



**Marion County
Board of County Commissioners**

Office of the County Engineer
412 SE 25th Ave.
Ocala, FL 34471
Phone: 352-671-8686
Email: DevelopmentReview@marionfl.org

January 27, 2026

Kok Wan Mah
Kittelson & Associates

Subject: Traffic Impact Analysis
Plan Name: Sandy Clay, LLC
Plan Number: 32956
Parcel Number: 37896-000-00
Additional Parcel Numbers:
Adjacent Street:
Intersecting Street From:
Intersecting Street To:

Dear Kok Wan,

The Traffic Study for the above referenced plan number was approved by the Office of the County Engineer on 1/27/2026. The following comments, if any, are for your record.

No Comments

Feel free to contact us at (352) 671-8686 or DevelopmentReview@marionfl.org with questions.

Sincerely,

Your Development Review Team
Office of the County Engineer

SANDY CLAY TRAFFIC IMPACT STUDY

Marion County

January 14, 2026



PROFESSIONAL ENGINEER CERTIFICATE

I hereby certify that I am a registered professional engineer in the State of Florida, practicing with Kittelson & Associates, a corporation authorized to operate as a Professional Engineering business by the State of Florida Department of Professional Regulation, Board of Professional Engineers, and that I have approved the Sandy Clay TIA in Marion County, Florida dated January 2026.

PROJECT: Sandy Clay TIA

LOCATION: Marion County, Florida

CLIENT: Sandy Clay, LLC

I acknowledge that the procedures and references used to develop the results contained in this report are standard to the professional practice of transportation engineering as applied through professional judgment and experience.

NAME: Kok Wan Mah

P.E. NUMBER: 56739

DATE: January 14, 2026



Kok Wan Mah

Digitally signed by Kok Wan Mah
Date: 2026.01.15 13:18:52 -05'00'

*The item has been digitally signed and sealed by
Kok Wan Mah on the date adjacent to the seal.*

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SIGNATURE MUST BE VERIFIED ON ANY
ELECTRONIC COPIES.**

Sandy Clay Traffic Impact Study

Marion County

Prepared for:
Sandy Clay, LLC
4349 SE 20th Street
Ocala, FL 34471

Prepared by:
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Project Number 30973

January 14, 2026



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Section 1

Introduction

Introduction

Kittelson & Associates, Inc. has been retained by Sandy Clay, LLC to conduct a Traffic Impact Analysis (TIA) for the proposed Sandy Clay Property residential development, located in Marion County, Florida. The proposed 119.69 acre-site includes parcels 37896-000-00 and 37896-000-01, located at the northeast corner of SE 92nd Loop and SE 110th Street Road. The development is planned to accommodate 442 detached single family residential units.

Based upon the generated project trips, a Transportation Impact Study (TIS) is conducted for 2028 (the project buildout year) per the MARION COUNTY TRAFFIC IMPACT ANALYSIS GUIDELINES (September 2022).

PROJECT DESCRIPTION

The development is planned as a single-phase project with an anticipated buildout year of 2028. Access to the proposed property will be two (2) driveways.

- a) Full access driveway on SE 110th Street Road.
- b) Directional northern access (Left-In/Right-In/Right-Out) along SE 92nd Loop

These access points with the development location are depicted in **Figure 1** and the site plan available in **Appendix A**.

STUDY AREA

The study area was determined using a test for significance documented in the methodology provided as **Appendix B**. The following roadway segments and intersections are included in the analysis.

Roadway Segments:

- SE 92nd Loop
 - SR 35 to Access 2
 - Access 2 to SE 110th Street
 - SE 110th Street Road to CR 25
 - CR 25 to U.S. 441
- SE 110th Street Road
 - CR 25 to SE 92nd Loop
 - SE 92nd Loop to Access 1
 - Access 1 to Oak Road
 - Oak Road to CR 464
- U.S. 441
 - SE 147 Place to SE 92nd Place Road
 - SE 92nd Place Road to SE 73rd Street

-
- SE 92nd Place Road
 - U.S. 441 to SR 35

Intersections:

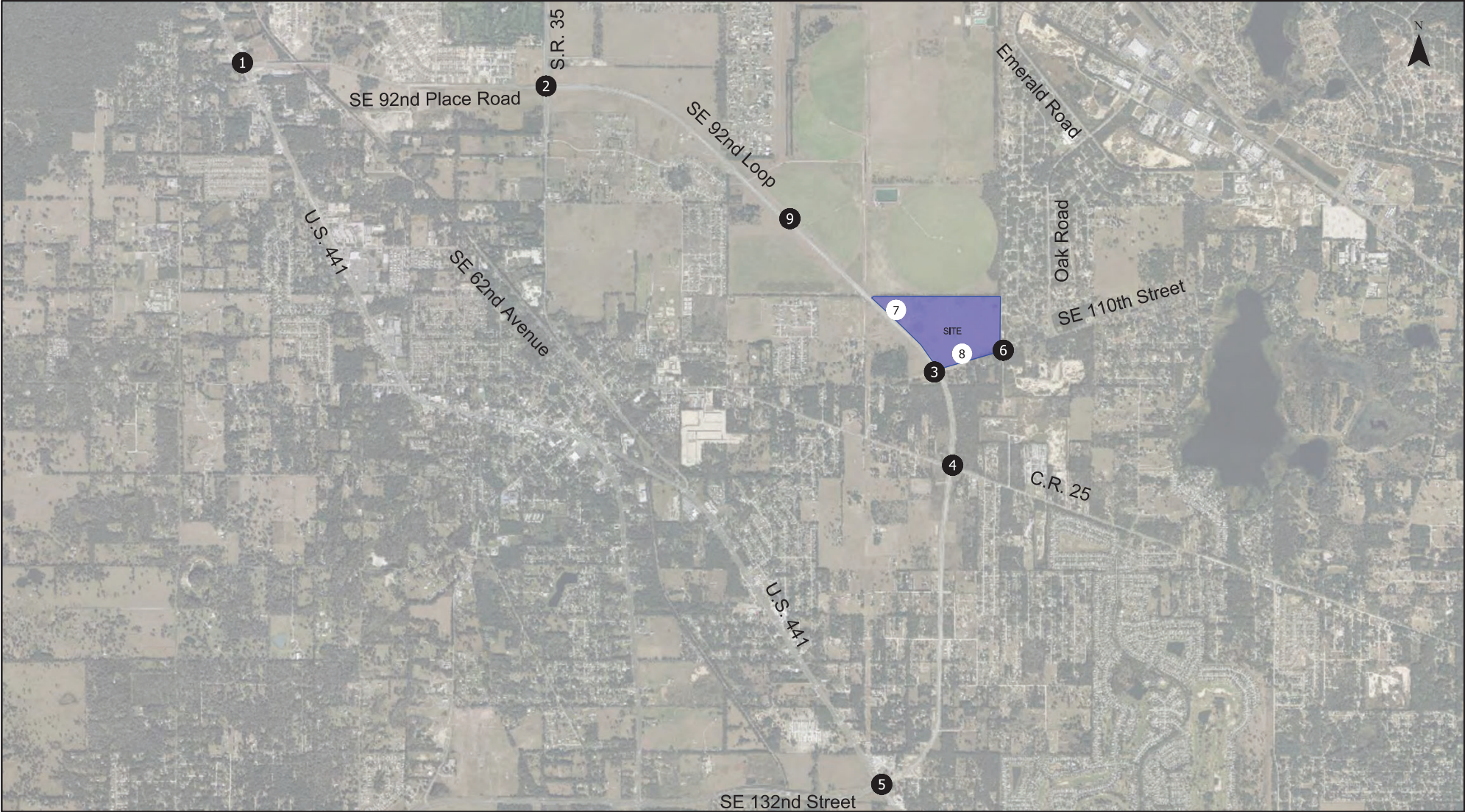
- U.S. 441 at SE 92nd Place Road (Signalized)
- S.R. 35 / SE 58th Avenue at SE 92nd Place Road (Signalized)
- SE 92nd Loop at SE 110th Street (Signalized)
- SE 92nd Loop at C.R. 25 (Signalized)
- U.S. 441 at SE 132nd Street (Signalized)
- Oak Road at SE 110th Street (Stop controlled)
- SE 92nd Loop at Emerald Road (future connection and signal)

Project Site Access Points

- SE 92nd Loop at Access 2 (Stop Controlled)
- SE 110th Street at Access 1 (Stop Controlled)

PLANNED AND PROGRAMMED IMPROVEMENTS

The extension of Emerald Road from existing Emerald Road to SE 92nd Loop will be considered for future conditions as a two-lane road. It is assumed that the intersection of SE 92nd Loop at Emerald Road will be signalized.



- ⊗ - Site Accesses
- - Study Intersections

Site Location
Bellevue, Florida

Figure
1



Section 2

Existing Conditions

Existing Conditions

This section provides a summary of existing transportation conditions within the study area, including roadway geometry, current traffic flow patterns, traffic control systems, and an evaluation of key roadways and intersections.

DATA COLLECTION

Existing turning movement counts (TMCs) were collected on Thursday, August 21, 2025, from 7:00 AM to 9:00 PM at the following locations:

- U.S. 441 at SE 92nd Place Road
- S.R. 35 / SE 58th Avenue at SE 92nd Place Road
- SE 92nd Loop at SE 110th Street
- SE 92nd Loop at C.R. 25
- U.S. 441 at SE 132nd Street
- Oak Road at SE 110th Street

The TMCs were adjusted to account for seasonal variation, using a seasonal factor of 1.06 derived from FDOT's Florida Traffic Online (FTO) website. The raw TMCs and FDOT Peak Season Category Report are included in **Appendix D**. **Figure 2** presents the existing weekday AM and PM peak hour traffic volumes. Heavy truck percentages were derived from the TMCs and applied to each study intersection for all study periods.

The signal timing data was obtained from Marion County (included in **Appendix E**) for the following locations:

- U.S. 441 at SE 92nd Place Road
- S.R. 35 / SE 58th Avenue at SE 92nd Place Road
- SE 92nd Loop at SE 110th Street
- SE 92nd Loop at C.R. 25
- U.S. 441 at SE 132nd Street

For the future signalized intersection at SE 92nd Loop and Emerald Road, the signalization plan provided by the county was adopted.

EXISTING ROADWAY CAPACITY ANALYSIS

Kittelson conducted a roadway capacity analysis to help quantify the existing level of service (LOS) of the study roadways for the PM peak hour conditions. The level of service and remaining capacity for each of the study roadways were determined based on the Ocala Marion TPO 2023 Congestion Management Process (CMP) Database, which is shown in **Appendix C**.

Based on direction from Marion County, the 2023 volumes were grown 2 years, using the approved 2.43% growth rate to 2025. The approved methodology is in **Appendix B**.

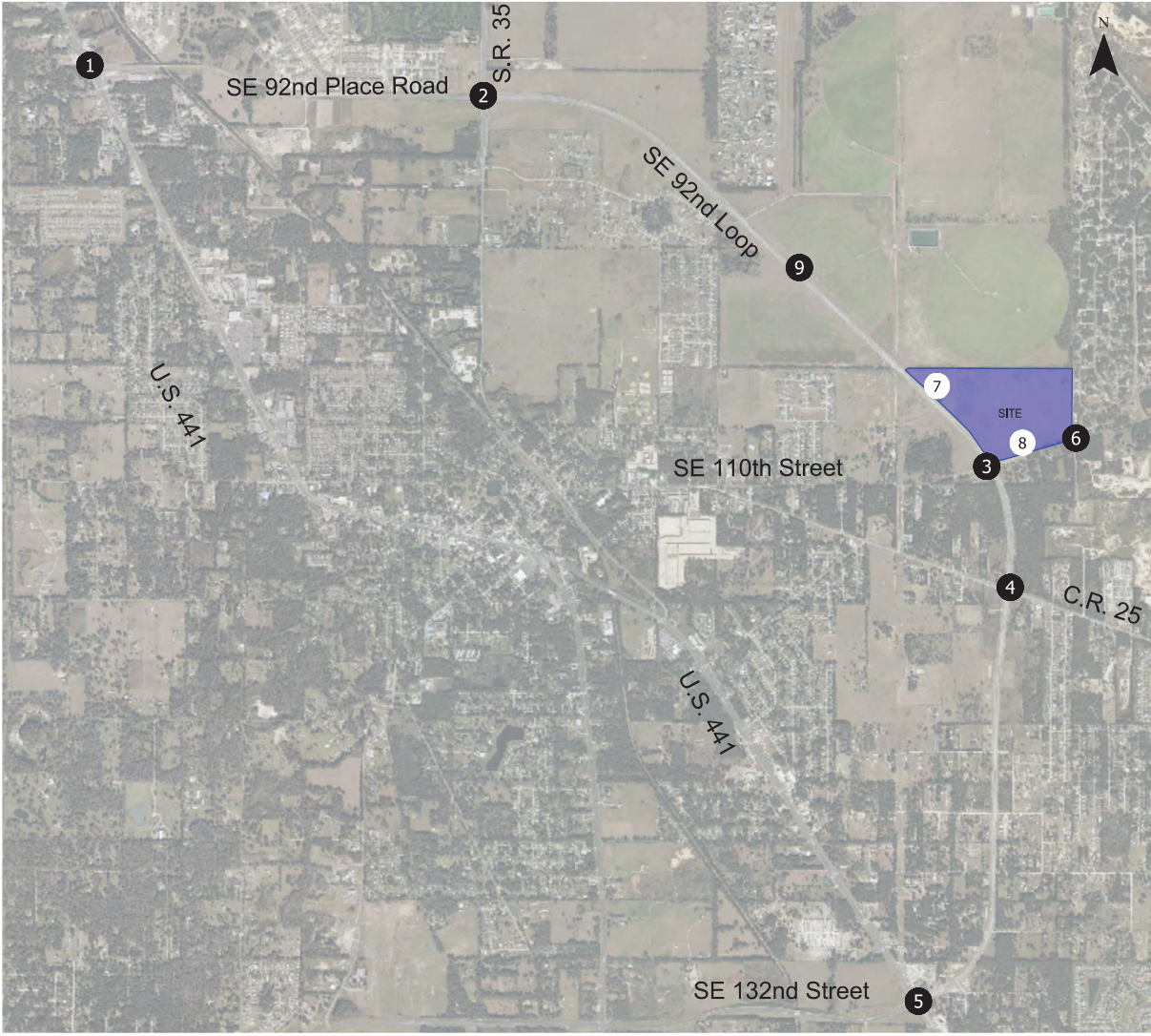
A comparison of the peak hour peak direction (PHPD) roadway traffic volumes was made against the roadway capacities to determine the existing level of service. The existing roadway capacity analysis was performed for all roadways within the study area as shown in **Table 1**. In summary, the study roadway segments operate acceptably and are shown to have sufficient capacity under existing conditions

Table 1: Existing Roadway Capacity Analysis

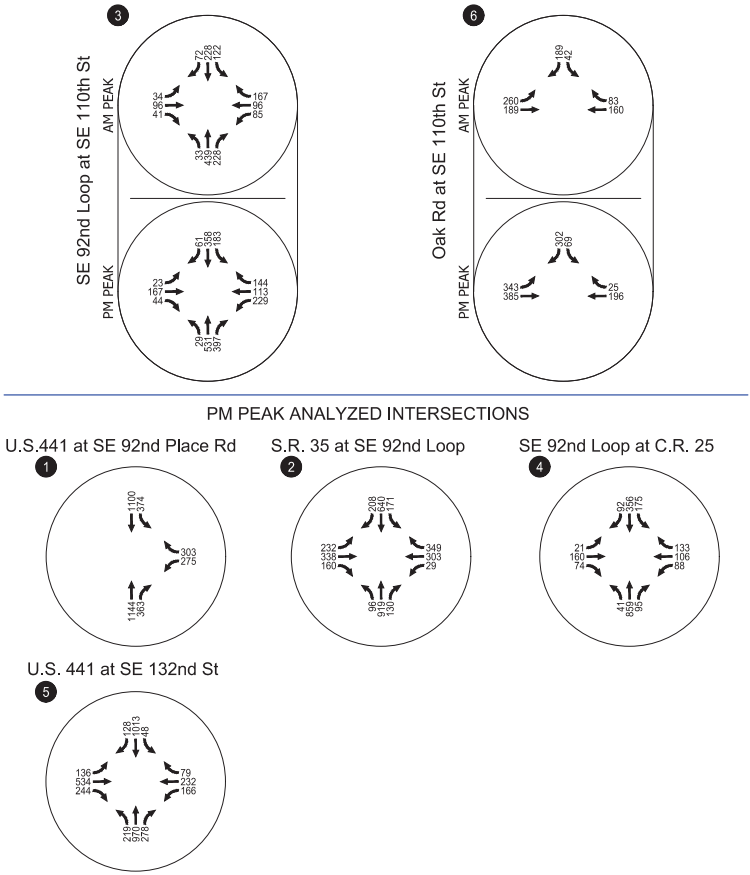
Segment ID	Road Name	From/To	Lanes	2025 PHPD Volume*	PHPD Service Volume	2025 PHPD V/MSV
1010	SE 92 LOOP	SR 35 to Access 2	4	654	1,800	0.36
		Access 2 to SE 110 ST Rd	4	654	1,800	0.36
		SE 110 St Road to CR 25	4	654	1,800	0.36
		CR 25 to U.S. 441	4	654	1,800	0.36
3840.1	SE 110 ST RD	CR 25 to SE 92 Lp	2	178	792	0.22
		SE 92 Lp to Access 1	2	178	792	0.22
		Access 1 to Oak Rd	2	178	792	0.22
3850.1	SE 110 ST RD	Oak Rd to CR 464	2	178	1,449	0.12
6840	U.S. 441	SE 92 PL Rd to SE 73 ST	4	1,454	1,901	0.76
4550	SE 92 PL RD	U.S. 441 to SR 35	2	570	634	0.90
6740	U.S. 441	SE 147 PL to SE 92 PL Lp	4	1,742	1,901	0.92

*2025 PHPD volumes were developed by applying the 2.43% annual growth rate to the 2023 PHPD Volume.

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- ⊗ - Site Accesses
- - Study Intersections



Turning Movement Volumes AM/PM Peak Hour (2025)
Belleview, Florida

Figure
2

EXISTING INTERSECTION ANALYSIS

The existing conditions of the study intersections were evaluated using the Synchro 12 Software, following the methods outlined in the Highway Capacity Manual, 7th Edition. The existing lane configurations are shown in **Figure 3**.

Based on the approved methodology (included in **Appendix B**), the intersections of SE 92nd Loop at SE 110th Street Road, and Oak Road at SE 110th Street Road were evaluated for both AM and PM peak hours. All other intersections within the study area were analyzed for PM peak hours only. The results of the intersection capacity analysis for existing conditions during the AM and PM peak hours are summarized in **Table 2**, with detailed Synchro analysis printouts provided in **Appendix F**.

Table 2. Existing Intersection Analysis

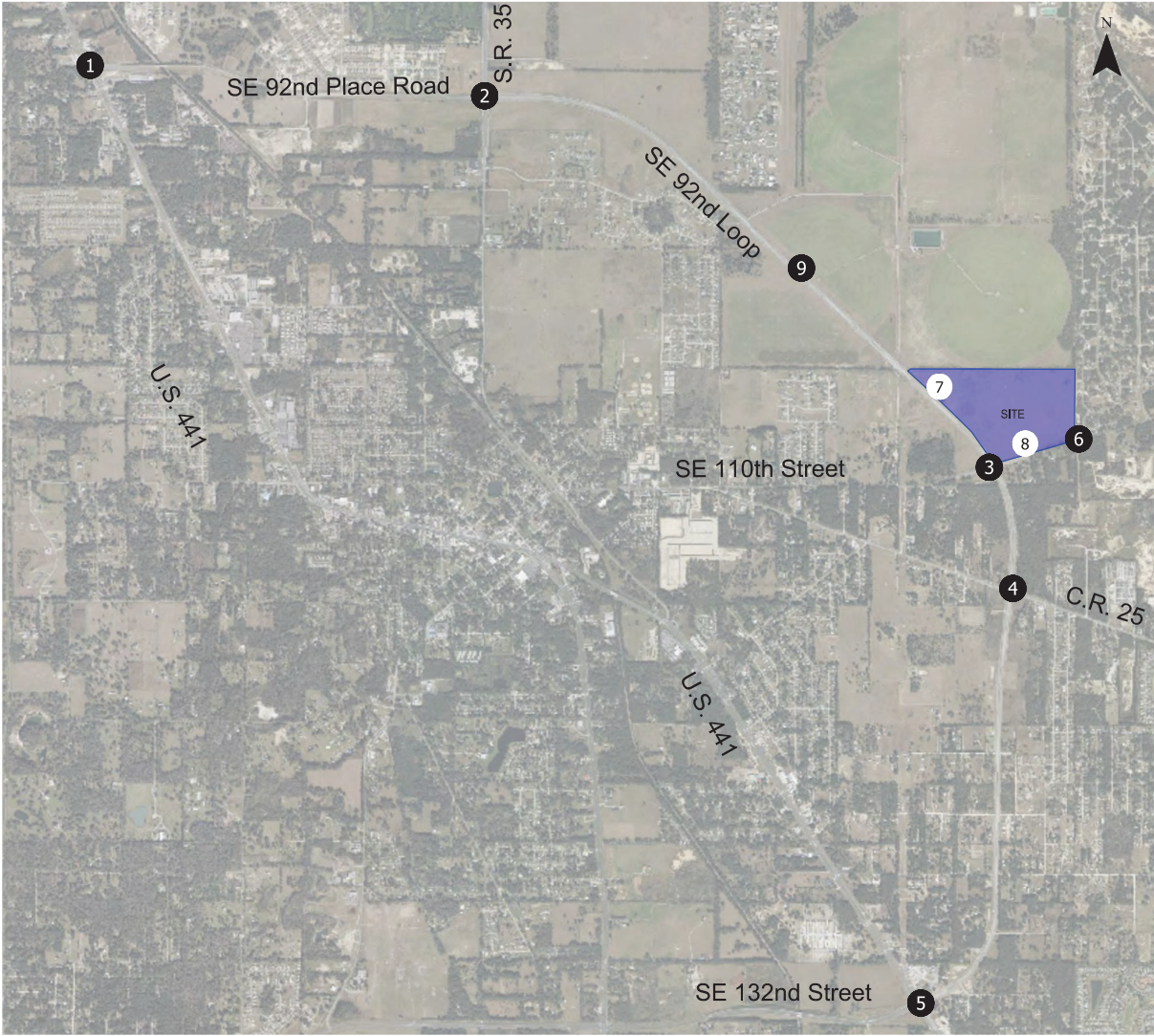
Intersection	Control Type	Performance Measure	AM Peak Period					PM Peak Period				
			Overall	EB	WB	NB	SB	Overall	EB	WB	NB	SB
1 - U.S. 441 & SE 92nd Place Rd	Signalized	Delay (s/veh)						22.2	-	39.1**	18.6	15.3
		LOS						C	-	D**	B	B
		v/c ratio*						-	-	0.85	0.59	0.94
2 - S.R. 35 / SE 58th Ave at SE 92nd Loop	Signalized	Delay (s/veh)						44.6	49.3	72.5	35.7	33.5
		LOS						D	D	E	D	C
		v/c ratio*						-	0.8	1.02	0.78	0.75
3 - SE 92nd Loop at SE 110th Street	Signalized	Delay (s/veh)	21.5	26.7	24	21.9	16.7	25.1	35.9	25.6	25.9	19.3
		LOS	C	C	C	C	B	C	D	C	C	B
		v/c ratio*	-	0.48	0.43	0.56	0.32	-	0.74	0.63	0.77	0.53
4 - SE 92nd Loop at C.R. 25	Signalized	Delay (s/veh)						32.6	27.3	24.4	43.4	21.2
		LOS						C	C	C	D	C
		v/c ratio*						-	0.46	0.34	0.95	0.67
5 - U.S. 441 at SE 132nd Street	Signalized	Delay (s/veh)						68.7	218.6	55.7	29.8	29.2
		LOS						E	F	E	C	C
		v/c ratio*						-	1.42	0.76	0.81	0.68
6 - Oak Road at SE 110th Street	TWSC	Delay (s/veh)	-	8.5	-	-	27	-	8.7	-	-	74.6
		LOS	-	A	-	-	D	-	A	-	-	F
		v/c ratio*	-	0.21	-	-	0.24	-	0.26	-	-	0.6

*v/c ratio reported for the highest movement

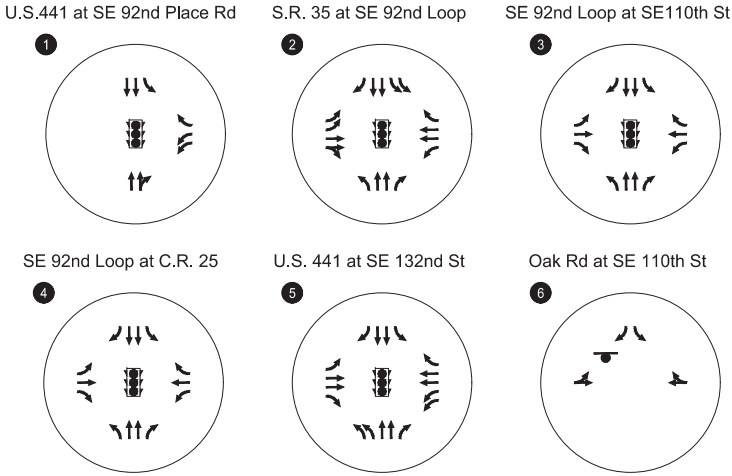
**values were obtained from the Synchro Report instead of the HCM 7th Edition, as HCM 7th was unable to generate the delay and LOS.

As shown in **Table 2**, the study area intersections operate at an overall Level of Service (LOS) of E or better. All intersections have movement approaches with a volume-to-capacity (v/c) ratio below 1.00, except for the westbound movement at S.R. 35/SE 58th Avenue at SE 92nd Loop and the eastbound movement at U.S. 441 at SE 132nd Street, which have v/c ratios of 1.02 and 1.42, respectively.

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- ⊗ - Site Accesses
- Ⓢ - Traffic Signal
- Ⓢ - Study Intersections
- Ⓢ - Stop Controlled



Existing Lane Configuration
Bellevue, Florida

Figure
3



Section 3

Future Volume Development

Future Volume Development

The proposed development is anticipated to be built out by 2028. Future traffic volumes for the buildout year were estimated by combining background growth with distributed project trips. The following sections describe the methodology used to develop the future traffic volumes. The spreadsheet used to generate the no-build and build volumes is provided in **Appendix G**.

BACKGROUND GROWTH

The Ocala Marion TPO 2023 Online Traffic Counts Map provides preferred growth rates for the study roadways as documented in the traffic methodology in **Appendix C**.

Based on the approved in the methodology, future background conditions incorporate an annual growth rate of 2.43%. The estimated growth rate is presented in **Table 3**.

Table 3. 2028 Growth Rate

Segment	Limits	2023 AADT	Annual Growth Rate	Weighted Growth
SE 92 Loop	SR 35 to U.S. 441	12,500	1.60%	600
SE 92 Place Road	U.S. 441 to SR 35	11,300	13.10%	4,441
SR 35	SE 92 PL to Laurel Rd	27,500	1.50%	1,238
SE 110 St Rd	SE 92 PL Lp to Oak Rd	3,300	3.50%	347
Composite Annual Average Growth Rate				2.43%

VESTED DEVELOPMENT

In addition to the annual growth rate, the following future vested were reviewed and included for the development of traffic volumes. Relevant trip development excerpts are provided in **Appendix H**.

- AR 29582 – Carissa Oaks
- AR 27902 – Central Florida RV Park at CR 25
- AR 27932 – C-25 Group Property (C-25 Mixed Use Development)
- AR 30026 – 7-Eleven on SE 92nd Loop at SR 35 (Parcel 37515-004-03)
- Bellehaven Community Development District in Belleview (Parcel 37912-000-00)
- Blue River (Parcel 37515-000-01 and 37515-000-05)
- Baseline North & South (Parcel 37515-004-00)

Figure 4 depicts the total vested trip assignment.

FUTURE NO-BUILD VOLUMES

To develop the 2028 No-Build volumes, the 2025 roadway segment volumes and turning movement counts were grown using the selected 2.43% annual rate, and vested trips were added to reflect committed developments. **Figure 5** illustrates the 2028 No-Build turning movement volumes for the AM and PM peak hours.

Based on the planned extension of Emerald Road, it is assumed that the 3-leg intersection of SE 92nd Loop at Emerald Road will exist under future no-build conditions. In line with the project's objective to alleviate traffic congestion at the intersection of S.R. 35/SE 58th Avenue and SE 92nd Place Road, traffic distribution assumptions have been applied to both the intersection of SE 92nd Loop at Emerald Road and the existing intersection at S.R. 35/SE 58th Avenue and SE 92nd Place Road.

- S.R. 35/SE 58th Avenue and SE 92nd Place Road
 - Northbound:
 - Same no-build traffic volumes are expected. As this intersection is located further north from the new intersection, northbound should not be affected by the intersection of Emerald Road at SE 92nd Loop.
 - Southbound:
 - 30% of no-build traffic volumes of southbound left, thru and right turn movements are assumed to divert to the intersection of SE 92nd Loop at Emerald Road.
 - Eastbound:
 - 30% of the no-build traffic volume for the eastbound left-turn movement are assumed to be diverted to the intersection of SE 92nd Loop at Emerald Road.
 - Based on the network connectivity and travel patterns—where left-turning vehicles are expected to utilize through lanes to reach the next intersection— The diverted left turn volume is reassigned to the eastbound through movement.
 - The eastbound right-turn volume under the no-build scenario is not expected to be impacted by the intersection of SE 92nd Loop at Emerald Road.
 - Westbound:
 - 30% of the no-build traffic volume for the westbound right-turn movement are assumed to divert to the intersection of SE 92nd Loop at Emerald Road.
 - Other westbound movements are expected not to be impacted.
- SE 92nd Loop at Emerald Road (3-legged intersection and signalized)
 - Southbound (Left and thru):
 - Based on the network connection, 30% of the no-build traffic volume for the eastbound left-turn movement at the intersection of S.R. 35/SE 58th Avenue and SE 92nd Place Road are assigned to the southbound left turn at this intersection.
 - There are no other intersections or proposed developments between the planned intersection of SE 92nd Loop at Emerald Road and the existing intersection of SE 92nd Loop at SE 110th Street. The southbound through movement at the existing

SE 92nd Loop and SE 110th Street intersection is expected to align with the southbound through movement at Emerald Road and SE 92nd Loop.

- Northbound (thru and right):
 - Based on the network connection, 30% of the no-build traffic volume for the westbound right-turn movement at the intersection of S.R. 35/SE 58th Avenue and SE 92nd Place Road are assigned to the northbound right turn at this intersection.
 - For the thru movement, the assigned volume is derived from the northbound thru movement at the existing intersection of SE 92nd Loop and SE 110th Street, excluding the right-turn movement at SE 92nd Loop at Emerald Road. It is assumed that the right-turn volume at SE 92nd Loop at Emerald Road is part of the northbound thru movement SE 92nd Loop and SE 110th Street, given that there are no other trip generators or intersections between the two intersections.
- Westbound (right and left):
 - Given the network connection, 30% of no-build traffic volumes of southbound left at S.R. 35/SE 58th Avenue and SE 92nd Place Road are assigned to the westbound left. In addition to that, 80% of the southbound thru traffic at S.R. 35/SE 58th Avenue and SE 92nd Place Road is added to the westbound left.
 - 30% of no-build traffic volumes of southbound right at S.R. 35/SE 58th Avenue and SE 92nd Place Road are assigned to the westbound right. In addition to that, 20% of the southbound thru traffic at S.R. 35/SE 58th Avenue and SE 92nd Place Road is added to the westbound right.

TRIP GENERATION

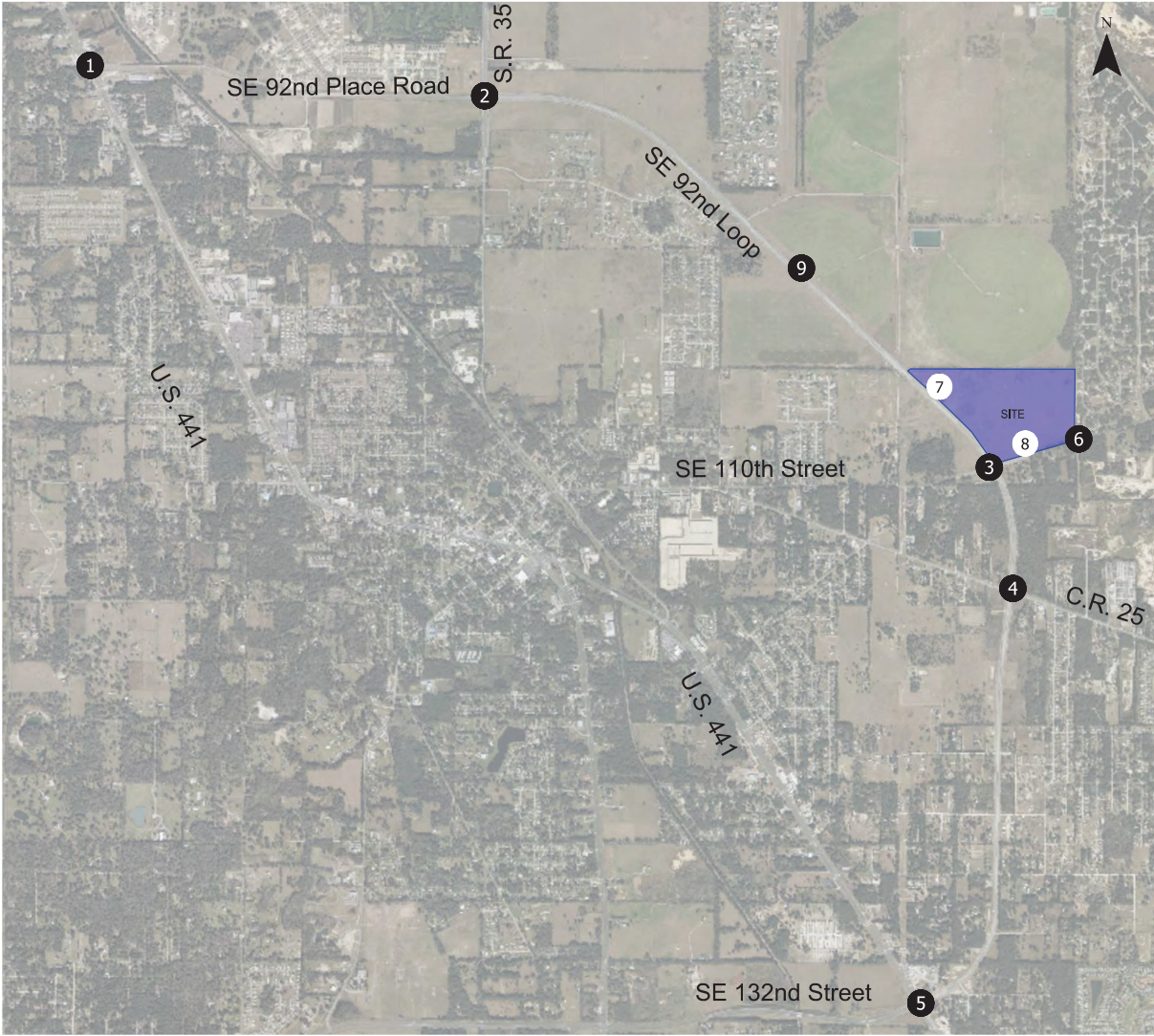
The trip generation analysis was conducted using information published by the *Institute of Transportation Engineers (ITE) Trip Generation Manual, 11th Edition*. **Table 4** summarizes the resulting trip generation analysis for the total weekday daily, weekday AM and Weekday PM peak hour vehicles trip generation for the proposed development. As the development is anticipated to consist of a single land use group (residential), no internal capture or pass-by trips would be generated by the site.

Table 4: Project Trip Generation

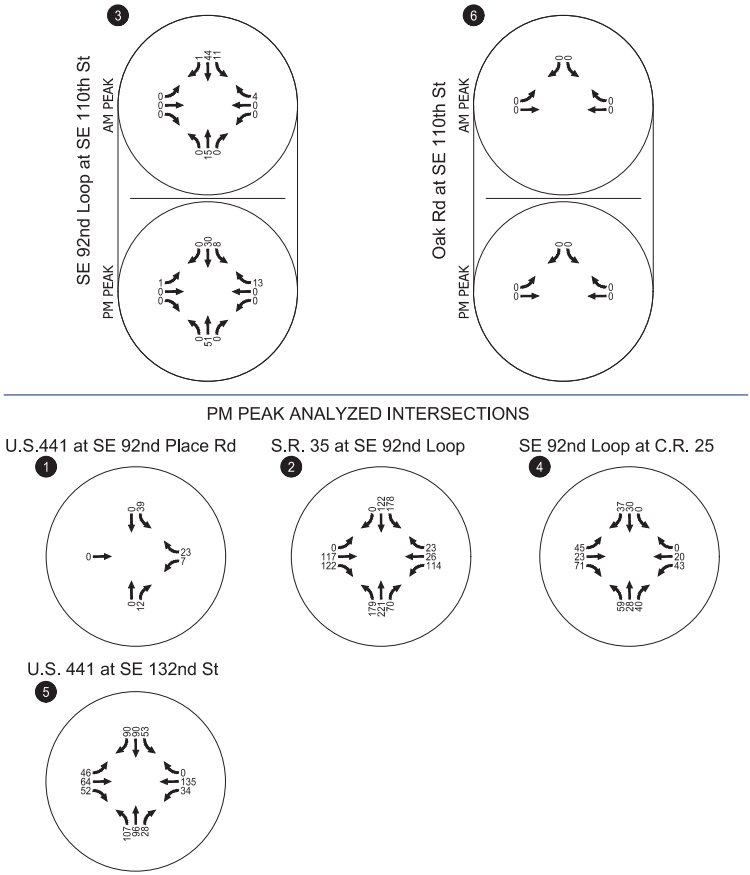
Land Use	ITE Code	Intensity	Weekday Daily Trips	AM Peak Period			PM Peak Period		
				In	Out	Total	In	Out	Total
Single-Family Detached Housing	210	442 DU	3,960	72	216	288	253	149	402

The proposed development is expected to generate 3,960 new daily trip ends, 288 new AM peak hour trips, and 402 new PM peak hour trips for the buildout condition.

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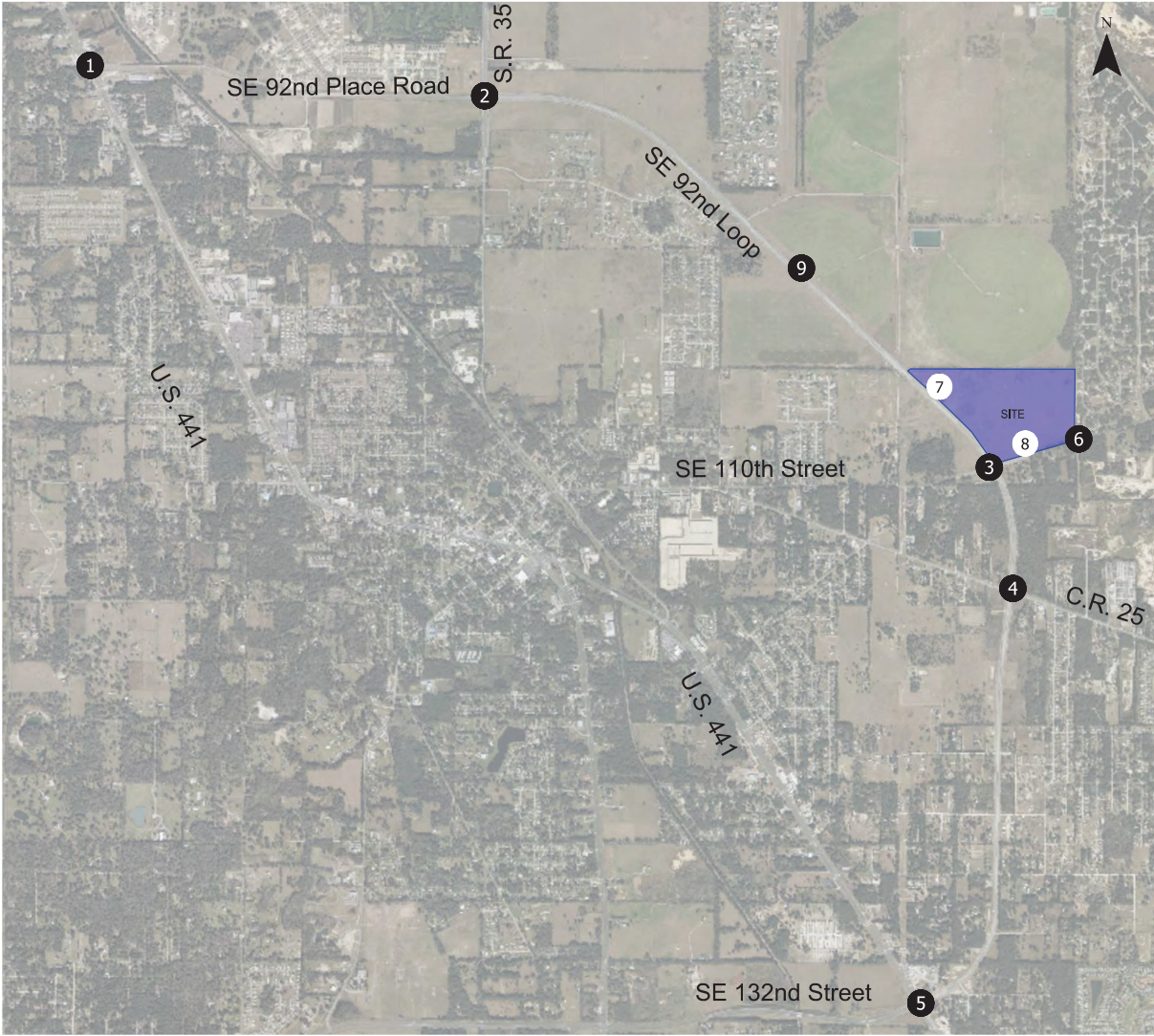
- ⊗ - Site Accesses
- - Study Intersections



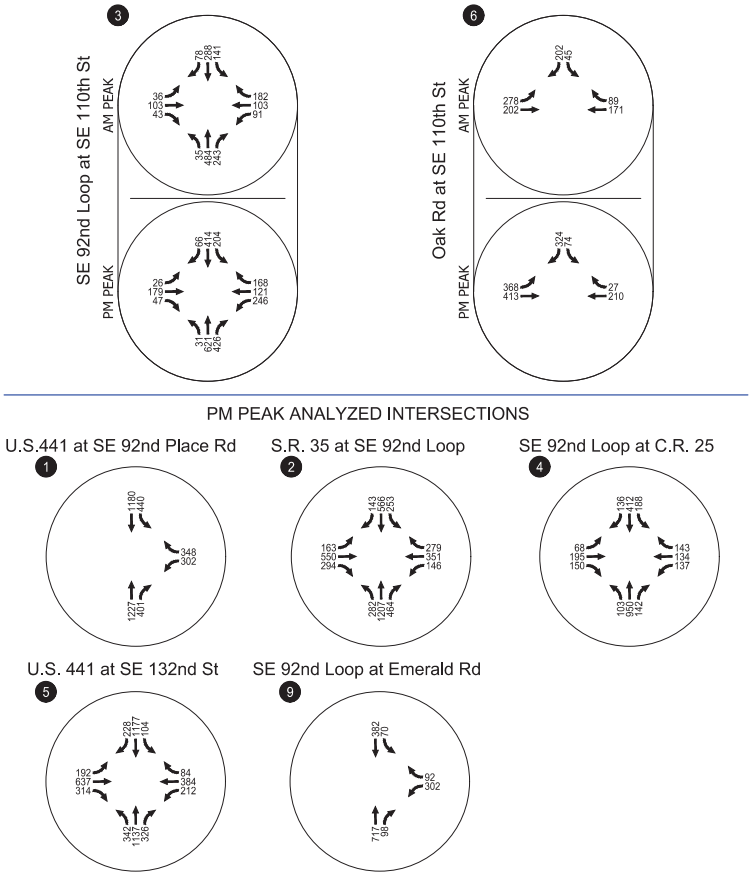
Vested Trips
Bellevue, Florida

Figure
4

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- ⊗ - Site Accesses
- - Study Intersections



No-Build AM / PM Traffic Volumes
Belleview, Florida

Figure
5

TRIP DISTRIBUTION AND ASSIGNMENT

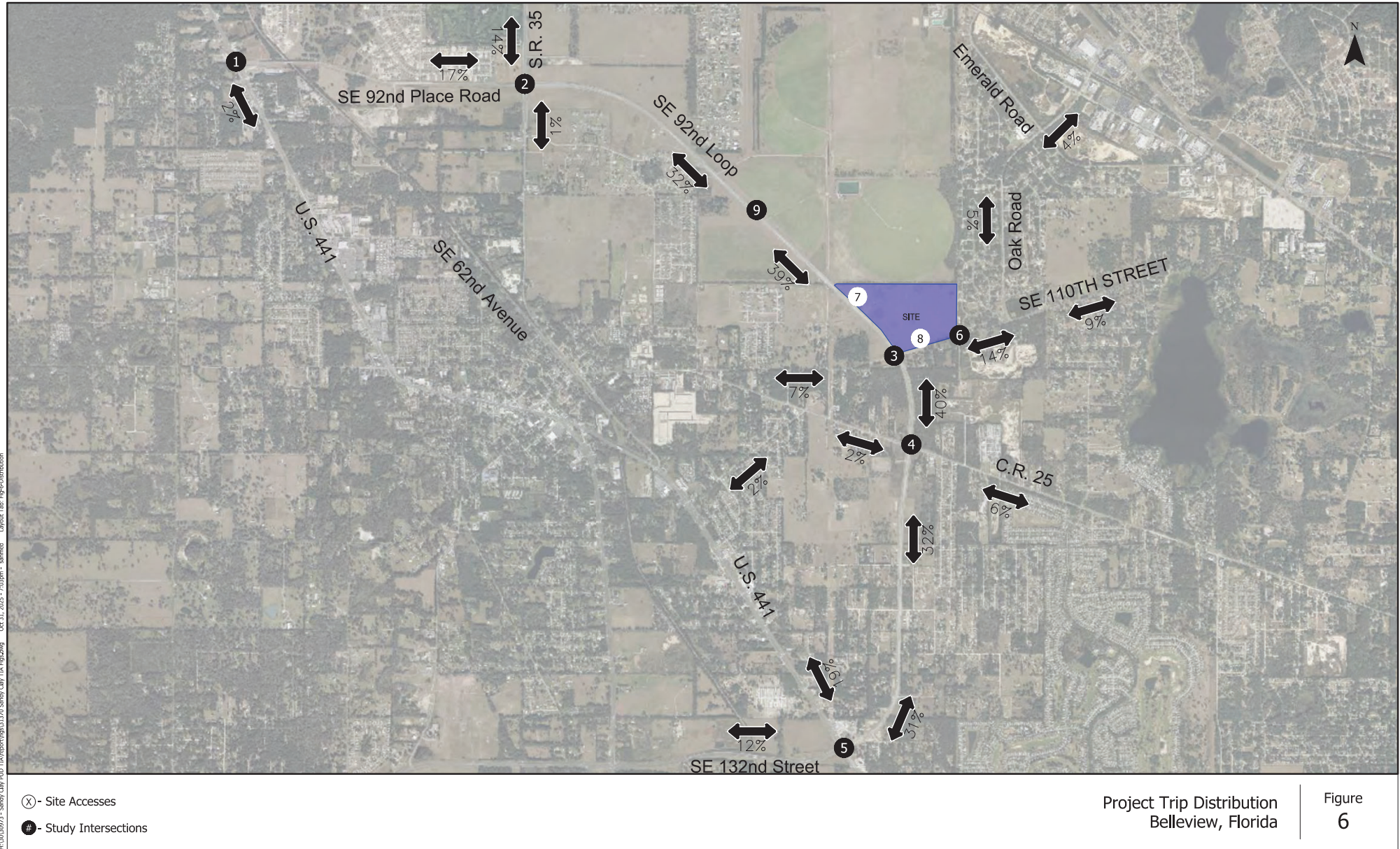
The project trip distribution and assignment were estimated based on a select zone analysis using the Central Florida Regional Planning Model (CFRPM), Version 7, project driveway distribution, and local traffic patterns. The models provide a macroscopic assignment of project trips within the study area. The model plot is included in **Appendix I**.

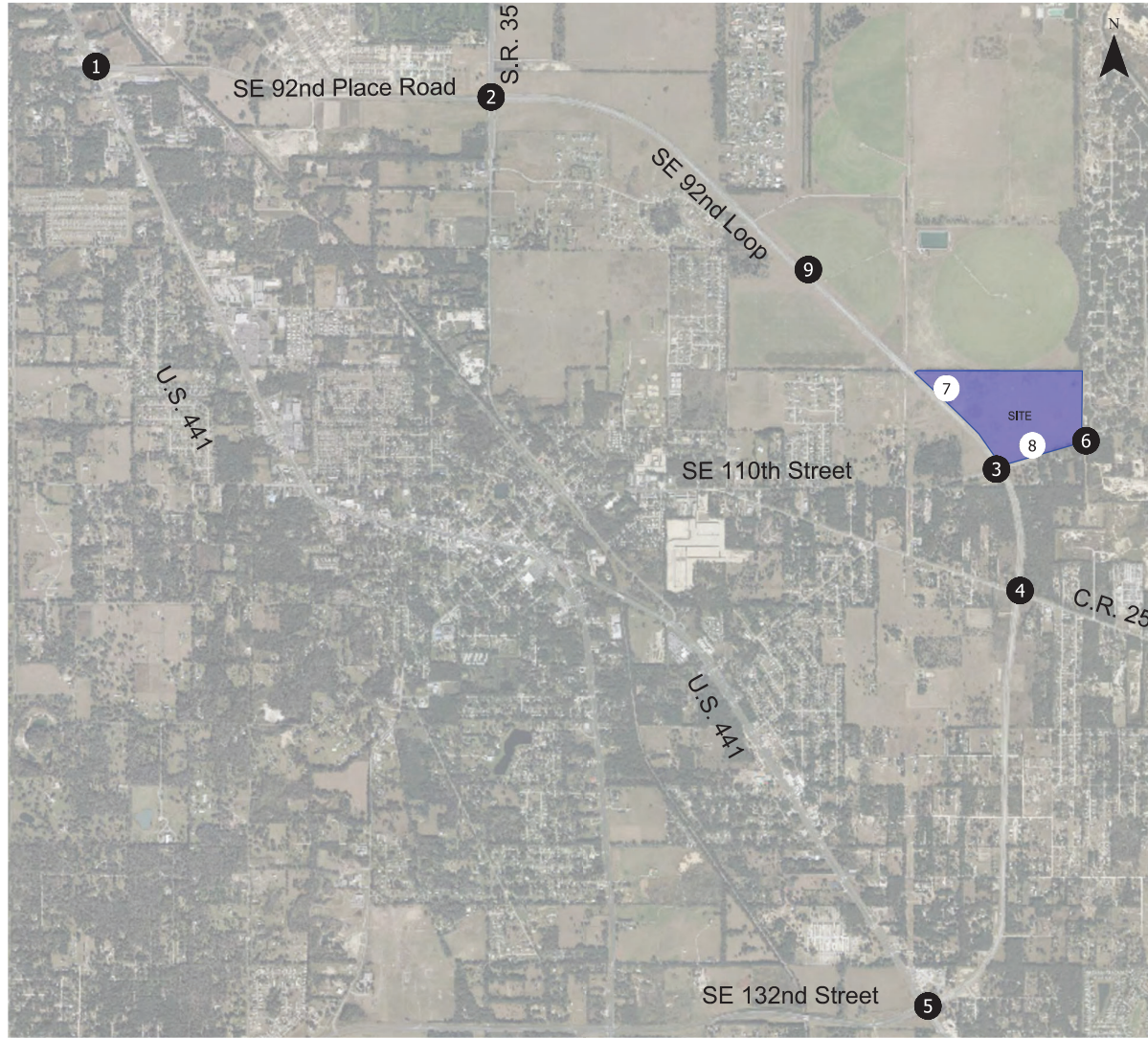
The CFRFM depicts approximately 38.8% of project traffic travels to/from the north on SE 92nd Loop, 39.8% of project traffic travels to/from the south on SE 92nd Loop, 7.1% of project traffic travels to/from the west on SE 110th Street Road and 14.3% of project traffic travels to/from the east of SE 110th Street Road. **Figure 6** summarize the proposed distribution and trip assignment.

Figure 7 depicts the project trip assignment at the study intersections.

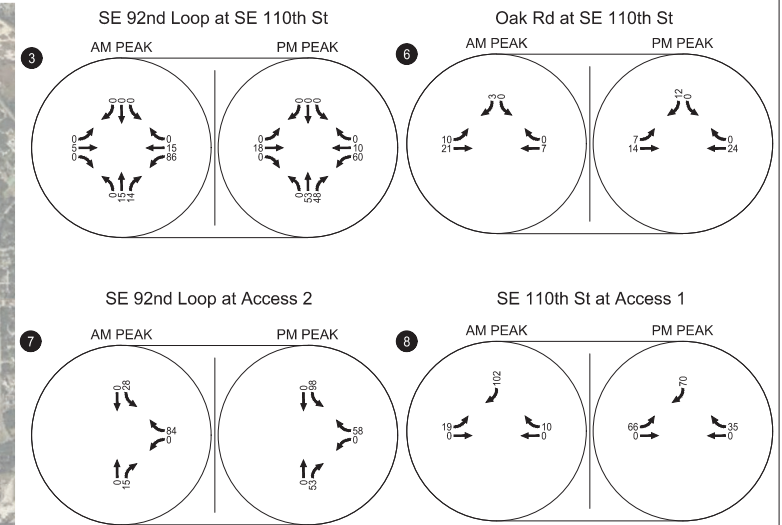
FUTURE BUILD VOLUMES

The distributed project trips were added to the 2028 no-build volumes to develop the 2028 build volumes. **Figure 8** illustrates the 2028 Build turning movement volumes for the AM and PM peak hours.

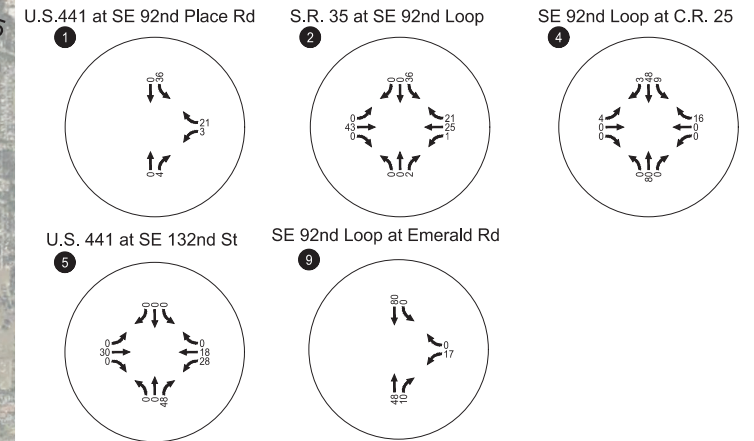
Figure
6



- (X) - Site Accesses
 (●) - Study Intersections

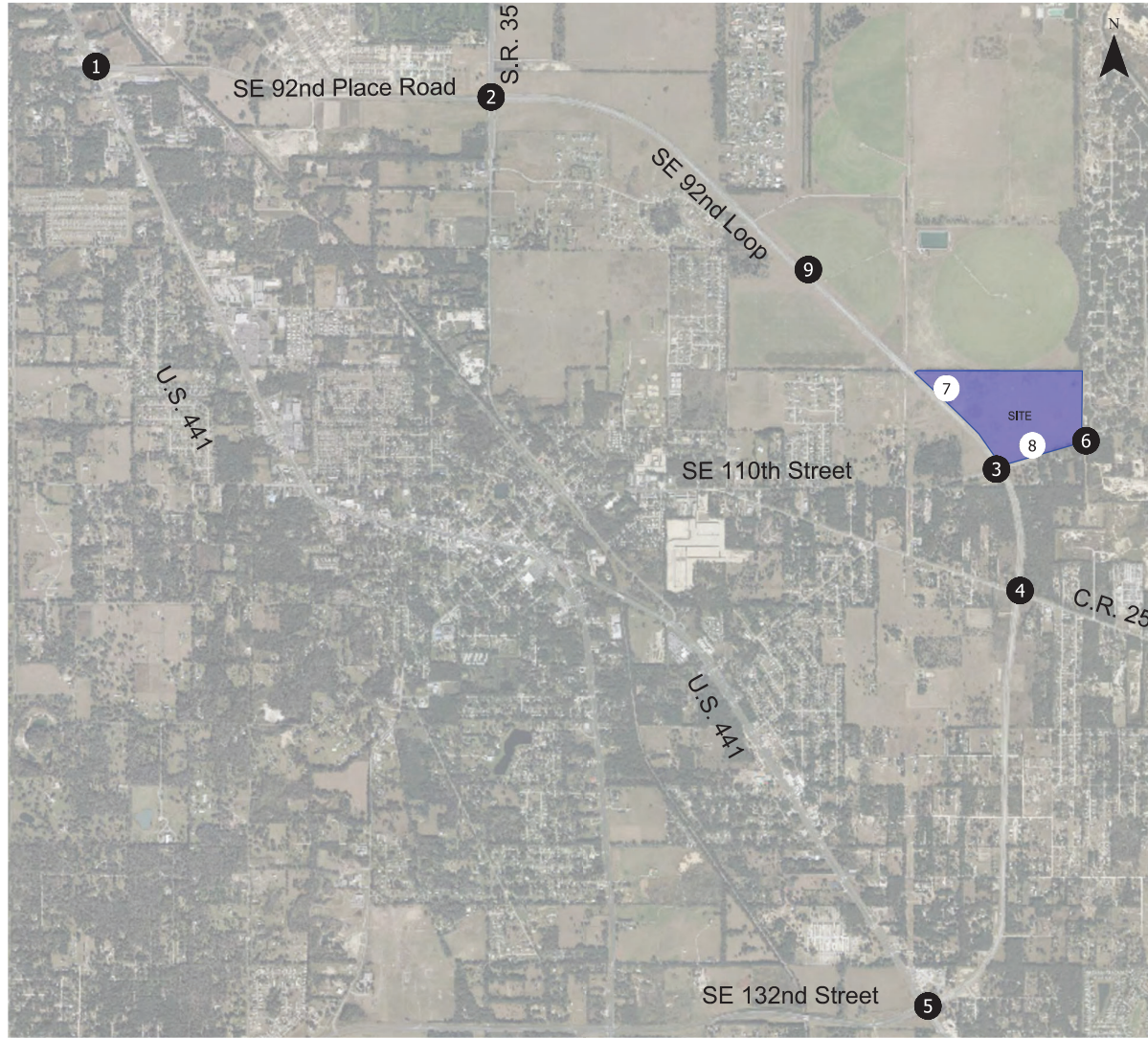


PM PEAK ANALYZED INTERSECTIONS

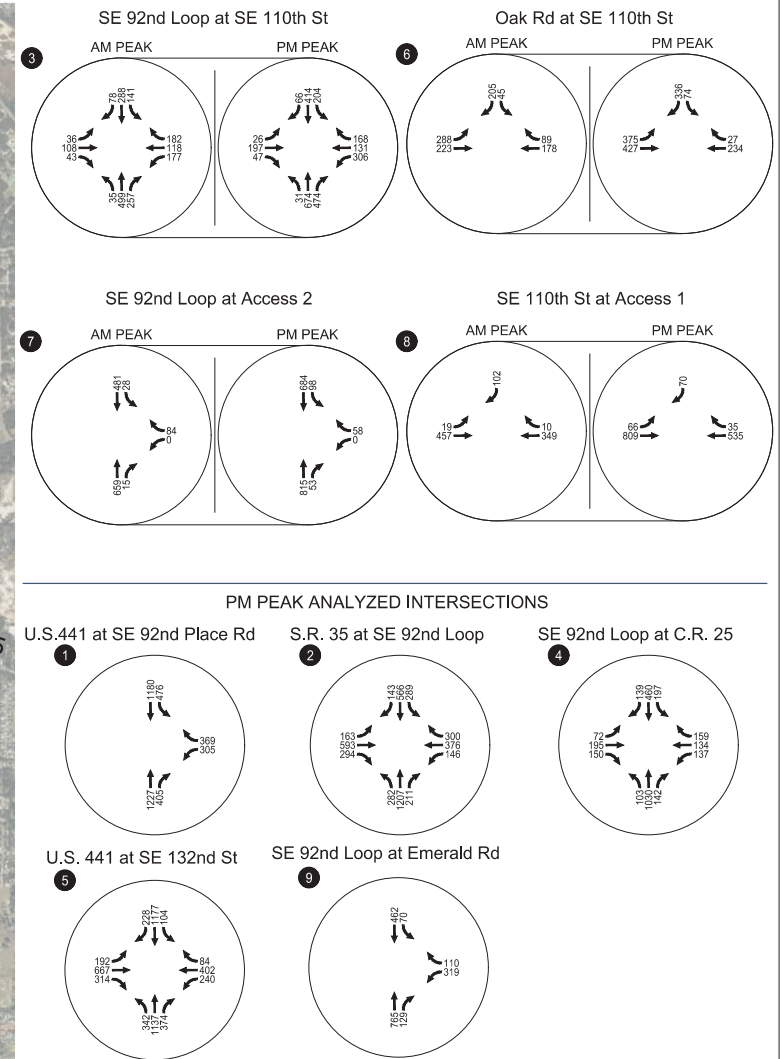


Project Trip Assignment
Bellevue, Florida

Figure
7



- (X) - Site Accesses
 (●) - Study Intersections



Buildout AM / PM Traffic Volumes
Belleview, Florida

Figure
8



Section 4

Future Conditions Analysis

Future Conditions Analysis

To determine the impacts of the site-generated traffic volumes on the surrounding roadways and study intersections, future traffic conditions were analyzed. The future conditions analysis includes vested trips from developments previously referenced. The breakdown of vested trips by development is available in **Appendix J**.

2028 NO-BUILD ROADWAY CAPACITY ANALYSIS

The PM peak hour 2028 future background capacity analysis for the study area roadways is shown in **Table 5**. As seen in **Table 5**, the analysis concludes that the following roadway segments operated over capacity as a result from no-build traffic conditions:

- SE 92nd Place Road from US 441 to S.R. 35
 - The roadway segment is anticipated to operate over capacity with a v/c ratio of 1.51.
 - This is consistent with the TPO's 2023 CMP Database, which shows a v/c of 1.09 by 2028 without accounting for vested trips
 - It should also be noted that when using the latest capacity guidance from FDOT's 2023 Multimodal Quality/Level of Service (MQ/LOS) Handbook, the roadway capacity on the SE 92nd Place Road segment is estimated to be higher. As this roadway segment has a context classification of C2-Rural in the FDOT preliminary context classification layer and an LOS Standard of E per the Ocala Marion TPO CMP Database, the peak hour peak direction capacity is estimated at 1,490. This would result in a v/c ratio of 0.64 if this capacity was used.
- US 441 from SE 147th Place to SE 92nd Place Loop
 - The roadway segment is anticipated to operate over capacity with a v/c ratio of 1.03.
 - The TPO's 2023 CMP Database shows a v/c of 0.91 without accounting for vested trips.
 - When using the latest capacity guidance from FDOT's MQ/LOS Handbook, the roadway capacity of US 441 is not anticipated to change. This roadway segment has a context classification of C3C-Suburban Commercial in the FDOT preliminary context classification layer, and an LOS Standard of D per the Ocala Marion TPO CMP Database. The peak hour peak direction capacity is estimated at 1,901, which is equal to the TPO CMP Database.

This capacity estimate is documented in **Appendix K**.

Table 5. Future No-Build Roadway Segment Analysis

Segment ID	Road Name	From/To	Lanes	2028 Background Volume	Vested Trips	2028 Background Growth + Vested Trips	2028 PHPD Service Volume	2028 No Build PHPD V/MSV
1010	SE 92 Loop	SR 35 to Access 2	4	702	298	1,000	1,800	0.56
		Access 2 to SE 110 ST RD	4	702	341	992	1,800	0.55
		SE 110 St Road to CR 25	4	702	41	743	1,800	0.41
		CR 25 to US 441	4	702	0	702	1,800	0.39
3840.1	SE 110 St Rd	CR 25 to SE 92 Lp	2	192	0	192	792	0.24
3840.1		SE 92 Lp to Access 1	2	192	0	192	792	0.24
3840.1		Access 1 to Oak Rd	2	192	0	192	792	0.24
3850.1	SE 110 St Rd	Oak Rd to CR 464	2	192	0	192	1,449	0.13
6840	US 441	SE 92 PL Rd to SE 73 ST	4	1,563	106	1,669	1,901	0.88
4550	SE 92 PI Rd	US 441 to SR 35	2	612	346	958	634	1.51
6740	US 441	SE 147 PL to SE 92 PL Lp	4	1,872	92	1,964	1,901	1.03

2028 NO-BUILD ROADWAY CAPACITY ANALYSIS WITH IMPROVEMENTS

Based on the future background roadway capacity analysis, it is recommended that the following roadway segment be widened to enhance operations and increase capacity to better accommodate future no-build traffic volumes:

- SE 92nd Place Road from US 441 to S.R. 35
 - Widen from two to four lanes
 - As noted in the previous section, this roadway segment could be considered under capacity in the future no-build condition without widening when using the estimated capacity from the 2023 MQ/LOS Handbook.
- US 441 from SE 147th Place to SE 92nd Place Loop
 - Widen from four to six lanes
 - As noted in the previous section, this roadway segment would still be considered over capacity in the future no-build condition without widening when using the estimated capacity from the 2023 MQ/LOS Handbook.

The 2028 no-build PM peak hour capacity analysis for the study area roadways with roadway improvements can be found in **Table 6**. All study area roadways are anticipated to operate acceptably in 2028 no-build PM peak hour conditions with the addition of the improvements described above.

Table 6. Future No-Build Roadway Segment Analysis with Improvements

Segment ID	Road Name	From/To	Lanes	2028 Background Volume	Vested Trips	2028 Background Growth + Vested Trips	2028 PHPD Service Volume	2028 No Build PHPD V/MSV
4550	SE 92 PI Rd	US 441 to SR 35	4*	612	253	958	2765*	0.35
6740	US 441	SE 147 PI to SE 92 PI Lp	6**	1,872	92	1,964	2814**	0.70

* Value from FDOT MQ/LOS Method (2023 Handbook) for LOS D and context class C2 (per FDOT preliminary classification of SE 92 Place Road); adjusted for multilane undivided highway with exclusive left turns (factor = 0.95)

**Value from FDOT MQ/LOS Method (2023 Handbook) for LOS D and context class C3C (per FDOT preliminary classification of U.S. 441); adjusted for roadway with exclusive left turns (factor = 1.05).

2028 NO-BUILD INTERSECTION CAPACITY ANALYSIS

The lane configurations for the no-build scenario are shown in **Figure 9**. In addition to the current intersections, the planned intersection of SE 92nd Loop at Emerald Road has been incorporated into the intersection capacity analysis.

- SE 92nd Loop at Emerald Road
 - Signalized intersection.
 - An exclusive eastbound left-turn and eastbound right-turn lane as shown in the county's construction plans for the extension project (County Project ID #TIP073865), as included in **Appendix L**.
 - The recommended length for the new southbound left-turn lane is 373 (*deceleration length + queue length* = $350 + 0.9 \times 25$) feet based on guidance from Exhibit 212-1 in the FDOT Design Manual and a posted speed limit of 50 miles per hour
 - The recommended length for the new northbound right-turn lane is 398 (*deceleration length + queue length* = $350 + 1.9 \times 25$) feet based on the deceleration length from Exhibit 212-1 in the FDOT Design Manual and a posted speed limit of 50 miles per hour.

The results of the intersection capacity analysis are shown in **Table 7**. The analysis reflects the v/c ratios, delays per turning movement (in seconds), and the operating LOS.

Table 7 shows that under future no-build conditions (which does not include project traffic), the study intersections and their respective movements are projected to operate with an overall LOS of F or better and a highest v/c ratio being 0.96, except for the following movements:

- Eastbound, westbound and northbound of S.R. 35 / SE 58th Avenue at SE 92nd Loop
- Northbound of SE 92nd Loop at C.R. 25
- Eastbound of US 441 at SE 132nd Street Road

The improvements needed for the no-build intersections to operate acceptably will be further evaluated and analyzed in the following sections. The future no-build Synchro intersection report printouts are provided in **Appendix M**.

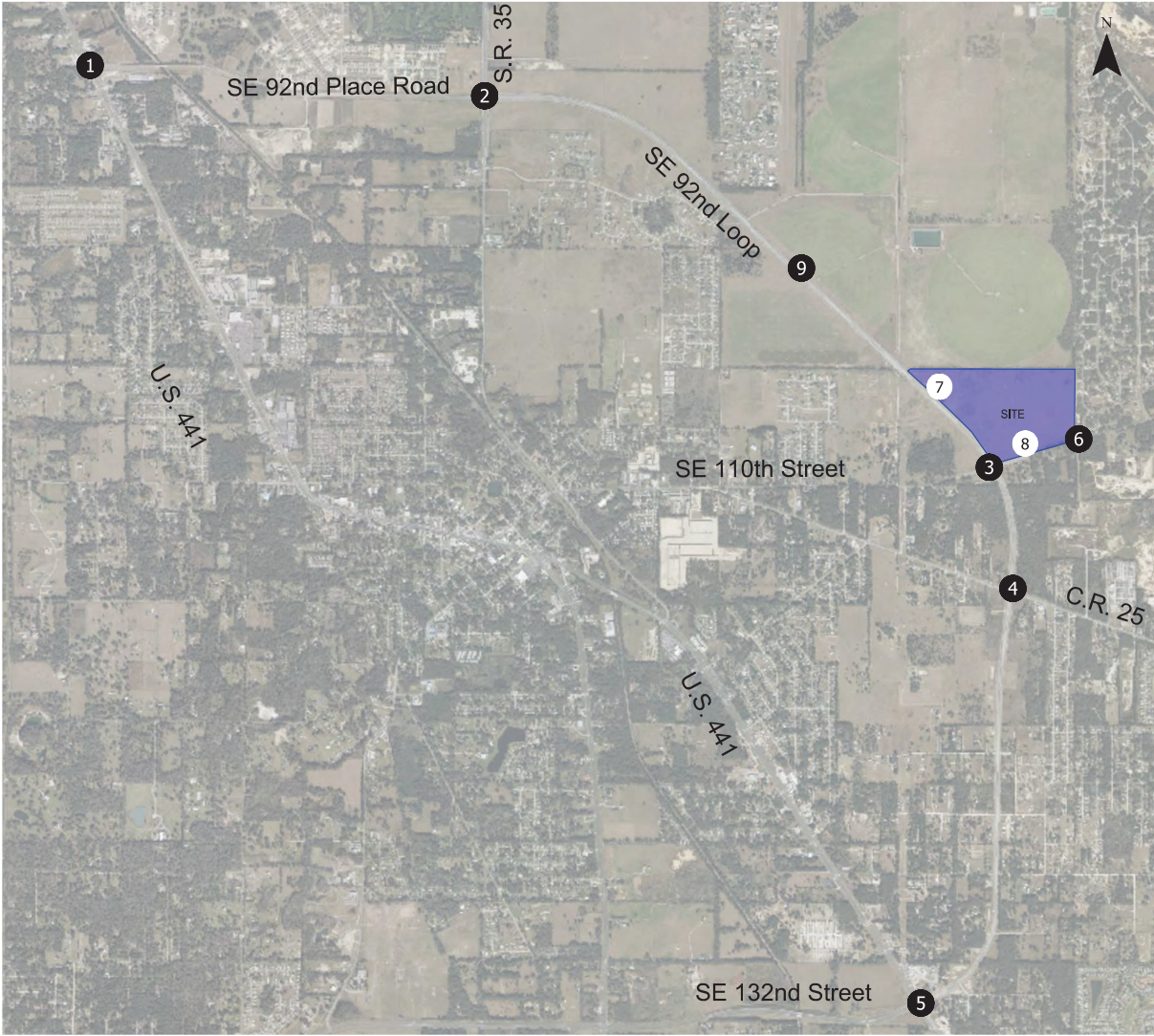
Table 7. Future No-Build Intersection Analysis

Intersection	Control Type	Performance Measure	AM Peak Period					PM Peak Period				
			Overall	EB	WB	NB	SB	Overall	EB	WB	NB	SB
1 - US 441 & SE 92 nd Place Rd	Signalized	Delay (s/veh)						31.1	-	37.6**	30.6	22.9
		LOS						C	-	D**	C	C
		v/c ratio*						-	-	0.85	0.76	0.96
2 - S.R. 35 / SE 58 th Ave at SE 92 nd Loop	Signalized	Delay (s/veh)						105.1	203.7	64.9	100.3	40.9
		LOS						F	F	E	F	D
		v/c ratio*						-	1.36	1.04	1.61	0.83
3 - SE 92 nd Loop at SE 110 th Street	Signalized	Delay (s/veh)	21.9	27.1	24.6	22.6	17.2	27.1	39.2	28.7	27.8	20.6
		LOS	C	C	C	C	B	C	D	C	C	C
		v/c ratio*	-	0.52	0.5	0.61	0.38	-	0.76	0.68	0.78	0.61
4 - SE 92 nd Loop at C.R. 25	Signalized	Delay (s/veh)						43.2	28.1	27	65.6	23.4
		LOS						D	C	C	E	C
		v/c ratio*						-	0.56	0.5	1.06	0.73
5 - US 441 at SE 132 nd Street	Signalized	Delay (s/veh)						81.6	190.8	66.7	63.1	42.9
		LOS						E	F	E	E	D
		v/c ratio*						-	1.30	0.89	1.2	0.85
6 - Oak Road at SE 110 th Street	TWSC	Delay (s/veh)	-	8.6	-	-	31.4	-	8.8	-	-	118.4
		LOS	-	A	-	-	D	-	A	-	-	F
		v/c ratio*	-	0.23	-	-	0.26	-	0.29	-	-	0.78
9 - SE 92 nd Loop at Emerald Road	Signalized	Delay (s/veh)						17.6	-	37.9	14.0	7.1
		LOS						B	-	D	B	A
		v/c ratio*						-	-	0.86	0.44	0.19

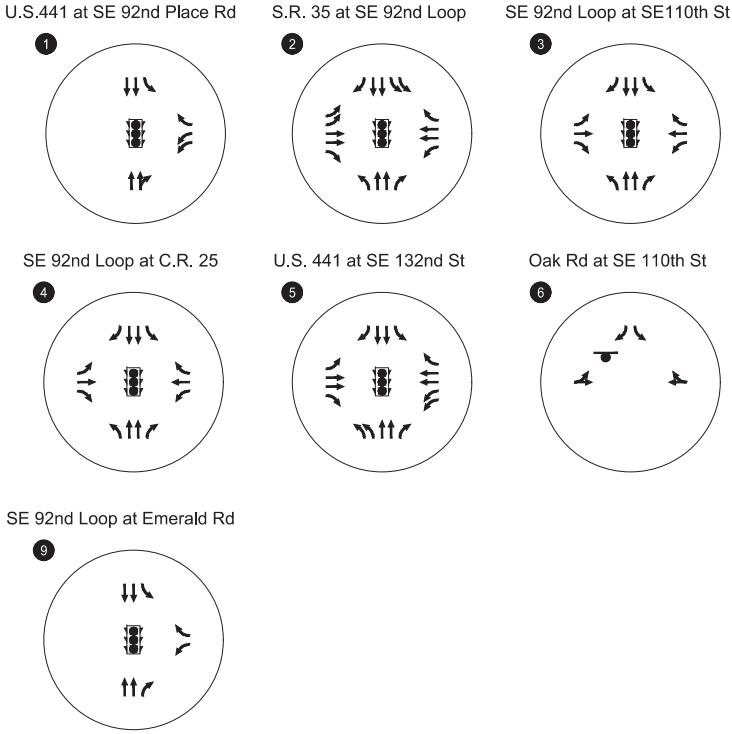
*v/c ratio reported for the highest movement

**values were obtained from the Synchro Report instead of the HCM 7th Edition,, as HCM 7th was unable to generate the delay and LOS.

H:\3036972 - Sandy Clay PUD TIA\report\figs\31270 Sandy Clay TIA Fig 9.dwg Oct 31, 2025 - 7:03pm - salmed Layout Title Fig-9-Background Lane Config



- ⊗ - Site Accesses
- Ⓢ - Traffic Signal
- Ⓢ - Study Intersections
- Ⓢ - Stop Controlled



Lane Configurations under No-Build
Bellevue, Florida

Figure
9

2028 NO-BUILD INTERSECTION CAPACITY ANALYSIS WITH IMPROVEMENTS

Under no-build conditions, the following intersections are operating at over capacity:

- S.R. 35 / SE 58th Avenue at SE 92nd Loop (Signalized) – Overall LOS F; Highest v/c ratio of 1.42
- SE 92nd Loop at C.R. 25 (Signalized) – Overall LOS D; Highest v/c ratio of 1.03
- US 441 at SE 132nd Street (Signalized) – Overall LOS E; Highest v/c ratio of 1.30

The following no-build related improvements are recommended to help improve operations at these intersections:

- S.R. 35 / SE 58th Avenue at SE 92nd Loop
 - Add a permitted-overlap exclusive eastbound right turn lane and convert the shared thru/right turn lane into thru only lane.
 - Increase the signal timing cycle length to 140 seconds and optimize the phase splits.
- SE 92nd Loop at C.R. 25
 - Optimize the phase splits.
- US 441 at SE 132nd Street
 - Increase the signal timing cycle length to 136 seconds and optimize the phase splits.

With the above recommended improvements, the intersections are anticipated to operate at LOS E or better with no over capacity movements. **Table 8** presents the results of the improved no-build conditions, and the Synchro intersection report printouts are provided in **Appendix M**.

Table 8. Future No-Build Intersection Analysis with Improvements

Intersection	Control Type	Performance Measure	PM Peak Period				
			Overall	EB	WB	NB	SB
2 - S.R. 35 / SE 58 th Ave at SE 92 nd Loop	Signalized	Delay (s/veh)	57.9	57.1	61.5	59.4	52.7
		LOS	E	E	E	E	D
		v/c ratio*	-	0.91	0.91	0.95	0.86
4 - SE 92 nd Loop at C.R. 25	Signalized	Delay (s/veh)	28.0	34.1	32.8	28.9	20.5
		LOS	C	C	C	C	C
		v/c ratio*	-	0.62	0.57	0.84	0.70
5 - U.S. 441 at SE 132 nd Street Road	Signalized	Delay (s/veh)	63.5	77.4	66.4	53.4	66.4
		LOS	E	E	E	D	E
		v/c ratio*	-	0.94	0.85	0.97	0.98

*v/c ratio reported for the highest movement

2028 BUILD ROADWAY CAPACITY ANALYSIS

The 2028 build PM peak hour roadway capacity analysis for the study area roadways with addition of the no-build improvements can be found in **Table 9**. The analysis concludes that none of the study segments operate over capacity in the build condition when assuming the no-build roadway improvements discussed in the **2028 No-Build Roadway Capacity Analysis with Improvements** section. That is, the project traffic from the proposed Sandy Clay development does not result in any additional deficiencies above and beyond the minimum needed to fix the future background deficiencies.

Table 9. Future Build Roadway Capacity Analysis

Segment ID	Road Name	From/To	Lanes	2028 Background Growth + Vested Trips	% of Project Trips	Project Trips	2028 Build PHPD Volume	2028 PHPD Service Volume	2028 Build PHPD V/MSV
1010	SE 92 Loop	SR 35 to Access 2	4	1,000	39%	99	1,099	1,800	0.61
		Access 2 to SE 110 St Rd	4	992	21%	53	1,045	1,800	0.58
		SE 110 St Road to CR 25	4	743	40%	101	844	1,800	0.47
		CR 25 to U.S. 441	4	702	32%	81	783	1,800	0.44
3840.1	SE 110 St Rd	CR 25 to SE 92 Lp	2	192	7%	18	210	792	0.27
		SE 92 Lp to Access 1	2	192	47%	119	311	792	0.39
		Access 1 to Oak Rd	2	192	14%	35	2,27	792	0.29
3850.1	SE 110 St Rd	Oak Rd to CR 464	2	192	10%	25	2,17	1,449	0.15
6840	U.S. 441	SE 92 Pl Rd to SE 73 St	4	1,669	14%	35	1,704	1,901	0.90
4550	SE 92 Pl Rd	U.S. 441 to SR 35	4*	958	17%	43	1011	2765*	0.37
6740	U.S. 441	SE 147 Pl to SE 92 Pl Lp	6**	1,964	19%	48	2,012	2814**	0.72

* Value from *FDOT MQ/LOS Method (2023 Handbook)* for LOS D and context class C2 (per *FDOT* preliminary classification of SE 92 Place Road); adjusted for multilane undivided highway with exclusive left turns (factor = 0.95)

**Value from *FDOT MQ/LOS Method (2023 Handbook)* for LOS D and context class C3C (per *FDOT* preliminary classification of U.S. 441); adjusted for roadway with exclusive left turns (factor = 1.05).

2028 BUILD ROADWAY INTERSECTION CAPACITY ANALYSIS

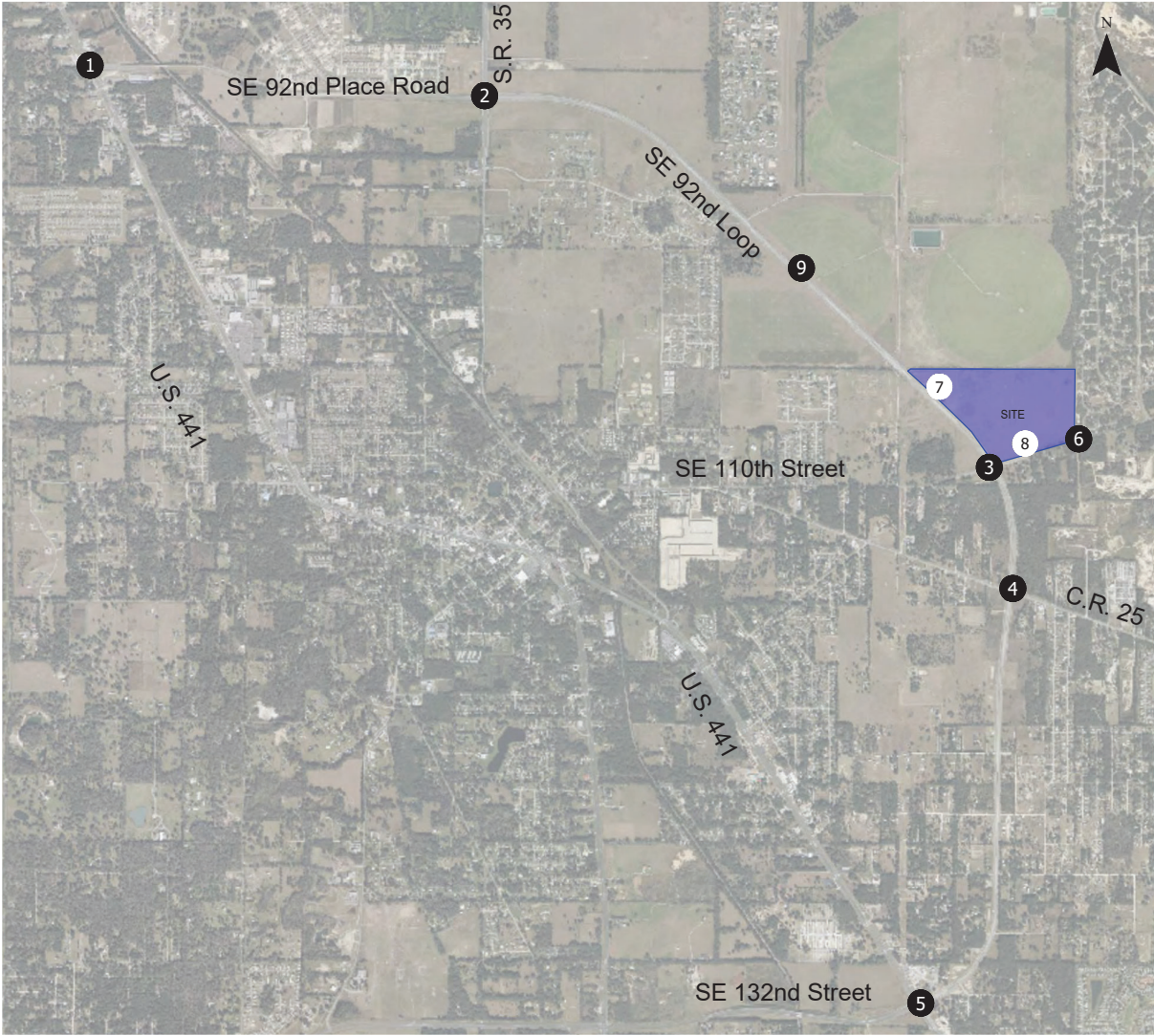
The build intersection analysis used the no-build with improvement lane configurations shown in **Figure 10**. The results of the build intersection capacity analysis are shown in **Table 10**. Two new intersections were analyzed for both AM and PM peak hours in the buildout condition including:

- SE 110th Street Road at Driveway 1
 - Stop controlled full-access intersection.
 - The driveway (north leg) consists of three lanes (one left-turn lane, one exclusive right-turn lane, and one receiving lane)
 - An exclusive eastbound left-turn lane is warranted per NCHRP 457. The results are in **Appendix N**.
 - An exclusive westbound right-turn lane is not warranted per NCHRP 457. The results are in **Appendix N**.
 - The recommended length of the exclusive left-turn lane is 150 feet. This calculation is based on the 95th percentile queue length under build conditions and the deceleration requirements outlined in Exhibit 212-1 of the FDOT Design Manual for a posted speed limit of 35 mph. The total length includes 145 feet for deceleration and 5 feet (0.4×25 feet) for queue storage.
- SE 92nd Loop at Driveway 2
 - Stop controlled intersection with left-in, right-in, and right-out.
 - The driveway (east leg) consists of two lanes (one right- turn-only lane and one receiving lane)
 - An exclusive northbound right-turn lane is warranted per NCHRP 457. The results are in **Appendix N**.
 - The recommended length of the exclusive northbound right-turn lane is 300 feet. This is based on the projected queue length under build conditions and the deceleration requirements outlined in Exhibit 212-1 of the FDOT Design Manual for a posted speed limit of 50 mph. The total length comprises 290 feet for deceleration and 10 feet (0.4×25 feet) for queue storage.
 - An exclusive southbound left-turn lane currently exists with a storage length of 260 feet. Based on the projected queue length under build conditions and the deceleration requirements outlined in Exhibit 212-1 of the FDOT Design Manual for a posted speed limit of 50 mph, the recommended length is 303 feet, comprising 290 feet for deceleration and 13 feet (0.5×25 feet) for queue storage.

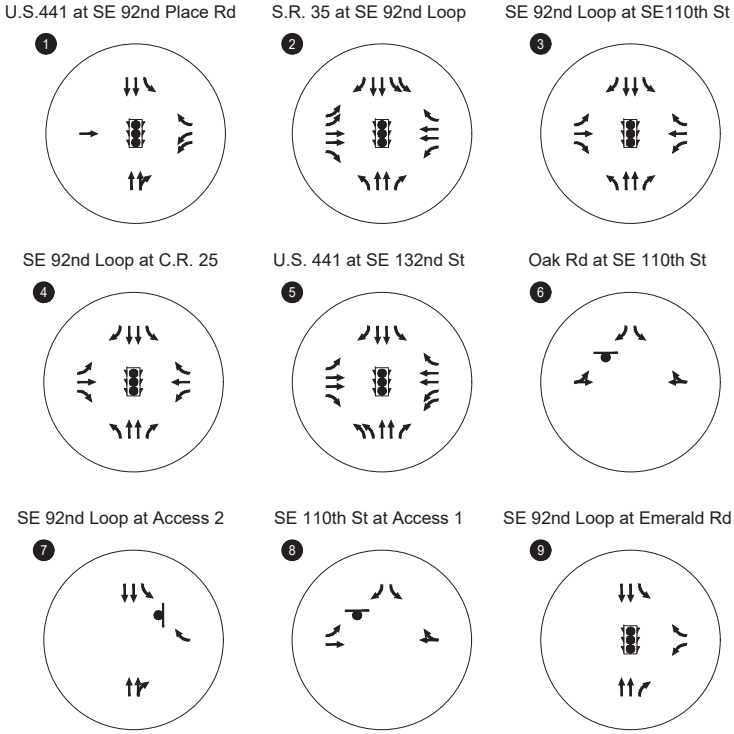
As shown in **Table 10**, the study intersections operate at LOS E or better and without over capacity movements. The only exception is the southbound movement at the intersection of U.S. 441 at SE 92nd Place Road, which has a v/c ratio of 1.04. This signalized intersection has an exclusive pedestrian phase (Ex-ped). However, pedestrian counts collected on Thursday, August 21, 2025, between 7:00 AM to 9:00 AM and 4:00 PM to 6:00 PM peak periods show no pedestrian crossings at this location. To improve operational efficiency, the phase split for the Ex-ped was reduced by 5 seconds, while the southbound movement phase was increased by 5 seconds. As a result of this adjustment, the v/c ratio for the southbound movement

decreased to 0.97. This improvement is shown in the second row of **Table 10**. The future build conditions Synchro intersection report printouts are provided in **Appendix O**.

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- ⊗ - Site Accesses
- 🚦 - Traffic Signal
- Ⓜ - Study Intersections
- 🛑 - Stop Controlled



Build Lane Configurations
Bellevue, Florida

Figure
10

Table 10. Future Build Intersection Analysis

Intersection	Control Type	Performance Measure	AM Peak Period					PM Peak Period				
			Overall	EB	WB	NB	SB	Overall	EB	WB	NB	SB
1 - U.S. 441 & SE 92 nd Place Rd	Signalized	Delay (s/veh)						34.9	-	37***	31.2	29.9
		LOS						C	-	D***	C	C
		v/c ratio*						-	-	0.87	0.76	1.04
1i - U.S. 441 & SE 92 nd Place Rd	Signalized (Improved)	Delay (s/veh)						34.1	-	37***	36.6	24.3
		LOS						C	-	D***	D	C
		v/c ratio*						-	-	0.87	0.82	0.97
2 - S.R. 35 / SE 58 th Ave at SE 92 nd Loop	Signalized	Delay (s/veh)						61.8	64.3	62.7	61.6	58.9
		LOS						E	E	E	E	E
		v/c ratio*						-	0.96	0.92	0.96	0.93
3 - SE 92 nd Loop at SE 110 th Street	Signalized	Delay (s/veh)	22.6	27.8	24.2	23.6	17.8	31.2	44.2	37.7	30.4	22.1
		LOS	C	C	C	C	B	C	D	D	C	C
		v/c ratio*	-	0.52	0.47	0.65	0.39	-	0.8	0.83	0.82	0.65
4 - SE 92 nd Loop at C.R. 25	Signalized	Delay (s/veh)						29.5	35.8	35.2	30.9	21.1
		LOS						C	D	D	C	C
		v/c ratio*						-	0.64	0.6	0.87	0.75
5 - U.S. 441 at SE 132 nd Street	Signalized	Delay (s/veh)						66.2	84.1	75.8	53.1	66.7
		LOS						E	F	E	D	E
		v/c ratio*						-	0.98	0.96	0.97	0.98
6 - Oak Road at SE 110 th Street	TWSC	Delay (s/veh)	-	8.7	-	-	30.5	-	9	-	-	148.3
		LOS	-	A	-	-	D	-	A	-	-	F
		v/c ratio*	-	0.23	-	-	0.26	-	0.3	-	-	0.87
7 - SE 92 nd Loop at Access 2	TWSC	Delay (s/veh)	-	-	11.4	-	9.1	-	-	12.2	-	10.6
		LOS	-	-	A	-	A	-	-	B	-	B
		v/c ratio*	-	-	0.13	-	0.03	-	-	0.11	-	0.14
8 - SE 110 th St at Access 1	TWSC	Delay (s/veh)	-	8.1	-	-	11.3	-	8.9	-	-	42.8
		LOS	-	A	-	-	B	-	A	-	-	E
		v/c ratio*	-	0.02	-	-	0.16	-	0.07	-	-	0.19
9 - SE 92 nd Loop at Emerald Road	Signalized	Delay (s/veh)						18	-	38.1	14.9	7.6
		LOS						B	-	D	B	A

Intersection	Control Type	Performance Measure	AM Peak Period					PM Peak Period				
			Overall	EB	WB	NB	SB	Overall	EB	WB	NB	SB
		v/c ratio*						-	-	0.87	0.48	0.23

*v/c ratio reported for the highest movement

**Major street left-turn movement results reported at unsignalized intersection

***values were obtained from the Synchro Report instead of the HCM 7th Edition, as HCM 7th was unable to generate the delay and LOS.

INTERSECTION TURN LANE AND QUEUE ANALYSIS

A queueing analysis was conducted for the study intersections to determine the impacts of the project trips on intersection queueing in the study area. **Table 11** shows the queueing results for the existing, background, and buildout conditions at these intersections. An indication is provided for whether the lane length is exceeded in the existing, background, or buildout condition. The estimations are based on the 95th percentile queues under build conditions and FDOT FDM deceleration lengths in Exhibit 212-1. The following intersections have a turning movement where a turn lane deficiency is caused by the project:

- U.S. 441 & SE 92nd Place Rd
 - Southbound Left Turn (45 feet)
- S.R. 35 / SE 58th Ave at SE 92nd Loop
 - Eastbound Left Turn (2 feet)
 - Westbound Left Turn (7 feet)
- SE 92nd Loop at SE 110th Street Road
 - Westbound Left Turn (10 feet)
 - Northbound Left Turn (2 feet)
 - Northbound Right Turn (73 feet)
 - Southbound Right Turn (3 feet)
- SE 92nd Loop at C.R. 25
 - Southbound Left Turn (5 feet)
- U.S. 441 at SE 132nd Street Road
 - Eastbound Left Turn (2 feet)
- Oak Road at SE 110th Street
 - Southbound Left Turn (13 feet)

The required deceleration length is determined from the FDOT Design Manual Exhibit 212-1 for state roads. Design speed (posted speed plus five) was used for FDOT intersections.

To avoid unnecessary construction for negligible benefit, this study adopts a 100-foot threshold for queue/storage deficiencies. FDOT guidance outlines how to design turn lanes (deceleration, storage, taper) but does not prescribe a universal “fix-it” trigger for shortfalls. In practice, gaps under 100 feet rarely affect intersection operations or safety in a meaningful way, yet correcting them can require milling, restriping, drainage, and signal work that tears up the road without commensurate returns. Accordingly, improvements are not proposed for any movement with a documented deficiency under 100 feet.

The turn lane analysis documentation is available in **Appendix P**.

Table 11. Queue Analysis

Intersection	Movement	Speed	Total Existing Lane Length (ft)	Required Deceleration (ft)	Existing Conditions Analysis			2028 Future Background Conditions Analysis			2028 Future Buildout Conditions Analysis			Cause for Deficiency
					95 th % Queue (ft)	Total Required Turn Lane Length (ft)	Lane Length Deficiency (ft)	95 th % Queue (ft)	Total Required Turn Lane Length (ft)	Lane Length Deficiency (ft)	95 th % Queue (ft)	Total Required Turn Lane Length (ft)	Lane Length Deficiency (ft)	
1 - U.S. 441 & SE 92 nd Place Rd	SBL	45	395	290	395	685	290	683	973	578	728	1018	623	45
	WBL	30	410	145	240	385	0	263	408	0	265	410	0	N/A
	EBL	45	235	290	165	455	220	143	433	198	145	435	200	2
	WBL	50	605	350	40	390	0	293	643	38	300	650	45	7
2 - S.R. 35 / SE 58 th Ave at SE 92 nd Loop	WBR	50	1,190	350	465	815	0	283	633	0	315	665	0	N/A
	NBL	45	445	290	140	430	0	455	745	300	448	738	293	N/A
	NBR	45	250	290	75	365	115	500	790	540	195	485	235	N/A
	SBL	45	675	290	115	405	0	228	518	0	273	563	0	N/A
	SBR	45	515	290	138	428	0	103	393	0	103	393	0	N/A
	EBL	30	430	145	18	163	0	23	168	0	25	170	0	N/A
	EBR	30	440	145	770	915	475	23	168	0	25	170	0	N/A
	WBL	30	440	145	165	310	0	203	348	0	305	450	10	10
3 - SE 92 nd Loop at SE 110 th Street Road	WBR	30	445	145	70	215	0	95	240	0	105	250	0	N/A
	NBL	50	330	350	15	365	35	18	368	38	20	370	40	2
	NBR	50	370	350	253	603	233	290	640	270	363	713	343	73
	SBL	50	735	350	100	450	0	123	473	0	138	488	0	N/A
	SBR	50	360	350	23	373	13	25	375	15	28	378	18	3
	EBL	45	495	290	13	303	0	53	343	0	58	348	0	N/A
	EBR	45	495	290	30	320	0	103	393	0	108	398	0	N/A
	WBL	45	505	290	58	348	0	30	320	0	40	330	0	N/A
4 - SE 92 nd Loop at C.R. 25	WBR	45	500	290	75	365	0	103	393	0	125	415	0	N/A
	NBL	50	425	350	23	373	0	58	408	0	60	410	0	N/A
	NBR	50	505	350	40	390	0	73	423	0	73	423	0	N/A
	SBL	50	475	350	110	460	0	115	465	0	130	480	5	5
	SBR	50	520	350	35	385	0	63	413	0	65	415	0	N/A
	EBL	55	600	405	223	628	28	343	748	148	345	750	150	2
	EBR	55	535	405	0	405	0	0	405	0	0	405	0	N/A
	WBL	50	605	350	118	468	0	203	553	0	250	600	0	N/A
5 - U.S. 441 at SE 132 nd Street	WBR	50	475	350	63	413	0	70	420	0	70	420	0	N/A
	NBL	55	595	405	168	573	0	320	725	130	320	725	130	N/A
	NBR	55	970	405	123	528	0	220	625	0	270	675	0	N/A
	SBL	55	620	405	70	475	0	213	618	0	215	620	0	N/A
	SBR	55	545	405	0	405	0	0	405	0	0	405	0	N/A
	SBL	40	125	185	75	260	135	105	290	165	118	303	178	13
6 - Oak Road at SE 110 th Street	SBL	40	125	185	75	260	135	105	290	165	118	303	178	13

MULTIMODAL ASSESSMENT

A multimodal assessment was conducted to determine existing and proposed alternate modes of transportation within the immediate project study area. The following is a summary of transit, pedestrian, and bicycle facilities:

TRANSIT

Transit services within Marion County are provided by Marion Transit. Marion Transit only provides paratransit services and does not operate fixed route services.

PEDESTRIAN FACILITIES

There is an existing sidewalk on both sides of SE 92nd Loop adjacent to the site. The development is expected to connect to the existing sidewalk network, but the specific locations of sidewalk installation have not yet been determined. Marion County will be working with the developer on the provisions of sidewalks for the site and this will be included in the Developer's Agreement. No sidewalks exist on SE 110th Street Road.

BICYCLE FACILITIES

There is a paved shoulder on both sides of SE 92nd Loop adjacent to the site but no bicycle lanes or shared use path are planned.



Section 5

Conclusions

Conclusions

This traffic analysis has been prepared to evaluate the traffic impacts associated with the Sandy Clay residential development to be located on the northeast quadrant of SE 92nd Loop and SE 110th Street Road in support of obtaining concurrency through Marion County.

The following is a summary of the study findings:

Trip Generation

- The proposed development is expected to generate 3,960 new daily trip ends, 288 new AM peak hour trips, and 402 new PM peak hour trips.

Proposed Access

- Access to the proposed property will be two (2) driveways, one full access driveway on SE 110th Street Road, a northern access along SE 92nd Loop with left/right-in with a right-out access.

Existing Conditions

- All study roadway segments operate acceptably and are shown to have sufficient capacity under existing conditions.
- All study intersections operate at an overall Level of Service (LOS) E or better. All intersections have movement approaches with a volume-to-capacity (v/c) ratio below 1.00, except for the westbound movement at S.R. 35/SE 58th Avenue at SE 92nd Loop and the eastbound movement at U.S. 441 at SE 132nd Street, which have v/c ratios of 1.02 and 1.42, respectively.

No-Build Conditions

- Two roadway segments for future no-build conditions operate over capacity as a result from background traffic conditions:
 - SE 92nd Place Road from U.S. 441 to SR 35
 - It is recommended that the SE 92nd Place Road segment described above be widened from two to four lanes due to deficiencies identified in the no-build traffic conditions. This will enhance operations and increase capacity in an effort to better accommodate future traffic conditions. Widening from two to four lanes would provide adequate capacity and reduce the v/c ratio to 0.35.
 - U.S. 441 from SE 147th Place to SE 92 Place Loop
 - It is recommended that U.S. 441 segment described above be widened from four to six lanes due to deficiencies identified in the no-build traffic conditions. This will enhance operations and increase capacity in an effort to better accommodate future traffic conditions. Widening U.S. 441 from four to six would provide adequate capacity and reduce the v/c ratio to 0.70.
- Under future no-build conditions, All intersections are expected to operate at LOS E or better, except the following movements projected to have v/c > 1.00:
 - S.R. 35/SE 58th Avenue at SE 92nd Loop
 - SE 92nd Loop at C.R. 25

- U.S. 441 at SE 132nd Street Road
- To help improve operations at the intersection with over capacity movements in the 2028 no-build peak hour conditions, the following improvements are recommended:
 - S.R. 35 / SE 58th Avenue at SE 92nd Loop
 - Add a permitted-overlap exclusive eastbound right turn lane and convert the shared thru/right turn lane into thru only lane.
 - Increase the signal timing cycle length to 140 seconds and optimize the phase splits.
 - SE 92nd Loop at C.R. 25
 - Optimize the phase splits.
 - U.S. 441 at SE 132nd Street
 - Increase the signal timing cycle length to 136 seconds and optimize the phase splits.

Buildout Conditions

- The analysis indicates that under the Build condition, roadway segments are expected to operate at acceptable levels with the improvements included in the Background condition.
- The analysis indicates that under the Build condition (assuming No-Build improvements), the study intersections operate at an overall LOS of E or better, with no over-capacity movements except for the southbound movement at U.S. 441 and SE 92nd Place Road. This intersection includes an exclusive pedestrian phase (Ex-Ped). Pedestrian counts collected on Thursday, August 21, 2025, between 7:00 AM and 9:00 PM showed no pedestrian crossings at this location. The proposed improvement is to reduce the Ex-Ped phase split and optimize the remaining phase splits.
- An exclusive eastbound left-turn lane at Driveway 1 and an exclusive northbound right-turn lane at Driveway 2 are recommended:
 - SE 110th Street Road at Driveway 1
 - An exclusive eastbound left-turn lane is warranted per NCHRP 457.
 - The recommended length of the exclusive left-turn lane is 150 feet. This calculation is based on the 95th percentile queue length under build conditions and the deceleration requirements outlined in Exhibit 212-1 of the FDOT Design Manual for a posted speed limit of 35 mph.
 - SE 92nd Loop at Driveway 2
 - An exclusive northbound right-turn lane is warranted per NCHRP 457.
 - The recommended length of the exclusive northbound right-turn lane is 300 feet. This is based on the projected queue length under build conditions and the deceleration requirements outlined in Exhibit 212-1 of the FDOT Design Manual for a posted speed limit of 50 mph.

Turn Lane Analysis

- Based on the turn-lane analysis, no turn movements show deficiencies exceeding 100 feet attributable to project trip.

Appendix A

Preliminary Site Plan

Appendix B

Approved Methodology

TECHNICAL MEMORANDUM

May 15, 2025

Project# 31370

To: Michael Olson

Taylor Morison Tampa

10210 Highland Manor Drive, Suite 400A

Tampa, FL 33610

From: Kok Wan Mah, PE; Misbaou Bah

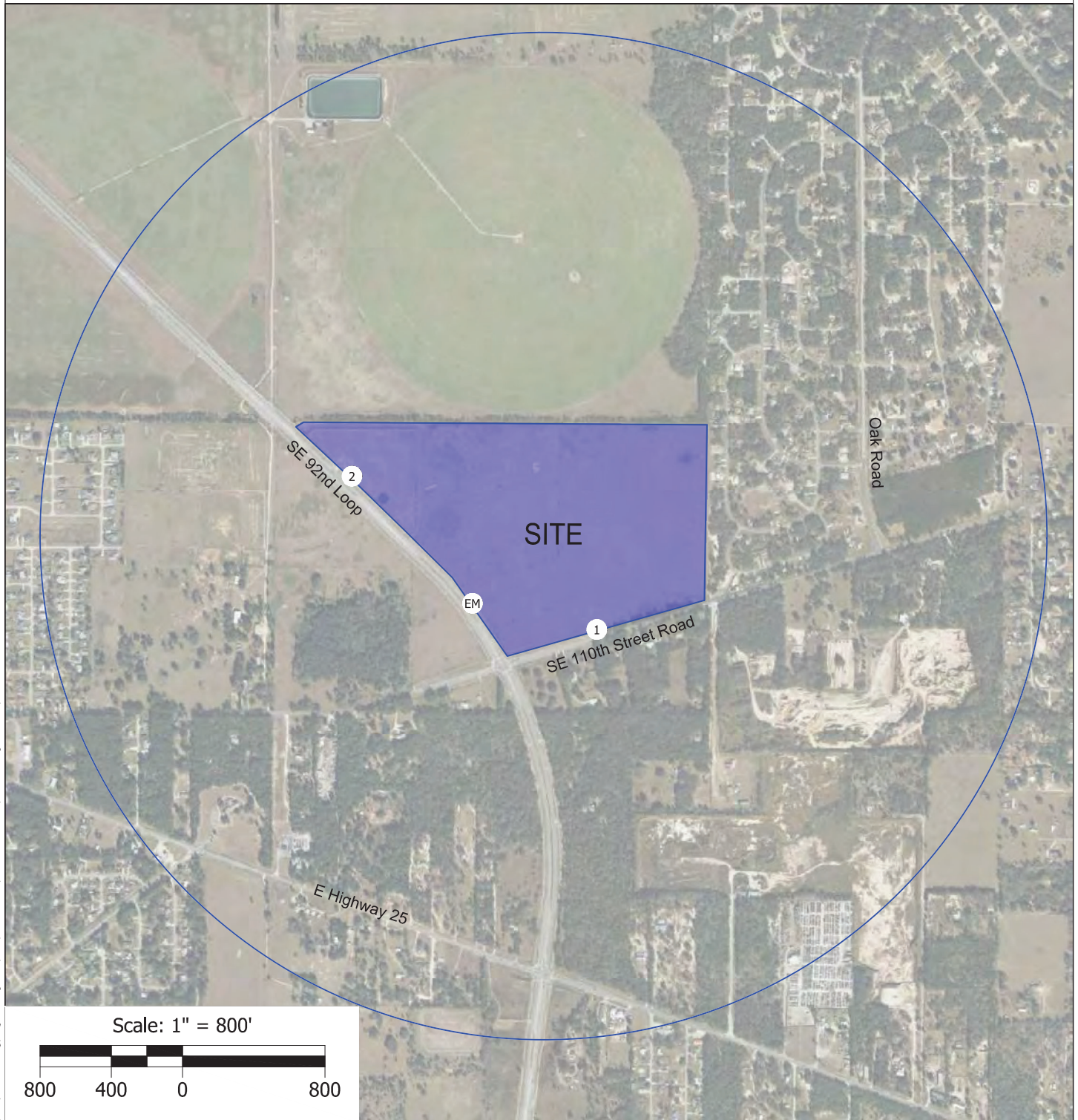
RE: Sandy Clay Property – Methodology

Introduction and Project Description

This technical memorandum provides a recommended Transportation Impact Study (TIS) methodology for the proposed Sandy Clay Property project located in Marion County, Florida, on the northeast corner of SE 92nd Loop and SE 110th Street Road. The site consists of the following parcel IDs: 37896-000-00 and 37896-000-01, on 119.69 acres. The proposed project includes up to 442 single family residential units.

The development will be constructed in a single phase with an anticipated buildout year of 2028. Access to the proposed property will be three (3) driveways, one full access driveway on SE 110th Street Road, a northern left/right-in with a right-out access on SE 92nd Loop and a southern right-in/right-out emergency access on SE 92nd loop. **Figure 1** shows the location of the proposed site. The site plan is found in **Appendix A**.

The proposed methodology is based on the requirements contained in the *Marion County Traffic Impact Analysis Guidelines*.



- - Study Area
- ⊗ - Site Accesses
- ⓔ - Emergency Access

Site Vicinity Map & Study Area
Bellevue, Florida

Figure
1

Trip Generation

The trip generation analysis was conducted using information published by the *Institute of Transportation Engineers (ITE) Trip Generation Manual, 11th Edition*. **Table 1** summarizes the resulting trip generation analysis for the total weekday daily, weekday AM and Weekday PM peak hour vehicles trip generation for the proposed development. As the development is anticipated to consist of a single land use group (residential), no internal capture or pass-by trips would be generated by the site.

Table 1: Project Trip Generation

Land Use	ITE Code	Intensity	Weekday Daily Trips	AM Peak Period			PM Peak Period		
				In	Out	Total	In	Out	Total
Single-Family Detached Housing	210	442 DU	3,960	72	216	288	253	149	402

The proposed development is expected to generate 3,960 new daily trip ends, 288 new AM peak hour trips, and 402

new PM peak hour trips for the buildout condition. The ITE Trip Generation summary sheets can be found in **Appendix B**.

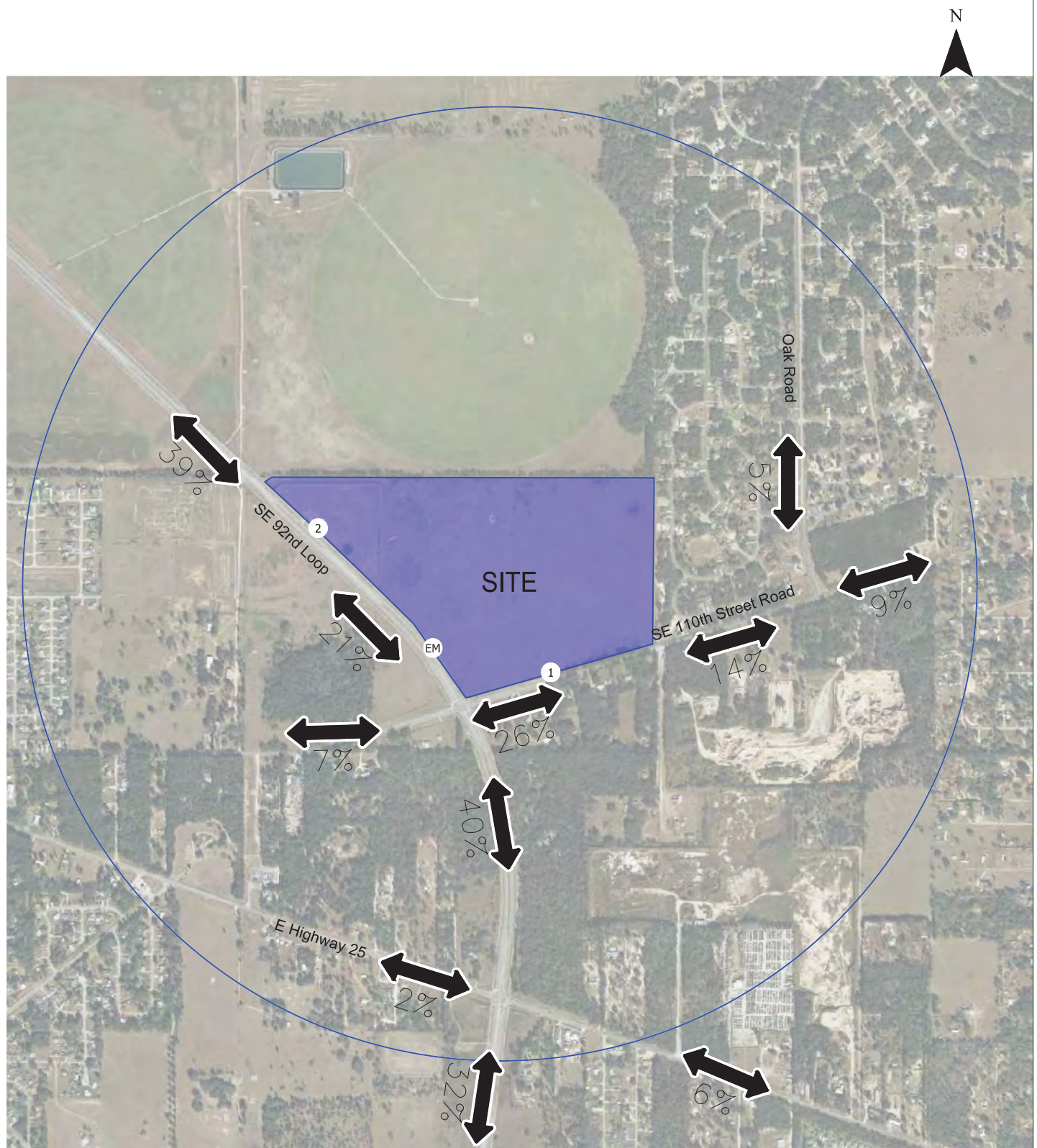
Trip Distribution & Assignment

The project trip distribution and assignment were estimated based on a select zone analysis using the Central Florida Regional Planning Model (CFRPM), Version 7, project driveway distribution, and local traffic patterns. The models provide a macroscopic assignment of project trips within the study area. The model plot is included in **Appendix D**.

The CFRPM depicts approximately 38.8% of project traffic travels to/from the north on SE 92nd Loop, 39.8% of project traffic travels to/from the south on SE 92nd Loop, 7.1% of project traffic travels to/from the west on SE 110th Street Road and 14.3% of project traffic travels to/from the east of SE 110th Street Road. **Figure 2, Figure 3, and Figure 4**, summarize the proposed distribution and trip assignment.

Planned and Programmed Improvements

The extension of Emerald Road from existing Emerald Road to SE 92nd Loop will be considered for future conditions as a two-lane road. It is assumed that the intersection of SE 92nd Loop at Emerald Road will be signalized.



(X) - Site Accesses

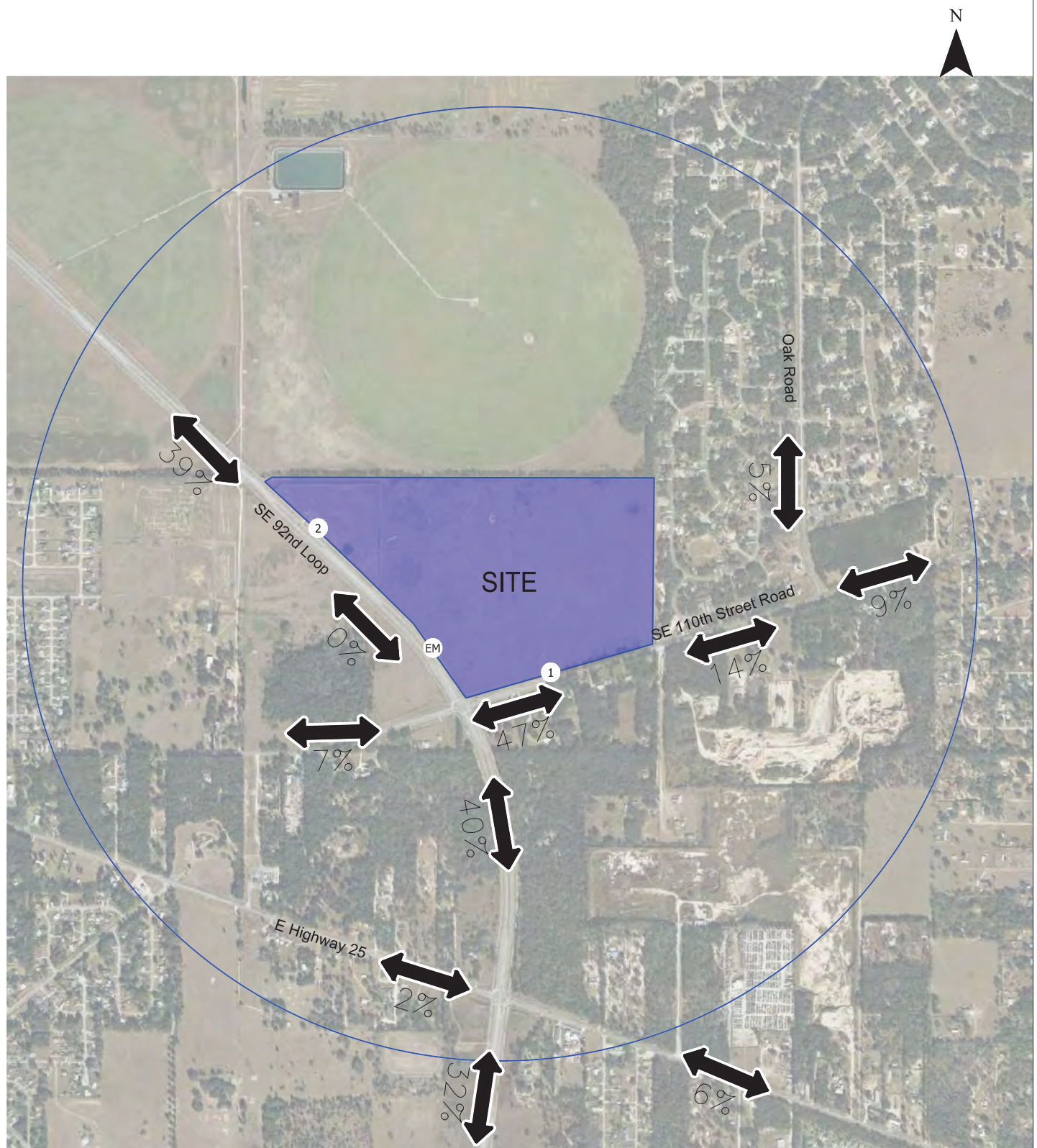
(EM) - Emergency Access

(O) - Study Area

XX% - Trip Distribution Percentage

Proposed Site Entry Trip Distribution
Belleview, Florida

Figure
2



(X) - Site Accesses

(EM) - Emergency Access

() - Study Area

XX% - Trip Distribution Percentage

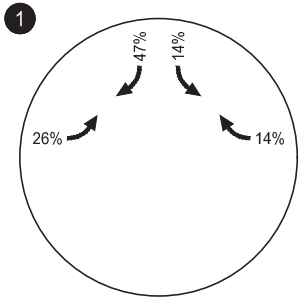
Proposed Site Exit Trip Distribution
Belleview, Florida

Figure
3

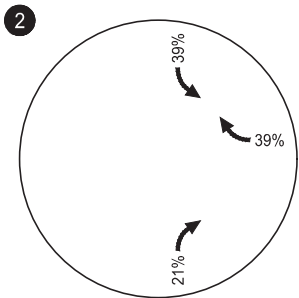
C:\Users\mbah\Downloads\31370 Sandy Clay Methodology Figs_2.dwg Apr 25, 2025 - 1:06pm - mbah Layout Tab: Fig03_Driveway



SE 110th Street Road & Access 1



SE 92nd Loop & Access 2



- (X) - Site Accesses
- (EM) - Emergency Access
- ↷ - Site Accesses Trip Distribution

Accesses Entry/Exit Project Trip Distribution
Bellevue, Florida

Figure
4

Study Area Determination

Per *Marion County Traffic Impact Analysis Guidelines*, a study area for a Traffic Study level of analysis includes public roadways where the net new project's traffic consumes at least three (3) percent of the maximum service volume based on the adopted level of service. **Table 2** presents the project's significance review. Roadway segment maximum service volumes and the existing traffic counts were obtained from the Ocala Marion Congestion Management Process (CMP), dated August 2023, included in **Appendix C**. Project trips were calculated using trips generated by the proposed development and trip distribution presented in previous sections.

Based on the expected trip generation, distribution, assignment, and significance review, it is recommended that the following roadway segment and intersections be evaluated in the TIA.

Roadway segments:

- SE 92nd Loop
 - SR 35 to Access 2
 - Access 2 to SE 110th Street Road
 - SE 110th Street Road to CR 25
 - CR 25 to US 441
- SE 110th Street Road
 - CR 25 to SE 92nd Loop
 - SE 92nd Loop to Access 1
 - Access 1 to Oak Road
 - Oak Road to CR 464
- US 441
 - SE 147 Place to SE 92nd Place Loop
 - SE 92nd Place Road to SE 73rd Street
- SE 92nd Place Road
 - US 441 to SR 35

Intersections:

1. SE 92nd Loop at SE 110th Street Road (Signalized)
2. SE 92nd Loop at Access 2 (Stop Controlled)
3. SE 92nd Loop at CR 25 (Signalized)
4. SE 110th Street Road at Access 1 (Stop Controlled)
5. SR 35 at SE 92nd Place Road (Signalized)
6. Oak Road at SE 110th Street Road (Stop controlled)
7. US 441 at SE 132nd Street Road (Signalized)
8. US 441 at SE 92nd Place Road (Signalized)
9. SE 92nd Loop at Emerald Road (future connection and signal)

Counts from the intersection turning movements will be used to develop existing baseline volumes.

Table 2. Project Trip Significance

Segment ID	Road Name	From/To	Lanes	Func. Class	Flow	Daily Capacity	Peak hour Dir Capacity	2023 AADT	2023 PHPD Volume*	% of Project Trips	#PM Project Trips	Project Sig	v/c	Significant	Adjacent to Site?	In Study Area
1010	SE 92 LOOP	SR 35 to Access 2	4	Arterial	Interrupted	35,820	1,800	12,500	623	39%	99	5.50%	0.35	Yes	Yes	Yes
1010	SE 92 LOOP	Access 2 to SE 110 ST RD	4	Arterial	Interrupted	35,820	1,800	12,500	623	21%	53	2.94%	0.35	No	Yes	Yes
1010	SE 92 LOOP	SE 110 St Road to CR 25	4	Arterial	Interrupted	35,820	1,800	12,500	623	40%	101	5.61%	0.35	Yes	No	Yes
1010	SE 92 LOOP	CR 25 to US 441	4	Arterial	Interrupted	35,820	1,800	12,500	623	32%	81	4.50%	0.35	Yes	No	Yes
3840.1	SE 110 ST RD	CR 25 to SE 92 Lp	2	Collector	Interrupted	15,930	792	3,400	170	7%	17	2.15%	0.21	No	No	Yes
3840.1	SE 110 ST RD	SE 92 Lp to Access 1	2	Collector	Interrupted	15,930	792	3,400	170	47%	119	15.03%	0.21	Yes	Yes	Yes
3840.1	SE 110 ST RD	Access 1 to Oak Rd	2	Collector	Interrupted	15,930	792	3,400	170	14%	35	4.42%	0.21	Yes	Yes	Yes
3850.1	SE 110 ST RD	Oak Rd to CR 464	2	Collector	Uninterrupted	29,340	1,449	3,400	170	10%	25	1.73%	0.12	No	No	Yes
5090.1	SR 35	SE 92nd Pl to Laurel Rd	4	Arterial	Interrupted	58,485	3,056	27,600	1,376	14%	35	1.15%	0.45	No	No	No
5080.1	SR 35	SR 25 to SE 92nd Pl	4	Arterial	Interrupted	32,970	1,722	12,700	633	1%	2	0.12%	0.37	No	No	No
6750.2	US 441	CR 25A to US 301	4	Arterial	Interrupted	38,430	1,901	18,300	912	0%	0	0.00%	0.48	No	No	No
6750.4	US 441	SE 92 Place Lp to CR 25A	4	Arterial	Uninterrupted	38,430	1,901	18,200	907	1%	2	0.11%	0.48	No	No	No
6770	US 441	US 301 to CR 484	4	Arterial	Interrupted	38,430	1,901	27,800	1,386	0%	0	0.00%	0.73	No	No	No
6780	US 441	CR 484 to SE 110 ST	4	Arterial	Interrupted	38,430	1,901	27,800	1,386	0%	0	0.00%	0.73	No	No	No
6790	US 441	SE 110 ST to SE 92 PL RD	4	Arterial	Interrupted	38,430	1,901	27,800	1,386	4%	10	0.53%	0.73	No	No	No
6840	US 441	SE 92 PL Rd to SE 73 ST	4	Arterial	Interrupted	38,430	1,901	27,800	1,386	14%	35	1.84%	0.73	No	No	Yes
1100.4	CR 25	SE 108 Ter Rd to SE 92 PL Loop	2	Collector	Interrupted	15,930	792	7,000	349	6%	15	1.89%	0.44	No	No	No

Segment ID	Road Name	From/To	Lanes	Func. Class	Flow	Daily Capacity	Peak hour Dir Capacity	2023 AADT	2023 PHPD Volume*	% of Project Trips	#PM Project Trips	Project Sig	v/c	Significant	Adjacent to Site?	In Study Area
1110.4	CR 25	SE 92 PL Loop to SE 110 ST	2	Collector	Interrupted	15,930	792	9,900	494	2%	5	0.63%	0.62	No	No	No
3830.1	CR 25	SE 110 ST to SR 35	2	Collector	Interrupted	15,930	792	9,900	494	7%	17	2.27%	0.62	No	No	No
3590.1	OAK Rd	SE 110 ST to CR 464	2	Collector	Uninterrupted	29,340	1,449	6,000	299	5%	12	0.83%	0.21	No	No	No
1770	CR 464	Oak Rd to Emerald RD N	4	Arterial	Interrupted	35,820	1,800	15,600	778	0%	0	0.00%	0.43	No	No	No
1790	CR 464	Emerald RD S to SE 110 ST	4	Arterial	Interrupted	35,820	1,800	9,300	464	0%	0	0.00%	0.26	No	No	No
4550	SE 92 PL RD	US 441 to SR 35	2	Arterial	Interrupted	12,744	634	10,900	543	17%	43	6.78%	0.86	Yes	No	Yes
2240	SR 25	US 441 to Baseline Rd	2	Arterial	Interrupted	22,785	1,124	10,500	524	6%	15	1.33%	0.47	No	No	No
7165	SE 132 ST Rd	CR 484 to US 301	4	Arterial	Interrupted	35,820	1,800	14,200	708	5%	13	0.72%	0.39	No	No	No
7170	SE 132 ST Rd	US 301 to US 441	4	Arterial	Interrupted	35,820	1,800	15,100	753	12%	30	1.67%	0.42	No	No	No
6740	US 441	SE 147 PL to SE 92 PL Lp	4	Arterial	Interrupted	38,430	1,901	33,300	1,660	19%	48	2.52%	0.87	No	No	Yes

*D -factor of 0.09 and K-Factor of 0.554 were applied to the AADT based on FDOT count station site 367020 to develop the PHPD Volumes.

FUTURE VOLUMES BUILDOUT (2028)

Traffic counts will be collected at the study intersections, including heavy vehicles percentages. The seasonal factor will be applied to existing peak hour data. If the seasonal factor is less than 1.0, then the counts will not be seasonally adjusted.

Historical average annual daily traffic (AADT) volumes along the study roadways were initially reviewed using data from the Ocala Marion Transportation Planning Organization (TPO) Database, as included in **Appendix C**. A composite growth rate of **2.43%** annually was determined, as shown in **Table 3**, and will be applied for future conditions analysis for all study roadway segments. The calculated composite annual average is based on the weighted average growth rate for the study area roadways published in the Ocala Marion CMP Database. **Table 3** presents the calculation of the composite rate.

Table 3: Growth Rate Determination

Segment	Limits	2023 AADT	Annual Growth Rate	Weighted Growth
SE 92 LOOP	SR 35 to US 441	12,500	1.60%	600
SE 92 Place Road	US 441 to SR 35	11,300	13.10%	4,441
SR 35	SE 92 PL to Laurel Rd	27,500	1.50%	1,238
SE 110 ST RD	SE 92 PL Lp to Oak Rd	3,300	3.50%	347
Composite Annual Average Growth Rate				2.43%

In addition to the annual growth rate, the following future vested trips will be accounted for in the development of traffic volumes:

- AR 29582 – Carissa Oaks
- AR 27902 – Central Florida RV Park at CR 25
- AR 27932 – C-25 Group Property (C-25 Mixed Use Development)
- AR 30026 – 7-Eleven on SE 92nd Loop at SR 35 (Parcel 37515-004-03)
- Bellehaven Community Development District in Belleview (Parcel 37912-000-00)

A request will be made to Marion County and the City of Belleview Development Services to obtain the above-listed studies.

FUTURE CONDITIONS OPERATIONAL ANALYSIS

The TIS will analyze weekday AM and PM peak hour traffic operations at the following intersections for existing conditions and Future Year 2028 Background (No Build) and Buildout conditions:

- SE 92nd Loop at SE 110th St Rd (Signalized)
- Oak Road at SE 110th St Rd (Stop Controlled)

Site driveways will be analyzed for the AM and PM peak hours for buildout conditions.

Additionally, it will analyze weekday PM peak hour traffic operations at all other intersections within the study area.

The intersection operations analyses will use the HCM 7th Edition methodology included in Synchro 12 software. These analyses will assess overall intersection delay and level of service (LOS), as well as queues, delays, and LOS by movement for the study intersections. Roadway segments will be analyzed for existing and Future Year 2028 No Build and Future Buildout conditions using peak-hour peak-direction roadway capacities published in the Ocala Marion TPO CMP Database 2023. For segments where capacities are not provided in the CMP Database, FDOT Generalized LOS Tables will be used. For roadways or intersections found to be operating deficiently due to the addition of site-generated trips, recommendations will be provided to address the identified deficiencies.

Turn lanes access to the property will be evaluated according to the *FDOT Multimodal Access Management Guidebook* (October 2023): Turn Lanes and U-Turns.

Appendix C

CMP Database

Ocala Marion TPO CMP Database - August 2023

SEGMENT ID	ROAD NAME	FROM	TO	LANES (2023)	FUNCTIONAL CLASSIFICATION	FLOW	FDOT CLASS	DAILY SERVICE VOLUME (2023)	PEAK HOUR DIRECTIONAL SERVICE VOLUME (2023)	LANES (2028)	DAILY SERVICE VOLUME (2028)	PEAK HOUR DIRECTIONAL SERVICE VOLUME (2028)	URBAN / RURAL	DIVIDED / UNDIVIDED	MAINTAINING AGENCY	ADOPTED LOS STANDARD	2023 AADT	2023 DAILY V/MSV	2023 DAILY LOS	GROWTH RATE	2028 AADT	2028 DAILY V/MSV	2028 DAILY LOS
1100.4	CR 25	SE 108 TER RD	SE 92 PL LOOP	2	COLLECTOR	UNINTERRUPTED		29,340	1,449	2	29,340	1,449	Urban	U	COUNTY	E	7,000	0.24	B	6.27%	9,500	0.32	B
1110.4	CR 25	SE 92 PL LOOP	SE 110 ST	2	COLLECTOR	UNINTERRUPTED		29,340	1,449	2	29,340	1,449	Urban	U	COUNTY	E	9,900	0.34	B	1.00%	10,400	0.35	B
3830.1	CR 25	SE 110 ST	SR 35	2	COLLECTOR	UNINTERRUPTED		30,807	1,521	2	30,807	1,521	Urban	D	COUNTY	E	9,900	0.32	B	1.00%	10,400	0.34	B
1770	CR 464	EMERALD RD (N)	OAK RD	4	ARTERIAL	INTERRUPTED	1	35,820	1,800	4	35,820	1,800	Urban	D	COUNTY	E	15,600	0.44	C	2.09%	17,300	0.48	C
1790	CR 464	EMERALD RD (S)	SE 110 ST	4	ARTERIAL	INTERRUPTED	1	35,820	1,800	4	35,820	1,800	Urban	D	COUNTY	E	9,300	0.26	C	1.86%	10,200	0.28	C
3590.1	OAK RD	SE 110 ST	CR 464	2	COLLECTOR	UNINTERRUPTED		29,340	1,449	2	29,340	1,449	Urban	U	COUNTY	E	6,000	0.2	B	12.82%	10,900	0.37	C
3840.1	SE 110 ST RD	CR 25	OAK RD	2	COLLECTOR	UNINTERRUPTED		29,340	1,449	2	29,340	1,449	Urban	U	COUNTY	E	3,400	0.12	B	1.00%	3,600	0.12	B
3850.1	SE 110 ST RD	OAK RD	CR 464	2	COLLECTOR	UNINTERRUPTED		29,340	1,449	2	29,340	1,449	Urban	U	COUNTY	E	3,400	0.12	B	1.00%	3,600	0.12	B
7165	SE 132 ST RD	CR 484	US 301	4	ARTERIAL	INTERRUPTED	1	35,820	1,800	4	35,820	1,800	Urban	D	COUNTY	E	14,200	0.4	C	3.93%	17,300	0.48	C
7170	SE 132 ST RD	US 301	US 441	4	ARTERIAL	INTERRUPTED	1	35,820	1,800	4	35,820	1,800	Urban	D	COUNTY	E	15,100	0.42	C	7.33%	21,600	0.60	C
9999	SE 92 LOOP	CR 25	SE 110 ST RD	4	COLLECTOR	INTERRUPTED	1	35,820	792	4	35,820	1,800	Urban	D	COUNTY	E	at County	N/A	N/A	1.00%	at County	N/A	N/A
4550	SE 92 PL RD	US 441	SR 35	2	ARTERIAL	INTERRUPTED	1	12,744	634	2	12,744	634	Urban	U	COUNTY	E	10,900	0.86	C	5.00%	13,900	1.09	F
1010	SE 92 PLACE LOOP	SR 35	US 441	4	ARTERIAL	UNINTERRUPTED		67,770	3,357	4	67,770	3,357	Urban	D	COUNTY	E	12,400	0.18	B	1.00%	13,100	0.19	B
2240	SR 25	US 441	BASILINE RD	2	ARTERIAL	INTERRUPTED		22,785	1,124	2	22,785	1,124	Urban	D	STATE	D	10,500	0.46	C	1.00%	11,000	0.48	C
5080.1	SR 35	SR 25	SE 92ND PL	4	ARTERIAL	INTERRUPTED		32,970	1,722	4	32,970	1,722	Urban	D	STATE	D	12,700	0.39	C	1.00%	13,400	0.41	C
5090.1	SR 35	SE 92ND PL	LAUREL RD	4	ARTERIAL	INTERRUPTED		58,485	3,056	4	58,485	3,056	Urban	D	STATE	D	27,600	0.47	B	4.27%	34,100	0.58	C
6740	US 441	SE 147 PL	SE 92 PLACE LOOP	4	ARTERIAL	INTERRUPTED		38,430	1,901	4	38,430	1,901	Urban	D	STATE	D	33,300	0.87	D	1.00%	35,000	0.91	D
6750.2	US 441	CR 25A	US 301	4	ARTERIAL	INTERRUPTED		38,430	1,901	4	38,430	1,901	Urban	D	STATE	D	18,300	0.48	C	1.00%	19,200	0.50	C
6750.4	US 441	SE 92 PLACE LOO	CR 25A	4	ARTERIAL	UNINTERRUPTED		38,430	1,901	4	38,430	1,901	Urban	D	STATE	D	18,200	0.47	C	1.00%	19,100	0.50	C
6770	US 441	US 301	CR 484	4	ARTERIAL	INTERRUPTED		38,430	1,901	4	38,430	1,901	Urban	D	STATE	D	27,800	0.72	C	1.00%	29,200	0.76	C
6780	US 441	CR 484	SE 110 ST	4	ARTERIAL	INTERRUPTED		38,430	1,901	4	38,430	1,901	Urban	D	STATE	D	27,800	0.72	C	1.00%	29,200	0.76	C
6790	US 441	SE 110 ST	SE 92 PL RD	4	ARTERIAL	INTERRUPTED		38,430	1,901	4	38,430	1,901	Urban	D	STATE	D	27,800	0.72	C	1.00%	29,200	0.76	C
6840	US 441	SE 92 PL RD	SE 73 ST	4	ARTERIAL	INTERRUPTED		38,430	1,901	4	38,430	1,901	Urban	D	STATE	D	27,800	0.72	C	1.13%	29,400	0.77	C

Appendix D

Traffic Data Collection

Raw Turning Movement Counts

File Name : 05 us 441 at se 92 Site Code : 00000005
Start Date : 8/21/2025 Page No : 1

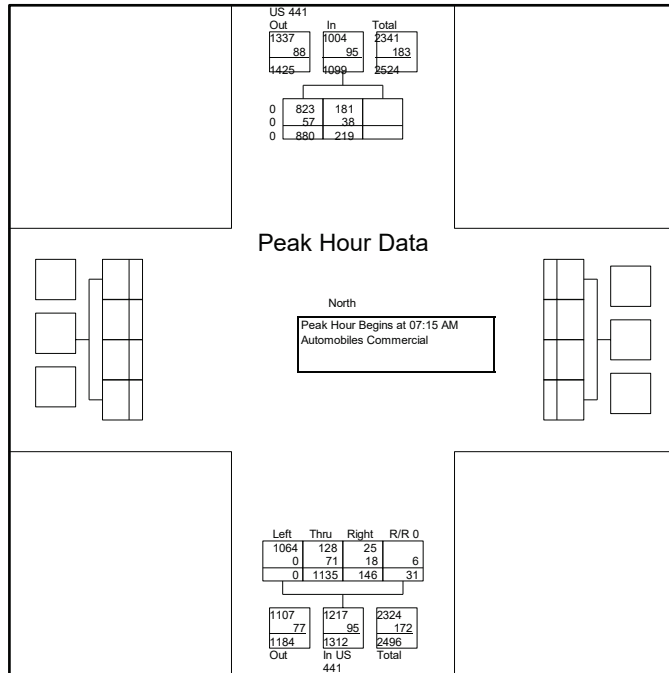
Groups Printed- Automobiles - Commercial

Start Time	US 441 Southbound				SE 92nd Place Rd Westbound					US 441 Northbound					N/A Eastbound					Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	R/R	App. Total	Left	Thru	Right	R/R	App. Total	Left	Thru	Right	Peds	App. Total	
07:00 AM	28	195	0	223	70	0	52	3	125	0	254	21	3	278	0	0	0	0	0	626
07:15 AM	49	210	0	259	79	0	56	4	139	0	290	30	5	325	0	0	0	0	0	723
07:30 AM	56	221	0	277	78	0	71	7	156	0	315	39	7	361	0	0	0	0	0	794
07:45 AM	66	229	0	295	71	0	80	4	155	0	296	35	10	341	0	0	0	0	0	791
Total	199	855	0	1054	298	0	259	18	575	0	1155	125	25	1305	0	0	0	0	0	2934
08:00 AM	48	220	0	268	76	0	83	7	166	0	234	42	9	285	0	0	0	0	0	719
08:15 AM	74	206	0	280	58	0	81	4	143	0	222	34	8	264	0	0	0	0	0	687
08:30 AM	63	191	0	254	68	0	68	9	145	0	214	35	10	259	0	0	0	0	0	658
08:45 AM	45	167	0	212	50	0	62	7	119	0	196	32	10	238	0	0	0	0	0	569
Total	230	784	0	1014	252	0	294	27	573	0	866	143	37	1046	0	0	0	0	0	2633
04:00 PM	67	227	0	294	36	0	53	6	95	0	245	63	14	322	0	0	0	0	0	711
04:15 PM	79	266	0	345	50	0	45	6	101	0	256	80	6	342	0	0	0	0	0	788
04:30 PM	92	251	0	343	61	0	50	6	117	0	268	75	6	349	0	0	0	0	0	809
04:45 PM	82	264	0	346	55	0	61	6	122	0	259	85	10	354	0	0	0	0	0	822
Total	320	1008	0	1328	202	0	209	24	435	0	1028	303	36	1367	0	0	0	0	0	3130
05:00 PM	92	267	0	359	66	0	80	9	155	0	301	81	6	388	0	0	0	0	0	902
05:15 PM	87	256	0	343	77	0	68	5	150	0	251	69	10	330	0	0	0	0	0	823
05:30 PM	79	250	0	329	69	0	79	6	154	0	218	88	5	311	0	0	0	0	0	794
05:45 PM	53	216	0	269	52	0	66	4	122	0	209	77	8	294	0	0	0	0	0	685
Total	311	989	0	1300	264	0	293	24	581	0	979	315	29	1323	0	0	0	0	0	3204
Grand Total	1060	3636	0	4696	1016	0	1055	93	2164	0	4028	886	127	5041	0	0	0	0	0	11901
Apprch %	22.6	77.4	0		4.7	0	48.8	4.3		0	79.9	17.6	2.5		0	0	0	0	0	
Total %	8.9	30.6	0	39.5	8.5	0	8.9	0.8	18.2	0	33.8	7.4	1.1	42.4	0	0	0	0	0	
Automobiles	938	3424	0	4362	942	0	989	80	2011	0	3783	814	107	4704	0	0	0	0	0	11077
% Automobiles	88.5	94.2	0	92.9	92.7	0	93.7	86	92.9	0	93.9	91.9	84.3	93.3	0	0	0	0	0	93.1
Commercial	122	212	0	334	74	0	66	13	153	0	245	72	20	337	0	0	0	0	0	824
% Commercial	11.5	5.8	0	7.1	7.3	0	6.3	14	7.1	0	6.1	8.1	15.7	6.7	0	0	0	0	0	6.9

File Name : 05 us 441 at se 92 Site Code : 00000005
Start Date : 8/21/2025 Page No : 2

	US 441 Southbound				SE 92nd Place Rd Westbound					US 441 Northbound					N/A Eastbound					
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	R/R	App. Total	Left	Thru	Right	R/R	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																				
Peak Hour for Entire Intersection Begins at 07:15 AM																				
07:15 AM	49	210	0	259	79	0	56	4	139	0	290	30	5	325	0	0	0	0	0	723
07:30 AM	56	221	0	277	78	0	71	7	156	0	315	39	7	361	0	0	0	0	0	794
07:45 AM	66	229	0	295	71	0	80	4	155	0	296	35	10	341	0	0	0	0	0	791
08:00 AM	48	220	0	268	76	0	83	7	166	0	234	42	9	285	0	0	0	0	0	719
Total Volume	219	880	0	1099	304	0	290	22	616	0	1135	146	31	1312	0	0	0	0	0	3027
% App. Total	19.9	80.1	0		49.4	0	47.1	3.6		0	86.5	11.1	2.4		0	0	0	0	0	
PHF	0.830	0.961	0.000	0.931	0.962	0.000	0.873	0.786	0.928	0.000	0.901	0.869	0.775	0.909	0.000	0.000	0.000	0.000	0.000	0.953
Automobiles	181	823	0	1004	284	0	273	18	575	0	1064	128	25	1217	0	0	0	0	0	2796
% Automobiles	82.6	93.5	0	91.4	93.4	0	94.1	81.8	93.3	0	93.7	87.7	80.6	92.8	0	0	0	0	0	92.4
Commercial	38	57	0	95	20	0	17	4	41	0	71	18	6	95	0	0	0	0	0	231
% Commercial	17.4	6.5	0	8.6	6.6	0	5.9	18.2	6.7	0	6.3	12.3	19.4	7.2	0	0	0	0	0	7.6

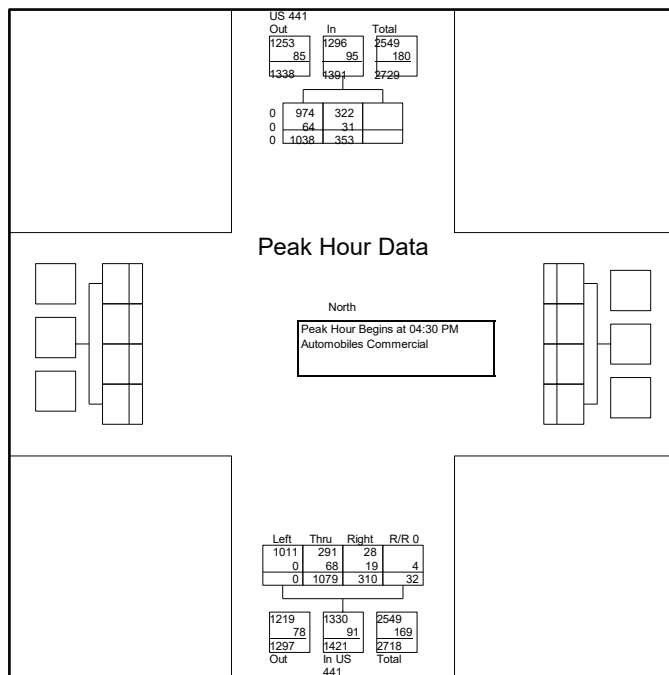
File Name : 05 us 441 at se 92 Site Code : 00000005
Start Date : 8/21/2025 Page No : 3



File Name : 05 us 441 at se 92 Site Code : 00000005
Start Date : 8/21/2025 Page No : 4

	US 441 Southbound					SE 92nd Place Rd Westbound					US 441 Northbound					N/A Eastbound					
Start Time	Left	Thru	Right	App. Total		Left	Thru	Right	R/R	App. Total	Left	Thru	Right	R/R	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:30 PM																					
04:30 PM	92	251	0	343		61	0	50	6	117	0	268	75	6	349	0	0	0	0	0	809
04:45 PM	82	264	0	346		55	0	61	6	122	0	259	85	10	354	0	0	0	0	0	822
05:00 PM	92	267	0	359		66	0	80	9	155	0	301	81	6	388	0	0	0	0	0	902
05:15 PM	87	256	0	343		77	0	68	5	150	0	251	69	10	330	0	0	0	0	0	823
Total Volume	353	1038	0	1391		259	0	259	26	544	0	1079	310	32	1421	0	0	0	0	0	3356
% App. Total	25.4	74.6	0			47.6	0	47.6	4.8		0	75.9	21.8	2.3		0	0	0	0	0	
PHF	0.959	0.972	0.000	0.969		0.841	0.000	0.809	0.722	0.877	0.000	0.896	0.912	0.800	0.916	0.000	0.000	0.000	0.000	0.000	0.930
Automobiles	322	974	0	1296		245	0	242	21	508	0	1011	291	28	1330	0	0	0	0	0	3134
% Automobiles	91.2	93.8	0	93.2		94.6	0	93.4	80.8	93.4	0	93.7	93.9	87.5	93.6	0	0	0	0	0	93.4
Commercial	31	64	0	95		14	0	17	5	36	0	68	19	4	91	0	0	0	0	0	222
% Commercial	8.8	6.2	0	6.8		5.4	0	6.6	19.2	6.6	0	6.3	6.1	12.5	6.4	0	0	0	0	0	6.6

File Name : 05 us 441 at se 92 Site Code : 00000005
Start Date : 8/21/2025 Page No : 5



File Name : 05 us 441 at se 92 Site Code : 00000005
Start Date : 8/21/2025 Page No : 6

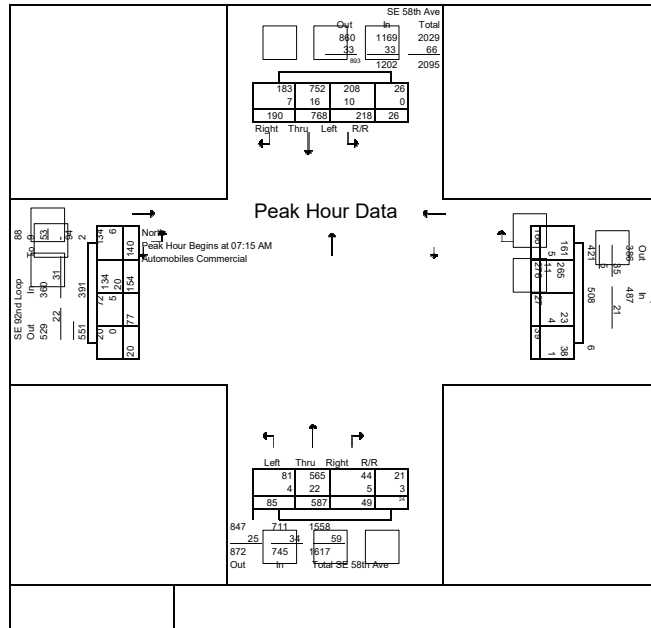
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File Name : 04 58th at 92 Site Code : 00000004 Start
Date : 8/21/2025 Page No : 1

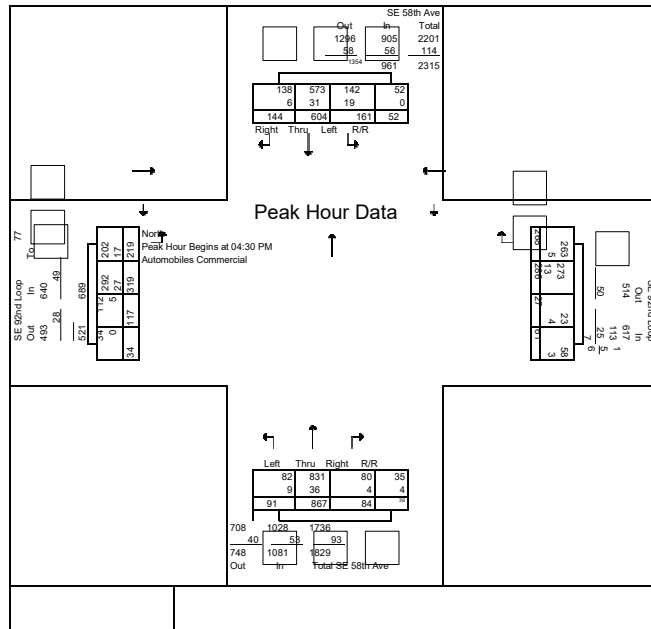
Groups Printed- Automobiles - Commercial																								
	SE 58th Ave Southbound					SE 92nd Loop Westbound					SE 58th Ave Northbound					SE 92nd Loop Eastbound								
Start Time	Left	Thru	Right	R/R	App. Total	Left	Thru	Right	R/R	App. Total	Left	Thru	Right	R/R	App. Total	Left	Thru	Right	R/R	App. Total	Int. Total			
07:00 AM	36	170	42	13	261		7	66	45	8	126	12	132	9	7	160	21	25	18	6	70	617		
07:15 AM	54	200	35	5	294	6	74	35	11	126	18	138	7	6	169	25	30	20	5	80	669			
07:30 AM	46	221	53	5	325	7	57	53	9	126	23	154	15	5	197	35	38	21	5	99	747			
07:45 AM	53	190	47	6	296	6	79	44	13	142	20	155	15	8	198	44	48	17	4	113	749			
Total	189	781	177	29	1176	26	276	177	41	520	73	579	46	26	724	125	141	76	20	362	2782			
08:00 AM	65	157	55	10	287	8	66	34	6	114	24	140	12	5	181	36	38	19	6	99	681			
08:15 AM	45	152	25	4	226	8	73	42	7	130	36	132	12	6	186	28	37	20	5	90	632			
08:30 AM	53	138	28	5	224	10	63	36	13	122	44	111	13	5	173	28	31	23	4	86	605			
08:45 AM	66	122	25	6	219	8	60	30	9	107	37	117	14	8	176	35	31	24	6	96	598			
Total	229	569	133	25	956	34	262	142	35	473	141	500	51	24	716	127	137	86	21	371	2516			
04:00 PM	30	133	17	9	189	7	58	47	7	119	17	141	12	6	176	35	73	20	8	136	620			
04:15 PM	45	168	26	11	250	4	63	64	6	137	20	164	14	12	210	64	78	19	11	172	769			
04:30 PM	40	156	17	17	230	10	73	58	8	149	18	206	26	8	258	44	90	25	7	166	803			
04:45 PM	46	159	36	15	256	4	59	76	15	154	24	210	17	11	262	53	81	37	10	181	853			
Total	161	616	96	52	925	25	293	245	36	559	79	721	69	37	906	196	322	101	36	655	3045			
05:00 PM	33	154	43	12	242	6	73	77	19	175	20	224	13	10	267	56	68	31	9	164	848			
05:15 PM	42	135	48	8	233	7	81	57	19	164	29	227	28	10	294	66	80	24	8	178	869			
05:30 PM	44	123	42	13	222	8	89	67	19	183	22	183	13	7	225	53	58	27	7	145	775			
05:45 PM	36	111	34	9	190	10	70	44	15	139	17	173	9	13	212	47	62	21	8	138	679			
Total	155	523	167	42	887	31	313	245	72	661	88	807	63	40	998	222	268	103	32	625	3171			
Grand Total	734	2489	573	148	3944	116	1104	809	184	2213	381	2607	229	127	3344	670	868	366	109	2013	11514			
Approach %	18.6	63.1	14.5	3.8		5.2	49.9	36.6	8.3		11.4	78	6.8	3.8		33.3	43.1	18.2	5.4					
Total %	6.4	21.6	5	1.3	34.3	1	9.6	7	1.6	19.2	3.3	22.6	2	1.1	29	5.8	7.5	3.2	0.9	17.5				
Automobiles	680	2391	546	148	3771	102	1081	785	175	2123	357	2500	214	117	3188	628	772	348	109	1857	10939			
% Automobiles	93.5	96.1	95.3	100	95.6	87.9	96.1	97	95.1	95.9	93.7	95.9	93.4	92.1	95.3	93.7	88.9	95.1	100	92.3	95			
Commercial	48	98	27	0	173	14	43	24	9	90	24	107	15	10	156	42	96	18	0	156	575			
% Commercial	6.5	3.9	4.7	0	4.4	12.1	3.9	3	4.9	4.1	6.3	4.1	6.6	7.9	4.7	6.3	11.1	4.9	0	7.7	5			

File Name : 04 58th at 92 Site Code : 00000004 Start
Date : 8/21/2025 Page No : 2

	SE 58th Ave Southbound					SE 92nd Loop Westbound					SE 58th Ave Northbound					SE 92nd Loop Eastbound					
Start Time	Left	Thru	Right	R/R	App. Total	Left	Thru	Right	R/R	App. Total	Left	Thru	Right	R/R	App. Total	Left	Thru	Right	R/R	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:15 AM																					
07:15 AM	54	200	35	5	294	6	74	35	11	126	18	138	7	6	169	25	30	20	5	80	669
07:30 AM	46	221	53	5	325	7	57	53	9	126	23	154	15	5	197	35	38	21	5	99	747
07:45 AM	53	190	47	6	296	6	79	44	13	142	20	155	15	8	198	44	48	17	4	113	749
08:00 AM	65	157	55	10	287	8	66	34	6	114	24	140	12	5	181	36	38	19	6	99	681
Total Volume	218	768	190	26	1202	27	276	166	39	508	85	587	49	24	745	140	154	77	20	391	2846
% App. Total	18.1	63.9	15.8	2.2		5.3	54.3	32.7	7.7		11.4	78.8	6.6	3.2		35.8	39.4	19.7	5.1		
PHF	0.838	0.869	0.864	0.650	0.825	0.844	0.873	0.783	0.750	0.894	0.885	0.947	0.817	0.750	0.941	0.795	0.802	0.917	0.833	0.860	0.850
Automobiles	208	752	183	26	1169	23	265	161	38	487	81	565	44	21	711	134	134	72	20	360	2727
% Automobiles	95.4	97.9	96.3	100	97.3	85.2	96.0	97.0	97.4	95.9	95.3	96.3	89.8	87.5	95.4	95.7	87.0	93.5	100	92.1	95.8
Commercial	10	16	7	0	33	4	11	5	1	21	4	22	5	3	34	6	20	5	0	31	119
% Commercial	4.6	2.1	3.7	0	2.7	14.8	4.0	3.0	2.6	4.1	4.7	3.7	10.2	12.5	4.6	4.3	13.0	6.5	0	7.9	4.2



	SE 58th Ave Southbound					SE 92nd Loop Westbound					SE 58th Ave Northbound					SE 92nd Loop Eastbound					
Start Time	Left	Thru	Right	R/R	App. Total	Left	Thru	Right	R/R	App. Total	Left	Thru	Right	R/R	App. Total	Left	Thru	Right	R/R	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:30 PM																					
04:30 PM	40	156	17	17	230	10	73	58	8	149	18	206	26	8	258	44	90	25	7	166	803
04:45 PM	46	159	36	15	256	4	59	76	15	154	24	210	17	11	262	53	81	37	10	181	853
05:00 PM	33	154	43	12	242	6	73	77	19	175	20	224	13	10	267	56	68	31	9	164	848
05:15 PM	42	135	48	8	233	7	81	57	19	164	29	227	28	10	294	66	80	24	8	178	869
Total Volume	161	604	144	52	961	27	286	268	61	642	91	867	84	39	1081	219	319	117	34	689	3373
% App. Total	16.8	62.9	15	5.4		4.2	44.5	41.7	9.5		8.4	80.2	7.8	3.6		31.8	46.3	17	4.9		
PHF	0.875	0.950	0.750	0.765	0.908	0.675	0.883	0.870	0.863	0.917	0.784	0.955	0.750	0.886	0.919	0.830	0.886	0.791	0.850	0.952	0.970
Automobiles	142	573	136	52	905	23	273	263	58	617	82	831	80	35	1028	202	292	112	34	640	3190
% Automobiles	88.2	94.9	95.8	100	94.2	85.2	95.5	98.1	95.1	96.1	90.1	95.8	95.2	89.7	95.1	92.2	91.5	95.7	100	92.9	94.6
Commercial	19	31	6	0	56	4	13	5	3	25	9	36	4	4	53	17	27	5	0	49	183
% Commercial	11.8	5.1	4.2	0	5.8	14.8	4.5	1.9	4.9	3.9	9.9	4.2	4.8	10.3	4.9	7.8	8.5	4.3	0	7.1	5.4

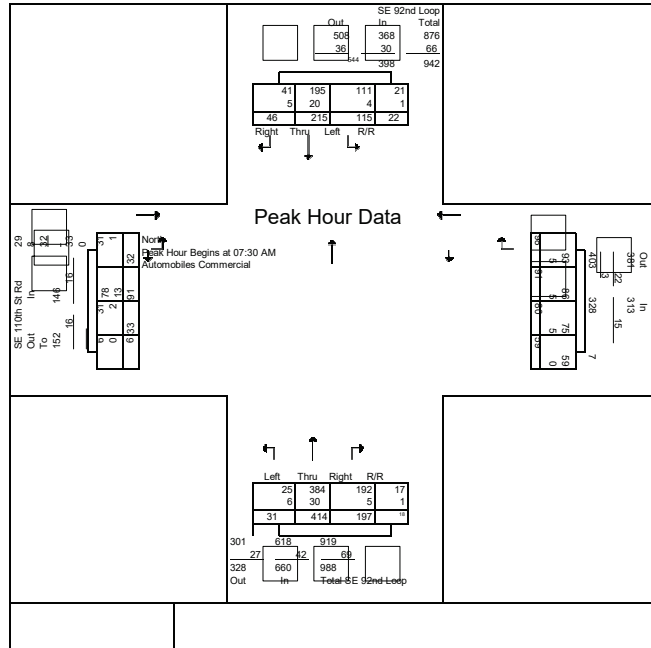
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Groups Printed- Automobiles - Commercial																								
SE 92nd Loop Southbound						SE 110th St Rd Westbound						SE 92nd Loop Northbound						SE 110th St Rd Eastbound						
Start Time	Left	Thru	Right	R/R	App. Total	Left	Thru	Right	R/R	App. Total	Left	Thru	Right	R/R	App. Total	Left	Thru	Right	R/R	App. Total	Int. Total			
07:00 AM	16	47	7	6	76	11	13	12	6	42	7	102	35	2	146	4	14	7	1	26	290			
07:15 AM	20	55	6	4	85	16	20	19	11	66	12	109	43	2	166	7	21	7	2	37	354			
07:30 AM	24	51	7	8	90	19	26	23	17	85	7	104	53	4	168	7	21	11	2	41	384			
07:45 AM	35	55	11	4	105	19	22	19	11	71	12	121	48	4	185	10	23	6	1	40	401			
Total	95	208	31	22	356	65	81	73	45	264	38	438	179	12	665	28	79	31	6	144	1429			
08:00 AM	31	52	14	5	102	19	23	26	15	83	5	90	53	6	154	10	20	10	2	42	381			
08:15 AM	25	57	14	5	101	23	20	30	16	89	7	99	43	4	153	5	27	6	1	39	382			
08:30 AM	26	68	13	2	109	19	19	22	13	73	6	84	63	7	160	4	22	4	2	32	374			
08:45 AM	23	75	7	6	111	23	18	17	14	72	7	88	42	6	143	7	23	7	2	39	365			
Total	105	252	48	18	423	84	80	95	58	317	25	361	201	23	610	26	92	27	7	152	1502			
04:00 PM	27	70	9	6	112	52	21	12	7	92	7	97	59	11	174	6	18	5	1	30	408			
04:15 PM	35	79	9	4	127	45	25	18	4	92	6	116	76	15	213	8	25	6	2	41	473			
04:30 PM	42	89	9	8	148	63	31	18	12	124	7	132	87	18	244	4	35	4	4	47	563			
04:45 PM	53	87	9	5	154	54	24	18	12	108	5	135	77	17	234	6	46	7	6	65	561			
Total	157	325	36	23	541	214	101	66	35	416	25	480	299	61	865	24	124	22	13	183	2005			
05:00 PM	43	71	11	6	131	43	27	28	11	109	9	120	64	15	208	4	38	4	4	50	498			
05:15 PM	35	91	6	4	136	56	25	26	11	118	6	114	86	10	216	8	39	8	5	60	530			
05:30 PM	27	82	5	8	122	54	24	24	14	116	5	149	76	9	239	4	44	4	4	56	533			
05:45 PM	35	77	6	4	122	47	17	26	16	106	5	103	66	8	182	5	37	6	2	50	460			
Total	140	321	28	22	511	200	93	104	62	449	25	488	292	42	845	21	158	22	15	216	2021			
Grand Total	497	1106	143	85	1831	563	355	338	190	1446	113	1763	971	138	2985	99	453	102	41	695	6957			
Apprch %	27.1	60.4	7.8	4.6		38.9	24.6	23.4	13.1		3.8	59.1	32.5	4.6		14.2	65.2	14.7	5.9					
Total %	7.1	15.9	2.1	1.2	26.3	8.1	5.1	4.9	2.7	20.8	1.6	25.3	14	2	42.9	1.4	6.5	1.5	0.6	10				
Automobiles	481	1028	128	82	1719	549	332	326	183	1390	93	1655	949	134	2831	88	413	95	41	637	6577			
% Automobiles	96.8	92.9	89.5	96.5	93.9	97.5	93.5	96.4	96.3	96.1	82.3	93.9	97.7	97.1	94.8	88.9	91.2	93.1	100	91.7	94.5			
Commercial	16	78	15	3	112	14	23	12	7	56	20	108	22	4	154	11	40	7	0	58	380			
% Commercial	3.2	7.1	10.5	3.5	6.1	2.5	6.5	3.6	3.7	3.9	17.7	6.1	2.3	2.9	5.2	11.1	8.8	6.9	0	8.3	5.5			

SE 92nd Loop Southbound						SE 110th St Rd Westbound						SE 92nd Loop Northbound						SE 110th St Rd Eastbound						
Start Time	Left	Thru	Right	R/R	App. Total	Left	Thru	Right	R/R	App. Total	Left	Thru	Right	R/R	App. Total	Left	Thru	Right	R/R	App. Total	Int. Total			
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																								
Peak Hour for Entire Intersection Begins at 07:30 AM																								
07:30 AM	24	51	7	8	90	19	26	23	17	85	7	104	53	4	168	7	21	11	2	41	394			
07:45 AM	35	55	11	4	105	19	22	19	11	71	12	121	48	4	185	10	23	6	1	40	401			
08:00 AM	31	52	14	5	102	19	23	26	15	83	5	90	53	6	154	10	20	10	2	42	381			
08:15 AM	25	57	14	5	101	23	20	30	16	89	7	99	43	4	153	5	27	6	1	39	382			
Total Volume	115	215	46	22	398	80	91	98	59	328	31	414	197	18	660	32	91	33	6	162	1548			
% App. Total	28.9	54	11.6	5.5		24.4	27.7	29.9	18		4.7	62.7	29.8	2.7		19.8	56.2	20.4	3.7					
PHF	0.821	0.943	0.821	0.688	0.948	0.870	0.875	0.817	0.868	0.921	0.646	0.855	0.929	0.750	0.892	0.800	0.843	0.750	0.750	0.964	0.965			
Automobiles	111	195	41	21	368	75	86	93	59	313	25	384	192	17	618	31	78	31	6	146	1445			

% Automobiles	96.5	90.7	89.1	95.5	92.5	93.8	94.5	94.9	100	95.4	80.6	92.8	97.5	94.4	93.6	96.9	85.7	93.9	100	90.1	93.3
Commercial	4	20	5	1	30	5	5	5	0	15	6	30	5	1	42	1	13	2	0	16	103
% Commercial	3.5	9.3	10.9	4.5	7.5	6.3	5.5	5.1	0	4.8	19.4	7.2	2.5	5.6	6.4	3.1	14.3	6.1	0	9.9	6.7

File Name : 03 92 at 110 Site Code :
00000003
Start Date : 8/21/2025 Page No : 3



File Name : 03 92 at 110 Site Code : 00000003
Start Date : 8/21/2025 Page No : 4

	SE 92nd Loop Southbound					SE 110th St Rd Westbound					SE 92nd Loop Northbound					SE 110th St Rd Eastbound					
Start Time	Left	Thru	Right	R/R	App. Total	Left	Thru	Right	R/R	App. Total	Left	Thru	Right	R/R	App. Total	Left	Thru	Right	R/R	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:30 PM																					
04:30 PM	42	89	9	8	148	63	31	18	12	124	7	132	87	18	244	4	35	4	4	47	563
04:45 PM	53	87	9	5	154	54	24	18	12	108	5	135	77	17	234	6	46	7	6	65	561
05:00 PM	43	71	11	6	131	43	27	28	11	109	9	120	64	15	208	4	38	4	4	50	498
05:15 PM	35	91	6	4	136	56	25	26	11	118	6	114	86	10	216	8	39	8	5	60	530
Total Volume	173	338	35	23	569	216	107	90	46	459	27	501	314	60	902	22	158	23	19	222	2152
% App. Total	30.4	59.4	6.2	4		47.1	23.3	19.6	10		3	55.5	34.8	6.7		9.9	71.2	10.4	8.6		
PHF	0.816	0.929	0.795	0.719	0.924	0.857	0.863	0.804	0.958	0.925	0.750	0.928	0.902	0.833	0.924	0.688	0.859	0.719	0.792	0.854	0.956
Automobiles	168	319	32	22	541	214	102	88	42	446	21	479	307	60	867	19	148	22	19	208	2062
% Automobiles	97.1	94.4	91.4	95.7	95.1	99.1	95.3	97.8	91.3	97.2	77.8	95.6	97.8	100	96.1	86.4	93.7	95.7	100	93.7	95.8
Commercial	5	19	3	1	28	2	5	2	4	13	6	22	7	0	35	3	10	1	0	14	90
% Commercial	2.9	5.6	8.6	4.3	4.9	0.9	4.7	2.2	8.7	2.8	22.2	4.4	2.2	0	3.9	13.6	6.3	4.3	0	6.3	4.2

SE 92nd Loop

	SE 92nd Loop Southbound				SE 110th St Rd Westbound				SE 92nd Loop Northbound				SE 110th St Rd Eastbound			
Start Time	Left	Thru	Right	R/R	Left	Thru	Right	R/R	Left	Thru	Right	R/R	Left	Thru	Right	R/R
7:00:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:00:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:00:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:15:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:30:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:45:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:00:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:15:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:30:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:45:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:00:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

File Name: C:\DE\Kittelson & Associates\2025\2025-26 Sandy Clay Bellevue Marion\01 441 at 132.ppd

Start Date: 8/21/2025

Start Time: 7:00:00 AM

Site Code: 00000001

Comment 1: Default Comments

Comment 2: Change These in The Preferences Window

Comment 3: Select File/Preference in the Main Scree

Comment 4: Then Click the Comments Tab

Start Time	US 441 Southbound				SE 92nd Loop Westbound				US 441 Northbound				SE 132nd St Rd Eastbound			
	Left	Thru	Right	R/R	Left	Thru	Right	R/R	Left	Thru	Right	R/R	Left	Thru	Right	R/R
7:00:00 AM	6	178	11	6	24	44	7	3	51	187	11	16	8	53	31	11
7:15:00 AM	4	199	15	11	34	51	6	4	64	198	24	34	7	71	49	12
7:30:00 AM	8	216	17	12	51	34	12	6	72	225	34	42	8	84	41	11
7:45:00 AM	4	241	24	8	42	51	13	4	54	234	41	34	10	82	33	13
8:00:00 AM	6	219	19	15	34	52	10	8	53	257	34	24	15	77	51	24
8:15:00 AM	4	202	25	17	42	64	11	7	46	246	25	26	17	78	30	34
8:30:00 AM	8	187	21	19	34	52	6	7	49	205	29	24	19	86	19	26
8:45:00 AM	10	176	23	21	26	42	4	8	53	198	24	16	13	85	31	21
9:00:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:00:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:15:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:30:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:45:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:00:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:15:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:30:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:45:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:00:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00:00 PM	3	199	11	13	47	63	9	6	98	225	51	21	9	115	55	24
4:15:00 PM	9	186	12	11	42	45	11	4	56	177	54	15	13	125	54	26
4:30:00 PM	8	197	21	16	28	37	12	8	57	185	42	24	23	135	46	14
4:45:00 PM	11	213	10	13	34	34	13	10	42	198	34	26	26	128	41	16
5:00:00 PM	16	234	10	15	32	51	11	9	51	216	51	24	34	142	18	34
5:15:00 PM	9	251	21	13	43	67	10	8	43	235	42	28	29	135	35	26
5:30:00 PM	10	235	13	17	37	51	13	7	46	226	34	28	34	115	20	26
5:45:00 PM	9	216	13	16	34	46	6	7	53	216	26	26	26	106	37	16

Comment 4: Then Click the Comments Tab

[illegible]

File Name : 02 92 at 25 Site Code : 00000002 Start
Date : 8/21/2025 Page No : 1

Groups Printed- Automobiles - Commercial

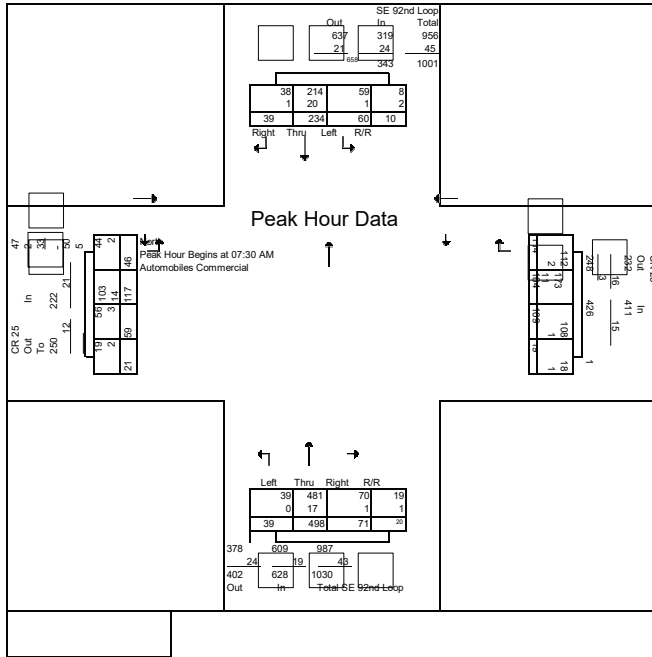
Start Time	SE 92nd Loop Southbound					CR 25 Westbound					SE 92nd Loop Northbound					CR 25 Eastbound					Int. Total
	Left	Thru	Right	R/R	App. Total	Left	Thru	Right	R/R	App. Total	Left	Thru	Right	R/R	App. Total	Left	Thru	Right	R/R	App. Total	
07:00 AM	11	47	6	3	67	24	36	12	6	78	8	109	10	2	129	6	20	9	6	41	315
07:15 AM	15	45	4	3	67	15	45	18	4	82	7	102	15	5	129	5	27	10	5	47	325
07:30 AM	16	61	11	3	91	24	52	35	5	116	8	130	18	5	161	8	27	17	5	57	425
07:45 AM	17	70	11	3	101	34	49	28	4	115	8	136	17	6	167	12	36	14	5	67	450
Total	59	223	32	12	326	97	182	93	19	391	31	474	60	18	586	31	110	50	21	212	1515
08:00 AM	15	56	9	3	83	26	37	24	6	93	10	122	20	4	156	10	28	15	6	59	391
08:15 AM	12	47	8	1	68	25	46	27	4	102	13	110	16	5	144	16	26	13	5	60	374
08:30 AM	16	63	10	2	91	16	45	26	5	92	9	114	16	4	143	13	27	14	7	61	387
08:45 AM	17	66	8	2	93	24	46	24	4	98	13	107	11	6	137	10	22	11	8	51	379
Total	60	232	35	8	335	91	174	101	19	385	45	458	63	19	580	49	103	63	26	231	1531
04:00 PM	27	68	10	2	107	12	28	40	8	88	5	143	13	2	163	6	33	9	9	57	415
04:15 PM	25	66	14	5	110	16	27	26	4	73	8	164	16	6	194	6	35	11	4	56	433
04:30 PM	44	83	9	6	142	19	23	31	6	79	7	219	17	6	249	4	36	12	6	58	528
04:45 PM	50	81	13	4	148	20	28	24	4	76	13	218	19	8	258	6	35	12	4	57	539
Total	146	298	46	17	507	67	106	121	22	316	33	744	65	22	864	22	139	44	23	228	1915
05:00 PM	37	80	18	9	144	20	27	25	8	80	6	192	14	7	219	5	44	10	8	67	510
05:15 PM	34	92	19	8	153	24	22	24	4	74	13	181	10	8	212	5	36	8	9	58	497
05:30 PM	38	90	9	7	144	17	19	28	6	70	8	171	10	9	198	4	28	9	7	48	460
05:45 PM	32	83	11	7	133	14	27	32	5	78	13	154	10	8	185	6	27	8	7	48	444
Total	141	345	57	31	574	75	95	109	23	302	40	698	44	32	814	20	135	35	31	221	1911
Grand Total	406	1098	170	68	1742	330	557	424	83	1394	149	2372	232	91	2844	122	487	182	101	892	6872
Approch %	23.3	63	9.8	3.9	23.7	4.8	8.1	6.2	1.2	20.3	5.2	83.4	8.2	3.2	28.4	13.7	54.6	20.4	11.3	13.3	
Total %	5.9	16	2.5	1	25.3	4.8	8.1	6.2	1.2	20.3	2.2	34.5	3.4	1.3	41.4	1.8	7.1	2.6	1.5	3.3	
Automobiles	366	1036	157	66	1625	308	499	382	82	1271	148	2284	218	90	2740	118	445	172	99	834	6470
% Automobiles	90.1	94.4	92.4	97.1	93.3	93.3	89.6	90.1	98.6	91.2	99.3	96.3	94	98.9	96.3	96.7	91.4	94.5	98	93.5	94.2
Commercial	40	62	13	2	117	22	58	42	1	123	1	88	14	1	104	4	42	10	2	58	402
% Commercial	9.9	5.6	7.6	2.9	6.7	6.7	10.4	9.9	1.2	8.8	0.7	3.7	6	1.1	3.7	3.3	8.6	5.5	2	6.5	5.8

File Name : 02 92 at 25 Site Code : 00000002 Start
Date : 8/21/2025 Page No : 2

	SE 92nd Loop Southbound					CR 25 Westbound					SE 92nd Loop Northbound					CR 25 Eastbound						
	Start Time	Left	Thru	Right	R/R	App. Total	Left	Thru	Right	R/R	App. Total	Left	Thru	Right	R/R	App. Total	Left	Thru	Right	R/R		App. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																						
Peak Hour for Entire Intersection Begins at 07:30 AM																						
07:30 AM	16	61	11	3	91	24	52	35	5	116	8	130	18	5	161	8	27	17	5	57	425	
07:45 AM	17	70	11	3	101	34	49	28	4	115	8	136	17	6	167	12	36	14	5	67	450	
08:00 AM	15	56	9	3	83	26	37	24	6	93	10	122	20	4	156	10	28	15	6	59	391	
08:15 AM	12	47	8	1	68	25	46	27	4	102	13	110	16	5	144	16	26	13	5	60	374	
Total Volume	60	234	39	10	343	109	184	114	19	426	39	498	71	20	628	46	117	59	21	243	1640	
% App. Total	17.5	68.2	11.4	2.9		25.6	43.2	26.8	4.5		6.2	79.3	11.3	3.2		18.9	48.1	24.3	8.6			
PHF	0.882	0.836	0.886	0.833	0.849	0.801	0.885	0.814	0.792	0.918	0.750	0.915	0.888	0.833	0.940	0.719	0.813	0.868	0.875	0.907	0.911	

Automobiles	59	214	38	8	319	108	173	112	18	411	39	481	70	19	609	44	103	56	19	222	1561
% Automobiles	98.3	91.5	97.4	80.0	93.0	99.1	94.0	98.2	94.7	96.5	100	96.6	98.6	95.0	97.0	95.7	88.0	94.9	90.5	91.4	95.2
Commercial	1	20	1	2	24	1	11	2	1	15	0	17	1	1	19	2	14	3	2	21	79
% Commercial	1.7	8.5	2.6	20.0	7.0	0.9	6.0	1.8	5.3	3.5	0	3.4	1.4	5.0	3.0	4.3	12.0	5.1	9.5	8.6	4.8

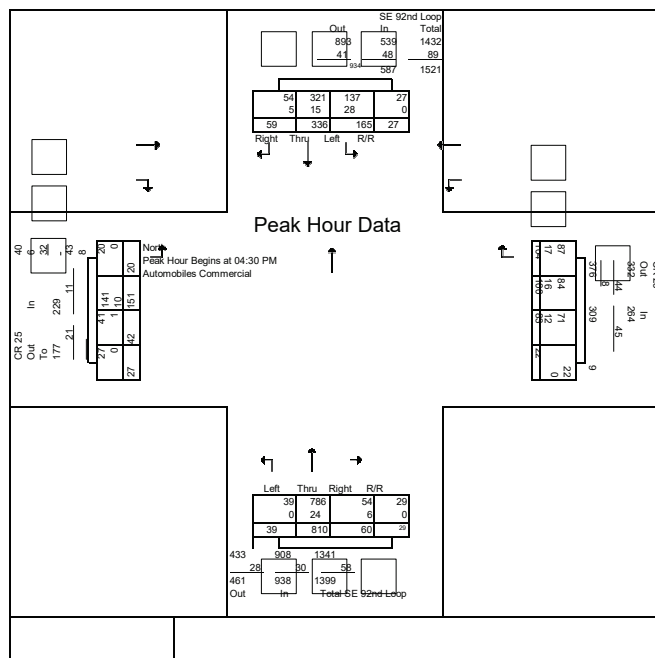
File Name : 02 92 at 25 Site Code :
 00000002
 Start Date : 8/21/2025 Page No : 3



File Name : 02 92 at 25 Site Code : 00000002 Start
 Date : 8/21/2025 Page No : 4

	SE 92nd Loop Southbound					CR 25 Westbound					SE 92nd Loop Northbound					CR 25 Eastbound					
Start Time	Left	Thru	Right	R/R	App. Total	Left	Thru	Right	R/R	App. Total	Left	Thru	Right	R/R	App. Total	Left	Thru	Right	R/R	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:30 PM																					
04:30 PM	44	83	9	6	142	19	23	31	6	79	7	219	17	6	249	4	36	12	6	58	528
04:45 PM	50	81	13	4	148	20	28	24	4	76	13	218	19	8	258	6	35	12	4	57	539
05:00 PM	37	80	18	9	144	20	27	25	8	80	6	192	14	7	219	5	44	10	8	67	510
05:15 PM	34	92	19	8	153	24	22	24	4	74	13	181	10	8	212	5	36	8	9	58	497
Total Volume	165	336	59	27	587	83	100	104	22	309	39	810	60	29	938	20	151	42	27	240	2074
% App. Total	28.1	57.2	10.1	4.6		26.9	32.4	33.7	7.1		4.2	86.4	6.4	3.1		8.3	62.9	17.5	11.2		
PHF	0.825	0.913	0.776	0.750	0.959	0.865	0.893	0.839	0.688	0.966	0.750	0.925	0.789	0.906	0.909	0.833	0.858	0.875	0.750	0.896	0.962
Automobiles	137	321	54	27	539	71	84	87	22	264	39	786	54	29	908	20	141	41	27	229	1940
% Automobiles	83.0	95.5	91.5	100	91.8	85.5	84.0	83.7	100	85.4	100	97.0	90.0	100	96.8	100	93.4	97.6	100	95.4	93.5
Commercial	28	15	5	0	48	12	16	17	0	45	0	24	6	0	30	0	10	1	0	11	134
% Commercial	17.0	4.5	8.5	0	8.2	14.5	16.0	16.3	0	14.6	0	3.0	10.0	0	3.2	0	6.6	2.4	0	4.6	6.5

File Name : 02 92 at 25 Site Code :
00000002
Start Date : 8/21/2025 Page No : 5



File Name : 02 92 at 25 Site Code : 00000002
Date : 8/21/2025 Page No : 6

Groups Printed- Peds																						
	SE 92nd Loop Southbound					CR 25 Westbound					SE 92nd Loop Northbound					CR 25 Eastbound						
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total	
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Approach %	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0			
Total %																						

Comment 4: Then Click the Comments Tab

[illegible]

File Name : 06 Oak at 110 Site Code : 00000006

Start Date : 8/21/2025 Page No : 1

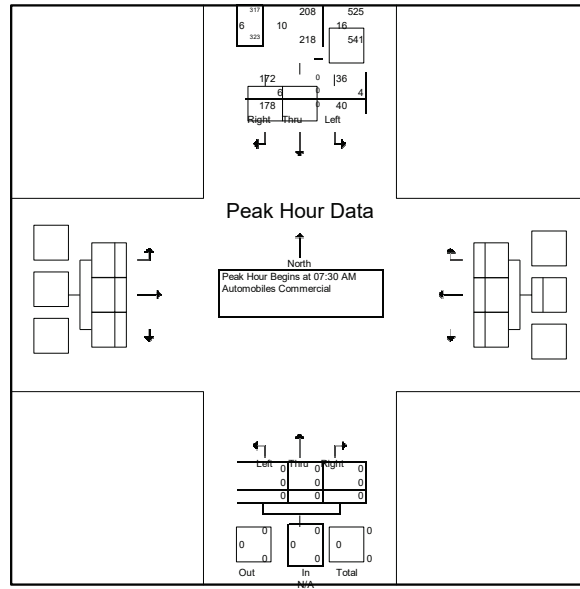
Groups Printed- Automobiles - Commercial

	Oak Rd Southbound				SE 110th St Rd Westbound				N/A Northbound				SE 110th St Rd Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	6	0	18	24	0	25	10	35	0	0	0	0	24	45	0	69	128
07:15 AM	4	0	16	20	0	51	17	68	0	0	0	0	44	47	0	91	179
07:30 AM	9	0	24	33	0	56	17	73	0	0	0	0	53	44	0	97	203
07:45 AM	11	0	37	48	0	38	20	58	0	0	0	0	64	46	0	110	216
Total	30	0	95	125	0	170	64	234	0	0	0	0	185	182	0	367	726
08:00 AM	10	0	43	53	0	40	21	61	0	0	0	0	78	42	0	118	232
08:15 AM	10	0	74	84	0	17	20	37	0	0	0	0	52	46	0	98	219
08:30 AM	8	0	45	53	0	28	17	45	0	0	0	0	45	57	0	102	200
08:45 AM	7	0	52	59	0	20	14	34	0	0	0	0	43	46	0	89	182
Total	35	0	214	249	0	105	72	177	0	0	0	0	216	191	0	407	833
04:00 PM	10	0	71	81	0	19	6	25	0	0	0	0	55	30	0	85	191
04:15 PM	15	0	81	96	0	13	4	17	0	0	0	0	86	53	0	139	252
04:30 PM	12	0	86	98	0	40	5	45	0	0	0	0	85	83	0	168	311
04:45 PM	16	0	80	96	0	34	6	40	0	0	0	0	77	106	0	183	319
Total	53	0	318	371	0	106	21	127	0	0	0	0	303	272	0	575	1073
05:00 PM	15	0	70	85	0	41	6	47	0	0	0	0	84	87	0	171	303
05:15 PM	22	0	49	71	0	70	7	77	0	0	0	0	78	87	0	165	313
05:30 PM	20	0	53	73	0	60	4	64	0	0	0	0	84	80	0	164	301
05:45 PM	18	0	49	67	0	58	7	65	0	0	0	0	78	71	0	149	281
Total	75	0	221	296	0	229	24	253	0	0	0	0	324	325	0	649	1198

File Name : 06 Oak at 110 Site Code : 00000006

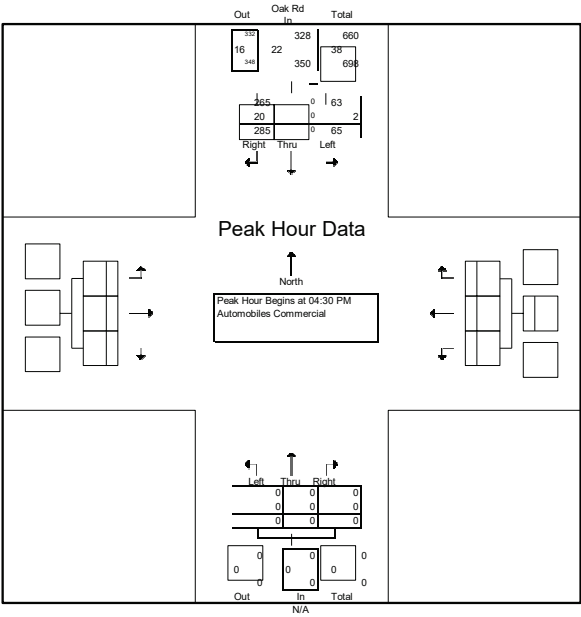
Start Date : 8/21/2025 Page No : 2

Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	9	0	24	33	0	56	17	73	0	0	0	0	53	44	0	97	203
07:45 AM	11	0	37	48	0	38	20	58	0	0	0	0	64	46	0	110	216
08:00 AM	10	0	43	53	0	40	21	61	0	0	0	0	76	42	0	118	232
08:15 AM	10	0	74	84	0	17	20	37	0	0	0	0	52	46	0	98	219
Total Volume	40	0	178	218	0	151	78	229	0	0	0	0	245	178	0	423	870
% App. Total	18.3	0	81.7		0	65.9	34.1		0	0	0	0	57.9	42.1	0		
PHF	0.909	0.000	0.601	0.649	0.000	0.674	0.929	0.784	0.000	0.000	0.000	0.000	0.806	0.967	0.000	0.896	0.938
Automobiles	36	0	172	208	0	141	75	216	0	0	0	0	242	160	0	402	826
% Automobiles	90.0	0	96.6	95.4	0	93.4	96.2	94.3	0	0	0	0	98.8	89.9	0	95.0	94.9
Commercial	4	0	6	10	0	10	3	13	0	0	0	0	3	18	0	21	44
% Commercial	10.0	0	3.4	4.6	0	6.6	3.8	5.7	0	0	0	0	1.2	10.1	0	5.0	5.1



	Oak Rd Southbound				SE 110th St Rd Westbound				N/A Northbound				SE 110th St Rd Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	12	0	86	98	0	40	5	45	0	0	0	0	85	83	0	168	311
04:45 PM	16	0	80	96	0	34	6	40	0	0	0	0	77	106	0	183	319
05:00 PM	15	0	70	85	0	41	6	47	0	0	0	0	84	87	0	171	303
05:15 PM	22	0	49	71	0	70	7	77	0	0	0	0	78	87	0	165	313
Total Volume	65	0	285	350	0	185	24	209	0	0	0	0	324	363	0	687	1246
% App. Total	18.6	0	81.4	0.893	0.000	88.5	11.5	0.675	0.000	0.000	0.000	0.000	47.2	52.8	0	0.938	0.975
PHF	0.739	0.000	0.828	0.893	0.000	0.661	0.857	0.675	0.000	0.000	0.000	0.000	0.953	0.858	0.000	0.938	0.975
Automobiles	63	0	265	328	0	181	21	202	0	0	0	0	311	348	0	659	1189
% Automobiles	96.9	0	93.0	93.7	0	97.8	87.5	96.7	0	0	0	0	96.0	95.9	0	95.9	95.4
Commercial	2	0	20	22	0	4	3	7	0	0	0	0	13	15	0	28	57
% Commercial	3.1	0	7.0	6.3	0	2.2	12.5	3.3	0	0	0	0	4.0	4.1	0	4.1	4.6

File Name : 06 Oak at 110 Site Code :
00000006 Start Date : 8/21/2025 Page No : 5



File Name : 06 Oak at 110 Site Code : 00000006
Start Date : 8/21/2025 Page No : 6

[illegible]

Comment 4: Then Click the Comments Tab

	Oak Rd Southbound					SE 110th St Rd Westbound					N/A					SE 110th St Rd Eastbound				
Start Time	Left	Thru	Right	Peds		Left	Thru	Right	Peds		Left	Thru	Right	Peds		Left	Thru	Right	Peds	
7:00:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15:00 AM	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0
7:30:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
7:45:00 AM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	2
8:00:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:00:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:00:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:15:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:30:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:45:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:00:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:15:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:30:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:45:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:00:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
5:45:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Peak Season Factor Category Report

2024 PEAK SEASON FACTOR CATEGORY REPORT - REPORT TYPE: ALL
 CATEGORY: 3600 MARION COUNTYWIDE

WEEK	DATES	SF	MOCF: 0.96 PSCF
1	01/01/2024 - 01/06/2024	0.99	1.03
2	01/07/2024 - 01/13/2024	1.02	1.06
3	01/14/2024 - 01/20/2024	1.05	1.09
4	01/21/2024 - 01/27/2024	1.03	1.07
5	01/28/2024 - 02/03/2024	1.02	1.06
6	02/04/2024 - 02/10/2024	1.00	1.04
* 7	02/11/2024 - 02/17/2024	0.98	1.02
* 8	02/18/2024 - 02/24/2024	0.97	1.01
* 9	02/25/2024 - 03/02/2024	0.96	1.00
*10	03/03/2024 - 03/09/2024	0.95	0.99
*11	03/10/2024 - 03/16/2024	0.94	0.98
*12	03/17/2024 - 03/23/2024	0.95	0.99
*13	03/24/2024 - 03/30/2024	0.95	0.99
*14	03/31/2024 - 04/06/2024	0.95	0.99
*15	04/07/2024 - 04/13/2024	0.96	1.00
*16	04/14/2024 - 04/20/2024	0.96	1.00
*17	04/21/2024 - 04/27/2024	0.97	1.01
*18	04/28/2024 - 05/04/2024	0.97	1.01
*19	05/05/2024 - 05/11/2024	0.98	1.02
20	05/12/2024 - 05/18/2024	0.99	1.03
21	05/19/2024 - 05/25/2024	0.99	1.03
22	05/26/2024 - 06/01/2024	0.99	1.03
23	06/02/2024 - 06/08/2024	0.99	1.03
24	06/09/2024 - 06/15/2024	1.00	1.04
25	06/16/2024 - 06/22/2024	1.00	1.04
26	06/23/2024 - 06/29/2024	1.01	1.05
27	06/30/2024 - 07/06/2024	1.02	1.06
28	07/07/2024 - 07/13/2024	1.02	1.06
29	07/14/2024 - 07/20/2024	1.03	1.07
30	07/21/2024 - 07/27/2024	1.04	1.08
31	07/28/2024 - 08/03/2024	1.04	1.08
32	08/04/2024 - 08/10/2024	1.05	1.09
33	08/11/2024 - 08/17/2024	1.05	1.09
34	08/18/2024 - 08/24/2024	1.06	1.10
35	08/25/2024 - 08/31/2024	1.06	1.10
36	09/01/2024 - 09/07/2024	1.07	1.11
37	09/08/2024 - 09/14/2024	1.07	1.11
38	09/15/2024 - 09/21/2024	1.08	1.13
39	09/22/2024 - 09/28/2024	1.06	1.10
40	09/29/2024 - 10/05/2024	1.04	1.08
41	10/06/2024 - 10/12/2024	1.02	1.06
42	10/13/2024 - 10/19/2024	1.00	1.04
43	10/20/2024 - 10/26/2024	1.00	1.04
44	10/27/2024 - 11/02/2024	1.00	1.04
45	11/03/2024 - 11/09/2024	1.00	1.04
46	11/10/2024 - 11/16/2024	1.01	1.05
47	11/17/2024 - 11/23/2024	1.00	1.04
48	11/24/2024 - 11/30/2024	1.00	1.04
49	12/01/2024 - 12/07/2024	1.00	1.04
50	12/08/2024 - 12/14/2024	0.99	1.03
51	12/15/2024 - 12/21/2024	0.99	1.03
52	12/22/2024 - 12/28/2024	1.02	1.06
53	12/29/2024 - 12/31/2024	1.05	1.09

* PEAK SEASON

04-MAR-2025 16:32:53

830UPD

5_3600_PKSEASON.TXT

Appendix E Signal Timing

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION - DISTRICT FIVE
US 441/27/301 - ICM Offline Retiming
Marion County
FIN 435443-6-82-02

Revised timings implemented on: 3/9/2024

Designed By:	S.M.P.	Section	36010000	Mile Post	17.537	Node	9
Date:	4/24/2024	Sig ID	165	System ID		SOP	12 Special
Checked By:	R.A.A	Maj. Street	US 27/441/301	Orientation	N-S	Controller	Siemens m60
Date:	4/24/2024	Min. Street	SE 92nd PI Rd	Orientation	E-W	Firmware	v5.3.1

Data Inputs									Time Of Day			
Movement # (Controller Phase Ø)	1	2	3	4	5	6	7	8	Weekday			
Direction	SBL	NB	EB PED	WB		SB			Plan	Pattern	Time	
Speed Limit (mph)	55	55		45		55			FREE	254	0:00	
Vehicle Traversed Width	127	141		100		108			AM	1	6:30	
Approach Grades	-0.5%	-0.6%		-1.4%		-0.5%			MIDDAY	2	10:00	
Ped-X (curb to curb)		113	85	89					PM	3	14:00	
Crossing Time		33	25	26					NIGHT	4	18:15	
Ped-X (button to curb)		8	6	8					FREE	254	19:45	
Ped-X (button to far curb)		121	91	97								
Crossing Time (to far curb)		41	31	33								
Controller Timings (seconds)												
Movement # (Controller Phase Ø)	1	2	3	4	5	6	7	8	Weekend			
Direction	SBL	NB	EB PED	WB		SB			Saturday			
Turn Type	Prot/Perm		Split	Split					Plan	Pattern	Time	
Min Green	5	17	0	8		17			FREE	254	0:00	
Ext	3.0	3.5	0.0	3.0		3.5			WKN OffPk	6	8:15	
Yellow Change Interval	5.6	5.6	5.6	4.9		5.6			WKN Pk	5	9:45	
Red Clearance Interval	3.0	2.0	3.0	2.3		2.0			WKN OffPk	6	17:00	
Max I	12	40	0	30		40			FREE	254	19:00	
Max II	0	0	0	0		0						
Walk		7	7	7								
Flashing Don't Walk		33	25	26					Sunday			
Min Splits	14.0	48.0	41.0	41.0		25.0			Plan	Pattern	Time	
Non-Locking Memory	ON			ON					FREE	254	0:00	
Det. Cross Switch.	1>6								WKN OffPk	6	10:00	
Recall		Min				Min			WKN Pk	5	11:00	
Dual Entry		ON				ON			WKN OffPk	6	17:00	
Coord Phase		ON				ON			FREE	254	19:00	
Coordination Timings (seconds)												
Plan	Pattern	C-O-S	Splits						Cycle Length	Offset	Alt Seq	
AM	1		21	49	23	37	-	70	-	130	68	9
MIDDAY	2		26	49	30	25	-	75	-	130	97	9
PM	3		39	49	27	25	-	88	-	140	45	9
NIGHT	4		20	40	18	22	-	60	-	100	48	9
WKN Pk	5		27	49	40	24	-	76	-	140	91	9
WKN OffPk	6		27	49	22	22	-	76	-	120	64	9

Notes:

- Offset referenced to end of main street green
- Use Plan Force-offs
- Use Max inhibit during coordination
- Operate permissive yield during pattern 4

All Plans			
Ring-1	1	2	4 3
Ring-2	6		

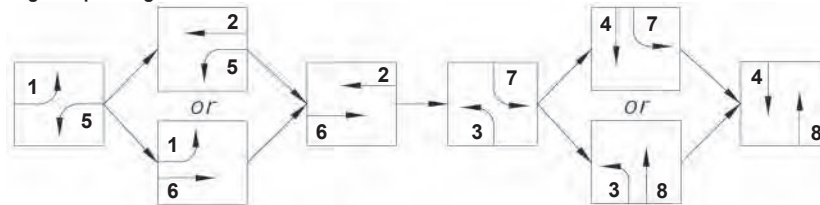


Marion County
Office of the County Engineer

Signal ID	Major Street	Minor Street	Date	Technician
232	S US Hwy 441	SE 132nd St Rd / SE 92nd Loop	3/18/2024	Youman

PHASE	1	2	3	4	5	6	7	8
DIRECTION	NBLT	SB	WBLT	EB	SBLT	NB	EBLT	WB
LEFT TURN MODE	Prot		Prot		Prot		Prot	
MIN GREEN	8	17	8	8	8	17	8	8
PASSAGE	3.0	3.0	3.5	3.0	3.0	3.0	3.0	3.0
MAX 1	20	60	25	21	20	60	21	12
MAX 2								
YELLOW	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
ALL RED	4.1	2.0	2.7	2.7	3.0	2.0	2.0	2.7
WALK								
PED CLR								
VEH RECALL		Max				Max		
NON-LOCK CALL	X		X	X	X		X	X
DUAL ENTRY		X		X		X		X
NO SIMUL GAP								

Signal Operating Plan



Additional Notes (Turning Restrictions?, Overlaps?, Etc.)

Coordination? Yes ☒ No ☐

Plan	Cycle	Phase Splits								Offset	Seq	Spec Func	Coord Mode	Force Mode
		1	2	3	4	5	6	7	8					

Mon-Thu		Fri		Sat		Sun	
Start Time	Plan	Start Time	Plan	Start Time	Plan	Start Time	Plan

General Coordination Data

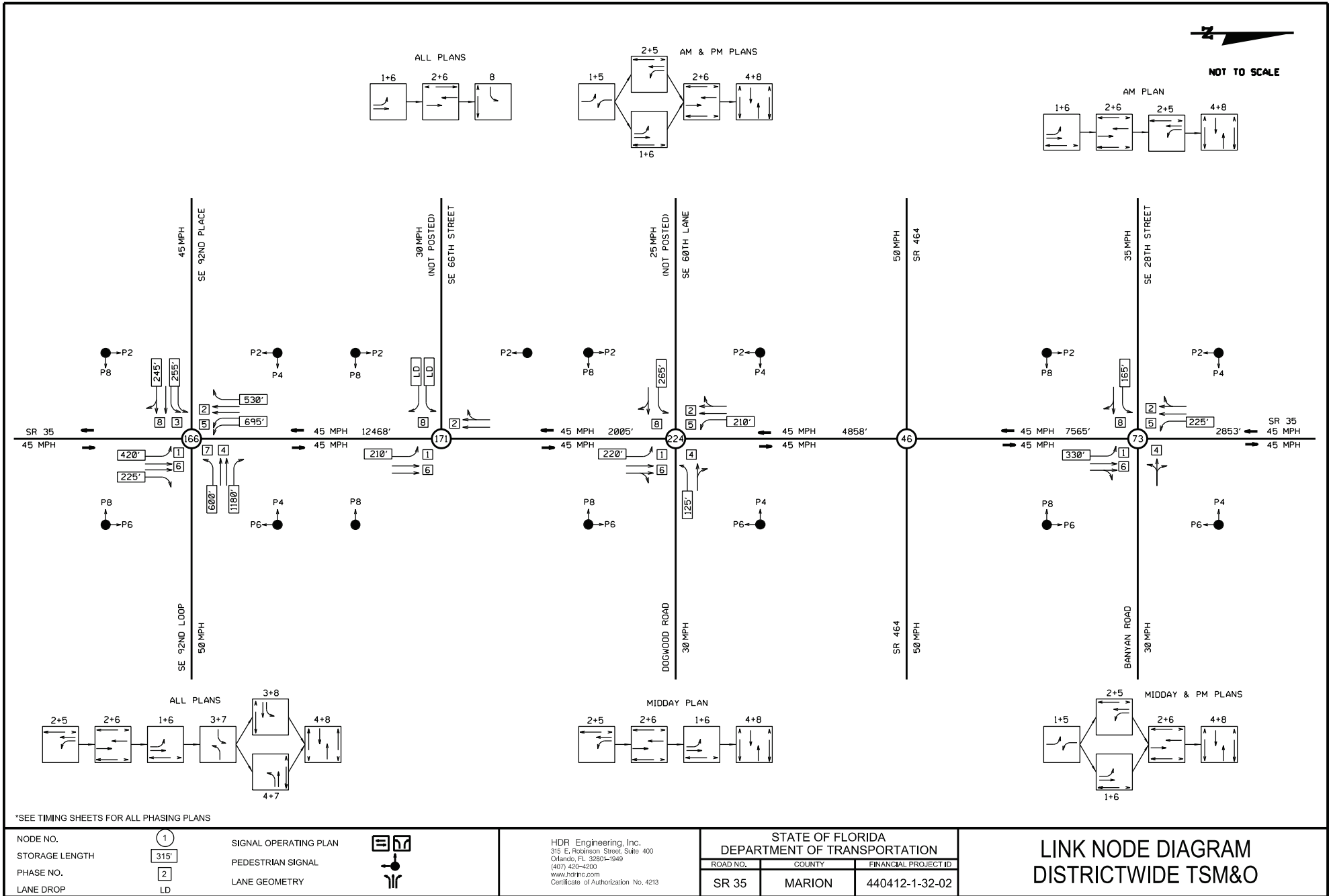
Coord Mode (Normal)	
Max Mode	
Correction Mode	
Offset Mode	
Force Mode (Normal)	

Detector Data

Veh Detector	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Phase	1	2	3	4	5	6	7	8								
Veh Detector	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
Phase																

Ped Detector	1	2	3	4	5	6	7	8
Phase	1	2	3	4	5	6	7	8

Revised Timings Implemented On: 4/23/2024



**Marion County
Office of the County Engineer**



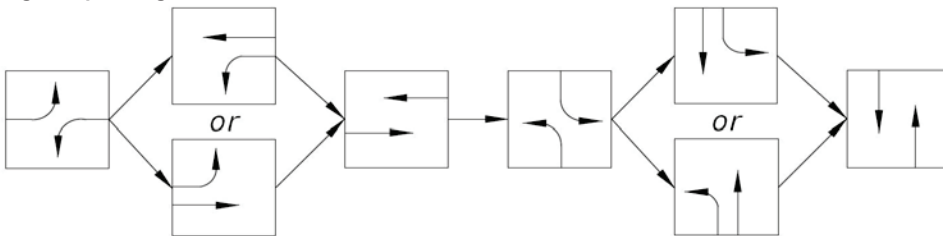
Field Notes

Signal ID	Major Street	Minor Street	Date	Technician
296	SE 92nd Loop	CR 25	4/27/2021	Solimando

Basic Timing

PHASE	Φ 1	Φ 2	Φ 3	Φ 4	Φ 5	Φ 6	Φ 7	Φ 8
DIRECTION	NBLT	SB	EBLT	WB	SBLT	NB	WBLT	EB
MIN GRN	5	16	5	16	5	16	5	16
GAP EXT	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
MAX 1	7	23	5	35	9	21	5	35
MAX 2								
YEL CLR	5.1	5.1	4.8	4.8	5.1	5.1	4.8	4.8
RED CLR	2.2	2.2	2.0	2.0	2.2	2.2	2.0	2.0
WALK		7		7		7		7
PED CLR		18		28		18		28
MIN RECALL		X				X		
MAX RECALL								
PED RECALL								
NON-LOCK CALL	X		X	X	X		X	X
DUAL ENTRY		X		X		X		X
REST IN WALK								

Signal Operating Plan



Additional Notes (Turning Restrictions?, Overlaps?, Etc.)

Coordination

Yes ☐ No ☒

Split	Movement Number								COMMENTS
	1	2	3	4	5	6	7	8	
1									
2									
3									

Time Patterns for Coordination

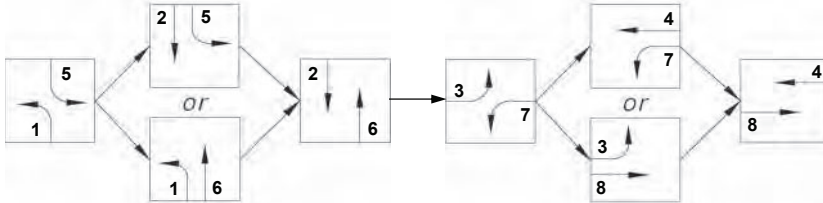


Marion County
Office of the County Engineer

Signal ID	Major Street	Minor Street	Date	Technician
295	SE 92nd Loop	SE 110th St	4/29/2024	Youman

PHASE	1	2	3	4	5	6	7	8
DIRECTION	NBLT	SB	EBLT	WB	SBLT	NB	WBLT	EB
LEFT TURN MODE	Prot-Perm		Prot-Perm		Prot-Perm		Prot-Perm	
MIN GREEN	8	16	8	8	8	16	8	8
PASSAGE	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
MAX 1	15	50	15	35	15	50	15	35
MAX 2								
YELLOW	5.1	5.1	4.0	4.0	5.1	5.1	4.0	4.0
ALL RED	2.0	2.0	2.0	3.3	2.0	2.0	2.0	3.3
WALK		7		7		7		7
PED CLR		17		27		17		27
VEH RECALL		Min				Min		
NON-LOCK CALL	X		X	X	X		X	X
DUAL ENTRY		X		X		X		X
NO SIMUL GAP								

Signal Operating Plan



Additional Notes (Turning Restrictions?, Overlaps?, Etc.)

1) These were existing timings in controller on 4/29/2024. No changes made on this date.

Coordination? Yes ☐ No ☒

Plan	Cycle	Phase Splits								Offset	Seq	Spec Func	Coord Mode	Force Mode
		1	2	3	4	5	6	7	8					

Mon-Thu

Start Time	Plan

Fri

Start Time	Plan

Sat

Start Time	Plan

Sun

Start Time	Plan

General Coordination Data

Coord Mode (Normal)	
Max Mode	
Correction Mode	
Offset Mode	
Force Mode (Normal)	

Detector Data

Veh Detector	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Phase	1	2	3	4	5	6	7	8								
Veh Detector	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
Phase																

Ped Detector	1	2	3	4	5	6	7	8
Phase	1	2	3	4	5	6	7	8

Appendix F

Existing Conditions Synchro Reports

Existing Weekday AM 2025

HCM 7th Signalized Intersection Summary 3: SE 92nd Loop & SE 110th St Rd

1. Existing AM (2025)
Sandy Clay TIS

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	34	96	41	85	96	167	33	439	228	122	228	72
Future Volume (veh/h)	34	96	41	85	96	167	33	439	228	122	228	72
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
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	1693	1811	1811	1811	1826	1618	1796	1856	1841	1767	1737
Adj Flow Rate, veh/h	35	100	37	89	100	108	34	457	218	127	238	51
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	3	14	6	6	6	5	19	7	3	4	9	11
Cap, veh/h	346	208	188	362	296	253	430	839	387	402	1007	442
Arrive On Green	0.06	0.12	0.12	0.10	0.16	0.16	0.06	0.25	0.25	0.11	0.30	0.30
Sat Flow, veh/h	1767	1693	1535	1725	1811	1547	1541	3413	1572	1753	3357	1472
Grp Volume(v), veh/h	35	100	37	89	100	108	34	457	218	127	238	51
Grp Sat Flow(s),veh/h/ln	1767	1693	1535	1725	1811	1547	1541	1706	1572	1753	1678	1472
Q Serve(g_s), s	1.1	3.6	1.4	2.8	3.2	4.1	1.0	7.6	7.9	3.3	3.5	1.6
Cycle Q Clear(g_c), s	1.1	3.6	1.4	2.8	3.2	4.1	1.0	7.6	7.9	3.3	3.5	1.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	346	208	188	362	296	253	430	839	387	402	1007	442
V/C Ratio(X)	0.10	0.48	0.20	0.25	0.34	0.43	0.08	0.54	0.56	0.32	0.24	0.12
Avail Cap(c_a), veh/h	651	910	825	590	974	832	698	2622	1208	612	2579	1131
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	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.3	26.6	25.7	20.9	24.1	24.5	16.2	21.4	21.5	15.1	17.2	16.5
Incr Delay (d2), s/veh	0.1	1.7	0.5	0.3	0.7	1.1	0.1	0.6	1.3	0.4	0.1	0.1
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(95%),veh/ln	0.8	2.7	0.9	1.9	2.4	2.7	0.6	4.8	5.1	2.0	2.1	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	22.4	28.3	26.2	21.3	24.8	25.6	16.3	21.9	22.8	15.5	17.3	16.6
LnGrp LOS	C	C	C	C	C	C	B	C	C	B	B	B
Approach Vol, veh/h	172			297			709			416		
Approach Delay, s/veh	26.7			24.0			21.9			16.7		
Approach LOS	C			C			C			B		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	10.8	26.6	9.8	17.9	14.3	23.1	12.4	15.3				
Change Period (Y+Rc), s	7.1	7.1	6.0	7.3	7.1	7.1	6.0	7.3				
Max Green Setting (Gmax), s	15.0	50.0	15.0	35.0	15.0	50.0	15.0	35.0				
Max Q Clear Time (g_c+I1), s	3.0	5.5	3.1	6.1	5.3	9.9	4.8	5.6				
Green Ext Time (p_c), s	0.0	1.6	0.0	0.9	0.2	3.6	0.1	0.7				
Intersection Summary												
HCM 7th Control Delay, s/veh	21.5											
HCM 7th LOS	C											

Intersection						
Int Delay, s/veh	5.8					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	260	189	160	83	42	189
Future Vol, veh/h	260	189	160	83	42	189
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	130	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	1	10	7	4	10	3
Mvmt Flow	277	201	170	88	45	201
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	259	0	-	0	969	214
Stage 1	-	-	-	-	214	-
Stage 2	-	-	-	-	754	-
Critical Hdwy	4.11	-	-	-	6.5	6.23
Critical Hdwy Stg 1	-	-	-	-	5.5	-
Critical Hdwy Stg 2	-	-	-	-	5.5	-
Follow-up Hdwy	2.209	-	-	-	3.59	3.327
Pot Cap-1 Maneuver	1312	-	-	-	272	823
Stage 1	-	-	-	-	803	-
Stage 2	-	-	-	-	451	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1312	-	-	-	207	823
Mov Cap-2 Maneuver	-	-	-	-	207	-
Stage 1	-	-	-	-	612	-
Stage 2	-	-	-	-	451	-
Approach	EB	WB		SB		
HCM Ctrl Dly, s/v	4.91	0		13.74		
HCM LOS				B		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1042	-	-	-	207	823
HCM Lane V/C Ratio	0.211	-	-	-	0.215	0.244
HCM Ctrl Dly (s/v)	8.5	0	-	-	27	10.8
HCM Lane LOS	A	A	-	-	D	B
HCM 95th %tile Q(veh)	0.8	-	-	-	0.8	1

Existing Weekday PM 2025

HCM 7th Signalized Intersection Summary

1: US 441 & SE 92nd Place Rd

2. Existing PM (2025)

Sandy Clay TIS

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	275	0	303	0	1144	363	374	1100	0
Future Volume (veh/h)	0	0	0	275	0	303	0	1144	363	374	1100	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
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	0	1870	0	1826	0	1796	0	1811	1811	1767	1811	0
Adj Flow Rate, veh/h	0	0	0	296	0	296	0	1230	0	402	1183	0
Peak Hour Factor	0.92	0.92	0.92	0.93	0.92	0.93	0.92	0.93	0.93	0.93	0.93	0.92
Percent Heavy Veh, %	0	2	0	5	0	7	0	6	6	9	6	0
Cap, veh/h	0	1	0	348	0	0	0	2070		430	2723	0
Arrive On Green	0.00	0.00	0.00	0.10	0.00	0.00	0.00	0.60	0.00	0.13	0.79	0.00
Sat Flow, veh/h	0	-160851	0	3374	296		0	3622	0	1682	3532	0
Grp Volume(v), veh/h	0	0	0	296	74.5		0	1230	0	402	1183	0
Grp Sat Flow(s),veh/h/ln	0	1870	0	1687	E		0	1721	0	1682	1721	0
Q Serve(g_s), s	0.0	0.0	0.0	12.1			0.0	31.0	0.0	14.9	15.3	0.0
Cycle Q Clear(g_c), s	0.0	0.0	0.0	12.1			0.0	31.0	0.0	14.9	15.3	0.0
Prop In Lane	0.00		0.00	1.00			0.00		0.00	1.00		0.00
Lane Grp Cap(c), veh/h	0	1	0	348			0	2070		430	2723	0
V/C Ratio(X)	0.00	0.00	0.00	0.85			0.00	0.59		0.94	0.43	0.00
Avail Cap(c_a), veh/h	0	246	0	429			0	2070		579	2723	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.00	0.00	1.00			0.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	0.0	0.0	61.7			0.0	17.3	0.0	25.9	4.7	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	12.8			0.0	1.3	0.0	19.1	0.5	0.0
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
%ile BackOfQ(95%),veh/ln	0.0	0.0	0.0	9.6			0.0	17.4	0.0	15.8	7.7	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	0.0	0.0	0.0	74.5			0.0	18.6	0.0	45.0	5.2	0.0
LnGrp LOS				E				B	D			A
Approach Vol, veh/h	0						1230			1585		
Approach Delay, s/veh	0.0						18.6			15.3		
Approach LOS							B			B		
Timer - Assigned Phs	1	2	3	4	6							
Phs Duration (G+Y+Rc), s	26.5	91.8	21.6	0.0	118.4							
Change Period (Y+Rc), s	8.6	7.6	7.2	8.6	7.6							
Max Green Setting (Gmax), s	30.4	41.4	17.8	18.4	80.4							
Max Q Clear Time (g_c+I1), s	16.9	33.0	14.1	0.0	17.3							
Green Ext Time (p_c), s	1.0	4.9	0.4	0.0	10.7							
Intersection Summary												
HCM 7th Control Delay, s/veh				22.2								
HCM 7th LOS				C								
Notes												
User approved pedestrian interval to be less than phase max green.												
Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.												

Kittelson & Associates, Inc.

Synchro 12 Report

The intersection does not have eastbound through (EBT) movement. The EBT has been treated as an exclusive pedestrian (ex-ped) movement for modeling and analysis purposes.

Lanes, Volumes, Timings
1: US 441 & SE 92nd Place Rd

2. Existing PM (2025)
Sandy Clay TIS

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				 				 			 	
Traffic Volume (vph)	0	0	0	275	0	303	0	1144	363	374	1100	0
Future Volume (vph)	0	0	0	275	0	303	0	1144	363	374	1100	0
Lane Util. Factor	1.00	1.00	1.00	0.97	1.00	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Frt						0.850		0.964				
Flt Protected				0.950						0.950		
Satd. Flow (prot)	0	1863	0	3335	0	1509	0	3283	0	1656	3406	0
Flt Permitted				0.950						0.057		
Satd. Flow (perm)	0	1863	0	3335	0	1509	0	3283	0	99	3406	0
Satd. Flow (RTOR)						326		31				
Adj. Flow (vph)	0	0	0	296	0	326	0	1230	390	402	1183	0
Lane Group Flow (vph)	0	0	0	296	0	326	0	1620	0	402	1183	0
Turn Type				Prot		Perm		NA		pm+pt	NA	
Protected Phases		4		3				2		1	6	
Permitted Phases						3				6		
Total Split (s)		27.0		25.0		25.0		49.0		39.0	88.0	
Total Lost Time (s)		8.6		7.2		7.2		7.6		8.6	7.6	
Act Effect Green (s)				17.8		17.8		61.9		106.4	107.4	
Actuated g/C Ratio				0.13		0.13		0.44		0.76	0.77	
v/c Ratio				0.70		0.69		1.10		0.83	0.45	
Control Delay (s/veh)				67.4		13.3		93.0		53.1	6.8	
Queue Delay				0.0		0.0		0.0		0.0	0.0	
Total Delay (s/veh)				67.4		13.3		93.0		53.1	6.8	
LOS				E		B		F		D	A	
Approach Delay (s/veh)					39.1			93.0			18.5	
Approach LOS					D			F			B	

Intersection Summary

Cycle Length: 140

Actuated Cycle Length: 140

Offset: 45 (32%), Referenced to phase 2:NBT and 6:SBTL, Start of Green

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.10

Intersection Signal Delay (s/veh): 53.4

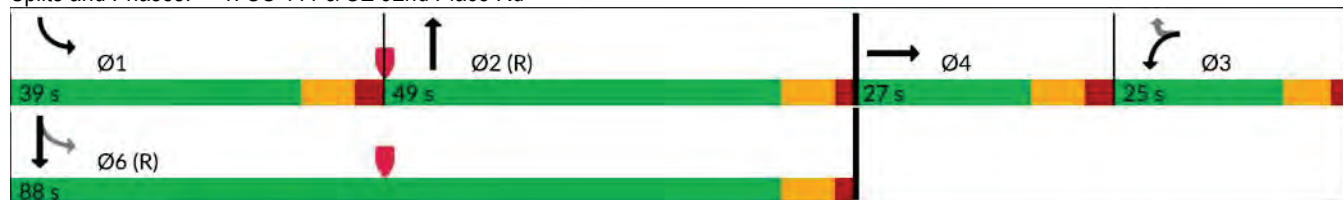
Intersection LOS: D

Intersection Capacity Utilization 88.6%

ICU Level of Service E

Analysis Period (min) 15

Splits and Phases: 1: US 441 & SE 92nd Place Rd



The intersection does not have eastbound through (EBT) movement. The EBT has been treated as an exclusive pedestrian (ex-ped) movement for modeling and analysis purposes.

HCM 7th Signalized Intersection Summary 2: SE 58th Ave & SE 92nd Loop

2. Existing PM (2025)
Sandy Clay TIS



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	232	338	160	29	303	349	96	919	130	171	640	208
Future Volume (veh/h)	232	338	160	29	303	349	96	919	130	171	640	208
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
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	1781	1767	1841	1678	1826	1870	1752	1841	1826	1722	1826	1841
Adj Flow Rate, veh/h	239	348	128	30	312	293	99	947	92	176	660	157
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	8	9	4	15	5	2	10	4	5	12	5	4
Cap, veh/h	298	551	199	70	628	287	127	1317	583	236	1302	585
Arrive On Green	0.09	0.23	0.23	0.04	0.18	0.18	0.08	0.38	0.38	0.07	0.38	0.38
Sat Flow, veh/h	3291	2414	874	1598	3469	1585	1668	3497	1547	3182	3469	1560
Grp Volume(v), veh/h	239	240	236	30	312	293	99	947	92	176	660	157
Grp Sat Flow(s),veh/h/ln	1646	1678	1609	1598	1735	1585	1668	1749	1547	1591	1735	1560
Q Serve(g_s), s	8.2	14.8	15.2	2.1	9.3	20.8	6.7	26.6	4.5	6.2	16.9	8.0
Cycle Q Clear(g_c), s	8.2	14.8	15.2	2.1	9.3	20.8	6.7	26.6	4.5	6.2	16.9	8.0
Prop In Lane	1.00		0.54	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	298	383	367	70	628	287	127	1317	583	236	1302	585
V/C Ratio(X)	0.80	0.63	0.64	0.43	0.50	1.02	0.78	0.72	0.16	0.75	0.51	0.27
Avail Cap(c_a), veh/h	375	383	367	154	628	287	192	1317	583	418	1302	585
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	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.2	39.9	40.1	53.5	42.3	47.0	52.1	30.6	23.7	52.1	27.7	24.9
Incr Delay (d2), s/veh	9.5	3.2	3.8	4.2	0.6	58.6	10.8	3.4	0.6	4.7	1.4	1.1
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(95%),veh/ln	6.6	10.3	10.3	1.6	7.0	18.6	5.6	16.7	3.0	4.6	11.2	5.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	60.8	43.2	43.9	57.7	42.9	105.6	62.9	34.0	24.3	56.8	29.1	26.0
LnGrp LOS	E	D	D	E	D	F	E	C	C	E	C	C
Approach Vol, veh/h	715		635			1138			993			
Approach Delay, s/veh	49.3		72.5			35.7			33.5			
Approach LOS	D		E			D			C			
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	7.6	50.0	19.3	28.0	17.4	50.2	13.9	33.4				
Change Period (Y+Rc), s	8.8	6.9	8.9	7.2	8.9	6.9	8.9	7.2				
Max Green Setting (Gmax), s	13.2	43.1	13.1	20.8	15.1	41.1	11.1	22.8				
Max Q Clear Time (g_c+I1), s	18.7	18.9	10.2	22.8	8.2	28.6	4.1	17.2				
Green Ext Time (p_c), s	0.1	4.8	0.2	0.0	0.3	5.1	0.0	1.3				

Intersection Summary

HCM 7th Control Delay, s/veh 44.6
HCM 7th LOS D

Notes

User approved pedestrian interval to be less than phase max green.

HCM 7th Signalized Intersection Summary 3: SE 92nd Loop & SE 110th St Rd

2. Existing PM (2025)
Sandy Clay TIS



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	23	167	44	229	113	144	29	531	397	183	358	61
Future Volume (veh/h)	23	167	44	229	113	144	29	531	397	183	358	61
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
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	1693	1811	1841	1885	1826	1870	1574	1841	1870	1856	1811	1767
Adj Flow Rate, veh/h	24	174	25	239	118	99	30	553	347	191	373	39
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	14	6	4	1	5	2	22	4	2	3	6	9
Cap, veh/h	295	237	204	381	412	358	375	1000	453	363	1165	507
Arrive On Green	0.04	0.13	0.13	0.14	0.23	0.23	0.05	0.29	0.29	0.10	0.34	0.34
Sat Flow, veh/h	1612	1811	1560	1795	1826	1585	1499	3497	1585	1767	3441	1497
Grp Volume(v), veh/h	24	174	25	239	118	99	30	553	347	191	373	39
Grp Sat Flow(s),veh/h/ln	1612	1811	1560	1795	1826	1585	1499	1749	1585	1767	1721	1497
Q Serve(g_s), s	1.0	7.4	1.1	8.6	4.3	4.1	1.1	10.7	15.9	5.9	6.4	1.4
Cycle Q Clear(g_c), s	1.0	7.4	1.1	8.6	4.3	4.1	1.1	10.7	15.9	5.9	6.4	1.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	295	237	204	381	412	358	375	1000	453	363	1165	507
V/C Ratio(X)	0.08	0.74	0.12	0.63	0.29	0.28	0.08	0.55	0.77	0.53	0.32	0.08
Avail Cap(c_a), veh/h	532	797	686	475	803	697	585	2198	996	517	2163	941
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	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.7	33.3	30.6	23.7	25.5	25.4	18.0	24.1	26.0	17.8	19.5	17.9
Incr Delay (d2), s/veh	0.1	4.4	0.3	1.7	0.4	0.4	0.1	0.5	2.7	1.2	0.2	0.1
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(95%),veh/ln	0.7	6.2	0.8	6.6	3.3	2.8	0.6	7.2	10.1	4.0	4.1	0.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	27.8	37.7	30.8	25.4	25.9	25.8	18.1	24.6	28.7	19.0	19.7	17.9
LnGrp LOS	C	D	C	C	C	C	B	C	C	B	B	B
Approach Vol, veh/h	223		456				930		603			
Approach Delay, s/veh	35.8		25.6				25.9		19.3			
Approach LOS	D		C				C		B			
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	1.0	34.0	9.3	25.3	15.2	29.8	16.9	17.7				
Change Period (Y+Rc), s	7.1	7.1	6.0	7.3	7.1	7.1	6.0	7.3				
Max Green Setting (Gmax), s	15.0	50.0	15.0	35.0	15.0	50.0	15.0	35.0				
Max Q Clear Time (g_c+I1), s	8.4	8.4	3.0	6.3	7.9	17.9	10.6	9.4				
Green Ext Time (p_c), s	0.0	2.4	0.0	1.0	0.3	4.8	0.3	1.0				
Intersection Summary												
HCM 7th Control Delay, s/veh			25.1									
HCM 7th LOS			C									

HCM 7th Signalized Intersection Summary 4: SE 92nd Loop & CR 25

2. Existing PM (2025)
Sandy Clay TIS



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	21	160	74	88	106	133	41	859	95	175	356	92
Future Volume (veh/h)	21	160	74	88	106	133	41	859	95	175	356	92
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
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	1900	1796	1870	1693	1663	1663	1900	1856	1752	1648	1826	1767
Adj Flow Rate, veh/h	22	167	47	92	110	115	43	895	67	182	371	66
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	7	2	14	16	16	0	3	10	17	5	9
Cap, veh/h	355	367	324	319	400	339	411	945	398	270	1168	504
Arrive On Green	0.02	0.20	0.20	0.06	0.24	0.24	0.04	0.27	0.27	0.11	0.34	0.34
Sat Flow, veh/h	1810	1796	1585	1612	1663	1409	1810	3526	1485	1570	3469	1497
Grp Volume(v), veh/h	22	167	47	92	110	115	43	895	67	182	371	66
Grp Sat Flow(s),veh/h/ln	1810	1796	1585	1612	1663	1409	1810	1763	1485	1570	1735	1497
Q Serve(g_s), s	0.7	6.4	1.9	3.5	4.2	5.3	1.3	19.5	2.7	6.4	6.2	2.4
Cycle Q Clear(g_c), s	0.7	6.4	1.9	3.5	4.2	5.3	1.3	19.5	2.7	6.4	6.2	2.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	355	367	324	319	400	339	411	945	398	270	1168	504
V/C Ratio(X)	0.06	0.46	0.15	0.29	0.28	0.34	0.10	0.95	0.17	0.67	0.32	0.13
Avail Cap(c_a), veh/h	426	802	708	324	743	629	502	945	398	282	1168	504
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	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.6	27.4	25.6	22.8	24.2	24.6	19.3	28.2	22.0	20.0	19.3	18.0
Incr Delay (d2), s/veh	0.1	0.9	0.2	0.5	0.4	0.6	0.1	17.9	0.2	5.9	0.2	0.1
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(95%),veh/ln	0.5	4.7	1.2	2.3	2.8	3.0	0.9	14.7	1.6	4.4	4.0	1.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	23.7	28.3	25.8	23.3	24.6	25.2	19.4	46.1	22.2	25.9	19.5	18.2
LnGrp LOS	C	C	C	C	C	C	B	D	C	C	B	B
Approach Vol, veh/h	236			317			1005			619		
Approach Delay, s/veh	27.3			24.4			43.4			21.2		
Approach LOS	C			C			D			C		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	33.7	8.7	25.6	15.7	28.3	11.5	22.8					
Change Period (Y+Rc), s	7.3	7.3	6.8	6.8	7.3	7.3	6.8	6.8				
Max Green Setting (Gmax), s	23.0	5.0	35.0	9.0	21.0	5.0	35.0					
Max Q Clear Time (g_c+I13), s	8.2	2.7	7.3	8.4	21.5	5.5	8.4					
Green Ext Time (p_c), s	0.0	2.0	0.0	0.9	0.0	0.0	0.0	1.0				

Intersection Summary

HCM 7th Control Delay, s/veh 32.6
HCM 7th LOS C

Notes

User approved pedestrian interval to be less than phase max green.

HCM 7th Signalized Intersection Summary
5: US 441 & SE 92nd Loop / SE 132nd St Rd

2. Existing PM (2025)
Sandy Clay TIS



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	136	534	244	166	232	79	219	970	278	48	1013	128
Future Volume (veh/h)	136	534	244	166	232	79	219	970	278	48	1013	128
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
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	1885	1707	1796	1870	1796	1796	1870	1870	1870	1870	1856
Adj Flow Rate, veh/h	146	574	0	178	249	50	235	1043	177	52	1089	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	4	1	13	7	2	7	7	2	2	2	2	3
Cap, veh/h	173	404		240	328	141	291	1711	763	99	1598	
Arrive On Green	0.10	0.11	0.00	0.07	0.09	0.09	0.09	0.48	0.48	0.06	0.45	0.00
Sat Flow, veh/h	1753	3582	1447	3319	3554	1522	3319	3554	1585	1781	3554	1572
Grp Volume(v), veh/h	146	574	0	178	249	50	235	1043	177	52	1089	0
Grp Sat Flow(s),veh/h/ln	1753	1791	1447	1659	1777	1522	1659	1777	1585	1781	1777	1572
Q Serve(g_s), s	9.6	13.2	0.0	6.1	8.0	3.6	8.1	25.1	7.6	3.3	28.4	0.0
Cycle Q Clear(g_c), s	9.6	13.2	0.0	6.1	8.0	3.6	8.1	25.1	7.6	3.3	28.4	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	173	404		240	328	141	291	1711	763	99	1598	
V/C Ratio(X)	0.84	1.42		0.74	0.76	0.36	0.81	0.61	0.23	0.52	0.68	
Avail Cap(c_a), veh/h	203	404		478	512	219	327	1711	763	176	1598	
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	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	51.7	51.8	0.0	53.1	51.7	49.7	52.3	22.2	17.7	53.6	25.5	0.0
Incr Delay (d2), s/veh	23.6	203.5	0.0	4.5	3.6	1.5	12.8	1.6	0.7	4.2	2.4	0.0
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(95%),veh/ln	8.9	27.0	0.0	4.7	6.5	2.5	6.7	15.0	4.9	2.8	16.9	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	75.4	255.3	0.0	57.6	55.3	51.2	65.1	23.8	18.4	57.8	27.8	0.0
LnGrp LOS	E	F		E	E	D	E	C	B	E	C	
Approach Vol, veh/h	720					477		1455		1141		
Approach Delay, s/veh	218.8					55.7		29.8		29.2		
Approach LOS	F					E		C		C		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	8.7	60.0	16.6	21.4	15.0	63.7	19.0	19.0				
Change Period (Y+Rc), s	8.5	7.5	8.2	8.2	8.5	7.5	7.5	8.2				
Max Green Setting (Gmax), s	11.5	52.5	16.8	12.8	11.5	52.5	13.5	16.8				
Max Q Clear Time (g_c+T1), s	11.0	30.4	8.1	15.2	5.3	27.1	11.6	10.0				
Green Ext Time (p_c), s	0.1	7.1	0.3	0.0	0.0	7.7	0.1	0.8				

Intersection Summary

HCM 7th Control Delay, s/veh	68.8
HCM 7th LOS	E

Notes

Unsignalized Delay for [EBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Intersection						
Int Delay, s/veh	8.9					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	343	385	196	25	69	302
Future Vol, veh/h	343	385	196	25	69	302
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	130	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	4	4	2	13	3	7
Mvmt Flow	350	393	200	26	70	308
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	226	0	-	0	1306	213
Stage 1	-	-	-	-	213	-
Stage 2	-	-	-	-	1093	-
Critical Hdwy	4.14	-	-	-	6.43	6.27
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.43	-
Follow-up Hdwy	2.236	-	-	-	3.527	3.363
Pot Cap-1 Maneuver	1331	-	-	-	176	815
Stage 1	-	-	-	-	820	-
Stage 2	-	-	-	-	320	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1331	-	-	-	117	815
Mov Cap-2 Maneuver	-	-	-	-	117	-
Stage 1	-	-	-	-	544	-
Stage 2	-	-	-	-	320	-
Approach	EB	WB		SB		
HCM Ctrl Dly, s/v	4.08	0		23.7		
HCM LOS				C		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	848	-	-	-	117	815
HCM Lane V/C Ratio	0.263	-	-	-	0.604	0.378
HCM Ctrl Dly (s/v)	8.7	0	-	-	74.6	12.1
HCM Lane LOS	A	A	-	-	F	B
HCM 95th %tile Q(veh)	1.1	-	-	-	3	1.8

Appendix G

Volume Development Spreadsheet

AM Peak Hour

		Eastbound			Westbound			Northbound			Southbound		
		L	T	R	L	T	R	L	T	R	L	T	R
SE 92nd Loop at SE 110th Street	Raw Volume	32	91	39	80	91	157	31	414	215	115	215	68
	Existing	34	96	41	85	96	166	33	439	228	122	228	72
	Growth Rate	2.43%	2.43%	2.43%	2.43%	2.43%	2.43%	2.43%	2.43%	2.43%	2.43%	2.43%	2.43%
	Vested Trip	0	0	0	0	0	4	0	15	0	11	44	1
	Future background	36	103	44	91	103	183	35	486	245	142	289	78
	Project	0	5	0	86	15	0	0	15	14	0	0	0
	Total Volume	36	108	43	177	118	182	35	499	257	141	288	78
Oak Road at SE 110th Street	Raw Volume	245	178	0	0	151	78	0	0	0	40	0	178
	Existing	260	189	0	0	160	83	0	0	0	42	0	189
	Growth Rate	2.43%	2.43%	2.43%	2.43%	2.43%	2.43%	2.43%	2.43%	2.43%	2.43%	2.43%	2.43%
	Vested Trip	0	0	0	0	0	0	0	0	0	0	0	0
	Future background	279	202	0	0	172	89	0	0	0	45	0	202
	Project	10	21	0	0	7	0	0	0	0	0	0	3
	Total Volume	288	223	0	0	178	89	0	0	0	45	0	205
SE 92nd Loop at Access 2	Raw Volume	0	0	0	0	0	0	0	0	0	0	0	0
	Existing	0	0	0	0	0	0	0	0	0	0	0	0
	Growth Rate	2.43%	2.43%	2.43%	2.43%	2.43%	2.43%	2.43%	2.43%	2.43%	2.43%	2.43%	2.43%
	Vested Trip	0	0	0	0	0	0	0	0	0	0	0	0
	Future background	0	0	0	0	0	0	0	659	0	0	481	0
	Project	0	0	0	0	0	84	0	0	15	28	0	0
	Total Volume	0	0	0	0	0	84	0	659	15	28	481	0
SE 110th St at Access 1	Raw Volume	0	0	0	0	0	0	0	0	0	0	0	0
	Existing	0	0	0	0	0	0	0	0	0	0	0	0
	Growth Rate	2.43%	2.43%	2.43%	2.43%	2.43%	2.43%	2.43%	2.43%	2.43%	2.43%	2.43%	2.43%
	Vested Trip	0	0	0	0	0	0	0	0	0	0	0	0
	Future background	0	0	0	0	0	0	0	0	0	0	0	0
	Project	19	0	0	0	0	10	0	0	0	31	0	102
	Total Volume	19	0	0	0	0	10	0	0	0	31	0	102

PM Peak Hour

		Eastbound			Westbound			Northbound			Southbound		
		L	T	R	L	T	R	L	T	R	L	T	R
U.S. 441 & SE 92nd Place Rd	Raw Volume	0	0	0	259	0	285	0	1,079	342	353	1,038	0
	Existing	0	0	0	275	0	302	0	1144	363	374	1100	0
	Growth Rate	2.43%	2.43%	2.43%	2.43%	2.43%	2.43%	2.43%	2.43%	2.43%	2.43%	2.43%	2.43%
	Vested Trip	0	0	0	7	0	23	0	0	12	39	0	0
	Future background	0	0	0	302	0	347	0	1227	401	440	1180	0
	Project	0	0	0	3	0	21	0	0	4	36	0	0
	Total Volume	0	0	0	305	0	369	0	1227	405	476	1180	0
S.R. 35 / SE 58th Ave at SE 92nd Loop	Raw Volume	219	319	151	27	286	329	91	867	123	161	604	196
	Existing	232	338	160	29	303	349	96	919	130	171	640	208
	Growth Rate	2.43%	2.43%	2.43%	2.43%	2.43%	2.43%	2.43%	2.43%	2.43%	2.43%	2.43%	2.43%
	Vested Trip	-16	117	122	114	26	23	179	221	70	178	122	-19
	Future background	163	550	294	145	351	279	282	1207	209	253	566	143
	Project	0	43	0	1	25	21	0	0	2	36	0	0
	Total Volume	163	593	294	146	376	300	282	1207	211	289	566	143
SE 92nd Loop at SE 110th Street	Raw Volume	22	158	42	216	107	136	27	501	374	173	338	58
	Existing	23	167	45	229	113	144	29	531	396	183	358	61
	Growth Rate	2.43%	2.43%	2.43%	2.43%	2.43%	2.43%	2.43%	2.43%	2.43%	2.43%	2.43%	2.43%
	Vested Trip	1	0	0	0	0	13	0	51	0	8	30	0
	Future background	26	179	47	246	121	168	31	621	426	204	414	66
	Project	0	18	0	60	10	0	0	53	48	0	0	0
	Total Volume	26	197	47	306	131	168	31	674	474	204	414	66
SE 92nd Loop at C.R. 25	Raw Volume	20	151	69	83	100	126	39	810	89	165	336	86
	Existing	21	160	73	88	106	134	41	859	94	175	356	91
	Growth Rate	2.43%	2.43%	2.43%	2.43%	2.43%	2.43%	2.43%	2.43%	2.43%	2.43%	2.43%	2.43%
	Vested Trip	45	23	71	43	20	0	59	28	40	0	30	37
	Future background	68	195	150	137	134	143	103	950	142	188	412	136
	Project	4	0	0	0	0	16	0	80	0	9	48	3
	Total Volume	72	195	150	137	134	159	103	1030	142	197	460	139
U.S. 441 at SE 132nd Street	Raw Volume	128	504	230	157	219	74	207	915	263	45	956	120
	Existing	136	534	244	166	232	78	219	970	279	48	1013	127
	Growth Rate	2.43%	2.43%	2.43%	2.43%	2.43%	2.43%	2.43%	2.43%	2.43%	2.43%	2.43%	2.43%
	Vested Trip	46	64	52	34	135	0	107	96	28	53	90	90
	Future background	192	637	314	212	384	84	342	1137	326	104	1177	228
	Project	0	30	0	28	18	0	0	0	48	0	0	0
	Total Volume	192	667	314	240	402	84	342	1137	374	104	1177	228
Oak Road at SE 110th Street	Raw Volume	324	363	0	0	185	24	0	0	0	65	0	285
	Existing	343	385	0	0	196	25	0	0	0	69	0	302
	Growth Rate	2.43%	2.43%	2.43%	2.43%	2.43%	2.43%	2.43%	2.43%	2.43%	2.43%	2.43%	2.43%
	Vested Trip	0	0	0	0	0	0	0	0	0	0	0	0
	Future background	368	413	0	0	210	27	0	0	0	74	0	324
	Project	7	14	0	0	24	0	0	0	0	0	0	12
	Total Volume	375	427	0	0	234	27	0	0	0	74	0	336
SE 92nd Loop at Access 2	Raw Volume	0	0	0	0	0	0	0	0	0	0	0	0
	Existing	0	0	0	0	0	0	0	0	0	0	0	0
	Growth Rate	2.43%	2.43%	2.43%	2.43%	2.43%	2.43%	2.43%	2.43%	2.43%	2.43%	2.43%	2.43%
	Vested Trip	0	0	0	0	0	0	0	0	0	0	0	0
	Future background	0	0	0	0	0	0	0	815	0	0	684	0
	Project	0	0	0	0	0	58	0	0	53	98	0	0
	Total Volume	0	0	0	0	0	58	0	815	53	98	684	0
SE 110th St at Access 1	Raw Volume	0	0	0	0	0	0	0	0	0	0	0	0
	Existing	0	0	0	0	0	0	0	0	0	0	0	0
	Growth Rate	2.43%	2.43%	2.43%	2.43%	2.43%	2.43%	2.43%	2.43%	2.43%	2.43%	2.43%	2.43%
	Vested Trip	0	0	0	0	0	0	0	0	0	0	0	0
	Future background	0	809	0	0	535	0	0	0	0	0	0	0
	Project	66	0	0	0	0	35	0	0	0	21	0	70
	Total Volume	66	809	0	0	535	35	0	0	0	21	0	70
SE 92nd Loop at Emerald Road	Raw Volume	0	0	0	0	0	0	0	0	0	0	0	0
	Existing	0	0	0	0	0	0	0	0	0	0	0	0
	Growth Rate	2.43%	2.43%	2.43%	2.43%	2.43%	2.43%	2.43%	2.43%	2.43%	2.43%	2.43%	2.43%
	Vested Trip	0	0	0	0	0	0	0	0	0	0	0	0
	Future background	0	0	0	302	0	110	0	717	119	70	382	0
	Project	0	0	0	17	0	0	0	48	10	0	80	0
	Total Volume	0	0	0	319	0	110	0	765	129	70	462	0

Appendix H

Vested Trip Excerpts

TRAFFIC STUDY

Convenience Store with Gasoline

SR 35 at SE 92nd Loop
Southeast Corner

PROJECT NAME: SE 58TH AVE & 92ND LOOP - CONVENIENCE STORE WITH FUELING

PROJECT NUMBER: 2022080152

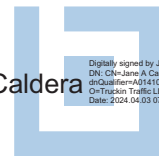
APPLICATION: TRAFFIC STUDY #30026

Prepared for:
RKM Development

Prepared By:
TRUCKIN TRAFFIC, LLC



Jane A Caldera



Digitally signed by Jane A Caldera
DN: cn=Jane A Caldera,
dnQualifier=Ag1410200001986853513F00060A47,
o=Truckin Traffic, LLC, c=US
Date: 2024.04.03 07:36:57 -04'00'

Submitted To:
Marion County

Original Submittal - April 17, 2023
Updated - September 21, 2023
Final - April 3, 2024



Jane A. Caldera, P.E.
P.E. # 53116

2. PROJECT TRIP CHARACTERISTICS

Trip Generation

Phase 1

The AM and PM peak-hour trip generation estimates for the proposed development are based on the trip rates contained in the 11th Edition of the Institute of Transportation of Engineers (ITE) Trip Generation Manual. The trip generation calculations for the development are shown in Tables 1 and 2 below.

TABLE 1 - PHASE 1 - AM PK-HR TRIP GENERATION ESTIMATES

ITE Land-Use Category	ITE Land-Use (Code)	ITE Sub Category	Independent Variable	(1) ITE Rate/Eqn	Size	Total Trips	Pass-By Capture Rate (2)	Pass-By Trips			New-Net Trips		
								2-Way	In	Out	2-Way	In	Out
Convenience Store / Gas Station	945	VFP (16-24)	SQUARE FEET	91.35	4,650	425	54%	230	115	115	196	98	98

(1) - SOURCE: ITE Trip Generation Manual 11th Edition. Land Use: 945 - Convenience Store/Gas Station; Land Use Subcategory - Number of vehicle fueling positions (VFP) at the site between 16 and 24 VFP.

(2) - ITE Trip Generation Manual, (11th Edition) Appendices - List of Land Uses with Vehicle Pass-By Rates and Data, ITE Recommended 76% was adjusted down due to 10% adjacent street capture limit.

TABLE 2 - PHASE 1 - PM PK-HR GENERATION ESTIMATES

ITE Land-Use Category	ITE Land-Use (Code)	ITE Sub Category	Independent Variable	(1) ITE Rate/Eqn	Size	Total Trips	Pass-By Capture Rate (2)	Pass-By Trips			New-Net Trips		
								2-Way	In	Out	2-Way	In	Out
Convenience Store / Gas Station	945	VFP (16-24)	SQUARE FEET	78.95	4,650	367	67%	246	123	123	121	61	61

(1) - SOURCE: ITE Trip Generation Manual 11th Edition. Land Use: 945 - Convenience Store/Gas Station; Land Use Subcategory - Number of vehicle fueling positions (VFP) at the site between 16 and 24 VFP.

(2) - ITE Trip Generation Manual, (11th Edition) Appendices - List of Land Uses with Vehicle Pass-By Rates and Data, ITE Recommended 75% was adjusted down due to 10% adjacent street capture limit.

	AM	PM
Adjacent Street By-Capture Limit -	10.0%	10.0%
(1) 2023 Peak-Season Adjacent PK-HR Volume Traffic (2-way) Both Roadways -	2,304	2,491
Pass-By Cap Limit -	230.4	249.1
Adjusted By-Capture Rate due to Limit -	54.0%	67.0%

(1) Source: TMC dated January 10, 2023

Phase 2

To be conservative, from a traffic planning standpoint, ITE Land-Use 821 (Shopping Plaza) was selected to estimate the traffic generation for the 6.7-acre remainder parcel. The AM and PM Peak-Hour Trip Generation Estimates for the Phase 2, remainder parcel, are provided in the Tables 3 and 4.

TABLE 3
AM PK-HR TRIP GENERATION ESTIMATES - REMAINDER PARCEL (PHASE 2)

ITE Land-Use Category	ITE Land-Use (Code)	Independent Variable	(1) ITE Rate/Eqn	Size	Total Trips	Pass-By Capture Rate (2)	Pass-By Trips			New-Net Trips		
							2-Way	In	Out	2-Way	In	Out
Shopping Plaza (40-150k)	821	SQUARE FEET	1.73	82,870	143	29%	41	26	16	102	63	39

(1) - SOURCE: ITE Trip Generation Manual 11th Edition.

(2) - ITE Trip Generation Manual, (11th Edition) Appendices - List of Land Uses with Vehicle Pass-By Rates and Data, ITE Recommended 40% was adjusted down due to 10% adjacent street capture limit for both phases.

TABLE 4
PM PK-HR GENERATION ESTIMATES - REMAINDER PARCEL (PHASE 2)

ITE Land-Use Category	ITE Land-Use (Code)	Independent Variable	(1) ITE Rate/Eqn	Size	Total Trips	Pass-By Capture Rate (2)	Pass-By Trips			New-Net Trips		
							2-Way	In	Out	2-Way	In	Out
Shopping Plaza (40-150k)	821	SQUARE FEET	5.19	82,870	430	11%	47	23	24	383	188	195

(1) - SOURCE: ITE Trip Generation Manual 11th Edition.

(2) - ITE Trip Generation Manual, (11th Edition) Appendices - List of Land Uses with Vehicle Pass-By Rates and Data, ITE Recommended 40% was adjusted down due to 10% adjacent street capture limit for both phases.

	AM	PM
Adjacent Street By-Capture Limit -	10.0%	10.0%
(1) 2023 Peak-Season Adjacent PK-HR Volume Traffic (2-way) Both Roadways -	2,304	2,491
(2) 2026 Peak-Season Adjacent PK-HR Volume Traffic (2-way) Both Roadways -	2,720	2,940
Pass-By Cap Limit -	272.0	294.0
Adjusted By-Capture Rate due to Limit -	n/a	n/a

(1) Source: TMC dated January 10, 2023

(2) Based on 6% annual growth rate

Tables 13 and 14 below provide the results of the Phase 1 Post Development Roadway Segment Capacity Analysis.

TABLE 13
PHASE 1 POST DEVELOPMENT ROADWAY SEGMENT CAPACITY ANALYSIS - AM PEAK HOUR

Segment ID	Road Name	From	To	Adopted LOS Standard	No. of Lanes	EXT VOLUME (2-WAY)	Site Traffic Dist. Peak Dir	Net New Trips (2-WAY)	PH 1 Post Dev Traffic	Pk-Hr Service Volume (1)	PH 1 Post Dev V/C Ratio
1010	SE 92 PLACE LOOP	SR 35	US 441	E	4D	971	20%	39	1,010	6,102	0.17
4550	SE 92 PL RD	US 441	SR 35	E	2U	1,041	20%	39	1,080	1,152	0.94
5080.1	SR 35	SR 25	SE 92ND PL	D	4D	1,333	20%	39	1,372	3,580	0.38
5090.1	SR 35	SE 92ND PL	LAUREL RD	D	4D	2,104	40%	78	2,182	3,759	0.58

(1) - Source: Ocala Marion CMP Database -2021 Version

Net-Net, AM Peak-Hour Trips 196

TABLE 14
PHASE 1 POST DEVELOPMENT ROADWAY SEGMENT CAPACITY ANALYSIS - PM PEAK HOUR

Segment ID	Road Name	From	To	Adopted LOS Standard	No. of Lanes	EXT VOLUME (2-WAY)	Site Traffic Dist. Peak Dir	Net New Trips (2-WAY)	PH 1 Post Dev Traffic	Pk-Hr Service Volume (1)	PH 1 Post Dev V/C Ratio
1010	SE 92 PLACE LOOP	SR 35	US 441	E	4D	953	20%	24	977	6,102	0.16
4550	SE 92 PL RD	US 441	SR 35	E	2U	1,045	20%	24	1,069	1,152	0.93
5080.1	SR 35	SR 25	SE 92ND PL	D	4D	1,538	20%	24	1,562	3,580	0.44
5090.1	SR 35	SE 92ND PL	LAUREL RD	D	4D	2,252	40%	48	2,300	3,759	0.61

(1) - Source: Ocala Marion CMP Database -2021 Version

Net-Net, PM Peak-Hour Trips 121

As indicated in Tables 13 and 14, all roadway segments in the study area are projected to operate at an acceptable level of service upon completion of Phase 1 development.

Tables 17 and 18 below provide the results of the Year 2026 Phase 1+2 Post Development Roadway Segment Capacity Analysis.

TABLE 17

YEAR 2026 PHASE 1+2 POST DEVELOPMENT ROADWAY SEGMENT CAPACITY ANALYSIS - AM PEAK HOUR

Segment ID	Road Name	From	To	Adopted LOS Standard	No. of Lanes	2026 BKDG TRAFFIC PROJECTION (2-WAY)	Site Traffic Dist. Peak Dir	Net New Trips (2-WAY)	PH 1+2 Post Dev Traffic	Pk-Hr Service Volume (1)	PH 1+2 Post Dev V/C Ratio
1010	SE 92 PLACE LOOP	SR 35	US 441	E	4D	1,156	20%	59	1,216	6,102	0.20
4550	SE 92 PL RD	US 441	SR 35	E	2U	1,240	20%	59	1,299	1,152	1.13
5080.1	SR 35	SR 25	SE 92ND PL	D	4D	1,588	20%	59	1,647	3,580	0.46
5090.1	SR 35	SE 92ND PL	LAUREL RD	D	4D	2,506	40%	119	2,625	3,759	0.70

(1) - Source: Ocala Marion CMP Database -2021 Version

Net-Net, AM Peak-Hour Trips 297

TABLE 18

YEAR 2026 PHASE 1+2 POST DEVELOPMENT ROADWAY SEGMENT CAPACITY ANALYSIS - PM PEAK HOUR

Segment ID	Road Name	From	To	Adopted LOS Standard	No. of Lanes	2026 BKDG TRAFFIC PROJECTION (2-WAY)	Site Traffic Dist. Peak Dir	Net New Trips (2-WAY)	PH 1+2 Post Dev Traffic	Pk-Hr Service Volume (1)	PH 1+2 Post Dev V/C Ratio
1010	SE 92 PLACE LOOP	SR 35	US 441	E	4D	1,135	20%	101	1,236	6,102	0.20
4550	SE 92 PL RD	US 441	SR 35	E	2U	1,245	20%	101	1,345	1,152	1.17
5080.1	SR 35	SR 25	SE 92ND PL	D	4D	1,832	20%	101	1,933	3,580	0.54
5090.1	SR 35	SE 92ND PL	LAUREL RD	D	4D	2,682	40%	202	2,884	3,759	0.77

(1) - Source: Ocala Marion CMP Database -2021 Version

Net-Net, PM Peak-Hour Trips 504

As indicated in Tables 17 and 18, the Year 2026 Post Development Traffic Projections are estimated to exceed the peak-hour service volume on SE 92nd Place Road (Seg ID 4550) under the AM and PM peak hour conditions. All other roadway segments in the study area are projected to operate at an acceptable level of service under Year 2026 Post Development Conditions.

6. PHASE 1 - POST DEVELOPMENT CONDITIONS

The Phase 1 Post Development Traffic Projections were developed by adding the Phase 1 site traffic to the 2023 Peak-Season Traffic Volumes. Figures 7 and 8 display the detailed site traffic assignments for the AM and PM peak hours, respectively.

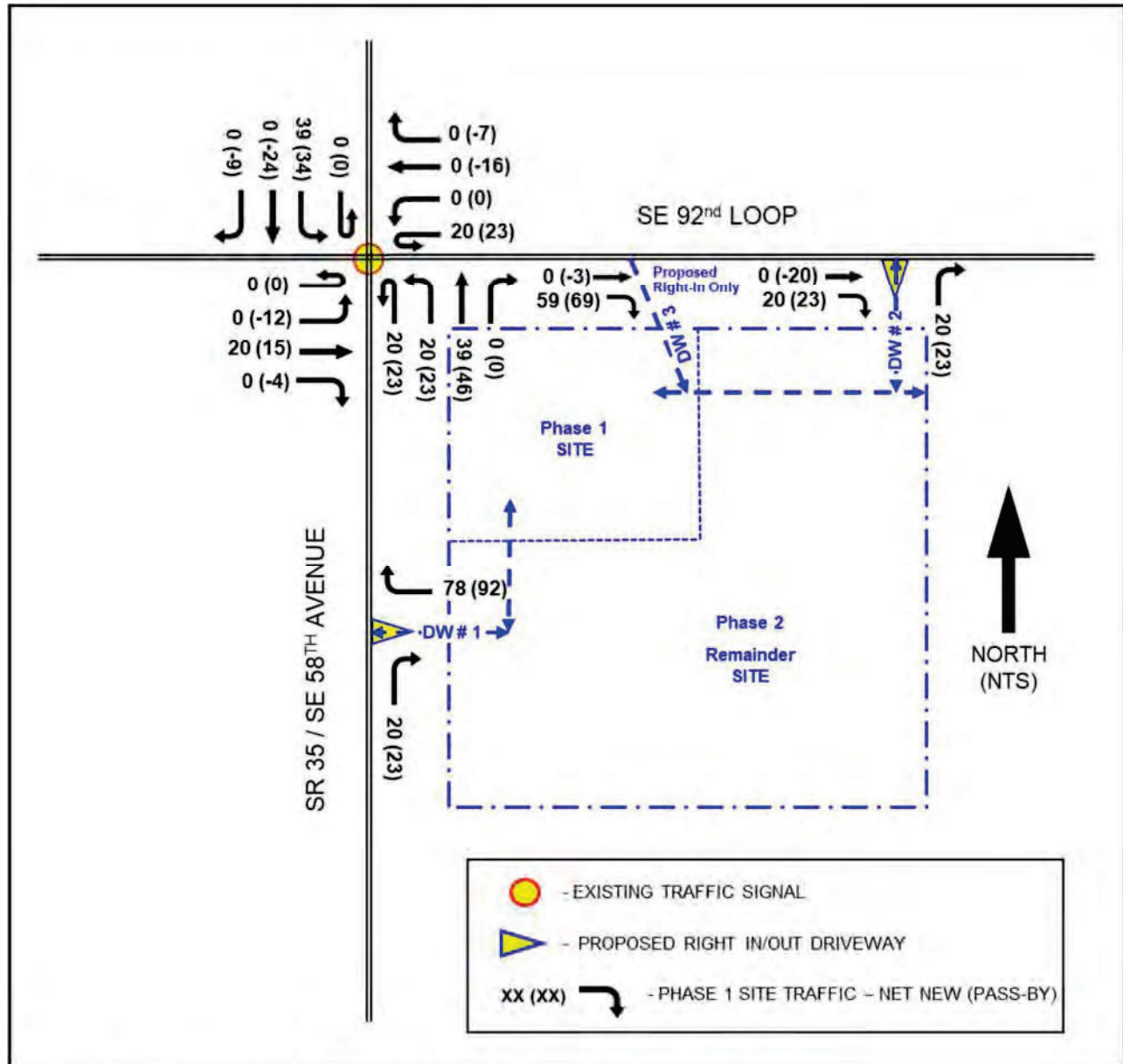


FIGURE 7 - PHASE 1 – SITE TRAFFIC ASSIGNMENT (AM PEAK-HOUR)

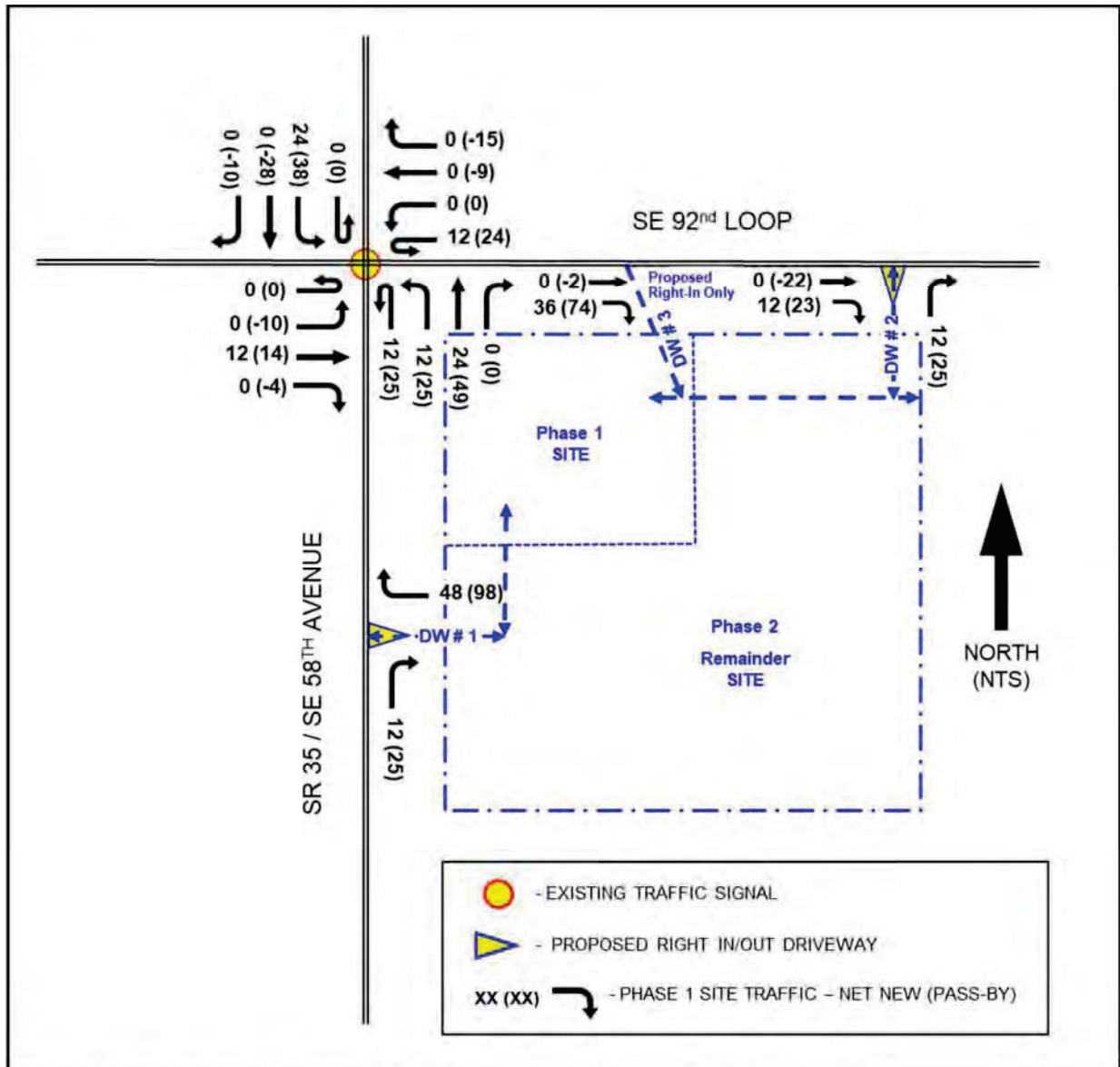


FIGURE 8 - PHASE 1 - SITE TRAFFIC ASSIGNMENT (PM PEAK-HOUR)

7. PHASE 2 - POST DEVELOPMENT CONDITIONS

The Phase 2 Post Development Traffic Projections were developed by adding the Phase 1 and Phase 2 site traffic to the 2026 Background (Peak-Season) Traffic Projections. Figures 10 and 11 display the detailed Phase 2 site traffic assignments for the AM and PM peak hours, respectively.

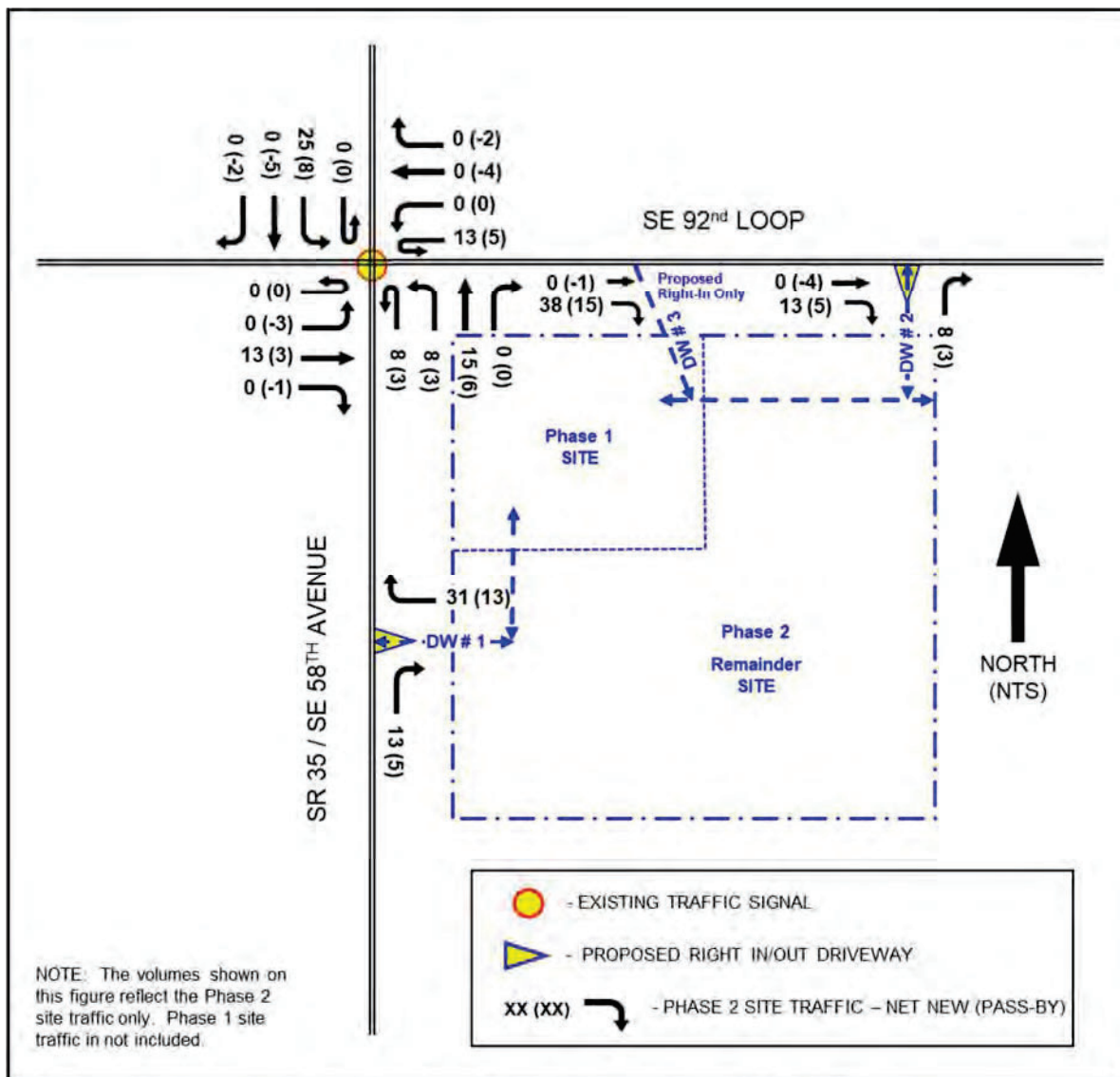


FIGURE 10 - PHASE 2 - SITE TRAFFIC ASSIGNMENT (AM PEAK-HOUR)

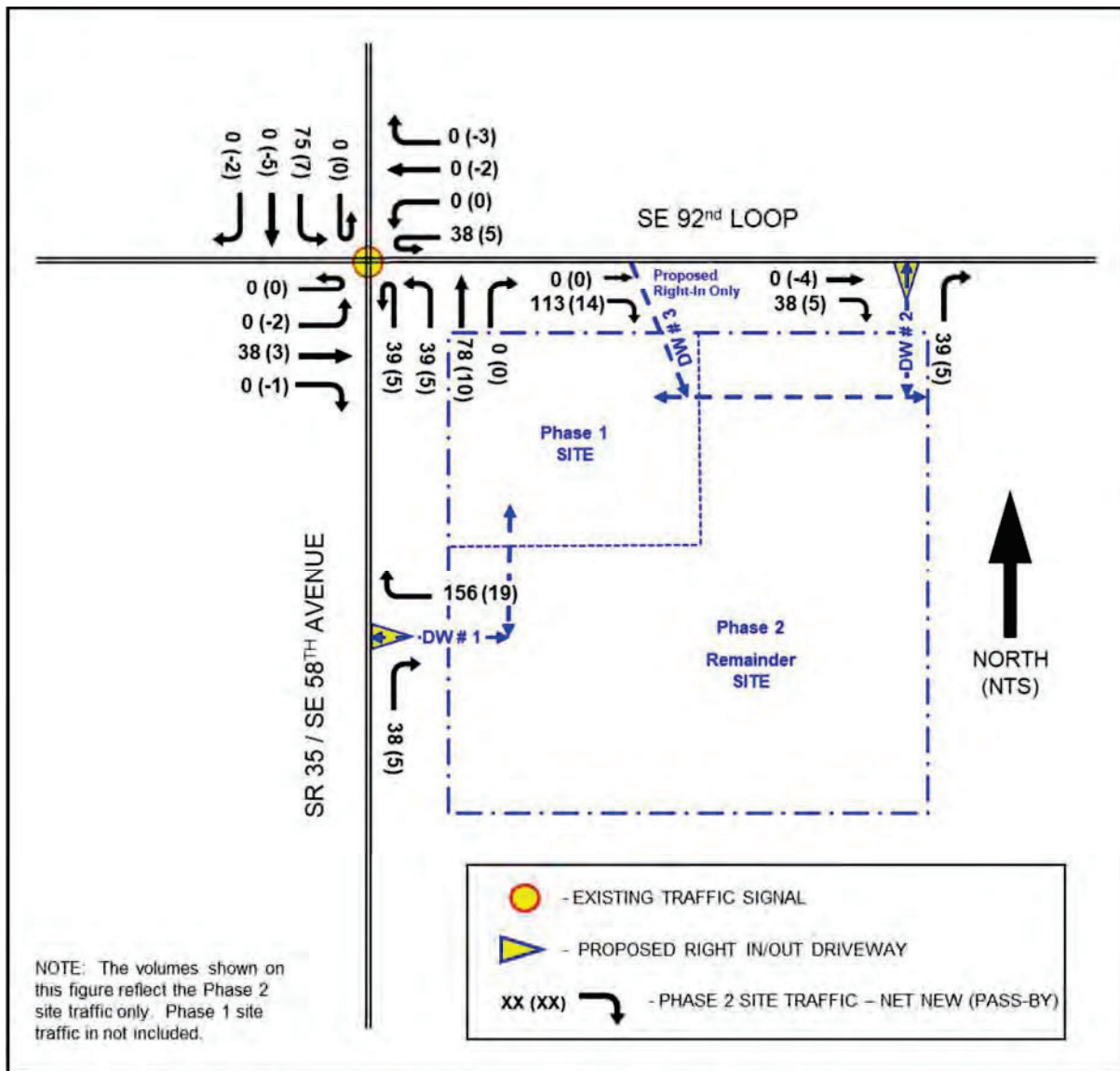


FIGURE 11 - PHASE 2 - SITE TRAFFIC ASSIGNMENT (PM PEAK-HOUR)

TRAFFIC IMPACT ANALYSIS
SE 92nd LOOP DEVELOPMENT
MARION COUNTY, FLORIDA



Prepared for:

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June 2023
Revised
April 2024

TPD № 5735

PROPOSED DEVELOPMENT AND TRIP GENERATION

To determine the impact of the proposed development, an analysis of its trip generation characteristics was conducted. This included the determination of the trips to be generated as well as their distribution and assignment to the area roadways.

Trip Generation

Trip generation equations obtained from the 11th Edition of the Institute of Transportation Engineers (ITE) *Trip Generation Manual* were used to estimate the trip generation for the proposed development. **Table 5** provides a summary of the trip generation for the proposed development. As can be seen in the table, the project is expected to generate a total of 2,635 daily trips, of which 162 will occur during the A.M. peak hour and 211 will occur during P.M. peak hour. Copies of the ITE trip generation worksheets are included in the Study Methodology in Appendix A.

Table 5
Trip Generation Summary

ITE Code	Land Use	Size (DU)*	Daily		A.M. Peak Hour				P.M. Peak Hour			
			Rate**	Trips	Rate**	Enter	Exit	Total	Rate**	Enter	Exit	Total
220	Multifamily	304	6.56	2,024	0.385	28	89	117	0.50	95	56	151
210	Single Family Detached	58	10.54	611	0.78	12	33	45	1.03	38	22	60
Total Trips:				2,635	----	40	122	162	----	133	78	211

* DU = Dwelling Units

** $R^2 > 0.75$, therefore Equations used

Trip Distribution / Trip Assignment

At the request of Marion County, the trip distribution was consistent with the study for the parcel just west of the site as follows:

- To/From the north on SR 35 – 40%
- To/From the south on SR 35 – 20%
- To/From the east on SE 92nd Loop – 20%
- To/From the west on SE 92nd Place Road – 20%

The trip distribution on the area roadways is illustrated in **Figure 4**. Utilizing this distribution, the development project trips were assigned to the area roadways.



Table 6
Projected P.M. Peak Hour Roadway Capacity Analysis

Segment	Lanes	Adopted		Bkgd Volume*	Project Trips**		Total Traffic	LOS
		LOS Std	2-Way Capacity		%	Volume		
SE 92nd Place Road								
US 301 to SE 92nd Loop	2U	E	1,440	1,101	20%	42	1,143	C
SE 92nd Loop								
SR 35 to SE 110th St	4LD	D	3,222	1,003	80%	169	1,177	C
Baseline Road (SR 35)								
SR 464 to SE 92nd Loop	4LD	D	3,580	2,372	40%	84	2,456	C
SE 92nd Loop to SE 110th St	2LD	D	1,600	1,620	20%	42	1,662	F

* Existing volumes with 6% growth rate applied

** Highest on Segment

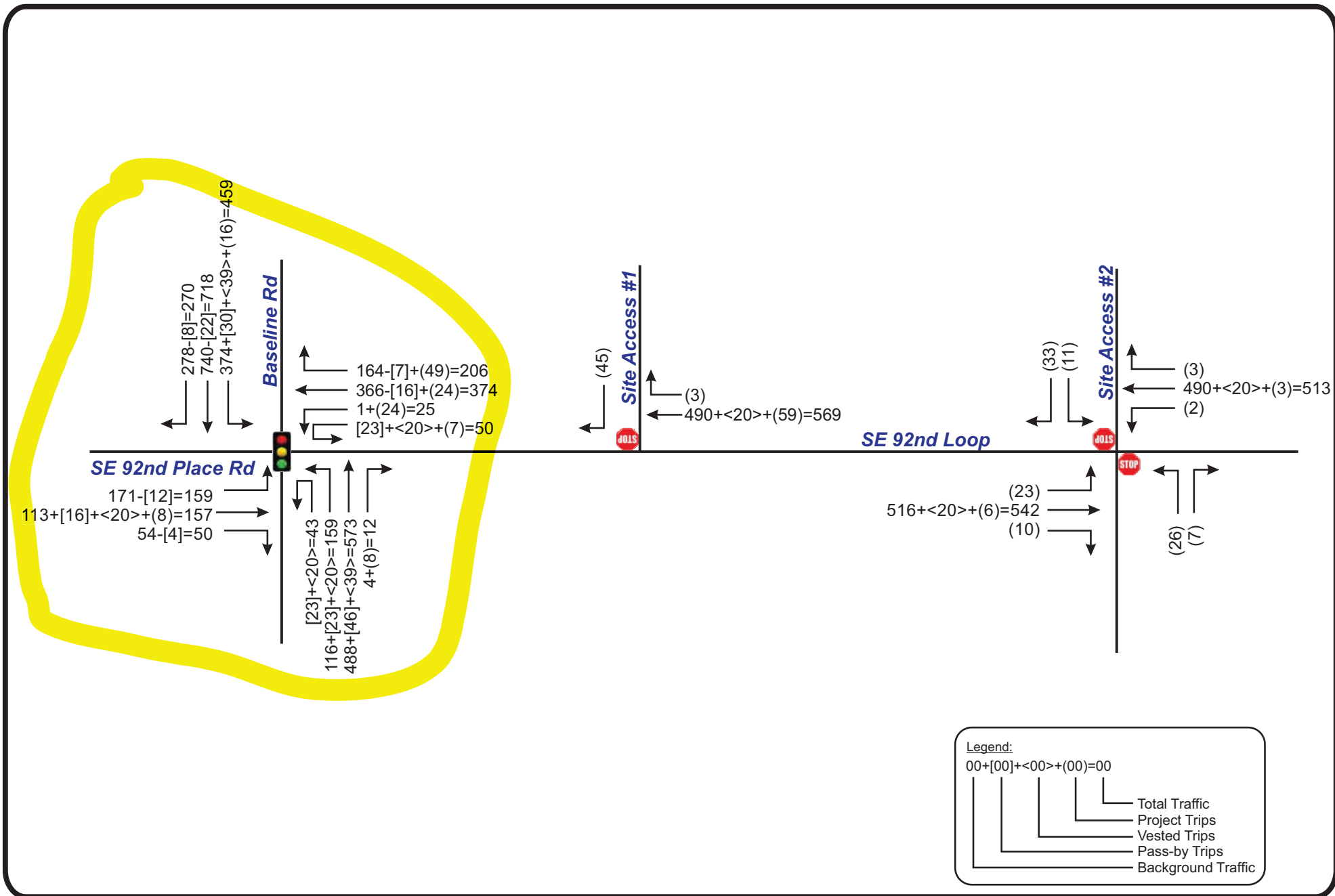
Table 7
Projected Daily Roadway Capacity Analysis

Segment	Lanes	Adopted		Bkgd Volume*	Project Trips**		Total Traffic	LOS
		LOS Std	Daily Cap.		%	Volume		
SE 92nd Place Road								
US 301 to SE 92nd Loop	2U	E	15,930	11,685	20%	527	12,065	C
SE 92nd Loop								
SR 35 to SE 110th St***	4LD	D	35,820	11,148	80%	2,108	12,670	C
Baseline Road (SR 35)								
SR 464 to SE 92nd Loop	4LD	D	39,800	29,775	40%	1,054	30,536	C
SE 92nd Loop to SE 110th St	2LD	D	17,700	14,157	20%	527	14,537	C

* Existing volumes with 6% growth rate applied

** Highest on Segment

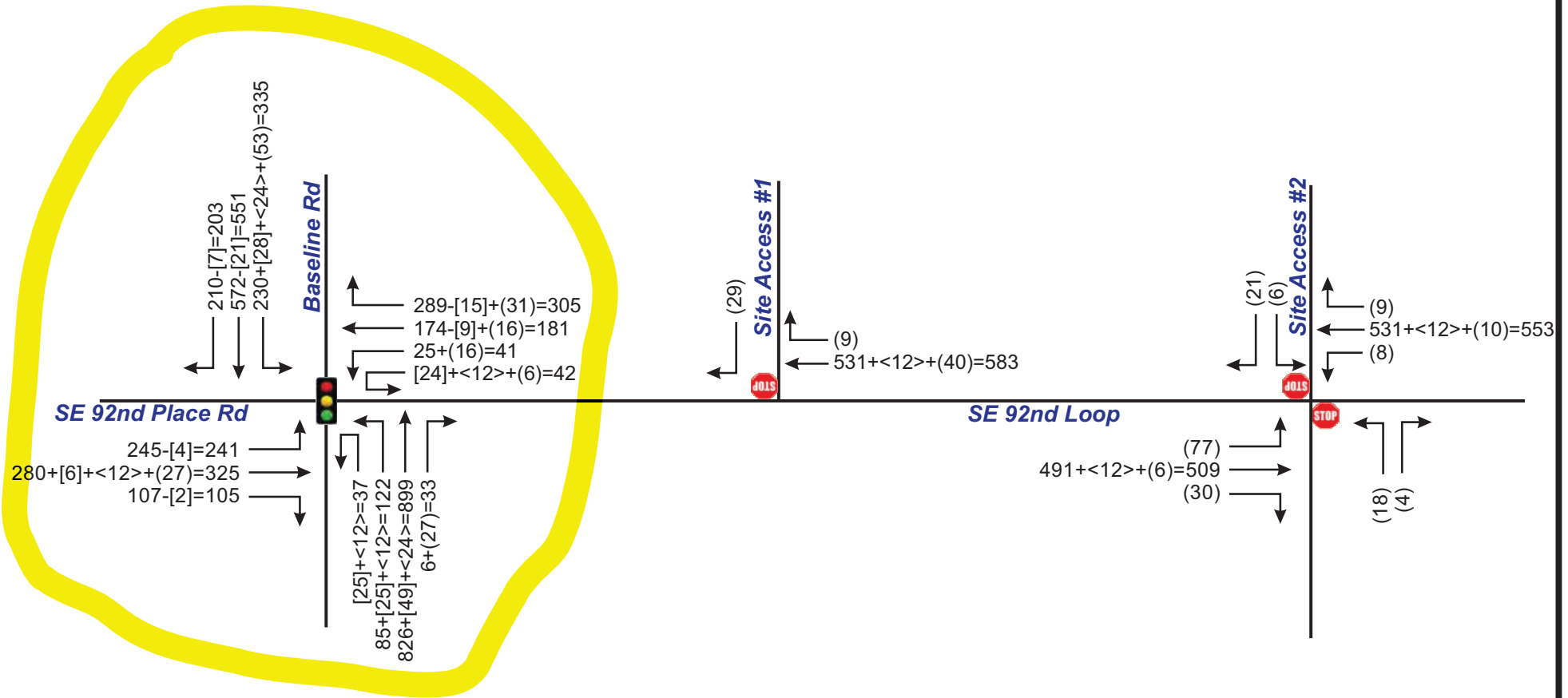




SE 92nd Loop Development
Project № 5735
Figure 5a

**Projected A.M. Peak Hour
Traffic Volumes**





SE 92nd Loop Development
Project № 5735
Figure 5b

**Projected P.M. Peak Hour
Traffic Volumes**



Bellehaven Property

City of Belleview, Florida

PREPARED FOR

Casa Holdings, LLC
Attention: Chris Armstrong
1415 SW 17th Street
Ocala, Florida 34471

PREPARED BY



225 East Robinson Street, Suite 300
Landmark Center Two
Orlando FL 32801
407.839.4006

July 2022

Table 5 Future Roadway Capacity Analysis

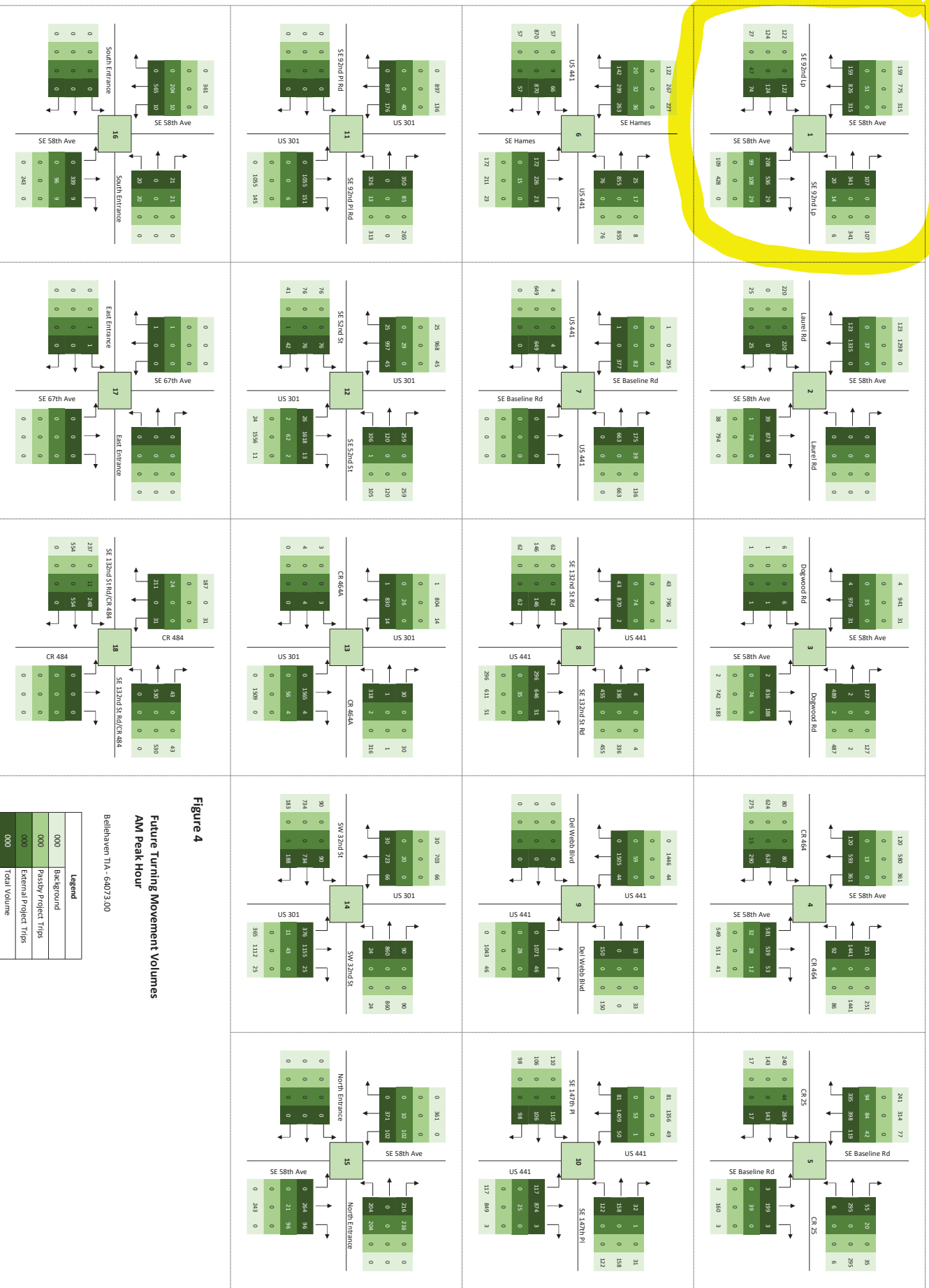
PM PEAK HOUR

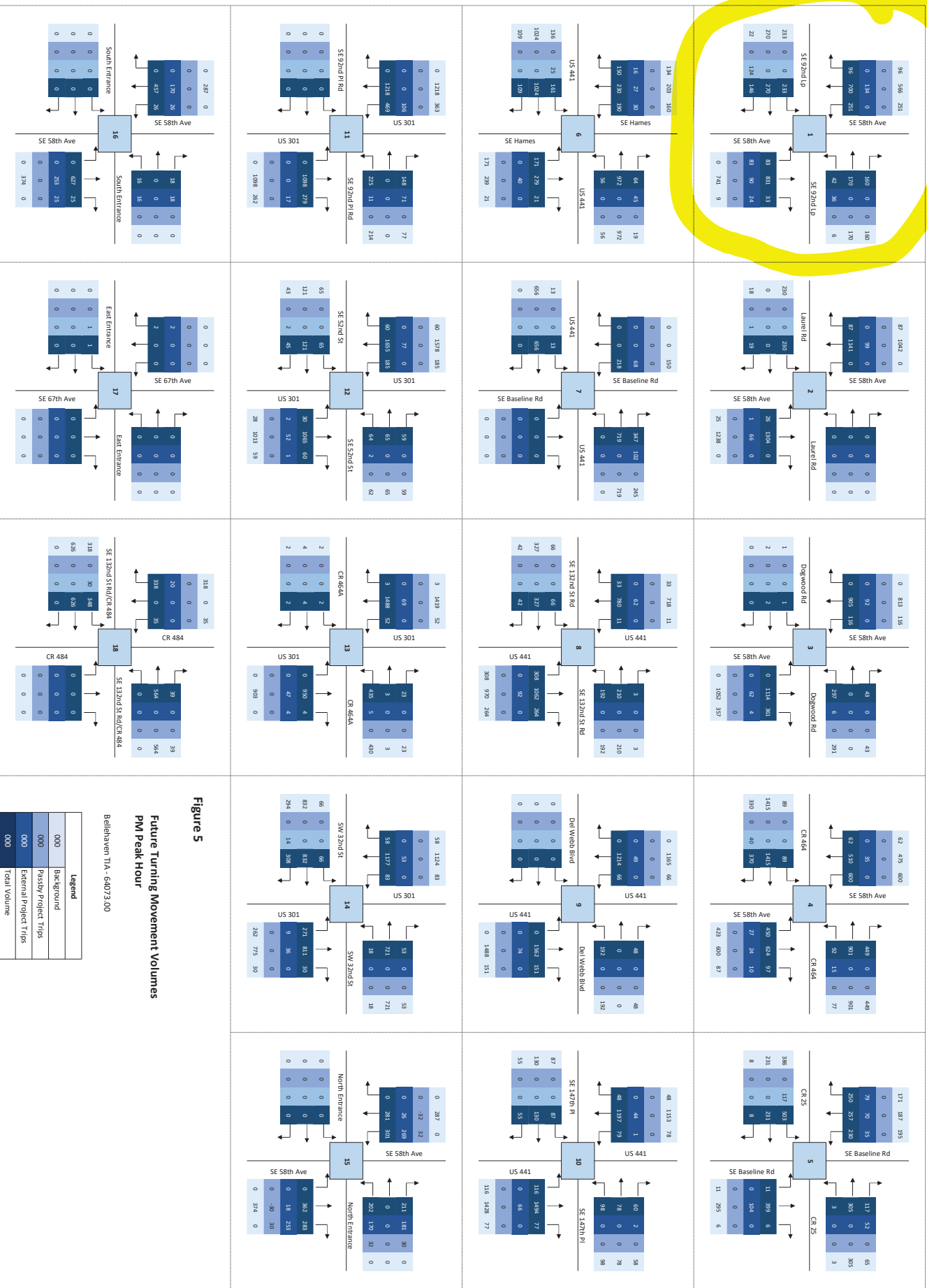
Roadway	No. of Adopted Lanes LOS		2021 AADT	PHPD Capacity	2021 PHPD	Annual Growth Rate	2026 Background Traffic			Project Distribution	Project Volume	2026 Background + Project Traffic				
							PHPD Volume	v/c	Deficient?			PHPD Volume	v/c	Remaining Capacity	Deficient?	Project Deficiency?
SR 35 from SR 25 to SE 92ND PL	4	D	12,000	2,000	577	2.00%	635	0.32	No	51.59%	297	932	0.47	1,068	No	No
SR 35 from SE 92ND PL to LAUREL RD	4	D	26,500	2,100	1,274	2.00%	1,401	0.67	No	23.25%	134	1,535	0.73	565	No	No
SR 35 from LAUREL RD to SR 464	4	D	26,500	2,000	1,274	2.00%	1,401	0.70	No	17.13%	99	1,500	0.75	500	No	No
SE 92 PL RD from US 441 to SR 35	2	E	6,200	634	298	2.00%	328	0.52	No	21.51%	124	452	0.71	182	No	No
BASELINE RD EXT from US 441 to SR 25	2	E	5,800	576	279	2.00%	307	0.53	No	18.06%	104	411	0.71	165	No	No
SR 25 from US 441 to BASELINE RD	2	D	10,300	788	495	2.00%	545	0.69	No	20.36%	117	662	0.84	127	No	No
CR 25 from SE 110 ST to SR 35	2	E	11,900	1,521	572	2.00%	629	0.41	No	8.99%	52	681	0.45	840	No	No
CR 25 from SE 92 PL LOOP to SE 110 ST	2	E	11,900	1,449	572	2.00%	629	0.43	No	7.70%	44	673	0.46	776	No	No
US 441 from CR 42 to SE 147 PL	4	D	30,900	2,000	1,485	2.00%	1,634	0.82	No	11.46%	66	1,700	0.85	301	No	No
US 441 from SE 147 PL to SE 92 PLACE LOOP	4	D	30,900	2,000	1,485	2.00%	1,634	0.82	No	15.94%	92	1,726	0.86	275	No	No
US 441 from SE 92 PLACE LOOP to CR 25A	4	D	17,900	3,280	860	2.00%	946	0.29	No	17.70%	102	1,048	0.32	2,232	No	No
US 441 from SE 92 PL RD to SE 73 ST	4	D	28,300	2,000	1,360	2.00%	1,496	0.75	No	18.39%	106	1,602	0.80	398	No	No
US 441 from SE 73 ST to SE 52 ST	4	D	27,000	2,000	1,298	2.00%	1,428	0.71	No	14.28%	82	1,510	0.75	490	No	No
US 441 from SE 52 ST to SE 40 CIR	4	D	32,100	2,000	1,543	2.00%	1,697	0.85	No	13.38%	77	1,774	0.89	226	No	No
US 441 from SE 40 CIR to CR 475	4	D	23,000	2,000	1,105	2.00%	1,216	0.61	No	12.07%	69	1,285	0.64	716	No	No
CR 484 from SE 132 ST RD to US 441	2	E	12,200	1,449	586	2.00%	645	0.44	No	7.88%	45	690	0.48	759	No	No

Sources: Florida Traffic Online

Ocala/Maron TPO CMP Database 2021

VHB, Inc.





BLUE RIVER TRAFFIC IMPACT ANALYSIS

MARION COUNTY, FLORIDA

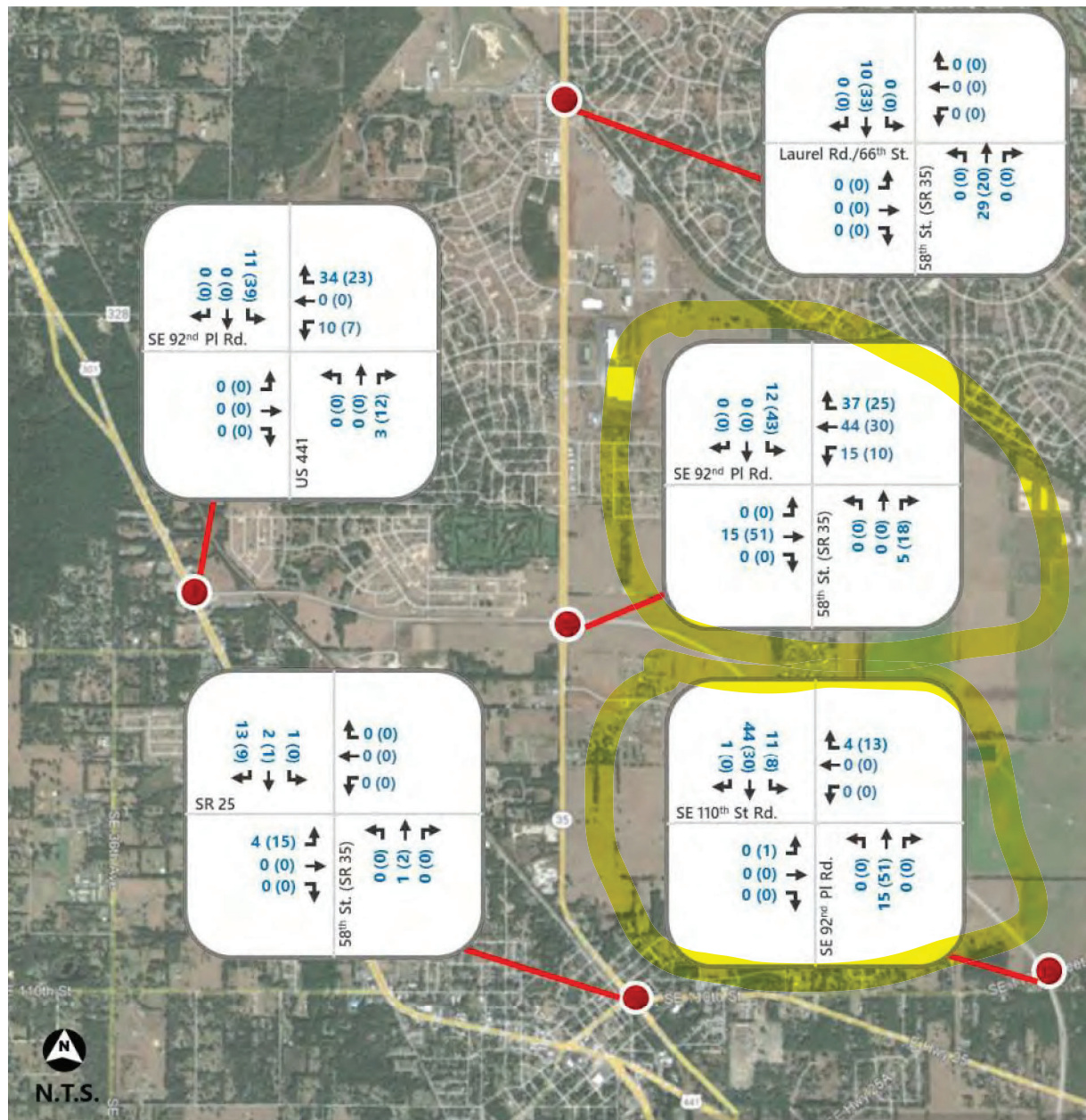
March 2024



FUTURE BUILD VOLUMES

The project trips were distributed according to the model results shown in **Figure 5** and added to the 2028 no-build volumes to develop the 2028 build volumes. The project trips for the larger study area are shown in **Figure 6**. The project trip distribution and total project trips at the site driveways are shown in **Figure 7** and **Figure 8**. The 2028 build volumes are shown in **Figure 9** and **Figure 10**.

Figure 6: Project Trips in Study Area



AM (PM) Peak

Table 9: 2028 Future Build Roadway Capacity Analysis

Roadway	Limits	No. of Lanes	Fun Class	LOS Std.	Daily Capacity	Pk Hr Pk Dir Capacity	Total No-Build PM PH NB/EB Vol	Total No-Build PM PH SB/WB Vol	Model Distribution	PM PH NB/EB Project Trips	PM PH NB/EB Project Trips	Total Build PM PH NB/EB Vol	Total Build PM PH SB/WB Vol	Build v/c
SE 92 nd Loop	SE 58 th Street (SR 35) to Site Entrance	4	Arterial	E	67,770	3,357	784	944	57%	112	66	896	1,010	0.30
	Site Entrance to SE 110 th Street Road	4	Arterial	E	67,770	3,357	784	944	43%	49	84	833	1,028	0.31
SE 92 nd Place Road	US 441/US 301 to SE 58 th St (SR 35)	4 ¹	Arterial	E	25,488 ²	1,268 ²	914	554	26%	51	30	965	584	0.76
SE 58 th Street (SR 35)	SR 25 to SE 92 nd Loop	4	Arterial	D	32,970	1,722	917	752	9%	18	10	935	762	0.54
	SE 92 nd Loop to Laurel Road	4	Arterial	D	58,485	3,056	1,988	1,630	22%	25	43	2,013	1,673	0.66

¹Two-to-four lane widening assumed on SE 92nd Place Road in the **2028 No-Build Roadway Capacity Analysis with Improvements** section.

²The four-lane capacity was estimated by doubling the two-lane capacity on this roadway.

Carissa Oaks Property

Marion County, Florida

PREPARED FOR

D32 Invest LLC
7988 Via Dellagio Way, Suite 206
Orlando, FL 32819

PREPARED BY



225 East Robinson Street, Suite 300
Landmark Center Two
Orlando FL 32801
407.839.4006

July 2022

Table 5 Future Roadway Capacity Analysis

PM PEAK HOUR

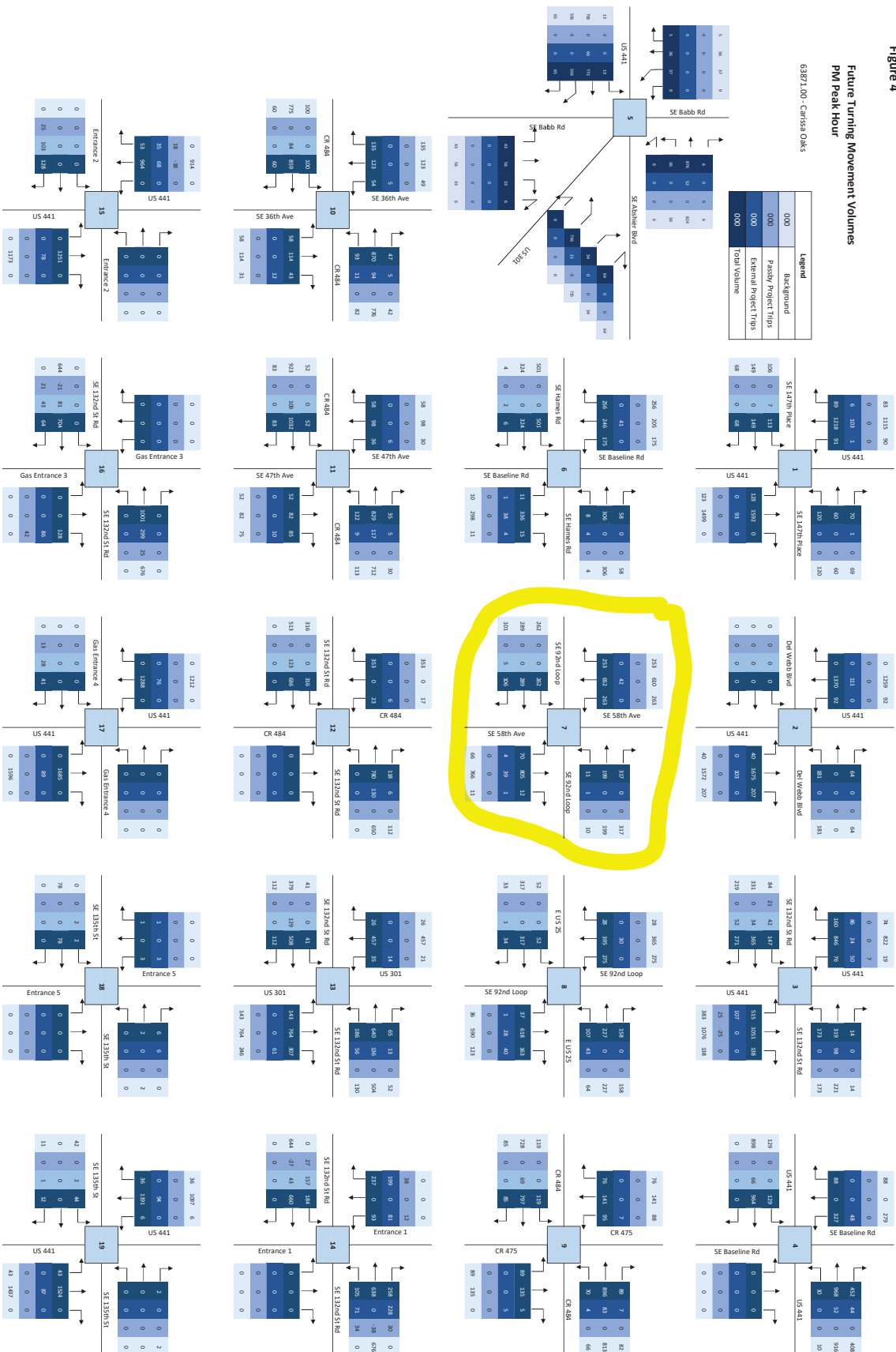
Roadway	No. of Adopted Lanes		2020 AADT	PHPD Capacity	2020 PHPD	Annual Growth Rate	2025 Background Traffic			Project		2025 Total				
							Volume	v/c	Deficient?	Distribution	Project Volume	Total Volume	v/c	Remaining Capacity	Deficient?	Project Deficiency?
CR 484																
SR 200 to CR 475	4	D	18,500	1,800	889	3.7%	1053	0.59	No	13.31%	72	1125	0.63	675	No	No
CR 475 to CR 467	4	D	18,500	1,800	889	3.69%	1053	0.59	No	16.23%	88	1141	0.63	659	No	No
CR 467 to SE 132nd St	4	D	18,300	1,800	985	3.69%	1167	0.65	No	20.80%	113	1280	0.71	520	No	No
E US 25																
CR 464 to SR 35	2	D	11,400	830	548	3.69%	649	0.78	No	7.73%	42	691	0.83	139	No	No
CR 464 C to CR 464	2	D	7,900	830	380	3.69%	450	0.54	No	3.08%	17	467	0.56	363	No	No
SE Baseline Rd																
US 27/US 441 to SE 110 St/CR 25	2	E	4,700	790	226	3.69%	268	0.34	No	8.78%	48	316	0.4	474	No	No
SE 58 Ave																
CR 25/SE 110 St to SE 92 Pl Lp	2	E	15,400	790	740	3.69%	877	1.11	Yes	8.03%	44	921	1.17	-131	Yes	No
SE 92 Pl Lp to CR 464	4	E	26,000	1,800	1,250	3.69%	1480	0.82	No	7.50%	41	1521	0.85	279	No	No
SE 132 St Rd																
CR 484 to US HWY 441	4	D	10,100	1,640	485	3.69%	575	0.35	No	41.65%	226	801	0.49	839	No	No
SE 92 Lp																
US 441 to SE 58 Ave	4	E	7,000	1,800	336	3.69%	398	0.22	No	17.23%	93	491	0.27	1309	No	No
US 441																
CR 42 to Sunset Harbor Rd	4	D	30,000	2,000	1,442	3.69%	1708	0.85	No	13.12%	71	1779	0.89	221	No	No
Sunset Harbor Rd to Baseline Rd	4	D	33,200	2,000	1,634	3.69%	1936	0.97	No	24.42%	132	2068	1.03	-68	Yes	Yes
Baseline Rd to Babb Rd	4	D	15,800	2,000	759	3.69%	899	0.45	No	10.29%	56	955	0.48	1045	No	No

Source: Ocala/Marion TPO 2021 Traffic Count Report
VHB, Inc.

Figure 4

Future Tuning Movement Volumes
PM Peak Hour

63871.00- Carissi Oaks





TRAFFIC IMPACT ANALYSIS

CR 25 MIXED USE DEVELOPMENT

MARION COUNTY, FLORIDA

MARCH 2022

Prepared for:

C-25 Group, LLC

Prepared by:

Kimley-Horn and Associates, Inc..

Kimley»Horn



Table 4: Buildout (2026) PM Peak Hour Roadway Segment Analysis

Segment From To		Adopted LOS ¹	Peak Hour Directional Service Volume ²	Future Non- Project PM Peak Hour Traffic Conditions (2026)		PM Peak Hour Project Traffic				Future Buildout PM Peak Hour Traffic Conditions (2026)					
				Volumes ³		% Assign ⁴	NB/EB	SB/WB	Peak Directional Impact	Volumes ⁵		V/C Ratios		LOS ⁶	
				NB / EB	SB / WB					NB / EB	SB / WB	NB / EB	SB / WB	NB / EB	SB / WB
SR/CR 25															
US 441	SR 35	E	800	553	435	12.0%	20	24	3.0%	573	459	0.72	0.57	D	D
SR 35	SE 110 St	E	760	357	303	23.0%	38	46	6.1%	395	349	0.52	0.46	D	C
SE 110 St	Project Driveway	E	836	315	206	26.5%	44	53	6.3%	359	259	0.43	0.31	C	C
Project Driveway	SE 92nd Loop	E	836	325	215	70.0%	139	116	16.6%	464	331	0.56	0.40	C	C
SE 92nd Loop	SE 100th Ave	E	836	642	392	11.0%	22	18	2.6%	664	410	0.79	0.49	C	C
SE 92nd Loop/SE 132nd St Rd															
SR 35	CR 25	E	1,900	706	483	14.5%	29	24	1.5%	735	507	0.39	0.27	C	C
CR 25	US 27	E	1,900	839	555	36.0%	60	72	3.8%	899	627	0.47	0.33	C	C
US 27	US 301	D	1,900	690	640	20.9%	35	41	2.2%	725	681	0.38	0.36	C	C
Notes: 1. Adopted LOS determined using the Marion County Comprehensive Plan, Transportation Element, Policy 2.1.2 Level of Service Standards. 2. Peak hour directional service volumes were determined using the 2020 FDOT Quality/Level of Service tables. 3. Future background volumes were derived by applying a 1.50% growth rate to the existing peak season peak hour traffic counts. 4. The % assignment is the average along the segment derived from the FSUTMS CFRPM v6.1 model. 5. Buildout traffic volumes are the summation of background traffic volumes plus project traffic. 6. LOS was derived utilizing the 2020 FDOT Quality/Level of Service Tables.															

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10/8/2021

TRAFFIC IMPACT ANALYSIS
SE 92nd LOOP DEVELOPMENT
MARION COUNTY, FLORIDA



Prepared for:

Red Jacket Development Group
625 Waltham Avenue,
Orlando, Florida 32809

Prepared by:

Traffic Planning and Design, Inc.
535 Versailles Drive
Maitland, Florida 32751
407-628-9955

June 2023
Revised
April 2024

TPD № 5735



SE 92nd Loop Development
Project № 5735
Figure 1

Site Location



Table 6
Projected P.M. Peak Hour Roadway Capacity Analysis

Segment	Lanes	Adopted		Bkgd Volume*	Project Trips**		Total Traffic	LOS
		LOS Std	2-Way Capacity		%	Volume		
SE 92nd Place Road								
US 301 to SE 92nd Loop	2U	E	1,440	1,101	20%	42	1,143	C
SE 92nd Loop								
SR 35 to SE 110th St	4LD	D	3,222	1,003	80%	169	1,177	C
Baseline Road (SR 35)								
SR 464 to SE 92nd Loop	4LD	D	3,580	2,372	40%	84	2,456	C
SE 92nd Loop to SE 110th St	2LD	D	1,600	1,620	20%	42	1,662	F

* Existing volumes with 6% growth rate applied

** Highest on Segment

Table 7
Projected Daily Roadway Capacity Analysis

Segment	Lanes	Adopted		Bkgd Volume*	Project Trips**		Total Traffic	LOS
		LOS Std	Daily Cap.		%	Volume		
SE 92nd Place Road								
US 301 to SE 92nd Loop	2U	E	15,930	11,685	20%	527	12,065	C
SE 92nd Loop								
SR 35 to SE 110th St***	4LD	D	35,820	11,148	80%	2,108	12,670	C
Baseline Road (SR 35)								
SR 464 to SE 92nd Loop	4LD	D	39,800	29,775	40%	1,054	30,536	C
SE 92nd Loop to SE 110th St	2LD	D	17,700	14,157	20%	527	14,537	C

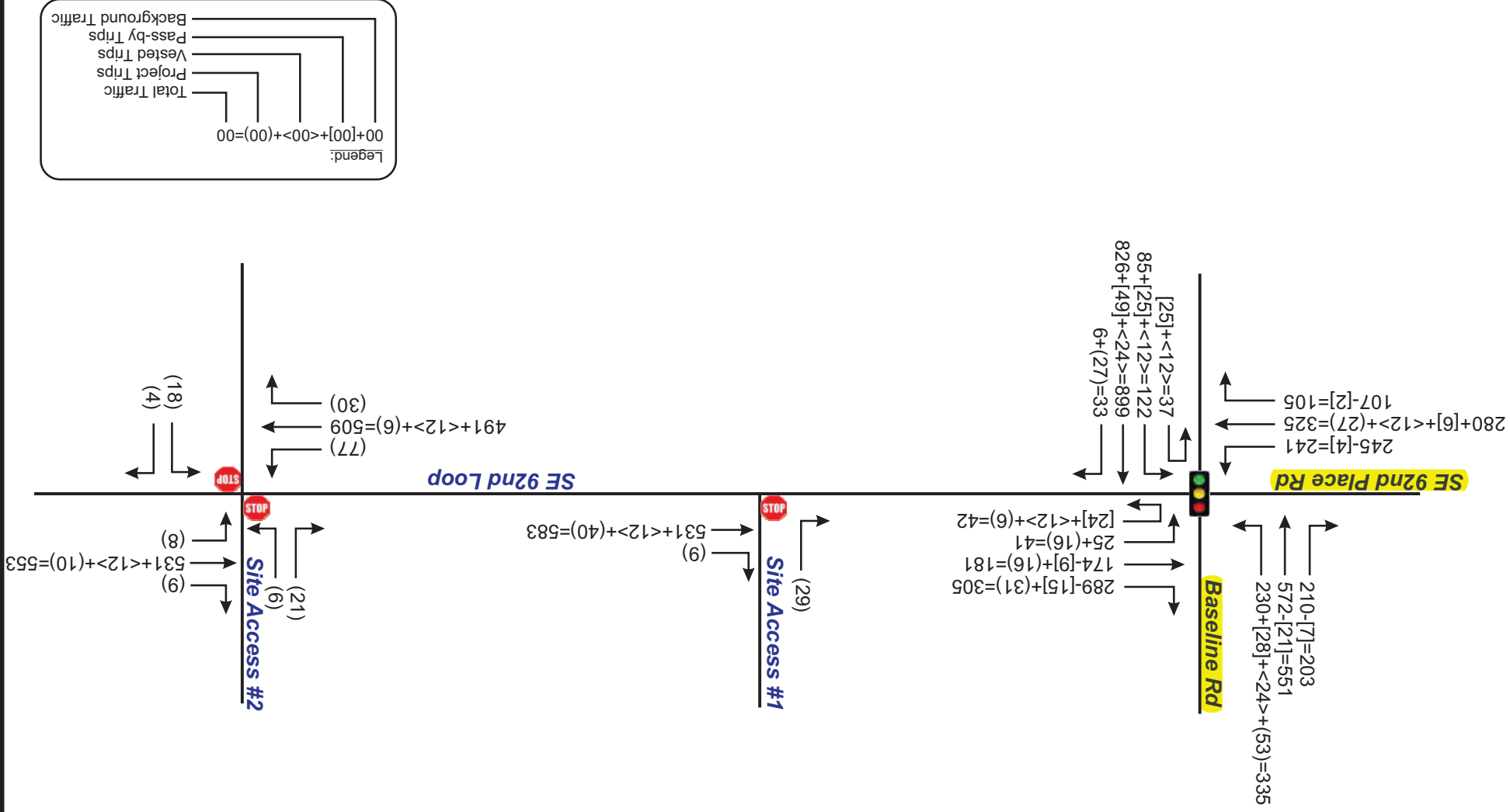
* Existing volumes with 6% growth rate applied

** Highest on Segment





SE 92nd Loop Development
Project № 5735
Figure 5b



BLUE RIVER TRAFFIC IMPACT ANALYSIS

MARION COUNTY, FLORIDA

March 2024



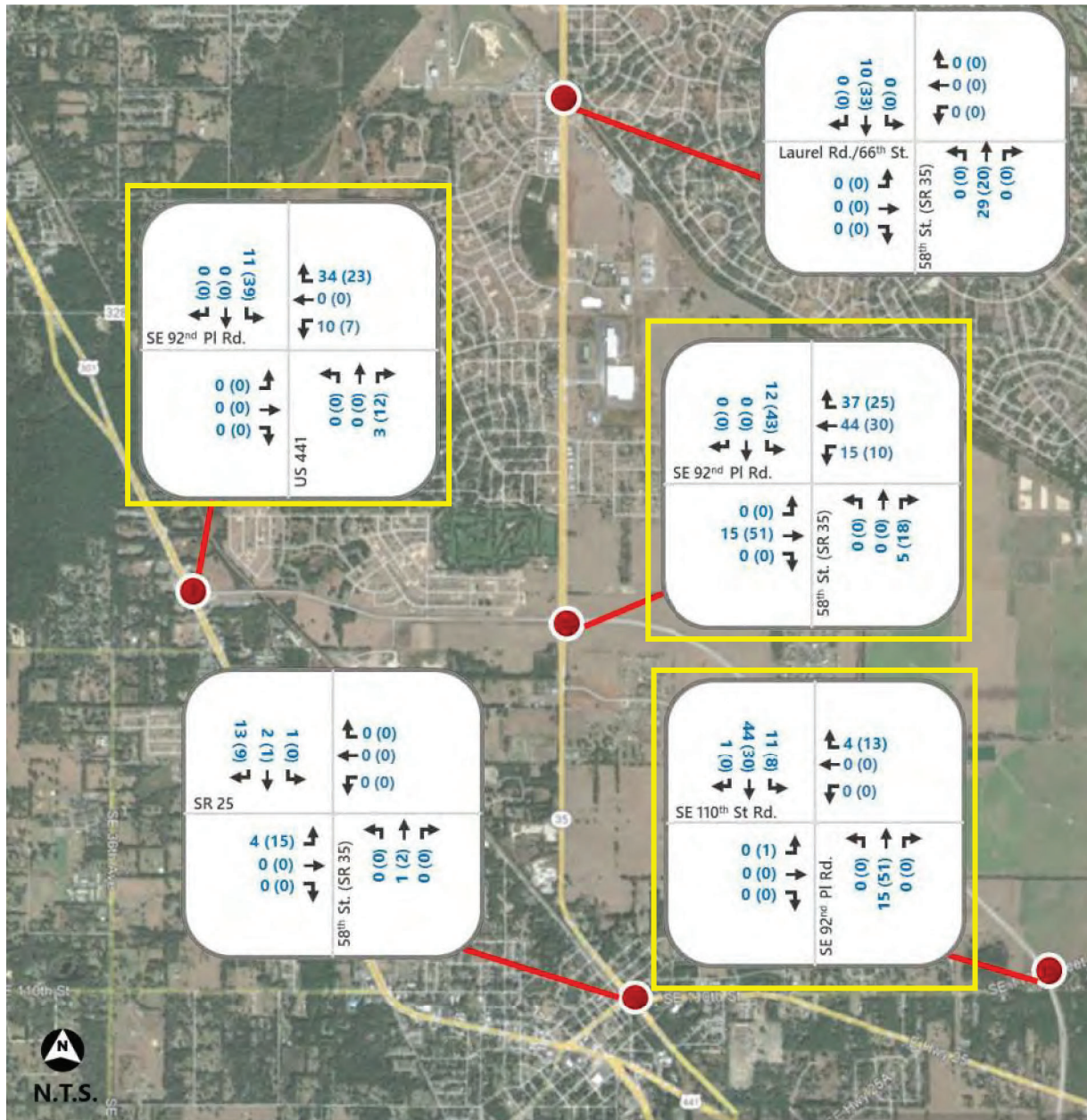
Figure 1: Location Map



FUTURE BUILD VOLUMES

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Figure 6: Project Trips in Study Area



AM (PM) Peak

Table 9: 2028 Future Build Roadway Capacity Analysis

Roadway	Limits	No. of Lanes	Fun Class	LOS Std.	Daily Capacity	Pk Hr Pk Dir Capacity	Total No-Build PM PH NB/EB Vol	Total No-Build PM PH SB/WB Vol	Model Distribution	PM PH NB/EB Project Trips	PM PH NB/EB Project Trips	Total Build PM PH NB/EB Vol	Total Build PM PH SB/WB Vol	Build v/c
SE 92 nd Loop	SE 58 th Street (SR 35) to Site Entrance	4	Arterial	E	67,770	3,357	784	944	57%	112	66	896	1,010	0.30
	Site Entrance to SE 110 th Street Road	4	Arterial	E	67,770	3,357	784	944	43%	49	84	833	1,028	0.31
SE 92 nd Place Road	US 441/US 301 to SE 58 th St (SR 35)	4 ¹	Arterial	E	25,488 ²	1,268 ²	914	554	26%	51	30	965	584	0.76
SE 58 th Street (SR 35)	SR 25 to SE 92 nd Loop	4	Arterial	D	32,970	1,722	917	752	9%	18	10	935	762	0.54
	SE 92 nd Loop to Laurel Road	4	Arterial	D	58,485	3,056	1,988	1,630	22%	25	43	2,013	1,673	0.66

¹Two-to-four lane widening assumed on SE 92nd Place Road in the **2028 No-Build Roadway Capacity Analysis with Improvements** section.

²The four-lane capacity was estimated by doubling the two-lane capacity on this roadway.

Carissa Oaks Property

Marion County, Florida

PREPARED FOR

D32 Invest LLC
7988 Via Dellagio Way, Suite 206
Orlando, FL 32819

PREPARED BY



225 East Robinson Street, Suite 300
Landmark Center Two
Orlando FL 32801
407.839.4006

July 2022

Figure 1 - Location Map

Carissa Oaks - 63871.00

Legend

 Parcel

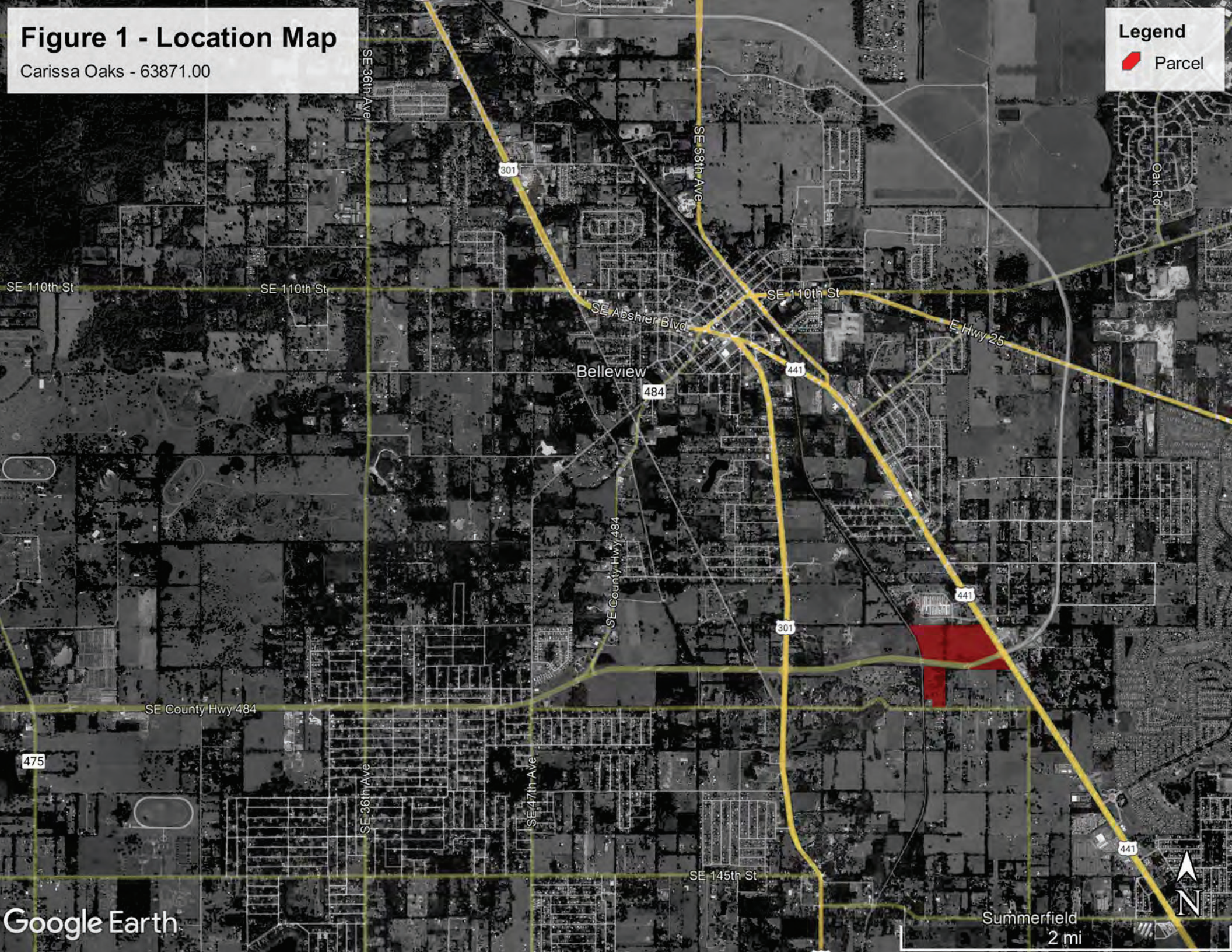


Table 5 Future Roadway Capacity Analysis

PM PEAK HOUR

Roadway	No. of Adopted Lanes		2020 AADT	PHPD Capacity	2020 PHPD	Annual Growth Rate	2025 Background Traffic			Project		2025 Total				
							Volume	v/c	Deficient?	Distribution	Project Volume	Total Volume	v/c	Remaining Capacity	Deficient?	Project Deficiency?
CR 484																
SR 200 to CR 475	4	D	18,500	1,800	889	3.7%	1053	0.59	No	13.31%	72	1125	0.63	675	No	No
CR 475 to CR 467	4	D	18,500	1,800	889	3.69%	1053	0.59	No	16.23%	88	1141	0.63	659	No	No
CR 467 to SE 132nd St	4	D	18,300	1,800	985	3.69%	1167	0.65	No	20.80%	113	1280	0.71	520	No	No
E US 25																
CR 464 to SR 35	2	D	11,400	830	548	3.69%	649	0.78	No	7.73%	42	691	0.83	139	No	No
CR 464 C to CR 464	2	D	7,900	830	380	3.69%	450	0.54	No	3.08%	17	467	0.56	363	No	No
SE Baseline Rd																
US 27/US 441 to SE 110 St/CR 25	2	E	4,700	790	226	3.69%	268	0.34	No	8.78%	48	316	0.4	474	No	No
SE 58 Ave																
CR 25/SE 110 St to SE 92 Pl Lp	2	E	15,400	790	740	3.69%	877	1.11	Yes	8.03%	44	921	1.17	-131	Yes	No
SE 92 Pl Lp to CR 464	4	E	26,000	1,800	1,250	3.69%	1480	0.82	No	7.50%	41	1521	0.85	279	No	No
SE 132 St Rd																
CR 484 to US HWY 441	4	D	10,100	1,640	485	3.69%	575	0.35	No	41.65%	226	801	0.49	839	No	No
SE 92 Lp																
US 441 to SE 58 Ave	4	E	7,000	1,800	336	3.69%	398	0.22	No	17.23%	93	491	0.27	1309	No	No
US 441																
CR 42 to Sunset Harbor Rd	4	D	30,000	2,000	1,442	3.69%	1708	0.85	No	13.12%	71	1779	0.89	221	No	No
Sunset Harbor Rd to Baseline Rd	4	D	33,200	2,000	1,634	3.69%	1936	0.97	No	24.42%	132	2068	1.03	-68	Yes	Yes
Baseline Rd to Babb Rd	4	D	15,800	2,000	759	3.69%	899	0.45	No	10.29%	56	955	0.48	1045	No	No

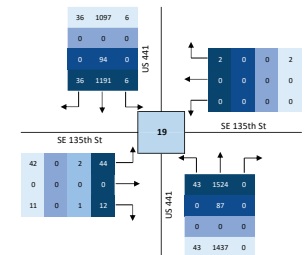
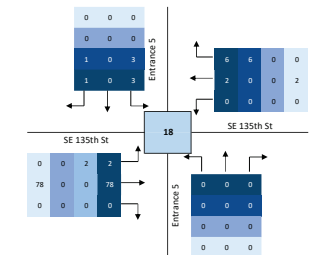
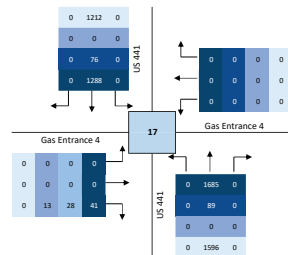
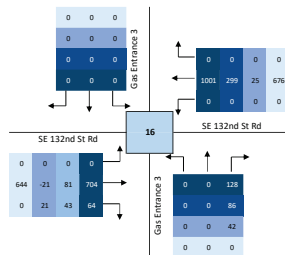
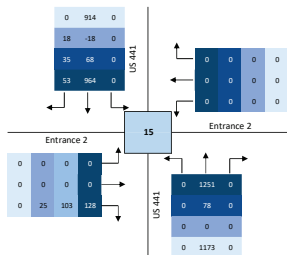
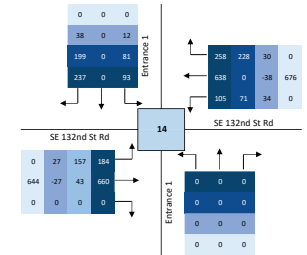
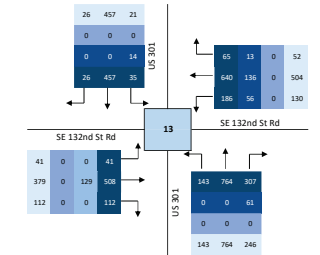
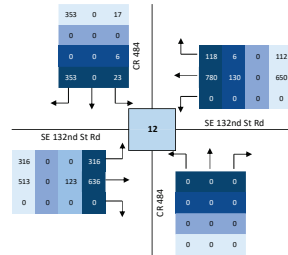
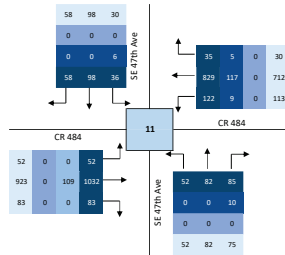
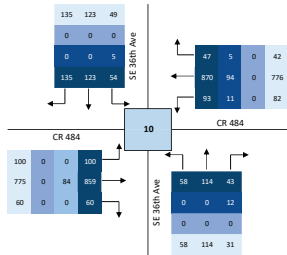
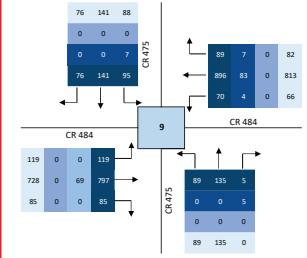
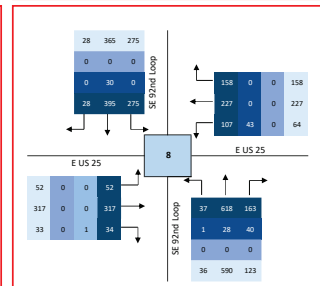
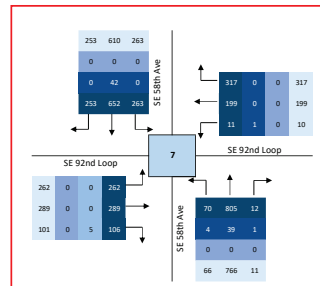
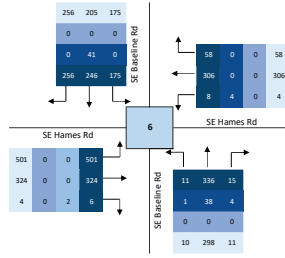
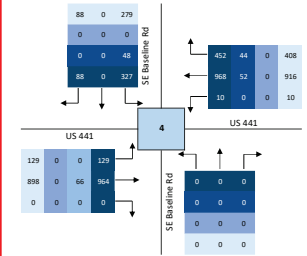
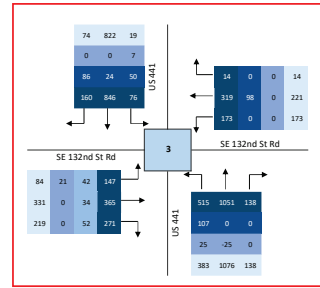
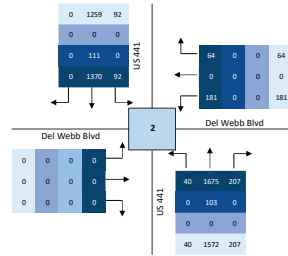
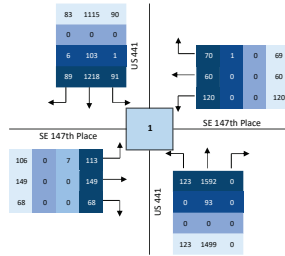
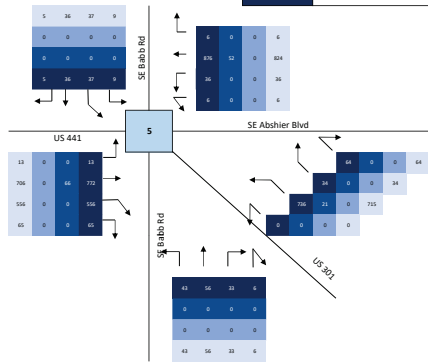
Source: Ocala/Marion TPO 2021 Traffic Count Report
VHB, Inc.

Figure 4

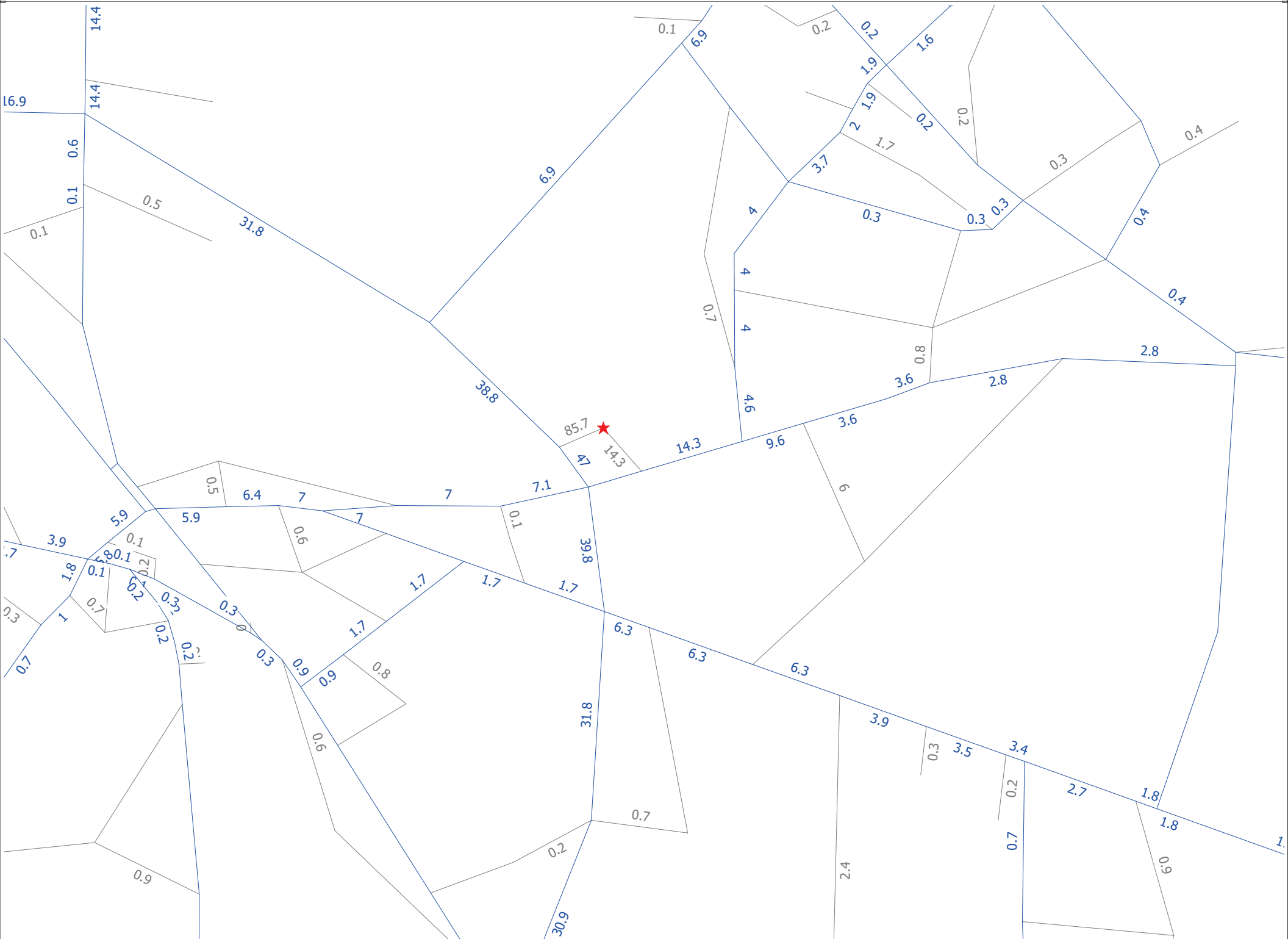
Future Turning Movement Volumes PM Peak Hour

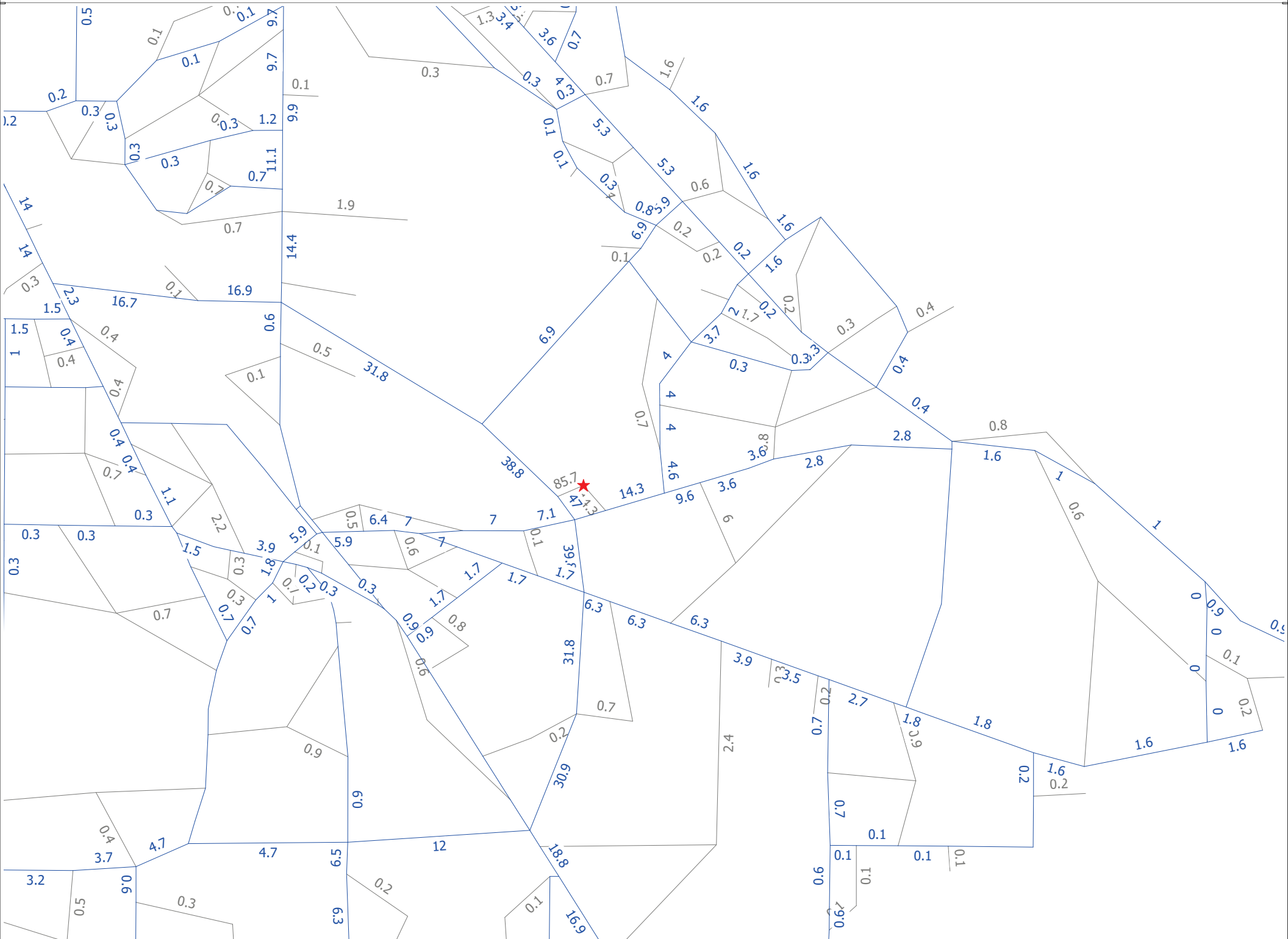
63871.00 - Carissa Oaks

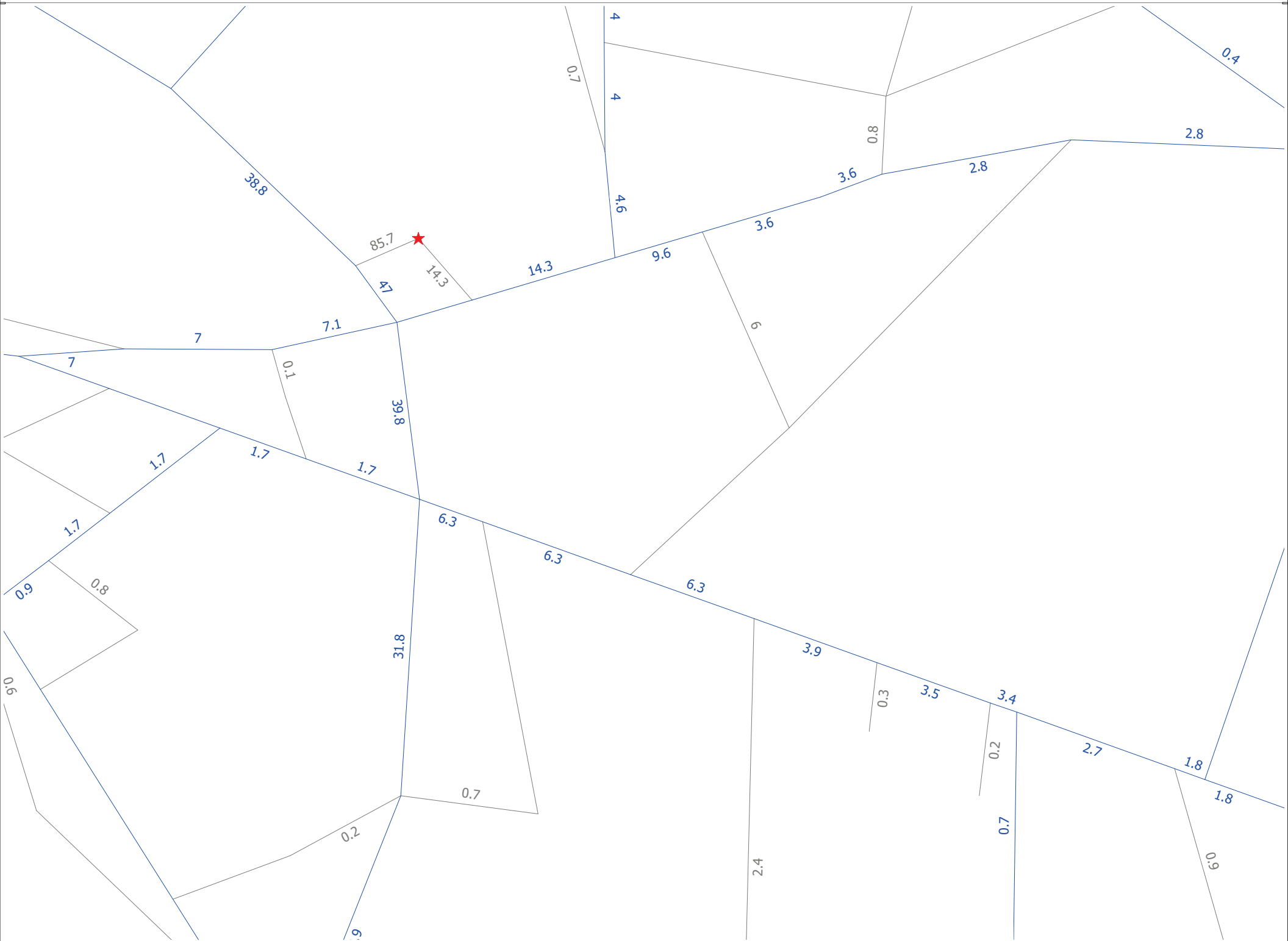
Legend	
000	Background
000	Passby Project Trips
000	External Project Trips
000	Total Volume



Appendix I Model Plot







Appendix J

Roadway Segment Vested Trips

Segment ID	Road Name	From/To	Baseline North & South Vested PHPD Trips	CR 25 TIS PHPD Trips	Carissa Oaks PHPD Trips	Bellehaven PHPD Trips	Blue River PHPD Trips	Central Florida RV Park PHPD Trips	7/11 Gas Station PHPD Trips
1010	SE 92 LOOP	SR 35 to Access 2	106	29	0	0	112	0	51
1010	SE 92 LOOP	Access 2 to SE 110 ST RD	106	72	0	0	112	0	51
1010	SE 92 LOOP	SE 110 St Road to CR 25	0	41	0	0	0	0	0
1010	SE 92 LOOP	CR 25 to US 441	0	0	0	0	0	0	0
3840.1	SE 110 ST RD	CR 25 to SE 92 Lp	0	0	0	0	0	0	0
3840.1	SE 110 ST RD	SE 92 Lp to Access 1	0	0	0	0	0	0	0
3840.1	SE 110 ST RD	Access 1 to Oak Rd	0	0	0	0	0	0	0
3850.1	SE 110 ST RD	Oak Rd to CR 464	0	0	0	0	0	0	0
6840	US 441	SE 92 PL Rd to SE 73 ST	0	0	0	106	0	0	0
4550	SE 92 PL RD	US 441 to SR 35	27	0	0	124	51	0	51
6740	US 441	SE 147 PL to SE 92 PL Lp	0	0	0	92	0	0	0

Appendix K

2023 MQLOS Capacity Estimate



2023 MULTIMODAL QUALITY/ LEVEL OF SERVICE HANDBOOK

State of Florida
Department of Transportation
Systems Implementation Office
605 Suwannee St. MS 19
Tallahassee, FL 32399

www.fdot.gov/planning
January 2023

Appendix B: Florida's Generalized Service Volume Tables

C1 & C2

Motor Vehicle Highway Generalized Service Volume Tables



Peak Hour Directional

	B	C	D	E
1 Lane	240	430	730	1,490
2 Lane	1,670	2,390	2,910	3,340
3 Lane	2,510	3,570	4,370	5,010

Peak Hour Two-Way

	B	C	D	E
2 Lane	440	780	1,330	2,710
4 Lane	3,040	4,350	5,290	6,070
6 Lane	4,560	6,490	7,950	9,110

AADT

	B	C	D	E
2 Lane	4,600	8,200	14,000	28,500
4 Lane	32,000	45,800	55,700	63,900
6 Lane	48,000	68,300	83,700	95,900

Adjustment Factors

2 Lane Divided Roadway with Exclusive Left Turn Adjustment: Multiply by 1.05
 Multilane Undivided Highway with Exclusive Left Turn Adjustment: Multiply by 0.95
 Multilane Undivided Highway without Exclusive Left Turn Adjustment:: Multiply by 0.75

C1 & C2

Motor Vehicle Highway Generalized Service Volume Tables

Input Parameters

Roadway Characteristics

	C1	C2
Number of Lanes (one direction)	1	2-3
Posted Speed (mph)	55	55
Base Free Flow Speed (mph)	60	60
Median Type	Undivided	Divided
Shoulder Width (feet)	3	6
Lane Width (feet)	12	12
% No Passing Zone	20%	
Access-Point Density (access/mile)	2	2
Terrain	Level	Level

Traffic Characteristics

	C1	C2
Planning Analysis Hour Factor (K)	0.095	0.095
Directional Distribution Factor (D)	0.55	0.55
Peak Hour Factor (PHF)	0.88	0.88
Heavy Vehicle Percent (%)	5%	10%
Speed Adjustment Factor (SAF)	0.975	0.975
Capacity Adjustment Factor (CAF)	0.968	0.968

C3C & C3R

Motor Vehicle Arterial Generalized Service Volume Tables

Peak Hour Directional

	B	C	D	E
1 Lane	*	760	1,070	**
2 Lane	*	1,520	1,810	**
3 Lane	*	2,360	2,680	**
4 Lane	*	3,170	3,180	**

Peak Hour Two-Way

	B	C	D	E
2 Lane	*	1,380	1,950	**
4 Lane	*	2,760	3,290	**
6 Lane	*	4,290	4,870	**
8 Lane	*	5,760	5,780	**

AADT

	B	C	D	E
2 Lane	*	15,300	21,700	**
4 Lane	*	30,700	36,600	**
6 Lane	*	47,700	54,100	**
8 Lane	*	64,000	64,200	**



(C3C-Suburban Commercial)



(C3R-Suburban Residential)

	B	C	D	E
1 Lane	*	970	1,110	**
2 Lane	*	1,700	1,850	**
3 Lane	*	2,620	2,730	**

	B	C	D	E
2 Lane	*	1,760	2,020	**
4 Lane	*	3,090	3,360	**
6 Lane	*	4,760	4,960	**

	B	C	D	E
2 Lane	*	19,600	22,400	**
4 Lane	*	34,300	37,300	**
6 Lane	*	52,900	55,100	**

Adjustment Factors

The peak hour directional service volumes should be adjusted by multiplying by 1.2 for one-way facilities
 The AADT service volumes should be adjusted by multiplying 0.6 for one way facilities 2 Lane Divided
 Roadway with an Exclusive Left Turn Lane(s): **Multiply by 1.05**
 2 lane Undivided Roadway with No Exclusive Left Turn Lane(s): Multiply by 0.80

Exclusive right turn lane(s): Multiply by 1.05
 Multilane Undivided Roadway with an Exclusive Left Turn Lane(s): Multiply by 0.95
 Multilane Roadway with No Exclusive Left Turn Lane(s): Multiply by 0.75
 Non-State Signalized Roadway: Multiply by 0.90

This table does not constitute a standard and should be used only for general planning applications. The table should not be used for corridor or intersection design, where more refined techniques exist.

* Cannot be achieved using table input value defaults.

** Not applicable for that level of service letter grade. For the automobile mode, volumes greater than level of service D become F because intersection capacities have been reached.

C3C & C3R

Motor Vehicle Arterial Generalized Service Volume Tables

Input Parameters

Roadway Characteristics

	C3C	C3R
Number of Lanes (one direction)	1-4	1-3
Posted Speed (mph)	45	45
Facility Length (miles)	3.98	2.57

Traffic Characteristics

	C3C		C3R	
Planning Analysis Hour Factor (K)	0.09		0.09	
Directional Distribution Factor (D)	0.55		0.55	
Peak Hour Factor (PHF)	0.95		0.92	
Base Saturation Flow Rate	1,950		1,950	
Heavy Vehicle Percent (%)	4		4	
Lane Width	12		12	
Median Type	Non Restrictive (1 lane)	Restrictive (2,3,4 lanes)	Non Restrictive (1 lane)	Restrictive (2,3 lanes)
Roadway Edge Type	Curbed		Flush	
On-Street Parking	None		None	

Control Characteristics

	C3C		C3R
Cycle Length	160		190
Major Street Through g/c	0.5 (1,2,3 lanes)	0.45 (4 lanes)	0.5
Yellow Change Interval	5.1		5.1
Red Change Interval	2		2
Number of Signals	10		5

Preliminary Context Classification TDA

Authoritative

Private Member
Florida Department of Transportation

Summary

The Preliminary Context Classification feature class shows preliminary context classification for applicable Florida roadways as derived from event mapping Feature 126, characteristic(s) CCTXTCLS (current context classification), FCTXTCLS (future context classification), CCTXTDTE (current context classification date), and FCTXTDTE (future context classification date) from the FDOT Roadway Characteristics (https://www.floridadot.com/About/About-Us/About-Us-Details.aspx).

Read More

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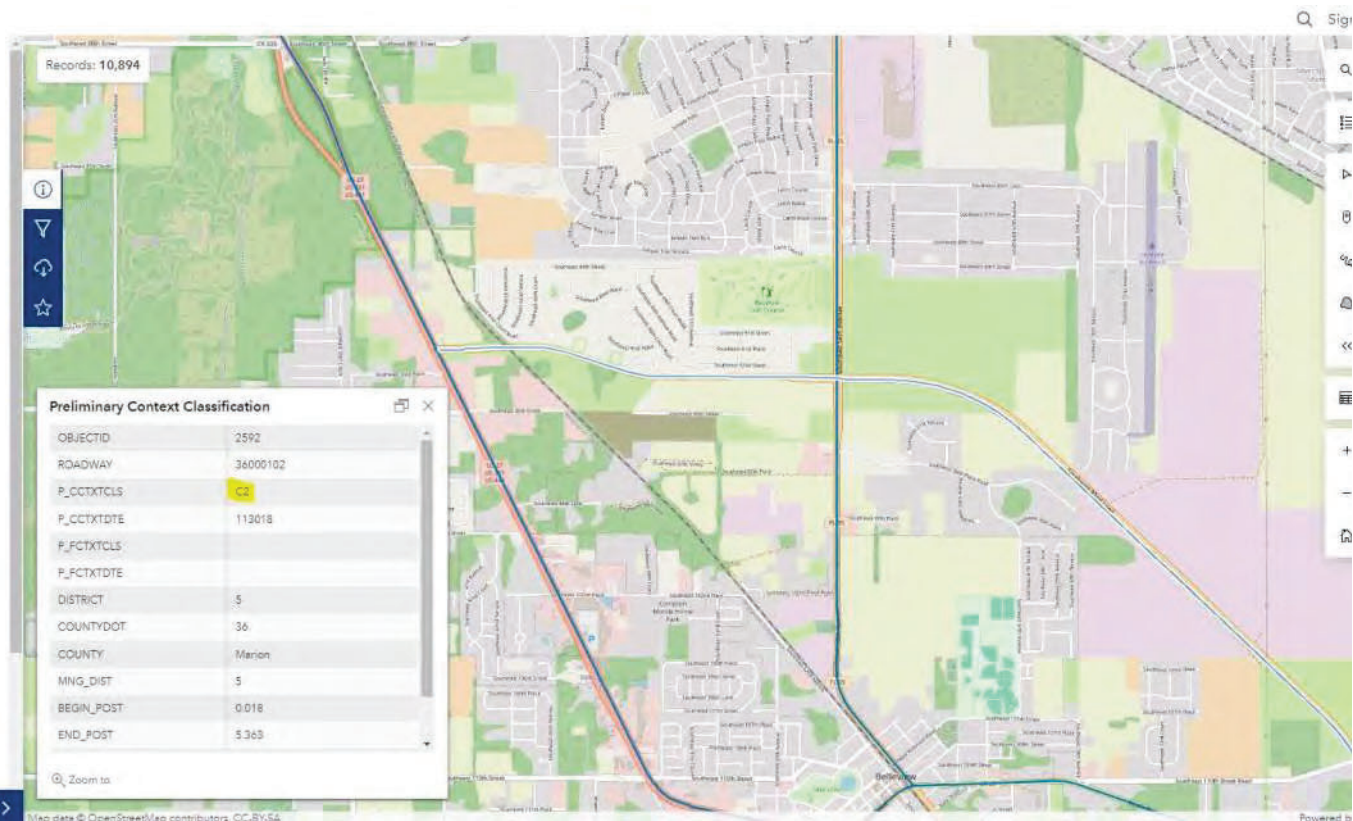
Details

Dataset
Feature Layer

February 4, 2024
Info Updated

Weekly
Data Updated: February 4, 2024

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Preliminary Context Classification TDA

Authoritative

Private Member
Florida Department of Transportation

Summary

The Preliminary Context Classification feature class shows preliminary context classification for applicable Florida roadways as derived from event mapping Feature 126, characteristic(s) CCTXTCLS (current context classification), FCTXTCLS (future context classification), CCTXTDTE (current context classification date), and FCTXTDTE (future context classification date) from the FDOT Roadway Characteristics inventory data. This data represents map information collected and released by FDOT.

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Feature Layer

June 8, 2025
Info Updated

Weekly
Data Updated: June 8, 2025

May 20, 2019
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