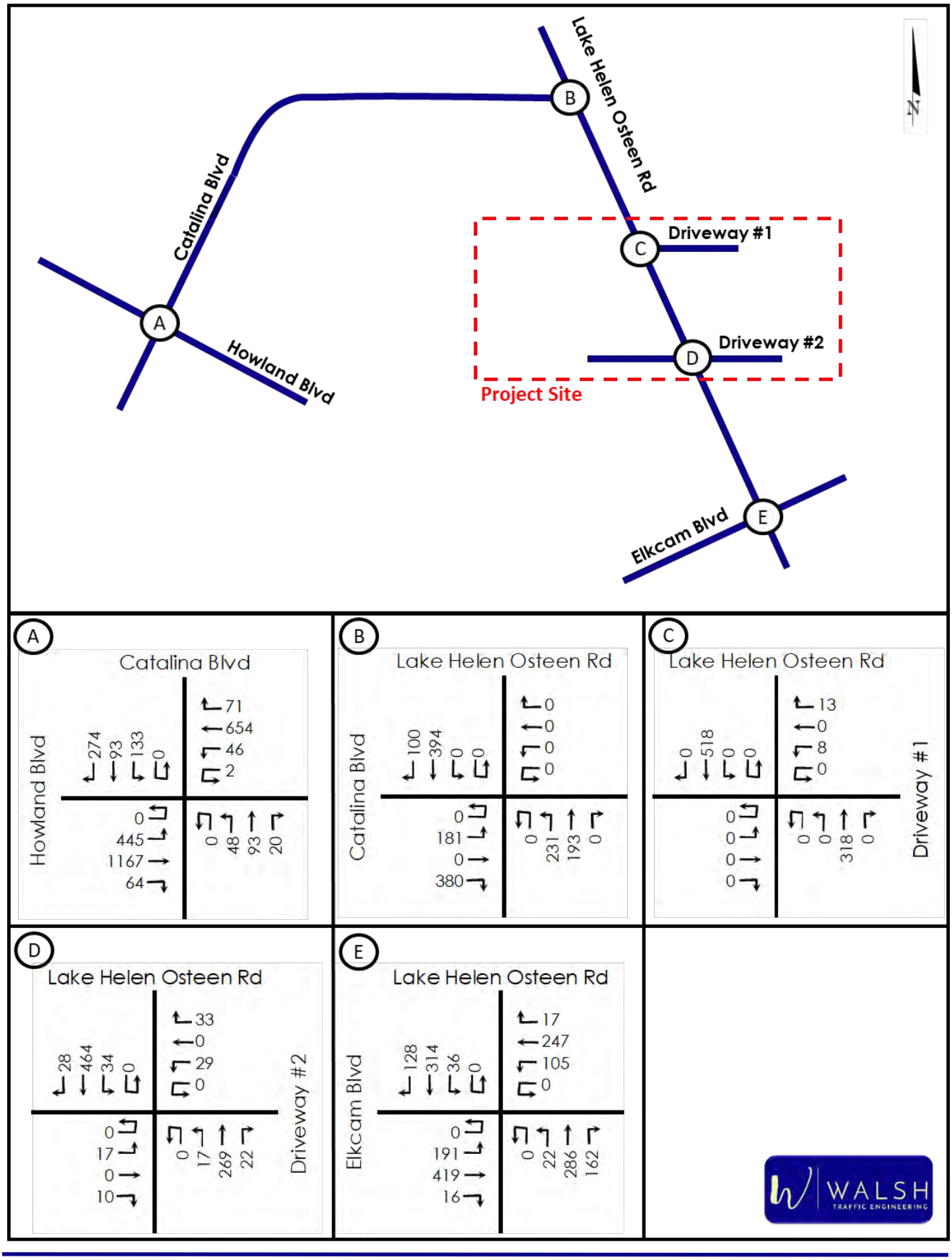


Table 10 – Future Buildout Intersection Operating Conditions (Year 2029)

		Eastbound				Westbound				Northbound				Southbound				Overall
		L/U	T	R	App	L/U	T	R	App	L/U	T	R	App	L/U	T	R	App	Intxn
Howland Blvd at Catalina Blvd - Signalized																		
AM Peak	**Delay (sec/veh)**	37.3	29.6	-	31.1	25.2	55.1	-	54.2	32.3	28.8	-	30.3	41.8	39.1	171.4	128.5	65.1
	LOS	D	C	-	C	C	E	-	D	C	C	-	C	D	D	F	F	E
	V/C	0.73	0.42	-	-	0.1	0.88	-	-	0.35	0.23	-	-	0.37	0.23	1.23	-	-
	Queue (ft)	78	-	-	-	15	-	-	-	70	-	-	-	100	-	710	-	-
	Storage (ft)	315	-	-	-	225	-	-	-	135	-	-	-	190	-	375	-	-
PM Peak	**Delay (sec/veh)**	45.4	27.9	-	32.5	24.7	35.0	-	34.3	39.3	36.5	-	37.3	49.1	45.4	57.6	52.6	36.2
	LOS	D	C	-	C	C	C	-	C	D	D	-	D	D	D	E	D	D
	V/C	0.93	0.7	-	-	0.23	0.57	-	-	0.2	0.25	-	-	0.5	0.3	0.86	-	-
	Queue (ft)	268	-	-	-	23	-	-	-	33	-	-	-	105	-	195	-	-
	Storage (ft)	315	-	-	-	225	-	-	-	135	-	-	-	190	-	375	-	-
Lake Helen Osteen Rd at Catalina Blvd - Signalized																		
AM Peak	**Delay (sec/veh)**	24.3	-	30.2	28.4	-	-	-	-	20.2	5.0	-	12.9	-	23.4	-	23.4	17.8
	LOS	C	-	C	C	-	-	-	-	B	A	-	A	-	C	-	C	B
	V/C	0.28	-	0.73	-	-	-	-	-	0.88	0.39	-	-	-	0.84	-	-	-
	Queue (ft)	20	-	-	-	-	-	-	-	98	-	-	-	-	-	-	-	-
	Storage (ft)	145	-	-	-	-	-	-	-	215	-	-	-	-	-	-	-	-
PM Peak	**Delay (sec/veh)**	21.9	-	53.1	43.0	-	-	-	-	18.2	8.6	-	13.8	-	33.7	-	33.7	31.5
	LOS	C	-	D	D	-	-	-	-	B	A	-	B	-	C	-	C	C
	V/C	0.4	-	0.94	-	-	-	-	-	0.7	0.2	-	-	-	0.89	-	-	-
	Queue (ft)	65	-	-	-	-	-	-	-	55	-	-	-	-	-	-	-	-
	Storage (ft)	145	-	-	-	-	-	-	-	215	-	-	-	-	-	-	-	-
		Eastbound				**Westbound**				**Northbound**				**Southbound**				**Overall**
		L	T	R	App	L	T	R	App	L/U	T	R	App	L	T	R	App	Intxn
Lake Helen Osteen Rd at Driveway #1 - 1-Way STOP Control																		
AM Peak	**Delay (sec/veh)**	-	-	-	-	-	15.0	-	15.0	-	-	-	-	-	-	-	-	-
	LOS	-	-	-	-	-	C	-	C	-	-	-	-	-	-	-	-	-
	V/C	-	-	-	-	-	0.58	-	-	-	-	-	-	-	-	-	-	-
	Queue (ft)	-	-	-	-	-	5	-	-	-	-	-	-	-	-	-	-	-
	Storage (ft)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PM Peak	**Delay (sec/veh)**	-	-	-	-	-	13.9	-	13.9	-	-	-	-	-	-	-	-	-
	LOS	-	-	-	-	-	B	-	B	-	-	-	-	-	-	-	-	-
	V/C	-	-	-	-	-	0.057	-	-	-	-	-	-	-	-	-	-	-
	Queue (ft)	-	-	-	-	-	5	-	-	-	-	-	-	-	-	-	-	-
	Storage (ft)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lake Helen Osteen Rd at Driveway #2 - 1-Way STOP Control																		
AM Peak	**Delay (sec/veh)**	-	22.0	-	22.0	-	19.3	-	19.3	-	7.9	-	0.1	-	9.0	-	1.5	-
	LOS	-	C	-	C	-	C	-	C	-	A	-	-	-	A	-	-	-
	V/C	-	0.24	-	-	-	0.13	-	-	-	0.005	-	-	-	0.063	-	-	-
	Queue (ft)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Storage (ft)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PM Peak	**Delay (sec/veh)**	-	21.0	-	21.0	-	18.7	-	18.7	-	8.6	-	0.5	-	8.0	-	0.5	-
	LOS	-	C	-	C	-	C	-	C	-	A	-	-	-	A	-	-	-
	V/C	-	0.121	-	-	-	0.214	-	-	-	0.019	-	-	-	0.032	-	-	-
	Queue (ft)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Storage (ft)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lake Helen Osteen Rd at Elkcam Blvd - Signalized																		
AM Peak	**Delay (sec/veh)**	23.6	27.6	-	26.0	21.8	35.3	-	31.4	22.1	27.1	-	26.9	21.4	30.6	-	30.5	29.1
	LOS	C	C	-	C	C	D	-	C	C	C	-	C	C	C	-	C	C
	V/C	0.42	0.46	-	-	0.35	0.84	-	-	0.05	0.68	-	-	0.03	0.83	-	-	-
	Queue (ft)	38	-	-	-	45	-	-	-	3	-	-	-	3	-	-	-	-
	Storage (ft)	140	-	-	-	60	-	-	-	115	-	-	-	60	-	-	-	-
PM Peak	**Delay (sec/veh)**	27.9	66.2	-	54.5	31.4	39.5	-	37.2	25.6	43.1	-	42.3	26.1	38.4	-	37.4	44.1
	LOS	C	E	-	D	C	D	-	D	C	D	-	D	C	D	-	D	D
	V/C	0.57	0.96	-	-	0.54	0.71	-	-	0.13	0.89	-	-	0.22	0.84	-	-	-
	Queue (ft)	90	-	-	-	53	-	-	-	15	-	-	-	10	-	-	-	-
	Storage (ft)	140	-	-	-	60	-	-	-	115	-	-	-	60	-	-	-	-

Project Driveway Turn-Lane Analysis

Driveway #1 on Lake Helen Osteen Road is and will remain exit only. Therefore, this driveway was not evaluated for turn lanes on Lake Helen Osteen Road into the site. However, Driveway #2 on Lake Helen Osteen Road was evaluated for the need for a northbound and/or southbound right-turn lane based on Section 72-619 of the Volusia County Land Development Code recognizing that Lake Osteen Road is a Volusia County roadway. Based on Volusia County's LDC, a right-turn lane is warranted for roadways with posted speed limits of 35 miles per hour or where the right-turn volume is projected to exceed 100 vehicles per hour. The northbound right-turn volume is projected to be 32 vehicles in the AM peak hour and 22 vehicles in the PM peak hour. Thus, from a traffic volume perspective, the northbound right-turn volume is well below the County's volume threshold for warranting a right-turn lane. However, given that the northbound right-turn lane serves the day care center as well as the church, a northbound right-turn lane of 320 feet is recommended based on the County's LDC given the 45-mph posted speed limit. The 320-foot turn-lane length includes a 50-foot taper.

The southbound right-turn volume is projected to be 9 vehicles in the AM peak hour and 28 vehicles in the PM peak hour. Thus, from a traffic volume perspective, the northbound right-turn volume is well below the County's volume threshold for warranting a right-turn lane. Although the posted speed limit is 45 mph, a waiver of the requirements for a southbound right-turn lane is requested given that the right-turn volumes are only projected to reach, at most, 30% of the County's volume threshold requirements.

Lake Helen Osteen Road at Driveway #2 was also evaluated for the need for northbound and southbound left-turn lanes on Lake Helen Osteen Road based on Section 72-619 of the Volusia County Land Development Code. Based on the County's LDC, a left-turn lane is warranted for roadways where the left-turn volume is projected to exceed 25 vehicles per hour. The northbound left-turn volume is projected to be five (5) vehicles in the AM peak hour and 17 vehicles in the PM peak hour. Thus, a northbound left-turn lane is not warranted.

The southbound left-turn volume is projected to exceed the 25 vehicle per hour threshold. Thus, a southbound right-turn lane of 370 feet is recommended based on a 50-foot queue (the 95th percentile queue is less than two vehicles) plus a deceleration distance of 320 feet based on the County's LDC given the 45-mph posted speed limit. The 370-foot turn-lane length includes a 50-foot taper.

Internal Site Queue Analysis for Daycare Operations

Based on *Table 4*, the proposed daycare will have 48 inbound AM peak-hour trips and 42 inbound PM peak-hour trips. There will be an additional 35 AM and 13 PM peak-hour non-daycare trips destined to parking spaces in the eastern portion of the development. These additional trips were not included in the queue analysis as they are expected to pull directly into the parking spaces.

The daycare will be located at the easternmost portion of the property. The existing entry driveway extends approximately 400' to the eastern end of the existing church. Then an additional 300' of parking aisle leads to the front of the daycare facility. This combined 700' can accommodate 28 vehicles. It is estimated that 25% of drop offs will occur with motorists parking and walking their children into the facility. Thus, these motorists will not be involved in the drop-off queues. If half of the peak-hour entering vehicles to be queued arrive in a 15-minute increment, that would equate to 18 queued vehicles (48 x 75% to be queued x 50% in 15-minute increment) in the AM peak hour and 17 queue vehicles (43 x 75% x 50%) in the PM peak hour. Without even considering a staggering-of-the-vehicles, 18 vehicles equate to a 450-foot queue and 17 vehicles to a 425-foot queue. Thus, the back of the worst-case queue would be contained on-site approximately 250' east of Lake Helen Osteen Road.

Alternative Mode Analysis

Per the River to Sea TPO TIA Guidelines, an evaluation relating to transit, pedestrian, and bicycle facilities is provided below.

Transit – Votran does not provide fixed-route transit service in close proximity to the development. The nearest fixed-route service is nearly two miles away at the Howland Boulevard/Elkcam Boulevard intersection (routes 21/22).

Pedestrian Facilities – Currently, sidewalks are not provided on either side of Lake Helen Osteen Road. However, a 5' walkway will be provided around the western portion of the development with pedestrian connections to the various buildings. Internal pedestrian connectivity will be provided in the eastern portion along with the provision of a sidewalk that runs parallel with Lake Helen Osteen Road within the development. This sidewalk will provide the opportunity for adjacent properties to provide sidewalk connectivity along the east side of Lake Helen Osteen Road. It is also proposed to provide a midblock crosswalk with a refuge island across Lake Helen Osteen Road on the south side of the south driveway intersection.

Bicycle Facilities – There are no bicycle facilities provided along Lake Helen Osteen Road.

Crash Analysis

A five-year crash analysis (January 1, 2019 to December 31, 2023) was conducted on Lake Helen Osteen Road immediately adjacent to the proposed development. Based on the University of Florida's Signal Four Analytics, there was only one rear-end crash (property damage only) on Lake Helen Osteen Road (see Signal Four Analytics screenshot of analysis in ***Appendix I***). No other crashes were identified. Thus, there is no existing crash trend on Lake Helen Osteen Road adjacent to the development. Further, the development is not projected to trigger any new roadway segment/intersection deficiencies. Therefore, no additional crash analyses were required per the approved methodology.

CONCLUSIONS

A traffic impact analysis was prepared for the proposed New Hope PUD located on Lake Helen Osteen Road, south of Haulover Boulevard in Deltona, Florida. Below is a summary of the findings of the study:

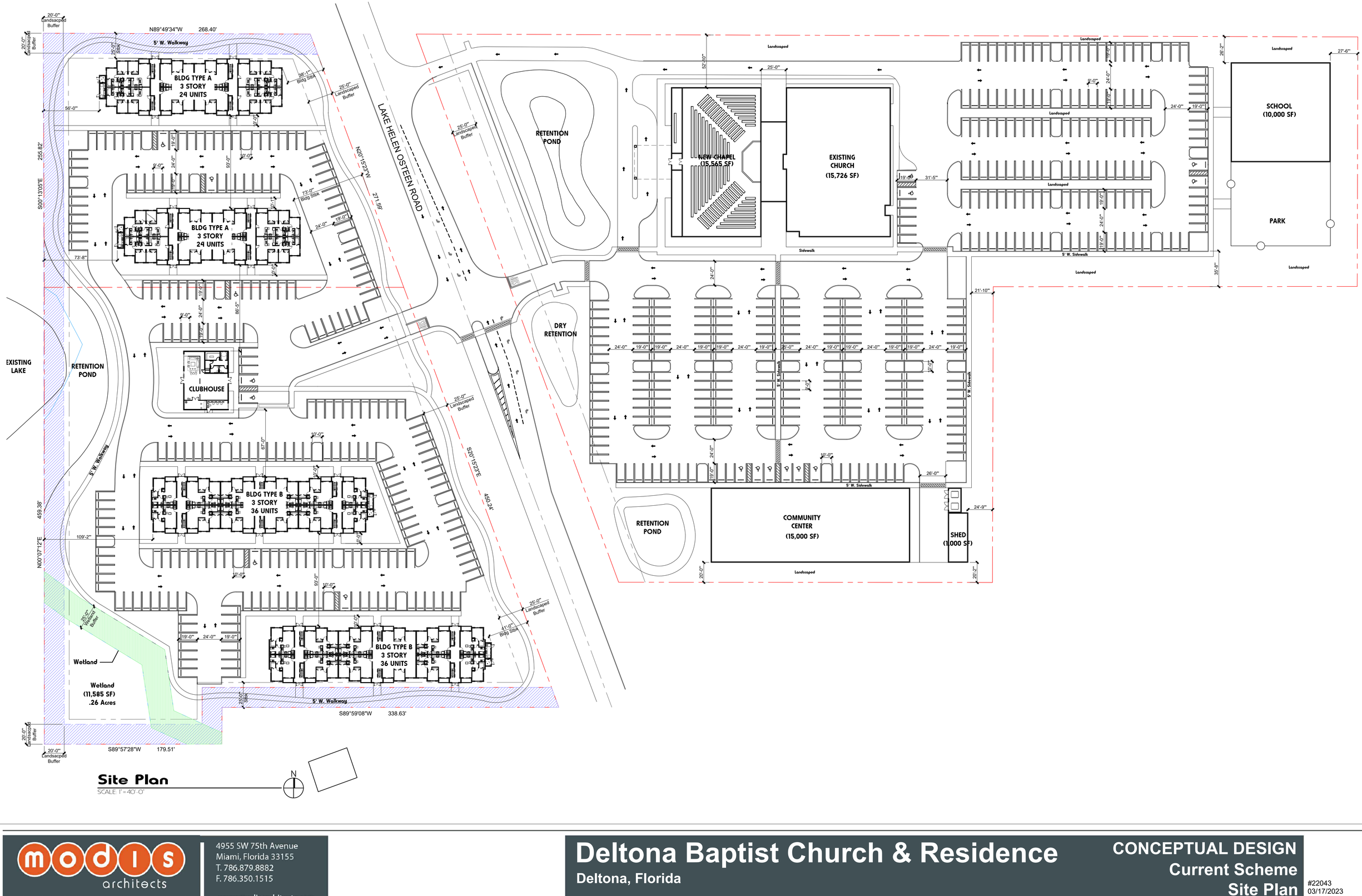
- Based on the existing conditions analyses, all study roadway segments currently operate at an acceptable level of service (LOS) with the exception of the volumes on Providence Boulevard from Fort Smith Boulevard to Elkcam Boulevard.
- Based on the future background conditions analyses, all study roadway segments are projected to operate acceptably with the exception Lake Helen Osteen Road from Haulover Canal to Catalina Boulevard and Providence Boulevard from Fort Smith Boulevard to Elkcam Boulevard. Both of these roadway segments need to be widened to four lanes to accommodate future background traffic.
- Based on the future buildout conditions analyses, consistent with the future background analyses, all study roadway segments are projected to operate acceptably with the exception Lake Helen Osteen Road from Haulover Canal to Catalina Boulevard and Providence Boulevard from Fort Smith Boulevard to Elkcam Boulevard. Both of these roadway segments need to be widened to four lanes to accommodate future background traffic. These improvements identified are the same improvements as those needed to address the future background deficiencies. Therefore, per Florida Statutes 163.3180, because the needed improvements for buildout are the same as those needed to mitigate deficiencies that are projected without the project, the development is not responsible to mitigate impacts to these roadway segments.
- Based on the existing conditions intersection analyses, all movements at the unsignalized driveway intersections on Lake Helen Osteen Road currently operate well at LOS B or better. As for the signalized intersections, all three study locations currently have overall acceptable levels of service (LOS) of D or better. The only noted existing deficiency is the southbound right-turn movement at the Howland Boulevard/Catalina Boulevard intersection which can be addressed through the optimization of signal timings.
- Based on the future buildout intersection analyses, all movements at the unsignalized driveway intersections on Lake Helen Osteen Road are projected to operate acceptably at LOS C or better. As for the signalized intersections, all three study locations are projected to have overall acceptable levels of service (LOS) of E or better. Consistent with the existing conditions analysis, the only noted projected deficiency is the southbound right-turn movement at the Howland Boulevard/Catalina Boulevard intersection. With the optimization of signal timings, the same improvement needed to address the existing deficiency, this intersection and all movements are

projected to operate acceptably. Because the needed intersection improvement for buildout is the same as that needed to mitigate a deficiency that currently exists without the project, per Florida Statutes 163.3180 the development is not responsible to mitigate impacts to these roadway segments.

- Driveway #1 on Lake Helen Osteen Road is and will remain exit only.
- Relative to Driveway #2 on Lake Helen Osteen Road
  - A northbound right-turn lane of 320 feet is recommended.
  - A southbound right-turn lane is not recommended.
  - A northbound left-turn lane is not warranted.
  - A southbound right-turn lane of 370 feet is recommended
- The daycare will be located at the easternmost portion of the property. The back of the worst-case projected queue will be contained on-site approximately 250' east of Lake Helen Osteen Road. Based on the buildout conditions (year 2026) intersection analyses:
- A 5' walkway will be provided around the western portion of the development with pedestrian connections to the various buildings. Internal pedestrian connectivity will be provided in the eastern portion along with the provision of a sidewalk that runs parallel with Lake Helen Osteen Road within the development. This sidewalk will provide the opportunity for adjacent properties to provide sidewalk connectivity along the east side of Lake Helen Osteen Road. It is also proposed to provide a midblock crosswalk with a refuge island across Lake Helen Osteen Road on the south side of the south driveway intersection.
- All movements at the STOP-controlled intersections are projected to operate acceptably.
- Based on a five-year crash analysis there is no existing crash trend on Lake Helen Osteen Road adjacent to the development.

Appendix A

Preliminary Development Plan



Site Plan

SCALE: 1"=40'-0"

modis architects

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Miami, Florida 33155
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www.modisarchitects.com

Deltona Baptist Church & Residence

Deltona, Florida

CONCEPTUAL DESIGN
Current Scheme
Site Plan

#22043
03/17/2023
SCALE: 1"=40'

Residential Data

Description			Required	Proposed
Lot				
Parcel ID				
811000000080	83,199.60 sf	1.91 Acres		
811000000041	196,020.00 sf	4.50 Acres		
Lot Area Summary				
Gross Lot Area:	279,220 sf	6.41 Acres		
Zonning District				
			District	
Proposed Residential	279,220 sf			PUD
	6.41 Acres			
Density				
Density	6.41 Acres		77 Units	120 Units
			12.00 Du/AC	0
Building Height				
Building Height:				40'-0"
				0
Building Setbacks				
Front Setback (East)			25'-0"	41'-0"
Side Setback (North)			25'-0"	25'-0"
Side Setback (South)			25'-0"	25'-0"
Rear Setback (West)			25'-0"	56'-0"
General Requirements				
Floor Area Ratio				121,486 sf
				43.51%
Lot Coverage			N/A	45,500 sf
				16.30%
Landscape Open Space:			69,805 sf	91,783 sf
			25 %	32.87%
Total Paved Area			N/A	120,214 sf
				43.05%
Sidewalk Area			N/A	21,723 sf
				7.78%

Building Area A

Total Sq Ft. does not include Balcony Sq Ft.

Levels	Leasable Area	Non-Leasable			Total Bldg Gross SF
Level 1	7,860 sf	1,247 sf			9,107 sf
Level 2	7,860 sf	1,087 sf			8,947 sf
Level 3	7,860 sf	1,087 sf			8,947 sf
Total	**23,580 sf**	**3,421 sf**			**27,001 sf**
			Total of 2 Bldg		**54,002 sf**

Building Area B

Total Sq Ft. does not include Balcony Sq Ft.

Levels	Leasable Area	Non-Leasable			Total Bldg Gross SF
Level 1	9,564 sf	1,778 sf			11,342 sf
Level 2	9,564 sf	1,636 sf			11,200 sf
Level 3	9,564 sf	1,636 sf			11,200 sf
Total	**28,692 sf**	**5,050 sf**			**33,742 sf**
			Total of 2 Bldg		**67,484 sf**

Unit Area

			Unit A (1 BD)	Unit B (2 BD)	Uni C (3 BD	Total Units
			651 sf	**870 sf**	**1,095 sf**	
Type A	Level 1			4 Units	4 Units	8 Units
	Level 2			4 Units	4 Units	8 Units
	Level 3			4 Units	4 Units	8 Units
Sub Total				**12 Units**	**12 Units**	**24 Units**
Total of 2 Bldg				**24 Units**	**24 Units**	**48 Units**
Type B	Level 1		4 Units	8 Units		12 Units
	Level 2		4 Units	8 Units		12 Units
	Level 3		4 Units	8 Units		12 Units
Sub Total			**12 Units**	**24 Units**		**36 Units**
Total of 2 Bldg			**24 Units**	**48 Units**		**72 Units**
				Total Units		**120 Units**

Residential Parking Requirement

					Required	Provided
Unit A (1 BD)	24 Units	20.00%		1.5 SP/DU	36 spaces	
Unit B (2 BD)	72 Units	60.00%		2.0 SP/DU	144 spaces	
Uni C (3 BD	24 Units	20.00%		2.0 SP/DU	48 spaces	
Total Units	120 Units	100.00%				
Visitors				1 sp/10 units	12 spaces	
			Sub Total		240 spaces	
			Sub Total		240 spaces	

Parking Provided

	Standard	HC	Parallel			
Surface	233	7				240 spaces
					240 spaces	**240 spaces**

Bicycle Requirements

Parking Space	240 spaces	6 Plus 1 for each 20 Autos over 100			10 spaces	10 spaces

modis architects
4955 SW 75th Avenue
Miami, Florida 33155
T. 786.879.8882
F. 786.350.1515
www.modisarchitects.com

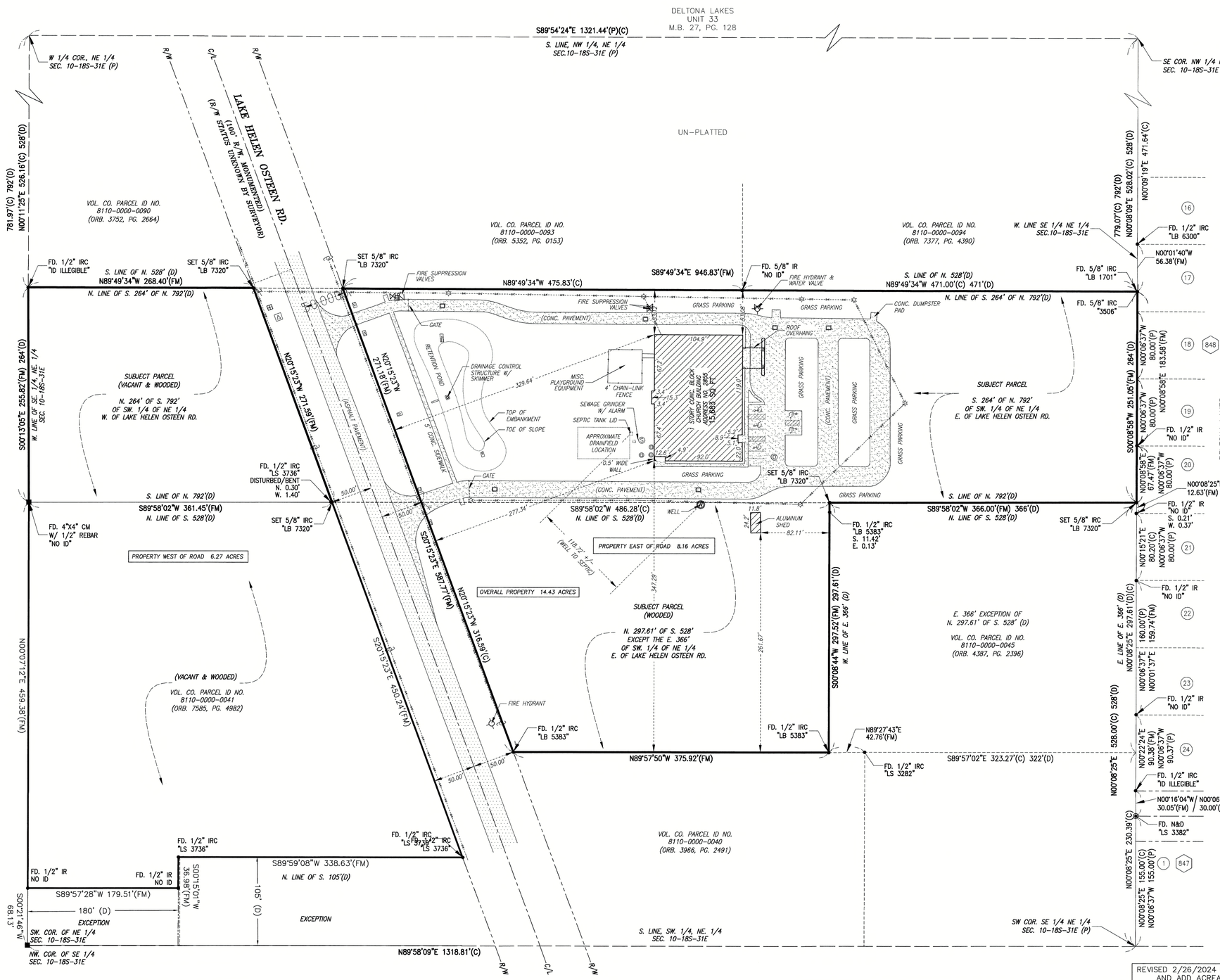
Deltona Baptist Church & Residence

Deltona, Florida

CONCEPTUAL DESIGN
Residential Site Diagram & Data
Site Plan

#22043
08/01/2022
SCALE: 1"=40'

SECTION 10, TOWNSHIP 18 SOUTH, RANGE 31 EAST
CITY OF DELTONA, VOLUSIA COUNTY, FLORIDA



ABBREVIATIONS:

A/C	= AIR CONDITIONER
(C)	= CALCULATED
C/L	= CENTERLINE
CLF	= CHAIN LINK FENCI
CONC.	= CONCRETE
CS	= CONCRETE SLAB
CB	= CONCRETE BLOCK
C.M.	= CONCRETE MONUM.INT
(D)	= DEED OR DESCRIP.ION
D/U	= DRAINAGE/UTILITY EASEMENT
E	= EAST
E/P	= EDGE OF PAVEMD.IT
ELEC.	= ELECTRIC
ELEV.	= ELEVATION
F.F.	= FINISHED FLOOR
FD.	= FOUND
(FM)	= FIELD MEASURED
I.D.	= IDENTIFICATION
IP	= IRON PIPE
IR	= IRON ROD
IR&C	= IRON ROD AND CAP
LS	= LICENSED SURVEYOR
LB	= LICENSED SURVEY BUSINESS
N	= NORTH
N/D	= NAIL AND DISK
N/W	= NAIL AND WASHER
O.R.	= OFFICIAL RECORDS
O/H	= OVERHANG
O/E	= OVERHEAD ELECTRIC LINE
P.B.	= PLAT BOOK
(P)	= PLAT (MAP) DIMENSION
P/P	= POWER POLE
P.C.	= POINT OF CURVATURE
F.F.	= FINISHED FLOOR
P.O.B.	= POINT OF BEGINNING
P.L.	= PROPERTY LINE
R/W	= RIGHT-OF-WAY
S	= SOUTH
S/T	= SEPTIC TANK
S.F.	= SQUARE FEET
TYP.	= TYPICAL
UGE	= UNDER GROUND ELECTRIC
W	= WEST
W/F	= WOOD FENCE
W/M	= WATER METER
Δ	= DELTA OR CENTRAL ANGLE
L	= LENGTH OF CURVE
R	= RADIUS
T	= TANGENT DISTANCE
C.B.	= CHORD BEARING
CH.	= CHORD DISTANCE
	= UTILITY POLE
	= LIGHT POLE
	= FIRE HYDRANT
	= BACKFLOW PREVENTOR
	= WATER METER
	= WATER VALVE
	= CATCH BASIN
	= MITERED END SECTION
	= DRAINAGE MANHOLE
	= SEPTIC/SANITARY MANHOLE
	= SEPTIC/SANITARY CLEANOUT
	= ELECTRIC TRANSFORMER
	= DISABLED PARKING
848	= SUBDIVISION BLOCK NUMBER
20	= SUBDIVISION LOT NUMBER
	= OVERHEAD ELECTRIC LINES

1" = 60' GRAPHIC SCALE
0 30 60 120

DESCRIPTION: (PER ORB 4041 PG. 402)

THE SOUTH 264 FEET OF THE NORTH 792 FEET OF THE SOUTHWEST 1/4 OF THE NORTHEAST 1/4, EAST OF ROAD, SECTION 10, TOWNSHIP 18 SOUTH, RANGE 31 EAST, VOLUSIA COUNTY, FLORIDA.

AND

DESCRIPTION: (PER ORB 6785 PG. 1227)

THE SOUTH 264 FEET OF THE NORTH 792 FEET OF THE SOUTHWEST 1/4 OF THE NORTHEAST 1/4 WEST OF ROAD SECTION 10, TOWNSHIP 18 SOUTH, RANGE 31 EAST, VOLUSIA COUNTY, FLORIDA.

AND

DESCRIPTION: (PER ORB 7585, PG 4982)

The South 528 feet of the Southwest 1/4 of the Northeast 1/4, except the South 68 feet of the West 180 feet thereof; and the North 132 feet of the Southeast 1/4, except the North 32 feet of the West 180 feetthereof, Section 10, Township 18 South, Range 31 East, lying West of Lake Helen-Osteen Road.

EXCEPT the following described property:

That portion of the South 105 feet of the Southwest 1/4 of the Northeast 1/4 of Section 10, Township 18 South, Range 31 East; Volusia County, Florida; lying West of "Lake Helen-Osteen Road", Except the West 180 feet thereof.

AND EXCEPT that portion of the North 132 feet of the Southeast 1/4 of Section 10, Township 18 South, Range 31 East, Volusia County, Florida, lying West of "Lake Helen-Osteen Road", Except the North 32 feet of the West 180 feet thereof.

NOTE:

THIS PLAT AND/OR SKETCH OF SURVEY IS CERTIFIED TO AND PREPARED FOR THE SOLE AND EXCLUSIVE BENEFIT OF THE ENTITIES AND/OR INDIVIDUALS SHOWN HEREON, ON THE MOST CURRENT DATE SHOWN, AND SHALL NOT BE RELIED UPON BY ANY OTHER ENTITY OR INDIVIDUAL WHOMSOEVER. THERE MAY BE ADDITIONAL RESTRICTIONS AND/OR OTHER MATTERS THAT ARE NOT SHOWN HEREON THAT MAY BE FOUND IN THE PUBLIC RECORDS OF THE COUNTY. THIS SURVEY /SKETCH IS PREPARED WITHOUT BENEFIT OF ABSTRACT OR TITLE SEARCH UNLESS OTHERWISE NOTED. ADDITIONS OR DELETIONS TO SURVEY MAPS OR REPORTS BY OTHER THAN THE SIGNING PARTY OR PARTIES IS PROHIBITED WITHOUT WRITTEN CONSENT OF THE SIGNING PARTY OR PARTIES. THIS SURVEY DRAWING IS THE PROFESSIONAL OPINION OF THIS SURVEYOR AND MAPPER AND THE FIRM, WHICH WAS PREPARED UTILIZING THE BEST AVAILABLE INFORMATION AND AS SUCH DOES NOT CONSTITUTE A GUARANTEE OR WARRANTY, EITHER EXPRESSED OR IMPLIED. FURTHERMORE, THIS SURVEYOR AND FIRM DOES NOT ASSUME RESPONSIBILITY AND SHALL NOT BE HELD LIABLE FOR CLAIMS ARISING FROM ERRONEOUS OR INCORRECT INFORMATION FURNISHED TO THE SURVEYOR, WHICH WAS USED AS A BASIS IN THE PREPARATION OF THIS SURVEY DRAWING.

NOTES:

1. *NO INSTRUMENTS OF RECORD REFLECTING EASEMENTS, RIGHT OF WAY AND/OR OWNERSHIP WERE FURNISHED TO THIS SURVEYOR EXCEPT AS SHOWN.*
2. *NOT VALID WITHOUT THE SIGNATURE AND RAISED SEAL OF A FLORIDA LICENSED SURVEYOR AND MAPPER.*
3. *NO UNDERGROUND IMPROVEMENTS OR INSTALLATIONS OR OTHER INTERIOR IMPROVEMENTS HAVE BEEN LOCATED, EXCEPT AS SHOWN, AS PER THE REQUEST OF THE CLIENT.*
4. *UNLESS NOTED, LEGAL DESCRIPTION FURNISHED BY CLIENT.*
5. *FEATURES SHOWN BY SYMBOL AS INDICATED IN THE LEGEND ARE NOT TO SCALE.*
6. *THIS SURVEY WAS PERFORMED WITHOUT BENEFIT OF A TITLE SEARCH, A TITLE SEARCH MAY REVEAL ADDITIONAL INFORMATION AFFECTING THE PARCEL AS SHOWN.*
7. *WHERE APPLICABLE, MONUMENT DIAMETERS, ETC., AND/OR LS OR LB NUMBERS ARE SHOWN NEAR RESPECTIVE SYMBOL ABOVE, UNLESS SHOWN IN LEGEND.*
8. *BEARINGS ASSUMED FROM PLAT, DEED, LEGAL DESCRIPTION.*
9. *UNLESS SHOWN, ONLY THOSE VISIBLE FEATURES IN THE IMMEDIATE VICINITY OF THE ABOVE DESCRIBED PARCEL BOUNDARY HAVE BEEN LOCATED.*
10. *SUBJECT PROPERTY LIES WITHIN ZONE "X", AS SHOWN ON THE FEDERAL EMERGENCY MANAGEMENT AGENCY FLOOD INSURANCE RATE MAP, CITY OF DELTONA COMMUNITY #120677, PANEL #12127C0630 K DATED SEPTEMBER 29, 2017. THIS FLOOD INSURANCE RATE MAP IS NOT A SURVEY AND NO RESPONSIBILITY IS TAKEN FOR THE ACCURACY OF SAID MAP.*

ACREAGE CALCULATIONS
OVERALL PROPERTY 14.43 ACRES
PROPERTY WEST OF ROAD 6.27 ACRES
PROPERTY EAST OF ROAD 8.16 ACRES
EXISTING CHURCH BUILDING 15,683 SQ FT

REVISED 2/26/2024 UPDATE SURVEY AND ADD ACREAGE DETAILS

REVISED 3/27/2021 TO INCLUDE OVERALL PROPERTIES FOR MASTERPLAN

EFIRD SURVEYING GROUP, INC.
475 S. BLUE LAKE AVENUE
DELAND, FLORIDA 32724
PHONE: (386) 740-4144 FAX:(386) 740-4155
WEBSITE: www.efirdsurveying.com
e-mail: larry@efirdsurveying.com
Certificate Of Authorization Licensed Business Number 7230

Boundary Survey

Survey Date:	Drawing Number:	Scale:
8/26/19	19-0543	1"=60'
		Drawn By: BE

For: NEW HOPE BAPTIST CHURCH OF DELTONA, INC.
2855 LAKE HELEN OSTEEN RD., DELTONA

I HEREBY CERTIFY THIS SURVEY DRAWING TO BE CORRECT, TO THE BEST OF MY KNOWLEDGE AND BELIEF, AND CONFORMS IN FORM WITH THE STANDARDS OF PRACTICE AS SET FORTH BY THE FLORIDA BOARD OF PROFESSIONAL SURVEYORS AND MAPPERS IN CHAPTER 5J-17, F.A.C. PURSUANT TO SECTION 472.027, FLORIDA STATUTES.

LARRY R. EFIRD JR.
Professional Surveyor & Mapper No. 5823

2/26/2024

Appendix B

Approved TIA Methodology

Volusia County
Traffic Engineering

The following proposed development project has an *APPROVED TIA METHODOLOGY:*

Project: **New Hope PUD**

Date of Approval: **February 9, 2024**

Date of Expiration*: **August 9, 2024**

TIA Approval Required By*: **February 9, 2025**

Conditions:

The respective TIA can now be accepted for review by the county. TIAs must be completed per the River-to-Sea TPO TIA Guidelines. which can be found on the R2CTPO.org website.

Approval Signature: Omar Atallah

TIA SUBMISSION TO COUNTY:

Two steps are required:

1) Submit the following items through email to Omar Atallah (Oatallah@volusia.org) and William White (Wdwhite@volusia.org)
- *PDF copy of the complete TIA (TIA needs to include completed TIA checklist)*
- *Response to Comments (if resubmitted)*

2) Due size limitations and computer input file incompatibility issues, send the following directly to VCTE by Mail or Delivery:
- *CD or USB drive containing all computer input files*

***REMINDERS:**

- TIA approval needs to be obtained within a year of the approved methodology based on the interpretation of the TPO TIA Guidelines, which state that an approved methodology is valid for up to 6 months and a TIA is valid for up to a year..
- The TIA submitted to support a development plan or use permit cannot be older than one year.
- Advisory: If the applicant waits to submit the TIA or TIA revisions, requested updates to vested trip data, growth rates, traffic count data, etc. are likely to occur. (Example: Applicant submits TIA, receives comments, but doesn't update the TIA and respond to comments until 10 months later.)

Questions about TIAs and TIA methodologies should be addressed to Omar Atallah at Oatallah@volusia.org

MEMORANDUM

To: Ms. Jessica Entwistle – Deltona Planning & Development Services

From: Mr. Chris J. Walsh, P.E.

Date: February 2, 2024

Subject: New Hope PUD – Response to City TIA Methodology Comments
Deltona, Florida

Walsh Traffic Engineering, LLC (Walsh Traffic) has received comments on the November 26, 2023 TIA methodology for the proposed New Hope PUD located on Lake Helen Osteen Road, south of Haulover Boulevard in Deltona, Florida. We offer the following responses:

1) Page 1:

a. For the existing land uses on the east side of Lake Helen Osteen Road, please provide the source for the information stated, for verification of the land use sizes.

Response: The site plan for the existing site shows 15,726 square feet. This is highly comparable to the property appraiser information which shows 15,748 square feet. As for the daycare, they are only licensed/certified to have a maximum of 85 students.

b. It is stated that the "Access to the development (on the east side) is currently provided via two full-access driveways with the northern driveway located approximately 650 feet south of Haulover Boulevard and the southern driveway located approximately 900 feet south of Haulover Boulevard".

Based on street view of the existing driveways into the property, it is observed that these are entry only (southern driveway) and exit only (northern driveway) driveways. Is it proposed to make these full access driveways (each driveway provides both entry and exit ways) as part of the development? If it is not the case, suggest modifying the description to keep them as entrance and exit only driveways.

Response: It is proposed to convert the southern driveway to full access. The northern driveway will remain as exit only.

c. The southern driveway (entrance only driveway) which is located approximately 900 feet south of Haulover Boulevard has a substandard exclusive right turn lane. It is suggested to improve/provide an exclusive right turn lane in accordance with Volusia County and City of Deltona design requirements.

Response: As conveyed in the methodology, turn lanes at the project driveways will be addressed in the traffic impact analysis.

2) Table 1: To calculate the weekday/daily trip generation for Day Care Center (Land Use Code 565), suggest using the average rate instead of fitted curve since R2 < 0.75 and sample size/number of studies are less than 20. (The R2 value should be at least 0.75, if using the fitted curve, "because it indicates the recommended acceptable level of correlation between trips generated by a site and the value measured for an independent variable" (ITE Trip Generation Handbook, 3rd edition)).

Please update the trip generation values in the table accordingly.

Response: The daily trip generation for the Day Care Center has been updated as requested.

3) Table 2: For the PM peak hour trip generation calculation for Day Care Center, the pass-by trips should be 19 (In) which is 44% of 43 and 21 (out) which is 44% of 48, instead of 20 (In) and 20 (Out). Please update accordingly.

Response: The trip generation has been updated accordingly.

4) Table 3:
a. The total trips calculated for Church are incorrect. Using the land use code 560 and intensity of
8.30 KSF, using the average rate (because the intensity value is out of data range), the calculated trip ends are calculated to be 63 (total) with 32 (entering) and 31 (exiting).

b. For the Church land use, suggest using average rate for the AM and PM peak hour trip generation. Please modify/update the table accordingly.
Response: The requested modifications have been made.
5) Table 4: For the PM peak hour trip generation calculation for Day Care Center:
a. Why is the pass-by trip percentage 43.3% instead of 44%?

b. The pass-by trips should be 14 (In) which is 44% of 32 and 15 (out) which is 44% of 35, instead of 15 (In) and 14 (Out). Please update the table accordingly.

Response: The trip generation table has been updated based on these comments.

6) Trip Generation: It is assumed that one-fourth of the trips that were shown on Lake Helen Osteen Road between Elkcam Boulevard and Howland Boulevard will now be diverted to use Elkcam Boulevard and Howland Boulevard roadways instead. Please justify the detour of 5% on to Elkcam Boulevard. Is it based on the existing roadway capacities or new modeling effort?

Response: The reassignment consideration has been removed.

7) Study Area: For the intersections to be studied, suggest including Lake Helen Osteen Road and Howland Boulevard intersection, since 17% of the project traffic will end up at the intersection.

Response: The methodology follows the River to Sea TPO's TIA Guidelines' defined significance process for determining the study area. The project impact on Lake Helen Osteen Road is below the three-percent impact threshold. Further, this intersection is not part of the County's critical/near critical list of roadways. The TIA Guidelines were established to provide consistency in the TIA process.

8) Analysis Periods:

a. Please specify the times of data collection for turning movement counts,

b. Please include a queuing analysis for turning movements at study intersections.

Response: The methodology has been revised to incorporate the two items above.

9) Conceptual Design: Please provide parking requirements and parking spaces provided for the proposed land uses on the east side of Lake Helen Osteen Road.

Response: This is a site plan item that will be addressed within the engineering plans, not within the TIA.

Please let us know if you have any questions.

MEMORANDUM

To: Ms. Jessica Entwistle – Deltona Planning & Development Services

From: Mr. Chris J. Walsh, P.E.

Date: February 2, 2024

Subject: New Hope PUD Traffic Impact Analysis Methodology (Revised)
Deltona, Florida

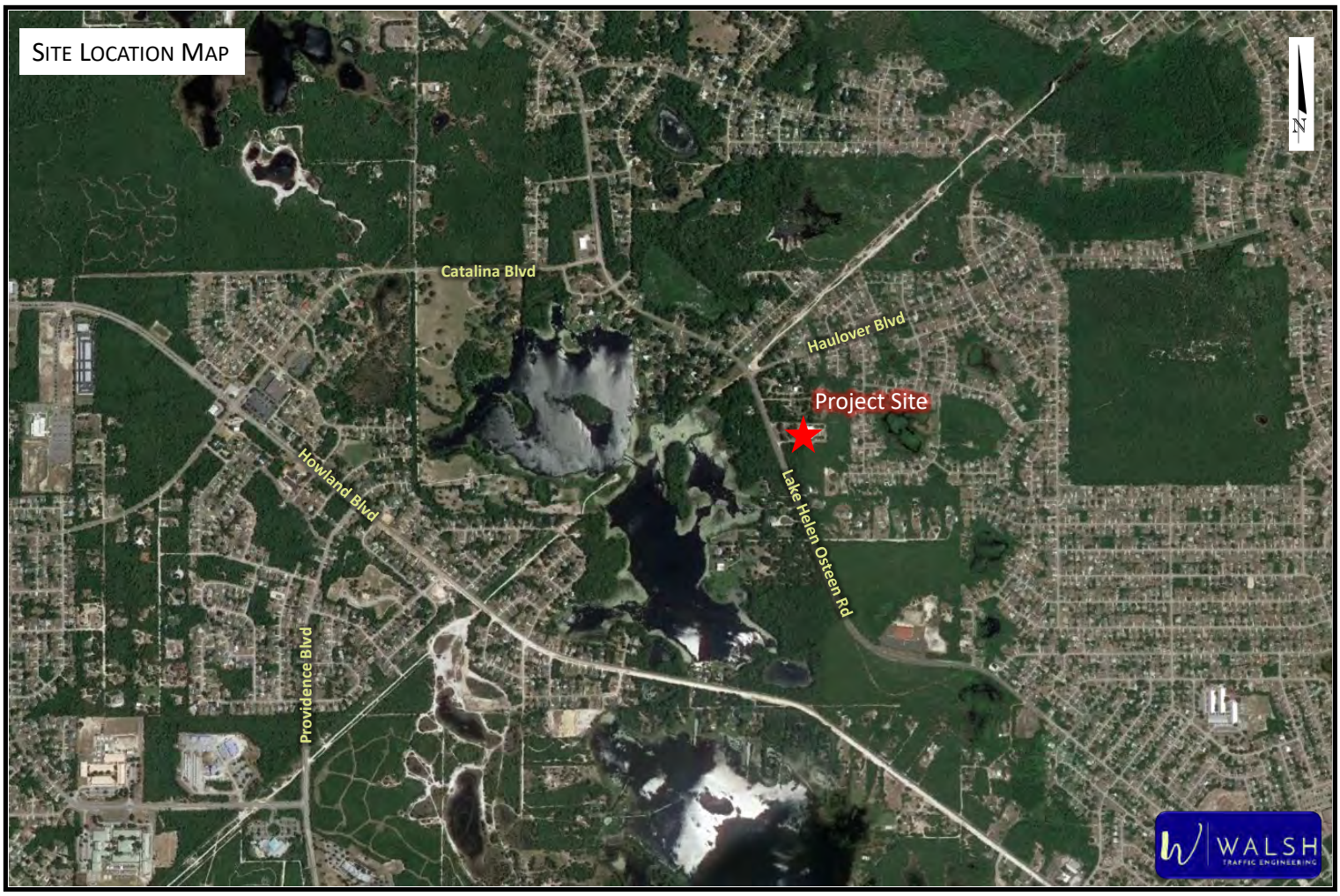
Walsh Traffic Engineering, LLC (Walsh Traffic) has been retained to conduct a traffic impact analysis (TIA) for a proposed New Hope PUD located on Lake Helen Osteen Road, south of Haulover Boulevard in Deltona, Florida (see ***Site Location Map***). The subject property straddles both sides of Lake Helen Osteen Road. The property on the west side is vacant. The property on the east side includes a 15,726 square-foot building that serves as a church and can accommodate up to 648 seats. Additionally, this building is used as a daycare facility and is licensed/certified for up to 85 students, operating from 6:30 AM to 6:00 PM with child drop offs/pick-ups occurring continuously throughout the day.

The development is proposed to include the following:

- West side of Lake Helen Osteen Road
  - 120-dwelling unit multi-family development

- East side of Lake Helen Osteen Road
  - 10,000 square-foot daycare building for 115 students
  - 15,000 square-foot community center building
  - 31,291 square-foot church (expansion of the existing church)

Access to the development (on the east side) is currently provided via two driveways with the northern driveway (exit only) located approximately 650 feet south of Haulover Boulevard and the southern driveway (entrance only) located approximately 900 feet south of Haulover Boulevard. Both driveways will be maintained for the eastern portion of the development, however the southern driveway will be converted to bi-directional. The multi-family development on the west side will have a single driveway that aligns with the southern driveway. A copy of the preliminary development plan is attached. The development is proposed to be constructed by year 2029. This memorandum is intended to serve as the methodology for the TIA, prepared in accordance with the River to Sea TPO TIA Guidelines.



Walsh Traffic Engineering
285 Palmetto Springs Street, DeBary, Florida 32713
www.walshtraffic.com
Phone: 386.668.0062

Trip Generation

The total daily, AM peak-hour and PM peak-hour trip generation potential for the proposed development is provided below based on trip generation equations/rates provided in the Institute of Transportation Engineer's (ITE) *Trip Generation Manual, 11th Edition.* As summarized below in ***Table 1***, the proposed development is projected to generate 1,763 total daily trips, 193 total AM peak-hour trips (97 in, 96 out), and 212 total PM peak-hour trips (101 in, 111 out).

Table 1 – Total Trip Generation Summary (Proposed Development)

Land Use	ITE Land Use Code	Intensity	Daily		
			Total Trips		
			In	Out	Total
Multi-Family (Low-Rise)	220	120 DU	422	423	845
Church	560	31.29 KSF	119	119	238
Day Care Center	565	115 Students	228	229	457
General Office (Community Center)	710	15.0 KSF	111	112	223
Total			880	883	1,763

Land Use	ITE Land Use Code	Intensity	AM Peak Hour		
			Total Trips		
			In	Out	Total
Multi-Family (Low-Rise)	220	120 DU	14	46	60
Church	560	31.29 KSF	6	4	10
Day Care Center	565	115 Students	48	42	90
General Office (Community Center)	710	15.0 KSF	29	4	33
Total			97	96	193

Land Use	ITE Land Use Code	Intensity	PM Peak Hour		
			Total Trips		
			In	Out	Total
Multi-Family (Low-Rise)	220	120 DU	45	27	72
Church	560	31.29 KSF	7	8	15
Day Care Center	565	115 Students	43	48	91
General Office (Community Center)	710	15.0 KSF	6	28	34
Total			101	111	212

ITE provides a PM peak-hour pass-by rate of 44% for the daycare facility (see attachment). The pass-by trips were thus calculated and the resulting new external trips identified. Within the TIA, pass-by trips will be limited to 14% of the future background traffic on the adjacent roadway per the River to Sea TPO's TIA Guidelines. As summarized in ***Table 2*** below, the proposed development is projected to generate 193 new external AM peak-hour trips (97 in, 96 out) and 172 new external PM peak-hour trips (82 in, 90 out).

Table 2 – New External Trip Generation Summary (Proposed Development)

Land Use	ITE Land Use Code	Intensity	AM Peak Hour									
			Total Trips			Pass-By Trips				Net New External Trips		
			In	Out	Total	%	In	Out	Total	In	Out	Total
Multi-Family (Low-Rise)	220	120 DU	14	46	60	0.0%	0	0	0	14	46	60
Church	560	31.29 KSF	6	4	10	0.0%	0	0	0	6	4	10
Day Care Center	565	115 Students	48	42	90	0.0%	0	0	0	48	42	90
General Office (Community Center)	710	15.0 KSF	29	4	33	0.0%	0	0	0	29	4	33
Total			97	96	193	0.0%	0	0	0	97	96	193

Land Use	ITE Land Use Code	Intensity	PM Peak Hour									
			Total Trips			Pass-By Trips				Net New External Trips		
			In	Out	Total	%	In	Out	Total	In	Out	Total
Multi-Family (Low-Rise)	220	120 DU	45	27	72	0.0%	0	0	0	45	27	72
Church	560	31.29 KSF	7	8	15	0.0%	0	0	0	7	8	15
Day Care Center	565	115 Students	43	48	91	44.0%	19	21	40	24	27	51
General Office (Community Center)	710	15.0 KSF	6	28	34	0.0%	0	0	0	6	28	34
Total			101	111	212	18.9%	19	21	40	82	90	172

Trip generation was then calculated for the existing development on the eastern portion of the subject property. It is important to note that the existing building currently serves as both a church and a day-care facility. For purposes of calculating trip generation, trips were first calculated based on the 85-student daycare facility. Based on the proposed development, a 10,000 square-foot daycare accommodates 115 students. This equates to approximately 87 square feet required per student. Applying this same ratio to the 85 students, it is estimated that approximately 7,395 square feet of the existing building serves as daycare during the weekdays. Thus, the remaining 8,300 square feet of the existing building is used as a church. As summarized on the following page in ***Table 3***, the existing development therefore generates 1,195 total daily trips, 69 total AM peak-hour trips (37 in, 32 out) and 71 total PM peak-hour trips (34 in, 37 out).

Similar to the proposed development, pass-by trips were calculated for the existing daycare facility and the resulting new external trips identified. As summarized in ***Table 4*** on the following page, the proposed development is projected to generate 69 new external AM peak-hour trips (37 in, 32 out) and 42 new external PM peak-hour trips (20 in, 22 out).

Table 3 – Total Trip Generation Summary (Existing Development)

Land Use	ITE Land Use Code	Intensity	Daily		
			Total Trips		
			In	Out	Total
Church	560	8.30 KSF	32	32	63
Day Care Center	565	85 Students	175	175	350
Total			207	207	413

Land Use	ITE Land Use Code	Intensity	AM Peak Hour		
			Total Trips		
			In	Out	Total
Church	560	8.30 KSF	2	1	3
Day Care Center	565	85 Students	35	31	66
Total			37	32	69

Land Use	ITE Land Use Code	Intensity	PM Peak Hour		
			Total Trips		
			In	Out	Total
Church	560	8.30 KSF	2	2	4
Day Care Center	565	85 Students	32	35	67
Total			34	37	71

Table 4 – New External Trip Generation Summary (Existing Development)

Land Use	ITE Land Use Code	Intensity	AM Peak Hour									
			Total Trips			Pass-By Trips				Net New External Trips		
			In	Out	Total	%	In	Out	Total	In	Out	Total
Church	560	8.30 KSF	2	1	3	0.0%	0	0	0	2	1	3
Day Care Center	565	85 Students	35	31	66	0.0%	0	0	0	35	31	66
Total			37	32	69	0.0%	0	0	0	37	32	69

Land Use	ITE Land Use Code	Intensity	PM Peak Hour									
			Total Trips			Pass-By Trips				Net New External Trips		
			In	Out	Total	%	In	Out	Total	In	Out	Total
Church	560	8.30 KSF	2	2	4	0.0%	0	0	0	2	2	4
Day Care Center	565	85 Students	32	35	67	44.0%	14	15	29	18	20	38
Total			34	37	71	40.8%	14	15	29	20	22	42

Recognizing that the existing development is vested, the difference between the existing and proposed development was then calculated. As summarized below in ***Table 5***, the proposed development modification will increase the AM peak-hour external trips by 124 trips (60 in, 64 out) and the new external PM peak-hour trips by 130 (62 in, 68 out).

Table 5 – New External Trip Generation Increase of Proposed Development

Land Use	AM Peak Hour Total Trips		
	In	Out	Total
Proposed Development	97	96	193
Existing Development	37	32	69
Additonal Trips from Proposed Development	60	64	124

Land Use	PM Peak Hour Total Trips		
	In	Out	Total
Proposed Development	82	90	172
Existing Development	20	22	42
Additonal Trips from Proposed Development	62	68	130

Trip Distribution

A TIA was recently prepared by LTG, Inc. in April of 2023 for the proposed development in support of a future land use change and rezoning. The TIA included a model distribution for the development as attached. This model distribution is also proposed for this TIA as it looked reasonable based on engineering judgment. The proposed distribution is attached.

Pass-by trip distribution for day care center will be assessed separately taking into consideration the directional volume of traffic on Lake Helen Osteen Road and the ease of access from each direction of travel.

Study Area

Based on the River to Sea TPO TIA Guidelines, the study area is to include those roadways where the project impact consumes 3% or more of a roadway's two-way peak-hour generalized service volume. ***Table 2*** below summarizes the significance analysis, based on the net increase of external trips, for purposes of determining the study area. Additionally, the study area is to include any critical/near critical roadway segments located within three miles. The attached critical/near critical map as included in the April 2023 TIA shows the 3-mile radius. It is important to note that the County current critical/near critical map on the County website map is based on 2021 counts. However, the section of Howland Boulevard from Elkcam Boulevard to Providenced Boulevard was recently widened and is thus no longer critical.

Table 2 – Study Area Determination

Roadway Segment	# of Lanes	Adopted LOS	Peak-Hr 2-Way Service Volume	Project Trips (2-Way)				Critical/Near Critical?	Study Roadway Segment?
				% Assign	Project Trips	% Significant	Significant?		
Lake Helen Osteen Road									
Howland Blvd to Elkcam Blvd	2	E	1,020	20.3%	26	2.55%	no	YES	YES
Elkcam Blvd to Project	2	E	1,230	38.8%	50	4.07%	YES	YES	YES
Project to Haulover Blvd	2	E	1,230	61.2%	80	6.50%	YES	YES	YES
Haulover Blvd to Catalina Blvd	2	E	1,230	55.6%	72	5.85%	YES	no	YES
Catalina Blvd to Captain Dr	2	E	1,020	22.8%	30	2.94%	no	no	no
Catalina Boulevard									
Eustace Ave to Howland Blvd	2	E	1,230	2.9%	4	0.33%	no	no	no
Howland Blvd to Lake Helen Osteen Rd	2	E	1,230	32.7%	43	3.50%	YES	YES	YES
Elkcam Boulevard									
Howland Blvd to Lake Helen Osteen Rd	2	E	1,230	11.9%	15	1.22%	no	no	no
Lake Helen-Osteen Rd to Courtland Blvd	2	E	1,230	1.5%	2	0.16%	no	no	no
Howland Boulevard									
Providence Blvd to Catalina Blvd	4	E	3,410	1.5%	2	0.06%	no	no	no
Catalina Blvd to Wolf Pack Run	4	E	3,410	27.4%	36	1.06%	no	YES	YES
Wolf Pack Run to I-4	4	E	3,410	27.1%	35	1.03%	no	YES	YES
Providence Boulevard									
Fort Smith Blvd to Elkcam Blvd	2	E	1,020	6.3%	8	0.78%	no	YES	YES

The study roadways will include the following:

- Lake Helen Osteen Road – from Howland Blvd to Elkcam Blvd
- Lake Helen Osteen Road – from Elkcam Blvd to Project
- Lake Helen Osteen Road – from Project to Haulover Blvd
- Lake Helen Osteen Road – from Haulover Blvd to Catalina Blvd
- Catalina Boulevard – from Howland Blvd to Lake Helen Osteen Rd
- Howland Boulevard – from Catalina Blvd to Wolf Pack Run
- Howland Boulevard – from Wolf Pack Run to I-4
- Providence Boulevard – from Fort Smith Blvd to Elkcam Blvd

The study intersections include the following:

- Lake Helen Osteen Rd at Elkcam Blvd
- Lake Helen Osteen Rd at Project Driveways
- Lake Helen Osteen Rad at Catalina Blvd
- Catalina Blvd at Howland Blvd

The map on the following page shows the study roadway segments and intersections.

Existing turning movement counts will be obtained from 7:00 to 9:00 AM and 4:00 to 6:00 PM for each of the study intersections. The counts, which will be no older than one year, will also include trucks, bikes, and pedestrians.

Future Volume Traffic Projections

Future background traffic volumes wll be estimated in accordance with Volusia County's *Segment Growth Rates and Vested Trips Instruction Policy* (see attachment). Because the existing development is in full operation, the net increase in new external project trips will then be added to the future background peak-hour volumes to develop the future total volume projections.

Analysis Periods

The study roadway segments and intersections will be analyzed under existing conditions and future build-out conditions. In the event a roadway segment or intersection is shown to have unacceptable operations at buildout of the development, future background conditions will also be conducted to determine if deficiencies are triggered by future background traffic volumes.

Roadway segments will be analyzed by comparing the PM peak-hour two-way volumes against each roadway's generalized service volume. In the event that the volumes exceed the generalized service volume, then a more detailed arterial/highway analysis may be conducted using HCM methodologies in accordance with the *FDOT Quality/Level of Service Handbook*. The operating conditions of the study intersections will be analyzed for AM and PM peak-hour conditons using *Synchro 11*, employing *HCM, 6th Edition* methodologies. A queueing summary for each study interssection will also be provided.

Planned Roadway Improvements

Improvements in the study area programmed for construction within the next three years by FDOT, Volusia County, or the City of Deltona will be included in the analyses as committed improvements. Based on information obtained, no improvements are committed for construction within the study area.

Crash Analysis

A five-year crash analysis with a crash summary and crash diagram will be provided for Lake Helen Osteen Road immediately adjacent to the proposed development as well as at each intersection where improvements are recommended under build-out conditions (due to the inclusion of project trips). The crash analysis will seek to identify any crash trends and whether or not any proposed improvements will result in degradation of an existing crash trend. In an effort to avoid unnecessarily burdening the developer, in the event no crash trends are identified, a screen shot of the signal four crash summary will be provided in place of a crash diagram/summary.

Alternative Mode Analysis

An alternative mode analysis will be conducted to evaluate present and programmed bike, pedestrian, and transit mobility options. Planned bicycle and pedestrian connections within the development will be documented. Votran will be notified of the proposed project and appropriate sections of the development review checklist on page 9, Table 2, of the Transit Development Design Guidelines, will be followed. Additonally, an assessment of pedestrian connectivity between the western and eastern portions of the development will be included in the study.

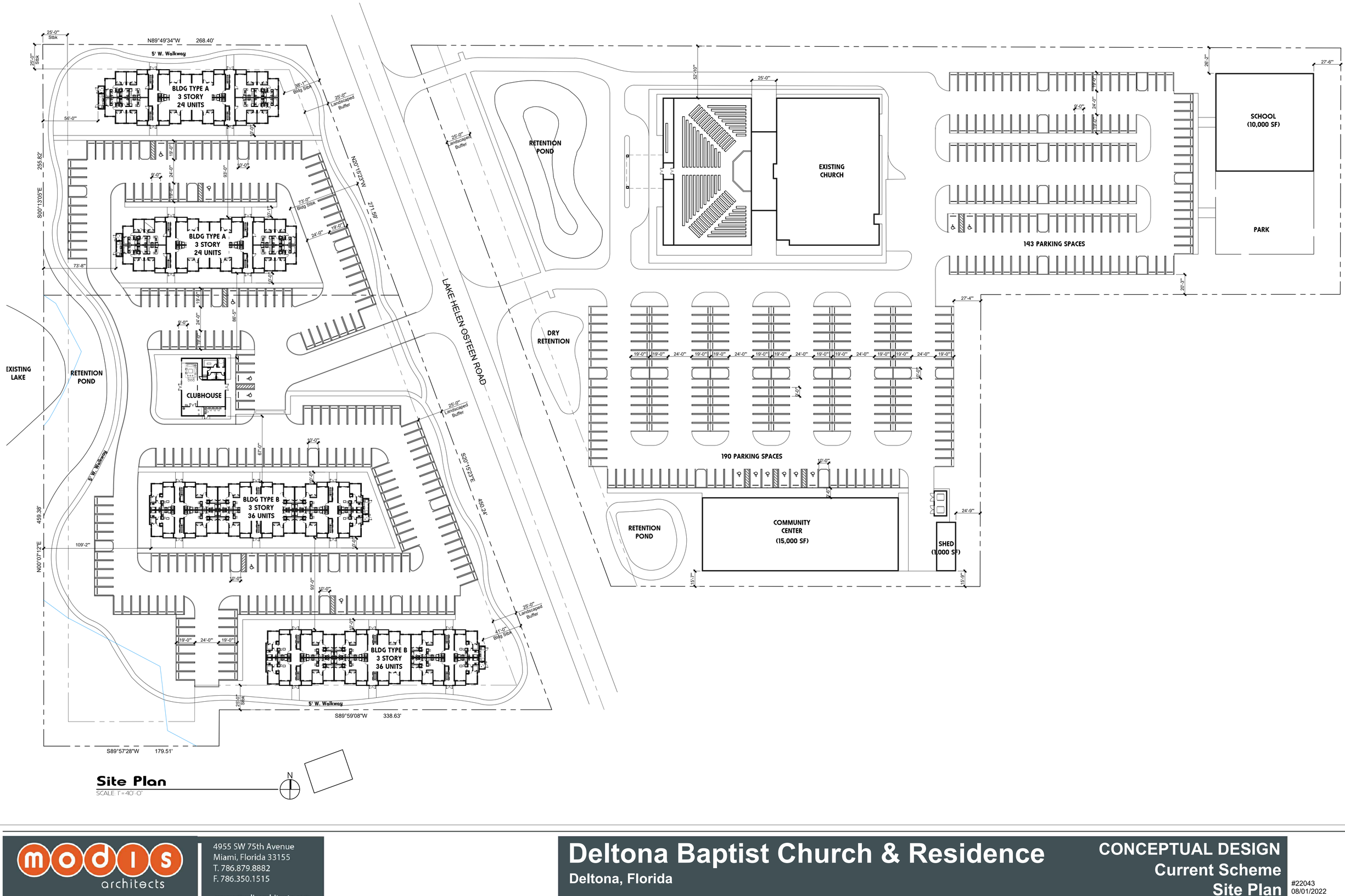
Project Driveway Evaluation

The project driveways on Lake Helen Osteen Road will be evaluated with regard to the need for a right-turn and left-turn lanes. This analysis will be conducted in accordance with requirements in Volusia County's Land Development Code. Should a turn lane be warranted, the study will identify the required turn-lane length in accordance with Volusia County criteria. As a part of this assessment, a queuing analysis will also be provided with regards to the operation of the day care center to better understand if there will be any concerns regarding potential queue spillback onto Lake Helen Osteen Road.

Mitigation

Where roadway segment or intersection deficiencies are identified, appropriate improvements will be identified for existing, future background, and future total build-out conditions. Following, the applicant and the development team will coordinate with the City, and other agencies where applicable, to determine the development's mitigation responsibility. All proposed mitigation improvements must be consistent with the appropriate city and county comprehensive plans transportation element. By way of example, if a proposed improvement is to widen a county roadway beyond that of which is indicated on the county's adopted Future Number of Lanes, the mitigation will consider improvements to a parallel facility. It should be noted that mitigation and associated credits towards impact fees will be addressed in accordance with Florida Statutes 163.3180.

Attachments



Site Plan

SCALE: 1"=40'-0"

modis architects
4955 SW 75th Avenue
Miami, Florida 33155
T. 786.879.8882
F. 786.350.1515
www.modisarchitects.com

Deltona Baptist Church & Residence

Deltona, Florida

CONCEPTUAL DESIGN
Current Scheme
Site Plan

#22043
08/01/2022
SCALE: 1"=40'

Residential Data

Description			Required	Proposed
Lot				
Parcel ID				
811000000080	83,199.60 sf	1.91 Acres		
811000000041	196,020.00 sf	4.50 Acres		
Lot Area Summary				
Gross Lot Area:	279,220 sf	6.41 Acres		
Zonning District				
			District	
Proposed Residential	279,220 sf			PUD
	6.41 Acres			
Density				
Density	6.41 Acres		77 Units	120 Units
			12.00 Du/AC	0
Building Height				
Building Height:				40'-0"
				0
Building Setbacks				
Front Setback (East)			25'-0"	41'-0"
Side Setback (North)			25'-0"	25'-0"
Side Setback (South)			25'-0"	25'-0"
Rear Setback (West)			25'-0"	56'-0"
General Requirements				
Floor Area Ratio				121,486 sf
				43.51%
Lot Coverage			N/A	45,500 sf
				16.30%
Landscape Open Space:			69,805 sf	91,783 sf
			25 %	32.87%
Total Paved Area			N/A	120,214 sf
				43.05%
Sidewalk Area			N/A	21,723 sf
				7.78%

Building Area A

Total Sq Ft. does not include Balcony Sq Ft.

Levels	Leasable Area	Non-Leasable			Total Bldg Gross SF
Level 1	7,860 sf	1,247 sf			9,107 sf
Level 2	7,860 sf	1,087 sf			8,947 sf
Level 3	7,860 sf	1,087 sf			8,947 sf
Total	**23,580 sf**	**3,421 sf**			**27,001 sf**
			Total of 2 Bldg		**54,002 sf**

Building Area B

Total Sq Ft. does not include Balcony Sq Ft.

Levels	Leasable Area	Non-Leasable			Total Bldg Gross SF
Level 1	9,564 sf	1,778 sf			11,342 sf
Level 2	9,564 sf	1,636 sf			11,200 sf
Level 3	9,564 sf	1,636 sf			11,200 sf
Total	**28,692 sf**	**5,050 sf**			**33,742 sf**
			Total of 2 Bldg		**67,484 sf**

Unit Area

			Unit A (1 BD)	Unit B (2 BD)	Uni C (3 BD	Total Units
			651 sf	**870 sf**	**1,095 sf**	
Type A	Level 1			4 Units	4 Units	8 Units
	Level 2			4 Units	4 Units	8 Units
	Level 3			4 Units	4 Units	8 Units
Sub Total				**12 Units**	**12 Units**	**24 Units**
Total of 2 Bldg				**24 Units**	**24 Units**	**48 Units**
Type B	Level 1		4 Units	8 Units		12 Units
	Level 2		4 Units	8 Units		12 Units
	Level 3		4 Units	8 Units		12 Units
Sub Total			**12 Units**	**24 Units**		**36 Units**
Total of 2 Bldg			**24 Units**	**48 Units**		**72 Units**
				Total Units		**120 Units**

Residential Parking Requirement

					Required	Provided
Unit A (1 BD)	24 Units	20.00%		1.5 SP/DU	36 spaces	
Unit B (2 BD)	72 Units	60.00%		2.0 SP/DU	144 spaces	
Uni C (3 BD	24 Units	20.00%		2.0 SP/DU	48 spaces	
Total Units	120 Units	100.00%				
Visitors				1 sp/10 units	12 spaces	
			Sub Total		240 spaces	
			Sub Total		240 spaces	

Parking Provided

	Standard	HC	Parallel			
Surface	233	7				240 spaces
					240 spaces	**240 spaces**

Bicycle Requirements

Parking Space	240 spaces	6 Plus 1 for each 20 Autos over 100			10 spaces	10 spaces

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Deltona Baptist Church & Residence

Deltona, Florida

CONCEPTUAL DESIGN
Residential Site Diagram & Data
Site Plan

#22043
08/01/2022
SCALE: 1"=40'

Vehicle Pass-By Rates by Land Use

Source: ITE *Trip Generation Manual* , 11th Edition

Land Use Code	565								
Land Use	Day Care Center								
Setting	General Urban/Suburban								
Time Period	Weekday PM Peak Period								
# Data Sites	1								
Average Pass-By Rate	44%								
	Pass-By Characteristics for Individual Sites								
	State or	Survey		Pass-By	Non-Pass-By Trips			Adj Street Peak	
GFA (000)	Province	Year	# Interviews	Trip (%)	Primary (%)	Diverted (%)	Total (%)	Hour Volume	Source
7.2	Pennsylvania	1990	—	44	24	32	56	—	23

Via Email: (info@tedcbuilds.org)

Ref: 5903.01

TECHNICAL MEMORANDUM

To: Ms. Carol Gardner, Tacolcy Economic Development Corporation

From: Matthew West, AICP

Subject: New Hope PUD – Comprehensive Plan Amendment (CPA) and Rezoning Traffic Impact Analysis (RTIA)
Deltona, FL

Date: April 26, 2023

INTRODUCTION

LTG, Inc. (LTG) has been retained by Tacolcy Economic Development Corporation, to prepare a traffic impact analysis in support of a future land use change and a rezoning for the proposed New Hope PUD. The subject property is located on the east and west sides of Lake Helen Osteen Road, south of Haulover Boulevard, in the City of Deltona, Florida. The land on the west side of Lake Helen Osteen Road is 6.24-acres and is currently vacant. The land on the east side of Lake Helen Osteen Road currently has a 648-seat church and an 85-student capacity day care center. Figure 1 shows the location of the project relative to the surrounding roadway network.

COMPREHENSIVE PLAN AMENDMENT (CPA)

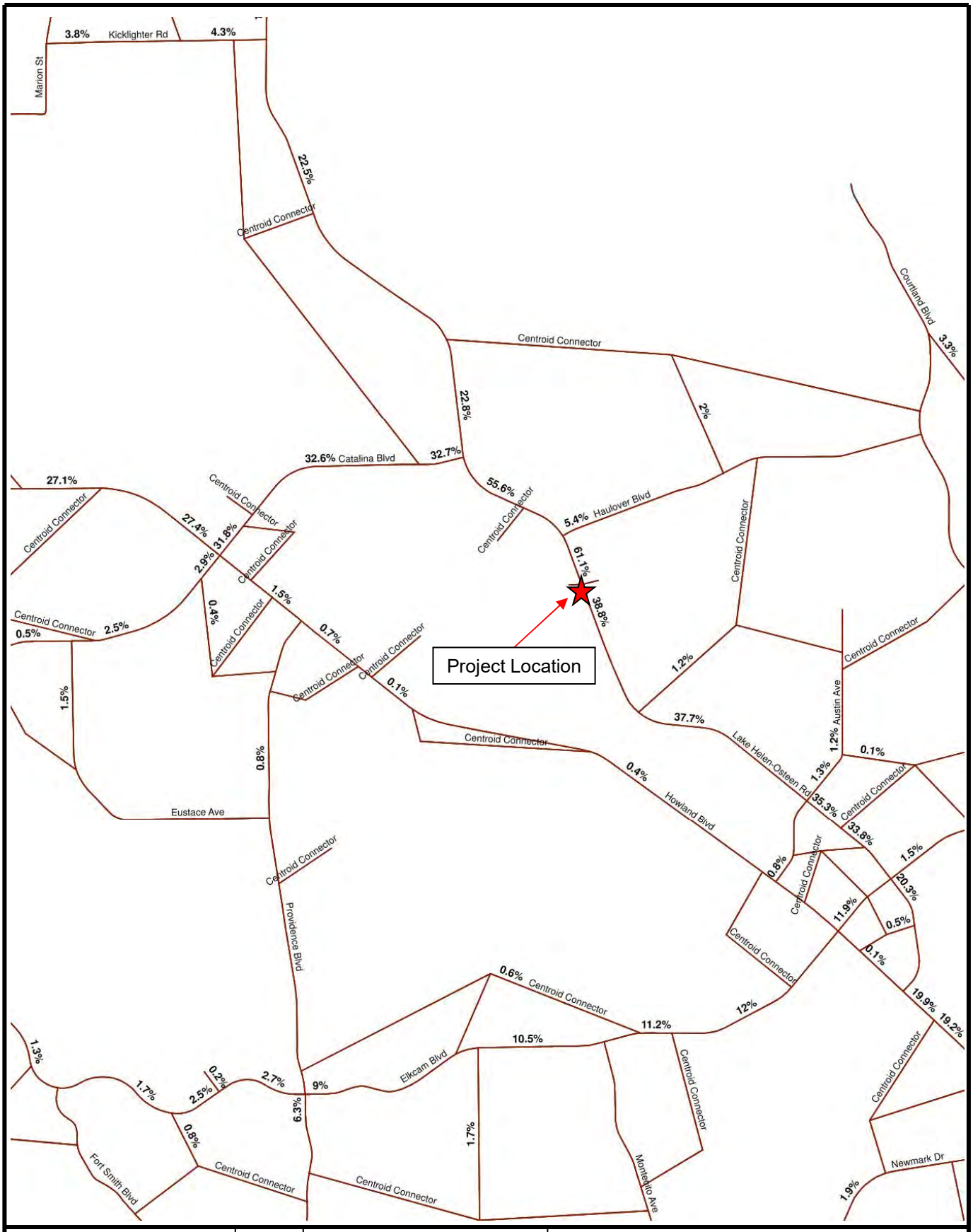
The future land use proposed change for the subject property is from Low Density Residential (LDR) to High Density Residential (HDR) on six (6) acres of the 14.4-acre property. The breakdown of the existing and proposed future land use categories on the subject property, by acreage, and the resultant maximum theoretical development are shown in Table 1 below.

Table 1
Existing and Proposed Future Land Use
New Hope PUD CPA and RTIA

Condition	FLUM	Land Use	Acreage	Intensity/Density	Resultant Size	Units
Existing	LDR	Single-Family	6.00	6 DU/Acre	36	DU
Proposed	HDR	Multi-Family Low Rise	6.00	20 DU/Acre (limited)	120	DU

TRIP GENERATION FOR THE EXISTING VS. PROPOSED FLU DESIGNATIONS

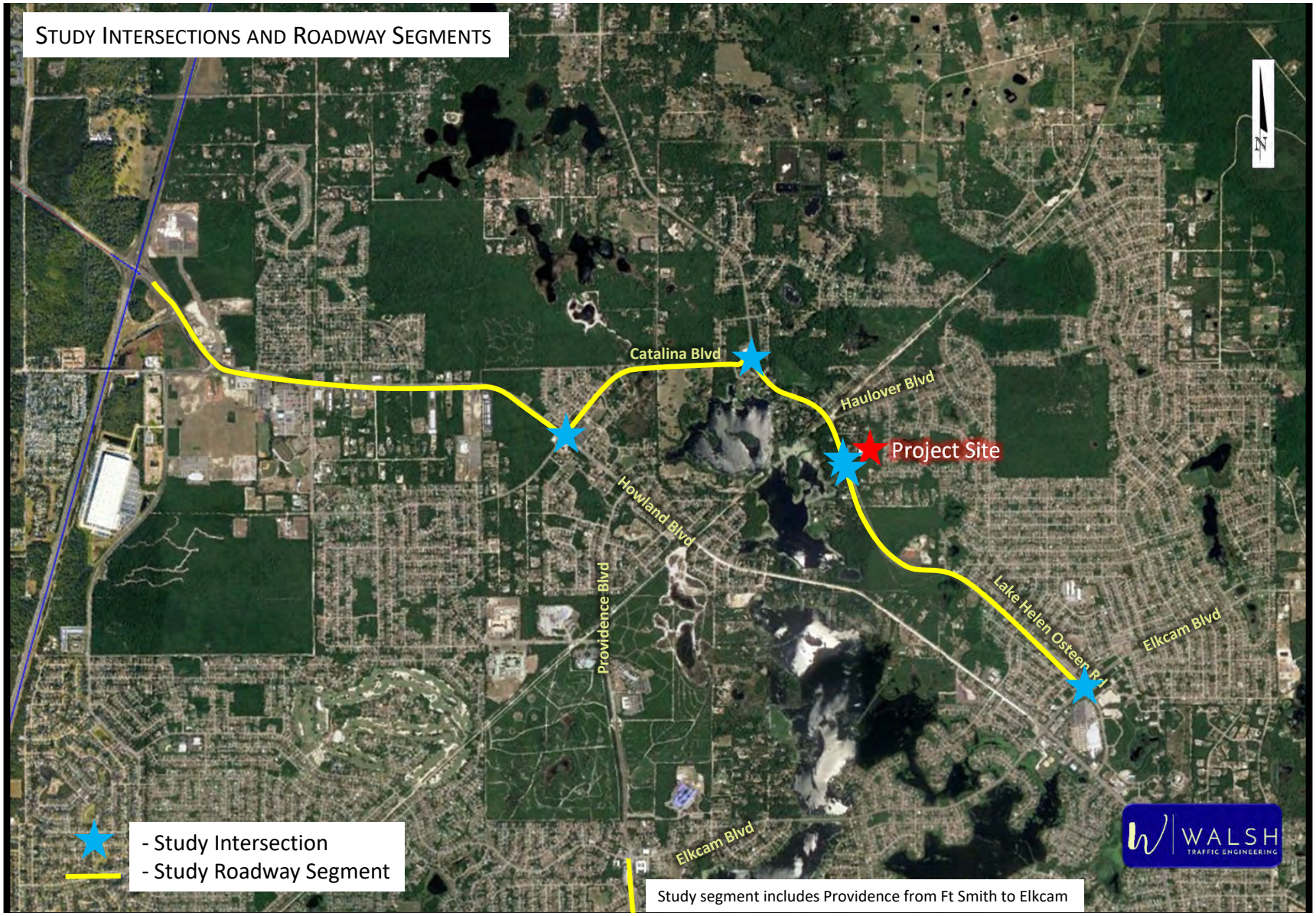
The site has an existing future land use designation of LDR, which allows for single-family residential land uses at the density indicated in Table 1. The daily, AM and PM peak-hour trip generation for the existing future land uses were determined using the Institute of Transportation Engineers (ITE) document, *Trip Generation Manual*, 11th Edition and are presented in Table 2, below.



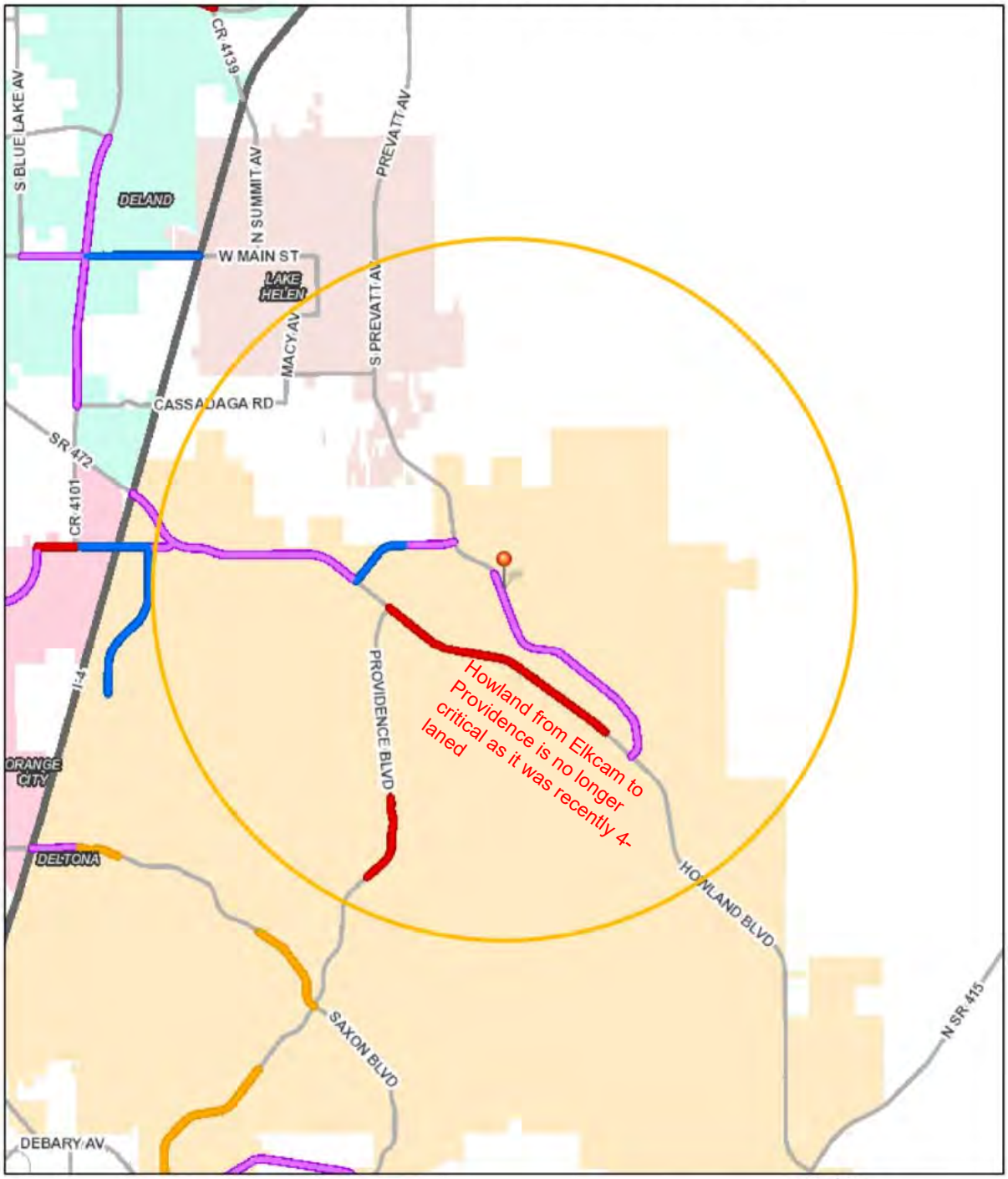
New Hope PUD	N NTS	**Project Distribution**	Project No.: 5903.01	Figure: 3

LTG Engineering & Planning

1450 W. Granada Blvd., Suite 2, Ormond Beach, Florida 32174
Telephone: 386.257.2571 Fax: 386.257.6996


Study Intersections and Roadway Segments
Catalina Blvd
Haulover Blvd
Project Site
Howland Blvd
Providence Blvd
Lake Helen Osteen Rd
Elkcam Blvd
Elkcam Blvd
N
- Study Intersection
- Study Roadway Segment
Study segment includes Providence from Ft Smith to Elkcam
WALSH
TRAFFIC ENGINEERING

Traffic Impact Buffer Map - 3 Mile Radius



3/27/2023, 10:55:35 AM

1:72,099

0 0.5 1 2 mi

0 1 2 4 km

Critical and Near Critical

Critical

Near Critical

Critical Vested

Near Critical Vested

Note: Map includes all critical and near-critical roadway segments within 3-miles of proposed development.

New Hope PUD	N NTS	**3-Mile Radius Critical Map**		LTG Engineering & Planning
		Project No.: 5903.01	Figure: 2	1450 W. Granada Blvd., Suite 2, Ormond Beach, Florida 32174 Telephone: 386.257.2571 Fax: 386.257.6996

Volusia County's Segment Growth Rates and Vested Trips Instructions Policy

Historical Growth Rates

Regression Analysis
* Linear
* Exponential

Data-5 Years
R^2 >= 0.70
Use Best Fitted Regression Analysis

Yes → **Check Trend Growth Rate:**

No ↓

Data-10 Years
R^2 >= 0.70
Use Best Fitted Regression Analysis

Yes → **Negative Growth** (Use Minimum 1%)

Yes → **Low to Medium Growth** (<= 3%) (Use Minimum 1%)

No ↓

High Growth (> 3%) Use Trend Growth Rate

Check R^2 for adjoining Upstream/Downstream Segments

R^2 >= 0.70
Use Best Fitted Regression Analysis

Yes →

Applicant can make a request to average growth rate if significant difference between upstream/downstream segments. Need to submit supporting documentation & justification.

No ↓

If unable to obtain R^2 >= 0.70, Visually check best regression analysis fitted curve

IF If Negative Growth → Yes → Use 1% Growth Rate

IF For Positive Low Growth (ie., R^2 < 0.70, Trend Growth <= 2%) → Yes → Use 2% Growth Rate

IF For High Growth Area (ie., R^2 < 0.70, Trend Growth > 2%) → Yes → Refer to Vested Trips: Medium or High Growth

AND

IF there are - Vested Trips

Negative Growth (Use Minimum 1%):

\+ Vested Trips

Low to Medium Growth (<= 3%)(Use Minimum 1%):

\+ Vested Trips

High Growth (> 3%):

Use the Highest # of the two (growth rate or vested trips). Need to submit supporting documentation & justification

HIGH GROWTH & HIGH VESTED TRIPS

If there are Vested Trips from multiple approved projects on segment.
And, Vested Trips comprise of multiple uses that would normally have significant interaction (residential, retail, office, restaurant, etc…).

And, Vested Trips make up more than 30% of the total future background traffic.

Then, Vested Trips can be reduced by 30% upon request by the Applicant

Signed: _____ Date: _____

Jon E. Cheney, P.E.

Appendix C

Traffic Counts

National Data & Surveying Services

Intersection Turning Movement Count

Location: Catalina Blvd & Howland Blvd
City: Deltona
Control: Signalized

Project ID: 24-130025-005
Date: 1/18/2024

Data - Total

NS/EW Streets:	Catalina Blvd				Catalina Blvd				Howland Blvd				Howland Blvd				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	17	9	5	0	13	12	131	0	23	105	10	0	5	230	16	0	576
7:15 AM	15	15	7	0	28	13	147	0	28	139	10	0	6	245	23	0	676
7:30 AM	26	41	7	0	39	31	122	0	16	132	5	0	8	250	23	1	701
7:45 AM	31	28	9	0	39	35	107	0	41	114	11	0	9	233	20	0	677
8:00 AM	34	22	11	0	18	18	111	0	31	128	5	0	5	249	9	0	641
8:15 AM	18	9	11	0	10	14	114	0	34	129	7	0	10	209	10	0	575
8:30 AM	16	22	8	0	10	18	96	0	50	156	12	0	10	213	5	1	617
8:45 AM	18	11	5	0	15	18	84	0	29	134	8	0	4	167	5	0	498
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	175	157	63	0	172	159	912	0	252	1037	68	0	57	1796	111	2	4961
APPROACH %'s :	44.30%	39.75%	15.95%	0.00%	13.84%	12.79%	73.37%	0.00%	18.57%	76.42%	5.01%	0.00%	2.90%	91.35%	5.65%	0.10%	
PEAK HR :	07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :	106	106	34	0	124	97	487	0	116	513	31	0	28	977	75	1	2695
PEAK HR FACTOR :	0.779	0.646	0.773	0.000	0.795	0.693	0.828	0.000	0.707	0.923	0.705	0.000	0.778	0.977	0.815	0.250	0.961
	0.831				0.922				0.932				0.958				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	16	11	4	0	32	20	51	0	92	261	11	0	10	157	20	2	687
4:15 PM	15	28	12	0	29	25	67	0	101	255	7	0	11	145	14	0	709
4:30 PM	17	25	9	0	21	18	61	0	101	229	12	0	10	149	24	2	678
4:45 PM	12	25	10	0	22	20	69	0	98	258	13	0	11	164	12	0	714
5:00 PM	11	23	7	0	32	16	44	0	88	277	22	0	10	143	19	0	692
5:15 PM	10	21	6	0	27	22	59	0	99	271	14	0	14	155	20	2	720
5:30 PM	9	24	2	0	25	16	75	0	108	265	12	0	15	163	15	0	729
5:45 PM	15	17	4	0	40	31	60	0	105	276	12	0	4	150	12	0	726
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	105	174	54	0	228	168	486	0	792	2092	103	0	85	1226	136	6	5655
APPROACH %'s :	31.53%	52.25%	16.22%	0.00%	25.85%	19.05%	55.10%	0.00%	26.51%	70.04%	3.45%	0.00%	5.85%	84.38%	9.36%	0.41%	
PEAK HR :	05:00 PM - 06:00 PM																TOTAL
PEAK HR VOL :	45	85	19	0	124	85	238	0	400	1089	60	0	43	611	66	2	2867
PEAK HR FACTOR :	0.750	0.885	0.679	0.000	0.775	0.685	0.793	0.000	0.926	0.983	0.682	0.000	0.717	0.937	0.825	0.250	0.983
	0.909				0.853				0.985				0.935				

	1%	1%	3%	#DIV/0!	2%	0%	2%	#DIV/0!	4%	5%	3%	#DIV/0!	0%	3%	3%	0%	
	2%	0%	0%	#DIV/0!	0%	0%	3%	#DIV/0!	1%	1%	5%	#DIV/0!	0%	1%	0%	0%	

National Data & Surveying Services

Intersection Turning Movement Count

Location: Catalina Blvd & Howland Blvd
City: Deltona
Control: Signalized

Project ID: 24-130025-005
Date: 1/18/2024

Data - Cars

NS/EW Streets:	Catalina Blvd				Catalina Blvd				Howland Blvd				Howland Blvd				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	16	8	5	0	13	12	129	0	23	102	9	0	5	229	15	0	566
7:15 AM	14	14	7	0	27	13	145	0	28	133	9	0	6	240	23	0	659
7:30 AM	26	41	7	0	38	31	122	0	14	129	5	0	8	242	22	1	686
7:45 AM	31	28	9	0	39	35	104	0	41	113	11	0	9	230	20	0	670
8:00 AM	34	22	10	0	18	18	107	0	28	113	5	0	5	239	8	0	607
8:15 AM	17	9	11	0	10	14	112	0	34	122	6	0	10	202	9	0	556
8:30 AM	15	20	8	0	10	16	96	0	49	150	12	0	10	205	5	1	597
8:45 AM	18	11	5	0	15	16	80	0	26	131	8	0	4	165	5	0	484
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	171	153	62	0	170	155	895	0	243	993	65	0	57	1752	107	2	4825
APPROACH %'s :	44.30%	39.64%	16.06%	0.00%	13.93%	12.70%	73.36%	0.00%	18.68%	76.33%	5.00%	0.00%	2.97%	91.35%	5.58%	0.10%	
PEAK HR :	07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :	105	105	33	0	122	97	478	0	111	488	30	0	28	951	73	1	2622
PEAK HR FACTOR :	0.772	0.640	0.825	0.000	0.782	0.693	0.824	0.000	0.677	0.917	0.682	0.000	0.778	0.982	0.793	0.250	0.956
	0.821				0.912				0.925				0.964				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	16	10	4	0	29	20	50	0	88	256	10	0	10	155	19	2	669
4:15 PM	15	27	12	0	28	25	66	0	101	248	7	0	11	138	13	0	691
4:30 PM	16	24	9	0	21	18	60	0	101	227	12	0	10	148	24	2	672
4:45 PM	12	25	10	0	20	19	68	0	94	255	12	0	11	159	11	0	696
5:00 PM	11	23	7	0	32	16	44	0	88	273	22	0	10	143	19	0	688
5:15 PM	10	21	6	0	27	22	57	0	96	269	12	0	14	151	20	2	707
5:30 PM	8	24	2	0	25	16	72	0	106	265	11	0	15	161	15	0	720
5:45 PM	15	17	4	0	40	31	57	0	105	272	12	0	4	148	12	0	717
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	103	171	54	0	222	167	474	0	779	2065	98	0	85	1203	133	6	5560
APPROACH %'s :	31.40%	52.13%	16.46%	0.00%	25.72%	19.35%	54.92%	0.00%	26.48%	70.19%	3.33%	0.00%	5.96%	84.30%	9.32%	0.42%	
PEAK HR :	05:00 PM - 06:00 PM																TOTAL
PEAK HR VOL :	44	85	19	0	124	85	230	0	395	1079	57	0	43	603	66	2	2832
PEAK HR FACTOR :	0.733	0.885	0.679	0.000	0.775	0.685	0.799	0.000	0.932	0.988	0.648	0.000	0.717	0.936	0.825	0.250	0.983
	0.902				0.857				0.984				0.935				

National Data & Surveying Services

Intersection Turning Movement Count

Location: Catalina Blvd & Howland Blvd
City: Deltona
Control: Signalized

Project ID: 24-130025-005
Date: 1/18/2024

Data - HT

NS/EW Streets:	Catalina Blvd				Catalina Blvd				Howland Blvd				Howland Blvd				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	1	1	0	0	0	0	2	0	0	3	1	0	0	1	1	0	10
7:15 AM	1	1	0	0	1	0	2	0	0	6	1	0	0	5	0	0	17
7:30 AM	0	0	0	0	1	0	0	0	2	3	0	0	0	8	1	0	15
7:45 AM	0	0	0	0	0	0	3	0	0	1	0	0	0	3	0	0	7
8:00 AM	0	0	1	0	0	0	4	0	3	15	0	0	0	10	1	0	34
8:15 AM	1	0	0	0	0	0	2	0	0	7	1	0	0	7	1	0	19
8:30 AM	1	2	0	0	0	2	0	0	1	6	0	0	0	8	0	0	20
8:45 AM	0	0	0	0	0	2	4	0	3	3	0	0	0	2	0	0	14
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	4	4	1	0	2	4	17	0	9	44	3	0	0	44	4	0	136
APPROACH %'s :	44.44%	44.44%	11.11%	0.00%	8.70%	17.39%	73.91%	0.00%	16.07%	78.57%	5.36%	0.00%	0.00%	91.67%	8.33%	0.00%	
PEAK HR :	07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :	1	1	1	0	2	0	9	0	5	25	1	0	0	26	2	0	73
PEAK HR FACTOR :	0.250	0.250	0.250	0.000	0.500	0.000	0.563	0.000	0.417	0.417	0.250	0.000	0.000	0.650	0.500	0.000	0.537
	0.375				0.688				0.431				0.636				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	1	0	0	3	0	1	0	4	5	1	0	0	2	1	0	18
4:15 PM	0	1	0	0	1	0	1	0	0	7	0	0	0	7	1	0	18
4:30 PM	1	1	0	0	0	0	1	0	0	2	0	0	0	1	0	0	6
4:45 PM	0	0	0	0	2	1	1	0	4	3	1	0	0	5	1	0	18
5:00 PM	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	4
5:15 PM	0	0	0	0	0	0	2	0	3	2	2	0	0	4	0	0	13
5:30 PM	1	0	0	0	0	0	3	0	2	0	1	0	0	2	0	0	9
5:45 PM	0	0	0	0	0	0	3	0	0	4	0	0	0	2	0	0	9
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	2	3	0	0	6	1	12	0	13	27	5	0	0	23	3	0	95
APPROACH %'s :	40.00%	60.00%	0.00%	0.00%	31.58%	5.26%	63.16%	0.00%	28.89%	60.00%	11.11%	0.00%	0.00%	88.46%	11.54%	0.00%	
PEAK HR :	05:00 PM - 06:00 PM																TOTAL
PEAK HR VOL :	1	0	0	0	0	0	8	0	5	10	3	0	0	8	0	0	35
PEAK HR FACTOR :	0.250	0.000	0.000	0.000	0.000	0.000	0.667	0.000	0.417	0.625	0.375	0.000	0.000	0.500	0.000	0.000	0.673
	0.250				0.667				0.643				0.500				

National Data & Surveying Services

Intersection Turning Movement Count

Location: Catalina Blvd & Howland Blvd
City: Deltona
Control: Signalized

Project ID: 24-130025-005
Date: 1/18/2024

Data - Bikes

NS/EW Streets:	Catalina Blvd				Catalina Blvd				Howland Blvd				Howland Blvd				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	2
APPROACH %'s :					0.00%	0.00%	100.00%	0.00%					0.00%	100.00%	0.00%	0.00%	
PEAK HR :	07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.250
	0.250												0.250				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
5:15 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
5:30 PM	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	2
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	1	0	0	0	0	0	0	0	4	0	0	0	0	1	0	6
APPROACH %'s :	0.00%	100.00%	0.00%	0.00%					0.00%	100.00%	0.00%	0.00%	0.00%	0.00%	100.00%	0.00%	
PEAK HR :	05:00 PM - 06:00 PM																TOTAL
PEAK HR VOL :	0	1	0	0	0	0	0	0	0	3	0	0	0	0	1	0	5
PEAK HR FACTOR :	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.750	0.000	0.000	0.000	0.000	0.250	0.000	0.625
	0.250								0.750				0.250				

National Data & Surveying Services

Intersection Turning Movement Count

Location: Catalina Blvd & Howland Blvd
City: Deltona

Project ID: 24-130025-005
Date: 1/18/2024

Data - Pedestrians (Crosswalks)

NS/EW Streets:	Catalina Blvd		Catalina Blvd		Howland Blvd		Howland Blvd		
AM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
7:00 AM	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0
8:00 AM	0	1	0	0	0	0	0	0	1
8:15 AM	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
TOTAL VOLUMES :	0	1	0	0	0	0	0	0	1
APPROACH %'s :	0.00%	100.00%							
PEAK HR :	**07:15 AM - 08:15 AM**								TOTAL
PEAK HR VOL :	0	1	0	0	0	0	0	0	1
PEAK HR FACTOR :		0.250							0.250
	0.250								

PM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
4:00 PM	3	0	1	0	0	0	0	0	4
4:15 PM	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	2	0	0	0	2
4:45 PM	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0
5:30 PM	0	1	0	0	0	1	0	1	3
5:45 PM	0	0	0	0	0	0	0	0	0
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
TOTAL VOLUMES :	3	1	1	0	2	1	0	1	9
APPROACH %'s :	75.00%	25.00%	100.00%	0.00%	66.67%	33.33%	0.00%	100.00%	
PEAK HR :	**05:00 PM - 06:00 PM**								TOTAL
PEAK HR VOL :	0	1	0	0	0	1	0	1	3
PEAK HR FACTOR :		0.250				0.250		0.250	0.250
	0.250				0.250		0.250		

Prepared by National Data & Surveying Services

Catalina Blvd & Howland Blvd

Peak Hour Turning Movement Count

ID: 24-130025-005
City: Deltona

Day: Thursday
Date: 1/18/2024

	PEAK HOURS	COUNT PERIODS
AM	07:15 AM - 08:15 AM	7:00 AM - 09:00 AM
NOON	NONE	NONE
PM	05:00 PM - 06:00 PM	4:00 PM - 06:00 PM

SOUTHBOUND (Catalina Blvd)

	Right	Through	Left	U-Turn	Outbound
AM	487	97	124	0	297
NOON	0	0	0	0	0
PM	238	85	124	0	551
	0	0	0	0	

EASTBOUND (Howland Blvd)

	AM	NOON	PM	
Outbound	1570	0	894	
U-Turn	0	0	0	0
Left	116	0	400	0
Through	513	0	1089	0
Right	31	0	60	0

WESTBOUND (Howland Blvd)

		PM	NOON	AM
Right	0	66	0	75
Through	0	611	0	977
Left	0	43	0	28
U-Turn	0	2	0	1
Outbound		1234	0	672

NORTHBOUND (Catalina Blvd)

	Outbound	U-Turn	Left	Through	Right
		0	0	0	0
PM	188	0	45	85	19
NOON	0	0	0	0	0
AM	156	0	106	106	34

CONTROL

Signalized

	AM	NOON	PM
TEV	2695	0	2867
PHF	0.96		0.98

Cars (AM)

Approach	Left	Through	Right
Southbound	122	97	478
Eastbound	111	488	30
Westbound	28	951	73
Northbound	105	105	33

HT (AM)

Approach	Left	Through	Right
Southbound	2	0	9
Eastbound	5	25	1
Westbound	0	26	2
Northbound	1	1	1

Cars (NOON)

Approach	Left	Through	Right
Southbound	0	0	0
Eastbound	0	0	0
Westbound	0	0	0
Northbound	0	0	0

HT (NOON)

Approach	Left	Through	Right
Southbound	0	0	0
Eastbound	0	0	0
Westbound	0	0	0
Northbound	0	0	0

Cars (PM)

Approach	Left	Through	Right
Southbound	124	85	230
Eastbound	395	1079	57
Westbound	43	603	66
Northbound	44	85	19

HT (PM)

Approach	Left	Through	Right
Southbound	0	0	8
Eastbound	5	10	3
Westbound	0	8	0
Northbound	1	0	0

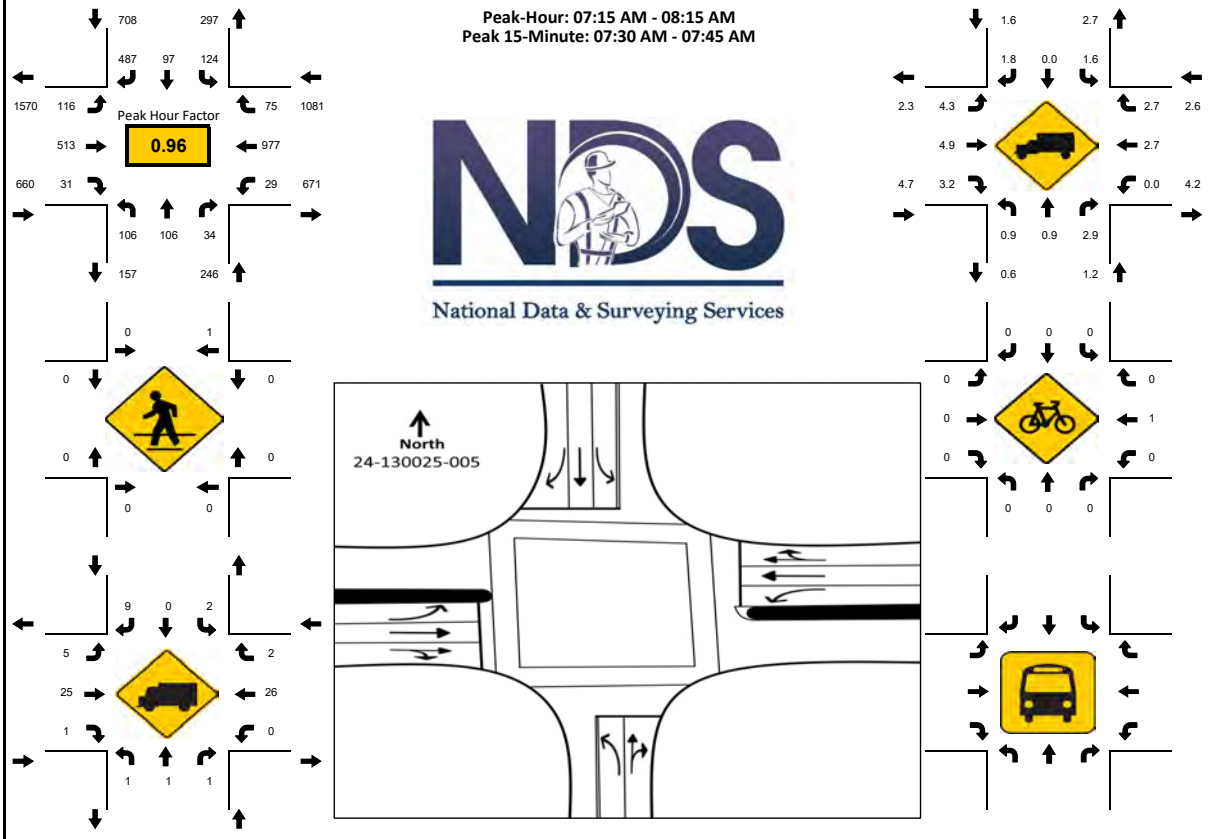
Pedestrians (Crosswalks)

Crosswalk	Direction	AM	NOON	PM
North leg	Eastbound	0	0	0
North leg	Westbound	1	0	1
South leg	Eastbound	0	0	0
South leg	Westbound	0	0	0
West leg	Southbound	0	0	1
West leg	Northbound	0	0	0
East leg	Southbound	0	0	1
East leg	Northbound	0	0	0
Diagonal NW		0	0	0
Diagonal NE		0	0	0
Diagonal SW		0	0	0
Diagonal SE		0	0	0

LOCATION: Catalina Blvd & Howland Blvd
CITY/STATE: Deltona, FL

PROJECT ID: 24-130025-005
DATE: Thu, Jan 18, 2024

Peak-Hour: 07:15 AM - 08:15 AM
Peak 15-Minute: 07:30 AM - 07:45 AM



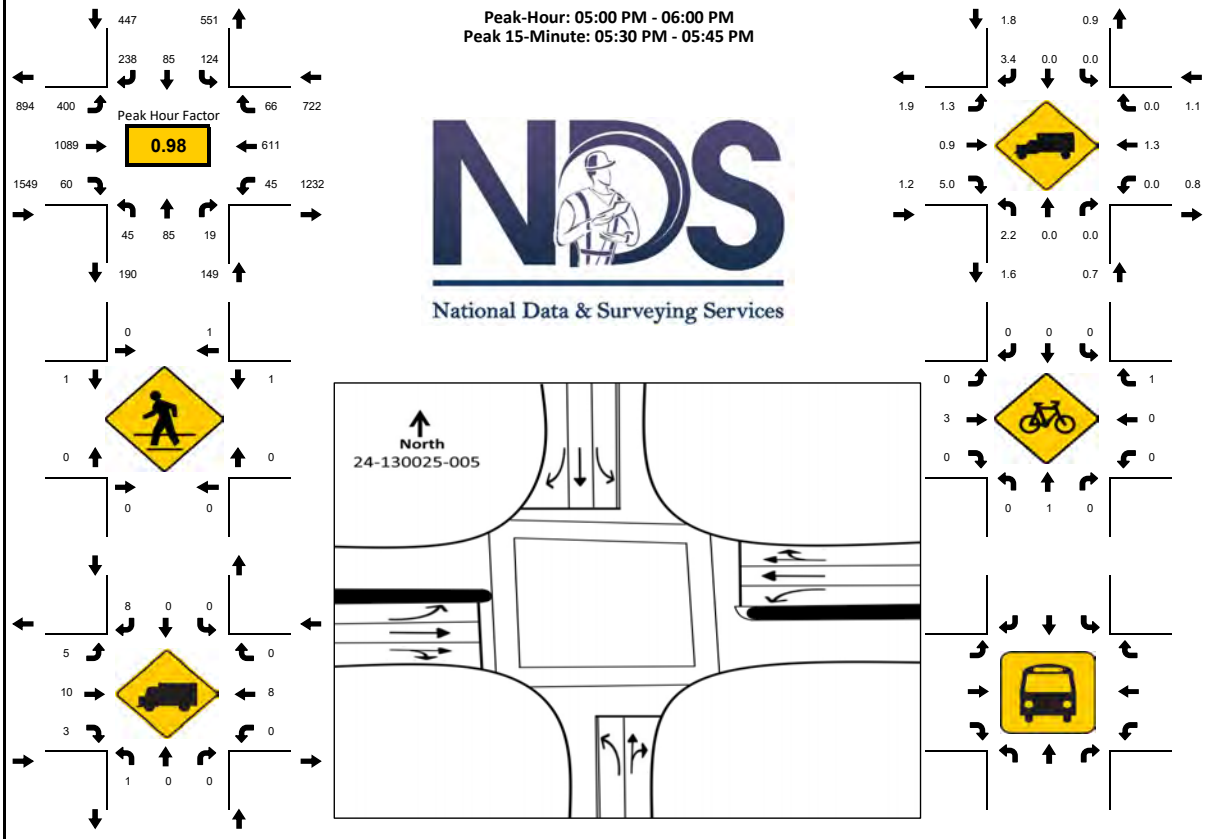
National Data & Surveying Services

15-Min Count Period Beginning At	Catalina Blvd Northbound					Catalina Blvd Southbound					Howland Blvd Eastbound					Howland Blvd Westbound					Total	Hourly Total
	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*		
7:00 AM	17	9	5	0		13	12	131	0		23	105	10	0		5	230	16	0		576	2630
7:15 AM	15	15	7	0		28	13	147	0		28	139	10	0		6	245	23	0		676	2695
7:30 AM	26	41	7	0		39	31	122	0		16	132	5	0		8	250	23	1		701	2594
7:45 AM	31	28	9	0		39	35	107	0		41	114	11	0		9	233	20	0		677	2510
8:00 AM	34	22	11	0		18	18	111	0		31	128	5	0		5	249	9	0		641	2331
8:15 AM	18	9	11	0		10	14	114	0		34	129	7	0		10	209	10	0		575	1690
8:30 AM	16	22	8	0		10	18	96	0		50	156	12	0		10	213	5	1		617	1115
8:45 AM	18	11	5	0		15	18	84	0		29	134	8	0		4	167	5	0		498	498
Peak 15-Min Flowrates	**Northbound**					**Southbound**					**Eastbound**					**Westbound**					**Total**	
	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*		
All Vehicles	136	164	44	0		156	140	588	0		164	556	44	0		36	1000	92	4		**3124**	
Heavy Trucks	4	4	4	0		4	0	16	0		12	60	4	0		0	40	4	0		**152**	
Pedestrians		0					4					0					0				**4**	
Bicycles	0	0	0	0		0	0	0	0		0	0	0	0		0	4	0	0		**4**	
Buses																						
Stopped Buses																						

LOCATION: Catalina Blvd & Howland Blvd
CITY/STATE: Deltona, FL

PROJECT ID: 24-130025-005
DATE: Thu, Jan 18, 2024

Peak-Hour: 05:00 PM - 06:00 PM
Peak 15-Minute: 05:30 PM - 05:45 PM



15-Min Count Period Beginning At	Catalina Blvd Northbound					Catalina Blvd Southbound					Howland Blvd Eastbound					Howland Blvd Westbound					Total	Hourly Total
	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*		
4:00 PM	16	11	4	0		32	20	51	0		92	261	11	0		10	157	20	2		687	2788
4:15 PM	15	28	12	0		29	25	67	0		101	255	7	0		11	145	14	0		709	2793
4:30 PM	17	25	9	0		21	18	61	0		101	229	12	0		10	149	24	2		678	2804
4:45 PM	12	25	10	0		22	20	69	0		98	258	13	0		11	164	12	0		714	2855
5:00 PM	11	23	7	0		32	16	44	0		88	277	22	0		10	143	19	0		692	2867
5:15 PM	10	21	6	0		27	22	59	0		99	271	14	0		14	155	20	2		720	2175
5:30 PM	9	24	2	0		25	16	75	0		108	265	12	0		15	163	15	0		729	1455
5:45 PM	15	17	4	0		40	31	60	0		105	276	12	0		4	150	12	0		726	726
Peak 15-Min Flowrates	**Northbound**					**Southbound**					**Eastbound**					**Westbound**					**Total**	
	Left	**Thru**	**Rgt**	**U**	**R***	**Left**	**Thru**	**Rgt**	**U**	**R***	**Left**	**Thru**	**Rgt**	**U**	**R***	**Left**	**Thru**	**Rgt**	**U**	**R***		
All Vehicles	60	96	28	0		160	124	300	0		432	1108	88	0		60	652	80	8		**3196**	
Heavy Trucks	4	0	0	0		0	0	12	0		12	16	8	0		0	16	0	0		**68**	
Pedestrians		0					4					4					4				**12**	
Bicycles	0	4	0	0		0	0	0	0		0	4	0	0		0	0	4	0		**12**	
Buses																						
Stopped Buses																						

National Data & Surveying Services

Intersection Turning Movement Count

Location: Lake Helen Osteen Rd & Catalina Blvd
City: Deltona
Control: Signalized

Project ID: 24-130025-004
Date: 1/18/2024

Data - Total

NS/EW Streets:	Lake Helen Osteen Rd				Lake Helen Osteen Rd				Catalina Blvd				Catalina Blvd				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	107	81	0	0	0	33	37	0	14	0	16	0	0	0	0	0	288
7:15 AM	116	109	0	0	0	34	42	0	11	0	28	0	0	0	0	0	340
7:30 AM	106	113	0	0	0	51	53	0	19	0	26	0	0	0	0	0	368
7:45 AM	89	81	0	0	0	81	47	0	10	0	37	0	0	0	0	0	345
8:00 AM	69	61	0	0	0	29	40	0	18	0	40	0	0	0	0	0	257
8:15 AM	80	48	0	0	0	33	42	0	13	0	38	0	0	0	0	0	254
8:30 AM	65	53	0	0	0	28	25	0	25	0	36	0	0	0	0	0	232
8:45 AM	65	39	0	0	0	29	30	0	10	0	29	0	0	0	0	0	202
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	697	585	0	0	0	318	316	0	120	0	250	0	0	0	0	0	2286
APPROACH %'s :	54.37%	45.63%	0.00%	0.00%	0.00%	50.16%	49.84%	0.00%	32.43%	0.00%	67.57%	0.00%					
PEAK HR :	07:00 AM - 08:00 AM																TOTAL
PEAK HR VOL :	418	384	0	0	0	199	179	0	54	0	107	0	0	0	0	0	1341
PEAK HR FACTOR :	0.901	0.850	0.000	0.000	0.000	0.614	0.844	0.000	0.711	0.000	0.723	0.000	0.000	0.000	0.000	0.000	0.911
	0.891				0.738				0.856								

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	56	46	0	0	0	58	23	0	25	0	68	0	0	0	0	0	276
4:15 PM	57	41	0	0	0	85	25	0	43	0	86	0	0	0	0	0	337
4:30 PM	44	50	0	0	0	62	22	0	28	0	89	0	0	0	0	0	295
4:45 PM	48	40	0	0	0	81	24	0	29	0	76	0	0	0	0	0	298
5:00 PM	43	44	0	0	0	73	20	0	46	0	76	0	0	0	0	0	302
5:15 PM	51	38	0	0	0	111	23	0	34	0	97	0	0	0	0	0	354
5:30 PM	42	45	0	0	0	93	24	0	37	0	84	0	0	0	0	0	325
5:45 PM	59	39	0	0	0	78	26	0	52	0	79	0	0	0	0	0	333
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	400	343	0	0	0	641	187	0	294	0	655	0	0	0	0	0	2520
APPROACH %'s :	53.84%	46.16%	0.00%	0.00%	0.00%	77.42%	22.58%	0.00%	30.98%	0.00%	69.02%	0.00%					
PEAK HR :	05:00 PM - 06:00 PM																TOTAL
PEAK HR VOL :	195	166	0	0	0	355	93	0	169	0	336	0	0	0	0	0	1314
PEAK HR FACTOR :	0.826	0.922	0.000	0.000	0.000	0.800	0.894	0.000	0.813	0.000	0.866	0.000	0.000	0.000	0.000	0.000	0.928
	0.921				0.836				0.964								

	1%	3%	#DIV/0!	#DIV/0!	#DIV/0!	5%	1%	#DIV/0!	0%	#DIV/0!	3%	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	
	5%	2%	#DIV/0!	#DIV/0!	#DIV/0!	3%	4%	#DIV/0!	1%	#DIV/0!	2%	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	

National Data & Surveying Services

Intersection Turning Movement Count

Location: Lake Helen Osteen Rd & Catalina Blvd
City: Deltona
Control: Signalized

Project ID: 24-130025-004
Date: 1/18/2024

Data - Cars

NS/EW Streets:	Lake Helen Osteen Rd				Lake Helen Osteen Rd				Catalina Blvd				Catalina Blvd				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	107	80	0	0	0	31	37	0	14	0	15	0	0	0	0	0	284
7:15 AM	114	106	0	0	0	31	42	0	11	0	28	0	0	0	0	0	332
7:30 AM	105	110	0	0	0	49	52	0	19	0	25	0	0	0	0	0	360
7:45 AM	88	76	0	0	0	78	46	0	10	0	36	0	0	0	0	0	334
8:00 AM	67	59	0	0	0	28	40	0	18	0	38	0	0	0	0	0	250
8:15 AM	78	48	0	0	0	31	42	0	12	0	37	0	0	0	0	0	248
8:30 AM	65	50	0	0	0	28	24	0	23	0	36	0	0	0	0	0	226
8:45 AM	61	37	0	0	0	25	26	0	10	0	27	0	0	0	0	0	186
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	685	566	0	0	0	301	309	0	117	0	242	0	0	0	0	0	2220
APPROACH %'s :	54.76%	45.24%	0.00%	0.00%	0.00%	49.34%	50.66%	0.00%	32.59%	0.00%	67.41%	0.00%					
PEAK HR :	07:00 AM - 08:00 AM																TOTAL
PEAK HR VOL :	414	372	0	0	0	189	177	0	54	0	104	0	0	0	0	0	1310
PEAK HR FACTOR :	0.908	0.845	0.000	0.000	0.000	0.606	0.851	0.000	0.711	0.000	0.722	0.000	0.000	0.000	0.000	0.000	0.910
	0.893				0.738				0.859								

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	53	43	0	0	0	55	22	0	24	0	65	0	0	0	0	0	262
4:15 PM	56	38	0	0	0	83	25	0	41	0	85	0	0	0	0	0	328
4:30 PM	43	48	0	0	0	61	21	0	27	0	87	0	0	0	0	0	287
4:45 PM	47	36	0	0	0	79	23	0	28	0	73	0	0	0	0	0	286
5:00 PM	43	42	0	0	0	71	17	0	44	0	76	0	0	0	0	0	293
5:15 PM	47	38	0	0	0	105	23	0	34	0	97	0	0	0	0	0	344
5:30 PM	37	45	0	0	0	90	24	0	37	0	80	0	0	0	0	0	313
5:45 PM	58	38	0	0	0	78	25	0	52	0	76	0	0	0	0	0	327
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	384	328	0	0	0	622	180	0	287	0	639	0	0	0	0	0	2440
APPROACH %'s :	53.93%	46.07%	0.00%	0.00%	0.00%	77.56%	22.44%	0.00%	30.99%	0.00%	69.01%	0.00%					
PEAK HR :	05:00 PM - 06:00 PM																TOTAL
PEAK HR VOL :	185	163	0	0	0	344	89	0	167	0	329	0	0	0	0	0	1277
PEAK HR FACTOR :	0.797	0.906	0.000	0.000	0.000	0.819	0.890	0.000	0.803	0.000	0.848	0.000	0.000	0.000	0.000	0.000	0.928
	0.906				0.846				0.947								

National Data & Surveying Services

Intersection Turning Movement Count

Location: Lake Helen Osteen Rd & Catalina Blvd
City: Deltona
Control: Signalized

Project ID: 24-130025-004
Date: 1/18/2024

Data - HT

NS/EW Streets:	Lake Helen Osteen Rd				Lake Helen Osteen Rd				Catalina Blvd				Catalina Blvd				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	1	0	0	0	2	0	0	0	0	1	0	0	0	0	0	4
7:15 AM	2	3	0	0	0	3	0	0	0	0	0	0	0	0	0	0	8
7:30 AM	1	3	0	0	0	2	1	0	0	0	1	0	0	0	0	0	8
7:45 AM	1	5	0	0	0	3	1	0	0	0	1	0	0	0	0	0	11
8:00 AM	2	2	0	0	0	1	0	0	0	0	2	0	0	0	0	0	7
8:15 AM	2	0	0	0	0	2	0	0	1	0	1	0	0	0	0	0	6
8:30 AM	0	3	0	0	0	0	1	0	2	0	0	0	0	0	0	0	6
8:45 AM	4	2	0	0	0	4	4	0	0	0	2	0	0	0	0	0	16
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	12	19	0	0	0	17	7	0	3	0	8	0	0	0	0	0	66
APPROACH %'s :	38.71%	61.29%	0.00%	0.00%	0.00%	70.83%	29.17%	0.00%	27.27%	0.00%	72.73%	0.00%					
PEAK HR :	07:00 AM - 08:00 AM																TOTAL
PEAK HR VOL :	4	12	0	0	0	10	2	0	0	0	3	0	0	0	0	0	31
PEAK HR FACTOR :	0.500	0.600	0.000	0.000	0.000	0.833	0.500	0.000	0.000	0.000	0.750	0.000	0.000	0.000	0.000	0.000	0.705
	0.667				0.750				0.750								

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	3	3	0	0	0	3	1	0	1	0	3	0	0	0	0	0	14
4:15 PM	1	3	0	0	0	2	0	0	2	0	1	0	0	0	0	0	9
4:30 PM	1	2	0	0	0	1	1	0	1	0	2	0	0	0	0	0	8
4:45 PM	1	4	0	0	0	2	1	0	1	0	3	0	0	0	0	0	12
5:00 PM	0	2	0	0	0	2	3	0	2	0	0	0	0	0	0	0	9
5:15 PM	4	0	0	0	0	6	0	0	0	0	0	0	0	0	0	0	10
5:30 PM	5	0	0	0	0	3	0	0	0	0	4	0	0	0	0	0	12
5:45 PM	1	1	0	0	0	0	1	0	0	0	3	0	0	0	0	0	6
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	16	15	0	0	0	19	7	0	7	0	16	0	0	0	0	0	80
APPROACH %'s :	51.61%	48.39%	0.00%	0.00%	0.00%	73.08%	26.92%	0.00%	30.43%	0.00%	69.57%	0.00%					
PEAK HR :	05:00 PM - 06:00 PM																TOTAL
PEAK HR VOL :	10	3	0	0	0	11	4	0	2	0	7	0	0	0	0	0	37
PEAK HR FACTOR :	0.500	0.375	0.000	0.000	0.000	0.458	0.333	0.000	0.250	0.000	0.438	0.000	0.000	0.000	0.000	0.000	0.771
	0.650				0.625				0.563								

National Data & Surveying Services

Intersection Turning Movement Count

Location: Lake Helen Osteen Rd & Catalina Blvd
City: Deltona
Control: Signalized

Project ID: 24-130025-004
Date: 1/18/2024

Data - Bikes

NS/EW Streets:	Lake Helen Osteen Rd				Lake Helen Osteen Rd				Catalina Blvd				Catalina Blvd				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
APPROACH %'s :	100.00%	0.00%	0.00%	0.00%													
PEAK HR :	07:00 AM - 08:00 AM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
APPROACH %'s :	0.00%	100.00%	0.00%	0.00%													
PEAK HR :	05:00 PM - 06:00 PM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	

National Data & Surveying Services

Intersection Turning Movement Count

Location: Lake Helen Osteen Rd & Catalina Blvd
City: Deltona

Project ID: 24-130025-004
Date: 1/18/2024

Data - Pedestrians (Crosswalks)

NS/EW Streets:	Lake Helen Osteen Rd		Lake Helen Osteen Rd		Catalina Blvd		Catalina Blvd		
AM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
7:00 AM	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0
APPROACH %'s :									
PEAK HR :	07:00 AM - 08:00 AM								TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0
PEAK HR FACTOR :									

PM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
4:00 PM	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	1	0	1
4:45 PM	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	1	1
5:45 PM	0	0	0	0	0	0	0	0	0
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	1	1	2
APPROACH %'s :							50.00%	50.00%	
PEAK HR :	05:00 PM - 06:00 PM								TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	1	1
PEAK HR FACTOR :								0.250	0.250
							0.250		

Prepared by National Data & Surveying Services

Lake Helen Osteen Rd & Catalina Blvd

Peak Hour Turning Movement Count

ID: 24-130025-004
City: Deltona

Day: Thursday
Date: 1/18/2024

PEAK HOURS		COUNT PERIODS
AM	07:00 AM - 08:00 AM	7:00 AM - 09:00 AM
NOON	NONE	NONE
PM	05:00 PM - 06:00 PM	4:00 PM - 06:00 PM

Lake Helen Osteen Rd — SOUTHBOUND

	Right	Thru	Left	U-Turn	Out
AM	179	199	0	0	438
NOON	0	0	0	0	0
PM	93	355	0	0	335
	0	0	0	0	

Catalina Blvd — EASTBOUND

	AM	NOON	PM	
Out	597	0	288	
U-Turn	0	0	0	0
Left	54	0	169	0
Thru	0	0	0	0
Right	107	0	336	0

Catalina Blvd — WESTBOUND

		PM	NOON	AM
Right	0	0	0	0
Thru	0	0	0	0
Left	0	0	0	0
U-Turn	0	0	0	0
Out		0	0	0

Lake Helen Osteen Rd — NORTHBOUND

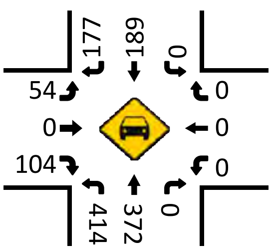
	Out	U-Turn	Left	Thru	Right
		0	0	0	0
PM	691	0	195	166	0
NOON	0	0	0	0	0
AM	306	0	418	384	0

CONTROL

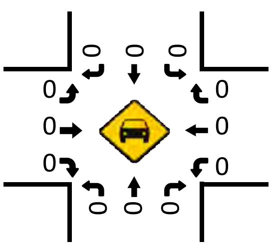
Signalized

	AM	NOON	PM
TEV	1341	0	1314
PHF	0.91		0.93

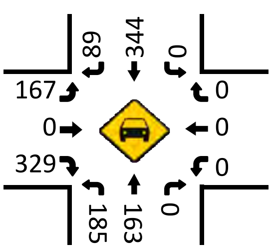
Cars (AM)



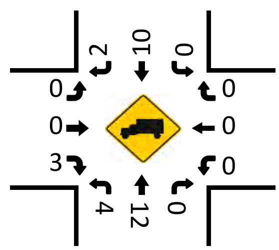
Cars (NOON)



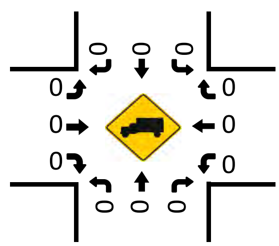
Cars (PM)



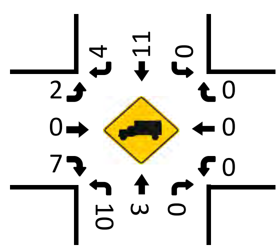
HT (AM)



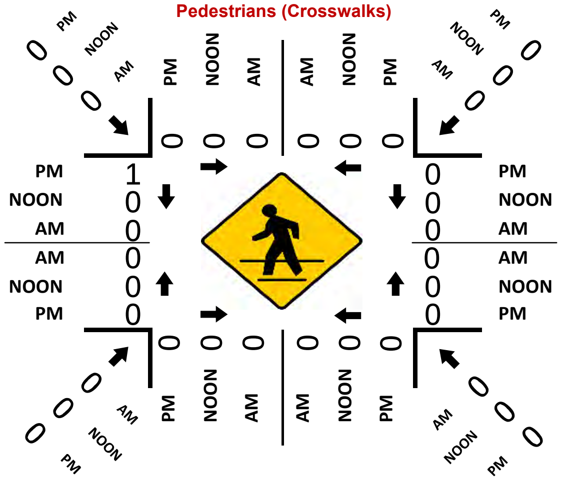
HT (NOON)



HT (PM)



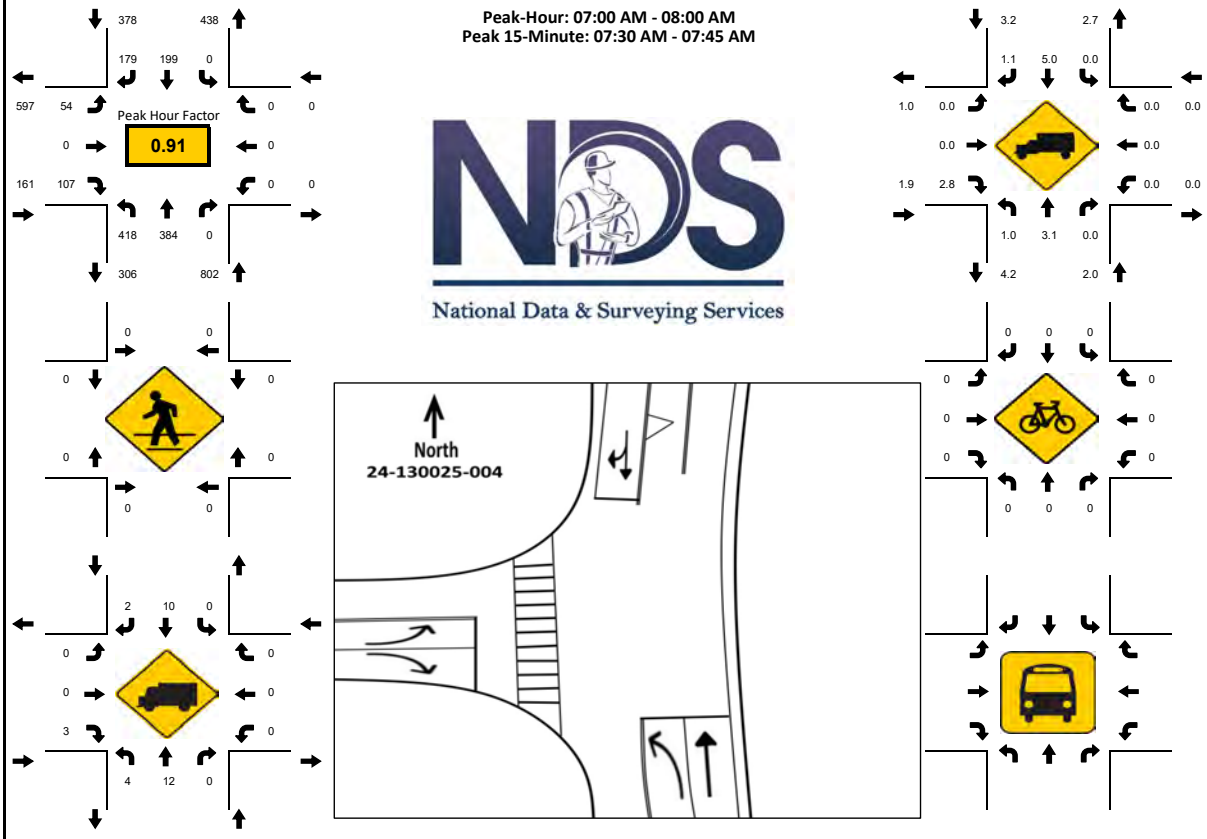
Pedestrians (Crosswalks)



LOCATION: Lake Helen Osteen Rd & Catalina Blvd
CITY/STATE: Deltona, FL

PROJECT ID: 24-130025-004
DATE: Thu, Jan 18, 2024

Peak-Hour: 07:00 AM - 08:00 AM
Peak 15-Minute: 07:30 AM - 07:45 AM



15-Min Count Period Beginning At	Lake Helen Osteen Rd Northbound					Lake Helen Osteen Rd Southbound					Catalina Blvd Eastbound					Catalina Blvd Westbound					Total	Hourly Total
	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*		
7:00 AM	107	81	0	0		0	33	37	0		14	0	16	0		0	0	0	0		288	1341
7:15 AM	116	109	0	0		0	34	42	0		11	0	28	0		0	0	0	0		340	1310
7:30 AM	106	113	0	0		0	51	53	0		19	0	26	0		0	0	0	0		368	1224
7:45 AM	89	81	0	0		0	81	47	0		10	0	37	0		0	0	0	0		345	1088
8:00 AM	69	61	0	0		0	29	40	0		18	0	40	0		0	0	0	0		257	945
8:15 AM	80	48	0	0		0	33	42	0		13	0	38	0		0	0	0	0		254	688
8:30 AM	65	53	0	0		0	28	25	0		25	0	36	0		0	0	0	0		232	434
8:45 AM	65	39	0	0		0	29	30	0		10	0	29	0		0	0	0	0		202	202
Peak 15-Min Flowrates	**Northbound**					**Southbound**					**Eastbound**					**Westbound**					**Total**	
	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*		
All Vehicles	464	452	0	0		0	324	212	0		76	0	148	0		0	0	0	0		**1676**	
Heavy Trucks	8	20	0	0		0	12	4	0		0	0	4	0		0	0	0	0		**48**	
Pedestrians		0					0					0					0				**0**	
Bicycles	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		**0**	
Buses																						
Stopped Buses																						

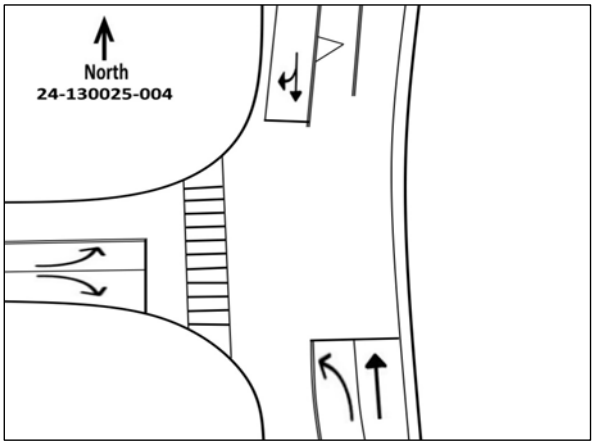
LOCATION: Lake Helen Osteen Rd & Catalina Blvd
CITY/STATE: Deltona, FL

PROJECT ID: 24-130025-004
DATE: Thu, Jan 18, 2024

Peak-Hour: 05:00 PM - 06:00 PM
Peak 15-Minute: 05:15 PM - 05:30 PM

Peak Hour Factor
0.93

National Data & Surveying Services



15-Min Count Period Beginning At	Lake Helen Osteen Rd Northbound					Lake Helen Osteen Rd Southbound					Catalina Blvd Eastbound					Catalina Blvd Westbound					Total	Hourly Total
	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*		
4:00 PM	56	46	0	0		0	58	23	0		25	0	68	0		0	0	0	0		276	1206
4:15 PM	57	41	0	0		0	85	25	0		43	0	86	0		0	0	0	0		337	1232
4:30 PM	44	50	0	0		0	62	22	0		28	0	89	0		0	0	0	0		295	1249
4:45 PM	48	40	0	0		0	81	24	0		29	0	76	0		0	0	0	0		298	1279
5:00 PM	43	44	0	0		0	73	20	0		46	0	76	0		0	0	0	0		302	1314
5:15 PM	51	38	0	0		0	111	23	0		34	0	97	0		0	0	0	0		354	1012
5:30 PM	42	45	0	0		0	93	24	0		37	0	84	0		0	0	0	0		325	658
5:45 PM	59	39	0	0		0	78	26	0		52	0	79	0		0	0	0	0		333	333
Peak 15-Min Flowrates	**Northbound**					**Southbound**					**Eastbound**					**Westbound**					**Total**	
	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*		
All Vehicles	236	180	0	0		0	444	104	0		208	0	388	0		0	0	0	0		**1560**	
Heavy Trucks	20	8	0	0		0	24	12	0		8	0	16	0		0	0	0	0		**88**	
Pedestrians		0					0					4					0				**4**	
Bicycles	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		**0**	
Buses																						
Stopped Buses																						

National Data & Surveying Services

Intersection Turning Movement Count

Location: Lake Helen Osteen Rd & New Hope Baptist Church N Dwy
City: Deltona
Control: 1-Way Stop(WB)

Project ID: 24-130025-003
Date: 1/18/2024

Data - Total

NS/EW Streets:	Lake Helen Osteen Rd				Lake Helen Osteen Rd				New Hope Baptist Church N Dwy				New Hope Baptist Church N Dwy				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	104	0	0	0	38	0	0	0	0	0	0	1	0	0	0	143
7:15 AM	0	124	0	0	0	41	0	0	0	0	0	0	1	0	1	0	167
7:30 AM	0	137	0	0	0	66	0	0	0	0	0	0	0	0	4	0	207
7:45 AM	0	99	0	0	0	85	0	0	0	0	0	0	1	0	2	0	187
8:00 AM	0	80	0	0	0	44	0	0	0	0	0	0	0	0	0	0	124
8:15 AM	0	58	0	0	0	56	0	0	0	0	0	0	2	0	2	0	118
8:30 AM	0	67	0	0	0	45	0	0	0	0	0	0	1	0	3	0	116
8:45 AM	0	60	0	0	0	36	0	0	0	0	0	0	2	0	0	0	98
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	729	0	0	0	411	0	0	0	0	0	0	8	0	12	0	1160
APPROACH %'s :	0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%					40.00%	0.00%	60.00%	0.00%	
PEAK HR :	07:00 AM - 08:00 AM																TOTAL
PEAK HR VOL :	0	464	0	0	0	230	0	0	0	0	0	0	3	0	7	0	704
PEAK HR FACTOR :	0.000	0.847	0.000	0.000	0.000	0.676	0.000	0.000	0.000	0.000	0.000	0.000	0.750	0.000	0.438	0.000	0.850
		0.847				0.676								0.625			

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	67	0	0	0	72	0	0	0	0	0	0	1	0	0	0	140
4:15 PM	0	71	0	0	0	109	0	0	0	0	0	0	2	0	1	0	183
4:30 PM	0	66	0	0	0	81	0	0	0	0	0	0	3	0	2	0	152
4:45 PM	0	64	0	0	0	90	0	0	0	0	0	0	1	0	0	0	155
5:00 PM	0	66	0	0	0	87	0	0	0	0	0	0	2	0	2	0	157
5:15 PM	0	55	0	0	0	145	0	0	0	0	0	0	2	0	2	0	204
5:30 PM	0	73	0	0	0	112	0	0	0	0	0	0	1	0	2	0	188
5:45 PM	0	64	0	0	0	92	0	0	0	0	0	0	0	0	0	0	156
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	526	0	0	0	788	0	0	0	0	0	0	12	0	9	0	1335
APPROACH %'s :	0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%					57.14%	0.00%	42.86%	0.00%	
PEAK HR :	05:00 PM - 06:00 PM																TOTAL
PEAK HR VOL :	0	258	0	0	0	436	0	0	0	0	0	0	5	0	6	0	705
PEAK HR FACTOR :	0.000	0.884	0.000	0.000	0.000	0.752	0.000	0.000	0.000	0.000	0.000	0.000	0.625	0.000	0.750	0.000	0.864
		0.884				0.752								0.688			

#DIV/0!	3%	#DIV/0!	#DIV/0!	#DIV/0!	4%	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	0%	#DIV/0!	0%	#DIV/0!	
#DIV/0!	2%	#DIV/0!	#DIV/0!	#DIV/0!	3%	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	0%	#DIV/0!	17%	#DIV/0!	

National Data & Surveying Services

Intersection Turning Movement Count

Location: Lake Helen Osteen Rd & New Hope Baptist Church N Dwy
City: Deltona
Control: 1-Way Stop(WB)

Project ID: 24-130025-003
Date: 1/18/2024

Data - Cars

NS/EW Streets:	Lake Helen Osteen Rd				Lake Helen Osteen Rd				New Hope Baptist Church N Dwy				New Hope Baptist Church N Dwy				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	103	0	0	0	38	0	0	0	0	0	0	1	0	0	0	142
7:15 AM	0	119	0	0	0	39	0	0	0	0	0	0	1	0	1	0	160
7:30 AM	0	134	0	0	0	63	0	0	0	0	0	0	0	0	4	0	201
7:45 AM	0	96	0	0	0	80	0	0	0	0	0	0	1	0	2	0	179
8:00 AM	0	75	0	0	0	41	0	0	0	0	0	0	0	0	0	0	116
8:15 AM	0	57	0	0	0	53	0	0	0	0	0	0	2	0	2	0	114
8:30 AM	0	65	0	0	0	44	0	0	0	0	0	0	1	0	3	0	113
8:45 AM	0	57	0	0	0	30	0	0	0	0	0	0	2	0	0	0	89
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	706	0	0	0	388	0	0	0	0	0	0	8	0	12	0	1114
APPROACH %'s :	0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%					40.00%	0.00%	60.00%	0.00%	
PEAK HR :	07:00 AM - 08:00 AM																TOTAL
PEAK HR VOL :	0	452	0	0	0	220	0	0	0	0	0	0	3	0	7	0	682
PEAK HR FACTOR :	0.000	0.843	0.000	0.000	0.000	0.688	0.000	0.000	0.000	0.000	0.000	0.000	0.750	0.000	0.438	0.000	0.848
	0.843				0.688								0.625				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	64	0	0	0	68	0	0	0	0	0	0	1	0	0	0	133
4:15 PM	0	67	0	0	0	107	0	0	0	0	0	0	2	0	1	0	177
4:30 PM	0	65	0	0	0	80	0	0	0	0	0	0	3	0	2	0	150
4:45 PM	0	61	0	0	0	89	0	0	0	0	0	0	1	0	0	0	151
5:00 PM	0	65	0	0	0	86	0	0	0	0	0	0	2	0	1	0	154
5:15 PM	0	53	0	0	0	140	0	0	0	0	0	0	2	0	2	0	197
5:30 PM	0	71	0	0	0	107	0	0	0	0	0	0	1	0	2	0	181
5:45 PM	0	64	0	0	0	92	0	0	0	0	0	0	0	0	0	0	156
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	510	0	0	0	769	0	0	0	0	0	0	12	0	8	0	1299
APPROACH %'s :	0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%					60.00%	0.00%	40.00%	0.00%	
PEAK HR :	05:00 PM - 06:00 PM																TOTAL
PEAK HR VOL :	0	253	0	0	0	425	0	0	0	0	0	0	5	0	5	0	688
PEAK HR FACTOR :	0.000	0.891	0.000	0.000	0.000	0.759	0.000	0.000	0.000	0.000	0.000	0.000	0.625	0.000	0.625	0.000	0.873
	0.891				0.759								0.625				

National Data & Surveying Services

Intersection Turning Movement Count

Location: Lake Helen Osteen Rd & New Hope Baptist Church N Dwy
City: Deltona
Control: 1-Way Stop(WB)

Project ID: 24-130025-003
Date: 1/18/2024

Data - HT

NS/EW Streets:	Lake Helen Osteen Rd				Lake Helen Osteen Rd				New Hope Baptist Church N Dwy				New Hope Baptist Church N Dwy				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
7:15 AM	0	5	0	0	0	2	0	0	0	0	0	0	0	0	0	0	7
7:30 AM	0	3	0	0	0	3	0	0	0	0	0	0	0	0	0	0	6
7:45 AM	0	3	0	0	0	5	0	0	0	0	0	0	0	0	0	0	8
8:00 AM	0	5	0	0	0	3	0	0	0	0	0	0	0	0	0	0	8
8:15 AM	0	1	0	0	0	3	0	0	0	0	0	0	0	0	0	0	4
8:30 AM	0	2	0	0	0	1	0	0	0	0	0	0	0	0	0	0	3
8:45 AM	0	3	0	0	0	6	0	0	0	0	0	0	0	0	0	0	9
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	23	0	0	0	23	0	0	0	0	0	0	0	0	0	0	46
APPROACH %'s :	0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%									
PEAK HR :	07:00 AM - 08:00 AM																TOTAL
PEAK HR VOL :	0	12	0	0	0	10	0	0	0	0	0	0	0	0	0	0	22
PEAK HR FACTOR :	0.000	0.600	0.000	0.000	0.000	0.500	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.688
	0.600				0.500												

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	3	0	0	0	4	0	0	0	0	0	0	0	0	0	0	7
4:15 PM	0	4	0	0	0	2	0	0	0	0	0	0	0	0	0	0	6
4:30 PM	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2
4:45 PM	0	3	0	0	0	1	0	0	0	0	0	0	0	0	0	0	4
5:00 PM	0	1	0	0	0	1	0	0	0	0	0	0	0	0	1	0	3
5:15 PM	0	2	0	0	0	5	0	0	0	0	0	0	0	0	0	0	7
5:30 PM	0	2	0	0	0	5	0	0	0	0	0	0	0	0	0	0	7
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	16	0	0	0	19	0	0	0	0	0	0	0	0	1	0	36
APPROACH %'s :	0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%					0.00%	0.00%	100.00%	0.00%	
PEAK HR :	05:00 PM - 06:00 PM																TOTAL
PEAK HR VOL :	0	5	0	0	0	11	0	0	0	0	0	0	0	0	1	0	17
PEAK HR FACTOR :	0.000	0.625	0.000	0.000	0.000	0.550	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.607
	0.625				0.550								0.250				

National Data & Surveying Services

Intersection Turning Movement Count

Location: Lake Helen Osteen Rd & New Hope Baptist Church N Dwy
City: Deltona
Control: 1-Way Stop(WB)

Project ID: 24-130025-003
Date: 1/18/2024

Data - Bikes

NS/EW Streets:	Lake Helen Osteen Rd				Lake Helen Osteen Rd				New Hope Baptist Church N Dwy				New Hope Baptist Church N Dwy				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
APPROACH %'s :																	
PEAK HR :	07:00 AM - 08:00 AM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
APPROACH %'s :																	
PEAK HR :	05:00 PM - 06:00 PM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	

National Data & Surveying Services

Intersection Turning Movement Count

Location: Lake Helen Osteen Rd & New Hope Baptist Church N Dwy **Project ID:** 24-130025-003
City: Deltona **Date:** 1/18/2024

Data - Pedestrians (Crosswalks)

NS/EW Streets:	Lake Helen Osteen Rd		Lake Helen Osteen Rd		New Hope Baptist Church N Dwy		New Hope Baptist Church N Dwy		
AM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
7:00 AM	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0
APPROACH %'s :									
PEAK HR :	07:00 AM - 08:00 AM								TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0
PEAK HR FACTOR :									

PM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
4:00 PM	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0
APPROACH %'s :									
PEAK HR :	05:00 PM - 06:00 PM								TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0
PEAK HR FACTOR :									

Prepared by National Data & Surveying Services

Lake Helen Osteen Rd & New Hope Baptist Church N Dwy

Peak Hour Turning Movement Count

ID: 24-130025-003
City: Deltona

Day: Thursday
Date: 1/18/2024

PEAK HOURS	COUNT PERIODS
07:00 AM - 08:00 AM	7:00 AM - 09:00 AM
NONE	NONE
05:00 PM - 06:00 PM	4:00 PM - 06:00 PM

SOUTHBOUND (Lake Helen Osteen Rd)

AM	0	230	0	0	471	AM
NOON	0	0	0	0	0	NOON
PM	0	436	0	0	264	PM

EASTBOUND (New Hope Baptist Church N Dwy)

AM	NOON	PM
0	0	0
0	0	0
0	0	0
0	0	0
0	0	0
AM	NOON	PM

WESTBOUND (New Hope Baptist Church N Dwy)

PM	NOON	AM
6	0	7
0	0	0
5	0	3
0	0	0
0	0	0
PM	NOON	AM

CONTROL

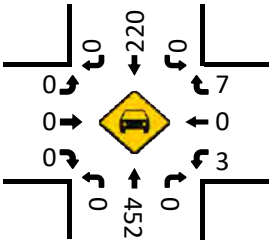
1-Way Stop(WB)

TEV	704 AM	0 NOON	705 PM
PHF	0.85		0.86

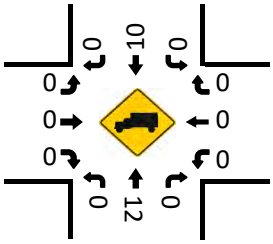
NORTHBOUND (Lake Helen Osteen Rd)

PM	441	0	0	258	0	PM
NOON	0	0	0	0	0	NOON
AM	233	0	0	464	0	AM

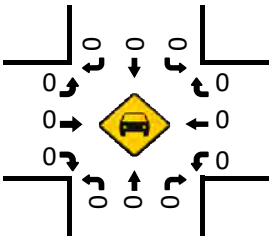
Cars (AM)



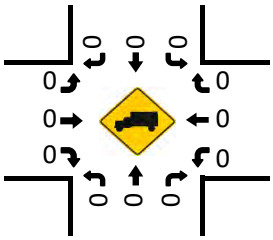
HT (AM)



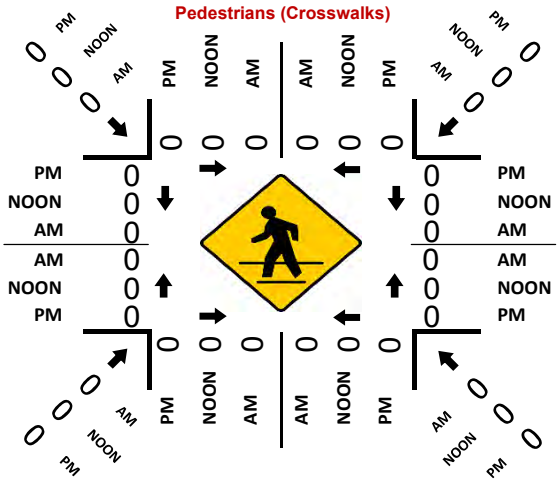
Cars (NOON)



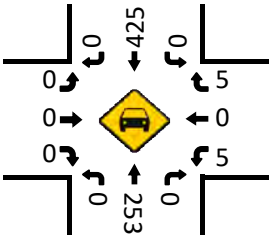
HT (NOON)



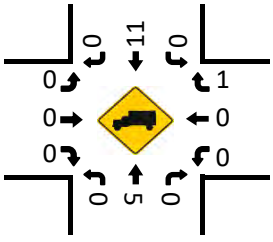
Pedestrians (Crosswalks)



Cars (PM)



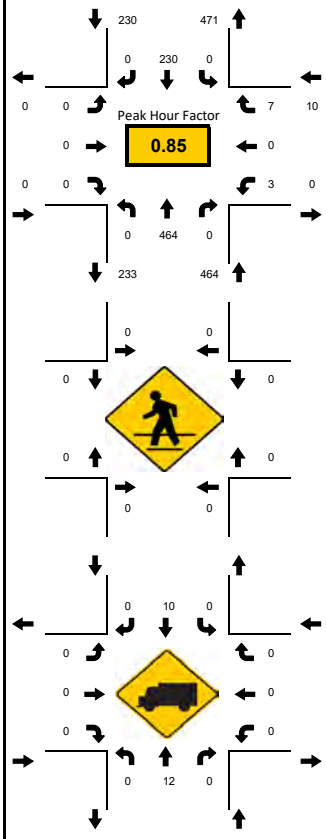
HT (PM)

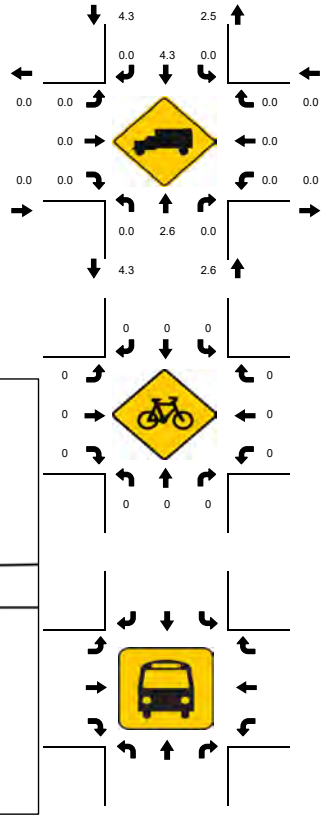


LOCATION: Lake Helen Osteen Rd & New Hope Baptist Church N Dwy
CITY/STATE: Deltona, FL

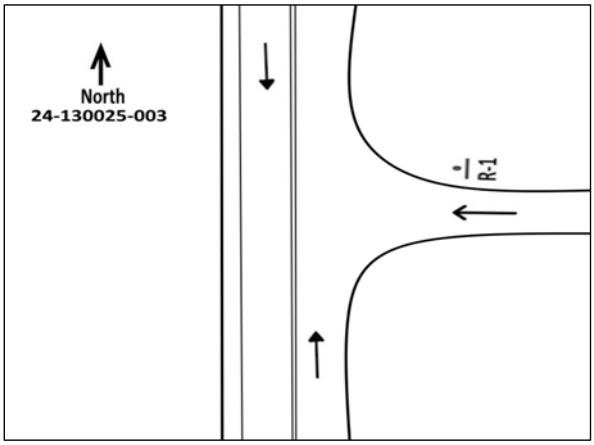
PROJECT ID: 24-130025-003
DATE: Thu, Jan 18, 2024

Peak-Hour: 07:00 AM - 08:00 AM
Peak 15-Minute: 07:30 AM - 07:45 AM





National Data & Surveying Services

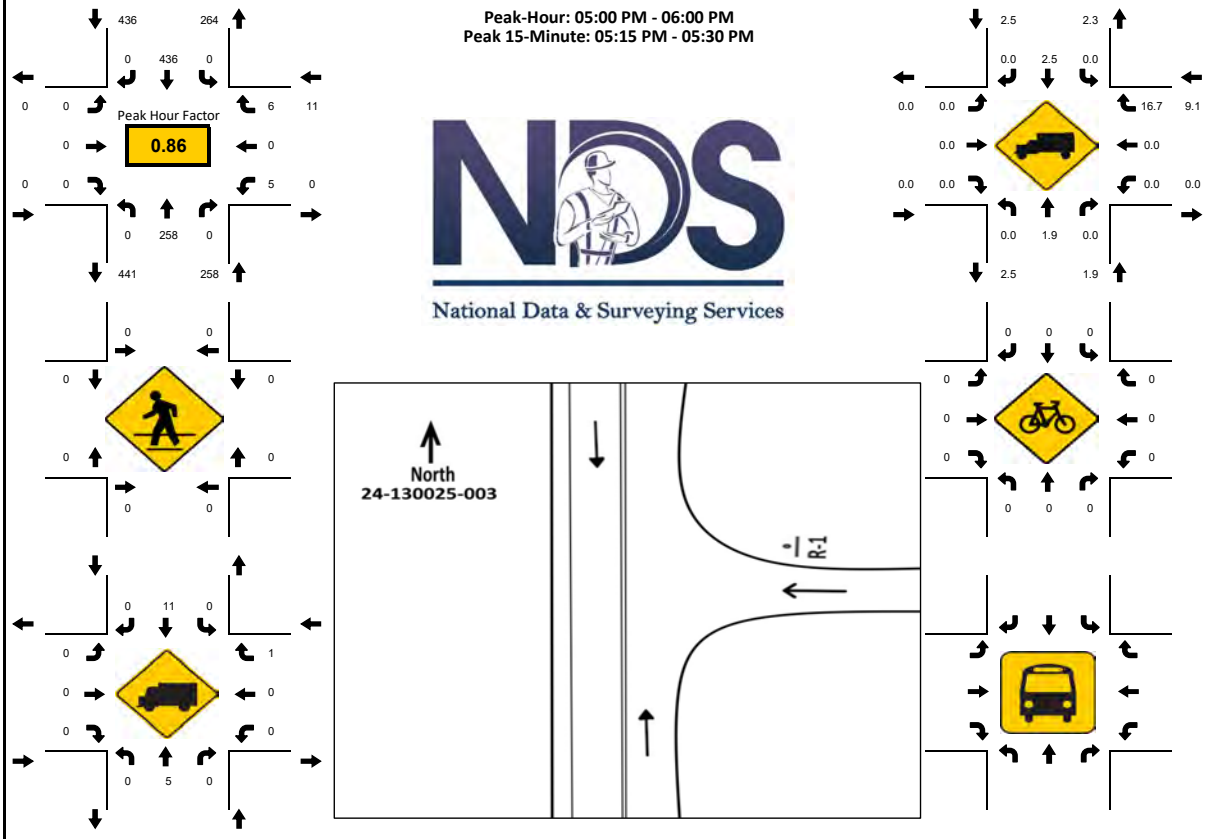


15-Min Count Period	Lake Helen Osteen Rd Northbound					Lake Helen Osteen Rd Southbound					New Hope Baptist Church N Dwy Eastbound					New Hope Baptist Church N Dwy Westbound						
Beginning At	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Total	Hourly Total
7:00 AM	0	104	0	0		0	38	0	0		0	0	0	0		1	0	0	0		143	704
7:15 AM	0	124	0	0		0	41	0	0		0	0	0	0		1	0	1	0		167	685
7:30 AM	0	137	0	0		0	66	0	0		0	0	0	0		0	0	4	0		207	636
7:45 AM	0	99	0	0		0	85	0	0		0	0	0	0		1	0	2	0		187	545
8:00 AM	0	80	0	0		0	44	0	0		0	0	0	0		0	0	0	0		124	456
8:15 AM	0	58	0	0		0	56	0	0		0	0	0	0		2	0	2	0		118	332
8:30 AM	0	67	0	0		0	45	0	0		0	0	0	0		1	0	3	0		116	214
8:45 AM	0	60	0	0		0	36	0	0		0	0	0	0		2	0	0	0		98	98
Peak 15-Min Flowrates	**Northbound**					**Southbound**					**Eastbound**					**Westbound**					**Total**	
	Left	**Thru**	**Rgt**	**U**	**R***	**Left**	**Thru**	**Rgt**	**U**	**R***	**Left**	**Thru**	**Rgt**	**U**	**R***	**Left**	**Thru**	**Rgt**	**U**	**R***		
All Vehicles	0	548	0	0		0	340	0	0		0	0	0	0		4	0	16	0		**908**	
Heavy Trucks	0	20	0	0		0	20	0	0		0	0	0	0		0	0	0	0		**40**	
Pedestrians		0						0				0					0				**0**	
Bicycles	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		**0**	
Buses																						
Stopped Buses																						

LOCATION: Lake Helen Osteen Rd & New Hope Baptist Church N Dwy
CITY/STATE: Deltona, FL

PROJECT ID: 24-130025-003
DATE: Thu, Jan 18, 2024

Peak-Hour: 05:00 PM - 06:00 PM
Peak 15-Minute: 05:15 PM - 05:30 PM



15-Min Count Period Beginning At	Lake Helen Osteen Rd Northbound					Lake Helen Osteen Rd Southbound					New Hope Baptist Church N Dwy Eastbound					New Hope Baptist Church N Dwy Westbound					Total	Hourly Total
	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*		
4:00 PM	0	67	0	0		0	72	0	0		0	0	0	0		1	0	0	0		140	630
4:15 PM	0	71	0	0		0	109	0	0		0	0	0	0		2	0	1	0		183	647
4:30 PM	0	66	0	0		0	81	0	0		0	0	0	0		3	0	2	0		152	668
4:45 PM	0	64	0	0		0	90	0	0		0	0	0	0		1	0	0	0		155	704
5:00 PM	0	66	0	0		0	87	0	0		0	0	0	0		2	0	2	0		157	705
5:15 PM	0	55	0	0		0	145	0	0		0	0	0	0		2	0	2	0		204	548
5:30 PM	0	73	0	0		0	112	0	0		0	0	0	0		1	0	2	0		188	344
5:45 PM	0	64	0	0		0	92	0	0		0	0	0	0		0	0	0	0		156	156
Peak 15-Min Flowrates	**Northbound**					**Southbound**					**Eastbound**					**Westbound**					**Total**	
	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*		
All Vehicles	0	292	0	0		0	580	0	0		0	0	0	0		8	0	8	0		**888**	
Heavy Trucks	0	8	0	0		0	20	0	0		0	0	0	0		0	0	4	0		**32**	
Pedestrians		0					0					0					0				**0**	
Bicycles	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		**0**	
Buses																						
Stopped Buses																						

National Data & Surveying Services

Intersection Turning Movement Count

Location: Lake Helen Osteen Rd & New Hope Baptist Church S Dwy
City: Deltona
Control: No Control

Project ID: 24-130025-002
Date: 1/18/2024

Data - Total

NS/EW Streets:	Lake Helen Osteen Rd				Lake Helen Osteen Rd				New Hope Baptist Church S Dwy				New Hope Baptist Church S Dwy				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	109	1	0	0	39	0	0	0	0	0	0	0	0	0	0	149
7:15 AM	0	119	1	0	1	40	0	0	0	0	0	0	0	0	0	0	161
7:30 AM	0	139	1	0	5	62	0	0	0	0	0	0	0	0	0	0	207
7:45 AM	0	98	2	0	1	82	0	0	0	0	0	0	0	0	0	0	183
8:00 AM	0	80	0	0	2	45	0	0	0	0	0	0	0	0	0	0	127
8:15 AM	0	57	6	0	7	50	0	0	0	0	0	0	0	0	0	0	120
8:30 AM	0	67	2	0	0	47	0	0	0	0	0	0	0	0	0	0	116
8:45 AM	0	61	1	0	1	37	0	0	0	0	0	0	0	0	0	0	100
															0.8		
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	730	14	0	17	402	0	0	0	0	0	0	0	0	0	0	1163
APPROACH %'s :	0.00%	98.12%	1.88%	0.00%	4.06%	95.94%	0.00%	0.00%									
PEAK HR :	07:00 AM - 08:00 AM																TOTAL
PEAK HR VOL :	0	465	5	0	7	223	0	0	0	0	0	0	0	0	0	0	700
PEAK HR FACTOR :	0.000	0.836	0.625	0.000	0.350	0.680	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.845
		0.839				0.693											

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	68	1	0	0	71	0	0	0	0	0	0	0	0	0	0	140
4:15 PM	0	69	1	0	3	109	0	0	0	0	0	0	0	0	0	0	182
4:30 PM	0	67	1	0	3	82	0	0	0	0	0	0	0	0	0	0	153
4:45 PM	0	63	1	0	0	91	0	0	0	0	0	0	0	0	0	0	155
5:00 PM	0	68	1	0	1	87	0	0	0	0	0	0	0	0	0	0	157
5:15 PM	0	54	1	0	4	144	0	0	0	0	0	0	0	0	0	0	203
5:30 PM	0	72	0	0	0	112	0	0	0	0	0	0	0	0	0	0	184
5:45 PM	0	65	0	0	0	93	0	0	0	0	0	0	0	0	0	0	158
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	526	6	0	11	789	0	0	0	0	0	0	0	0	0	0	1332
APPROACH %'s :	0.00%	98.87%	1.13%	0.00%	1.38%	98.63%	0.00%	0.00%									
PEAK HR :	05:00 PM - 06:00 PM																TOTAL
PEAK HR VOL :	0	259	2	0	5	436	0	0	0	0	0	0	0	0	0	0	702
PEAK HR FACTOR :	0.000	0.899	0.500	0.000	0.313	0.757	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.865
		0.906				0.745											

#DIV/0!	3%	0%	#DIV/0!	0%	4%	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
#DIV/0!	2%	0%	#DIV/0!	0%	3%	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!

National Data & Surveying Services

Intersection Turning Movement Count

Location: Lake Helen Osteen Rd & New Hope Baptist Church S Dwy
City: Deltona
Control: No Control

Project ID: 24-130025-002
Date: 1/18/2024

Data - Cars

NS/EW Streets:	Lake Helen Osteen Rd				Lake Helen Osteen Rd				New Hope Baptist Church S Dwy				New Hope Baptist Church S Dwy				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	107	1	0	0	39	0	0	0	0	0	0	0	0	0	0	147
7:15 AM	0	115	1	0	1	38	0	0	0	0	0	0	0	0	0	0	155
7:30 AM	0	136	1	0	5	59	0	0	0	0	0	0	0	0	0	0	201
7:45 AM	0	94	2	0	1	78	0	0	0	0	0	0	0	0	0	0	175
8:00 AM	0	76	0	0	1	42	0	0	0	0	0	0	0	0	0	0	119
8:15 AM	0	56	6	0	7	47	0	0	0	0	0	0	0	0	0	0	116
8:30 AM	0	65	2	0	0	46	0	0	0	0	0	0	0	0	0	0	113
8:45 AM	0	58	1	0	1	31	0	0	0	0	0	0	0	0	0	0	91
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	707	14	0	16	380	0	0	0	0	0	0	0	0	0	0	1117
APPROACH %'s :	0.00%	98.06%	1.94%	0.00%	4.04%	95.96%	0.00%	0.00%									
PEAK HR :	07:00 AM - 08:00 AM																TOTAL
PEAK HR VOL :	0	452	5	0	7	214	0	0	0	0	0	0	0	0	0	0	678
PEAK HR FACTOR :	0.000	0.831	0.625	0.000	0.350	0.686	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.843
	0.834				0.699												

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	66	1	0	0	67	0	0	0	0	0	0	0	0	0	0	134
4:15 PM	0	65	1	0	3	107	0	0	0	0	0	0	0	0	0	0	176
4:30 PM	0	66	1	0	3	81	0	0	0	0	0	0	0	0	0	0	151
4:45 PM	0	60	1	0	0	90	0	0	0	0	0	0	0	0	0	0	151
5:00 PM	0	67	1	0	1	86	0	0	0	0	0	0	0	0	0	0	155
5:15 PM	0	52	1	0	4	139	0	0	0	0	0	0	0	0	0	0	196
5:30 PM	0	70	0	0	0	107	0	0	0	0	0	0	0	0	0	0	177
5:45 PM	0	65	0	0	0	93	0	0	0	0	0	0	0	0	0	0	158
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	511	6	0	11	770	0	0	0	0	0	0	0	0	0	0	1298
APPROACH %'s :	0.00%	98.84%	1.16%	0.00%	1.41%	98.59%	0.00%	0.00%									
PEAK HR :	05:00 PM - 06:00 PM																TOTAL
PEAK HR VOL :	0	254	2	0	5	425	0	0	0	0	0	0	0	0	0	0	686
PEAK HR FACTOR :	0.000	0.907	0.500	0.000	0.313	0.764	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.875
	0.914				0.752												

National Data & Surveying Services

Intersection Turning Movement Count

Location: Lake Helen Osteen Rd & New Hope Baptist Church S Dwy
City: Deltona
Control: No Control

Project ID: 24-130025-002
Date: 1/18/2024

Data - HT

NS/EW Streets:	Lake Helen Osteen Rd				Lake Helen Osteen Rd				New Hope Baptist Church S Dwy				New Hope Baptist Church S Dwy				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
7:15 AM	0	4	0	0	0	2	0	0	0	0	0	0	0	0	0	0	6
7:30 AM	0	3	0	0	0	3	0	0	0	0	0	0	0	0	0	0	6
7:45 AM	0	4	0	0	0	4	0	0	0	0	0	0	0	0	0	0	8
8:00 AM	0	4	0	0	1	3	0	0	0	0	0	0	0	0	0	0	8
8:15 AM	0	1	0	0	0	3	0	0	0	0	0	0	0	0	0	0	4
8:30 AM	0	2	0	0	0	1	0	0	0	0	0	0	0	0	0	0	3
8:45 AM	0	3	0	0	0	6	0	0	0	0	0	0	0	0	0	0	9
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	23	0	0	1	22	0	0	0	0	0	0	0	0	0	0	46
APPROACH %'s :	0.00%	100.00%	0.00%	0.00%	4.35%	95.65%	0.00%	0.00%									
PEAK HR :	07:00 AM - 08:00 AM																TOTAL
PEAK HR VOL :	0	13	0	0	0	9	0	0	0	0	0	0	0	0	0	0	22
PEAK HR FACTOR :	0.000	0.813	0.000	0.000	0.000	0.563	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.688
	0.813				0.563												

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	2	0	0	0	4	0	0	0	0	0	0	0	0	0	0	6
4:15 PM	0	4	0	0	0	2	0	0	0	0	0	0	0	0	0	0	6
4:30 PM	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2
4:45 PM	0	3	0	0	0	1	0	0	0	0	0	0	0	0	0	0	4
5:00 PM	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2
5:15 PM	0	2	0	0	0	5	0	0	0	0	0	0	0	0	0	0	7
5:30 PM	0	2	0	0	0	5	0	0	0	0	0	0	0	0	0	0	7
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	15	0	0	0	19	0	0	0	0	0	0	0	0	0	0	34
APPROACH %'s :	0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%									
PEAK HR :	05:00 PM - 06:00 PM																TOTAL
PEAK HR VOL :	0	5	0	0	0	11	0	0	0	0	0	0	0	0	0	0	16
PEAK HR FACTOR :	0.000	0.625	0.000	0.000	0.000	0.550	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.571
	0.625				0.550												

National Data & Surveying Services

Intersection Turning Movement Count

Location: Lake Helen Osteen Rd & New Hope Baptist Church S Dwy
City: Deltona
Control: No Control

Project ID: 24-130025-002
Date: 1/18/2024

Data - Bikes

NS/EW Streets:	Lake Helen Osteen Rd				Lake Helen Osteen Rd				New Hope Baptist Church S Dwy				New Hope Baptist Church S Dwy				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
APPROACH %'s :																	
PEAK HR :	07:00 AM - 08:00 AM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
APPROACH %'s :																	
PEAK HR :	05:00 PM - 06:00 PM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	

National Data & Surveying Services

Intersection Turning Movement Count

Location: Lake Helen Osteen Rd & New Hope Baptist Church S Dwy **Project ID:** 24-130025-002
City: Deltona **Date:** 1/18/2024

Data - Pedestrians (Crosswalks)

NS/EW Streets:	Lake Helen Osteen Rd		Lake Helen Osteen Rd		New Hope Baptist Church S Dwy		New Hope Baptist Church S Dwy		
AM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
7:00 AM	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0
APPROACH %'s :									
PEAK HR :	07:00 AM - 08:00 AM								TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0
PEAK HR FACTOR :									

PM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
4:00 PM	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0
APPROACH %'s :									
PEAK HR :	05:00 PM - 06:00 PM								TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0
PEAK HR FACTOR :									

Prepared by National Data & Surveying Services

Lake Helen Osteen Rd & New Hope Baptist Church S Dwy

Peak Hour Turning Movement Count

ID: 24-130025-002
City: Deltona

Day: Thursday
Date: 1/18/2024

PEAK HOURS	COUNT PERIODS
07:00 AM - 08:00 AM	7:00 AM - 09:00 AM
NONE	NONE
05:00 PM - 06:00 PM	4:00 PM - 06:00 PM

CONTROL: No Control

	AM	NOON	PM
TEV	700	0	702
PHF	0.85		0.86

SOUTHBOUND (Lake Helen Osteen Rd)

	Left	Thru	Right	U-Turn	Total
AM	0	223	7	0	465
NOON	0	0	0	0	0
PM	0	436	5	0	259

NORTHBOUND (Lake Helen Osteen Rd)

	Left	Thru	Right	U-Turn	Total
PM	436	0	0	259	2
NOON	0	0	0	0	0
AM	223	0	0	465	5

EASTBOUND (New Hope Baptist Church S Dwy)

	Left	Thru	Right	U-Turn	Total
AM	0	0	0	0	0
NOON	0	0	0	0	0
PM	0	0	0	0	0

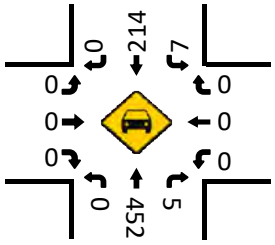
WESTBOUND (New Hope Baptist Church S Dwy)

	Left	Thru	Right	U-Turn	Total
PM	0	0	0	0	0
NOON	0	0	0	0	0
AM	0	0	0	0	0

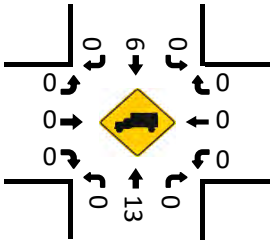
	Left	Thru	Right	U-Turn	Total
PM	0	0	0	0	0
NOON	0	0	0	0	0
AM	0	0	0	0	0

	Left	Thru	Right	U-Turn	Total
PM	0	0	0	0	0
NOON	0	0	0	0	0
AM	7	0	12	0	0

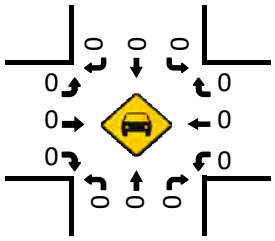
Cars (AM)



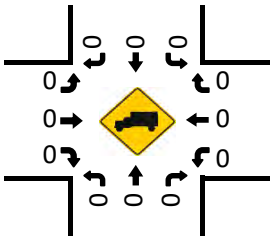
HT (AM)



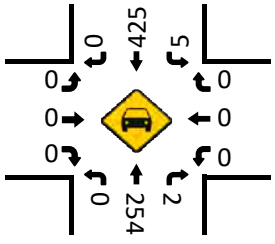
Cars (NOON)



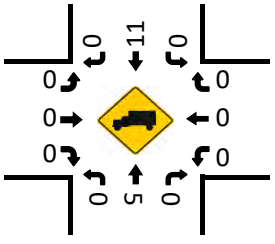
HT (NOON)



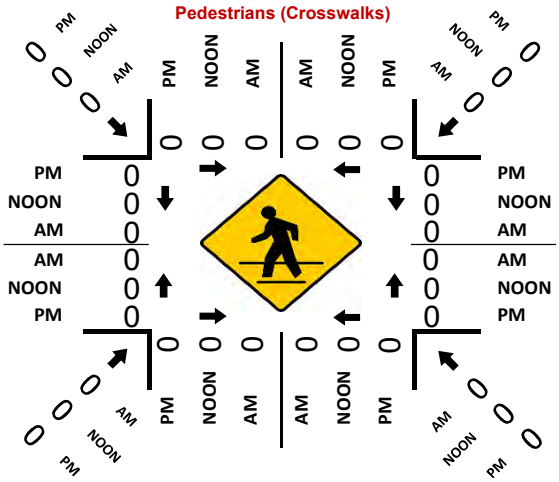
Cars (PM)



HT (PM)



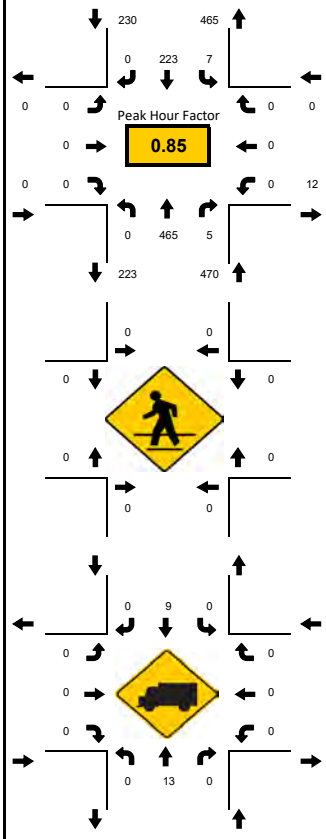
Pedestrians (Crosswalks)

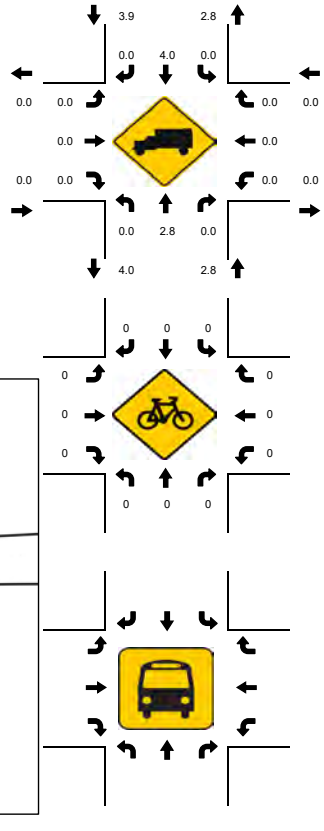


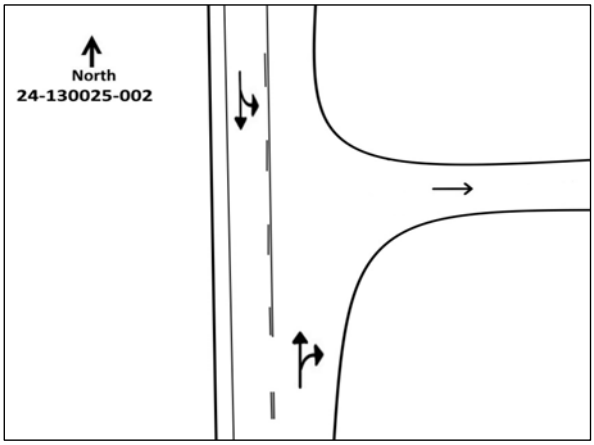
LOCATION: Lake Helen Osteen Rd & New Hope Baptist Church S Dwy
CITY/STATE: Deltona, FL

PROJECT ID: 24-130025-002
DATE: Thu, Jan 18, 2024

Peak-Hour: 07:00 AM - 08:00 AM
Peak 15-Minute: 07:30 AM - 07:45 AM





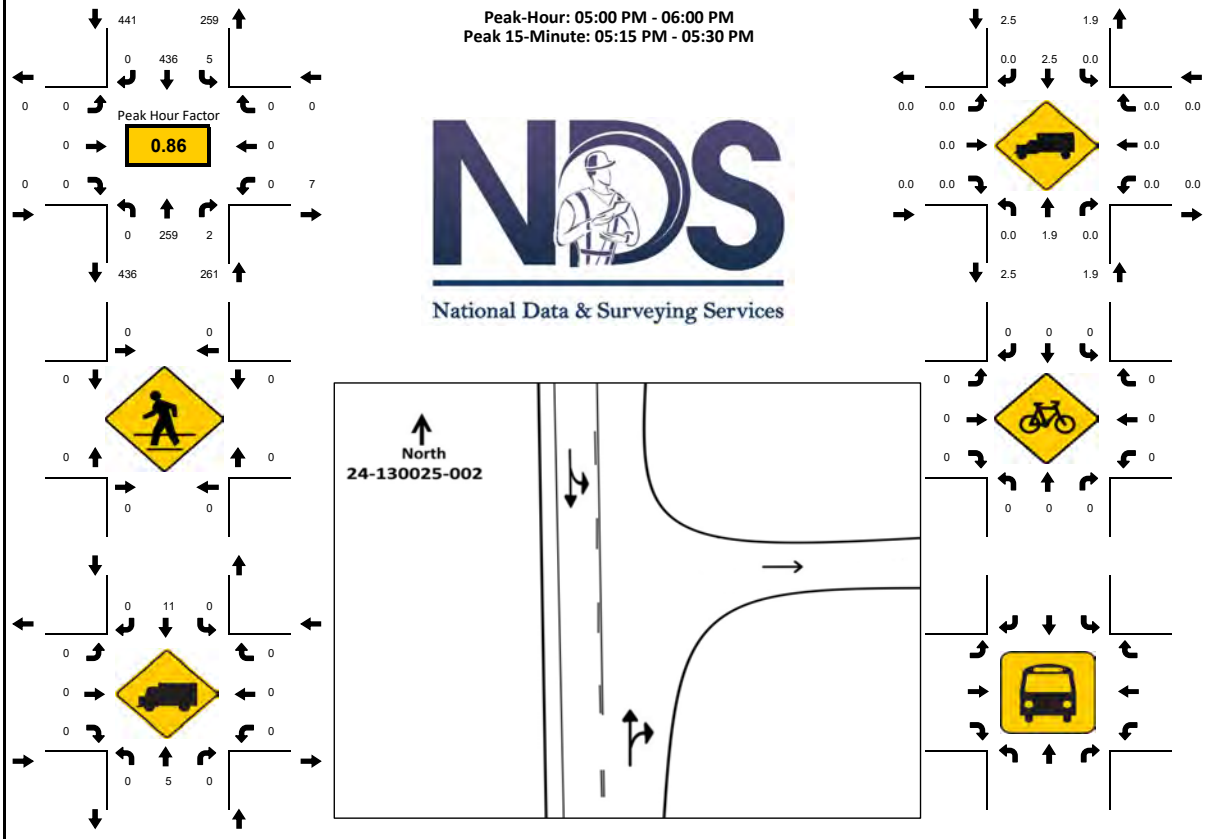


15-Min Count Period Beginning At	Lake Helen Osteen Rd Northbound					Lake Helen Osteen Rd Southbound					New Hope Baptist Church S Dwy Eastbound					New Hope Baptist Church S Dwy Westbound					Total	Hourly Total
	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*		
7:00 AM	0	109	1	0		0	39	0	0		0	0	0	0		0	0	0	0		149	700
7:15 AM	0	119	1	0		1	40	0	0		0	0	0	0		0	0	0	0		161	678
7:30 AM	0	139	1	0		5	62	0	0		0	0	0	0		0	0	0	0		207	637
7:45 AM	0	98	2	0		1	82	0	0		0	0	0	0		0	0	0	0		183	546
8:00 AM	0	80	0	0		2	45	0	0		0	0	0	0		0	0	0	0		127	463
8:15 AM	0	57	6	0		7	50	0	0		0	0	0	0		0	0	0	0		120	336
8:30 AM	0	67	2	0		0	47	0	0		0	0	0	0		0	0	0	0		116	216
8:45 AM	0	61	1	0		1	37	0	0		0	0	0	0		0	0	0	0		100	100
Peak 15-Min Flowrates	**Northbound**					**Southbound**					**Eastbound**					**Westbound**					**Total**	
	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*		
All Vehicles	0	556	8	0		20	328	0	0		0	0	0	0		0	0	0	0		**912**	
Heavy Trucks	0	16	0	0		0	16	0	0		0	0	0	0		0	0	0	0		**32**	
Pedestrians		0					0					0					0				**0**	
Bicycles	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		**0**	
Buses																						
Stopped Buses																						

LOCATION: Lake Helen Osteen Rd & New Hope Baptist Church S Dwy
CITY/STATE: Deltona, FL

PROJECT ID: 24-130025-002
DATE: Thu, Jan 18, 2024

Peak-Hour: 05:00 PM - 06:00 PM
Peak 15-Minute: 05:15 PM - 05:30 PM



15-Min Count Period Beginning At	Lake Helen Osteen Rd Northbound					Lake Helen Osteen Rd Southbound					New Hope Baptist Church S Dwy Eastbound					New Hope Baptist Church S Dwy Westbound					Total	Hourly Total
	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*		
4:00 PM	0	68	1	0		0	71	0	0		0	0	0	0		0	0	0	0		140	630
4:15 PM	0	69	1	0		3	109	0	0		0	0	0	0		0	0	0	0		182	647
4:30 PM	0	67	1	0		3	82	0	0		0	0	0	0		0	0	0	0		153	668
4:45 PM	0	63	1	0		0	91	0	0		0	0	0	0		0	0	0	0		155	699
5:00 PM	0	68	1	0		1	87	0	0		0	0	0	0		0	0	0	0		157	702
5:15 PM	0	54	1	0		4	144	0	0		0	0	0	0		0	0	0	0		203	545
5:30 PM	0	72	0	0		0	112	0	0		0	0	0	0		0	0	0	0		184	342
5:45 PM	0	65	0	0		0	93	0	0		0	0	0	0		0	0	0	0		158	158
Peak 15-Min Flowrates	**Northbound**					**Southbound**					**Eastbound**					**Westbound**					**Total**	
	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*		
All Vehicles	0	288	4	0		16	576	0	0		0	0	0	0		0	0	0	0		**884**	
Heavy Trucks	0	8	0	0		0	20	0	0		0	0	0	0		0	0	0	0		**28**	
Pedestrians		0					0					0					0				**0**	
Bicycles	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		**0**	
Buses																						
Stopped Buses																						

National Data & Surveying Services

Intersection Turning Movement Count

Location: Lake Helen Osteen Rd & Elkcam Blvd
City: Deltona
Control: Signalized

Project ID: 24-130025-001
Date: 1/18/2024

Data - Total

NS/EW Streets:	Lake Helen Osteen Rd				Lake Helen Osteen Rd				Elkcam Blvd				Elkcam Blvd				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	3	45	2	0	2	34	26	0	21	17	0	0	24	64	4	0	242
7:15 AM	5	67	8	0	0	42	21	0	19	21	3	0	39	77	6	0	308
7:30 AM	0	61	11	0	2	60	32	0	18	22	3	0	22	63	2	0	296
7:45 AM	1	50	12	0	1	79	18	0	19	37	3	0	25	46	4	0	295
8:00 AM	1	24	15	0	3	43	25	0	26	44	5	0	22	67	4	0	279
8:15 AM	3	28	13	0	3	39	15	0	20	35	1	0	22	51	5	0	235
8:30 AM	3	34	9	0	1	42	17	0	14	32	4	0	15	51	2	0	224
8:45 AM	4	30	15	0	0	33	24	0	16	31	2	0	20	63	8	0	246
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	20	339	85	0	12	372	178	0	153	239	21	0	189	482	35	0	2125
APPROACH %'s :	4.50%	76.35%	19.14%	0.00%	2.14%	66.19%	31.67%	0.00%	37.05%	57.87%	5.08%	0.00%	26.77%	68.27%	4.96%	0.00%	
PEAK HR :	07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :	7	202	46	0	6	224	96	0	82	124	14	0	108	253	16	0	1178
PEAK HR FACTOR :	0.350	0.754	0.767	0.000	0.500	0.709	0.750	0.000	0.788	0.705	0.700	0.000	0.692	0.821	0.667	0.000	0.956
	0.797				0.832				0.733				0.773				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	5	44	33	0	6	54	19	0	25	83	4	0	21	60	7	0	361
4:15 PM	1	47	28	0	7	57	33	0	36	81	6	0	27	46	3	0	372
4:30 PM	5	64	31	0	6	47	29	0	45	62	7	0	15	46	3	0	360
4:45 PM	5	52	30	0	6	35	40	0	42	82	5	0	20	53	1	0	371
5:00 PM	5	56	27	0	10	67	27	0	40	82	4	0	17	59	6	0	400
5:15 PM	6	57	35	0	4	73	26	0	32	108	2	0	25	46	3	0	417
5:30 PM	2	57	33	0	10	76	36	0	47	81	1	0	26	52	3	0	424
5:45 PM	6	57	40	0	8	64	23	0	35	79	7	0	19	49	2	0	389
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	35	434	257	0	57	473	233	0	302	658	36	0	170	411	28	0	3094
APPROACH %'s :	4.82%	59.78%	35.40%	0.00%	7.47%	61.99%	30.54%	0.00%	30.32%	66.06%	3.61%	0.00%	27.91%	67.49%	4.60%	0.00%	
PEAK HR :	05:00 PM - 06:00 PM																TOTAL
PEAK HR VOL :	19	227	135	0	32	280	112	0	154	350	14	0	87	206	14	0	1630
PEAK HR FACTOR :	0.792	0.996	0.844	0.000	0.800	0.921	0.778	0.000	0.819	0.810	0.500	0.000	0.837	0.873	0.583	0.000	0.961
	0.925				0.869				0.912				0.936				

	0%	3%	4%	#DIV/0!	0%	4%	4%	#DIV/0!	2%	2%	21%	#DIV/0!	3%	2%	6%	#DIV/0!
	0%	2%	1%	#DIV/0!	3%	1%	2%	#DIV/0!	0%	1%	0%	#DIV/0!	0%	1%	0%	#DIV/0!

National Data & Surveying Services

Intersection Turning Movement Count

Location: Lake Helen Osteen Rd & Elkcam Blvd
City: Deltona
Control: Signalized

Project ID: 24-130025-001
Date: 1/18/2024

Data - Cars

NS/EW Streets:	Lake Helen Osteen Rd				Lake Helen Osteen Rd				Elkcam Blvd				Elkcam Blvd				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	2	44	2	0	1	33	26	0	21	17	0	0	24	63	3	0	236
7:15 AM	5	66	7	0	0	40	21	0	19	21	2	0	39	75	6	0	301
7:30 AM	0	61	11	0	2	58	28	0	17	22	3	0	22	62	2	0	288
7:45 AM	1	46	11	0	1	76	18	0	19	34	3	0	24	46	4	0	283
8:00 AM	1	22	15	0	3	41	25	0	25	44	3	0	20	66	3	0	268
8:15 AM	3	26	11	0	2	37	14	0	18	31	1	0	22	48	5	0	218
8:30 AM	3	33	8	0	1	39	17	0	14	30	4	0	14	49	1	0	213
8:45 AM	4	29	13	0	0	30	23	0	16	30	1	0	19	60	8	0	233
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	19	327	78	0	10	354	172	0	149	229	17	0	184	469	32	0	2040
APPROACH %'s :	4.48%	77.12%	18.40%	0.00%	1.87%	66.04%	32.09%	0.00%	37.72%	57.97%	4.30%	0.00%	26.86%	68.47%	4.67%	0.00%	
PEAK HR :	07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :	7	195	44	0	6	215	92	0	80	121	11	0	105	249	15	0	1140
PEAK HR FACTOR :	0.350	0.739	0.733	0.000	0.500	0.707	0.821	0.000	0.800	0.688	0.917	0.000	0.673	0.830	0.625	0.000	0.947
	0.788				0.824				0.736				0.769				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	5	43	33	0	6	52	19	0	25	83	3	0	20	59	7	0	355
4:15 PM	1	46	27	0	6	57	32	0	35	79	6	0	26	44	3	0	362
4:30 PM	5	62	30	0	6	47	29	0	45	60	6	0	15	46	3	0	354
4:45 PM	5	51	29	0	4	34	40	0	40	81	5	0	19	52	1	0	361
5:00 PM	5	55	26	0	9	67	27	0	40	81	4	0	17	58	6	0	395
5:15 PM	6	55	35	0	4	70	24	0	32	108	2	0	25	45	3	0	409
5:30 PM	2	56	32	0	10	75	36	0	47	79	1	0	26	52	3	0	419
5:45 PM	6	57	40	0	8	64	23	0	35	78	7	0	19	49	2	0	388
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	35	425	252	0	53	466	230	0	299	649	34	0	167	405	28	0	3043
APPROACH %'s :	4.92%	59.69%	35.39%	0.00%	7.08%	62.22%	30.71%	0.00%	30.45%	66.09%	3.46%	0.00%	27.83%	67.50%	4.67%	0.00%	
PEAK HR :	05:00 PM - 06:00 PM																TOTAL
PEAK HR VOL :	19	223	133	0	31	276	110	0	154	346	14	0	87	204	14	0	1611
PEAK HR FACTOR :	0.792	0.978	0.831	0.000	0.775	0.920	0.764	0.000	0.819	0.801	0.500	0.000	0.837	0.879	0.583	0.000	0.961
	0.910				0.862				0.905				0.941				

National Data & Surveying Services

Intersection Turning Movement Count

Location: Lake Helen Osteen Rd & Elkcam Blvd
City: Deltona
Control: Signalized

Project ID: 24-130025-001
Date: 1/18/2024

Data - HT

NS/EW Streets:	Lake Helen Osteen Rd				Lake Helen Osteen Rd				Elkcam Blvd				Elkcam Blvd				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	1	1	0	0	1	1	0	0	0	0	0	0	0	1	1	0	6
7:15 AM	0	1	1	0	0	2	0	0	0	0	1	0	0	2	0	0	7
7:30 AM	0	0	0	0	0	2	4	0	1	0	0	0	0	1	0	0	8
7:45 AM	0	4	1	0	0	3	0	0	0	3	0	0	1	0	0	0	12
8:00 AM	0	2	0	0	0	2	0	0	1	0	2	0	2	1	1	0	11
8:15 AM	0	2	2	0	1	2	1	0	2	4	0	0	0	3	0	0	17
8:30 AM	0	1	1	0	0	3	0	0	0	2	0	0	1	2	1	0	11
8:45 AM	0	1	2	0	0	3	1	0	0	1	1	0	1	3	0	0	13
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	1	12	7	0	2	18	6	0	4	10	4	0	5	13	3	0	85
APPROACH %'s :	5.00%	60.00%	35.00%	0.00%	7.69%	69.23%	23.08%	0.00%	22.22%	55.56%	22.22%	0.00%	23.81%	61.90%	14.29%	0.00%	
PEAK HR :	07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :	0	7	2	0	0	9	4	0	2	3	3	0	3	4	1	0	38
PEAK HR FACTOR :	0.000	0.438	0.500	0.000	0.000	0.750	0.250	0.000	0.500	0.250	0.375	0.000	0.375	0.500	0.250	0.000	0.792
	0.450				0.542				0.667				0.500				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	1	0	0	0	2	0	0	0	0	1	0	1	1	0	0	6
4:15 PM	0	1	1	0	1	0	1	0	1	2	0	0	1	2	0	0	10
4:30 PM	0	2	1	0	0	0	0	0	0	2	1	0	0	0	0	0	6
4:45 PM	0	1	1	0	2	1	0	0	2	1	0	0	1	1	0	0	10
5:00 PM	0	1	1	0	1	0	0	0	0	1	0	0	0	1	0	0	5
5:15 PM	0	2	0	0	0	3	2	0	0	0	0	0	0	1	0	0	8
5:30 PM	0	1	1	0	0	1	0	0	0	2	0	0	0	0	0	0	5
5:45 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	9	5	0	4	7	3	0	3	9	2	0	3	6	0	0	51
APPROACH %'s :	0.00%	64.29%	35.71%	0.00%	28.57%	50.00%	21.43%	0.00%	21.43%	64.29%	14.29%	0.00%	33.33%	66.67%	0.00%	0.00%	
PEAK HR :	05:00 PM - 06:00 PM																TOTAL
PEAK HR VOL :	0	4	2	0	1	4	2	0	0	4	0	0	0	2	0	0	19
PEAK HR FACTOR :	0.000	0.500	0.500	0.000	0.250	0.333	0.250	0.000	0.000	0.500	0.000	0.000	0.000	0.500	0.000	0.000	0.594
	0.750				0.350				0.500				0.500				

National Data & Surveying Services

Intersection Turning Movement Count

Location: Lake Helen Osteen Rd & Elkcam Blvd
City: Deltona
Control: Signalized

Project ID: 24-130025-001
Date: 1/18/2024

Data - Bikes

NS/EW Streets:	Lake Helen Osteen Rd				Lake Helen Osteen Rd				Elkcam Blvd				Elkcam Blvd				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	1	0	0	0	0	0	1	0	0	0	0	0	0	2	1	0	5
8:30 AM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	1	0	0	0	0	0	2	0	0	0	0	0	0	3	1	0	7
APPROACH %'s :	100.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	0.00%					0.00%	75.00%	25.00%	0.00%	
PEAK HR :	07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	2
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	1	0	1	1	0	0	0	0	0	0	3
APPROACH %'s :					0.00%	0.00%	100.00%	0.00%	50.00%	50.00%	0.00%	0.00%					
PEAK HR :	05:00 PM - 06:00 PM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	

National Data & Surveying Services

Intersection Turning Movement Count

Location: Lake Helen Osteen Rd & Elkcam Blvd
City: Deltona

Project ID: 24-130025-001
Date: 1/18/2024

Data - Pedestrians (Crosswalks)

NS/EW Streets:	Lake Helen Osteen Rd		Lake Helen Osteen Rd		Elkcam Blvd		Elkcam Blvd		
AM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
7:00 AM	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0
8:15 AM	0	1	0	0	0	0	0	0	1
8:30 AM	1	0	0	0	0	0	0	0	1
8:45 AM	0	0	0	0	0	0	0	0	0
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
TOTAL VOLUMES :	1	1	0	0	0	0	0	0	2
APPROACH %'s :	50.00%	50.00%							
PEAK HR :	**07:15 AM - 08:15 AM**								TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0
PEAK HR FACTOR :									

PM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
4:00 PM	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	1	1
4:45 PM	0	0	0	0	0	0	1	0	1
5:00 PM	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0
5:30 PM	1	0	0	0	0	0	0	0	1
5:45 PM	0	0	1	0	0	0	0	0	1
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
TOTAL VOLUMES :	1	0	1	0	0	0	1	1	4
APPROACH %'s :	100.00%	0.00%	100.00%	0.00%			50.00%	50.00%	
PEAK HR :	**05:00 PM - 06:00 PM**								TOTAL
PEAK HR VOL :	1	0	1	0	0	0	0	0	2
PEAK HR FACTOR :	0.250		0.250						0.500
	0.250		0.250						

Prepared by National Data & Surveying Services

Lake Helen Osteen Rd & Elkcam Blvd

Peak Hour Turning Movement Count

ID: 24-130025-001
City: Deltona

Day: Thursday
Date: 1/18/2024

PEAK HOURS	COUNT PERIODS
07:15 AM - 08:15 AM	7:00 AM - 09:00 AM
NONE	NONE
05:00 PM - 06:00 PM	4:00 PM - 06:00 PM

SOUTHBOUND (Lake Helen Osteen Rd)

AM	96	224	6	0	300	AM
NOON	0	0	0	0	0	NOON
PM	112	280	32	0	395	PM

EASTBOUND (Elkcam Blvd)

AM	NOON	PM	
356	0	337	⇦
0	0	0	↶ 0
82	0	154	↱ 0
124	0	350	→ 0
14	0	14	↴ 0
AM	NOON	PM	

WESTBOUND (Elkcam Blvd)

PM	NOON	AM	
14	0	16	0 ↰
206	0	253	0 ←
87	0	108	0 ↩
0	0	0	0 ↷
517	0	176	⇨
PM	NOON	AM	

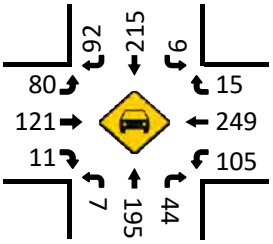
CONTROL: Signalized

TEV	1178 AM	0 NOON	1630 PM
PHF	0.96		0.96

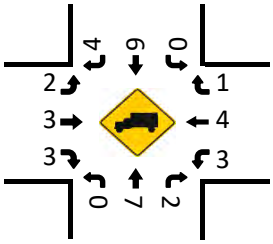
NORTHBOUND (Lake Helen Osteen Rd)

PM	381	0	19	227	135	PM
NOON	0	0	0	0	0	NOON
AM	346	0	7	202	46	AM

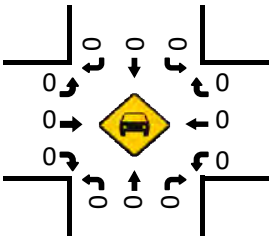
Cars (AM)



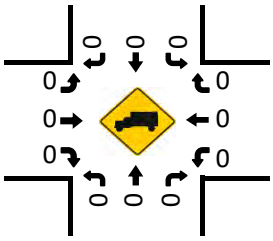
HT (AM)



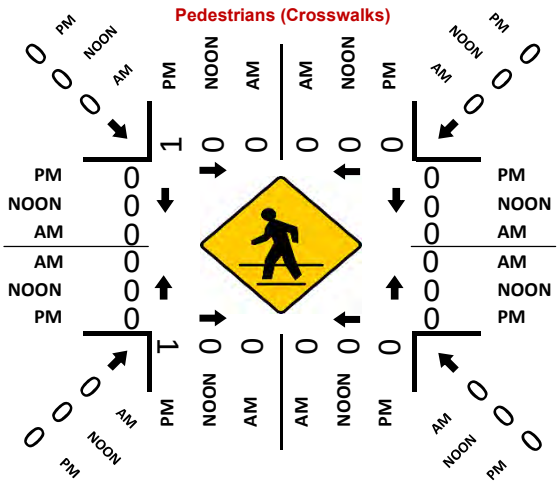
Cars (NOON)



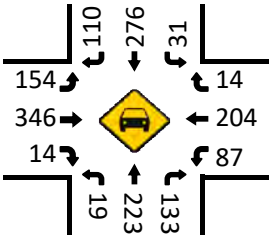
HT (NOON)



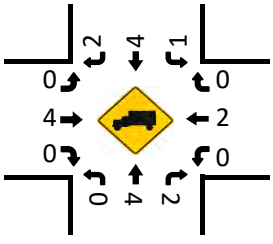
Pedestrians (Crosswalks)



Cars (PM)



HT (PM)



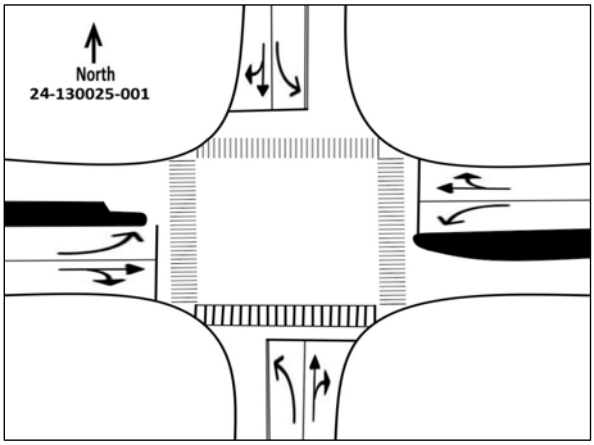
LOCATION: Lake Helen Osteen Rd & Elkcam Blvd
CITY/STATE: Deltona, FL

PROJECT ID: 24-130025-001
DATE: Thu, Jan 18, 2024

Peak-Hour: 07:15 AM - 08:15 AM
Peak 15-Minute: 07:15 AM - 07:30 AM

Peak Hour Factor: **0.96**

National Data & Surveying Services

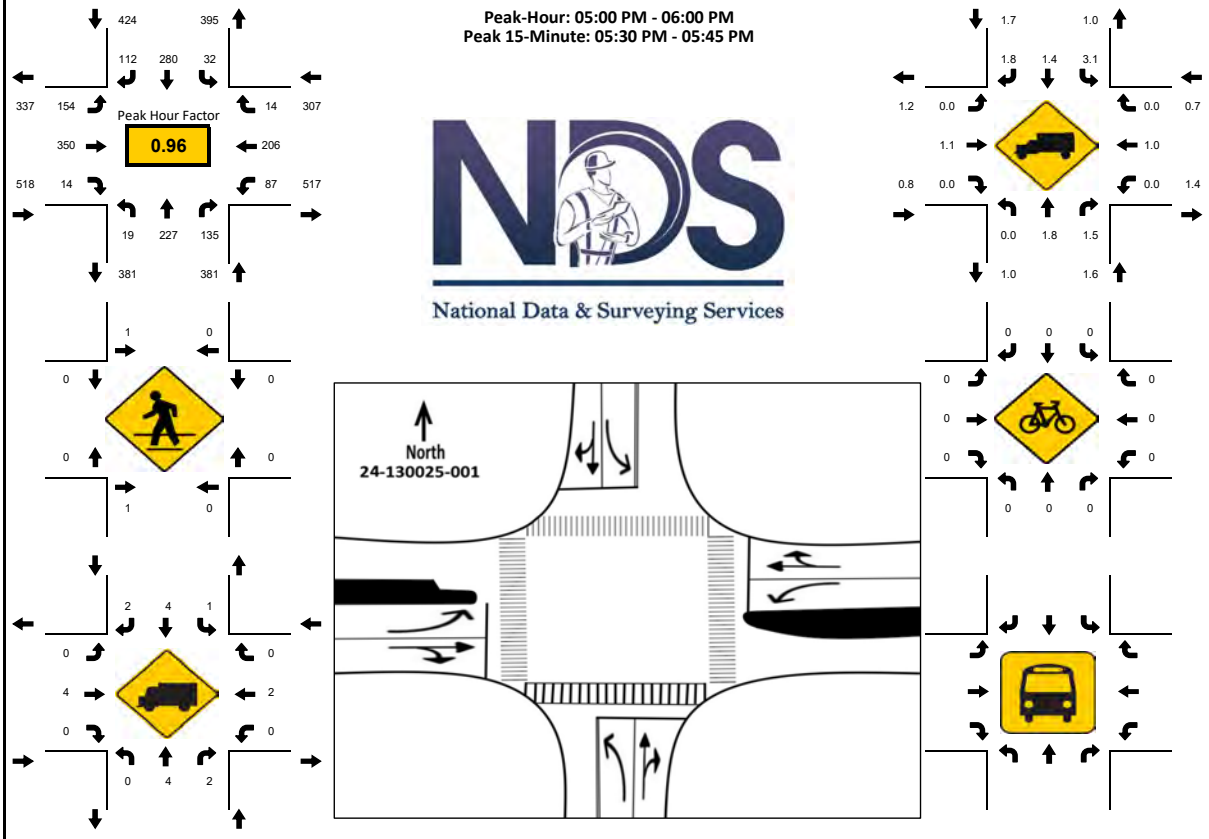


15-Min Count Period Beginning At	Lake Helen Osteen Rd Northbound					Lake Helen Osteen Rd Southbound					Elkcam Blvd Eastbound					Elkcam Blvd Westbound					Total	Hourly Total
	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*		
7:00 AM	3	45	2	0		2	34	26	0		21	17	0	0		24	64	4	0		242	1141
7:15 AM	5	67	8	0		0	42	21	0		19	21	3	0		39	77	6	0		308	1178
7:30 AM	0	61	11	0		2	60	32	0		18	22	3	0		22	63	2	0		296	1105
7:45 AM	1	50	12	0		1	79	18	0		19	37	3	0		25	46	4	0		295	1033
8:00 AM	1	24	15	0		3	43	25	0		26	44	5	0		22	67	4	0		279	984
8:15 AM	3	28	13	0		3	39	15	0		20	35	1	0		22	51	5	0		235	705
8:30 AM	3	34	9	0		1	42	17	0		14	32	4	0		15	51	2	0		224	470
8:45 AM	4	30	15	0		0	33	24	0		16	31	2	0		20	63	8	0		246	246
Peak 15-Min Flowrates	**Northbound**					**Southbound**					**Eastbound**					**Westbound**					**Total**	
	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*		
All Vehicles	20	268	60	0		12	316	128	0		104	176	20	0		156	308	24	0		**1592**	
Heavy Trucks	0	16	4	0		0	12	16	0		4	12	8	0		8	8	4	0		**92**	
Pedestrians		0					0					0					0				**0**	
Bicycles	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		**0**	
Buses																						
Stopped Buses																						

LOCATION: Lake Helen Osteen Rd & Elkcam Blvd
CITY/STATE: Deltona, FL

PROJECT ID: 24-130025-001
DATE: Thu, Jan 18, 2024

Peak-Hour: 05:00 PM - 06:00 PM
Peak 15-Minute: 05:30 PM - 05:45 PM



National Data & Surveying Services

15-Min Count Period Beginning At	Lake Helen Osteen Rd Northbound					Lake Helen Osteen Rd Southbound					Elkcam Blvd Eastbound					Elkcam Blvd Westbound					Total	Hourly Total
	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*		
4:00 PM	5	44	33	0		6	54	19	0		25	83	4	0		21	60	7	0		361	1464
4:15 PM	1	47	28	0		7	57	33	0		36	81	6	0		27	46	3	0		372	1503
4:30 PM	5	64	31	0		6	47	29	0		45	62	7	0		15	46	3	0		360	1548
4:45 PM	5	52	30	0		6	35	40	0		42	82	5	0		20	53	1	0		371	1612
5:00 PM	5	56	27	0		10	67	27	0		40	82	4	0		17	59	6	0		400	1630
5:15 PM	6	57	35	0		4	73	26	0		32	108	2	0		25	46	3	0		417	1230
5:30 PM	2	57	33	0		10	76	36	0		47	81	1	0		26	52	3	0		424	813
5:45 PM	6	57	40	0		8	64	23	0		35	79	7	0		19	49	2	0		389	389
Peak 15-Min Flowrates	**Northbound**					**Southbound**					**Eastbound**					**Westbound**					**Total**	
	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*		
All Vehicles	24	228	160	0		40	304	144	0		188	432	28	0		104	236	24	0		**1912**	
Heavy Trucks	0	8	4	0		4	12	8	0		0	8	0	0		0	4	0	0		**48**	
Pedestrians		4					4					0					0				**8**	
Bicycles	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		**0**	
Buses																						
Stopped Buses																						

2022 PEAK SEASON FACTOR CATEGORY REPORT - REPORT TYPE: ALL
CATEGORY: 7900 VOLUSIA COUNTYWIDE

MOCF: 0.94

WEEK	DATES	SF	PSCF
1	01/01/2022 - 01/01/2022	1.02	1.09
2	01/02/2022 - 01/08/2022	1.03	1.10
3	01/09/2022 - 01/15/2022	1.04	1.11
4	01/16/2022 - 01/22/2022	1.02	1.09
5	01/23/2022 - 01/29/2022	1.01	1.07
6	01/30/2022 - 02/05/2022	0.99	1.05
* 7	02/06/2022 - 02/12/2022	0.97	1.03
* 8	02/13/2022 - 02/19/2022	0.95	1.01
* 9	02/20/2022 - 02/26/2022	0.94	1.00
*10	02/27/2022 - 03/05/2022	0.93	0.99
*11	03/06/2022 - 03/12/2022	0.92	0.98
*12	03/13/2022 - 03/19/2022	0.91	0.97
*13	03/20/2022 - 03/26/2022	0.92	0.98
*14	03/27/2022 - 04/02/2022	0.93	0.99
*15	04/03/2022 - 04/09/2022	0.94	1.00
*16	04/10/2022 - 04/16/2022	0.96	1.02
*17	04/17/2022 - 04/23/2022	0.96	1.02
*18	04/24/2022 - 04/30/2022	0.97	1.03
*19	05/01/2022 - 05/07/2022	0.98	1.04
20	05/08/2022 - 05/14/2022	0.98	1.04
21	05/15/2022 - 05/21/2022	0.99	1.05
22	05/22/2022 - 05/28/2022	1.00	1.06
23	05/29/2022 - 06/04/2022	1.02	1.09
24	06/05/2022 - 06/11/2022	1.03	1.10
25	06/12/2022 - 06/18/2022	1.04	1.11
26	06/19/2022 - 06/25/2022	1.05	1.12
27	06/26/2022 - 07/02/2022	1.06	1.13
28	07/03/2022 - 07/09/2022	1.06	1.13
29	07/10/2022 - 07/16/2022	1.07	1.14
30	07/17/2022 - 07/23/2022	1.06	1.13
31	07/24/2022 - 07/30/2022	1.05	1.12
32	07/31/2022 - 08/06/2022	1.04	1.11
33	08/07/2022 - 08/13/2022	1.03	1.10
34	08/14/2022 - 08/20/2022	1.02	1.09
35	08/21/2022 - 08/27/2022	1.04	1.11
36	08/28/2022 - 09/03/2022	1.05	1.12
37	09/04/2022 - 09/10/2022	1.06	1.13
38	09/11/2022 - 09/17/2022	1.07	1.14
39	09/18/2022 - 09/24/2022	1.05	1.12
40	09/25/2022 - 10/01/2022	1.02	1.09
41	10/02/2022 - 10/08/2022	0.99	1.05
42	10/09/2022 - 10/15/2022	0.97	1.03
43	10/16/2022 - 10/22/2022	0.98	1.04
44	10/23/2022 - 10/29/2022	0.99	1.05
45	10/30/2022 - 11/05/2022	1.01	1.07
46	11/06/2022 - 11/12/2022	1.02	1.09
47	11/13/2022 - 11/19/2022	1.04	1.11
48	11/20/2022 - 11/26/2022	1.03	1.10
49	11/27/2022 - 12/03/2022	1.03	1.10
50	12/04/2022 - 12/10/2022	1.02	1.09
51	12/11/2022 - 12/17/2022	1.02	1.09
52	12/18/2022 - 12/24/2022	1.03	1.10
53	12/25/2022 - 12/31/2022	1.04	1.11

* PEAK SEASON

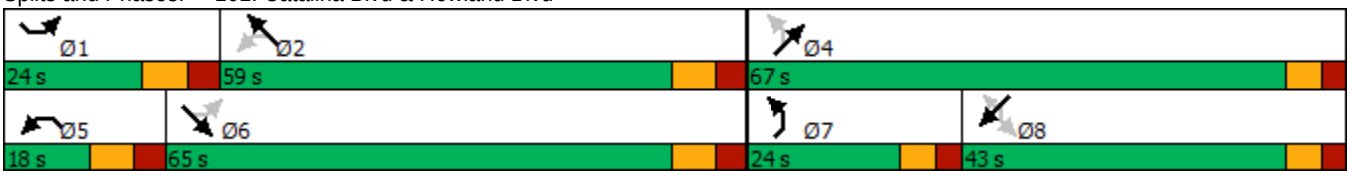
Appendix D

Existing Conditions Synchro Printouts

Lane Group	SEL	SET	NWL	NWT	NEL	NET	SWL	SWT	SWR
Lane Configurations									
Traffic Volume (vph)	118	523	30	997	108	108	126	99	497
Future Volume (vph)	118	523	30	997	108	108	126	99	497
Turn Type	pm+pt	NA	pm+pt	NA	pm+pt	NA	Perm	NA	Perm
Protected Phases	1	6	5	2	7	4		8	
Permitted Phases	6		2		4		8		8
Detector Phase	1	6	5	2	7	4	8	8	8
Switch Phase									
Minimum Initial (s)	5.0	11.0	5.0	11.0	5.0	7.0	7.0	7.0	7.0
Minimum Split (s)	13.5	19.5	13.5	19.5	12.0	14.0	14.0	14.0	14.0
Total Split (s)	24.0	65.0	18.0	59.0	24.0	67.0	43.0	43.0	43.0
Total Split (%)	16.0%	43.3%	12.0%	39.3%	16.0%	44.7%	28.7%	28.7%	28.7%
Yellow Time (s)	5.0	5.0	5.0	5.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	3.5	3.5	3.5	3.5	3.0	3.0	3.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	8.5	8.5	8.5	8.5	7.0	7.0	7.0	7.0	7.0
Lead/Lag	Lead	Lag	Lead	Lag	Lead		Lag	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Recall Mode	None	Max	None	Max	None	None	None	None	None
Act Effct Green (s)	69.5	62.1	58.2	51.4	49.3	49.3	28.9	28.9	28.9
Actuated g/C Ratio	0.51	0.46	0.43	0.38	0.36	0.36	0.21	0.21	0.21
v/c Ratio	0.59	0.38	0.08	0.86	0.25	0.23	0.51	0.26	0.93
Control Delay	33.1	28.2	19.9	48.4	30.5	27.8	55.1	46.8	47.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	33.1	28.2	19.9	48.4	30.5	27.8	55.1	46.8	47.5
LOS	C	C	B	D	C	C	E	D	D
Approach Delay		29.0		47.6		29.0		48.7	
Approach LOS		C		D		C		D	

Intersection Summary	
Cycle Length: 150	
Actuated Cycle Length: 136	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.93	
Intersection Signal Delay: 41.6	Intersection LOS: D
Intersection Capacity Utilization 85.5%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 101: Catalina Blvd & Howland Blvd



Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (veh/h)	118	523	32	30	997	77	108	108	35	126	99	497
Future Volume (veh/h)	118	523	32	30	997	77	108	108	35	126	99	497
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1841	1826	1856	1870	1856	1856	1885	1885	1856	1870	1870	1870
Adj Flow Rate, veh/h	124	551	34	32	1049	81	114	114	37	133	104	472
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	4	5	3	2	3	3	1	1	3	2	2	2
Cap, veh/h	205	1388	86	350	1282	99	349	515	167	383	498	422
Arrive On Green	0.06	0.42	0.42	0.03	0.39	0.39	0.06	0.38	0.38	0.27	0.27	0.27
Sat Flow, veh/h	1753	3319	204	1781	3316	256	1795	1363	442	1236	1870	1585
Grp Volume(v), veh/h	124	288	297	32	557	573	114	0	151	133	104	472
Grp Sat Flow(s),veh/h/ln	1753	1735	1789	1781	1763	1809	1795	0	1806	1236	1870	1585
Q Serve(g_s), s	5.7	15.6	15.7	1.5	38.3	38.4	6.0	0.0	7.7	11.9	5.8	36.0
Cycle Q Clear(g_c), s	5.7	15.6	15.7	1.5	38.3	38.4	6.0	0.0	7.7	11.9	5.8	36.0
Prop In Lane	1.00		0.11	1.00		0.14	1.00		0.25	1.00		1.00
Lane Grp Cap(c), veh/h	205	726	748	350	681	699	349	0	683	383	498	422
V/C Ratio(X)	0.61	0.40	0.40	0.09	0.82	0.82	0.33	0.00	0.22	0.35	0.21	1.12
Avail Cap(c_a), veh/h	305	726	748	430	681	699	468	0	802	383	498	422
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	29.7	27.4	27.4	24.3	37.2	37.2	31.6	0.0	28.5	40.7	38.5	49.5
Incr Delay (d2), s/veh	2.9	1.6	1.6	0.1	10.5	10.3	0.5	0.0	0.2	0.5	0.2	79.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.5	6.6	6.8	0.6	17.9	18.3	2.7	0.0	3.4	3.7	2.7	23.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	32.6	29.0	29.0	24.4	47.7	47.5	32.1	0.0	28.7	41.3	38.7	129.2
LnGrp LOS	C	C	C	C	D	D	C	A	C	D	D	F
Approach Vol, veh/h		709			1162			265			709	
Approach Delay, s/veh		29.6			47.0			30.1			99.4	
Approach LOS		C			D			C			F	

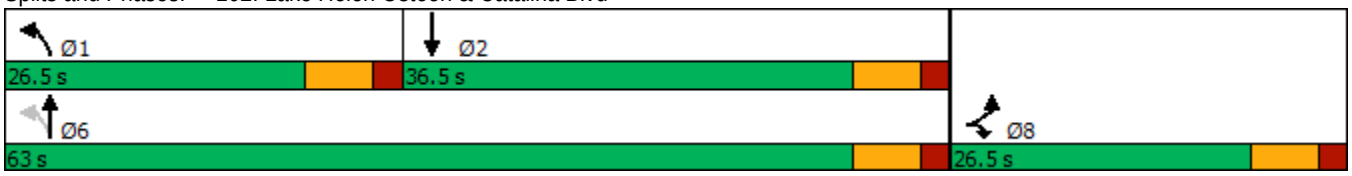
Timer - Assigned Phs	1	2		4	5	6	7	8				
Phs Duration (G+Y+Rc), s	16.3	60.7		58.1	12.0	65.0	15.1	43.0				
Change Period (Y+Rc), s	8.5	8.5		7.0	8.5	8.5	7.0	7.0				
Max Green Setting (Gmax), s	15.5	50.5		60.0	9.5	56.5	17.0	36.0				
Max Q Clear Time (g_c+I1), s	7.7	40.4		9.7	3.5	17.7	8.0	38.0				
Green Ext Time (p_c), s	0.2	4.8		1.0	0.0	3.4	0.2	0.0				

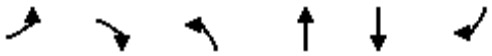
Intersection Summary			
HCM 6th Ctrl Delay		54.2	
HCM 6th LOS		D	

Lane Group	EBL	EBR	NBL	NBT	SBT
Lane Configurations					
Traffic Volume (vph)	55	109	426	392	203
Future Volume (vph)	55	109	426	392	203
Turn Type	Prot	Prot	pm+pt	NA	NA
Protected Phases	8	8	1	6	2
Permitted Phases			6		
Detector Phase	8	8	1	6	2
Switch Phase					
Minimum Initial (s)	5.0	5.0	5.0	15.0	15.0
Minimum Split (s)	11.5	11.5	11.5	21.5	21.5
Total Split (s)	26.5	26.5	26.5	63.0	36.5
Total Split (%)	29.6%	29.6%	29.6%	70.4%	40.8%
Yellow Time (s)	4.5	4.5	4.5	4.5	4.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.5	6.5	6.5	6.5	6.5
Lead/Lag			Lead		Lag
Lead-Lag Optimize?			Yes		Yes
Recall Mode	None	None	None	Min	Min
Act Effct Green (s)	8.0	8.0	41.7	43.9	20.9
Actuated g/C Ratio	0.13	0.13	0.70	0.74	0.35
v/c Ratio	0.25	0.38	0.71	0.32	0.67
Control Delay	30.9	10.8	12.3	5.0	22.2
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	30.9	10.8	12.3	5.0	22.2
LOS	C	B	B	A	C
Approach Delay	17.5			8.8	22.2
Approach LOS	B			A	C

Intersection Summary			
Cycle Length: 89.5			
Actuated Cycle Length: 59.7			
Natural Cycle: 60			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.71			
Intersection Signal Delay: 13.6		Intersection LOS: B	
Intersection Capacity Utilization 65.9%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 102: Lake Helen Osteen & Catalina Blvd





Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	55	109	426	392	203	183
Future Volume (veh/h)	55	109	426	392	203	183
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1856	1870	1856	1826	1870
Adj Flow Rate, veh/h	60	120	468	431	223	201
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	3	2	3	5	2
Cap, veh/h	197	174	591	1199	275	248
Arrive On Green	0.11	0.11	0.21	0.65	0.31	0.31
Sat Flow, veh/h	1781	1572	1781	1856	885	798
Grp Volume(v), veh/h	60	120	468	431	0	424
Grp Sat Flow(s),veh/h/ln	1781	1572	1781	1856	0	1682
Q Serve(g_s), s	1.7	3.9	8.3	5.7	0.0	12.4
Cycle Q Clear(g_c), s	1.7	3.9	8.3	5.7	0.0	12.4
Prop In Lane	1.00	1.00	1.00			0.47
Lane Grp Cap(c), veh/h	197	174	591	1199	0	523
V/C Ratio(X)	0.30	0.69	0.79	0.36	0.00	0.81
Avail Cap(c_a), veh/h	667	589	878	1963	0	945
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	21.9	22.9	9.9	4.4	0.0	17.0
Incr Delay (d2), s/veh	0.9	4.8	3.0	0.2	0.0	3.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	1.5	2.3	1.0	0.0	4.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	22.7	27.7	12.9	4.5	0.0	20.0
LnGrp LOS	C	C	B	A	A	C
Approach Vol, veh/h	180			899	424	
Approach Delay, s/veh	26.0			8.9	20.0	
Approach LOS	C			A	C	

Timer - Assigned Phs	1	2				6	8
Phs Duration (G+Y+Rc), s	17.9	23.1				41.0	12.4
Change Period (Y+Rc), s	6.5	6.5				6.5	6.5
Max Green Setting (Gmax), s	20.0	30.0				56.5	20.0
Max Q Clear Time (g_c+I1), s	10.3	14.4				7.7	5.9
Green Ext Time (p_c), s	1.1	2.2				2.6	0.4

Intersection Summary	
HCM 6th Ctrl Delay	14.1
HCM 6th LOS	B

Intersection	
Int Delay, s/veh	0.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	3	7	473	0	0	235
Future Vol, veh/h	3	7	473	0	0	235
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	2	2	3	2	2	4
Mvmt Flow	4	8	556	0	0	276

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	832	556	0	-	-	-
Stage 1	556	-	-	-	-	-
Stage 2	276	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	-	-
Pot Cap-1 Maneuver	339	531	-	0	0	-
Stage 1	574	-	-	0	0	-
Stage 2	771	-	-	0	0	-
Platoon blocked, %			-			-
Mov Cap-1 Maneuver	339	531	-	-	-	-
Mov Cap-2 Maneuver	339	-	-	-	-	-
Stage 1	574	-	-	-	-	-
Stage 2	771	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	13.1	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	WBLn1	SBT
Capacity (veh/h)	-	454	-
HCM Lane V/C Ratio	-	0.026	-
HCM Control Delay (s)	-	13.1	-
HCM Lane LOS	-	B	-
HCM 95th %tile Q(veh)	-	0.1	-

Intersection	
Int Delay, s/veh	0.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	474	5	7	227
Future Vol, veh/h	0	0	474	5	7	227
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	2	2	3	2	2	4
Mvmt Flow	0	0	558	6	8	267

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	844	561	0	0	564	0
Stage 1	561	-	-	-	-	-
Stage 2	283	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	334	527	-	-	1008	-
Stage 1	571	-	-	-	-	-
Stage 2	765	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	331	527	-	-	1008	-
Mov Cap-2 Maneuver	331	-	-	-	-	-
Stage 1	571	-	-	-	-	-
Stage 2	758	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	0	0	0.3
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	-	1008	-
HCM Lane V/C Ratio	-	-	-	0.008	-
HCM Control Delay (s)	-	-	0	8.6	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	-	0	-

Lane Group	SEL	SET	NWL	NWT	NEL	NET	SWL	SWT
Lane Configurations								
Traffic Volume (vph)	6	228	7	206	84	126	110	258
Future Volume (vph)	6	228	7	206	84	126	110	258
Turn Type	pm+pt	NA	pm+pt	NA	pm+pt	NA	pm+pt	NA
Protected Phases	5	2	1	6	3	8	7	4
Permitted Phases	2		6		8		4	
Detector Phase	5	2	1	6	3	8	7	4
Switch Phase								
Minimum Initial (s)	5.0	16.0	5.0	16.0	5.0	6.0	5.0	6.0
Minimum Split (s)	14.0	25.0	14.0	25.0	13.5	13.0	13.5	13.0
Total Split (s)	29.0	49.0	29.0	49.0	28.5	32.0	28.5	32.0
Total Split (%)	20.9%	35.4%	20.9%	35.4%	20.6%	23.1%	20.6%	23.1%
Yellow Time (s)	5.5	5.5	5.5	5.5	5.5	4.0	5.5	4.0
All-Red Time (s)	3.5	3.5	3.5	3.5	3.0	3.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	9.0	9.0	9.0	9.0	8.5	7.0	8.5	7.0
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Min	None	Min	None	None	None	None
Act Effct Green (s)	22.3	21.4	22.3	21.4	22.6	16.2	28.2	22.0
Actuated g/C Ratio	0.30	0.28	0.30	0.28	0.30	0.22	0.37	0.29
v/c Ratio	0.02	0.68	0.02	0.52	0.23	0.38	0.24	0.54
Control Delay	18.5	32.2	18.6	28.0	16.9	30.2	16.3	30.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	18.5	32.2	18.6	28.0	16.9	30.2	16.3	30.9
LOS	B	C	B	C	B	C	B	C
Approach Delay		31.9		27.7		25.2		26.7
Approach LOS		C		C		C		C

Intersection Summary	
Cycle Length: 138.5	
Actuated Cycle Length: 75.3	
Natural Cycle: 75	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.68	
Intersection Signal Delay: 28.1	Intersection LOS: C
Intersection Capacity Utilization 57.6%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 105: Elkcam Blvd & Lake Helen Osteen

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (veh/h)	6	228	98	7	206	47	84	126	14	110	258	16
Future Volume (veh/h)	6	228	98	7	206	47	84	126	14	110	258	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1841	1841	1870	1856	1841	1870	1870	1604	1856	1870	1811
Adj Flow Rate, veh/h	6	240	103	7	217	49	88	133	15	116	272	17
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	4	4	2	3	4	2	2	20	3	2	6
Cap, veh/h	247	299	128	184	360	81	263	298	34	372	342	21
Arrive On Green	0.01	0.24	0.24	0.01	0.25	0.25	0.06	0.18	0.18	0.08	0.20	0.20
Sat Flow, veh/h	1781	1222	524	1781	1465	331	1781	1651	186	1767	1742	109
Grp Volume(v), veh/h	6	0	343	7	0	266	88	0	148	116	0	289
Grp Sat Flow(s),veh/h/ln	1781	0	1746	1781	0	1796	1781	0	1837	1767	0	1851
Q Serve(g_s), s	0.2	0.0	12.6	0.2	0.0	9.0	2.7	0.0	4.9	3.6	0.0	10.2
Cycle Q Clear(g_c), s	0.2	0.0	12.6	0.2	0.0	9.0	2.7	0.0	4.9	3.6	0.0	10.2
Prop In Lane	1.00		0.30	1.00		0.18	1.00		0.10	1.00		0.06
Lane Grp Cap(c), veh/h	247	0	427	184	0	442	263	0	332	372	0	364
V/C Ratio(X)	0.02	0.00	0.80	0.04	0.00	0.60	0.33	0.00	0.45	0.31	0.00	0.79
Avail Cap(c_a), veh/h	755	0	1022	689	0	1051	679	0	672	756	0	677
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	19.7	0.0	24.3	20.3	0.0	22.8	21.4	0.0	25.0	20.4	0.0	26.1
Incr Delay (d2), s/veh	0.0	0.0	3.6	0.1	0.0	1.3	0.7	0.0	0.9	0.5	0.0	4.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	5.2	0.1	0.0	3.7	1.1	0.0	2.1	1.4	0.0	4.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	19.8	0.0	27.8	20.4	0.0	24.1	22.2	0.0	25.9	20.9	0.0	30.1
LnGrp LOS	B	A	C	C	A	C	C	A	C	C	A	C
Approach Vol, veh/h		349			273			236			405	
Approach Delay, s/veh		27.7			24.0			24.5			27.5	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.6	25.7	12.6	20.4	9.5	25.8	13.7	19.3
Change Period (Y+Rc), s	9.0	9.0	8.5	7.0	9.0	9.0	8.5	7.0
Max Green Setting (Gmax), s	20.0	40.0	20.0	25.0	20.0	40.0	20.0	25.0
Max Q Clear Time (g_c+I1), s	2.2	14.6	4.7	12.2	2.2	11.0	5.6	6.9
Green Ext Time (p_c), s	0.0	2.1	0.2	1.3	0.0	1.6	0.2	0.6

Intersection Summary	
HCM 6th Ctrl Delay	26.2
HCM 6th LOS	C

Lane Group	SEL	SET	NWL	NWT	NEL	NET	SWL	SWT	SWR
Lane Configurations									
Traffic Volume (vph)	408	1111	46	623	46	87	126	87	243
Future Volume (vph)	408	1111	46	623	46	87	126	87	243
Turn Type	pm+pt	NA	pm+pt	NA	pm+pt	NA	Perm	NA	Perm
Protected Phases	1	6	5	2	7	4		8	
Permitted Phases	6		2		4		8		8
Detector Phase	1	6	5	2	7	4	8	8	8
Switch Phase									
Minimum Initial (s)	5.0	11.0	5.0	11.0	5.0	7.0	7.0	7.0	7.0
Minimum Split (s)	13.5	19.5	13.5	19.5	12.0	14.0	14.0	14.0	14.0
Total Split (s)	30.0	65.0	20.0	55.0	20.0	60.0	45.0	45.0	45.0
Total Split (%)	20.0%	43.3%	13.3%	36.7%	13.3%	40.0%	30.0%	30.0%	30.0%
Yellow Time (s)	5.0	5.0	5.0	5.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	3.5	3.5	3.5	3.5	3.0	3.0	3.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	8.5	8.5	8.5	8.5	7.0	7.0	7.0	7.0	7.0
Lead/Lag	Lead	Lag	Lead	Lag	Lead		Lag	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Recall Mode	None	Max	None	Max	None	None	None	None	None
Act Effct Green (s)	77.3	65.2	54.0	47.0	31.4	31.4	18.7	18.7	18.7
Actuated g/C Ratio	0.62	0.52	0.43	0.38	0.25	0.25	0.15	0.15	0.15
v/c Ratio	0.85	0.67	0.21	0.55	0.16	0.24	0.69	0.33	0.57
Control Delay	33.1	28.2	17.0	33.9	34.4	33.3	69.8	51.0	10.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	33.1	28.2	17.0	33.9	34.4	33.3	69.8	51.0	10.6
LOS	C	C	B	C	C	C	E	D	B
Approach Delay		29.4		32.9		33.6		34.7	
Approach LOS		C		C		C		C	

Intersection Summary	
Cycle Length: 150	
Actuated Cycle Length: 124.4	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.85	
Intersection Signal Delay: 31.3	Intersection LOS: C
Intersection Capacity Utilization 75.6%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 101: Catalina Blvd & Howland Blvd

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (veh/h)	408	1111	61	46	623	67	46	87	19	126	87	243
Future Volume (veh/h)	408	1111	61	46	623	67	46	87	19	126	87	243
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1826	1870	1870	1870	1870	1870	1870	1870	1870	1856
Adj Flow Rate, veh/h	429	1169	64	48	656	71	48	92	20	133	92	205
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	5	2	2	2	2	2	2	2	2	3
Cap, veh/h	514	1767	97	240	1265	137	242	371	81	261	293	246
Arrive On Green	0.16	0.52	0.52	0.03	0.39	0.39	0.03	0.25	0.25	0.16	0.16	0.16
Sat Flow, veh/h	1781	3426	187	1781	3235	350	1781	1489	324	1281	1870	1572
Grp Volume(v), veh/h	429	606	627	48	360	367	48	0	112	133	92	205
Grp Sat Flow(s),veh/h/ln	1781	1777	1837	1781	1777	1807	1781	0	1812	1281	1870	1572
Q Serve(g_s), s	16.4	29.8	29.9	1.9	18.4	18.5	2.6	0.0	5.9	11.6	5.2	15.0
Cycle Q Clear(g_c), s	16.4	29.8	29.9	1.9	18.4	18.5	2.6	0.0	5.9	11.6	5.2	15.0
Prop In Lane	1.00		0.10	1.00		0.19	1.00		0.18	1.00		1.00
Lane Grp Cap(c), veh/h	514	917	947	240	695	707	242	0	451	261	293	246
V/C Ratio(X)	0.83	0.66	0.66	0.20	0.52	0.52	0.20	0.00	0.25	0.51	0.31	0.83
Avail Cap(c_a), veh/h	554	917	947	352	695	707	378	0	808	470	598	502
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	19.0	21.2	21.2	21.3	27.7	27.7	38.7	0.0	35.8	47.2	44.5	48.6
Incr Delay (d2), s/veh	10.1	3.7	3.6	0.4	2.8	2.7	0.4	0.0	0.3	1.5	0.6	7.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.5	12.4	12.8	0.8	8.0	8.2	1.2	0.0	2.7	3.8	2.5	6.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	29.1	24.9	24.8	21.7	30.4	30.4	39.1	0.0	36.0	48.7	45.1	55.8
LnGrp LOS	C	C	C	C	C	C	D	A	D	D	D	E
Approach Vol, veh/h		1662			775			160			430	
Approach Delay, s/veh		25.9			29.9			36.9			51.3	
Approach LOS		C			C			D			D	

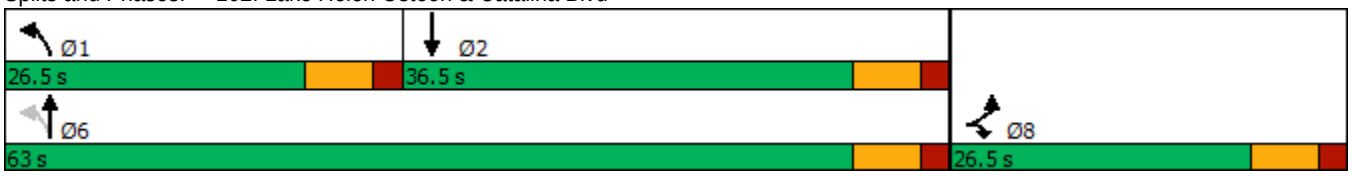
Timer - Assigned Phs	1	2		4	5	6	7	8				
Phs Duration (G+Y+Rc), s	27.3	55.0		36.6	12.5	69.8	11.0	25.6				
Change Period (Y+Rc), s	8.5	8.5		7.0	8.5	8.5	7.0	7.0				
Max Green Setting (Gmax), s	21.5	46.5		53.0	11.5	56.5	13.0	38.0				
Max Q Clear Time (g_c+I1), s	18.4	20.5		7.9	3.9	31.9	4.6	17.0				
Green Ext Time (p_c), s	0.5	4.3		0.7	0.0	8.4	0.0	1.6				

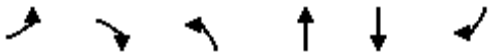
Intersection Summary			
HCM 6th Ctrl Delay		31.1	
HCM 6th LOS		C	

Lane Group	EBL	EBR	NBL	NBT	SBT
Lane Configurations					
Traffic Volume (vph)	172	343	199	169	362
Future Volume (vph)	172	343	199	169	362
Turn Type	Prot	Prot	pm+pt	NA	NA
Protected Phases	8	8	1	6	2
Permitted Phases			6		
Detector Phase	8	8	1	6	2
Switch Phase					
Minimum Initial (s)	5.0	5.0	5.0	15.0	15.0
Minimum Split (s)	11.5	11.5	11.5	21.5	21.5
Total Split (s)	26.5	26.5	26.5	63.0	36.5
Total Split (%)	29.6%	29.6%	29.6%	70.4%	40.8%
Yellow Time (s)	4.5	4.5	4.5	4.5	4.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.5	6.5	6.5	6.5	6.5
Lead/Lag			Lead		Lag
Lead-Lag Optimize?			Yes		Yes
Recall Mode	None	None	None	Min	Min
Act Effct Green (s)	12.6	12.6	39.4	39.4	23.1
Actuated g/C Ratio	0.19	0.19	0.60	0.60	0.35
v/c Ratio	0.54	0.61	0.49	0.16	0.77
Control Delay	31.8	8.1	10.3	6.6	28.1
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	31.8	8.1	10.3	6.6	28.1
LOS	C	A	B	A	C
Approach Delay	16.0			8.6	28.1
Approach LOS	B			A	C

Intersection Summary	
Cycle Length: 89.5	
Actuated Cycle Length: 65.5	
Natural Cycle: 60	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.77	
Intersection Signal Delay: 18.1	Intersection LOS: B
Intersection Capacity Utilization 61.6%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 102: Lake Helen Osteen & Catalina Blvd





Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	172	343	199	169	362	95
Future Volume (veh/h)	172	343	199	169	362	95
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1826	1870	1856	1841
Adj Flow Rate, veh/h	185	369	214	182	389	102
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	5	2	3	4
Cap, veh/h	473	421	362	997	456	120
Arrive On Green	0.27	0.27	0.11	0.53	0.32	0.32
Sat Flow, veh/h	1781	1585	1739	1870	1417	372
Grp Volume(v), veh/h	185	369	214	182	0	491
Grp Sat Flow(s),veh/h/ln	1781	1585	1739	1870	0	1789
Q Serve(g_s), s	5.5	14.4	4.9	3.2	0.0	16.6
Cycle Q Clear(g_c), s	5.5	14.4	4.9	3.2	0.0	16.6
Prop In Lane	1.00	1.00	1.00			0.21
Lane Grp Cap(c), veh/h	473	421	362	997	0	575
V/C Ratio(X)	0.39	0.88	0.59	0.18	0.00	0.85
Avail Cap(c_a), veh/h	552	491	708	1637	0	831
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	19.4	22.7	14.0	7.8	0.0	20.5
Incr Delay (d2), s/veh	0.5	14.7	1.5	0.1	0.0	6.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	6.5	1.6	1.0	0.0	6.8
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	20.0	37.4	15.6	7.9	0.0	26.5
LnGrp LOS	B	D	B	A	A	C
Approach Vol, veh/h	554			396	491	
Approach Delay, s/veh	31.6			12.0	26.5	
Approach LOS	C			B	C	

Timer - Assigned Phs	1	2				6	8
Phs Duration (G+Y+Rc), s	13.7	27.3				40.9	23.6
Change Period (Y+Rc), s	6.5	6.5				6.5	6.5
Max Green Setting (Gmax), s	20.0	30.0				56.5	20.0
Max Q Clear Time (g_c+I1), s	6.9	18.6				5.2	16.4
Green Ext Time (p_c), s	0.5	2.2				1.0	0.7

Intersection Summary		
HCM 6th Ctrl Delay		24.5
HCM 6th LOS		C

Intersection	
Int Delay, s/veh	0.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	5	6	263	0	0	445
Future Vol, veh/h	5	6	263	0	0	445
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	2	17	2	2	2	3
Mvmt Flow	6	7	306	0	0	517

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	823	306	0	-	-	-
Stage 1	306	-	-	-	-	-
Stage 2	517	-	-	-	-	-
Critical Hdwy	6.42	6.37	-	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.453	-	-	-	-
Pot Cap-1 Maneuver	343	700	-	0	0	-
Stage 1	747	-	-	0	0	-
Stage 2	598	-	-	0	0	-
Platoon blocked, %			-			-
Mov Cap-1 Maneuver	343	700	-	-	-	-
Mov Cap-2 Maneuver	343	-	-	-	-	-
Stage 1	747	-	-	-	-	-
Stage 2	598	-	-	-	-	-

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

Minor Lane/Major Mvmt	NBT	WBLn1	SBT
Capacity (veh/h)	-	475	-
HCM Lane V/C Ratio	-	0.027	-
HCM Control Delay (s)	-	12.8	-
HCM Lane LOS	-	B	-
HCM 95th %tile Q(veh)	-	0.1	-

Intersection	
Int Delay, s/veh	0.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	264	2	5	445
Future Vol, veh/h	0	0	264	2	5	445
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	2	2	2	2	2	3
Mvmt Flow	0	0	303	2	6	511

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	827	304	0	0	305	0
Stage 1	304	-	-	-	-	-
Stage 2	523	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	341	736	-	-	1256	-
Stage 1	748	-	-	-	-	-
Stage 2	595	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	339	736	-	-	1256	-
Mov Cap-2 Maneuver	339	-	-	-	-	-
Stage 1	748	-	-	-	-	-
Stage 2	591	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	0	0	0.1
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	-	1256	-
HCM Lane V/C Ratio	-	-	-	0.005	-
HCM Control Delay (s)	-	-	0	7.9	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	-	0	-

Lane Group	SEL	SET	NWL	NWT	NEL	NET	SWL	SWT
Lane Configurations								
Traffic Volume (vph)	33	286	19	232	157	357	89	210
Future Volume (vph)	33	286	19	232	157	357	89	210
Turn Type	pm+pt	NA	pm+pt	NA	pm+pt	NA	pm+pt	NA
Protected Phases	5	2	1	6	3	8	7	4
Permitted Phases	2		6		8		4	
Detector Phase	5	2	1	6	3	8	7	4
Switch Phase								
Minimum Initial (s)	5.0	16.0	5.0	16.0	5.0	6.0	5.0	6.0
Minimum Split (s)	14.0	25.0	14.0	25.0	13.5	13.0	13.5	13.0
Total Split (s)	29.0	49.0	29.0	49.0	28.5	32.0	28.5	32.0
Total Split (%)	20.9%	35.4%	20.9%	35.4%	20.6%	23.1%	20.6%	23.1%
Yellow Time (s)	5.5	5.5	5.5	5.5	5.5	4.0	5.5	4.0
All-Red Time (s)	3.5	3.5	3.5	3.5	3.0	3.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	9.0	9.0	9.0	9.0	8.5	7.0	8.5	7.0
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Min	None	Min	None	None	None	None
Act Effct Green (s)	33.2	30.7	30.7	27.3	35.7	28.0	29.0	21.1
Actuated g/C Ratio	0.35	0.32	0.32	0.29	0.38	0.30	0.31	0.22
v/c Ratio	0.12	0.72	0.07	0.75	0.40	0.71	0.31	0.57
Control Delay	19.4	36.9	18.9	40.8	23.9	44.0	24.3	43.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	19.4	36.9	18.9	40.8	23.9	44.0	24.3	43.1
LOS	B	D	B	D	C	D	C	D
Approach Delay		35.6		39.7		38.1		37.7
Approach LOS		D		D		D		D

Intersection Summary	
Cycle Length: 138.5	
Actuated Cycle Length: 94.9	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.75	
Intersection Signal Delay: 37.7	Intersection LOS: D
Intersection Capacity Utilization 72.4%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 105: Elkcam Blvd & Lake Helen Osteen

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (veh/h)	33	286	114	19	232	138	157	357	14	89	210	14
Future Volume (veh/h)	33	286	114	19	232	138	157	357	14	89	210	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1870	1870	1870	1870	1870	1870	1885	1870	1870	1870	1870
Adj Flow Rate, veh/h	35	301	120	20	244	145	165	376	15	94	221	15
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	2	2	2	2	2	2	1	2	2	2	2
Cap, veh/h	202	353	141	178	293	174	356	430	17	230	349	24
Arrive On Green	0.03	0.28	0.28	0.02	0.27	0.27	0.10	0.24	0.24	0.06	0.20	0.20
Sat Flow, veh/h	1767	1272	507	1781	1099	653	1781	1800	72	1781	1732	118
Grp Volume(v), veh/h	35	0	421	20	0	389	165	0	391	94	0	236
Grp Sat Flow(s),veh/h/ln	1767	0	1779	1781	0	1753	1781	0	1872	1781	0	1849
Q Serve(g_s), s	1.2	0.0	18.7	0.7	0.0	17.5	6.0	0.0	16.8	3.4	0.0	9.7
Cycle Q Clear(g_c), s	1.2	0.0	18.7	0.7	0.0	17.5	6.0	0.0	16.8	3.4	0.0	9.7
Prop In Lane	1.00		0.29	1.00		0.37	1.00		0.04	1.00		0.06
Lane Grp Cap(c), veh/h	202	0	494	178	0	467	356	0	447	230	0	372
V/C Ratio(X)	0.17	0.00	0.85	0.11	0.00	0.83	0.46	0.00	0.87	0.41	0.00	0.63
Avail Cap(c_a), veh/h	567	0	853	565	0	840	610	0	561	551	0	554
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	22.7	0.0	28.5	23.3	0.0	28.8	23.3	0.0	30.5	25.3	0.0	30.5
Incr Delay (d2), s/veh	0.4	0.0	4.3	0.3	0.0	3.9	0.9	0.0	12.1	1.2	0.0	1.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.0	8.1	0.3	0.0	7.4	2.5	0.0	8.7	1.5	0.0	4.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.2	0.0	32.8	23.5	0.0	32.8	24.2	0.0	42.6	26.5	0.0	32.3
LnGrp LOS	C	A	C	C	A	C	C	A	D	C	A	C
Approach Vol, veh/h		456			409			556			330	
Approach Delay, s/veh		32.0			32.3			37.1			30.6	
Approach LOS		C			C			D			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.9	32.2	16.6	23.8	11.8	31.2	13.5	26.9
Change Period (Y+Rc), s	9.0	9.0	8.5	7.0	9.0	9.0	8.5	7.0
Max Green Setting (Gmax), s	20.0	40.0	20.0	25.0	20.0	40.0	20.0	25.0
Max Q Clear Time (g_c+I1), s	2.7	20.7	8.0	11.7	3.2	19.5	5.4	18.8
Green Ext Time (p_c), s	0.0	2.5	0.3	1.0	0.0	2.3	0.2	1.2

Intersection Summary	
HCM 6th Ctrl Delay	33.5
HCM 6th LOS	C

Volusia County, FL

ECONOLITE

MOVING TRAFFIC FORWARD

400 - Lake Helen Osteen @ Catalina Blvd. - ASC - [redacted] - Econolite Type - ASC/3

Controller Timing Plan (MM) 2-1

Plan 1

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Direction																
Min Green	5	15	0	0	0	15	0	5	5	5	5	5	5	5	5	5
Bk Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CS Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Delay Green	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk	0	7	0	0	0	0	0	0	0	10	0	10	0	10	0	10
Walk2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear	0	15	0	0	0	0	0	0	0	16	0	16	0	16	0	16
Ped Clear 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped CO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vehicle Ext	5.0	5.0	0.0	0.0	0.0	5.0	0.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Ext 2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max1	20	30	0	0	0	30	0	20	35	35	35	35	35	35	35	35
Max2	0	0	0	0	0	0	0	0	40	40	40	40	40	40	40	40
Max3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DYM Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dym Step	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	4.5	4.5	0.0	0.0	0.0	4.5	0.0	4.5	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Red Clear	2.0	2.0	0.0	0.0	0.0	2.0	0.0	2.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Red Max	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Revert	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Act B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sec/Act	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Int	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Time B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cars Wt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
STPTDuc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TTReduc	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Min Gap	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Volusia County, FL

ECONOLITE

MOVING TRAFFIC FORWARD

400 - Lake Helen Osteen @ Catalina Blvd. - ASC - [redacted] - Econolite Type - ASC/3

Time Base Day Plan/Schedule
Day Plan (MM) 5-3

Day Plan #1

Event	Action Plan	Start Time
1	11	00:00

Schedule (MM) 5-4

Schedule Number - 1

Day Plan No.: 1

Month	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
	X	X	X	X	X	X	X	X	X	X	X	X

Day (DOW)	SUN	MON	TUE	WED	THU	FRI	SAT
	X	X	X	X	X	X	X

Day (DOM)	1	2	3	4	5	6	7	8	9	10	11
	X	X	X	X	X	X	X	X	X	X	X
	12	13	14	15	16	17	18	19	20	21	22
	X	X	X	X	X	X	X	X	X	X	X
	23	24	25	26	27	28	29	30	31		
	X	X	X	X	X	X	X	X	X		

Volusia County, FL

ECONOLITE

MOVING TRAFFIC FORWARD

339 - Elkcam @ Lake Helen Osteen - ASC-3 - [redacted] - Econolite Type - Cobalt

Controller Timing Plan (MM) 2-1

Plan 1 - ""

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Direction	N-L	S-T	E-L	W-T	S-L	N-T	W-L	E-T	N	N	N	N	N	N	N	N
Min Green	5	16	5	6	5	16	5	6	5	5	5	5	5	5	5	5
Bk Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CS Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Delay Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk	0	7	0	7	0	7	0	7	0	10	0	10	0	10	0	10
Walk2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear	0	24	0	20	0	24	0	20	0	16	0	16	0	16	0	16
Ped Clear 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped CO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vehicle Ext	3.0	4.0	3.0	4.0	3.0	4.0	3.0	4.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Ext 2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max1	20	40	20	25	20	40	20	25	35	35	35	35	35	35	35	35
Max2	0	0	0	0	0	0	0	0	40	40	40	40	40	40	40	40
Max3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DYM Max	0	60	0	60	0	60	0	60	0	0	0	0	0	0	0	0
Dym Step	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	5.5	5.5	5.5	4.0	5.5	5.5	5.5	4.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Red Clear	3.5	3.5	3.0	3.0	3.5	3.5	3.0	3.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Red Max	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Revert	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Act B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sec/Act	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Int	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Time B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cars Wt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
STPTDuc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TTReduc	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Min Gap	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Volusia County, FL

ECONOLITE

MOVING TRAFFIC FORWARD

339 - Elkcam @ Lake Helen Osteen - ASC-3 - [redacted] - Econolite Type - Cobalt

Time Base Day Plan/Schedule
Day Plan (MM) 5-3

Schedule (MM) 5-4

Volusia County, FL

ECONOLITE

MOVING TRAFFIC FORWARD

250 -Howland Blvd @ Catalina Blvd. - ASC/3 - [redacted] - Econolite Type - ASC/3

Controller Timing Plan (MM) 2-1

Plan 1

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Direction																
Min Green	5	11	0	7	5	11	5	7	5	5	5	5	5	5	5	5
Bk Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CS Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Delay Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk	0	7	0	7	0	7	0	7	0	10	0	10	0	10	0	10
Walk2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear	0	23	0	23	0	23	0	26	0	16	0	16	0	16	0	16
Ped Clear 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped CO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vehicle Ext	3.0	4.0	0.0	3.0	3.0	4.0	3.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Ext 2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max1	30	45	0	25	20	45	20	35	35	35	35	35	35	35	35	35
Max2	30	45	0	25	20	45	20	20	20	40	40	40	40	40	40	40
Max3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DYM Max	0	90	0	0	0	0	0	50	0	0	0	0	0	0	0	0
Dym Step	0.0	10.0	0.0	0.0	0.0	0.0	0.0	10.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	5.0	5.0	0.0	4.0	5.0	5.0	4.0	4.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Red Clear	3.5	3.5	0.0	3.0	3.5	3.5	3.0	3.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Red Max	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Revert	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Act B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sec/Act	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Int	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Time B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cars Wt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
STPTDuc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TTReduc	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Min Gap	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Volusia County, FL

ECONOLITE

MOVING TRAFFIC FORWARD

250 -Howland Blvd @ Catalina Blvd. - ASC/3 - [redacted] - Econolite Type - ASC/3

Coordination Options

Options (MM) 3-1

Manual Pattern	Auto	ECPI Coord	Yes
System Source	SYS	System Format	PTN
Splits In	Seconds	Offsets In	Seconds
Transition	Smooth	Max Select	MAXINH
Dwell / Add Time	0		
Delay Coord Wk-LZ	No	Force Off	Float
Offset Reference	Yellow	Use Ped Time	Yes
Ped Recall	No	Ped Reservice	No
Local Zero Override	No	FO Added Ini Green	No
Re-sync Count	0	Multisync	No

Auto Perm Minimum Green (Seconds) (MM) 3-4

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Minimum Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Split Demand (MM) 3-5

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Demand 1																
Demand 2																

Demand	1	2
Detector	0	0
Call Time (Sec)	0	0
Cycle Count	0	0

Volusia County, FL

ECONOLITE

MOVING TRAFFIC FORWARD

250 -Howland Blvd @ Catalina Blvd. - ASC/3 - [redacted] - Econolite Type - ASC/3

Coordination Pattern Data
Coordinator Pattern Data (MM) 3-2

Coordinator Pattern # 1

Split Pattern	1	TS2 (Pat-Off)	0-1	Splits In	Seconds
Cycle	150	Std (COS)	9	Offsets In	Seconds
Offset Value	0s	Dwell/Add Time	0		
Actuated Coord	Yes	Timing Plan	0		
Actuated Walk Rest	No	Sequence	0		
Phase Reservice	No	Action Plan	0		
Max Select	None	Force Off	None		

Split Preference Phases

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description																
Splits (Split Pat 1)	24	59	0	67	18	65	24	43	0	0	0	0	0	0	0	0
Pref 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pref 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Ring	1	2	3	4
Ring Split Ext	0	0	0	0
Ring Displacement	-	0	0	0
Split Sum	150s	150s	0s	0s

Misc. Data

Veh Perm 1	0	Veh Perm 2	0	Veh Perm 2 Disp	0
Split Demand Pat 1	0	Split Demand Pat 2	0	Crossing Arterial Pat	0

Split Pattern

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Coord Phase		X				X										
Vehicle Recall																
Pedestrian Recall																
Recall to Max. Time																
Omit Phase									X	X	X	X	X	X	X	X
Special Funciton Outputs																

Coordinator Pattern # 2

Split Pattern	2	TS2 (Pat-Off)	0-2	Splits In	Seconds
Cycle	150	Std (COS)	17	Offsets In	Seconds
Offset Value	0s	Dwell/Add Time	0		
Actuated Coord	Yes	Timing Plan	0		
Actuated Walk Rest	No	Sequence	0		
Phase Reservice	No	Action Plan	0		
Max Select	None	Force Off	None		

Split Preference Phases

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description																
Splits (Split Pat 2)	31	59	0	60	20	65	25	40	0	0	0	0	0	0	0	0
Pref 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pref 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Ring	1	2	3	4
Ring Split Ext	0	0	0	0
Ring Displacement	-	0	0	0
Split Sum	150s	150s	0s	0s

Misc. Data

Veh Perm 1	0	Veh Perm 2	0	Veh Perm 2 Disp	0
Split Demand Pat 1	0	Split Demand Pat 2	0	Crossing Arterial Pat	0

Split Pattern

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Coord Phase		X				X										
Vehicle Recall																
Pedestrian Recall																
Recall to Max. Time																
Omit Phase									X	X	X	X	X	X	X	X
Special Funciton Outputs																

Coordinator Pattern # 3

Split Pattern	3	TS2 (Pat-Off)	0-3	Splits In	Seconds
Cycle	150	Std (COS)	25	Offsets In	Seconds
Offset Value	0s	Dwell/Add Time	0		
Actuated Coord	Yes	Timing Plan	0		
Actuated Walk Rest	No	Sequence	0		
Phase Reservice	No	Action Plan	0		
Max Select	None	Force Off	None		

Split Preference Phases

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description																
Splits (Split Pat 3)	30	60	0	60	20	65	20	45	0	0	0	0	0	0	0	0
Pref 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pref 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Ring	1	2	3	4
Ring Split Ext	0	0	0	0
Ring Displacement	-	0	0	0
Split Sum	150s	150s	0s	0s

Misc. Data

Veh Perm 1	0	Veh Perm 2	0	Veh Perm 2 Disp	0
Split Demand Pat 1	0	Split Demand Pat 2	0	Crossing Arterial Pat	0

Split Pattern

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Coord Phase		X				X										
Vehicle Recall																
Pedestrian Recall																
Recall to Max. Time																
Omit Phase									X	X	X	X	X	X	X	X
Special Funciton Outputs																

Volusia County, FL

ECONOLITE

MOVING TRAFFIC FORWARD

250 -Howland Blvd @ Catalina Blvd. - ASC/3 - [redacted] - Econolite Type - ASC/3

Coordination Split Pattern
Split Pattern Data (MM) 3-3

Split Pattern # 1

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description																
Split (seconds)	24	59	0	67	18	65	24	43	0	0	0	0	0	0	0	0
Coord Phase		X				X										
Vehicle Recall																
Pedestrian Recall																
Recall to Max. Time																
Omit Phase									X	X	X	X	X	X	X	X

Ring	1	2	3	4
Split Sum	150s	150s	0s	0s

Split Pattern # 2

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description																
Split (seconds)	31	59	0	60	20	65	25	40	0	0	0	0	0	0	0	0
Coord Phase		X				X										
Vehicle Recall																
Pedestrian Recall																
Recall to Max. Time																
Omit Phase									X	X	X	X	X	X	X	X

Ring	1	2	3	4
Split Sum	150s	150s	0s	0s

Split Pattern # 3

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description																
Split (seconds)	30	60	0	60	20	65	20	45	0	0	0	0	0	0	0	0
Coord Phase		X				X										
Vehicle Recall																
Pedestrian Recall																
Recall to Max. Time																
Omit Phase									X	X	X	X	X	X	X	X

Ring	1	2	3	4
Split Sum	150s	150s	0s	0s

Volusia County, FL

ECONOLITE

MOVING TRAFFIC FORWARD

250 -Howland Blvd @ Catalina Blvd. - ASC/3 - [redacted] - Econolite Type - ASC/3

Time Base Day Plan/Schedule
Day Plan (MM) 5-3

Day Plan #1

Event	Action Plan	Start Time
1	1	06:30
2	11	09:00
3	3	14:30
4	11	19:00

Day Plan #2

Event	Action Plan	Start Time
1	11	00:00

Schedule (MM) 5-4

Schedule Number - 1

Day Plan No.: 1

Month	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
	X	X	X	X	X	X	X	X	X	X	X	X

Day (DOW)	SUN	MON	TUE	WED	THU	FRI	SAT
		X	X	X	X	X	

Day (DOM)	1	2	3	4	5	6	7	8	9	10	11
	X	X	X	X	X	X	X	X	X	X	X
	12	13	14	15	16	17	18	19	20	21	22
	X	X	X	X	X	X	X	X	X	X	X
	23	24	25	26	27	28	29	30	31		
	X	X	X	X	X	X	X	X	X		

Schedule Number - 3

Day Plan No.: 3

Month	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC

Day (DOW)	SUN	MON	TUE	WED	THU	FRI	SAT

Day (DOM)	1	2	3	4	5	6	7	8	9	10	11
	12	13	14	15	16	17	18	19	20	21	22
	23	24	25	26	27	28	29	30	31		

Appendix E

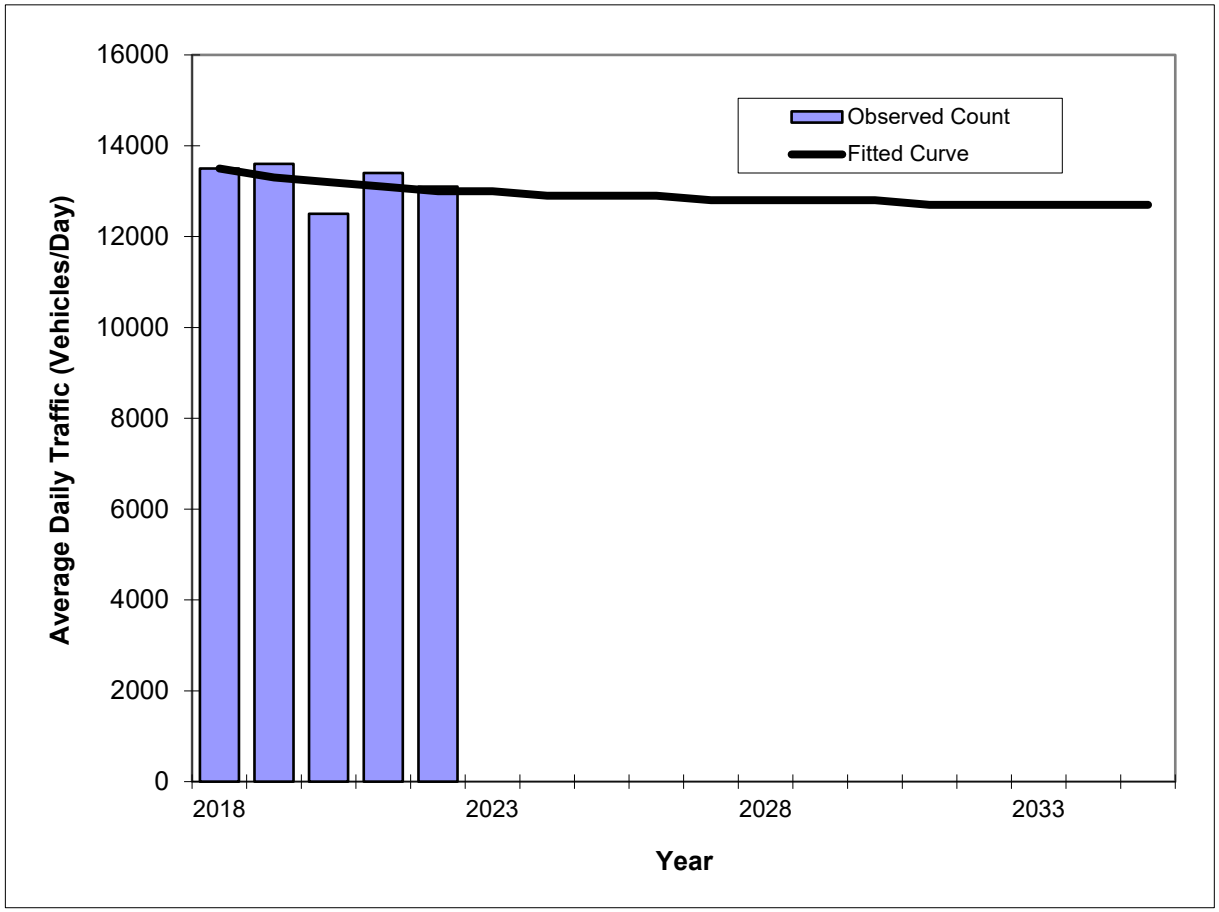
Historical Data/Trends & Applied Annual Growth Rates

Traffic Trends - V03.a

Providence Blvd, Ft. Smith to Elkcam --

FIN#	
Location	

County:	Volusia
Station #:	1541
Highway:	Providence Blvd, Ft. Smith to Elkcam



Year	Traffic (ADT/AADT) Count*	Trend**
2018	13500	13500
2019	13600	13300
2020	12500	13200
2021	13400	13100
2022	13100	13000
2025 Opening Year Trend		
2025	N/A	12900
2027 Mid-Year Trend		
2027	N/A	12800
2029 Design Year Trend		
2029	N/A	12800
TRANPLAN Forecasts/Trends		

Trend R-squared:	17.44%
Compounded Annual Historic Growth Rate:	-0.94%
Compounded Growth Rate (2022 to Design Year):	-0.22%
Printed:	26-Feb-24

Decaying Exponential Growth Option

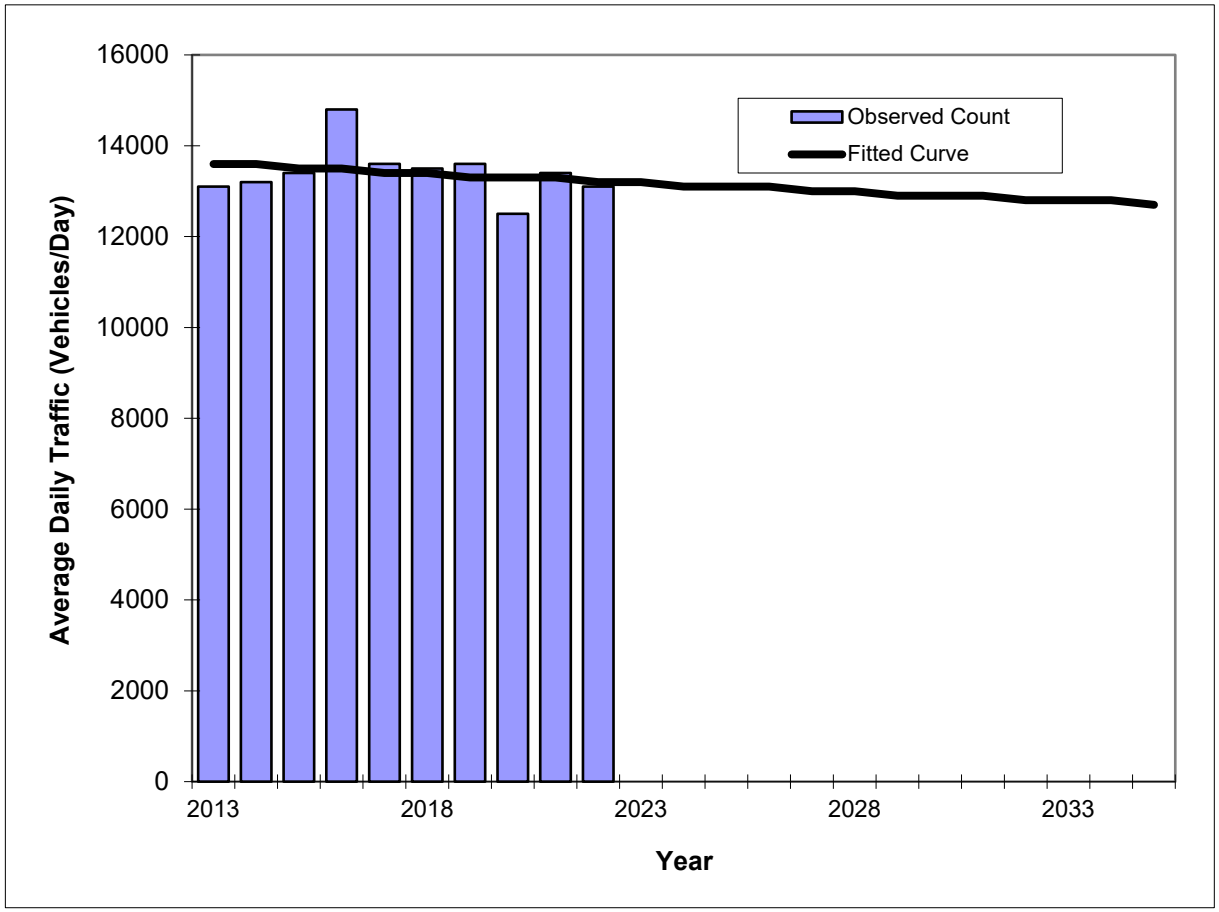
*Axle-Adjusted

Traffic Trends - V03.a

Providence Blvd, Ft. Smith to Elkcam --

FIN#	
Location	

County:	Volusia
Station #:	1541
Highway:	Providence Blvd, Ft. Smith to Elkcam



Year	Traffic (ADT/AADT) Count*	Trend**
2013	13100	13600
2014	13200	13600
2015	13400	13500
2016	14800	13500
2017	13600	13400
2018	13500	13400
2019	13600	13300
2020	12500	13300
2021	13400	13300
2022	13100	13200
2025 Opening Year Trend		
2025	N/A	13100
2027 Mid-Year Trend		
2027	N/A	13000
2029 Design Year Trend		
2029	N/A	12900
TRANPLAN Forecasts/Trends		

Trend R-squared:	4.67%
Compounded Annual Historic Growth Rate:	-0.33%
Compounded Growth Rate (2022 to Design Year):	-0.33%
Printed:	26-Feb-24

Exponential Growth Option

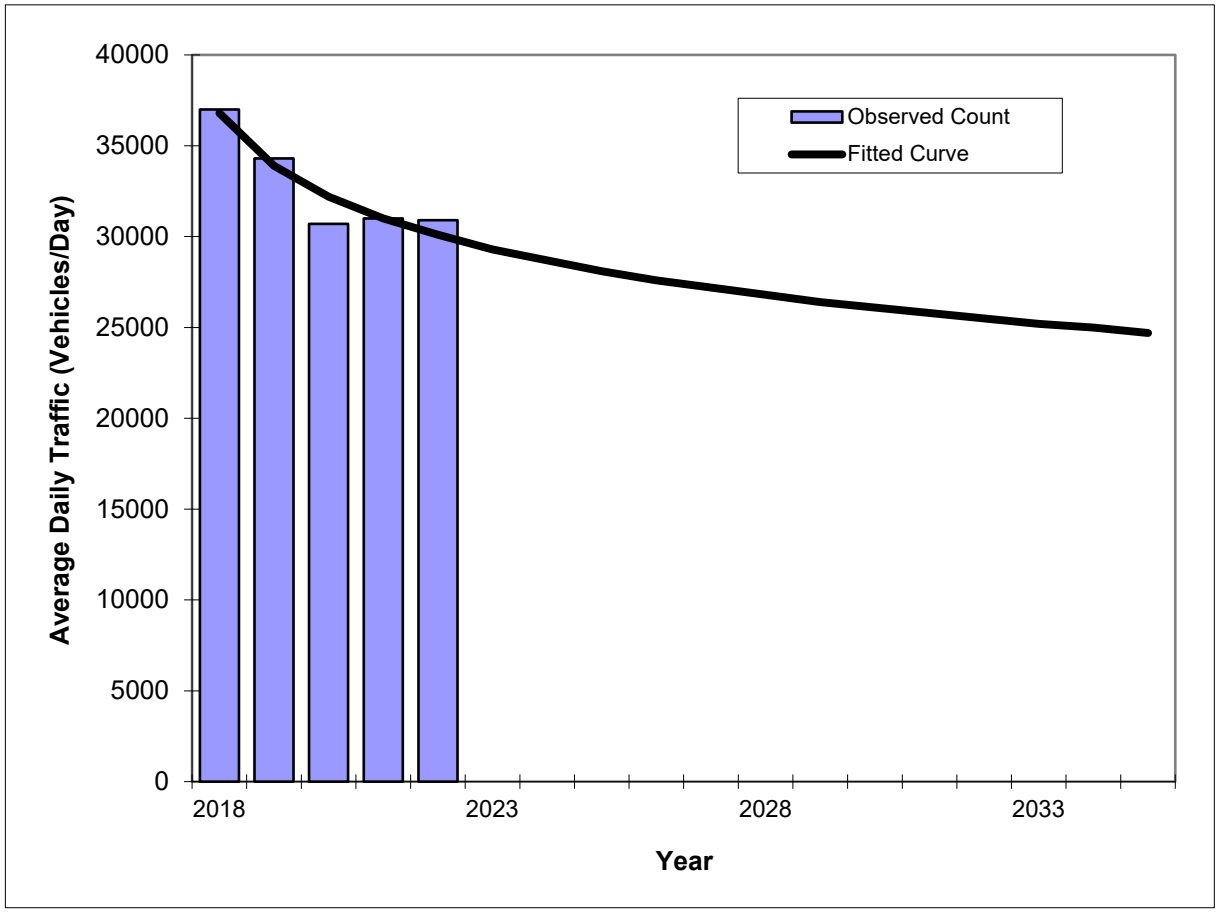
*Axle-Adjusted

Traffic Trends - V03.a

Howland Blvd, I-4 to Wolf Pack Run --

FIN#	
Location	

County:	Volusia
Station #:	901
Highway:	Howland Blvd, I-4 to Wolf Pack Run



Year	Traffic (ADT/AADT) Count*	Trend**
2018	37000	36800
2019	34300	33900
2020	30700	32200
2021	31000	31000
2022	30900	30100
2025 Opening Year Trend		
2025	N/A	28100
2027 Mid-Year Trend		
2027	N/A	27200
2029 Design Year Trend		
2029	N/A	26400
TRANPLAN Forecasts/Trends		

Trend R-squared:	89.87%
Compounded Annual Historic Growth Rate:	-4.90%
Compounded Growth Rate (2022 to Design Year):	-1.86%
Printed:	23-Feb-24

Decaying Exponential Growth Option

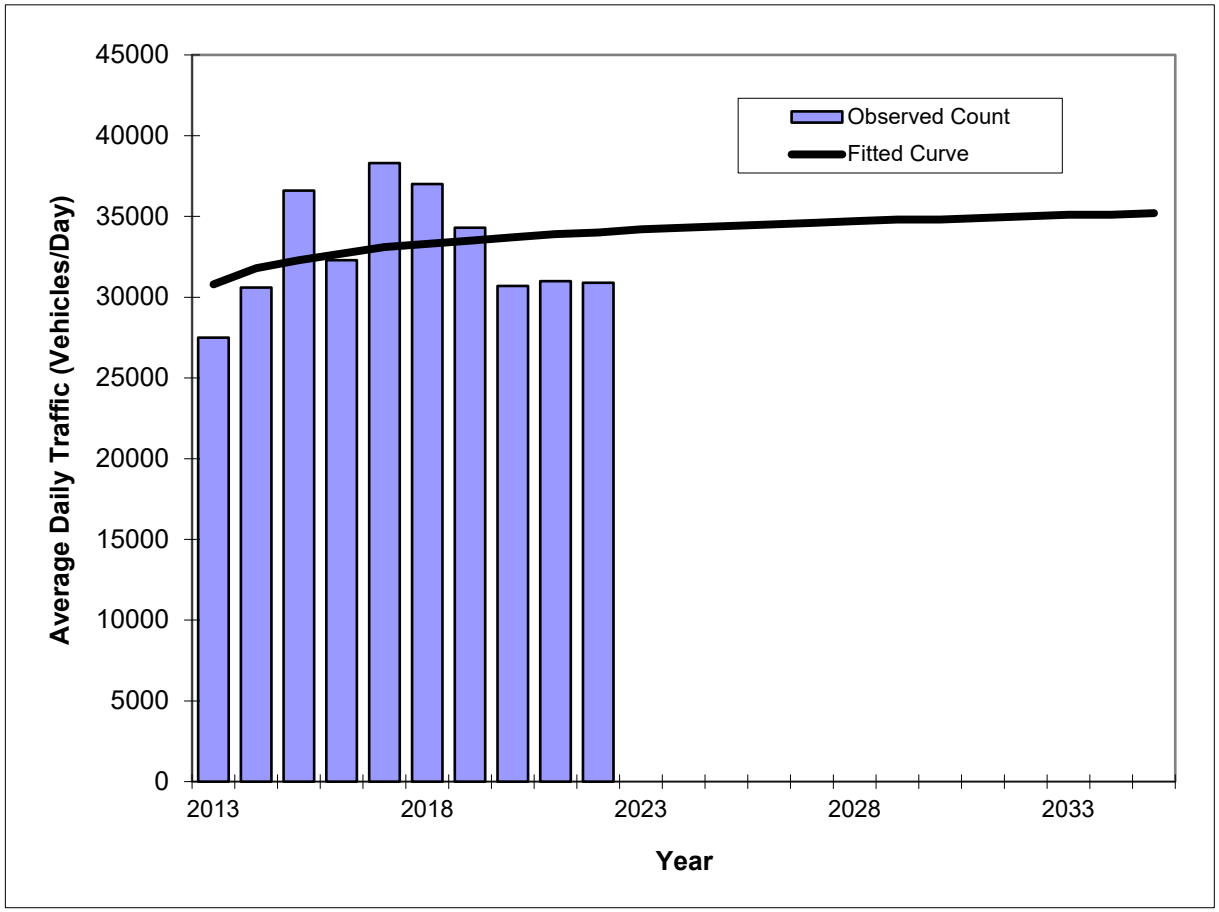
*Axle-Adjusted

Traffic Trends - V03.a

Howland Blvd, I-4 to Wolf Pack Run --

FIN#	
Location	

County:	Volusia
Station #:	901
Highway:	Howland Blvd, I-4 to Wolf Pack Run



Year	Traffic (ADT/AADT) Count*	Trend**
2013	27500	30800
2014	30600	31800
2015	36600	32300
2016	32300	32700
2017	38300	33100
2018	37000	33300
2019	34300	33500
2020	30700	33700
2021	31000	33900
2022	30900	34000
2025 Opening Year Trend		
2025	N/A	34400
2027 Mid-Year Trend		
2027	N/A	34600
2029 Design Year Trend		
2029	N/A	34800
TRANPLAN Forecasts/Trends		

Trend R-squared:	8.64%
Compounded Annual Historic Growth Rate:	1.10%
Compounded Growth Rate (2022 to Design Year):	0.33%
Printed:	23-Feb-24

Decaying Exponential Growth Option

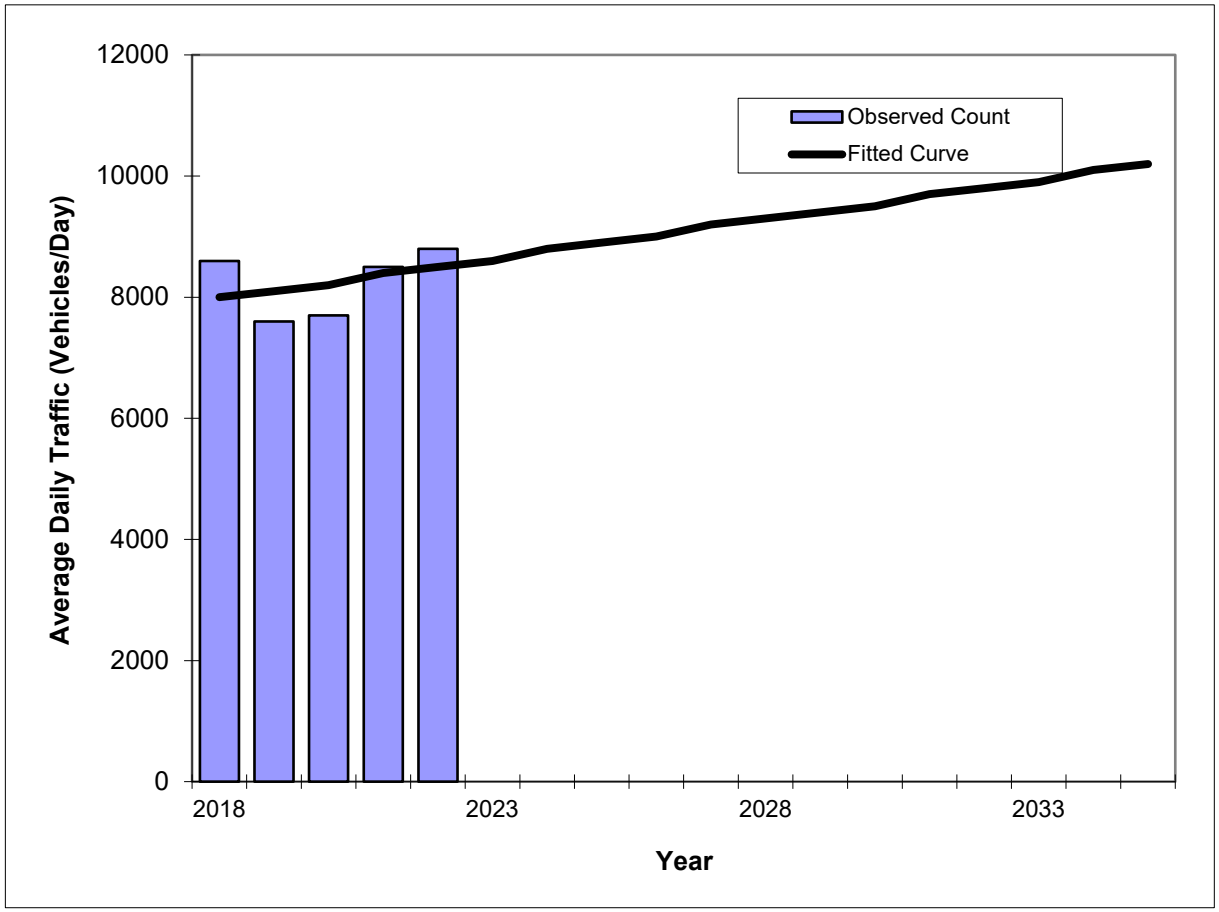
*Axle-Adjusted

Traffic Trends - V03.a

Lake Helen Osteen, Catalina to Captain --

FIN#	
Location	

County:	Volusia
Station #:	1073
Highway:	Lake Helen Osteen, Catalina to Captain



Year	Traffic (ADT/AADT) Count*	Trend**
2018	8600	8000
2019	7600	8100
2020	7700	8200
2021	8500	8400
2022	8800	8500
2025 Opening Year Trend		
2025	N/A	8900
2027 Mid-Year Trend		
2027	N/A	9200
2029 Design Year Trend		
2029	N/A	9400
TRANPLAN Forecasts/Trends		

** Annual Trend Increase:	130
Trend R-squared:	13.94%
Trend Annual Historic Growth Rate:	1.56%
Trend Growth Rate (2022 to Design Year):	1.51%
Printed:	23-Feb-24

Straight Line Growth Option

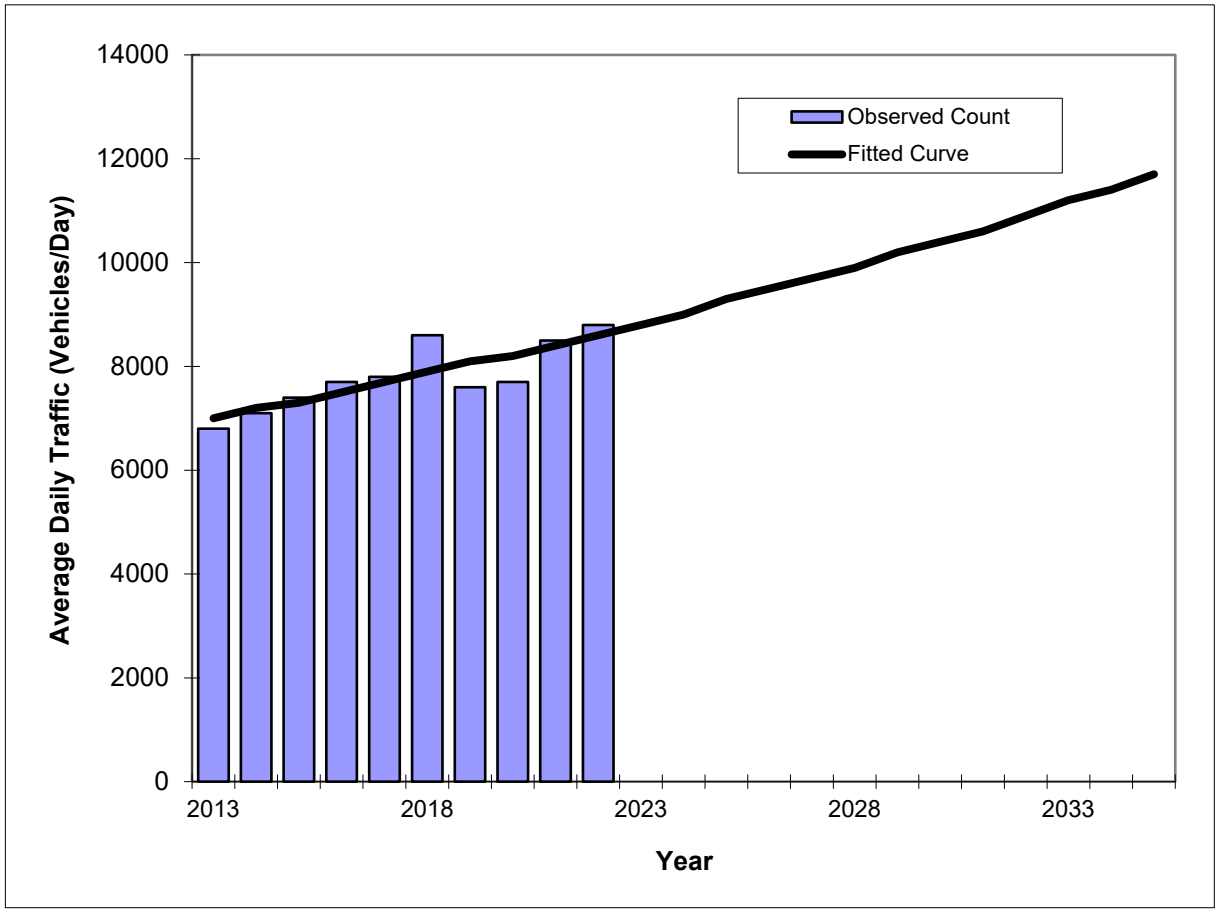
*Axle-Adjusted

Traffic Trends - V03.a

Lake Helen Osteen, Catalina to Captain --

FIN#	
Location	

County:	Volusia
Station #:	1073
Highway:	Lake Helen Osteen, Catalina to Captain



Year	Traffic (ADT/AADT) Count*	Trend**
2013	6800	7000
2014	7100	7200
2015	7400	7300
2016	7700	7500
2017	7800	7700
2018	8600	7900
2019	7600	8100
2020	7700	8200
2021	8500	8400
2022	8800	8600
2025 Opening Year Trend		
2025	N/A	9300
2027 Mid-Year Trend		
2027	N/A	9700
2029 Design Year Trend		
2029	N/A	10200
TRANPLAN Forecasts/Trends		

*Axle-Adjusted

Trend R-squared:	71.04%
Compounded Annual Historic Growth Rate:	2.31%
Compounded Growth Rate (2022 to Design Year):	2.47%
Printed:	23-Feb-24

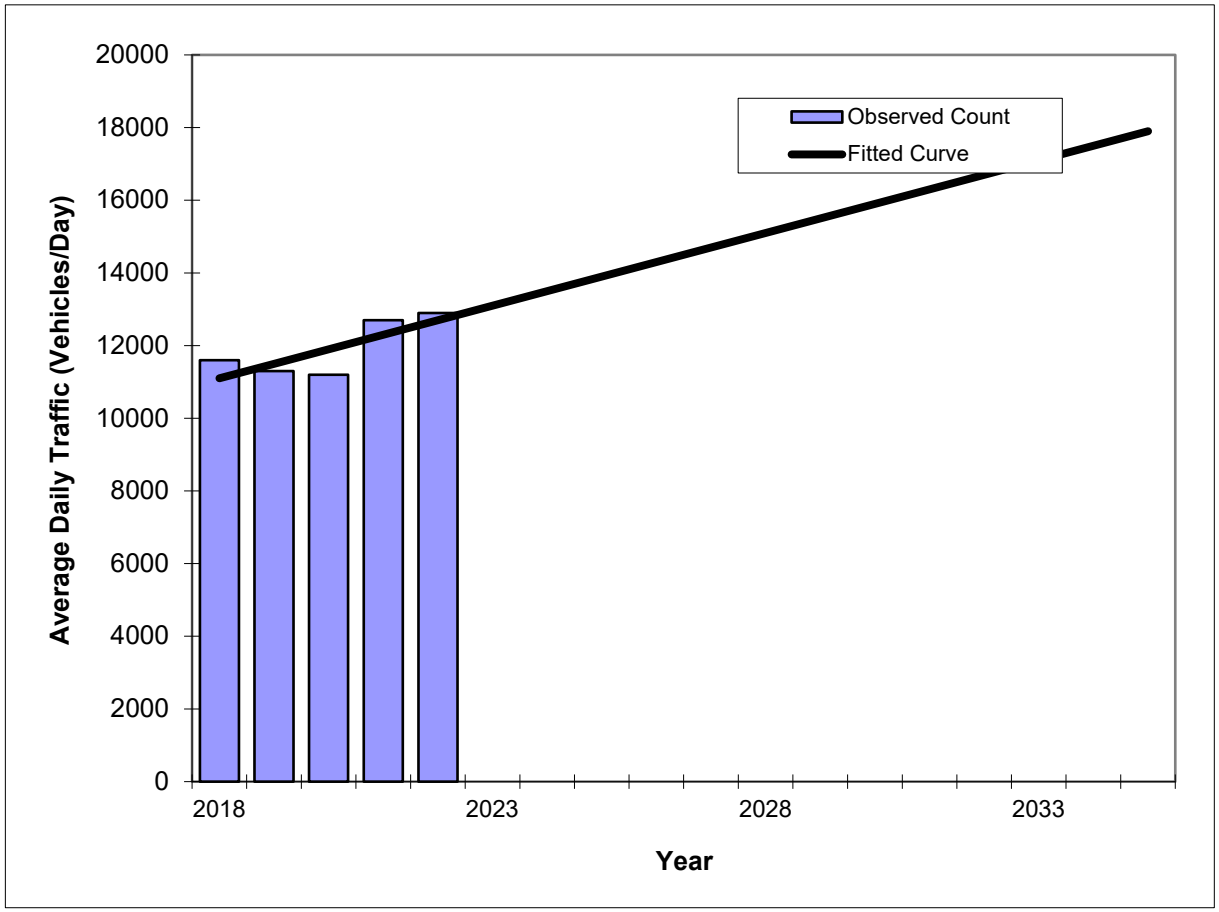
Exponential Growth Option

Traffic Trends - V03.a

Lake Helen Osteen, Haulover to Catalina --

FIN#	
Location	

County:	Volusia
Station #:	1072
Highway:	Lake Helen Osteen, Haulover to Catalina



Year	Traffic (ADT/AADT) Count*	Trend**
2018	11600	11100
2019	11300	11500
2020	11200	11900
2021	12700	12300
2022	12900	12700
2025 Opening Year Trend		
2025	N/A	13900
2027 Mid-Year Trend		
2027	N/A	14700
2029 Design Year Trend		
2029	N/A	15500
TRANPLAN Forecasts/Trends		

*Axle-Adjusted

** Annual Trend Increase:	400
Trend R-squared:	62.21%
Trend Annual Historic Growth Rate:	3.60%
Trend Growth Rate (2022 to Design Year):	3.15%
Printed:	23-Feb-24

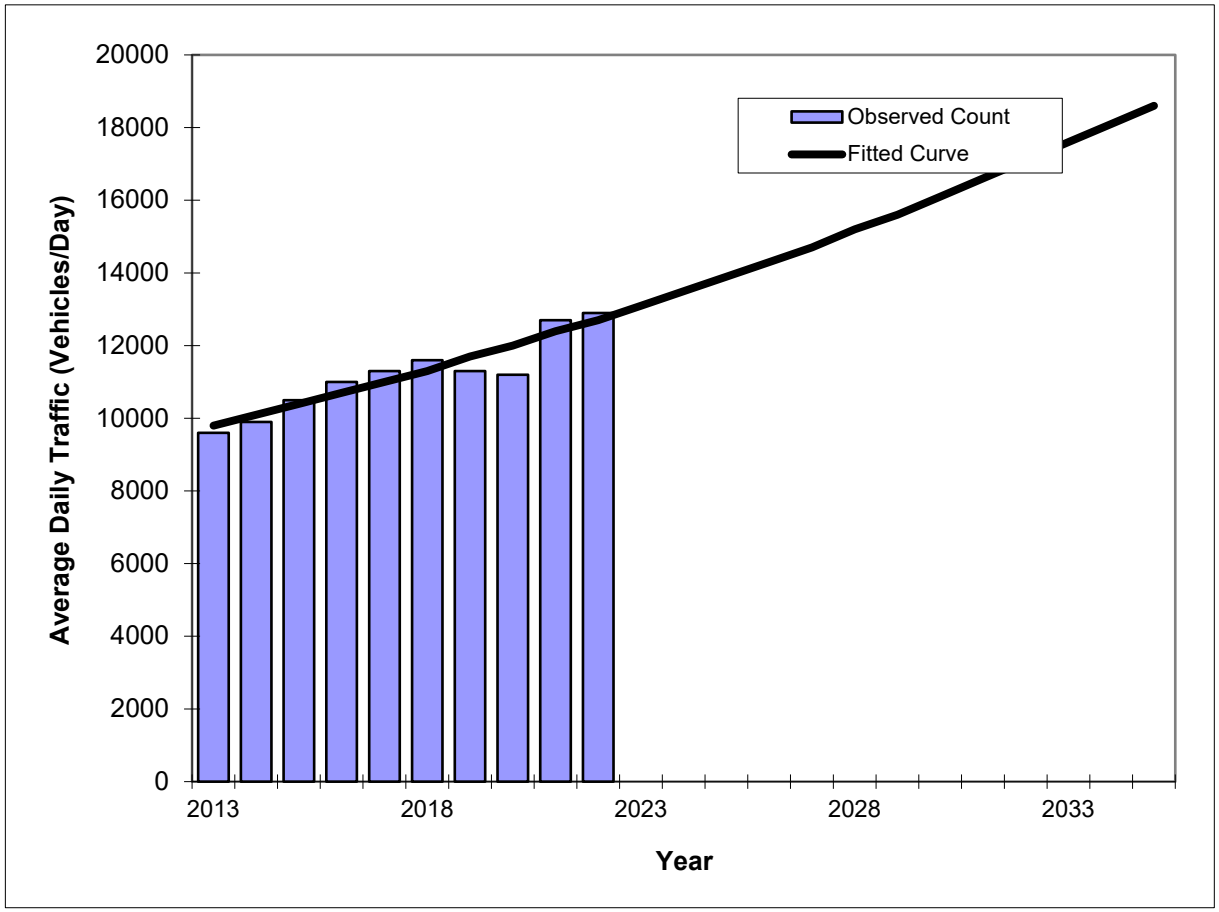
Straight Line Growth Option

Traffic Trends - V03.a

Lake Helen Osteen, Haulover to Catalina --

FIN#	
Location	

County:	Volusia
Station #:	1072
Highway:	Lake Helen Osteen, Haulover to Catalina



Year	Traffic (ADT/AADT) Count*	Trend**
2013	9600	9800
2014	9900	10100
2015	10500	10400
2016	11000	10700
2017	11300	11000
2018	11600	11300
2019	11300	11700
2020	11200	12000
2021	12700	12400
2022	12900	12700
2025 Opening Year Trend		
2025	N/A	13900
2027 Mid-Year Trend		
2027	N/A	14700
2029 Design Year Trend		
2029	N/A	15600
TRANPLAN Forecasts/Trends		

Trend R-squared:	87.93%
Compounded Annual Historic Growth Rate:	2.92%
Compounded Growth Rate (2022 to Design Year):	2.98%
Printed:	23-Feb-24

Exponential Growth Option

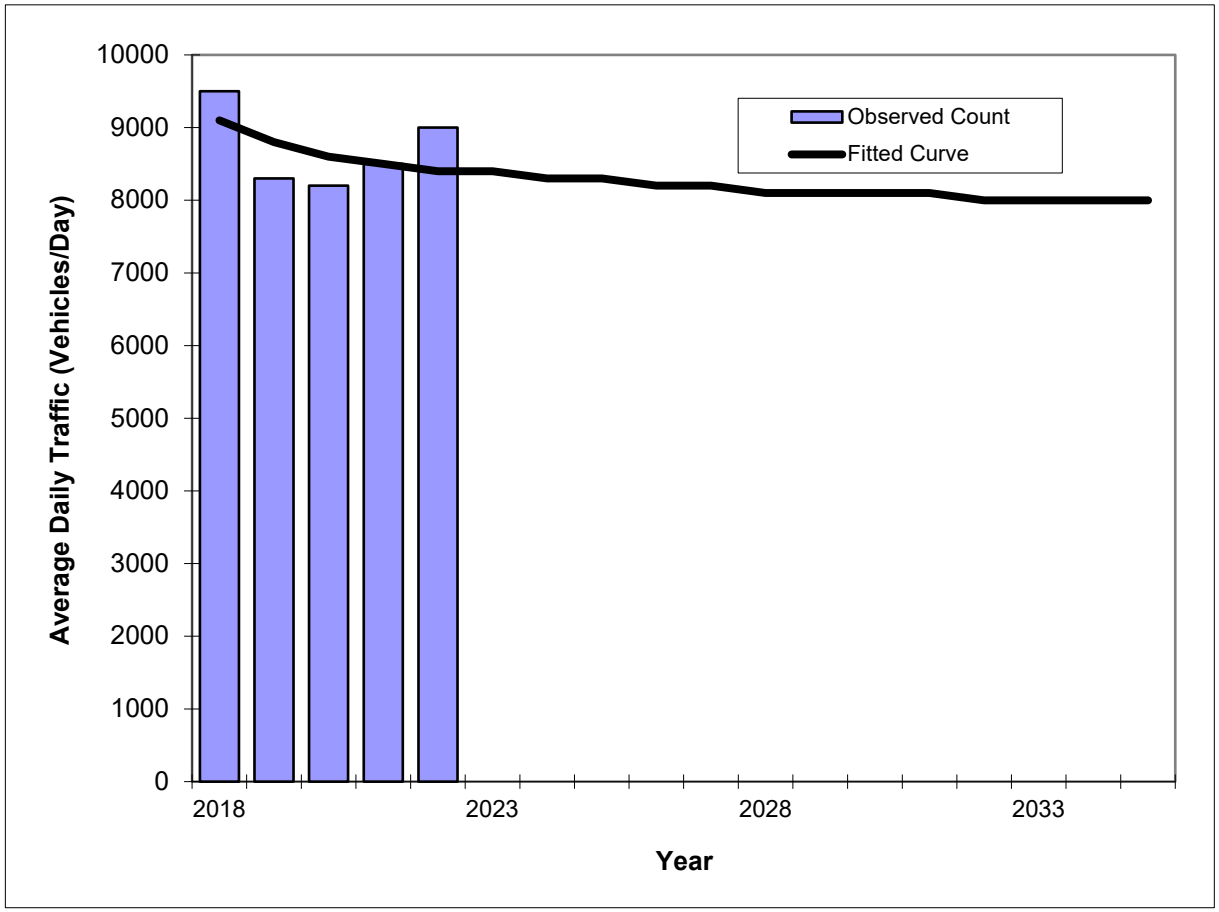
*Axle-Adjusted

Traffic Trends - V03.a

Lake Helen Osteen, Elkcam to Haulover --

FIN#	
Location	

County:	Volusia
Station #:	1071
Highway:	Lake Helen Osteen, Elkcam to Haulover



Year	Traffic (ADT/AADT) Count*	Trend**
2018	9500	9100
2019	8300	8800
2020	8200	8600
2021	8500	8500
2022	9000	8400
2025 Opening Year Trend		
2025	N/A	8300
2027 Mid-Year Trend		
2027	N/A	8200
2029 Design Year Trend		
2029	N/A	8100
TRANPLAN Forecasts/Trends		

Trend R-squared:	20.23%
Compounded Annual Historic Growth Rate:	-1.98%
Compounded Growth Rate (2022 to Design Year):	-0.52%
Printed:	23-Feb-24

Decaying Exponential Growth Option

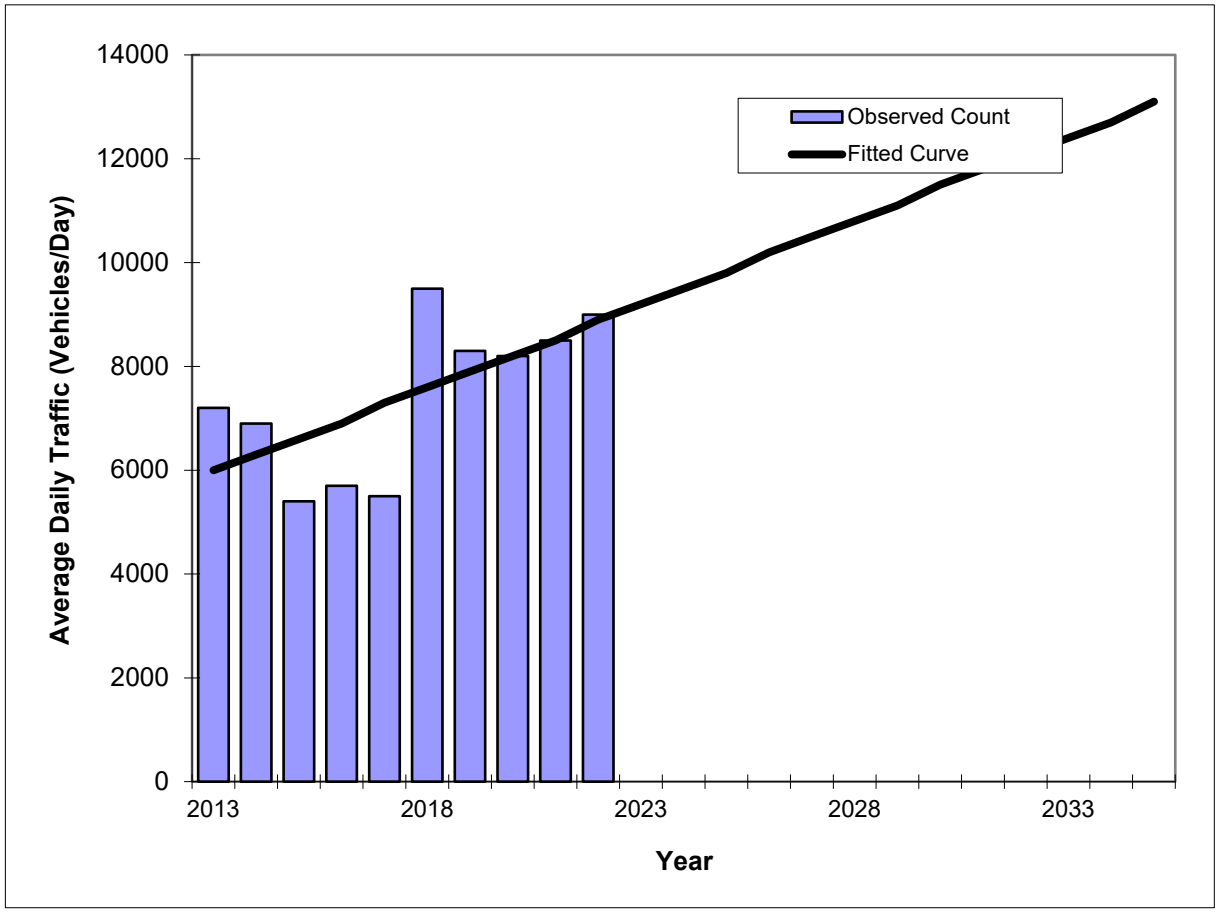
*Axle-Adjusted

Traffic Trends - V03.a

Lake Helen Osteen, Elkcam to Haulover --

FIN#	
Location	

County:	Volusia
Station #:	1071
Highway:	Lake Helen Osteen, Elkcam to Haulover



Year	Traffic (ADT/AADT) Count*	Trend**
2013	7200	6000
2014	6900	6300
2015	5400	6600
2016	5700	6900
2017	5500	7300
2018	9500	7600
2019	8300	7900
2020	8200	8200
2021	8500	8500
2022	9000	8900
2025 Opening Year Trend		
2025	N/A	9800
2027 Mid-Year Trend		
2027	N/A	10500
2029 Design Year Trend		
2029	N/A	11100
TRANPLAN Forecasts/Trends		

*Axle-Adjusted

** Annual Trend Increase:	322
Trend R-squared:	42.01%
Trend Annual Historic Growth Rate:	5.37%
Trend Growth Rate (2022 to Design Year):	3.53%
Printed:	23-Feb-24

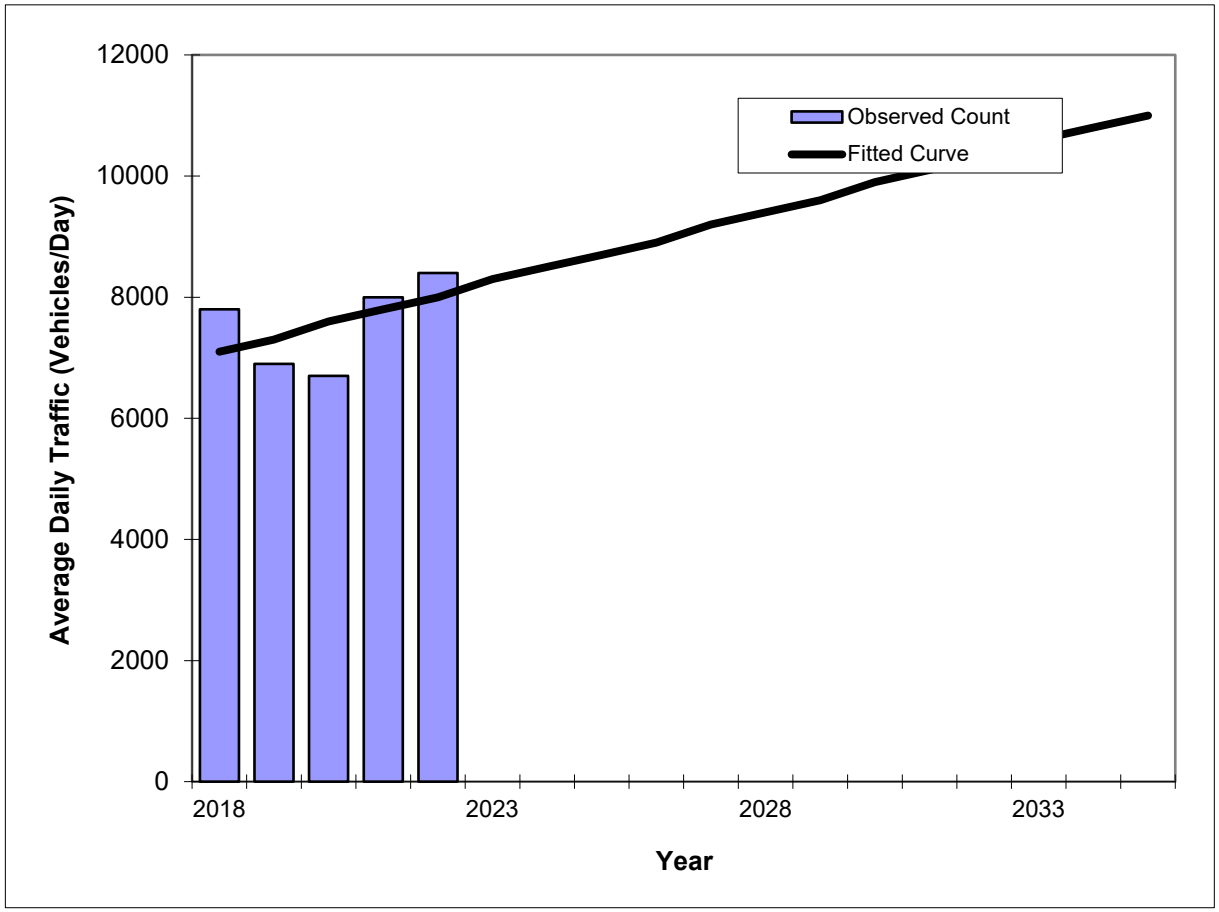
Straight Line Growth Option

Traffic Trends - V03.a

Lake Helen Osteen, Howland to Elkcam --

FIN#	
Location	

County:	Volusia
Station #:	1070
Highway:	Lake Helen Osteen, Howland to Elkcam



** Annual Trend Increase:	230
Trend R-squared:	24.81%
Trend Annual Historic Growth Rate:	3.17%
Trend Growth Rate (2022 to Design Year):	2.86%
Printed:	23-Feb-24

Straight Line Growth Option

Year	Traffic (ADT/AADT) Count*	Trend**
2018	7800	7100
2019	6900	7300
2020	6700	7600
2021	8000	7800
2022	8400	8000
2025 Opening Year Trend		
2025	N/A	8700
2027 Mid-Year Trend		
2027	N/A	9200
2029 Design Year Trend		
2029	N/A	9600
TRANPLAN Forecasts/Trends		

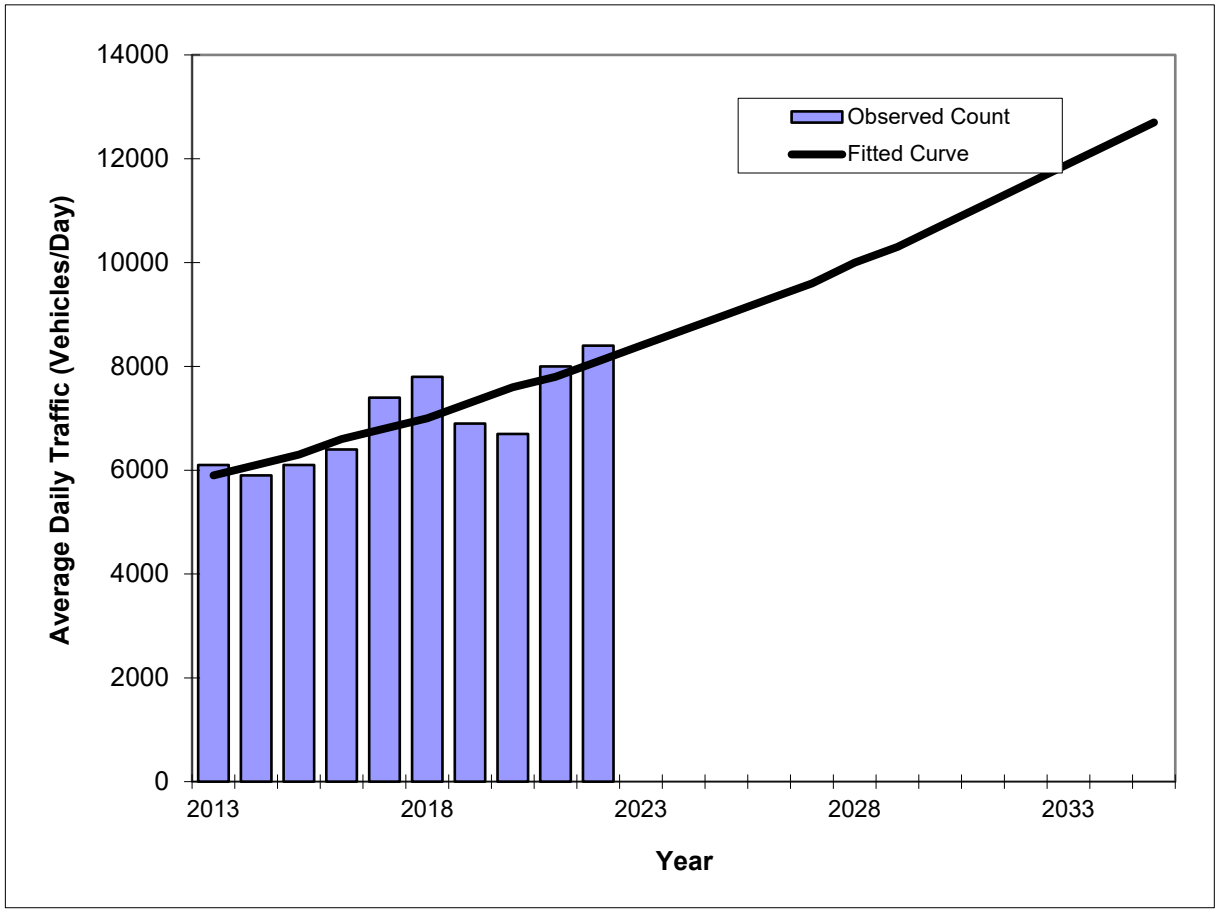
*Axle-Adjusted

Traffic Trends - V03.a

Lake Helen Osteen, Howland to Elkcam --

FIN#	
Location	

County:	Volusia
Station #:	1070
Highway:	Lake Helen Osteen, Howland to Elkcam



Year	Traffic (ADT/AADT) Count*	Trend**
2013	6100	5900
2014	5900	6100
2015	6100	6300
2016	6400	6600
2017	7400	6800
2018	7800	7000
2019	6900	7300
2020	6700	7600
2021	8000	7800
2022	8400	8100
2025 Opening Year Trend		
2025	N/A	9000
2027 Mid-Year Trend		
2027	N/A	9600
2029 Design Year Trend		
2029	N/A	10300
TRANPLAN Forecasts/Trends		

Trend R-squared:	70.85%
Compounded Annual Historic Growth Rate:	3.58%
Compounded Growth Rate (2022 to Design Year):	3.49%
Printed:	23-Feb-24

Exponential Growth Option

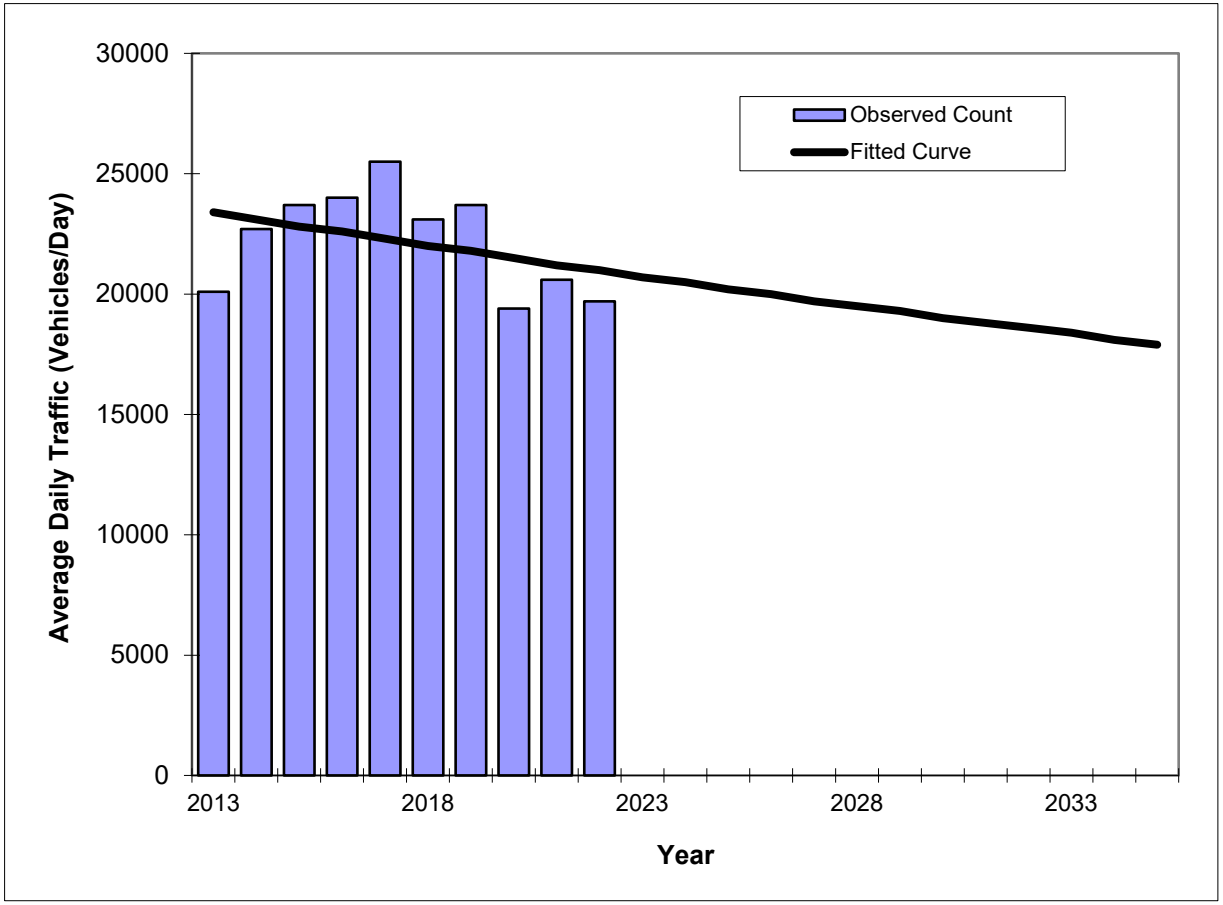
*Axle-Adjusted

Traffic Trends - V03.a

Howland Blvd, Catalina to Providence --

FIN#	
Location	

County:	Volusia
Station #:	905
Highway:	Howland Blvd, Catalina to Providence



Year	Traffic (ADT/AADT) Count*	Trend**
2013	20100	23400
2014	22700	23100
2015	23700	22800
2016	24000	22600
2017	25500	22300
2018	23100	22000
2019	23700	21800
2020	19400	21500
2021	20600	21200
2022	19700	21000
2025 Opening Year Trend		
2025	N/A	20200
2027 Mid-Year Trend		
2027	N/A	19700
2029 Design Year Trend		
2029	N/A	19300
TRANPLAN Forecasts/Trends		

Trend R-squared:	14.44%
Compounded Annual Historic Growth Rate:	-1.20%
Compounded Growth Rate (2022 to Design Year):	-1.20%
Printed:	23-Feb-24

Exponential Growth Option

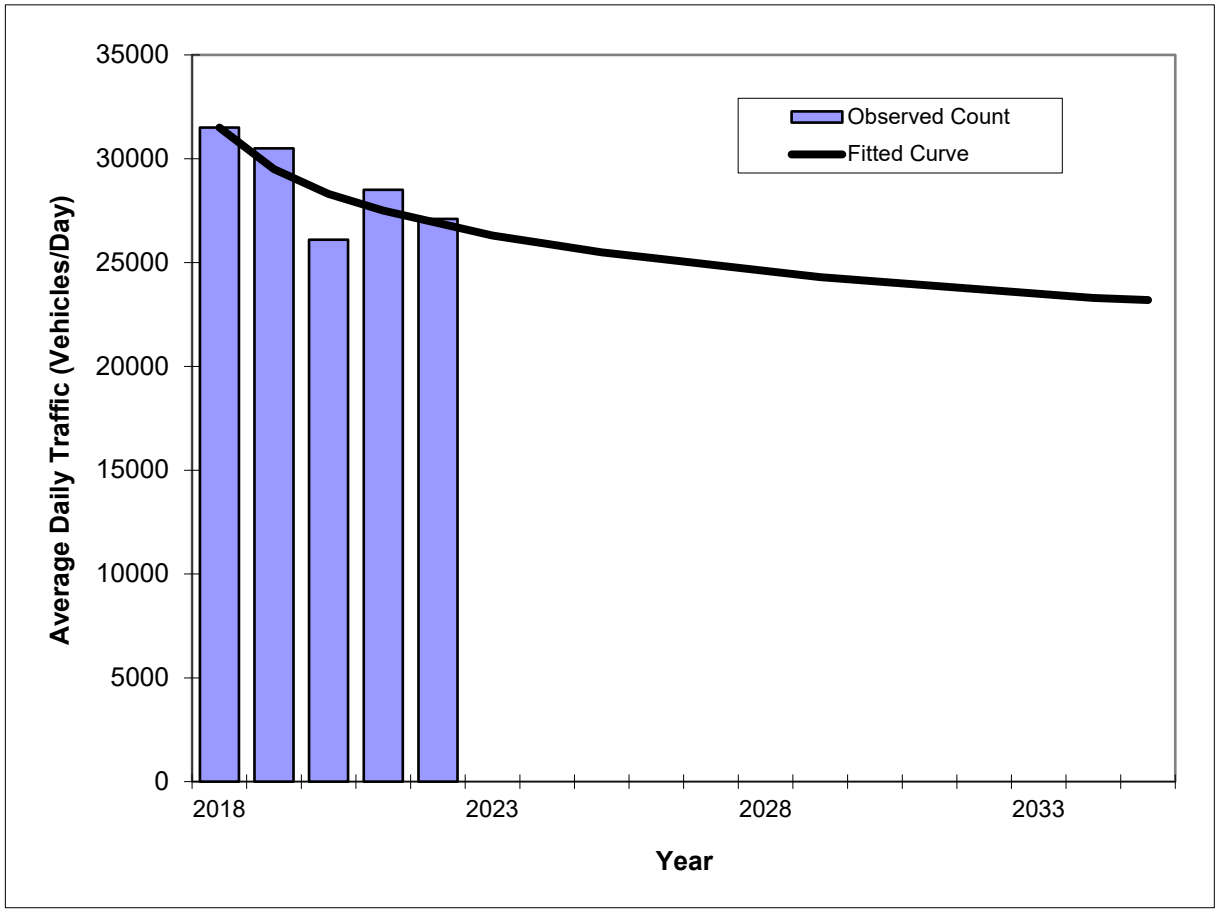
*Axle-Adjusted

Traffic Trends - V03.a

Howland Blvd, Wolf Pack Run to Catalina --

FIN#	
Location	

County:	Volusia
Station #:	903
Highway:	Howland Blvd, Wolf Pack Run to Catalina



Year	Traffic (ADT/AADT) Count*	Trend**
2018	31500	31500
2019	30500	29500
2020	26100	28300
2021	28500	27500
2022	27100	26900
2025 Opening Year Trend		
2025	N/A	25500
2027 Mid-Year Trend		
2027	N/A	24900
2029 Design Year Trend		
2029	N/A	24300
TRANPLAN Forecasts/Trends		

Trend R-squared:	65.58%
Compounded Annual Historic Growth Rate:	-3.87%
Compounded Growth Rate (2022 to Design Year):	-1.44%
Printed:	23-Feb-24

Decaying Exponential Growth Option

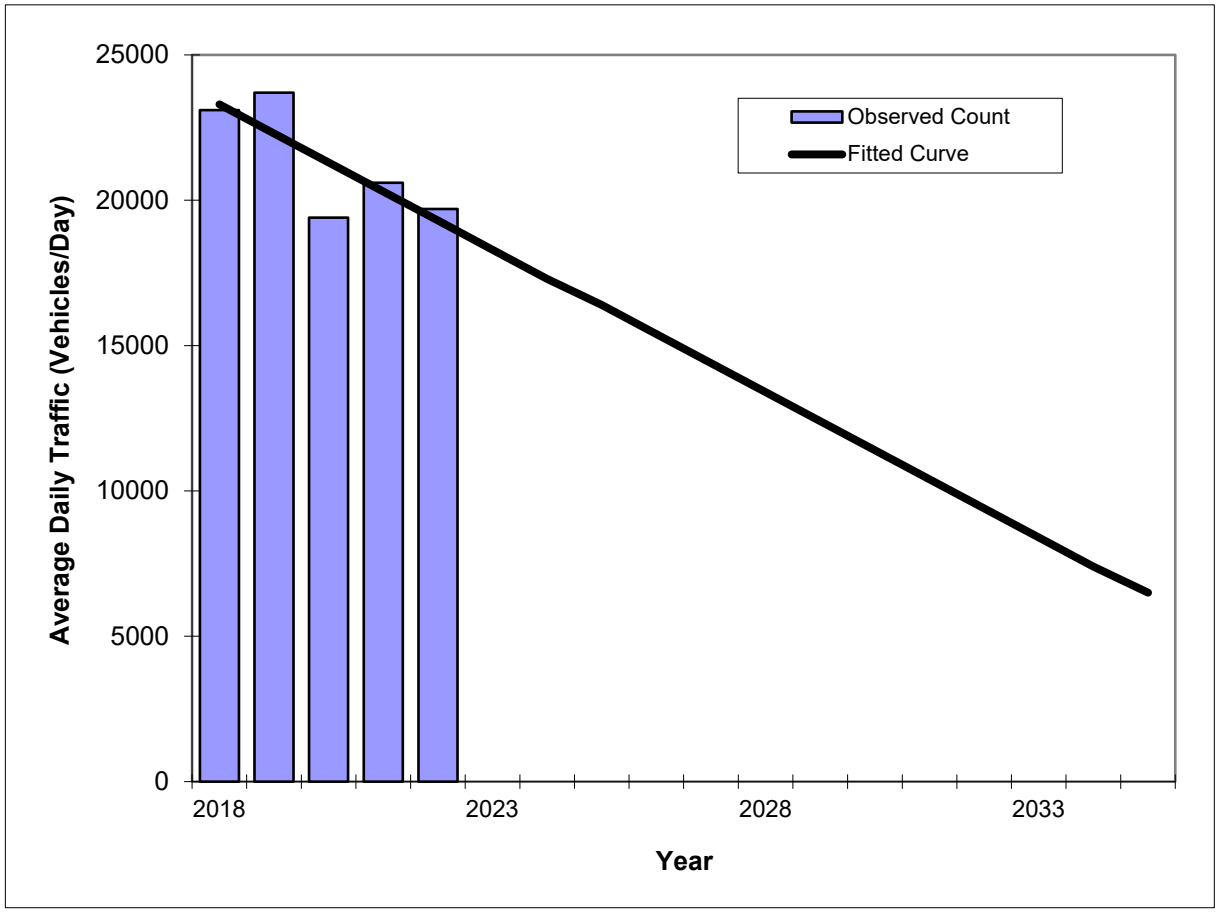
*Axle-Adjusted

Traffic Trends - V03.a

Howland Blvd, Catalina to Providence --

FIN#	
Location	

County:	Volusia
Station #:	905
Highway:	Howland Blvd, Catalina to Providence



Year	Traffic (ADT/AADT) Count*	Trend**
2018	23100	23300
2019	23700	22300
2020	19400	21300
2021	20600	20300
2022	19700	19300
2025 Opening Year Trend		
2025	N/A	16400
2027 Mid-Year Trend		
2027	N/A	14400
2029 Design Year Trend		
2029	N/A	12400
TRANPLAN Forecasts/Trends		

** Annual Trend Increase:	-990
Trend R-squared:	62.59%
Trend Annual Historic Growth Rate:	-4.29%
Trend Growth Rate (2022 to Design Year):	-5.11%
Printed:	23-Feb-24

Straight Line Growth Option

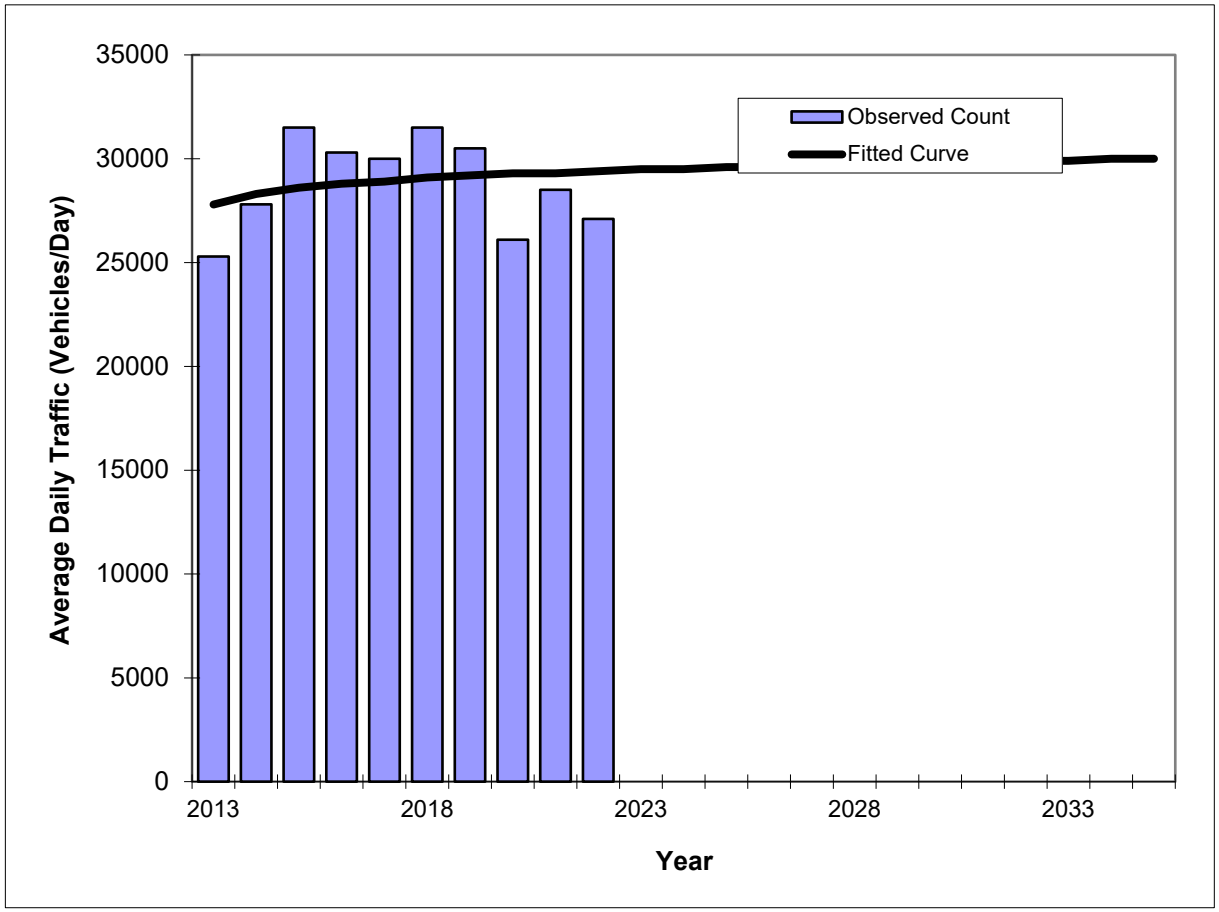
*Axle-Adjusted

Traffic Trends - V03.a

Howland Blvd, Wolf Pack Run to Catalina --

FIN#	
Location	

County:	Volusia
Station #:	903
Highway:	Howland Blvd, Wolf Pack Run to Catalina



Year	Traffic (ADT/AADT) Count*	Trend**
2013	25300	27800
2014	27800	28300
2015	31500	28600
2016	30300	28800
2017	30000	28900
2018	31500	29100
2019	30500	29200
2020	26100	29300
2021	28500	29300
2022	27100	29400
2025 Opening Year Trend		
2025	N/A	29600
2027 Mid-Year Trend		
2027	N/A	29700
2029 Design Year Trend		
2029	N/A	29800
TRANPLAN Forecasts/Trends		

*Axle-Adjusted

Trend R-squared:	5.15%
Compounded Annual Historic Growth Rate:	0.62%
Compounded Growth Rate (2022 to Design Year):	0.19%
Printed:	23-Feb-24

Decaying Exponential Growth Option

Background Growth Rate Determination Summary Table

Roadway Segment	Future Background Volumes									
	5 Year			10 Year			Applied Growth			
	Best Fit Regression	R^2	Historical Annual Growth Rate	Best Fit Regression	R^2	Historical Annual Growth Rate	Applied Growth Procedure	Applicable R^2	Applicable Annual Growth Rate	Applied Annual Growth Rate
Lake Helen Osteen Road										
Howland Blvd to Elkcam Blvd	Straight Line	24.8%	2.9%	Exponential	70.9%	3.5%	Exponential	70.9%	3.5%	3.5%
Elkcam Blvd to Project	Decay Exp	20.2%	-0.5%	Straight Line	42.0%	3.5%	Adjacent	87.9%	3.0%	1.0%
Project to Haulover Blvd	Decay Exp	20.2%	-0.5%	Straight Line	42.0%	3.5%	Adjacent	87.9%	3.0%	1.0%
Haulover Blvd to Catalina Blvd	Straight Line	62.2%	3.2%	Exponential	87.9%	3.0%	Exponential	87.9%	3.0%	1.0%
Catalina Blvd to Captain Dr	Straight Line	13.9%	1.5%	Exponential	71.0%	2.5%	Exponential	71.0%	2.5%	1.0%
Catalina Boulevard										
Eustace Ave to Howland Blvd	N/A	N/A	N/A	N/A	N/A	N/A	Adjacent	89.9%	-1.9%	1.0%
Howland Blvd to Lake Helen Osteen Rd	N/A	N/A	N/A	N/A	N/A	N/A	Adjacent	87.9%	3.0%	1.0%
Elkcam Boulevard										
Howland Blvd to Lake Helen Osteen Rd	N/A	N/A	N/A	N/A	N/A	N/A	Adjacent	70.9%	3.5%	3.5%
Lake Helen-Osteen Rd to Courtland Blvd	N/A	N/A	N/A	N/A	N/A	N/A	Adjacent	70.9%	3.5%	3.5%
Howland Boulevard										
Providence Blvd to Catalina Blvd	Linear	62.6%	-5.1%	Exponential	14.4%	-1.2%	Adjacent	89.9%	-1.9%	1.0%
Catalina Blvd to Wolf Pack Run	Decay Exp	65.6%	-1.4%	Decay Exp	5.2%	0.2%	Adjacent	89.9%	-1.9%	1.0%
Wolf Pack Run to I-4	Decay Exp	89.9%	-1.9%	Decay Exp	8.6%	0.3%	Decay Exp	89.9%	-1.9%	1.0%
Providence Boulevard										
Fort Smith Blvd to Elkcam Blvd	Decay Exp	17.4%	-0.2%	Exponential	4.7%	-0.3%	Decay Exp	17.4%	-0.2%	1.0%

Volusia County's Segment Growth Rates and Vested Trips Instructions Policy

Historical Growth Rates

Regression Analysis
* Linear
* Exponential

Data-5 Years
R^2 >= 0.70
Use Best Fitted Regression Analysis

Yes → **Check Trend Growth Rate:**

No ↓

Data-10 Years
R^2 >= 0.70
Use Best Fitted Regression Analysis

Yes → **Negative Growth** (Use Minimum 1%)

Yes → **Low to Medium Growth** (<= 3%) (Use Minimum 1%)

No ↓

High Growth (> 3%) Use Trend Growth Rate

Check R^2 for adjoining Upstream/Downstream Segments

R^2 >= 0.70
Use Best Fitted Regression Analysis

Yes →

Applicant can make a request to average growth rate if significant difference between upstream/downstream segments. Need to submit supporting documentation & justification.

No ↓

If unable to obtain R^2 >= 0.70, Visually check best regression analysis fitted curve

IF If Negative Growth → Yes → Use 1% Growth Rate

IF For Positive Low Growth (ie., R^2 < 0.70, Trend Growth <= 2%) → Yes → Use 2% Growth Rate

IF For High Growth Area (ie., R^2 < 0.70, Trend Growth > 2%) → Yes → Refer to Vested Trips: Medium or High Growth

AND

IF there are - Vested Trips

Negative Growth (Use Minimum 1%):

\+ Vested Trips

Low to Medium Growth (<= 3%)(Use Minimum 1%):

\+ Vested Trips

High Growth (> 3%):

Use the Highest # of the two (growth rate or vested trips). Need to submit supporting documentation & justification

HIGH GROWTH & HIGH VESTED TRIPS

If there are Vested Trips from multiple approved projects on segment.
And, Vested Trips comprise of multiple uses that would normally have significant interaction (residential, retail, office, restaurant, etc…).

And, Vested Trips make up more than 30% of the total future background traffic.

Then, Vested Trips can be reduced by 30% upon request by the Applicant

Signed: _____ Date: _____

Jon E. Cheney, P.E.

Appendix F

Turning Movement Worksheets

Howland Boulevard at Catalina Boulevard
AM Peak Hour

Existing TMCs

	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Existing Count	0	116	513	31	1	28	977	75	0	106	106	34	0	124	97	487
Date of Count	1/18/2024				SF				1.02							
Adjusted Count	0	118	523	32	1	29	997	77	0	108	108	35	0	126	99	497

	West Leg	East Leg	South Leg	North Leg
Existing Approach & Departure Volumes	EB: 673	EB: 685	NB: 251	NB: 303
	WB: 1,602	WB: 1,104	SB: 160	SB: 722
Directional Factors Based on Existing Counts	EB: 0.30	EB: 0.38	NB: 0.61	NB: 0.30
	WB: 0.70	WB: 0.62	SB: 0.39	SB: 0.70

Future Background **Year** 2029

Annual Growth Rate	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
Simple Volume Growth	0	6	26	2	0	1	50	4	0	5	5	2	0	6	5	25
Applied Bckgrnd Growth	0	6	26	2	0	1	50	4	0	5	5	2	0	6	5	25
Total Bckgrnd Pk-Hr Vols	0	124	549	34	1	30	1,047	81	0	113	113	37	0	132	104	522

Project Trips

	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
New Ext Inbound	0.0%	27.4%	0.0%	0.0%	0.0%	0.0%	0.0%	1.5%	0.0%	0.0%	2.9%	0.0%	0.0%	0.0%	0.0%	0.0%
Volume	0	16	0	0	0	0	0	1	0	0	2	0	0	0	0	0
New Ext Outbound	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.5%	2.9%	27.4%
Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	18
Pass-By Inbound	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-By Outbound	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Project Trips	0	16	0	0	0	0	0	1	0	0	2	0	0	1	2	18

	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Total Pk-Hr Volumes	0	140	549	34	1	30	1,047	82	0	113	115	37	0	133	106	540

Howland Boulevard at Catalina Boulevard
PM Peak Hour

Existing TMCs

	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Existing Count	0	400	1,089	60	2	43	611	66	0	45	85	19	0	124	85	238
Date of Count	1/18/2024				SF				1.02							
Adjusted Count	0	408	1,111	61	2	44	623	67	0	46	87	19	0	126	87	243

	West Leg	East Leg	South Leg	North Leg
Existing Approach & Departure Volumes	EB: 1,580	EB: 1,258	NB: 152	NB: 562
	WB: 912	WB: 736	SB: 192	SB: 456
Directional Factors Based on Existing Counts	EB: 0.63	EB: 0.63	NB: 0.44	NB: 0.55
	WB: 0.37	WB: 0.37	SB: 0.56	SB: 0.45

Future Background **Year** 2029

Annual Growth Rate	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
Simple Volume Growth	0	20	56	3	0	2	31	3	0	2	4	1	0	6	4	12
Applied Bckgrnd Growth	0	20	56	3	0	2	31	3	0	2	4	1	0	6	4	12
Total Bckgrnd Pk-Hr Vols	0	428	1,167	64	2	46	654	70	0	48	91	20	0	132	91	255

Project Trips

	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
New Ext Inbound	0.0%	27.4%	0.0%	0.0%	0.0%	0.0%	0.0%	1.5%	0.0%	0.0%	2.9%	0.0%	0.0%	0.0%	0.0%	0.0%
Volume	0	17	0	0	0	0	0	1	0	0	2	0	0	0	0	0
New Ext Outbound	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.5%	2.9%	27.4%
Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	19
Pass-By Inbound	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-By Outbound	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Project Trips	0	17	0	0	0	0	0	1	0	0	2	0	0	1	2	19

	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Total Pk-Hr Volumes	0	445	1,167	64	2	46	654	71	0	48	93	20	0	133	93	274

Lake Helen Osteen Road at Catalina Boulevard
AM Peak Hour

Existing TMCs

	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Existing Count	0	54	0	107	0	0	0	0	0	418	384	0	0	0	199	179
Date of Count	1/18/2024				SF				1.02							
Adjusted Count	0	55	0	109	0	0	0	0	0	426	392	0	0	0	203	183

	West Leg	East Leg	South Leg	North Leg
Existing Approach & Departure Volumes	EB: 164	EB: 0	NB: 818	NB: 447
	WB: 609	WB: 0	SB: 312	SB: 386
Directional Factors Based on Existing Counts	EB: 0.21	EB: #DIV/0!	NB: 0.72	NB: 0.54
	WB: 0.79	WB: #DIV/0!	SB: 0.28	SB: 0.46

Future Background **Year** 2029

Annual Growth Rate	1.0%	1.0%	1.0%	1.0%	0.0%	0.0%	0.0%	0.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
Simple Volume Growth	0	3	0	5	0	0	0	0	0	21	20	0	0	0	10	9
Applied Bckgrnd Growth	0	3	0	5	0	0	0	0	0	21	20	0	0	0	10	9
Total Bckgrnd Pk-Hr Vols	0	58	0	114	0	0	0	0	0	447	412	0	0	0	213	192

Project Trips

	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
New Ext Inbound	0.0%	0.0%	0.0%	32.7%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	22.8%	0.0%
Volume	0	0	0	20	0	0	0	0	0	0	0	0	0	0	14	0
New Ext Outbound	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	32.7%	22.8%	0.0%	0.0%	0.0%	0.0%	0.0%
Volume	0	0	0	0	0	0	0	0	0	21	15	0	0	0	0	0
Pass-By Inbound	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-By Outbound	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Project Trips	0	0	0	20	0	0	0	0	0	21	15	0	0	0	14	0

	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Total Pk-Hr Volumes	0	58	0	134	0	0	0	0	0	468	427	0	0	0	227	192

Lake Helen Osteen Road at Catalina Boulevard
PM Peak Hour

Existing TMCs

	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Existing Count	0	169	0	336	0	0	0	0	0	195	166	0	0	0	355	93
Date of Count	1/18/2024				SF				1.02							
Adjusted Count	0	172	0	343	0	0	0	0	0	199	169	0	0	0	362	95

	West Leg	East Leg	South Leg	North Leg
Existing Approach & Departure Volumes	EB: 515	EB: 0	NB: 368	NB: 341
	WB: 294	WB: 0	SB: 705	SB: 457
Directional Factors Based on Existing Counts	EB: 0.64	EB: #DIV/0!	NB: 0.34	NB: 0.43
	WB: 0.36	WB: #DIV/0!	SB: 0.66	SB: 0.57

Future Background **Year** 2029

Annual Growth Rate	1.0%	1.0%	1.0%	1.0%	0.0%	0.0%	0.0%	0.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
Simple Volume Growth	0	9	0	17	0	0	0	0	0	10	8	0	0	0	18	5
Applied Bckgrnd Growth	0	9	0	17	0	0	0	0	0	10	8	0	0	0	18	5
Total Bckgrnd Pk-Hr Vols	0	181	0	360	0	0	0	0	0	209	177	0	0	0	380	100

Project Trips

	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
New Ext Inbound	0.0%	0.0%	0.0%	32.7%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	22.8%	0.0%
Volume	0	0	0	20	0	0	0	0	0	0	0	0	0	0	14	0
New Ext Outbound	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	32.7%	22.8%	0.0%	0.0%	0.0%	0.0%	0.0%
Volume	0	0	0	0	0	0	0	0	0	22	16	0	0	0	0	0
Pass-By Inbound	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-By Outbound	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Project Trips	0	0	0	20	0	0	0	0	0	22	16	0	0	0	14	0

	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Total Pk-Hr Volumes	0	181	0	380	0	0	0	0	0	231	193	0	0	0	394	100

Lake Helen Osteen Road at Driveway #1
AM Peak Hour

Existing TMCs

	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Existing Count	0	0	0	0	0	3	0	7	0	0	464	0	0	0	230	0
Date of Count	1/18/2024				SF				1.02							
Adjusted Count	0	0	0	0	0	3	0	7	0	0	473	0	0	0	235	0

	West Leg	East Leg	South Leg	North Leg
Existing Approach & Departure Volumes	EB: 0	EB: 0	NB: 473	NB: 480
	WB: 0	WB: 10	SB: 238	SB: 235
Directional Factors Based on Existing Counts	EB: #DIV/0!	EB: 0.00	NB: 0.67	NB: 0.67
	WB: #DIV/0!	WB: 1.00	SB: 0.33	SB: 0.33

Future Background Year 2029

Annual Growth Rate	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.0%	0.0%	0.0%	0.0%	1.0%	0.0%
Simple Volume Growth	0	0	0	0	0	0	0	0	0	0	24	0	0	0	12	0
Applied Bckgrnd Growth	0	0	0	0	0	0	0	0	0	0	24	0	0	0	12	0
Total Bckgrnd Pk-Hr Vols	0	0	0	0	0	3	0	7	0	0	497	0	0	0	247	0

Project Trips

	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Westside Development																
New Ext Inbound	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	61.2%	0.0%
Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9	0
New Ext Outbound	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	61.2%	0.0%	0.0%	0.0%	0.0%	0.0%
Volume	0	0	0	0	0	0	0	0	0	0	28	0	0	0	0	0
Eastside Development																
New Ext Inbound	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	61.2%	0.0%
Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	51	0
New Ext Outbound	0.0%	0.0%	0.0%	0.0%	0.0%	11.0%	0.0%	25.0%	0.0%	0.0%	36.2%	0.0%	0.0%	0.0%	0.0%	0.0%
Volume	0	0	0	0	0	6	0	13	0	0	18	0	0	0	0	0
Pass-By Inbound	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-By Outbound	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Project Trips in Counts	0	0	0	0	0	-3	0	-7	0	0	0	0	0	0	0	0
Total New External Trips at Buildout	0	0	0	0	0	6	0	13	0	0	46	0	0	0	60	0
Total Pass-By Trips at Buildout	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Net Change in Project Trips	0	0	0	0	0	3	0	6	0	0	46	0	0	0	60	0

	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Total Pk-Hr Volumes	0	0	0	0	0	6	0	13	0	0	543	0	0	0	307	0

Lake Helen Osteen Road at Driveway #1
PM Peak Hour

Existing TMCs

	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Existing Count	0	0	0	0	0	5	0	6	0	0	258	0	0	0	436	0
Date of Count	1/18/2024				SF				1.02							
Adjusted Count	0	0	0	0	0	5	0	6	0	0	263	0	0	0	445	0

	West Leg	East Leg	South Leg	North Leg
Existing Approach & Departure Volumes	EB: 0	EB: 0	NB: 263	NB: 269
	WB: 0	WB: 11	SB: 450	SB: 445
Directional Factors Based on Existing Counts	EB: #DIV/0!	EB: 0.00	NB: 0.37	NB: 0.38
	WB: #DIV/0!	WB: 1.00	SB: 0.63	SB: 0.62

Future Background **Year** 2029

Annual Growth Rate	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.0%	0.0%	0.0%	0.0%	1.0%	0.0%
Simple Volume Growth	0	0	0	0	0	0	0	0	0	0	13	0	0	0	22	0
Applied Bckgrnd Growth	0	0	0	0	0	0	0	0	0	0	13	0	0	0	22	0
Total Bckgrnd Pk-Hr Vols	0	0	0	0	0	5	0	6	0	0	276	0	0	0	467	0

Project Trips

	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Westside Development																
New Ext Inbound	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	61.2%	0.0%
Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	28	0
New Ext Outbound	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	61.2%	0.0%	0.0%	0.0%	0.0%	0.0%
Volume	0	0	0	0	0	0	0	0	0	0	17	0	0	0	0	0
Eastside Development																
New Ext Inbound	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	61.2%	0.0%
Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	23	0
New Ext Outbound	0.0%	0.0%	0.0%	0.0%	0.0%	6.0%	0.0%	15.0%	0.0%	0.0%	46.2%	0.0%	0.0%	0.0%	0.0%	0.0%
Volume	0	0	0	0	0	4	0	9	0	0	29	0	0	0	0	0
Pass-By Inbound	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-By Outbound	0.0%	0.0%	0.0%	0.0%	0.0%	20.0%	0.0%	20.0%	0.0%	0.0%	-20.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Volume	0	0	0	0	0	4	0	4	0	0	-4	0	0	0	0	0
Existing Project Trips in Counts	0	0	0	0	0	-5	0	-6	0	0	0	0	0	0	0	0
Total New External Trips at Buildout	0	0	0	0	0	4	0	9	0	0	46	0	0	0	51	0
Total Pass-By Trips at Buildout	0	0	0	0	0	4	0	4	0	0	-4	0	0	0	0	0
Net Change in Project Trips	0	0	0	0	0	3	0	7	0	0	42	0	0	0	51	0

	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Total Pk-Hr Volumes	0	0	0	0	0	8	0	13	0	0	318	0	0	0	518	0

Lake Helen Osteen Road at Driveway #2
AM Peak Hour

Existing TMCs

	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Existing Count	0	0	0	0	0	0	0	0	0	0	465	5	0	7	223	0
Date of Count	1/18/2024				SF				1.02							
Adjusted Count	0	0	0	0	0	0	0	0	0	0	474	5	0	7	227	0

	West Leg	East Leg	South Leg	North Leg
Existing Approach & Departure Volumes	EB: 0	EB: 12	NB: 479	NB: 474
	WB: 0	WB: 0	SB: 227	SB: 234
Directional Factors Based on Existing Counts	EB: #DIV/0!	EB: 1.00	NB: 0.68	NB: 0.67
	WB: #DIV/0!	WB: 0.00	SB: 0.32	SB: 0.33

Future Background Year 2029

Annual Growth Rate	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.0%	0.0%	0.0%	0.0%	1.0%	0.0%
Simple Volume Growth	0	0	0	0	0	0	0	0	0	0	24	0	0	0	11	0
Applied Bckgrnd Growth	0	0	0	0	0	0	0	0	0	0	24	0	0	0	11	0
Total Bckgrnd Pk-Hr Vols	0	0	0	0	0	0	0	0	0	0	498	5	0	7	238	0

Project Trips

	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Westside Development																
New Ext Inbound	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	38.8%	0.0%	0.0%	0.0%	0.0%	0.0%	61.2%
Volume	0	0	0	0	0	0	0	0	0	5	0	0	0	0	0	9
New Ext Outbound	0.0%	61.2%	0.0%	38.8%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Volume	0	28	0	18	0	0	0	0	0	0	0	0	0	0	0	0
Eastside Development																
New Ext Inbound	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	38.8%	0.0%	61.2%	0.0%	0.0%
Volume	0	0	0	0	0	0	0	0	0	0	0	32	0	51	0	0
New Ext Outbound	0.0%	0.0%	0.0%	0.0%	0.0%	27.8%	0.0%	36.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	11.0%	0.0%
Volume	0	0	0	0	0	14	0	18	0	0	0	0	0	0	6	0
Pass-By Inbound	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-By Outbound	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Project Trips in Counts	0	0	0	0	0	0	0	0	0	0	0	-5	0	-7	0	0
Total New External Trips at Buildout	0	28	0	18	0	14	0	18	0	5	0	32	0	51	6	9
Total Pass-By Trips at Buildout	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Net Change in Project Trips	0	28	0	18	0	14	0	18	0	5	0	27	0	44	6	9

	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Total Pk-Hr Volumes	0	28	0	18	0	14	0	18	0	5	498	32	0	51	244	9

Lake Helen Osteen Road at Driveway #2
PM Peak Hour

Existing TMCs

	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Existing Count	0	0	0	0	0	0	0	0	0	0	259	2	0	5	436	0
Date of Count	1/18/2024				SF				1.02							
Adjusted Count	0	0	0	0	0	0	0	0	0	0	264	2	0	5	445	0

	West Leg	East Leg	South Leg	North Leg
Existing Approach & Departure Volumes	EB: 0	EB: 7	NB: 266	NB: 264
	WB: 0	WB: 0	SB: 445	SB: 450
Directional Factors Based on Existing Counts	EB: #DIV/0!	EB: 1.00	NB: 0.37	NB: 0.37
	WB: #DIV/0!	WB: 0.00	SB: 0.63	SB: 0.63

Future Background Year 2029

Annual Growth Rate	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.0%	0.0%	0.0%	0.0%	1.0%	0.0%
Simple Volume Growth	0	0	0	0	0	0	0	0	0	0	13	0	0	0	22	0
Applied Bckgrnd Growth	0	0	0	0	0	0	0	0	0	0	13	0	0	0	22	0
Total Bckgrnd Pk-Hr Vols	0	0	0	0	0	0	0	0	0	0	277	2	0	5	467	0

Project Trips

	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Westside Development																
New Ext Inbound	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	38.8%	0.0%	0.0%	0.0%	0.0%	0.0%	61.2%
Volume	0	0	0	0	0	0	0	0	0	17	0	0	0	0	0	28
New Ext Outbound	0.0%	61.2%	0.0%	38.8%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Volume	0	17	0	10	0	0	0	0	0	0	0	0	0	0	0	0
Eastside Development																
New Ext Inbound	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	38.8%	0.0%	61.2%	0.0%	0.0%
Volume	0	0	0	0	0	0	0	0	0	0	0	14	0	23	0	0
New Ext Outbound	0.0%	0.0%	0.0%	0.0%	0.0%	32.8%	0.0%	46.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	6.0%	0.0%
Volume	0	0	0	0	0	21	0	29	0	0	0	0	0	0	4	0
Pass-By Inbound	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-40.0%	40.0%	0.0%	60.0%	-60.0%	0.0%
Volume	0	0	0	0	0	0	0	0	0	0	-8	8	0	11	-11	0
Pass-By Outbound	0.0%	0.0%	0.0%	0.0%	0.0%	40.0%	0.0%	20.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	20.0%	0.0%
Volume	0	0	0	0	0	8	0	4	0	0	0	0	0	0	4	0
Existing Project Trips in Counts	0	0	0	0	0	0	0	0	0	0	0	-2	0	-5	0	0
Total New External Trips at Buildout	0	17	0	10	0	21	0	29	0	17	0	14	0	23	4	28
Total Pass-By Trips at Buildout	0	0	0	0	0	8	0	4	0	0	-8	8	0	11	-7	0
Net Change in Project Trips	0	17	0	10	0	29	0	33	0	17	-8	20	0	29	-3	28

	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Total Pk-Hr Volumes	0	17	0	10	0	29	0	33	0	17	269	22	0	34	464	28

Lake Helen Osteen Road at Elkcam Boulevard
AM Peak Hour

Existing TMCs

	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Existing Count	0	82	124	14	0	108	253	16	0	7	202	46	0	6	224	96
Date of Count	1/18/2024				SF				1.02							
Adjusted Count	0	84	126	14	0	110	258	16	0	7	206	47	0	6	228	98

	West Leg	East Leg	South Leg	North Leg
Existing Approach & Departure Volumes	EB: 224	EB: 179	NB: 260	NB: 306
	WB: 363	WB: 384	SB: 352	SB: 332
Directional Factors Based on Existing Counts	EB: 0.38	EB: 0.32	NB: 0.42	NB: 0.48
	WB: 0.62	WB: 0.68	SB: 0.58	SB: 0.52

Future Background **Year** 2029

Annual Growth Rate	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	1.0%	1.0%	1.0%	1.0%
Simple Volume Growth	0	15	22	2	0	19	45	3	0	1	36	8	0	0	11	5
Applied Bckgrnd Growth	0	15	22	2	0	19	45	3	0	1	36	8	0	0	11	5
Total Bckgrnd Pk-Hr Vols	0	99	148	16	0	129	303	19	0	8	242	55	0	6	239	103

Project Trips

	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
New Ext Inbound	0.0%	12.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.5%	0.0%	0.0%	20.3%	0.0%	0.0%	0.0%	0.0%	0.0%
Volume	0	7	0	0	0	0	0	1	0	0	12	0	0	0	0	0
New Ext Outbound	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.5%	20.3%	12.0%
Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	1	13	8
Pass-By Inbound	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-By Outbound	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Project Trips	0	7	0	0	0	0	0	1	0	0	12	0	0	1	13	8

	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Total Pk-Hr Volumes	0	106	148	16	0	129	303	20	0	8	254	55	0	7	252	111

Lake Helen Osteen Road at Elkcam Boulevard
PM Peak Hour

Existing TMCs

	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Existing Count	0	154	350	14	0	87	206	14	0	19	227	135	0	32	280	112
Date of Count	1/18/2024				SF				1.02							
Adjusted Count	0	157	357	14	0	89	210	14	0	19	232	138	0	33	286	114

	West Leg	East Leg	South Leg	North Leg
Existing Approach & Departure Volumes	EB: 528	EB: 528	NB: 389	NB: 403
	WB: 343	WB: 313	SB: 389	SB: 433
Directional Factors Based on Existing Counts	EB: 0.61	EB: 0.63	NB: 0.50	NB: 0.48
	WB: 0.39	WB: 0.37	SB: 0.50	SB: 0.52

Future Background **Year** 2029

Annual Growth Rate	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	1.0%	1.0%	1.0%	1.0%
Simple Volume Growth	0	27	62	2	0	16	37	2	0	3	41	24	0	2	14	6
Applied Bckgrnd Growth	0	27	62	2	0	16	37	2	0	3	41	24	0	2	14	6
Total Bckgrnd Pk-Hr Vols	0	184	419	16	0	105	247	16	0	22	273	162	0	35	300	120

Project Trips

	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
New Ext Inbound	0.0%	12.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.5%	0.0%	0.0%	20.3%	0.0%	0.0%	0.0%	0.0%	0.0%
Volume	0	7	0	0	0	0	0	1	0	0	13	0	0	0	0	0
New Ext Outbound	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.5%	20.3%	12.0%
Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	1	14	8
Pass-By Inbound	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-By Outbound	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Project Trips	0	7	0	0	0	0	0	1	0	0	13	0	0	1	14	8

	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Total Pk-Hr Volumes	0	191	419	16	0	105	247	17	0	22	286	162	0	36	314	128

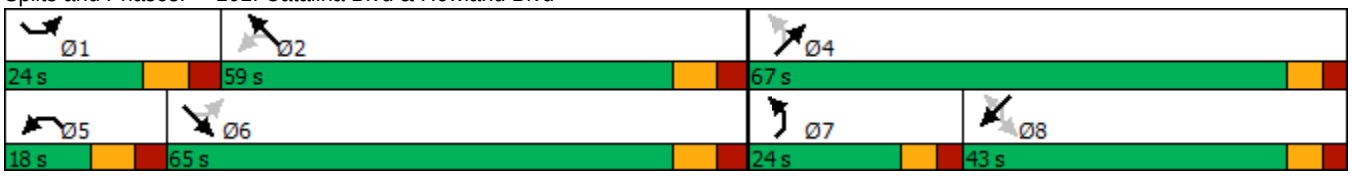
Appendix G

Future Buildout (2029) Synchro Printouts

Lane Group	SEL	SET	NWL	NWT	NEL	NET	SWL	SWT	SWR
Lane Configurations									
Traffic Volume (vph)	140	549	31	1047	113	115	133	106	540
Future Volume (vph)	140	549	31	1047	113	115	133	106	540
Turn Type	pm+pt	NA	pm+pt	NA	pm+pt	NA	Perm	NA	Perm
Protected Phases	1	6	5	2	7	4		8	
Permitted Phases	6		2		4		8		8
Detector Phase	1	6	5	2	7	4	8	8	8
Switch Phase									
Minimum Initial (s)	5.0	11.0	5.0	11.0	5.0	7.0	7.0	7.0	7.0
Minimum Split (s)	13.5	19.5	13.5	19.5	12.0	14.0	14.0	14.0	14.0
Total Split (s)	24.0	65.0	18.0	59.0	24.0	67.0	43.0	43.0	43.0
Total Split (%)	16.0%	43.3%	12.0%	39.3%	16.0%	44.7%	28.7%	28.7%	28.7%
Yellow Time (s)	5.0	5.0	5.0	5.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	3.5	3.5	3.5	3.5	3.0	3.0	3.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	8.5	8.5	8.5	8.5	7.0	7.0	7.0	7.0	7.0
Lead/Lag	Lead	Lag	Lead	Lag	Lead		Lag	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Recall Mode	None	Max	None	Max	None	None	None	None	None
Act Effct Green (s)	70.8	62.3	57.6	50.7	54.8	54.8	34.0	34.0	34.0
Actuated g/C Ratio	0.50	0.44	0.41	0.36	0.39	0.39	0.24	0.24	0.24
v/c Ratio	0.74	0.41	0.09	0.96	0.25	0.23	0.48	0.25	0.96
Control Delay	55.1	30.2	20.7	62.0	30.2	27.8	53.7	46.4	54.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	55.1	30.2	20.7	62.0	30.2	27.8	53.7	46.4	54.3
LOS	E	C	C	E	C	C	D	D	D
Approach Delay		35.0		60.9		28.8		53.1	
Approach LOS		D		E		C		D	

Intersection Summary	
Cycle Length: 150	
Actuated Cycle Length: 142	
Natural Cycle: 100	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.96	
Intersection Signal Delay: 49.5	Intersection LOS: D
Intersection Capacity Utilization 90.0%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 101: Catalina Blvd & Howland Blvd



Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (veh/h)	140	549	34	31	1047	82	113	115	37	133	106	540
Future Volume (veh/h)	140	549	34	31	1047	82	113	115	37	133	106	540
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1841	1826	1856	1870	1856	1856	1885	1885	1856	1870	1870	1870
Adj Flow Rate, veh/h	147	578	36	33	1102	86	119	121	39	140	112	517
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	4	5	3	2	3	3	1	1	3	2	2	2
Cap, veh/h	201	1384	86	337	1248	97	340	518	167	379	497	421
Arrive On Green	0.07	0.42	0.42	0.03	0.38	0.38	0.06	0.38	0.38	0.27	0.27	0.27
Sat Flow, veh/h	1753	3317	206	1781	3313	258	1795	1366	440	1226	1870	1585
Grp Volume(v), veh/h	147	302	312	33	586	602	119	0	160	140	112	517
Grp Sat Flow(s),veh/h/ln	1753	1735	1789	1781	1763	1809	1795	0	1806	1226	1870	1585
Q Serve(g_s), s	6.9	16.6	16.7	1.5	42.0	42.1	6.3	0.0	8.2	12.8	6.3	36.0
Cycle Q Clear(g_c), s	6.9	16.6	16.7	1.5	42.0	42.1	6.3	0.0	8.2	12.8	6.3	36.0
Prop In Lane	1.00		0.12	1.00		0.14	1.00		0.24	1.00		1.00
Lane Grp Cap(c), veh/h	201	724	746	337	664	681	340	0	685	379	497	421
V/C Ratio(X)	0.73	0.42	0.42	0.10	0.88	0.88	0.35	0.00	0.23	0.37	0.23	1.23
Avail Cap(c_a), veh/h	284	724	746	416	664	681	454	0	800	379	497	421
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.6	27.9	27.9	25.1	39.4	39.4	31.7	0.0	28.6	41.2	38.8	49.7
Incr Delay (d2), s/veh	5.7	1.8	1.7	0.1	15.7	15.5	0.6	0.0	0.2	0.6	0.2	121.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.1	7.1	7.3	0.6	20.4	20.9	2.8	0.0	3.6	4.0	3.0	28.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	37.3	29.6	29.6	25.2	55.1	54.9	32.3	0.0	28.8	41.8	39.1	171.4
LnGrp LOS	D	C	C	C	E	D	C	A	C	D	D	F
Approach Vol, veh/h		761			1221			279			769	
Approach Delay, s/veh		31.1			54.2			30.3			128.5	
Approach LOS		C			D			C			F	

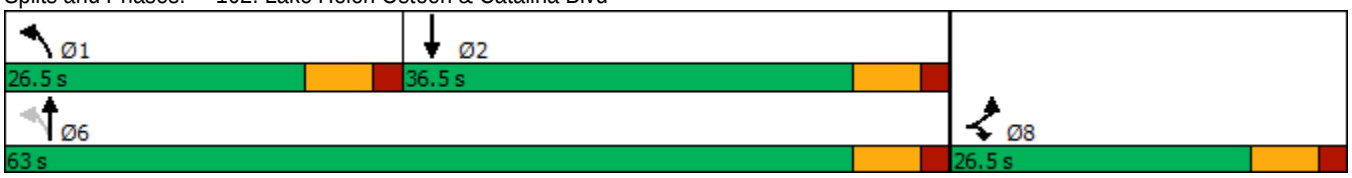
Timer - Assigned Phs	1	2		4	5	6	7	8				
Phs Duration (G+Y+Rc), s	17.5	59.5		58.4	12.1	65.0	15.4	43.0				
Change Period (Y+Rc), s	8.5	8.5		7.0	8.5	8.5	7.0	7.0				
Max Green Setting (Gmax), s	15.5	50.5		60.0	9.5	56.5	17.0	36.0				
Max Q Clear Time (g_c+I1), s	8.9	44.1		10.2	3.5	18.7	8.3	38.0				
Green Ext Time (p_c), s	0.2	3.6		1.0	0.0	3.6	0.2	0.0				

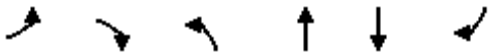
Intersection Summary			
HCM 6th Ctrl Delay		65.1	
HCM 6th LOS		E	

Lane Group	EBL	EBR	NBL	NBT	SBT
Lane Configurations					
Traffic Volume (vph)	58	134	468	427	227
Future Volume (vph)	58	134	468	427	227
Turn Type	Prot	Prot	pm+pt	NA	NA
Protected Phases	8	8	1	6	2
Permitted Phases			6		
Detector Phase	8	8	1	6	2
Switch Phase					
Minimum Initial (s)	5.0	5.0	5.0	15.0	15.0
Minimum Split (s)	11.5	11.5	11.5	21.5	21.5
Total Split (s)	26.5	26.5	26.5	63.0	36.5
Total Split (%)	29.6%	29.6%	29.6%	70.4%	40.8%
Yellow Time (s)	4.5	4.5	4.5	4.5	4.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.5	6.5	6.5	6.5	6.5
Lead/Lag			Lead		Lag
Lead-Lag Optimize?			Yes		Yes
Recall Mode	None	None	None	Min	Min
Act Effct Green (s)	8.0	8.0	46.8	46.8	22.1
Actuated g/C Ratio	0.12	0.12	0.69	0.69	0.32
v/c Ratio	0.31	0.47	0.79	0.37	0.78
Control Delay	34.1	11.5	20.6	5.5	28.8
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	34.1	11.5	20.6	5.5	28.8
LOS	C	B	C	A	C
Approach Delay	18.4			13.4	28.8
Approach LOS	B			B	C

Intersection Summary	
Cycle Length: 89.5	
Actuated Cycle Length: 68.1	
Natural Cycle: 60	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.79	
Intersection Signal Delay: 18.3	Intersection LOS: B
Intersection Capacity Utilization 70.0%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 102: Lake Helen Osteen & Catalina Blvd





Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	58	134	468	427	227	192
Future Volume (veh/h)	58	134	468	427	227	192
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1856	1870	1856	1826	1870
Adj Flow Rate, veh/h	64	147	514	469	249	211
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	3	2	3	5	2
Cap, veh/h	227	201	582	1215	296	251
Arrive On Green	0.13	0.13	0.22	0.65	0.32	0.32
Sat Flow, veh/h	1781	1572	1781	1856	913	774
Grp Volume(v), veh/h	64	147	514	469	0	460
Grp Sat Flow(s),veh/h/ln	1781	1572	1781	1856	0	1687
Q Serve(g_s), s	1.9	5.4	10.2	7.0	0.0	15.2
Cycle Q Clear(g_c), s	1.9	5.4	10.2	7.0	0.0	15.2
Prop In Lane	1.00	1.00	1.00			0.46
Lane Grp Cap(c), veh/h	227	201	582	1215	0	547
V/C Ratio(X)	0.28	0.73	0.88	0.39	0.00	0.84
Avail Cap(c_a), veh/h	596	526	782	1754	0	847
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	23.6	25.1	11.0	4.8	0.0	18.8
Incr Delay (d2), s/veh	0.7	5.1	9.2	0.2	0.0	4.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	2.1	3.9	1.4	0.0	5.6
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	24.3	30.2	20.2	5.0	0.0	23.4
LnGrp LOS	C	C	C	A	A	C
Approach Vol, veh/h	211			983	460	
Approach Delay, s/veh	28.4			12.9	23.4	
Approach LOS	C			B	C	

Timer - Assigned Phs	1	2				6	8
Phs Duration (G+Y+Rc), s	19.8	25.9				45.6	14.1
Change Period (Y+Rc), s	6.5	6.5				6.5	6.5
Max Green Setting (Gmax), s	20.0	30.0				56.5	20.0
Max Q Clear Time (g_c+I1), s	12.2	17.2				9.0	7.4
Green Ext Time (p_c), s	1.1	2.2				2.9	0.5

Intersection Summary		
HCM 6th Ctrl Delay		17.8
HCM 6th LOS		B

Intersection	
Int Delay, s/veh	0.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	6	13	543	0	0	307
Future Vol, veh/h	6	13	543	0	0	307
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	2	2	3	2	2	4
Mvmt Flow	7	15	639	0	0	361

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1000	639	0	-	-	-
Stage 1	639	-	-	-	-	-
Stage 2	361	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	-	-
Pot Cap-1 Maneuver	270	476	-	0	0	-
Stage 1	526	-	-	0	0	-
Stage 2	705	-	-	0	0	-
Platoon blocked, %			-			-
Mov Cap-1 Maneuver	270	476	-	-	-	-
Mov Cap-2 Maneuver	270	-	-	-	-	-
Stage 1	526	-	-	-	-	-
Stage 2	705	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	15	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	WBLn1	SBT
Capacity (veh/h)	-	384	-
HCM Lane V/C Ratio	-	0.058	-
HCM Control Delay (s)	-	15	-
HCM Lane LOS	-	C	-
HCM 95th %tile Q(veh)	-	0.2	-

Intersection	
Int Delay, s/veh	2.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	28	0	18	14	0	18	5	498	32	51	244	9
Future Vol, veh/h	28	0	18	14	0	18	5	498	32	51	244	9
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2	2	3	2	2	4	2
Mvmt Flow	33	0	21	16	0	21	6	586	38	60	287	11

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1041	1049	293	1040	1035	605	298	0	0	624	0	0
Stage 1	413	413	-	617	617	-	-	-	-	-	-	-
Stage 2	628	636	-	423	418	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	208	227	746	208	232	498	1263	-	-	957	-	-
Stage 1	616	594	-	477	481	-	-	-	-	-	-	-
Stage 2	471	472	-	609	591	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	187	209	746	189	213	498	1263	-	-	957	-	-
Mov Cap-2 Maneuver	187	209	-	189	213	-	-	-	-	-	-	-
Stage 1	612	549	-	474	478	-	-	-	-	-	-	-
Stage 2	448	469	-	547	547	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	22	19.3	0.1	1.5
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1263	-	-	265	290	957	-	-
HCM Lane V/C Ratio	0.005	-	-	0.204	0.13	0.063	-	-
HCM Control Delay (s)	7.9	0	-	22	19.3	9	0	-
HCM Lane LOS	A	A	-	C	C	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.7	0.4	0.2	-	-

Lane Group	SEL	SET	NWL	NWT	NEL	NET	SWL	SWT
Lane Configurations								
Traffic Volume (vph)	7	252	8	254	106	148	129	303
Future Volume (vph)	7	252	8	254	106	148	129	303
Turn Type	pm+pt	NA	pm+pt	NA	pm+pt	NA	pm+pt	NA
Protected Phases	5	2	1	6	3	8	7	4
Permitted Phases	2		6		8		4	
Detector Phase	5	2	1	6	3	8	7	4
Switch Phase								
Minimum Initial (s)	5.0	16.0	5.0	16.0	5.0	6.0	5.0	6.0
Minimum Split (s)	14.0	25.0	14.0	25.0	13.5	13.0	13.5	13.0
Total Split (s)	29.0	49.0	29.0	49.0	28.5	32.0	28.5	32.0
Total Split (%)	20.9%	35.4%	20.9%	35.4%	20.6%	23.1%	20.6%	23.1%
Yellow Time (s)	5.5	5.5	5.5	5.5	5.5	4.0	5.5	4.0
All-Red Time (s)	3.5	3.5	3.5	3.5	3.0	3.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	9.0	9.0	9.0	9.0	8.5	7.0	8.5	7.0
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Min	None	Min	None	None	None	None
Act Effct Green (s)	24.7	23.8	24.8	23.8	31.5	24.3	34.5	25.8
Actuated g/C Ratio	0.29	0.28	0.29	0.28	0.37	0.28	0.40	0.30
v/c Ratio	0.02	0.77	0.03	0.65	0.30	0.34	0.26	0.61
Control Delay	19.1	39.2	19.2	33.5	18.4	30.7	17.2	34.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	19.1	39.2	19.2	33.5	18.4	30.7	17.2	34.9
LOS	B	D	B	C	B	C	B	C
Approach Delay		38.8		33.2		25.8		29.8
Approach LOS		D		C		C		C

Intersection Summary	
Cycle Length: 138.5	
Actuated Cycle Length: 85.9	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.77	
Intersection Signal Delay: 32.2	Intersection LOS: C
Intersection Capacity Utilization 63.5%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 105: Elkcam Blvd & Lake Helen Osteen

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (veh/h)	7	252	111	8	254	55	106	148	16	129	303	20
Future Volume (veh/h)	7	252	111	8	254	55	106	148	16	129	303	20
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1841	1841	1870	1856	1841	1870	1870	1604	1856	1870	1811
Adj Flow Rate, veh/h	7	265	117	8	267	58	112	156	17	136	319	21
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	4	4	2	3	4	2	2	20	3	2	6
Cap, veh/h	217	318	141	169	390	85	264	341	37	390	380	25
Arrive On Green	0.01	0.26	0.26	0.01	0.26	0.26	0.07	0.21	0.21	0.08	0.22	0.22
Sat Flow, veh/h	1781	1210	534	1781	1477	321	1781	1657	181	1767	1736	114
Grp Volume(v), veh/h	7	0	382	8	0	325	112	0	173	136	0	340
Grp Sat Flow(s),veh/h/ln	1781	0	1745	1781	0	1798	1781	0	1838	1767	0	1850
Q Serve(g_s), s	0.2	0.0	15.8	0.3	0.0	12.4	3.7	0.0	6.3	4.5	0.0	13.5
Cycle Q Clear(g_c), s	0.2	0.0	15.8	0.3	0.0	12.4	3.7	0.0	6.3	4.5	0.0	13.5
Prop In Lane	1.00		0.31	1.00		0.18	1.00		0.10	1.00		0.06
Lane Grp Cap(c), veh/h	217	0	459	169	0	475	264	0	378	390	0	405
V/C Ratio(X)	0.03	0.00	0.83	0.05	0.00	0.68	0.42	0.00	0.46	0.35	0.00	0.84
Avail Cap(c_a), veh/h	667	0	911	616	0	939	604	0	600	703	0	604
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	21.4	0.0	26.6	22.0	0.0	25.3	22.6	0.0	26.7	21.2	0.0	28.6
Incr Delay (d2), s/veh	0.1	0.0	4.0	0.1	0.0	1.8	1.1	0.0	0.9	0.5	0.0	6.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	6.7	0.1	0.0	5.2	1.5	0.0	2.7	1.8	0.0	6.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	21.4	0.0	30.6	22.1	0.0	27.1	23.6	0.0	27.6	21.8	0.0	35.3
LnGrp LOS	C	A	C	C	A	C	C	A	C	C	A	D
Approach Vol, veh/h		389			333			285			476	
Approach Delay, s/veh		30.5			26.9			26.0			31.4	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.8	29.1	13.9	23.8	9.7	29.2	14.9	22.7
Change Period (Y+Rc), s	9.0	9.0	8.5	7.0	9.0	9.0	8.5	7.0
Max Green Setting (Gmax), s	20.0	40.0	20.0	25.0	20.0	40.0	20.0	25.0
Max Q Clear Time (g_c+I1), s	2.3	17.8	5.7	15.5	2.2	14.4	6.5	8.3
Green Ext Time (p_c), s	0.0	2.3	0.2	1.3	0.0	1.9	0.3	0.8

Intersection Summary	
HCM 6th Ctrl Delay	29.1
HCM 6th LOS	C

Lane Group	SEL	SET	NWL	NWT	NEL	NET	SWL	SWT	SWR
Lane Configurations									
Traffic Volume (vph)	445	1167	48	654	48	93	133	93	274
Future Volume (vph)	445	1167	48	654	48	93	133	93	274
Turn Type	pm+pt	NA	pm+pt	NA	pm+pt	NA	Perm	NA	Perm
Protected Phases	1	6	5	2	7	4		8	
Permitted Phases	6		2		4		8		8
Detector Phase	1	6	5	2	7	4	8	8	8
Switch Phase									
Minimum Initial (s)	5.0	11.0	5.0	11.0	5.0	7.0	7.0	7.0	7.0
Minimum Split (s)	13.5	19.5	13.5	19.5	12.0	14.0	14.0	14.0	14.0
Total Split (s)	30.0	65.0	20.0	55.0	20.0	60.0	45.0	45.0	45.0
Total Split (%)	20.0%	43.3%	13.3%	36.7%	13.3%	40.0%	30.0%	30.0%	30.0%
Yellow Time (s)	5.0	5.0	5.0	5.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	3.5	3.5	3.5	3.5	3.0	3.0	3.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	8.5	8.5	8.5	8.5	7.0	7.0	7.0	7.0	7.0
Lead/Lag	Lead	Lag	Lead	Lag	Lead		Lag	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Recall Mode	None	Max	None	Max	None	None	None	None	None
Act Effct Green (s)	77.4	65.1	54.1	47.0	32.4	32.4	19.6	19.6	19.6
Actuated g/C Ratio	0.62	0.52	0.43	0.37	0.26	0.26	0.16	0.16	0.16
v/c Ratio	0.96	0.71	0.25	0.58	0.17	0.25	0.71	0.34	0.59
Control Delay	53.7	30.0	18.3	35.3	34.2	33.7	70.5	50.9	10.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	53.7	30.0	18.3	35.3	34.2	33.7	70.5	50.9	10.4
LOS	D	C	B	D	C	C	E	D	B
Approach Delay		36.3		34.2		33.8		34.0	
Approach LOS		D		C		C		C	

Intersection Summary	
Cycle Length: 150	
Actuated Cycle Length: 125.5	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.96	
Intersection Signal Delay: 35.3	Intersection LOS: D
Intersection Capacity Utilization 79.0%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 101: Catalina Blvd & Howland Blvd

HCM 6th Signalized Intersection Summary
101: Catalina Blvd & Howland Blvd

03/01/2024

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (veh/h)	445	1167	64	48	654	71	48	93	20	133	93	274
Future Volume (veh/h)	445	1167	64	48	654	71	48	93	20	133	93	274
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1826	1870	1870	1870	1870	1870	1870	1870	1870	1856
Adj Flow Rate, veh/h	468	1228	67	51	688	75	51	98	21	140	98	237
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	5	2	2	2	2	2	2	2	2	3
Cap, veh/h	505	1748	95	217	1201	131	253	396	85	281	329	277
Arrive On Green	0.17	0.51	0.51	0.03	0.37	0.37	0.03	0.27	0.27	0.18	0.18	0.18
Sat Flow, veh/h	1781	3427	187	1781	3232	352	1781	1493	320	1273	1870	1572
Grp Volume(v), veh/h	468	636	659	51	378	385	51	0	119	140	98	237
Grp Sat Flow(s),veh/h/ln	1781	1777	1837	1781	1777	1807	1781	0	1813	1273	1870	1572
Q Serve(g_s), s	19.7	34.2	34.3	2.2	21.3	21.3	2.9	0.0	6.5	12.7	5.7	18.3
Cycle Q Clear(g_c), s	19.7	34.2	34.3	2.2	21.3	21.3	2.9	0.0	6.5	12.7	5.7	18.3
Prop In Lane	1.00		0.10	1.00		0.19	1.00		0.18	1.00		1.00
Lane Grp Cap(c), veh/h	505	906	937	217	660	671	253	0	480	281	329	277
V/C Ratio(X)	0.93	0.70	0.70	0.23	0.57	0.57	0.20	0.00	0.25	0.50	0.30	0.86
Avail Cap(c_a), veh/h	505	906	937	322	660	671	379	0	768	444	568	477
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.1	23.4	23.4	24.1	31.4	31.4	38.9	0.0	36.2	47.8	44.9	50.0
Incr Delay (d2), s/veh	23.3	4.5	4.4	0.5	3.6	3.5	0.4	0.0	0.3	1.4	0.5	7.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.7	14.5	15.0	0.9	9.4	9.6	1.3	0.0	2.9	4.2	2.7	7.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	45.4	27.9	27.8	24.7	35.0	35.0	39.3	0.0	36.5	49.1	45.4	57.6
LnGrp LOS	D	C	C	C	C	C	D	A	D	D	D	E
Approach Vol, veh/h		1763			814			170			475	
Approach Delay, s/veh		32.5			34.3			37.3			52.6	
Approach LOS		C			C			D			D	

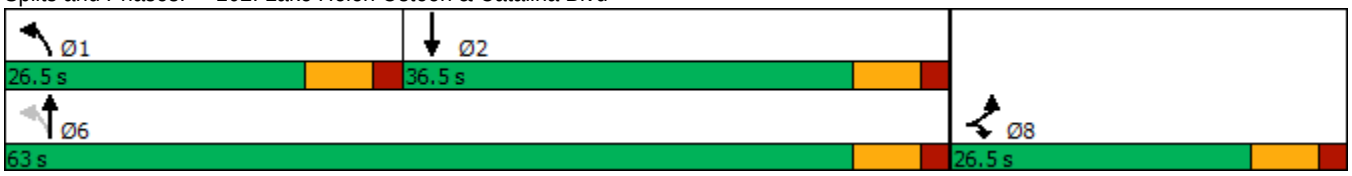
Timer - Assigned Phs	1	2		4	5	6	7	8				
Phs Duration (G+Y+Rc), s	30.0	55.0		40.2	12.7	72.3	11.2	29.0				
Change Period (Y+Rc), s	8.5	8.5		7.0	8.5	8.5	7.0	7.0				
Max Green Setting (Gmax), s	21.5	46.5		53.0	11.5	56.5	13.0	38.0				
Max Q Clear Time (g_c+I1), s	21.7	23.3		8.5	4.2	36.3	4.9	20.3				
Green Ext Time (p_c), s	0.0	4.4		0.7	0.0	8.2	0.0	1.7				

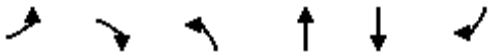
Intersection Summary			
HCM 6th Ctrl Delay		36.2	
HCM 6th LOS		D	

Lane Group	EBL	EBR	NBL	NBT	SBT
Lane Configurations					
Traffic Volume (vph)	181	380	231	193	394
Future Volume (vph)	181	380	231	193	394
Turn Type	Prot	Prot	pm+pt	NA	NA
Protected Phases	8	8	1	6	2
Permitted Phases			6		
Detector Phase	8	8	1	6	2
Switch Phase					
Minimum Initial (s)	5.0	5.0	5.0	15.0	15.0
Minimum Split (s)	11.5	11.5	11.5	21.5	21.5
Total Split (s)	26.5	26.5	26.5	63.0	36.5
Total Split (%)	29.6%	29.6%	29.6%	70.4%	40.8%
Yellow Time (s)	4.5	4.5	4.5	4.5	4.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.5	6.5	6.5	6.5	6.5
Lead/Lag			Lead		Lag
Lead-Lag Optimize?			Yes		Yes
Recall Mode	None	None	None	Min	Min
Act Effct Green (s)	13.3	13.3	42.9	42.9	25.2
Actuated g/C Ratio	0.19	0.19	0.62	0.62	0.36
v/c Ratio	0.58	0.65	0.57	0.18	0.81
Control Delay	34.7	8.5	12.2	6.6	32.5
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	34.7	8.5	12.2	6.6	32.5
LOS	C	A	B	A	C
Approach Delay	17.0			9.6	32.5
Approach LOS	B			A	C

Intersection Summary	
Cycle Length: 89.5	
Actuated Cycle Length: 69.7	
Natural Cycle: 60	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.81	
Intersection Signal Delay: 20.1	Intersection LOS: C
Intersection Capacity Utilization 65.9%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 102: Lake Helen Osteen & Catalina Blvd





Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	181	380	231	193	394	100
Future Volume (veh/h)	181	380	231	193	394	100
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1826	1870	1856	1841
Adj Flow Rate, veh/h	195	409	248	208	424	108
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	5	2	3	4
Cap, veh/h	492	437	354	1019	478	122
Arrive On Green	0.28	0.28	0.12	0.54	0.33	0.33
Sat Flow, veh/h	1781	1585	1739	1870	1427	363
Grp Volume(v), veh/h	195	409	248	208	0	532
Grp Sat Flow(s),veh/h/ln	1781	1585	1739	1870	0	1790
Q Serve(g_s), s	6.5	18.3	6.2	4.1	0.0	20.4
Cycle Q Clear(g_c), s	6.5	18.3	6.2	4.1	0.0	20.4
Prop In Lane	1.00	1.00	1.00			0.20
Lane Grp Cap(c), veh/h	492	437	354	1019	0	600
V/C Ratio(X)	0.40	0.94	0.70	0.20	0.00	0.89
Avail Cap(c_a), veh/h	492	437	625	1458	0	741
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	21.3	25.6	15.7	8.5	0.0	22.8
Incr Delay (d2), s/veh	0.5	27.5	2.5	0.1	0.0	10.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.6	9.7	2.2	1.3	0.0	9.3
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	21.9	53.1	18.2	8.6	0.0	33.7
LnGrp LOS	C	D	B	A	A	C
Approach Vol, veh/h	604			456	532	
Approach Delay, s/veh	43.0			13.8	33.7	
Approach LOS	D			B	C	

Timer - Assigned Phs	1	2				6	8
Phs Duration (G+Y+Rc), s	15.2	30.8				46.0	26.5
Change Period (Y+Rc), s	6.5	6.5				6.5	6.5
Max Green Setting (Gmax), s	20.0	30.0				56.5	20.0
Max Q Clear Time (g_c+I1), s	8.2	22.4				6.1	20.3
Green Ext Time (p_c), s	0.5	1.9				1.1	0.0

Intersection Summary			
HCM 6th Ctrl Delay		31.5	
HCM 6th LOS		C	

Intersection	
Int Delay, s/veh	0.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	8	13	318	0	0	518
Future Vol, veh/h	8	13	318	0	0	518
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	2	17	2	2	2	3
Mvmt Flow	9	15	370	0	0	602

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	972	370	0	-	-	-
Stage 1	370	-	-	-	-	-
Stage 2	602	-	-	-	-	-
Critical Hdwy	6.42	6.37	-	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.453	-	-	-	-
Pot Cap-1 Maneuver	280	644	-	0	0	-
Stage 1	699	-	-	0	0	-
Stage 2	547	-	-	0	0	-
Platoon blocked, %			-			-
Mov Cap-1 Maneuver	280	644	-	-	-	-
Mov Cap-2 Maneuver	280	-	-	-	-	-
Stage 1	699	-	-	-	-	-
Stage 2	547	-	-	-	-	-

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

Minor Lane/Major Mvmt	NBT	WBLn1	SBT
Capacity (veh/h)	-	431	-
HCM Lane V/C Ratio	-	0.057	-
HCM Control Delay (s)	-	13.9	-
HCM Lane LOS	-	B	-
HCM 95th %tile Q(veh)	-	0.2	-

Intersection	
Int Delay, s/veh	2.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	17	0	10	29	0	33	17	269	22	34	464	28
Future Vol, veh/h	17	0	10	29	0	33	17	269	22	34	464	28
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	87	87	87	87	87	87	87	87	87	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	3	2
Mvmt Flow	20	0	11	33	0	38	20	309	25	39	533	32

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1008	1001	549	995	1005	322	565	0	0	334	0	0
Stage 1	627	627	-	362	362	-	-	-	-	-	-	-
Stage 2	381	374	-	633	643	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	219	243	535	224	241	719	1007	-	-	1225	-	-
Stage 1	471	476	-	657	625	-	-	-	-	-	-	-
Stage 2	641	618	-	468	468	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	196	226	535	207	224	719	1007	-	-	1225	-	-
Mov Cap-2 Maneuver	196	226	-	207	224	-	-	-	-	-	-	-
Stage 1	460	454	-	641	610	-	-	-	-	-	-	-
Stage 2	593	603	-	436	446	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	21	18.7	0.5	0.5
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1007	-	-	256	333	1225	-	-
HCM Lane V/C Ratio	0.019	-	-	0.121	0.214	0.032	-	-
HCM Control Delay (s)	8.6	0	-	21	18.7	8	0	-
HCM Lane LOS	A	A	-	C	C	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.4	0.8	0.1	-	-

Lane Group	SEL	SET	NWL	NWT	NEL	NET	SWL	SWT
Lane Configurations								
Traffic Volume (vph)	36	314	22	286	191	419	105	247
Future Volume (vph)	36	314	22	286	191	419	105	247
Turn Type	pm+pt	NA	pm+pt	NA	pm+pt	NA	pm+pt	NA
Protected Phases	5	2	1	6	3	8	7	4
Permitted Phases	2		6		8		4	
Detector Phase	5	2	1	6	3	8	7	4
Switch Phase								
Minimum Initial (s)	5.0	16.0	5.0	16.0	5.0	6.0	5.0	6.0
Minimum Split (s)	14.0	25.0	14.0	25.0	13.5	13.0	13.5	13.0
Total Split (s)	29.0	49.0	29.0	49.0	28.5	32.0	28.5	32.0
Total Split (%)	20.9%	35.4%	20.9%	35.4%	20.6%	23.1%	20.6%	23.1%
Yellow Time (s)	5.5	5.5	5.5	5.5	5.5	4.0	5.5	4.0
All-Red Time (s)	3.5	3.5	3.5	3.5	3.0	3.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	9.0	9.0	9.0	9.0	8.5	7.0	8.5	7.0
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Min	None	Min	None	None	None	None
Act Effct Green (s)	38.5	34.4	37.6	34.0	40.5	28.4	34.0	25.2
Actuated g/C Ratio	0.36	0.32	0.35	0.32	0.38	0.27	0.32	0.24
v/c Ratio	0.16	0.80	0.10	0.82	0.52	0.92	0.47	0.64
Control Delay	20.6	44.9	20.0	46.9	27.9	66.8	30.2	48.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	20.6	44.9	20.0	46.9	27.9	66.8	30.2	48.7
LOS	C	D	B	D	C	E	C	D
Approach Delay		43.1		45.6		55.0		43.4
Approach LOS		D		D		D		D

Intersection Summary	
Cycle Length: 138.5	
Actuated Cycle Length: 107	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.92	
Intersection Signal Delay: 47.6	Intersection LOS: D
Intersection Capacity Utilization 79.2%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 105: Elkcam Blvd & Lake Helen Osteen

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (veh/h)	36	314	128	22	286	162	191	419	16	105	247	17
Future Volume (veh/h)	36	314	128	22	286	162	191	419	16	105	247	17
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1870	1870	1870	1870	1870	1870	1885	1870	1870	1870	1870
Adj Flow Rate, veh/h	38	331	135	23	301	171	201	441	17	111	260	18
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	2	2	2	2	2	2	1	2	2	2	2
Cap, veh/h	173	393	160	178	338	192	350	461	18	206	368	25
Arrive On Green	0.03	0.31	0.31	0.02	0.30	0.30	0.11	0.26	0.26	0.07	0.21	0.21
Sat Flow, veh/h	1767	1263	515	1781	1120	636	1781	1803	70	1781	1729	120
Grp Volume(v), veh/h	38	0	466	23	0	472	201	0	458	111	0	278
Grp Sat Flow(s),veh/h/ln	1767	0	1778	1781	0	1756	1781	0	1873	1781	0	1849
Q Serve(g_s), s	1.4	0.0	23.9	0.9	0.0	25.1	8.4	0.0	23.6	4.7	0.0	13.6
Cycle Q Clear(g_c), s	1.4	0.0	23.9	0.9	0.0	25.1	8.4	0.0	23.6	4.7	0.0	13.6
Prop In Lane	1.00		0.29	1.00		0.36	1.00		0.04	1.00		0.06
Lane Grp Cap(c), veh/h	173	0	553	178	0	530	350	0	479	206	0	393
V/C Ratio(X)	0.22	0.00	0.84	0.13	0.00	0.89	0.57	0.00	0.96	0.54	0.00	0.71
Avail Cap(c_a), veh/h	477	0	727	499	0	718	519	0	479	452	0	473
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	25.5	0.0	31.4	25.3	0.0	32.6	26.5	0.0	35.9	29.2	0.0	35.7
Incr Delay (d2), s/veh	0.6	0.0	6.9	0.3	0.0	10.5	1.5	0.0	30.3	2.2	0.0	3.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.0	10.9	0.4	0.0	11.8	3.6	0.0	14.4	2.1	0.0	6.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	26.1	0.0	38.4	25.6	0.0	43.1	27.9	0.0	66.2	31.4	0.0	39.5
LnGrp LOS	C	A	D	C	A	D	C	A	E	C	A	D
Approach Vol, veh/h		504			495			659			389	
Approach Delay, s/veh		37.4			42.3			54.5			37.2	
Approach LOS		D			D			D			D	

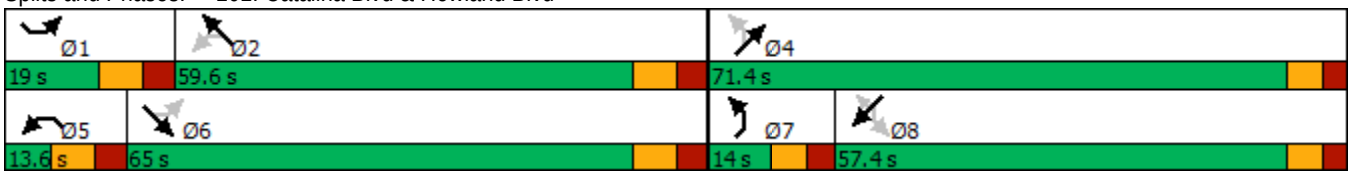
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.3	39.4	19.2	27.8	12.2	38.5	15.0	32.0
Change Period (Y+Rc), s	9.0	9.0	8.5	7.0	9.0	9.0	8.5	7.0
Max Green Setting (Gmax), s	20.0	40.0	20.0	25.0	20.0	40.0	20.0	25.0
Max Q Clear Time (g_c+I1), s	2.9	25.9	10.4	15.6	3.4	27.1	6.7	25.6
Green Ext Time (p_c), s	0.0	2.5	0.4	1.0	0.0	2.4	0.2	0.0

Intersection Summary	
HCM 6th Ctrl Delay	44.1
HCM 6th LOS	D

Lane Group	SEL	SET	NWL	NWT	NEL	NET	SWL	SWT	SWR
Lane Configurations									
Traffic Volume (vph)	140	549	31	1047	113	115	133	106	540
Future Volume (vph)	140	549	31	1047	113	115	133	106	540
Turn Type	pm+pt	NA	pm+pt	NA	pm+pt	NA	Perm	NA	Perm
Protected Phases	1	6	5	2	7	4		8	
Permitted Phases	6		2		4		8		8
Detector Phase	1	6	5	2	7	4	8	8	8
Switch Phase									
Minimum Initial (s)	5.0	11.0	5.0	11.0	5.0	7.0	7.0	7.0	7.0
Minimum Split (s)	13.5	19.5	13.5	19.5	12.0	14.0	14.0	14.0	14.0
Total Split (s)	19.0	65.0	13.6	59.6	14.0	71.4	57.4	57.4	57.4
Total Split (%)	12.7%	43.3%	9.1%	39.7%	9.3%	47.6%	38.3%	38.3%	38.3%
Yellow Time (s)	5.0	5.0	5.0	5.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	3.5	3.5	3.5	3.5	3.0	3.0	3.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	8.5	8.5	8.5	8.5	7.0	7.0	7.0	7.0	7.0
Lead/Lag	Lead	Lag	Lead	Lag	Lead		Lag	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Recall Mode	None	Max	None	Max	None	None	None	None	None
Act Effct Green (s)	68.4	62.3	56.4	51.3	58.6	58.6	44.5	44.5	44.5
Actuated g/C Ratio	0.47	0.43	0.39	0.36	0.41	0.41	0.31	0.31	0.31
v/c Ratio	0.86	0.42	0.10	0.96	0.25	0.22	0.37	0.20	0.94
Control Delay	74.4	31.5	22.9	63.8	28.2	25.7	41.6	37.0	58.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	74.4	31.5	22.9	63.8	28.2	25.7	41.6	37.0	58.0
LOS	E	C	C	E	C	C	D	D	E
Approach Delay		39.8		62.7		26.8		52.3	
Approach LOS		D		E		C		D	

Intersection Summary	
Cycle Length: 150	
Actuated Cycle Length: 144.3	
Natural Cycle: 100	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.96	
Intersection Signal Delay: 51.0	Intersection LOS: D
Intersection Capacity Utilization 90.0%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 101: Catalina Blvd & Howland Blvd



Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (veh/h)	140	549	34	31	1047	82	113	115	37	133	106	540
Future Volume (veh/h)	140	549	34	31	1047	82	113	115	37	133	106	540
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1841	1826	1856	1870	1856	1856	1885	1885	1856	1870	1870	1870
Adj Flow Rate, veh/h	147	578	36	33	1102	86	119	121	39	140	112	517
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	4	5	3	2	3	3	1	1	3	2	2	2
Cap, veh/h	173	1276	79	298	1134	88	368	587	189	460	628	532
Arrive On Green	0.07	0.38	0.38	0.02	0.34	0.34	0.05	0.43	0.43	0.34	0.34	0.34
Sat Flow, veh/h	1753	3317	206	1781	3313	258	1795	1366	440	1226	1870	1585
Grp Volume(v), veh/h	147	302	312	33	586	602	119	0	160	140	112	517
Grp Sat Flow(s),veh/h/ln	1753	1735	1789	1781	1763	1809	1795	0	1806	1226	1870	1585
Q Serve(g_s), s	8.1	19.4	19.4	1.8	48.9	49.0	6.4	0.0	8.3	12.8	6.3	48.0
Cycle Q Clear(g_c), s	8.1	19.4	19.4	1.8	48.9	49.0	6.4	0.0	8.3	12.8	6.3	48.0
Prop In Lane	1.00		0.12	1.00		0.14	1.00		0.24	1.00		1.00
Lane Grp Cap(c), veh/h	173	667	688	298	603	619	368	0	776	460	628	532
V/C Ratio(X)	0.85	0.45	0.45	0.11	0.97	0.97	0.32	0.00	0.21	0.30	0.18	0.97
Avail Cap(c_a), veh/h	178	667	688	315	603	619	368	0	779	462	631	535
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.1	34.2	34.3	31.1	48.4	48.4	29.4	0.0	26.6	37.2	35.0	48.9
Incr Delay (d2), s/veh	29.8	2.2	2.2	0.2	30.2	30.0	0.5	0.0	0.1	0.4	0.1	31.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.8	8.4	8.7	0.8	25.9	26.6	2.9	0.0	3.7	3.9	3.0	23.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	66.9	36.4	36.4	31.2	78.6	78.4	29.9	0.0	26.8	37.5	35.2	80.3
LnGrp LOS	E	D	D	C	E	E	C	A	C	D	D	F
Approach Vol, veh/h		761			1221			279			769	
Approach Delay, s/veh		42.3			77.3			28.1			65.9	
Approach LOS		D			E			C			E	

Timer - Assigned Phs	1	2		4	5	6	7	8				
Phs Duration (G+Y+Rc), s	18.6	59.6		71.2	12.2	65.9	14.0	57.2				
Change Period (Y+Rc), s	8.5	8.5		7.0	8.5	8.5	7.0	7.0				
Max Green Setting (Gmax), s	10.5	51.1		64.4	5.1	56.5	7.0	50.4				
Max Q Clear Time (g_c+I1), s	10.1	51.0		10.3	3.8	21.4	8.4	50.0				
Green Ext Time (p_c), s	0.0	0.1		1.0	0.0	3.6	0.0	0.2				

Intersection Summary			
HCM 6th Ctrl Delay		61.1	
HCM 6th LOS		E	

Appendix H

Internal Queue Assessment

Appendix I

Signal Four Analytics Crash Summary Screenshot

SIGNAL FOUR ANALYTICS

EVENT ANALYSIS

Crash data available from **January 1, 2014** to **January 1, 2024** Learn Why. Last data update completed March 3, 2024 at 1:43 AM. Disclaimer Data Dictionary

Search Crashes

Crashes in Custom Area
From 1/1/2018 - 12/31/2023

Injury Summary | Common Attributes | FDOT Attributes

	Total	Fatal Crashes	Serious Injury Cras...	Injury Crashes	Property Damage ...
Crashes	1	0	0	0	1
Fatalities (within 30 Days)	0	0	0	0	0
Incapacitating Injuries	0	0	0	0	0
Non-Incapacitating Injuries	0	0	0	0	0

Charting