

Submittal Document G
H-24-53



MAPLE CROSSING

LAND DEVELOPMENT TRAFFIC ASSESSMENT

Prepared for:

Ryan Homes, LLC/NVR, Inc.

Prepared by:

W.E. Oliver, P.E., LLC



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Maple Crossing Land Development Transportation Assessment

Executive Summary

This report summarizes the findings of a land development transportation assessment undertaken for the proposed Maple Crossing (fka Emerson Oaks), a proposed 223-unit townhome residential development on a 41+/- acre site on the southwest corner of SR 50 (Cortez Blvd) and Emerson Rd in Hernando County.

One full access connection is proposed to Emerson Rd on the east at approximately 1,000 ft south of SR 50 (Cortez Blvd). A second connection is proposed to Oxley Rd on the west at approximately 250 ft south of SR 50 (Cortez Blvd.). The development is anticipated to be developed in one phase, over a five year period with buildout in 2030. The site is currently undeveloped.

Prior to undertaking this study, proposed transportation study methodologies and assumptions were discussed with County staff. Generally, this study followed the procedures adopted by Hernando County in its "Appendix F Traffic Impact Study Procedures" (January, 2008), "Roadway Standard Traffic Access Analysis" (10-1-08), and "Guidance for Traffic Study Methodology Requirements for Roadway Operations and Concurrency" (August 1, 2019).

In view of the above analyses, the following findings and recommendations are summarized:

- Maple Crossing is estimated to generate 105 new a.m. peak hour trips, and 126 new p.m. peak hour trip-ends, the majority of which will travel westward on SR 50 (Cortez Rd).
- The project traffic will not consume 5% or more of the service volume of any road in the area.
- Year 2030 intersection level of service analysis indicates good conditions, meeting adopted County standards.
- An east-to-south right-turn lane on SR 50 (Cortez Rd) at Oxley Rd is recommended.
- Reconstruction of Oxley Rd from the west site driveway to SR 50 (Cortez Rd) is recommended to bring the road up to County standards.
- A south-to-west right turn lane on Emerson Rd at the east site driveway is recommended.
- One exiting traffic lane will serve the expected traffic demands on both the east and west site driveways, regulated by a "STOP" sign in accordance with the Manual on Uniform Traffic Control devices.

MAPLE CROSSING

LAND DEVELOPMENT TRAFFIC ASSESSMENT

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Maple Crossing

Land Development Transportation Assessment

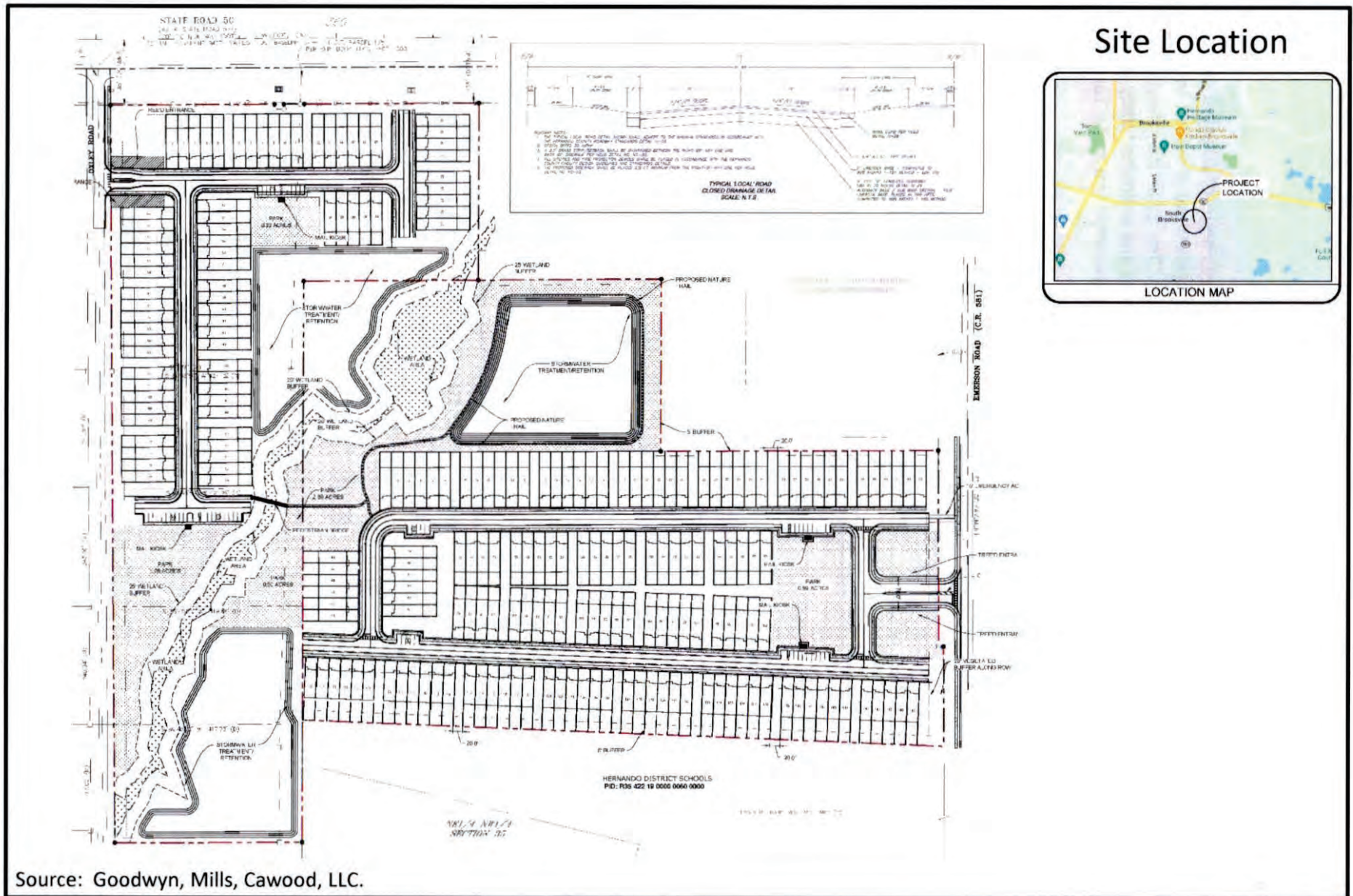
Introduction

This report summarizes the findings of a land development transportation assessment undertaken for the proposed Maple Crossing (fka Emerson Oaks), a proposed 223-unit single-family (townhome) residential development on a 41+/- acre site on the southwest corner of SR 50 (Cortez Blvd) and Emerson Rd in Hernando County, Florida. The site location and initial concept plan are provided in Figure 1. The site is divided by a wetland that “compartmentalizes” into two development areas that are not connected by road. One full access connection, serving the 149 unit southeastern development area, will connect to Emerson Rd on the east at approximately 1,000 ft south of SR 50 (Cortez Blvd). A second access, serving the 74-unit northwestern development area, will connect to Oxley Rd on the west at approximately 250 feet south of SR 50 (Cortez Blvd). The development is anticipated to be developed in one phase, over a five year period with buildout in 2030.

The site is currently undeveloped. The current land use plan designation is Commercial on the eastern 27.7 acres, and the western 13.8 acres are designated for residential uses. The current zoning is planned development. Rezoning to PDP-Single-Family Residential is proposed. The land parcel numbers for the site are:

R26 422 19 0000 0350 0120
R26 422 19 0000 0100 0031
R35 422 19 0000 0050 0060
R26 422 19 0000 0100 0030
R26 422 19 0000 0350 0020
R26 422 19 0000 0350 0130
R26 422 19 0000 0350 0060

Prior to undertaking this study, proposed transportation study methodologies and assumptions were discussed with County staff. Generally, this study followed the procedures adopted by Hernando County in its “Appendix F Traffic Impact Study Procedures” (January, 2008), “Roadway Standard Traffic Access Analysis” (10-1-08), and “Guidance for Traffic Study Methodology Requirements for Roadway Operations and Concurrency” (August 1, 2019). Other specific assumptions are documented in further correspondence, and a record of the correspondence is provided in Appendix A of this report.



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Figure 1
Maple Crossing -- Conceptual Site Plan

Trip Generation

Project site trip generation was estimated for the daily, AM, and PM peak hours of adjacent street traffic using data for Land Use Code 215, Single-Family Attached Residential provided in Trip Generation (Institute of Transportation Engineers, 11th Edition, 2022). The estimate reflects the two development areas. Table 1 summarizes the trip generation rates and estimated daily, a.m. peak hour, and p.m. peak hour of adjacent street traffic trip generation estimate for the development.

Table 1
Traffic Generation Estimate

Land Use	ITE Code	Qty	Daily		A.M. Peak Hour				P.M. Peak Hour			
			Trip Rate	Trip-Ends	Trip Rate	Total	In	Out	Trip Rate	Total	In	Out
Single-Family Attached	215	149 d.u.	7.28	1,085	0.48	72	22	50	0.57	85	49	37
Single-Family Attached	215	74 d.u.	6.94	513	0.44	33	10	23	0.55	40	23	17
		223 d.u.	Totals:	1,598		105	32	72		126	72	54

Source: Institute of Transportation Engineers, Trip Generation 11th Edition, 2022

No internal trip capture rate was applied to the trips generated by Maple Crossing, since the development is a single-use development. As indicated in Table 1, the site is expected to generate 1,598 daily trip-ends, with 105 trip ends (32 inbound and 72 outbound) during the a.m. peak hour of adjacent street traffic and 126 trip-ends (72 inbound and 54 outbound) during the p.m. peak hour of adjacent street traffic.

Tier I Spreadsheet Report

A "Tier I Spreadsheet Report" using the TierIWorksheet_082011_sent.xlsm spreadsheet file was prepared and is provided with the digital submittal for this development proposal. This spreadsheet apparently has not been updated since 2010, so an abbreviated version was prepared, updated to 2021 – 2030 conditions, and is summarized in Table 2, below. This table updates to recently recorded traffic counts (year of count varied from 2021 to 2024) and current FDOT Generalized Service Volumes, but draws on the roadway segmentation, K factors, and traffic growth rates of the "Tier I spreadsheet".

Road segments where the peak-hour, two-way 2030 estimated volume (recent volumes with growth rates applied, plus p.m. peak hour development volumes) is 90 percent or more of the adopted level of service maximum service volume (MSV) and development traffic volume consumes five percent or more of the MSV were identified as being on the study network for more detailed evaluation. The p.m. peak hour development volumes were used for this analysis because they are the highest hourly volumes experienced during the day. The paragraphs below further describe the trip distribution and assignment analyses undertaken to support the data entered into the table. The indications of this updated "Tier I analysis" are that the proposed development will not have significant and adverse impacts on any major

Table 2

Study Network Identification

Segment ID	On: From/To	Recorded AADT	Year of Count	Growth Rate	2030 AADT Estimate	K Factor	2030 Pk Hr Vol Estimate	Exist Road Type	Jurisdiction	Area (U/S)	LOS Std	2-Way Pk Hr Service Capacity	% Assign	Pk Hr 2-Way Dev Volume	2028 Total Volume Est	Vol: MSV Ratio	% Impact	On Study Network ?
10120	Broad St. Wisconsin Rd to Cortez Blvd (SR 50)	31,500	2021	0.18%	32,000	0.097	3,104	6D	SR	S	C	3,790	22.0%	28	3,132	0.826	0.7%	No
10130	Broad St. Cortez Blvd (SR 50) to Winn Dixie Plaza	25,500	2023	0.45%	26,300	0.097	2,551	6D	SR	S	C	3,790	8.1%	10	2,561	0.676	0.3%	No
2110	CORTEZ BLVD BY PASS (SR50): JEFFERSON RD to BROAD ST (US41/SR45)	23,000	2023	1.41%	25,400	0.097	2,464	4D	SR	S	C	3,060	7.8%	10	2,474	0.808	0.3%	No
2120.1	CORTEZ BLVD BY PASS (SR50): BROAD ST (US41/SR45) to SOUTHERN HILLS BLVD	32,000	2023	2.00%	36,800	0.097	3,570	4D	SR	S	C	3,060	43.6%	55	3,625	1.185	1.8%	No
2120.2	CORTEZ BLVD BY PASS (SR50): SOUTHERN HILLS BLVD to MAIN ST	32,000	2023	2.00%	36,800	0.097	3,570	4D	SR	S	C	3,060	56.3%	71	3,641	1.190	2.3%	No
2130	CORTEZ BLVD BY PASS (SR50): MAIN ST to OXLEY RD	21,200	2022	2.00%	24,800	0.097	2,406	4D	SR	S	C	3,060	64.4%	81	2,487	0.813	2.6%	No
2130	CORTEZ BLVD BY PASS (SR50): OXLEY RD to EMERSON RD	21,200	2022	2.00%	24,800	0.097	2,406	4D	SR	S	C	3,060	70.4%	89	2,495	0.815	2.9%	No
2140	CORTEZ BLVD BY PASS (SR50): EMERSON RD to JEFFERSON ST (SR50)	21,500	2021	2.00%	25,700	0.097	2,493	4D	SR	S	C	3,060	9.3%	12	2,505	0.819	0.4%	No
2910	Emerson Rd: S of Site	7,500	2024	2.00%	8,400	0.097	815	2U	CR	S	D	1,310	4.0%	5	820	0.626	0.4%	No
2910	Emerson: Site to SR 50	7,500	2024	2.00%	8,400	0.097	815	2U	CR	U	D	1,440	63.5%	80	895	0.621	5.6%	Yes
2910	Emerson Rd: N of SR 50	2,900	2020	2.00%	3,500	0.097	340	2U	CR	U	D	1,440	20.8%	26	366	0.254	1.8%	No
10500	MAIN ST: CORTEZ BLVD (SR50) to MIK	4,000	2023	2.00%	4,600	0.097	446	2U	CR	U	D	1,440	8.1%	10	456	0.317	0.7%	No
10510	MAIN ST: MIK to BROAD ST (US41/SR45)	4,000	2023	2.00%	4,600	0.097	446	2U	CR	U	D	1,440	8.1%	10	456	0.317	0.7%	No
n/a	Oxley Rd S of Site	75	2024	0.00%	100	0.097	10	2S	CR	S	D	400	1.6%	2	12	0.029	0.5%	No
n/a	Oxley Rd: Site to SR 50	75	2024	0.00%	100	0.097	10	2S	CR	S	D	400	30.2%	38	48	0.119	9.5%	Yes

Note: Road Type "S" denotes sub-standard road. Capacity of 400 vehicles per day assigned.

roads in the vicinity of the site. Thus, this analysis focuses on access to and from SR 50 (Cortez Rd) to and from the site, via Emerson Rd and Oxley Rd.

Trip Distribution and Assignment

The a.m. and p.m. peak hour traffic distributions from the site were estimated based on select-zone traffic assignments from the Tampa Bay Regional Planning Model, v9.2. The majority of traffic (64 percent) is expected to travel westward on SR 50 (Cortez Rd), and an additional 20 percent northward on Emerson Rd. Plots of the select-zone assignments are provided in Appendix B.

The directional left turn median opening on SR 50 (Cortez Rd) at Oxley Rd was not coded into the highway network, so the traffic assignment was manually adjusted to reflect the inability to make north-to-west left turns at this location. A worksheet showing the re-assignment of project traffic is also provided in Appendix B.

Planned and Scheduled Roadway Improvements

No improvements are scheduled within the build-out timeframe (2030) that directly affect the traffic study road network.

Traffic Data Collection

A.M. and P.M. peak hour turning movement counts (TMC's) were collected on June 18, 2024, after the schools to the south of the site on Emerson Rd had closed for summer break, at the following intersections:

- SR 50 (Cortez Rd) @ Emerson Rd
- SR 50 (Cortez Rd) @ Oxley Rd

Because the counts were recorded after schools had closed, similar intersection counts undertaken in October, 2022 were compared to the recent counts. The movements providing access to the schools (eastbound right-turn, southbound through, westbound left turn, and northbound left, through, and right turn) in the October, 2022 counts were found to be substantially higher in the a.m. peak hour (671 vehicles) than the recent June, 2024 counts (321 vehicles). The October, 2022 volumes in these movements were inserted into the June 2024 counts for this analysis.

The volumes so adjusted were further adjusted by the FDOT seasonal factor for this week of the year of 1.09. The resulting volumes were compared to an estimate of 2024 AADT times the observed a.m. and p.m. K factors (peak hour to daily traffic ratio). The 2024 AADT estimate was based on the historical trend of recent FDOT AADT counts recorded on SR 50 (Cortez Rd) to the west of Emerson Rd, which exhibited a 2.72 percent per year (linear) growth rate. (See Appendix C.) The morning and afternoon K factors were obtained from the FDOT "Synopsis Report" at the same count station. In the a.m. peak hour, the seasonally adjusted TMC volume was found to be

greater than the “AADT times K” volume, the TMC volumes were used. In the p.m. peak, the seasonally adjusted TMC volume was found to be one percent lower than the “AADT times K” volume, so the p.m. TMC was increased to align with the “AADT times K” volume. These adjusted peak hour volumes served as the basis from which future (2030) volumes were estimated.

The collected intersection turning movement counts, adjustments, and volume worksheets are provided in Appendix C. The 2024 a.m. and p.m. peak hour peak season volume estimates are illustrated in Figures 2 and 3.

Current (2023) Conditions

Adjacent to the site, Emerson Rd is a two-lane County minor collector road with a 20-foot pavement width and posted speed limit of 50 mph. No street lighting, bicycle lanes, or sidewalks exist.

Oxley Rd is a local street, has a pavement width of 15 feet, no sidewalks, street lighting, or bicycle lanes. There is no posted speed limit, so the County-wide speed limit for local roads of 30 mph would apply. The pavement is in poor condition. By County standards, it is a sub-standard road, and should be improved before adding substantial additional traffic.

Using the intersection turning volume estimates described above, current conditions at the two studied intersections were evaluated. Synchro software, version 12, was applied, using the Highway Capacity Manual 7th Edition (HCM6) procedures. The results are summarized in Table 3, and supporting worksheets are provided in Appendix D. The HCM7 procedures are not capable of analyzing U-turns, so the U-turn volumes were added into the corresponding left turn volumes.

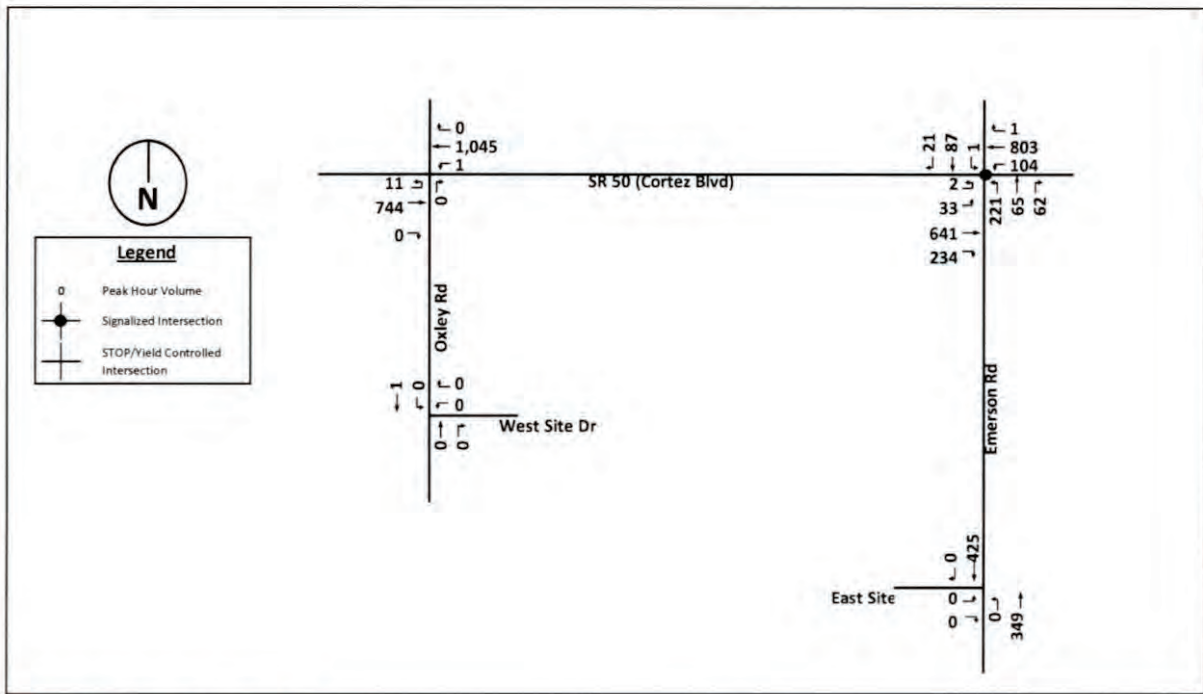
Indications of the intersection capacity analyses are that current conditions are good, meeting Hernando County’s level of service standards.

Traffic Growth Forecast

Based on the historical trend recorded by FDOT, a 2.72 percent per year growth rate was applied to the 2024 intersection turning volume estimates to account for background traffic growth. This factor was applied for six years, to estimate 2030 a.m. and p.m. peak hour background traffic volumes. No specific other developments were identified for inclusion in background traffic. Worksheets summarizing the future year volume estimates are included in Appendix C.

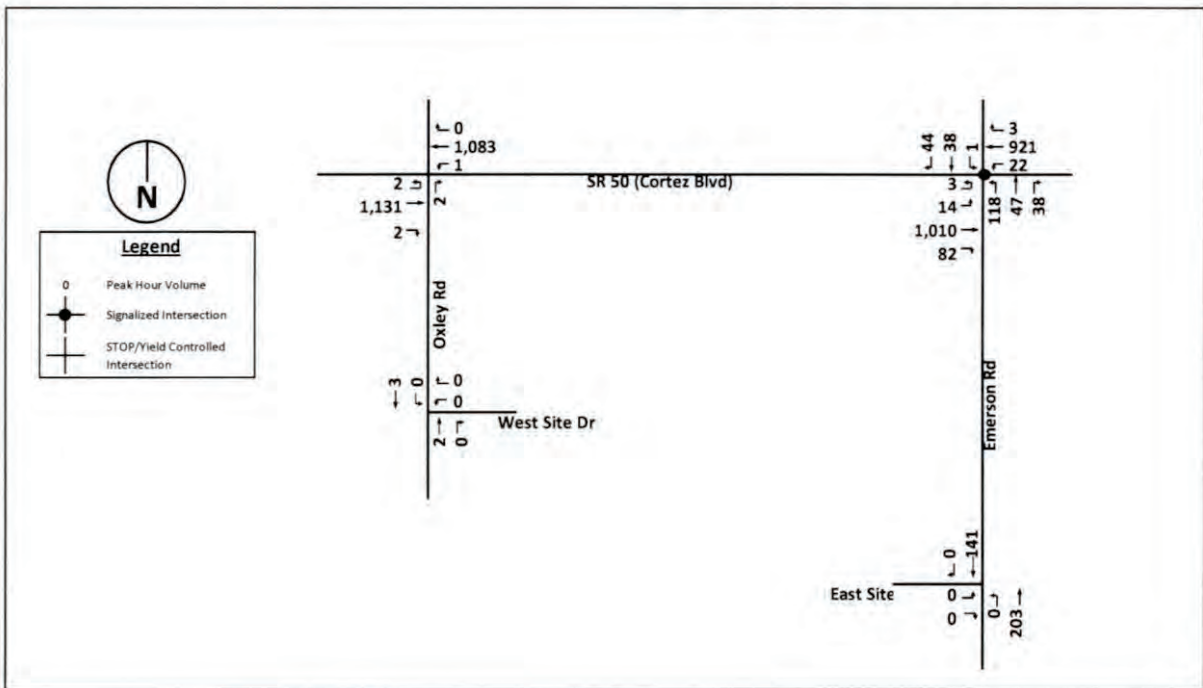
Maple Crossing traffic was added to the 2030 background traffic volumes to estimate 2030 total traffic volumes.

Figures 4 and 5 illustrate the 2030 “design-hour” a.m. and p.m. peak hour traffic volume estimates, respectively.



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Figure 2
2024 Existing A.M. Peak Hour Volumes



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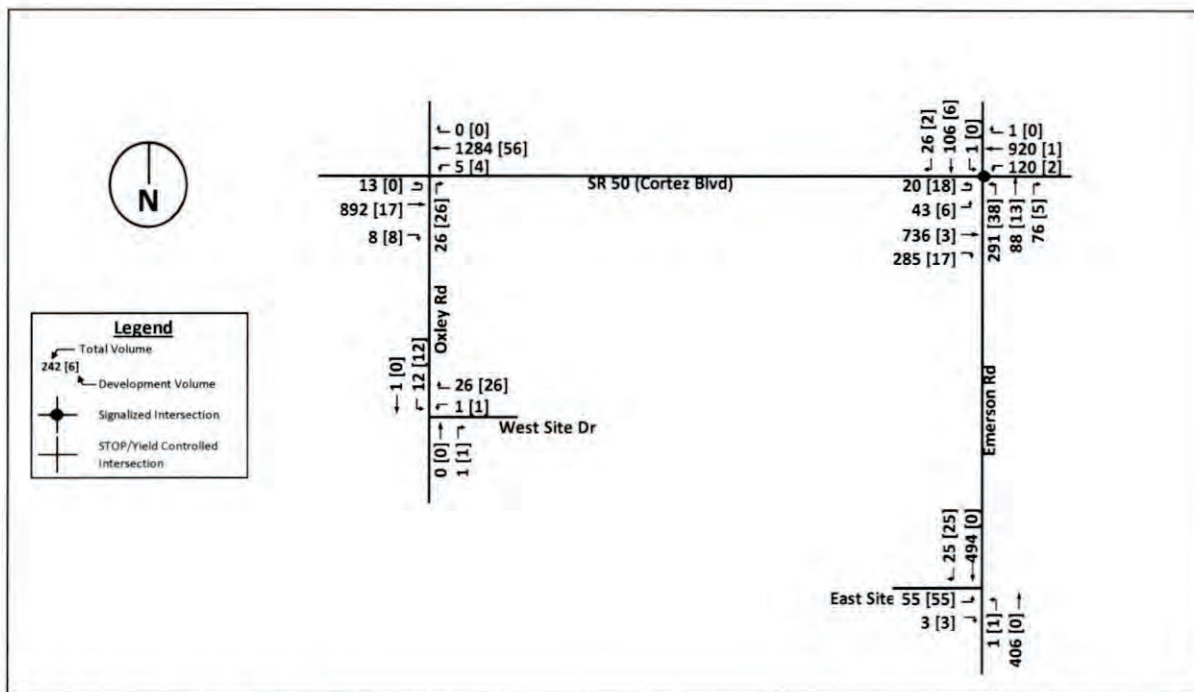
Figure 3
2024 Existing P.M. Peak Hour Volumes

Table 3
Intersection Capacity Analysis Summary

A.M. Conditions				P.M. Conditions								
2024 Traffic On Existing Geometry delay			2030 Total Traffic On Existing Geometry delay		2024 Traffic On Existing Geometry delay			2030 Total Traffic On Existing Geometry delay				
v:c ⁽¹⁾ (sec/veh) LOS			v:c ⁽¹⁾ (sec/veh) LOS		v:c ⁽¹⁾ (sec/veh) LOS			v:c ⁽¹⁾ (sec/veh) LOS				
Location: SR 50 @ Oxley												
Control:	TWSC			TWSC		TWSC			TWSC			
EB-U	<0.01	10.3	B	<0.01	10.3	B	<0.01	10.3	B			
WB-L	0.002	10.3	B	0.009	11.3	B	0.002	13.0	B			
NB-R	<0.01	11.0	B	0.053	12.2	B	0.005	13.2	B			
Location: SR 50 @ Emerson												
Control:	Signal			Signal		Signal			Signal			
NB-L	0.680	37.6	D	0.760	39.3	D	0.540	40.5	D			
NB-TR	0.310	26.7	C	0.320	22.8	C	0.330	33.7	C			
SB-L	<0.01	28.7	C	<0.01	25.1	C	<0.01	34.9	C			
SB-TR	0.250	26.1	C	0.240	22.0	C	0.320	33.6	C			
EB-L	0.120	12.8	B	0.280	18.3	B	0.050	8.1	A			
EB-TR	0.470	17.3	B	0.640	24.6	C	0.580	12.5	B			
WB-L	0.310	16.3	B	0.450	18.0	B	0.080	8.8	A			
WB-TR	0.550	12.7	B	0.740	26.2	C	0.510	11.2	B			
Overall:	19.9 B			25.9 C		14.7 B			19.5 B			
Location: Emerson @ East Site Drive												
Control:	Does not Exist			TWSC		Does not Exist			TWSC			
NB-L	n/a	n/a	n/a	0.001	8.5	A	n/a	n/a	n/a	0.002	7.7	A
EB	n/a	n/a	n/a	0.225	21.5	C	n/a	n/a	n/a	0.069	11.9	B
Location: Oxley @ West Site Drive												
Control:	Does not Exist			TWSC		Does not Exist			TWSC			
SB-L	n/a	n/a	n/a	0.008	7.2	A	n/a	n/a	n/a	0.015	7.2	A
WB	n/a	n/a	n/a	0.027	8.4	A	n/a	n/a	n/a	0.017	8.4	A

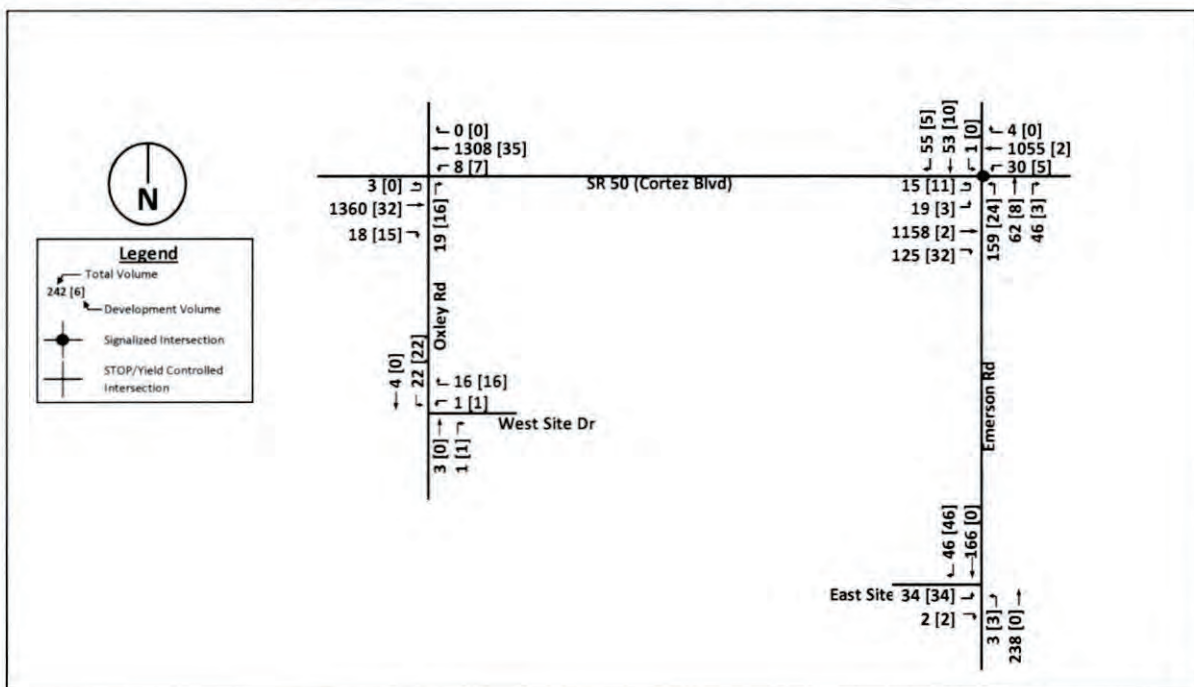
Future Conditions Traffic Operational Analysis

Intersection capacity and level of service analyses were undertaken for Oxley Rd and Emerson Rd at SR 50 (Cortez Rd) on the existing intersection lanes. In addition, the unsignalized Maple Crossing driveway connections to Oxley Rd and to Emerson Rd were also analyzed. In this level of service analysis, no auxiliary turn lanes were incorporated at any location; however, for safety reasons some auxiliary lanes are recommended resulting from the site access analysis described below. Table 3 summarizes the year 2030 level of service analyses also, and the supporting worksheets are provided in Appendix E.



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Figure 4
2030 Total A.M. Peak Hour Volumes



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Figure 5
2030 Total P.M. Peak Hour Volumes

Review of individual movements at the intersections (in the Appendix E worksheets) indicated no excessive queues or delays are experienced by any movements. Hernando County's adopted level of service standards will continue to be met in the development's impact area.

For safety reasons, the need for auxiliary turn lanes (e.g. additional left- and right-turn lanes) were reviewed against Florida DOT warranting guidance and recommendations of NCHRP Report 457 ("Evaluating Intersection Improvements: An Engineering Study Guide", 2001). The NCHRP methodology considers the volume turning, the total volume in the lane from which turns are made, the magnitude of opposing traffic (for left turns) and the posted speed limit. We did this using the current posted speed and build-out volumes turning into the site during the p.m. peak hour (highest volume on a day). But, in this review, we considered that the development will exist well beyond its estimated five-year buildout, with continued background traffic growth. We estimated the level of total traffic on the major road at which warranting guidance was met, then compared to the existing level of traffic on the road. These warrant analysis worksheets are provided in Appendix F.

This review produced the following results:

On SR 50 (Cortez Rd) at Oxley Rd, the proposed development will create a demand for east-to-south right turns which meets FDOT guidelines for implementing a right turn lane (50 mph posted speed and 18 right-turns in the peak hour). Thus, for safety reasons, a 240-foot right-turn lane is recommended at this location.

At the site driveway connection to Emerson Rd, a south-to-west right turn lane is not warranted at buildout, but if traffic on Emerson Rd increases by 50 percent, the turn lane is warranted. Given the continuity of the road, this is reasonable to expect over the life of the subdivision, and thus the turn lane is recommended. For the north-to-west left turn lane, the volume of traffic turning into the site is very low (3 vehicles in the peak hour), and the NCHRP guidance indicates a turn lane is not warranted until traffic on Emerson Rd increases to 26,700 vehicles per day, a condition which would require widening the road to four lanes. Thus, this turn lane is not recommended.

At the site driveway connection to Oxley Rd, a south-to-east left turn lane was tested and found to meet warranting conditions if total traffic on Oxley Rd increases to 11,450 vehicles per day. The road currently carries about 100 vehicles per day, based on the ten cars observed in the p.m. peak hour, extends only from Mitchell Rd to SR 50 (Cortez Rd, a distance of 0.6 miles) and essentially serves only the adjacent properties. Under these conditions, it is difficult to envision the road developing significant traffic growth, unless specific developments are approved that would cause traffic growth. Thus, this turn lane is not recommended.

Summary of Findings and Recommendations

In view of the above analyses, the following findings and recommendations are summarized:

- Maple Crossing is a proposed 223-unit townhome development estimated to generate 105 new a.m. peak hour trips, and 126 new p.m. peak hour trip-ends, the majority of which will travel westward on SR 50 (Cortez Rd).
- The project traffic is not estimated to consume 5% or more of the service volume of any major road in the area except for on Emerson Rd from the site to SR 50 (Cortez Rd).
- Year 2030 intersection level of service analysis indicates good conditions, meeting adopted County standards.
- A 240-foot long east-to-south right-turn lane on SR 50 (Cortez Rd) at Oxley Rd is recommended.
- Reconstruction of Oxley Rd from the west site driveway to SR 50 (Cortez Rd) is recommended to bring the road up to County standards.
- A south-to-west right turn lane on Emerson Rd at the east site driveway is recommended.
- One exiting traffic lane will serve the expected traffic demands on both the east and west site driveways, regulated by a "STOP" sign in accordance with the Manual on Uniform Traffic Control devices.

Appendix A

Methodology Correspondence



DEPARTMENT OF PUBLIC WORKS

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1525 EAST JEFFERSON STREET • BROOKSVILLE, FLORIDA 34601
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June 17, 2024

Mr. William E. Oliver, PE
Traffic Engineering / Transportation Planners
P.O. Box 10361
Tampa, Florida 33679

SUBJECT: Emerson Oaks
Transportation Analysis Methodology Statement

Dear Mr. Oliver:

Staff has reviewed your Transportation Analysis Methodology Statement (dated June 11, 2024) for the Emerson Oaks project. The analysis is in the format shown in the Hernando County guidelines. Staff accepts the methodology as presented.

Analysis of the site access connections to Emerson Road and Oxley Road will be undertaken for the a.m. and p.m. peak hours. Recommendations will be made for the connection locations relative to surrounding connections, lanes and control measures, and sight distance.

These comments are not intended to be inclusive of any or all errors or omissions within the subject analysis. It remains the responsibility of the consulting engineer to thoroughly check the analysis and make necessary corrections.

Please contact me with any questions or comments.

Sincerely,

A handwritten signature in blue ink, appearing to read "D. Todd Crosby".

D. Todd Crosby, P.E.
Assistant County Engineer



DEPARTMENT OF PUBLIC WORKS

ENGINEERING • FACILITIES • REAL PROPERTY • ROADS BRIDGES • STORMWATER • TRAFFIC • TRASH

1525 EAST JEFFERSON STREET • BROOKSVILLE, FLORIDA 34601
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Letter to William E. Oliver, P.E.
June 17, 2024
Subject: Emerson Oaks Methodology
Page #2

EL:DTC

cc: Laura A. Borgesi P.E., Traffic Engineer
Kandi McCorkel, Engineering Development Coordinator
File

June 11, 2024

Ms. Kandi McKorkel, Engineering Development Coordinator
Hernando County Department of Public Works
1525 East Jefferson St.
Brooksville, FL 34601

SUBJECT: **Transportation Study Methodology Statement**
PROJECT NAME: NVR-Emerson Oaks

Dear Ms. McKorkel,

The purpose of this letter is to propose methodologies for the transportation analyses for the "JSN-Emerson Oaks" development. The following paragraphs summarize the elements of transportation methodology requested in "Appendix F Traffic Impact Study Procedures" (January, 2008, "Roadway Standard Traffic Access Analysis" (10-1-08), and "Guidance for Traffic Study Methodology Requirements for Roadway Operations and Concurrency" (August 1, 2019).

Concurrency Analysis Methodologies

Project Information

The development proposes 223 single-family townhome dwellings on a 40+/- acre site on the southwest corner of SR 50 (Cortez Blvd) and Emerson Rd in Hernando County. The site location and initial concept plan are provided in Figure 1, showing that 74 units will be accessed from Oxley Rd and 149 units will be accessed from Emerson Rd. The development is anticipated to be developed in one phase, over a five-year period with buildout in 2030.

The developer/applicant is:
Mr. Scott K. Stannard, P.E., Vice-President
Goodwyn Mills Cawood, LLC
21764 State Rd 54
Lutz, FL 33549
(813) 885-2032, ext 981

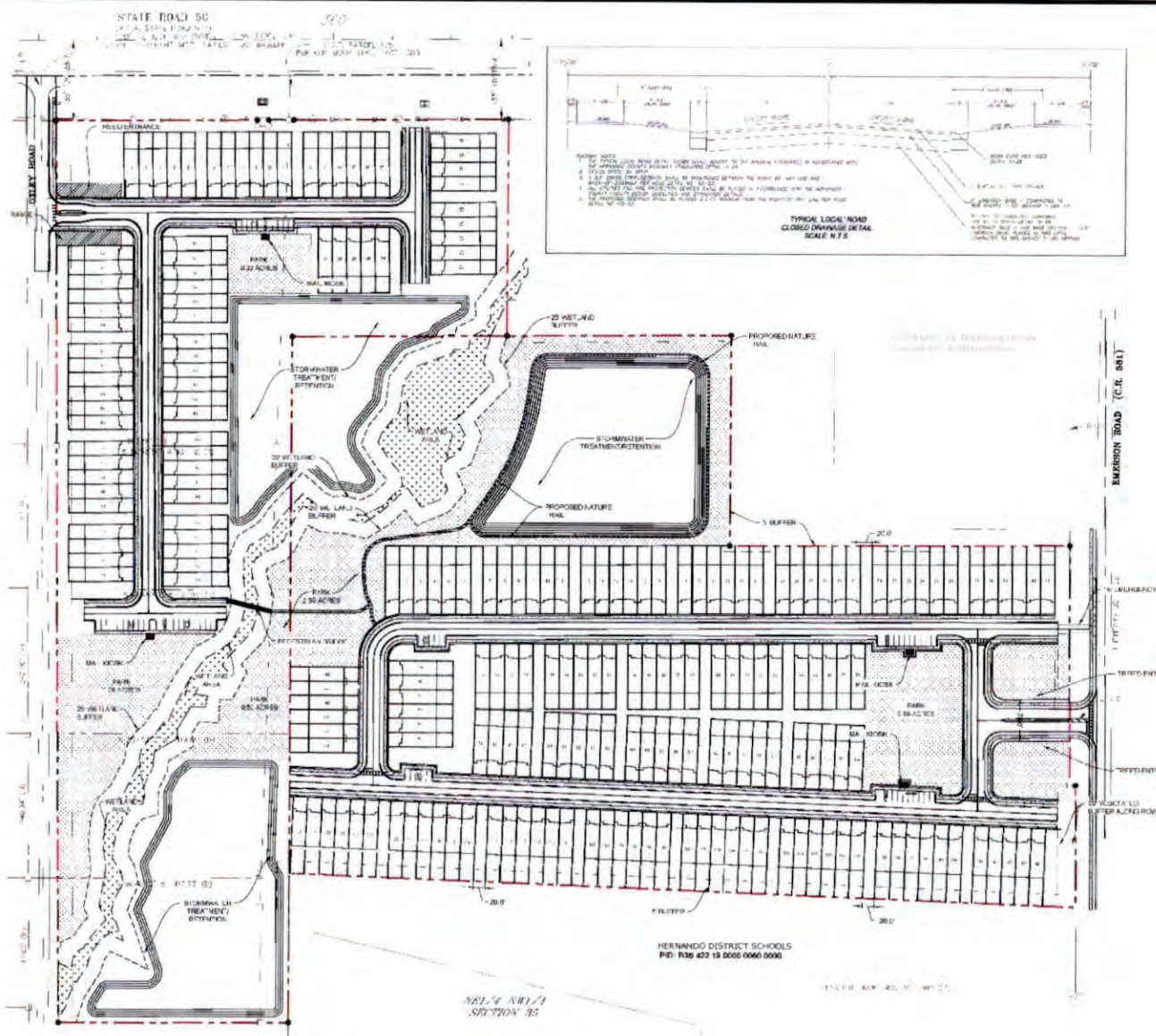
W.E. Oliver, P.E., LLC identified on this letterhead is the engineer performing the traffic studies.

Trip Generation: Trip generation of the site has been estimated using the ITE Trip Generation, 11th Edition (2022) land use code 215, Single-Family Attached Housing, and is provided in Table 1, below.

Table 1
Traffic Generation Estimates

Ed	Land Use	ITE Code	Qty	Daily		A.M. Peak Hour				P.M. Peak Hour			
				Trip Rate	Trip- Ends	Trip Rate	Total	In	Out	Trip Rate	Total	In	Out
11	Single-Family Attached	215	149 d.u.	7.28	1,085	0.48	72	22	50	0.57	85	49	37
11	Single-Family Attached	215	74 d.u.	6.94	513	0.44	33	10	23	0.55	40	23	17
223				Totals:	1,598		105	32	72		126	72	54

Source: Institute of Transportation Engineers, Trip Generation 11th Edition, 2022



Ms. Kandi McKorkel
 June 11, 2024
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Separate generation estimates are provided for the two areas of housing, as no internal vehicular connection will be provided between the two areas.

Internal Capture/Passerby: No internal or pass-by capture of trips is anticipated for the development, as the development is a single land use and internal trips are considered in the trip generation equations used.

Distribution and Assignment: Traffic distribution/assignment will be drawn from the TBRPM9 model, p.m. peak period assignment. A traffic assignment plot from an initial application of the model is attached to this letter.

Study Area: Study of the road segments directly accessed, plus roads beyond those segments on which development traffic is expected to consume 4.5 percent or more of the LOS D (County Roads) or LOS C (State Roads) Two-Way Flow Rates will be included in the study road network. Based on the initial traffic assignment model, and supporting data provided in Table 2, development traffic volumes are less than 4.5 percent of the above-referenced capacities on the surrounding roads except for Emerson Rd from the site to SR 50 (Cortez Blvd). Thus, only the two road segments to which the site connects will be analyzed, which are:

- Emerson Rd: Site to SR 50 (Cortez Blvd)
- Oxley Rd: Site to SR 50 (Cortez Blvd)

Table 2
Study Network Identification

Segment ID	On: From/To	Exist Road Type	Juris-diction	Area (U/S)	LOS Std	2-Way Pk Hr Service Capacity	% Assign	Pk Hr 2-Way Dev Volume	% Impact	On Study Network ?
2130	CORTEZ BLVD BY PASS (SR50): MAIN ST to OXLEY RD	4D	SR	S	C	3,060	64.4%	81	2.6%	No
2130	CORTEZ BLVD BY PASS (SR50): OXLEY RD to EMERSON RD	4D	SR	S	C	3,060	53.2%	67	2.2%	No
2140	CORTEZ BLVD BY PASS (SR50): EMERSON RD to JEFFERSON ST (SR50)	4D	SR	S	C	3,060	9.3%	12	0.4%	No
2910	Emerson Rd: S of Site	2U	CR	S	D	1,310	4.0%	5	0.4%	No
2910	Emerson: Site to SR 50	2U	CR	U	D	1,440	63.5%	80	5.6%	Yes
2910	Emerson Rd: N of SR 50	2U	CR	U	D	1,440	20.8%	26	1.8%	No
n/a	Oxley Rd S of Site	2S	CR	S	D	400	1.6%	2	0.5%	No
n/a	Oxley Rd: Site to SR 50	2S	CR	U	D	400	30.2%	38	9.5%	Yes

Note: Road Type "S" denotes sub-standard road. Capacity of 400 vehicles per day assigned.

Collection of Traffic Counts: Collection of a.m. and p.m. peak hour traffic counts at the following intersections is proposed, associated with the study network identified as described above:

- SR 50 @ Oxley Rd
- SR 50 @ Emerson Rd

Counts will be undertaken shortly after this methodology is approved. Counts will be adjusted to peak season using Florida DOT seasonal factors.

Background Traffic Growth Procedure: The Florida DOT has a traffic count station on SR 50 west of Emerson Rd, and Hernando County has a count station on Emerson Rd south of SR 50 where traffic

Ms. Kandi McKorkel
June 11, 2024
Page 3 of 3

counts have been recorded fairly consistently. Historical data on these two stations will be reviewed to establish traffic growth rates for these two roads. We will apply the greater growth rate determined by this review or two percent per year. Since Oxley Rd is not on Hernando County's Concurrency Determination Network, and because it is not a "thoroughfare" road serving long trips or regional traffic growth, a two percent per year growth rate will be applied.

Please advise of any specific developments that we should take into consideration.

Capacity/Level of Service Analysis: A.m. and p.m. peak hour analyses will be undertaken using HCM 6th Edition procedures as implemented by Synchro software, version 11.

Access Management Analysis

Analysis of the site access connections to Emerson Rd and Oxley Rd will be undertaken for the a.m. and p.m. peak hours. Recommendations will be made for the connection locations relative to surrounding connections, lanes and control measures, and sight distance. All traffic demand estimates will be consistent with the above Concurrency Study Methodology.

Should you have any questions regarding the above matters, please feel free to contact me. If the above is agreeable, please so indicate by signing and dating below and returning a scanned version of this methodology letter to me.

Very Truly Yours
W.E. Oliver, P.E., LLC



William E. Oliver, P.E., PTOE
President

The above methodologies are acceptable for
this analysis

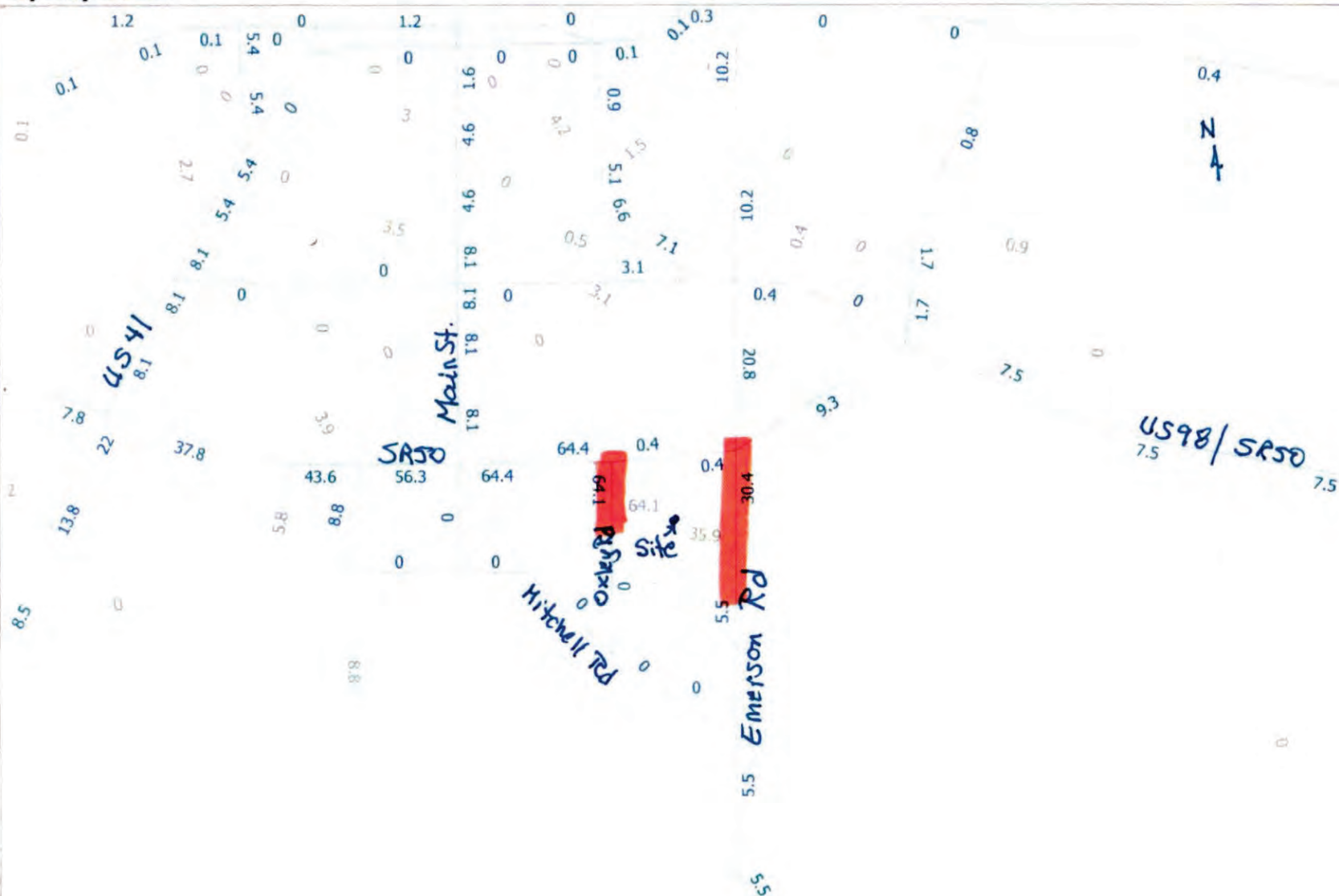
Kandi McKorkel
Transportation Planner II

Date: _____

Attachments

C:\WEO-PE\Projects\137.02-NVR-Emerson Oaks\5. Docs\Emerson Oaks Transportation Methodology 20240611.docx

9/20/2022

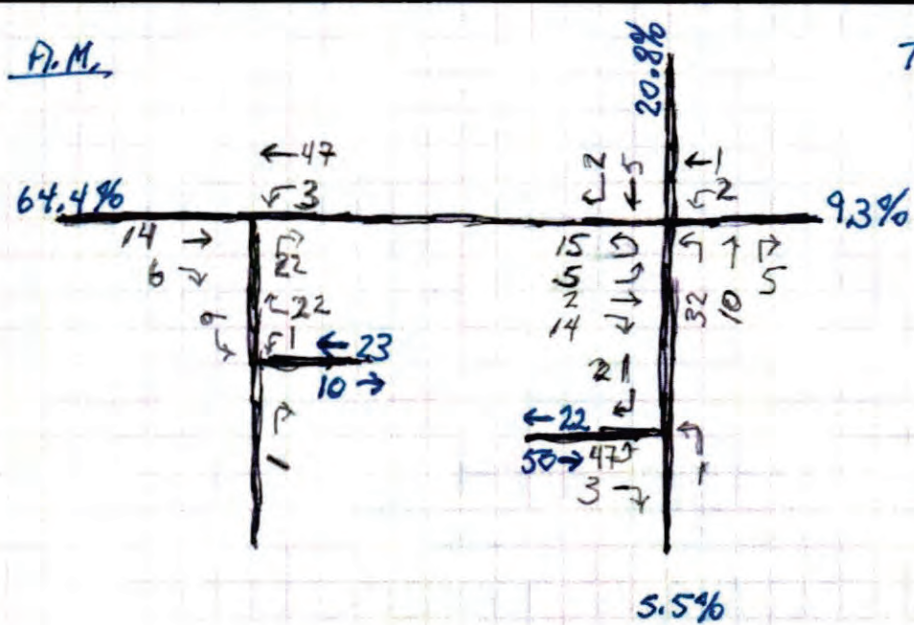


Appendix B

**Distribution and Assignment of
Development Traffic**

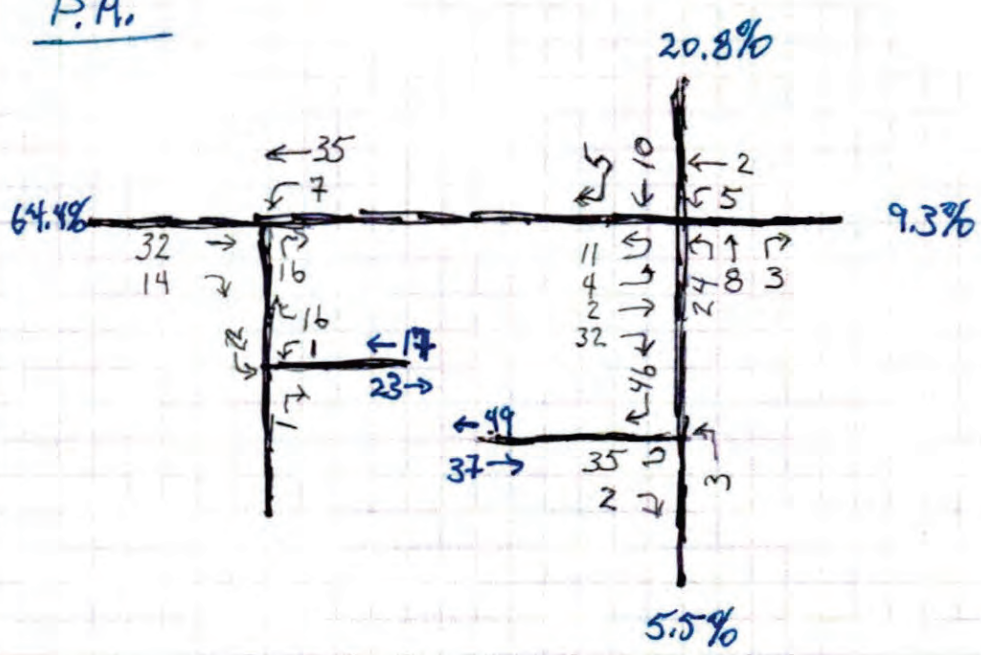
P.M.

TRAFFIC
ASSIGNMENT

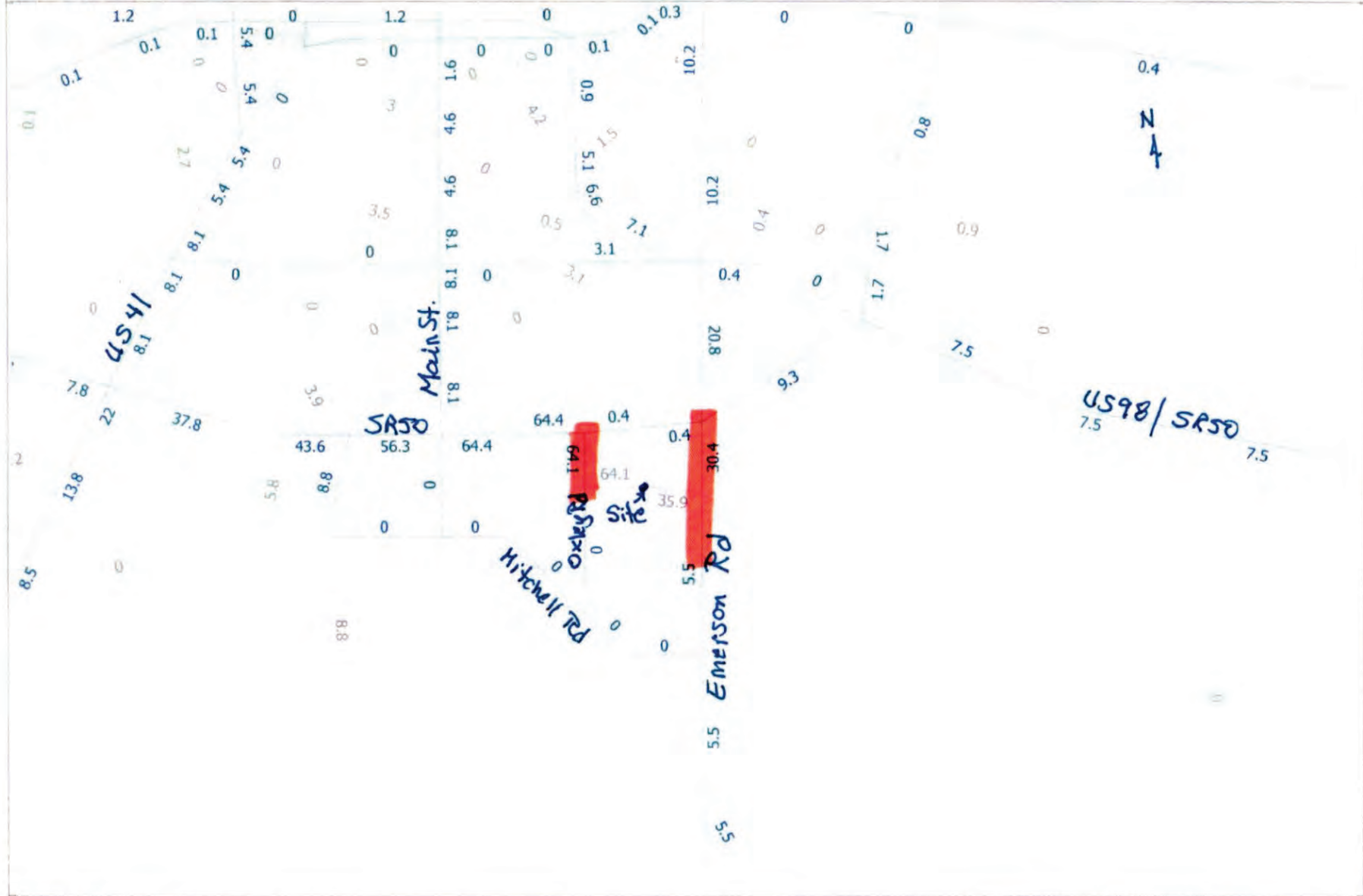


Note: Volumes in Analysis & Graphics may vary by ± 1 vehicle due to rounding.

P.M.



**NVR Site -- Select Zone Assignment P.M. Peak
9/20/2022**



B-3

Appendix C

Traffic Counts and Intersection

Volume Estimates

National Data & Surveying Services

Intersection Turning Movement Count

Location: Oxley Rd & SR 50/Cortez Blvd/Melendez Rd
City: Brooksville
Control: 1-Way Stop(NB)

Project ID: 24-120270-002
Date: 6/18/2024

Data - Total

NS/EW Streets:	Oxley Rd				Oxley Rd				SR 50/Cortez Blvd/Melendez Rd				SR 50/Cortez Blvd/Melendez Rd				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	0 NL	0 NT	0 NR	0 NU	0 SL	0 ST	0 SR	0 SU	0 EL	0 ET	0 ER	0 EU	0 WL	0 WT	0 WR	0 WU	
7:00 AM	0	0	0	0	0	0	0	0	0	166	0	1	0	160	0	0	327
7:15 AM	0	0	2	0	0	0	0	0	0	175	0	7	0	201	0	0	385
7:30 AM	0	0	1	0	0	0	0	0	0	177	0	3	0	215	0	0	396
7:45 AM	0	0	0	0	0	0	0	0	0	176	0	4	1	219	0	0	400
8:00 AM	0	0	0	0	0	0	0	0	0	162	0	3	0	183	0	0	348
8:15 AM	0	0	0	0	0	0	0	0	0	176	0	1	0	196	0	0	373
8:30 AM	0	0	0	0	0	0	0	0	0	169	0	2	0	261	0	0	432
8:45 AM	0	0	0	0	0	0	0	0	0	160	0	4	0	207	0	0	371
TOTAL VOLUMES :	NL 0	NT 0	NR 3	NU 0	SL 0	ST 0	SR 0	SU 0	EL 0	ET 1361	ER 0	EU 25	WL 1	WT 1642	WR 0	WU 0	TOTAL 3032
APPROACH %'s :	0.00%	0.00%	100.00%	0.00%					0.00%	98.20%	0.00%	1.80%	0.06%	99.94%	0.00%	0.00%	
PEAK HR :	07:45 AM - 08:45 AM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	683	0	10	1	859	0	0	1553
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.970	0.000	0.625	0.250	0.823	0.000	0.000	0.899
										0.963				0.824			

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	0 NL	0 NT	0 NR	0 NU	0 SL	0 ST	0 SR	0 SU	0 EL	0 ET	0 ER	0 EU	0 WL	0 WT	0 WR	0 WU	
4:00 PM	0	0	4	0	0	0	0	0	0	262	1	3	1	224	0	0	495
4:15 PM	0	0	0	0	0	0	0	0	0	241	0	1	0	219	0	0	461
4:30 PM	0	0	1	0	0	0	0	0	0	237	0	1	1	244	0	0	484
4:45 PM	0	0	0	0	0	0	0	0	0	229	0	1	0	262	0	0	492
5:00 PM	0	0	1	0	0	0	0	0	0	243	0	0	1	237	0	0	482
5:15 PM	0	0	1	0	0	0	0	0	0	291	1	1	0	218	0	0	512
5:30 PM	0	0	0	0	0	0	0	0	0	262	1	0	0	233	0	0	496
5:45 PM	0	0	3	0	0	0	0	0	0	211	1	2	0	200	0	0	417
TOTAL VOLUMES :	NL 0	NT 0	NR 10	NU 0	SL 0	ST 0	SR 0	SU 0	EL 0	ET 1976	ER 4	EU 9	WL 3	WT 1837	WR 0	WU 0	TOTAL 3839
APPROACH %'s :	0.00%	0.00%	100.00%	0.00%					0.00%	99.35%	0.20%	0.45%	0.16%	99.84%	0.00%	0.00%	
PEAK HR :	04:45 PM - 05:45 PM																TOTAL
PEAK HR VOL :	0	0	2	0	0	0	0	0	0	1025	2	2	1	950	0	0	1982
PEAK HR FACTOR :	0.000	0.000	0.500	0.000	0.000	0.000	0.000	0.000	0.000	0.881	0.500	0.500	0.250	0.906	0.000	0.000	0.968
			0.500							0.878				0.907			

C-1

National Data & Surveying Services

Intersection Turning Movement Count

Location: Emerson Rd/CR 581 & SR 50/Cortez Blvd/Melendez Rd
City: Brooksville
Control: Signalized

Project ID: 24-120270-001
Date: 6/18/2024

Data - Total

NS/EW Streets:	Emerson Rd/CR 581				Emerson Rd/CR 581				SR 50/Cortez Blvd/Melendez Rd				SR 50/Cortez Blvd/Melendez Rd				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	0 NL	0 NT	0 NR	0 NU	0 SL	0 ST	0 SR	0 SU	0 EL	0 ET	0 ER	0 EU	0 WL	0 WT	0 WR	0 WU	
7:00 AM	18	5	7	0	0	12	6	0	4	150	13	0	2	138	1	0	356
7:15 AM	16	4	2	0	0	8	8	0	9	153	8	0	6	177	0	0	391
7:30 AM	16	5	7	0	0	8	1	0	10	156	19	0	8	199	0	0	429
7:45 AM	27	6	3	0	0	14	7	0	8	149	15	0	14	183	0	0	426
8:00 AM	13	6	3	0	1	9	5	0	9	138	16	2	13	163	0	0	378
8:15 AM	15	16	7	0	0	15	6	0	3	145	27	0	8	192	1	0	435
8:30 AM	27	8	5	0	0	8	4	0	5	150	15	0	5	213	0	0	440
8:45 AM	22	9	1	0	0	5	3	0	6	147	8	0	4	182	2	0	389
TOTAL VOLUMES :	NL 154	NT 59	NR 35	NU 0	SL 1	ST 79	SR 40	SU 0	EL 54	ET 1188	ER 121	EU 2	WL 60	WT 1447	WR 4	WU 0	TOTAL 3244
APPROACH %'s :	62.10%	23.79%	14.11%	0.00%	0.83%	65.83%	33.33%	0.00%	3.96%	87.03%	8.86%	0.15%	3.97%	95.76%	0.26%	0.00%	
PEAK HR :	07:45 AM - 08:45 AM																TOTAL
PEAK HR VOL :	82	36	18	0	1	46	22	0	25	582	73	2	40	751	1	0	1679
PEAK HR FACTOR :	0.759	0.563	0.643	0.000	0.250	0.767	0.786	0.000	0.694	0.970	0.676	0.250	0.714	0.881	0.250	0.000	0.954
	0.850				0.821				0.974				0.908				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	0 NL	0 NT	0 NR	0 NU	0 SL	0 ST	0 SR	0 SU	0 EL	0 ET	0 ER	0 EU	0 WL	0 WT	0 WR	0 WU	
4:00 PM	15	5	7	0	0	12	11	0	5	258	7	2	3	202	0	0	527
4:15 PM	15	15	6	0	0	7	7	0	5	218	11	0	2	192	3	1	482
4:30 PM	12	4	5	0	0	6	13	0	3	220	20	2	4	218	0	0	507
4:45 PM	27	20	7	0	0	5	8	0	3	201	17	0	3	227	1	0	519
5:00 PM	26	9	5	0	0	15	9	0	3	230	18	1	5	205	2	0	528
5:15 PM	20	10	3	0	1	8	10	0	4	265	19	0	8	185	0	0	533
5:30 PM	15	4	7	0	0	6	4	0	3	246	17	0	3	215	1	0	521
5:45 PM	12	14	6	0	0	5	4	0	5	192	15	1	4	183	2	0	443
TOTAL VOLUMES :	NL 142	NT 81	NR 46	NU 0	SL 1	ST 64	SR 66	SU 0	EL 31	ET 1830	ER 124	EU 6	WL 32	WT 1627	WR 9	WU 1	TOTAL 4060
APPROACH %'s :	52.79%	30.11%	17.10%	0.00%	0.76%	48.85%	50.38%	0.00%	1.56%	91.91%	6.23%	0.30%	1.92%	97.48%	0.54%	0.06%	
PEAK HR :	04:45 PM - 05:45 PM																TOTAL
PEAK HR VOL :	88	43	22	0	1	34	31	0	13	942	71	1	19	832	4	0	2101
PEAK HR FACTOR :	0.815	0.538	0.786	0.000	0.250	0.567	0.775	0.000	0.813	0.889	0.934	0.250	0.594	0.916	0.500	0.000	0.985
	0.708				0.688				0.891				0.925				

C-2

National Data & Surveying Services Intersection Turning Movement Count

Location: CR 581/Emerson Rd & SR 50/Cortez Blvd/Melendez Rd
City: Brooksville
Control: Signalized

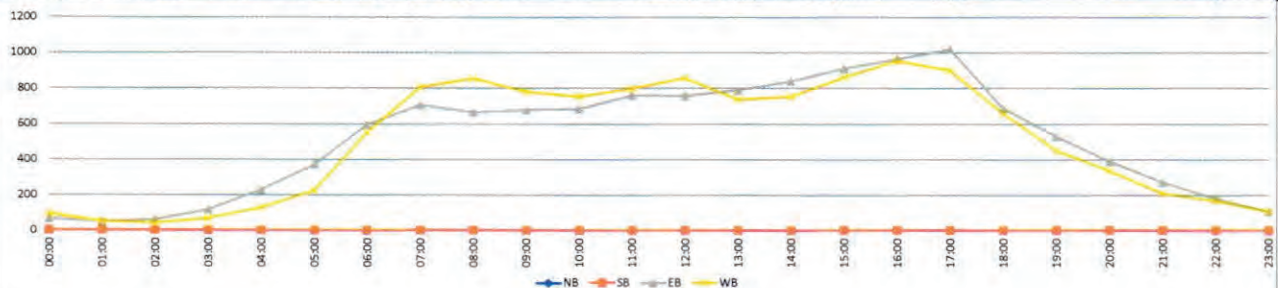
Project ID: 22-120478-001
Date: 10/19/2022

Data - Total

NS/EW Streets:		CR 581/Emerson Rd				CR 581/Emerson Rd				SR 50/Cortez Blvd/Melendez Rd				SR 50/Cortez Blvd/Melendez Rd				
AM		NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
		0 NL	0 NT	0 NR	0 NU	0 SL	0 ST	0 SR	0 SU	0 EL	0 ET	0 ER	0 EU	0 WL	0 WT	0 WR	0 WU	TOTAL
	7:00 AM	15	6	1	0	0	9	3	0	3	154	16	0	5	144	0	0	356
	7:15 AM	19	8	4	0	0	19	5	0	10	185	23	1	14	143	0	0	431
	7:30 AM	35	12	11	0	0	25	3	0	7	186	56	0	28	188	0	1	552
	7:45 AM	80	23	32	0	0	27	6	0	10	173	80	0	45	211	1	0	688
	8:00 AM	48	14	4	0	0	13	5	0	7	132	40	0	9	161	1	0	434
	8:15 AM	40	11	10	0	0	6	5	0	15	156	39	0	3	195	0	0	480
	8:30 AM	36	15	1	0	0	12	5	0	2	129	19	0	3	208	0	0	430
	8:45 AM	22	13	3	0	0	7	6	0	1	156	7	0	3	168	0	0	386
		NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :		295	102	66	0	0	118	38	0	55	1271	280	1	110	1418	2	1	3757
APPROACH %'s :		63.71%	22.03%	14.25%	0.00%	0.00%	75.64%	24.36%	0.00%	3.42%	79.09%	17.42%	0.06%	7.18%	92.62%	0.13%	0.07%	
PEAK HR :		07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :		203	60	57	0	0	71	19	0	39	647	215	0	85	755	2	1	2154
PEAK HR FACTOR :		0.634	0.652	0.445	0.000	0.000	0.657	0.792	0.000	0.650	0.870	0.672	0.000	0.472	0.895	0.500	0.250	0.783
		0.593				0.682				0.856				0.820				
Percent Heavy Veh:		2.5%	5.0%	5.3%	n/a	n/a	4.2%	15.8%	n/a	2.6%	15.5%	1.4%	n/a	0.0%	12.2%	0.0%	100.0%	9.9%
PM		NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
		0 NL	0 NT	0 NR	0 NU	0 SL	0 ST	0 SR	0 SU	0 EL	0 ET	0 ER	0 EU	0 WL	0 WT	0 WR	0 WU	TOTAL
	4:00 PM	23	15	8	0	0	10	11	0	6	219	21	0	4	213	0	0	530
	4:15 PM	17	13	5	0	0	8	13	0	4	202	24	0	7	217	2	0	512
	4:30 PM	30	13	12	0	0	9	12	0	3	211	11	1	5	214	1	0	522
	4:45 PM	26	6	6	0	0	10	15	0	5	219	21	2	7	205	1	0	523
	5:00 PM	20	7	6	0	0	3	9	0	4	227	17	1	7	248	1	0	550
	5:15 PM	31	17	10	0	0	3	9	0	7	212	21	1	6	236	0	0	553
	5:30 PM	9	7	7	0	0	8	7	0	7	214	14	0	2	198	0	0	473
	5:45 PM	22	11	1	0	0	6	10	0	6	181	8	0	2	185	1	0	433
		NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :		178	89	55	0	0	57	86	0	42	1685	137	5	40	1716	6	0	4096
APPROACH %'s :		55.28%	27.64%	17.08%	0.00%	0.00%	39.86%	60.14%	0.00%	2.25%	90.16%	7.33%	0.27%	2.27%	97.39%	0.34%	0.00%	
PEAK HR :		04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :		107	43	34	0	0	25	45	0	19	869	70	5	25	903	3	0	2148
PEAK HR FACTOR :		0.863	0.632	0.708	0.000	0.000	0.625	0.750	0.000	0.679	0.957	0.833	0.625	0.893	0.910	0.750	0.000	0.971
		0.793				0.700				0.967				0.909				
Percent Heavy Veh:		0.0%	0.0%	2.9%	n/a	n/a	0.0%	4.4%	n/a	0.0%	7.1%	1.4%	20.0%	0.0%	8.1%	0.0%	n/a	6.5%

VOLUME**SR 50/Cortez Blvd/Melendez Rd Bet Emerson Rd/CR 581 & Oxley Rd**Day: Tuesday
Date: 6/18/2024City: Brooksville
Project #: FL24_120271_001

DAILY TOTALS						NB		SB		EB		WB		Total		DAILY TOTALS					
						0		0		12,414		12,056		24,470							
15-Minutes Interval												Hourly Intervals									
TIME	NB	SB	EB	WB	TOTAL	TIME	NB	SB	EB	WB	TOTAL	TIME	NB	SB	EB	WB	TOTAL				
0:00			22	18	40	12:00			201	209	410	00:00 01:00			66	94	160				
0:15			17	26	43	12:15			194	200	394	01:00 02:00			50	49	99				
0:30			14	28	42	12:30			193	229	422	02:00 03:00			60	40	100				
0:45			13	22	35	12:45			168	216	384	03:00 04:00			117	64	181				
1:00			12	17	29	13:00			198	176	374	04:00 05:00			229	123	352				
1:15			20	11	31	13:15			191	168	359	05:00 06:00			370	222	592				
1:30			9	7	16	13:30			210	202	412	06:00 07:00			596	548	1144				
1:45			9	14	23	13:45			190	187	377	07:00 08:00			704	802	1506				
2:00			14	10	24	14:00			227	187	414	08:00 09:00			663	851	1514				
2:15			15	8	23	14:15			190	166	356	09:00 10:00			678	775	1453				
2:30			21	11	32	14:30			212	223	435	10:00 11:00			683	749	1432				
2:45			10	11	21	14:45			209	173	382	11:00 12:00			760	795	1555				
3:00			25	8	33	15:00			221	197	418	12:00 13:00			756	854	1610				
3:15			31	15	46	15:15			246	194	440	13:00 14:00			789	733	1522				
3:30			24	14	38	15:30			203	220	423	14:00 15:00			838	749	1587				
3:45			37	27	64	15:45			239	247	486	15:00 16:00			909	858	1767				
4:00			40	21	61	16:00			264	227	491	16:00 17:00			964	951	1915				
4:15			62	28	90	16:15			244	219	463	17:00 18:00			1019	898	1917				
4:30			71	42	113	16:30			236	245	481	18:00 19:00			687	655	1342				
4:45			56	32	88	16:45			220	260	480	19:00 20:00			530	446	976				
5:00			78	33	111	17:00			253	245	498	20:00 21:00			388	332	720				
5:15			98	54	152	17:15			287	217	504	21:00 22:00			271	204	475				
5:30			79	60	139	17:30			265	234	499	22:00 23:00			180	163	343				
5:45			115	75	190	17:45			214	202	416	23:00 00:00			107	101	208				
6:00			121	83	204	18:00			207	184	391	STATISTICS									
6:15			145	120	265	18:15			165	175	340		NB	SB	EB	WB	TOTAL				
6:30			166	190	356	18:30			169	173	342	Peak Period	00:00	to	12:00						
6:45			164	155	319	18:45			146	123	269	Volume			4976	5112	10088				
7:00			168	163	331	19:00			145	129	274	Peak Hour			11:00	7:45	7:45				
7:15			172	199	371	19:15			141	121	262	Peak Volume			760	869	1557				
7:30			179	219	398	19:30			131	92	223	Peak Hour Factor			0.979	0.832	0.901				
7:45			185	221	406	19:45			113	104	217										
8:00			157	187	344	20:00			127	86	213	Peak Period	12:00	to	00:00						
8:15			175	200	375	20:15			97	107	204	Volume			7438	6944	14382				
8:30			171	261	432	20:30			91	76	167	Peak Hour			16:45	16:15	16:45				
8:45			160	203	363	20:45			73	63	136	Peak Volume			1025	969	1981				
9:00			157	189	346	21:00			77	45	122	Peak Hour Factor			0.893	0.932	0.983				
9:15			164	199	363	21:15			58	63	121										
9:30			182	184	366	21:30			60	53	113	Peak Period	07:00	to	09:00						
9:45			175	203	378	21:45			76	43	119	Volume			1367	1653	3020				
10:00			151	182	333	22:00			57	43	100	Peak Hour			7:00	7:45	7:45				
10:15			199	166	365	22:15			46	49	95	Peak Volume			704	869	1557				
10:30			173	203	376	22:30			42	41	83	Peak Hour Factor			0.951	0.832	0.901				
10:45			160	198	358	22:45			35	30	65										
11:00			187	175	362	23:00			32	27	59	Peak Period	16:00	to	18:00						
11:15			186	219	405	23:15			35	21	56	Volume			1983	1849	3832				
11:30			194	187	381	23:30			27	29	56	Peak Hour			16:45	16:15	16:45				
11:45			193	214	407	23:45			13	24	37	Peak Volume			1025	969	1981				
TOTALS	0	0	4976	5112	10088	TOTALS	0	0	7438	6944	14382	Peak Hour Factor			0.893	0.932	0.983				
SPLIT %	0%	0%	49%	51%	41%	SPLIT %	0%	0%	52%	48%	59%										



VOLUME

SR 50/Cortez Blvd/Melendez Rd Bet Emerson Rd/CR 581 & Oxley Rd

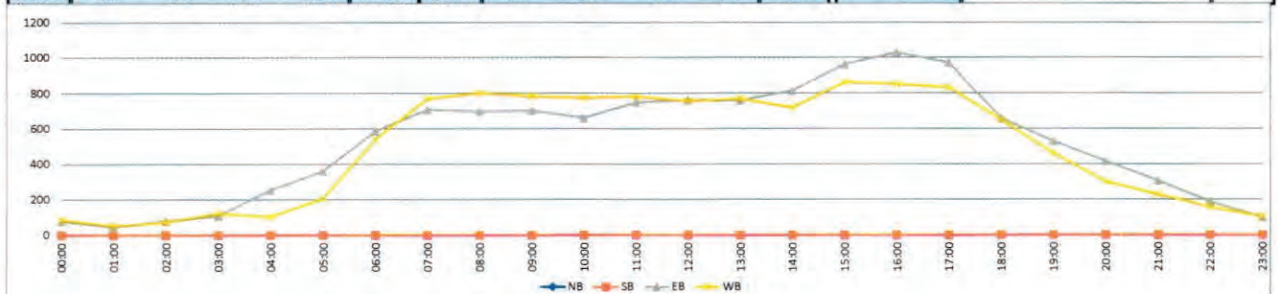
Day: Wednesday

City: Brooksville

Date: 6/19/2024

Project #: FL24_120271_001

DAILY TOTALS						NB	SB	EB	WB	Total	DAILY TOTALS							
						0	0	12,486	11,743	24,229								
15-Minutes Interval											Hourly Intervals							
TIME	NB	SB	EB	WB	TOTAL	TIME	NB	SB	EB	WB	TOTAL	TIME	NB	SB	EB	WB	TOTAL	
0:00			25	26	51	12:00			199	181	380	00:00 01:00			77	86	163	
0:15			14	23	37	12:15			191	176	367	01:00 02:00			45	52	97	
0:30			22	17	39	12:30			192	206	398	02:00 03:00			78	72	150	
0:45			16	20	36	12:45			178	189	367	03:00 04:00			105	121	226	
1:00			8	19	27	13:00			194	178	372	04:00 05:00			251	102	353	
1:15			12	15	27	13:15			184	210	394	05:00 06:00			358	205	563	
1:30			11	6	17	13:30			201	187	388	06:00 07:00			584	539	1123	
1:45			14	12	26	13:45			179	193	372	07:00 08:00			706	767	1473	
2:00			17	12	29	14:00			193	178	371	08:00 09:00			695	799	1494	
2:15			24	19	43	14:15			220	181	401	09:00 10:00			701	781	1482	
2:30			14	19	33	14:30			205	177	382	10:00 11:00			661	773	1434	
2:45			23	22	45	14:45			195	181	376	11:00 12:00			747	780	1527	
3:00			21	25	46	15:00			219	189	408	12:00 13:00			760	752	1512	
3:15			30	41	71	15:15			227	233	460	13:00 14:00			758	768	1526	
3:30			27	30	57	15:30			258	196	454	14:00 15:00			813	717	1530	
3:45			27	25	52	15:45			257	241	498	15:00 16:00			961	859	1820	
4:00			47	15	62	16:00			288	204	492	16:00 17:00			1027	849	1876	
4:15			67	30	97	16:15			240	207	447	17:00 18:00			971	831	1802	
4:30			81	24	105	16:30			230	229	459	18:00 19:00			657	648	1305	
4:45			56	33	89	16:45			269	209	478	19:00 20:00			528	460	988	
5:00			93	32	125	17:00			240	238	478	20:00 21:00			415	300	715	
5:15			68	43	111	17:15			256	224	480	21:00 22:00			304	227	531	
5:30			81	69	150	17:30			248	208	456	22:00 23:00			186	155	341	
5:45			116	61	177	17:45			227	161	388	23:00 00:00			98	100	198	
6:00			121	97	218	18:00			163	186	349	STATISTICS						
6:15			136	124	260	18:15			201	161	362		NB	SB	EB	WB	TOTAL	
6:30			156	163	319	18:30			154	153	307	Peak Period	00:00	to	12:00			
6:45			171	155	326	18:45			139	148	287	Volume				5008	5077	10085
7:00			158	155	313	19:00			148	143	291	Peak Hour				11:00	7:45	11:00
7:15			197	174	371	19:15			145	138	283	Peak Volume				747	828	1527
7:30			179	209	388	19:30			125	93	218	Peak Hour Factor				0.943	0.904	0.938
7:45			172	229	401	19:45			110	86	196							
8:00			153	175	328	20:00			117	78	195	Peak Period	12:00	to	00:00			
8:15			182	214	396	20:15			106	75	181	Volume				7478	6666	14144
8:30			182	210	392	20:30			99	77	176	Peak Hour				15:30	16:30	15:15
8:45			178	200	378	20:45			93	70	163	Peak Volume				1043	900	1904
9:00			158	181	339	21:00			83	61	144	Peak Hour Factor				0.905	0.945	0.956
9:15			183	188	371	21:15			88	68	156							
9:30			184	219	403	21:30			70	51	121	Peak Period	07:00	to	09:00			
9:45			176	193	369	21:45			63	47	110	Volume				1401	1566	2967
10:00			166	196	362	22:00			51	45	96	Peak Hour				7:00	7:45	7:45
10:15			157	193	350	22:15			48	34	82	Peak Volume				706	828	1517
10:30			178	189	367	22:30			42	42	84	Peak Hour Factor				0.896	0.904	0.946
10:45			160	195	355	22:45			45	34	79							
11:00			172	190	362	23:00			28	28	56	Peak Period	16:00	to	18:00			
11:15			189	187	376	23:15			34	22	56	Volume				1998	1680	3678
11:30			188	194	382	23:30			15	29	44	Peak Hour				16:00	16:30	16:30
11:45			198	209	407	23:45			21	21	42	Peak Volume				1027	900	1895
TOTALS	0	0	5008	5077	10085	TOTALS	0	0	7478	6666	14144	Peak Hour Factor				0.891	0.945	0.987
SPLIT %	0%	0%	50%	50%	42%	SPLIT %	0%	0%	53%	47%	58%							



2023 PEAK SEASON FACTOR CATEGORY REPORT - REPORT TYPE: ALL
 CATEGORY: 0800 HERNANDO COUNTYWIDE

WEEK	DATES	SF	MOCF: 0.96 PSCF
1	01/01/2023 - 01/07/2023	1.00	1.04
2	01/08/2023 - 01/14/2023	1.01	1.05
3	01/15/2023 - 01/21/2023	1.01	1.05
4	01/22/2023 - 01/28/2023	1.00	1.04
5	01/29/2023 - 02/04/2023	0.99	1.03
* 6	02/05/2023 - 02/11/2023	0.98	1.02
* 7	02/12/2023 - 02/18/2023	0.97	1.01
* 8	02/19/2023 - 02/25/2023	0.96	1.00
* 9	02/26/2023 - 03/04/2023	0.95	0.99
*10	03/05/2023 - 03/11/2023	0.94	0.98
*11	03/12/2023 - 03/18/2023	0.93	0.97
*12	03/19/2023 - 03/25/2023	0.94	0.98
*13	03/26/2023 - 04/01/2023	0.95	0.99
*14	04/02/2023 - 04/08/2023	0.96	1.00
*15	04/09/2023 - 04/15/2023	0.97	1.01
*16	04/16/2023 - 04/22/2023	0.97	1.01
*17	04/23/2023 - 04/29/2023	0.98	1.02
*18	04/30/2023 - 05/06/2023	0.99	1.03
19	05/07/2023 - 05/13/2023	0.99	1.03
20	05/14/2023 - 05/20/2023	1.00	1.04
21	05/21/2023 - 05/27/2023	1.01	1.05
22	05/28/2023 - 06/03/2023	1.02	1.06
23	06/04/2023 - 06/10/2023	1.04	1.08
24	06/11/2023 - 06/17/2023	1.05	1.09
25	06/18/2023 - 06/24/2023	1.05	1.09
26	06/25/2023 - 07/01/2023	1.05	1.09
27	07/02/2023 - 07/08/2023	1.05	1.09
28	07/09/2023 - 07/15/2023	1.05	1.09
29	07/16/2023 - 07/22/2023	1.05	1.09
30	07/23/2023 - 07/29/2023	1.05	1.09
31	07/30/2023 - 08/05/2023	1.06	1.10
32	08/06/2023 - 08/12/2023	1.06	1.10
33	08/13/2023 - 08/19/2023	1.06	1.10
34	08/20/2023 - 08/26/2023	1.05	1.09
35	08/27/2023 - 09/02/2023	1.04	1.08
36	09/03/2023 - 09/09/2023	1.04	1.08
37	09/10/2023 - 09/16/2023	1.03	1.07
38	09/17/2023 - 09/23/2023	1.02	1.06
39	09/24/2023 - 09/30/2023	1.01	1.05
40	10/01/2023 - 10/07/2023	1.01	1.05
41	10/08/2023 - 10/14/2023	1.00	1.04
42	10/15/2023 - 10/21/2023	1.00	1.04
43	10/22/2023 - 10/28/2023	0.99	1.03
44	10/29/2023 - 11/04/2023	0.99	1.03
45	11/05/2023 - 11/11/2023	0.99	1.03
46	11/12/2023 - 11/18/2023	0.99	1.03
47	11/19/2023 - 11/25/2023	0.99	1.03
48	11/26/2023 - 12/02/2023	0.99	1.03
49	12/03/2023 - 12/09/2023	0.99	1.03
50	12/10/2023 - 12/16/2023	1.00	1.04
51	12/17/2023 - 12/23/2023	1.00	1.04
52	12/24/2023 - 12/30/2023	1.01	1.05
53	12/31/2023 - 12/31/2023	1.01	1.05

* PEAK SEASON

09-MAR-2024 18:41:41

830UPD

7_0800_PKSEASON.TXT

FLORIDA DEPARTMENT OF TRANSPORTATION
TRANSPORTATION STATISTICS OFFICE
2023 HISTORICAL AADT REPORT

COUNTY: 08 - HERNANDO

SITE: 0042 - SR 50, WEST OF CR 581/EMERSON RD

YEAR	AADT		DIRECTION 1		DIRECTION 2	*K FACTOR	D FACTOR	T FACTOR
----	-----		-----		-----	-----	-----	-----
2023	23000 F	E	10500	W	12500	9.00	54.80	16.80
2022	21200 C	E	9700	W	11500	9.00	54.50	16.80
2021	24500 C	E	12500	W	12000	9.00	54.20	13.60
2020	22000 C	E	11000	W	11000	9.00	54.30	14.80
2019	19400 F	E	9700	W	9700	9.00	54.30	14.20
2018	23700 C	E	9500	W	9500	9.00	54.40	14.20
2017	22500 F	E	11500	W	11000	9.00	55.60	13.00
2016	21500 C	E	11000	W	10500	9.00	54.80	13.00
2015	20000 C	E	10000	W	10000	9.00	55.00	11.80
2014	19200 C	E	9600	W	9600	9.00	56.00	11.40
2013	17800 C	E	9000	W	8800	9.00	57.90	12.90
2012	18300 C	E	9200	W	9100	9.00	55.00	11.80
2011	18300 C	E	9300	W	9000	9.00	55.00	11.60
2010	18900 C	E	9500	W	9400	9.74	54.68	10.20
2009	20400 C	E	10500	W	9900	9.60	55.47	13.00
2008	21000 C	E	10500	W	10500	9.72	54.99	14.20

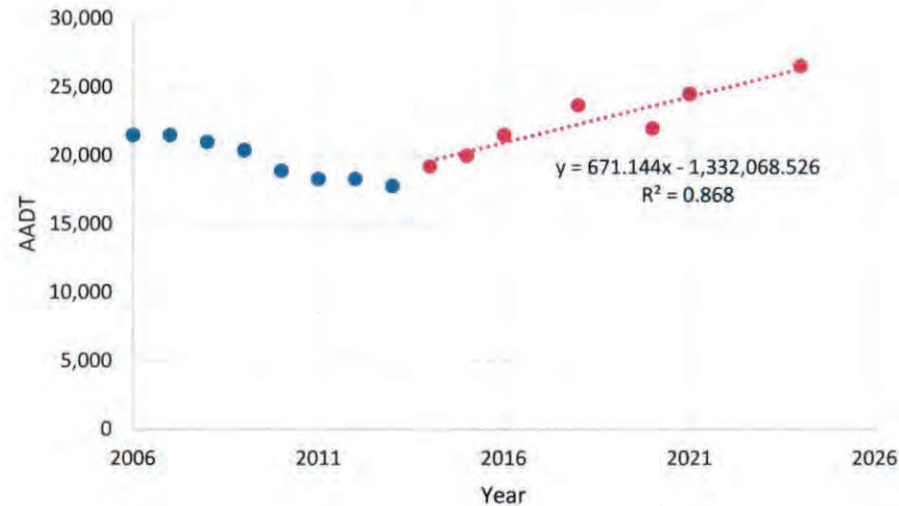
AADT FLAGS: C = COMPUTED; E = MANUAL ESTIMATE; F = FIRST YEAR ESTIMATE
 S = SECOND YEAR ESTIMATE; T = THIRD YEAR ESTIMATE; R = FOURTH YEAR ESTIMATE
 V = FIFTH YEAR ESTIMATE; 6 = SIXTH YEAR ESTIMATE; X = UNKNOWN
 *K FACTOR: STARTING WITH YEAR 2011 IS STANDARDK, PRIOR YEARS ARE K30 VALUES

Growth Rate Analysis:

FDOT Station 08-0042

SR 50 W of Emerson Rd

2006	21,500 Count
2007	21,500 Count
2008	21,000 Count
2009	20,400 Count
2010	18,900 Count
2011	18,300 Count
2012	18,300 Count
2013	17,800 Count
2014	19,200 Count
2015	20,000 Count
2016	21,500 Count
2018	23,700 Count
2020	22,000 Count
2021	24,500 Count
2024	26,542 NDS Count



2030 30,354 Est 2.72% <-- 2024 to 2030 5-Year Exponential Growth Rate
1.144 <-- 2024 to 2030 5-Year Growth Factor

From Synopsis Report:

A.M. Peak:	1,482	23,911	0.062
P.M. Peak	1,966	23,911	0.082

2023 Est Peak:	2024 AADT*K	TMC Volume	Ratio	Treatment
A.M.	1,645	1,873		Use TMC volume
P.M.	2,182	1,957		Use AADT x K

COUNTY: 08
 STATION: 0042
 DESCRIPTION: SR 50, WEST OF CR 581/EMERSON RD
 START DATE: 06/28/2021
 START TIME: 1200

TIME	DIRECTION: E					DIRECTION: W					COMBINED	
	1ST	2ND	3RD	4TH	TOTAL	1ST	2ND	3RD	4TH	TOTAL	TOTAL	
0000	28	17	13	16	74	22	20	15	24	81	155	
0100	16	16	18	12	62	12	13	9	23	57	119	
0200	10	21	22	15	68	11	7	19	18	55	123	
0300	20	33	37	35	125	9	18	11	25	63	188	
0400	37	59	97	71	264	22	42	42	41	147	411	
0500	75	91	134	130	430	42	54	53	99	248	678	
0600	131	128	150	189	598	85	93	164	136	478	1076	
0700	160	168	172	177	677	154	211	190	232	787	1464	
0800	169	161	135	179	644	163	195	219	188	765	1409	
0900	146	130	170	140	586	185	176	192	166	719	1305	
1000	171	184	157	188	700	163	197	199	219	778	1478	
1100	192	205	186	190	773	167	197	199	208	771	1544	
1200	180	199	187	173	739	200	202	184	203	789	1528	
1300	181	174	216	182	753	214	207	182	201	804	1557	
1400	165	202	167	210	744	202	181	214	167	764	1508	
1500	214	225	215	228	882	181	182	181	228	772	1654	
1600	250	223	243	254	970	244	237	222	261	964	1934	
1700	261	247	233	189	930	229	242	239	233	943	1873	
1800	175	178	149	130	632	215	194	138	125	672	1304	
1900	133	132	119	128	512	136	123	101	94	454	966	
2000	112	89	78	87	366	101	66	78	56	301	667	
2100	86	71	49	37	243	55	48	60	37	200	443	
2200	61	36	40	24	161	53	37	37	28	155	316	
2300	34	33	18	15	100	31	26	29	25	111	211	
24-HOUR TOTALS:					12033						11878	23911

PEAK VOLUME INFORMATION				COMBINED DIRECTIONS			
DIRECTION: E		DIRECTION: W		DIRECTION: E		DIRECTION: W	
HOUR	VOLUME	HOUR	VOLUME	HOUR	VOLUME	HOUR	VOLUME
A.M.	645	689	745	809	715	1482	
P.M.	1630	1005	1645	971	1645	1966	
DAILY	1630	1005	1645	971	1645	1966	

TRUCK PERCENTAGE 14.34 13.64 13.99

CLASSIFICATION SUMMARY DATABASE

DIR	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	TOTTRK	TOTVOL
E	40	7182	3086	14	432	179	31	368	602	89	3	2	5	0	0	1725	12033
W	35	7145	3078	9	422	122	71	376	525	88	2	2	3	0	0	1620	11878

Traffic Volume Work-up

Location: SR 50 (Cortez Blvd) @ Oxley Rd

Date: 6/8/2024

Observer: National Data Services

Weather: Clear

	Northbound (Oxley Rd)			Southbound (none)			Eastbound (SR 50/Cortez)			Westbound (SR 50/Cortez)			Totals
	L	T	R	L	T	R	L	T	R	L	T	R	
7:00 AM	0	0	0	0	0	0	1	166	0	0	160	0	327
7:15 AM	0	0	2	0	0	0	7	175	0	0	201	0	385
7:30 AM	0	0	1	0	0	0	3	177	0	0	215	0	396
7:45 AM	0	0	0	0	0	0	4	176	0	1	219	0	400
8:00 AM	0	0	0	0	0	0	3	162	0	0	183	0	348
8:15 AM	0	0	0	0	0	0	1	176	0	0	196	0	373
8:30 AM	0	0	0	0	0	0	2	169	0	0	261	0	432
8:45 AM	0	0	0	0	0	0	4	160	0	0	207	0	371

Pk Hr Begins:

7:45 AM 0 0 0 0 0 0 10 683 0 1 859 0 1,553

Seasonal Factor: 1.09 Week of Count: 25 AADT*K Adjustment: 1.00

100th HHR:	0	0	0	0	0	0	11	744	0	1	1,045	0	1,693
Ins:	0			0			755			1,046			
Outs:	11			1			744			1,045			

Vested Trips:

A													0
B													0
Tot Vest:	0	0	0	0	0	0	0	0	0	0	0	0	0

Background Growth:

Rate: 2.721% /yr

Number of years: 6

Vehicles:	0	0	0	0	0	0	2	131	0	0	183	0	296
Total Growth:	0	0	0	0	0	0	2	131	0	0	183	0	296
Tot BVol:	0	0	0	0	0	0	13	875	0	1	1,228	0	1,989

Ratio to Existing: 1.17

Development Trips: A.M. Peak Hr Trip Gen: 105 D= 0.31 In

% Assign:			30.4%					44.0%	20.8%	9.6%	64.8%		
Direction:			Out					In	In	In	Out		
Volume:	0	0	26	0	0	0	0	17	8	4	56	0	112

Total Vol: 0 0 26 0 0 0 13 892 8 5 1,284 0 2,229

Ratio to Existing: 1.32

Traffic Volume Work-up

Location: SR 50 (Cortez Blvd) @ Emerson Rd

Date: 6/8/2024

Observer: National Data Services

Weather: Clear

	Northbound (Emerson Rd)			Southbound (Emerson Rd)			Eastbound (SR 50/Cprtez)				Westbound (SR 50/Cortez)			Totals
	L	T	R	L	T	R	U	L	T	R	L	T	R	
7:00 AM	15	6	7	0	12	6	0	4	150	16	5	138	1	360
7:15 AM	19	8	4	0	19	8	0	9	153	23	14	177	0	434
7:30 AM	35	12	11	0	25	1	0	10	156	56	29	199	0	534
7:45 AM	80	23	32	0	27	7	0	8	149	80	45	183	0	634
8:00 AM	48	14	4	1	13	5	2	9	138	40	13	163	0	450
8:15 AM	40	11	10	0	15	6	0	3	145	39	8	192	1	470
8:30 AM	36	15	5	0	12	4	0	5	150	19	5	213	0	464
8:45 AM	22	13	3	0	7	3	0	6	147	8	4	182	2	397

Pk Hr Begins:

7:30 AM 203 60 57 1 80 19 2 30 588 215 95 737 1 2,088

Seasonal Factor: 1.09

Week of Count: 25

AADT*K Adjustment:

1.00

100th HHR:	221	65	62	1	87	21	2	33	641	234	104	803	1	2,276
------------	-----	----	----	---	----	----	---	----	-----	-----	-----	-----	---	-------

Ins: 349

109

910

908

Outs: 69

425

704

1,045

Vested Trips:

A														0
B														0
Tot Vest:	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Background Growth:

Rate: 2.7% /yr

Number of years:

6 5

Vehicles:	32	10	9	0	13	3	0	4	92	34	14	116	0	327
Total Growth:	32	10	9	0	13	3	0	4	92	34	14	116	0	327
Tot BVol:	253	75	71	1	100	24	2	37	733	268	118	919	1	2,603

Ratio to Existing: 1.25

Development Trips:

A.M. Peak Hr Trip Gen:

105

D=

0.31

In

% Assign:	44.0%	14.4%	6.0%		14.4%	6.4%	20.8%	6.4%	3.0%	44.0%	6.3%	3.0%		
Direction:	Out	Out	Out		In	In	Out	Out	Out	In	In	In		
Volume:	38	13	5	0	6	2	18	6	3	17	2	1	0	111

Total Vol: 291 88 76 1 106 26 20 43 736 285 120 920 1 2,713

Ratio to Existing: 1.19

C-11

Traffic Volume Work-up

Location: Emerson @ Site Driveway (East)

Date: 6/8/2024

Observer: National Data Services

Weather: Clear

	Northbound			Southbound			Eastbound			Westbound			Totals
	L	T	R	L	T	R	L	T	R	L	T	R	
4:00 PM													0
4:15 PM													0
4:30 PM													0
4:45 PM	BUILT FROM SR 50 @ EMERSON												0
5:00 PM													0
5:15 PM													0
5:30 PM													0
5:45 PM													0

Pk Hr Begins:

1:30 PM 0 0 0 0 0 0 0 0 0 0 0 0

Seasonal Factor: 1.09 Week of Count: 25 AADT*K Adjustment: 1.00

100th HHR:	0	349	0	0	425	0	0	0	0	0	0	0	0
------------	---	-----	---	---	-----	---	---	---	---	---	---	---	---

Ins: 349 425 0 0

Outs: 349 425 0 0

Background Growth: Rate: 2.6% /yr Number of years: 6

Vehicles:	0	57	0	0	69	0	0	0	0	0	0	0	0
Total Growth:	0	57	0	0	69	0	0	0	0	0	0	0	0
Tot BVol:	0	406	0	0	494	0	0	0	0	0	0	0	0

Ratio to Existing: #DIV/0!

Development Trips: A.M. Peak Hr Trip Gen: 105 D= 0.31 In

% Assign:	3.7%					63.5%	63.5%		3.7%				
Direction:	In					In	Out		Out				
Volume:	1	0	0	0	0	25	55	0	3	0	0	0	85

Total Vol: 1 406 0 0 494 25 55 0 3 0 0 0 985

Ratio to Existing: #DIV/0!

Source: WEO, PE, LLC

C:\WEO-PE\Projects\137.02-NVR-Emerson Oaks\3. Analysis\Synchro\AM TMC Worksheets 20240612.xlsm



Location: Oxley @ Site Driveway (West)

Date: 6/8/2024

Observer: National Data Services

Weather: Clear

	Northbound (Site Dr)			Southbound			Eastbound (Parkway Bl)			Westbound (Parkway Bl)			Totals
	L	T	R	L	T	R	L	T	R	L	T	R	
7:00 AM													0
7:15 AM													0
7:30 AM													0
7:45 AM	BUILT FROM SR 50 @ OXLEY												0
8:00 AM													0
8:15 AM													0
8:30 AM													0
8:45 AM													0

Pk Hr Begins:

1:30 PM 0 0 0 0 0 0 0 0 0 0 0 0 0

Seasonal Factor: 1.09 Week of Count: 25 AADT*K Adjustment: 1.00

100th HHR:	0	0	0	0	1	0	0	0	0	0	0	0	1
------------	---	---	---	---	---	---	---	---	---	---	---	---	---

Ins: 0 1 0 0

Outs: 0 1 0 0

Background Growth:

2.6%

Number of years: 6

Vehicles:	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Growth:	0	0	0	0	0	0	0	0	0	0	0	0	0
Tot BVol:	0	0	0	0	1	0	0	0	0	0	0	0	1

Development Trips:

A.M. Peak Hr Trip Gen:

105

D=

0.31

In

% Assign:			1.6%	30.2%						1.6%		30.2%	
Direction:			In	In						Out		Out	
Volume:	0	0	1	12	0	0	0	0	0	1	0	26	40

Total Vol: 0 0 1 12 1 0 0 0 0 1 0 26 41

Source: WEO, PE, LLC

C:\WEO-PE\Projects\137.02-NVR-Emerson Oaks\3. Analysis\Synchro\AM TMC Worksheets 20240612.xlsm



Traffic Volume Work-up

Location: SR 50 (Cortez Blvd) @ Oxley Rd

Date: 6/18/2024

Observer: National Data Services

Weather: Clear

	Northbound (Oxley Rd)			Southbound (none)			Eastbound (SR 50/Cortez)			Westbound (SR 50/Cortez)			Totals
	L	T	R	L	T	R	L	T	R	L	T	R	
4:00 PM	0	0	4	0	0	0	3	262	1	1	224	0	495
4:15 PM	0	0	0	0	0	0	1	241	0	0	219	0	461
4:30 PM	0	0	1	0	0	0	1	237	0	1	244	0	484
4:45 PM	0	0	0	0	0	0	1	229	0	0	262	0	492
5:00 PM	0	0	1	0	0	0	0	243	0	1	237	0	482
5:15 PM	0	0	1	0	0	0	1	291	1	0	218	0	512
5:30 PM	0	0	0	0	0	0	0	262	1	0	233	0	496
5:45 PM	0	0	3	0	0	0	2	211	1	0	200	0	417

Pk Hr Begins:

4:45 PM 0 0 2 0 0 0 2 1025 2 1 950 0 1,982

Seasonal Factor: 1.09

Week of Count: 25

AADT*K Adjustment: 1.01

100th HHr:	0	0	2	0	0	0	2	1,131	2	1	1,083	0	2,186
Ins:	2			0			1,135			1,084			
Outs:	2			3			1,133			1,083			

Vested Trips:

A													0
B													0
Tot Vest:	0	0	0	0	0	0	0	0	0	0	0	0	0

Background Growth:

Rate: 2.72% /yr

Number of years: 6

Vehicles:	0	0	1	0	0	0	1	197	1	0	190	0	382
Total Growth:	0	0	1	0	0	0	1	197	1	0	190	0	382
Tot BVol:	0	0	3	0	0	0	3	1,328	3	1	1,273	0	2,568

Ratio to Existing: 1.17

Development Trips:

P.M. Peak Hr Trip Gen:

126

D= 0.57

In

% Assign:			30.4%					44.0%	20.8%	9.6%	64.8%		
Direction:			Out					In	In	In	Out		
Volume:	0	0	16	0	0	0	0	32	15	7	35	0	105

Total Vol: 0 0 19 0 0 0 3 1,360 18 8 1,308 0 2,716

Ratio to Existing: 1.24

C-14

Traffic Volume Work-up

Location: SR 50 (Cortez Blvd) @ Emerson Rd

Date: 10/19/2022

Observer: National Data Services

Weather: Clear

	Northbound (Emerson Rd)			Southbound (Emerson Rd)			Eastbound (SR 50/Cprtez)				Westbound (SR 50/Cortez)			Totals
	L	T	R	L	T	R	U	L	T	R	L	T	R	
4:00 PM	23	5	8	0	12	11	2	5	258	7	3	202	0	536
4:15 PM	17	15	5	0	7	7	0	5	218	11	3	192	3	483
4:30 PM	30	4	12	0	6	13	2	3	220	20	4	218	0	532
4:45 PM	26	20	6	0	5	8	0	3	201	17	3	227	1	517
5:00 PM	20	9	6	0	15	9	1	3	230	18	5	205	2	523
5:15 PM	31	10	10	1	8	10	0	4	265	19	8	185	0	551
5:30 PM	9	4	7	0	6	4	0	3	246	17	3	215	1	515
5:45 PM	22	14	1	0	5	4	1	5	192	15	4	183	2	448

Pk Hr Begins:

4:30 PM 107 43 34 1 34 40 3 13 916 74 20 835 3 2,123

Seasonal Factor: 1.09

Week of Count: 25

AADT*K Adjustment:

1.01

100th HHr:	118	47	38	1	38	44	3	14	1,010	82	22	921	3	2,314
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Ins:

203

83

1,110

946

Outs:

54

141

1,049

1,083

Vested Trips:

A														0
B														0
Tot Vest:	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Background Growth:

Rate: 2.7% /yr

Number of years:

6 5

Vehicles:	17	7	5	0	5	6	1	2	146	11	3	132	1	332
Total Growth:	17	7	5	0	5	6	1	2	146	11	3	132	1	332
Tot BVol:	135	54	43	1	43	50	4	16	1,156	93	25	1,053	4	2,646

Ratio to Existing: 1.25

Development Trips:

P.M. Peak Hr Trip Gen:

126

D=

0.57

In

% Assign:	44.0%	14.4%	6.0%		14.4%	6.4%	20.8%	6.4%	3.0%	44.0%	6.3%	3.0%		
Direction:	Out	Out	Out		In	In	Out	Out	Out	In	In	In		
Volume:	24	8	3	0	10	5	11	3	2	32	5	2	0	104

Total Vol: 159 62 46 1 53 55 15 19 1,158 125 30 1,055 4 2,781

Ratio to Existing: 1.20

Source: WEO, PE, LLC

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C-15

Traffic Volume Work-up

Location: Emerson @ Site Driveway (East)

Date: 10/17/2022

Observer: National Data Services

Weather: Clear

	Northbound			Southbound			Eastbound			Westbound			Totals
	L	T	R	L	T	R	L	T	R	L	T	R	
4:00 PM													0
4:15 PM													0
4:30 PM													0
4:45 PM	BUILT FROM SR 50 @ EMERSON												0
5:00 PM													0
5:15 PM													0
5:30 PM													0
5:45 PM													0

Pk Hr Begins:

10:30 AM 0 0 0 0 0 0 0 0 0 0 0 0 0

Seasonal Factor: 1.09

Week of Count:

25

AADT*K Adjustment:

1.08

100th HHR:	0	203	0	0	141	0	0	0	0	0	0	0	0
Ins:		203			141			0			0		
Outs:		203			141			0			0		

Background Growth:

Rate: 2.7% /yr

Number of years:

6

Vehicles:	0	35	0	0	25	0	0	0	0	0	0	0	0
Total Growth:	0	35	0	0	25	0	0	0	0	0	0	0	0
Tot BVol:	0	238	0	0	166	0	0	0	0	0	0	0	0

Ratio to Existing: #DIV/0!

Development Trips:

P.M. Peak Hr Trip Gen:

126

D=

0.57

In

% Assign:	3.7%					63.5%	63.5%		3.7%				
Direction:	In					In	Out		Out				
Volume:	3	0	0	0	0	46	34	0	2	0	0	0	85

Total Vol: 3 238 0 0 166 46 34 0 2 0 0 0 489

Ratio to Existing: #DIV/0!

Source: WEO, PE, LLC

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Location: Oxley @ Site Driveway (West)

Date: 10/17/2022

Observer: National Data Services

Weather: Clear

	Northbound (Site Dr)			Southbound			Eastbound (Parkway Bl)			Westbound (Parkway Bl)			
	L	T	R	L	T	R	L	T	R	L	T	R	Totals
4:00 PM													0
4:15 PM													0
4:30 PM													0
4:45 PM	BUILT FROM SR 50 @ OXLEY												0
5:00 PM													0
5:15 PM													0
5:30 PM													0
5:45 PM													0

Pk Hr Begins:

10:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
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Seasonal Factor: 1.09 Week of Count: 25 AADT*K Adjustment: 1.08

100th HHR:	0	2	0	0	3	0	0	0	0	0	0	0	6
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Ins: 2 3 0 0

Outs: 2 3 0 0

Background Growth:

2.7%

Number of years: 6

Vehicles:	0	1	0	0	1	0	0	0	0	0	0	0	0
Total Growth:	0	1	0	0	1	0	0	0	0	0	0	0	0
Tot BVOL:	0	3	0	0	4	0	0	0	0	0	0	0	6

Development Trips: P.M. Peak Hr Trip Gen: 126 D= 0.57 In

% Assign:			1.6%	30.2%						1.6%		30.2%	
Direction:			In	In						Out		Out	
Volume:	0	0	1	22	0	0	0	0	0	1	0	16	40

Total Vol:	0	3	1	22	4	0	0	0	0	1	0	16	47
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Source: WEO, PE, LLC

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Appendix D
2024 Existing Conditions
Intersection Capacity Analysis
Worksheets

Intersection

Int Delay, s/veh 0

Movement	EBU	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔	↕↕		↕	↕↕		↕
Traffic Vol, veh/h	0	744	0	1	1045	0	0
Future Vol, veh/h	0	744	0	1	1045	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	-	None	-	None	-	None
Storage Length	400	-	-	450	-	-	0
Veh in Median Storage, #	-	0	-	-	0	0	-
Grade, %	-	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92	92
Heavy Vehicles, %	55	12	0	25	11	0	0
Mvmt Flow	0	809	0	1	1136	0	0

Major/Minor	Major1			Major2			Minor1
Conflicting Flow All	1136	0	0	809	0	-	404
Stage 1	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-
Critical Hdwy	7.5	-	-	4.6	-	-	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-
Follow-up Hdwy	3.05	-	-	2.45	-	-	3.3
Pot Cap-1 Maneuver	172	-	-	680	-	0	601
Stage 1	-	-	-	-	-	0	-
Stage 2	-	-	-	-	-	0	-
Platoon blocked, %	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	172	-	-	680	-	-	601
Mov Cap-2 Maneuver	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s/v	0	0.01	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBU	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	172	-	-	680	-
HCM Lane V/C Ratio	-	-	-	-	0.002	-
HCM Control Delay (s/veh)	0	0	-	-	10.3	-
HCM Lane LOS	A	A	-	-	B	-
HCM 95th %tile Q(veh)	-	0	-	-	0	-

HCM 7th Signalized Intersection Summary 2: Emerson Rd & SR 50 (Cortez Rd)

2024 AM Existing
07/11/2024

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	35	641	234	104	803	1	221	65	62	1	87	21
Future Volume (veh/h)	35	641	234	104	803	1	221	65	62	1	87	21
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	1663	1885	1885	1722	1900	1856	1826	1826	1900	1841	1663
Adj Flow Rate, veh/h	38	697	254	113	873	1	240	71	67	1	95	23
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	3	16	1	1	12	0	3	5	5	0	4	16
Cap, veh/h	330	1483	750	364	1595	785	352	231	218	336	383	93
Arrive On Green	0.03	0.47	0.47	0.05	0.49	0.49	0.27	0.27	0.27	0.27	0.27	0.27
Sat Flow, veh/h	1767	3159	1598	1795	3272	1610	1264	864	815	1271	1432	347
Grp Volume(v), veh/h	38	697	254	113	873	1	240	0	138	1	0	118
Grp Sat Flow(s), veh/h/ln	1767	1580	1598	1795	1636	1610	1264	0	1679	1271	0	1778
Q Serve(g_s), s	1.0	13.5	9.0	2.9	16.8	0.0	16.6	0.0	5.9	0.1	0.0	4.7
Cycle Q Clear(g_c), s	1.0	13.5	9.0	2.9	16.8	0.0	21.2	0.0	5.9	6.0	0.0	4.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.49	1.00		0.19
Lane Grp Cap(c), veh/h	330	1483	750	364	1595	785	352	0	449	336	0	475
V/C Ratio(X)	0.12	0.47	0.34	0.31	0.55	0.00	0.68	0.00	0.31	0.00	0.00	0.25
Avail Cap(c_a), veh/h	370	1483	750	403	1595	785	427	0	549	412	0	581
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	12.7	16.3	15.1	12.2	16.1	11.8	34.2	0.0	26.3	28.7	0.0	25.9
Incr Delay (d2), s/veh	0.2	1.1	1.2	0.5	1.4	0.0	3.4	0.0	0.4	0.0	0.0	0.3
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	4.5	3.1	1.0	5.7	0.0	5.1	0.0	2.3	0.0	0.0	1.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	12.8	17.3	16.3	12.7	17.5	11.8	37.6	0.0	26.7	28.7	0.0	26.1
LnGrp LOS	B	B	B	B	B	B	D		C	C		C
Approach Vol, veh/h		989			987			378			119	
Approach Delay, s/veh		16.9			16.9			33.6			26.2	
Approach LOS		B			B			C			C	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.4	51.0		29.7	11.0	49.3		29.7				
Change Period (Y+Rc), s	6.3	7.1		5.6	6.3	7.1		5.6				
Max Green Setting (Gmax), s	5.1	36.5		29.4	6.7	34.9		29.4				
Max Q Clear Time (g_c+I1), s	3.0	18.8		23.2	4.9	15.5		8.0				
Green Ext Time (p_c), s	0.0	5.2		0.8	0.0	5.0		0.5				
Intersection Summary												
HCM 7th Control Delay, s/veh			19.9									
HCM 7th LOS			B									

Intersection

Int Delay, s/veh 0

Movement	EBU	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔	↕		↕	↕		↕
Traffic Vol, veh/h	0	1131	2	1	1083	0	2
Future Vol, veh/h	0	1131	2	1	1083	0	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	-	None	-	None	-	None
Storage Length	400	-	-	450	-	-	0
Veh in Median Storage, #	-	0	-	-	0	0	-
Grade, %	-	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92	92
Heavy Vehicles, %	55	12	0	25	11	0	0
Mvmt Flow	0	1229	2	1	1177	0	2

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	1177	0	0	1232	0	- 616
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	7.5	-	-	4.6	-	- 6.9
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	3.05	-	-	2.45	-	- 3.3
Pot Cap-1 Maneuver	161	-	-	450	-	0 439
Stage 1	-	-	-	-	-	0 -
Stage 2	-	-	-	-	-	0 -
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	161	-	-	450	-	- 439
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s/v	0	0.01	13.25
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBU	EBT	EBR	WBL	WBT
Capacity (veh/h)	439	161	-	-	450	-
HCM Lane V/C Ratio	0.005	-	-	-	0.002	-
HCM Control Delay (s/veh)	13.2	0	-	-	13	-
HCM Lane LOS	B	A	-	-	B	-
HCM 95th %tile Q(veh)	0	0	-	-	0	-

HCM 7th Signalized Intersection Summary 2: Emerson Rd & SR 50 (Cortez Rd)

2024 PM Existing
07/11/2024

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	17	1010	82	22	921	3	118	47	38	1	38	44
Future Volume (veh/h)	17	1010	82	22	921	3	118	47	38	1	38	44
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	1663	1885	1885	1722	1900	1856	1826	1826	1900	1841	1663
Adj Flow Rate, veh/h	18	1098	89	24	1001	3	128	51	41	1	41	48
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	3	16	1	1	12	0	3	5	5	0	4	16
Cap, veh/h	353	1885	953	307	1968	969	236	157	126	238	129	151
Arrive On Green	0.02	0.60	0.60	0.03	0.60	0.60	0.17	0.17	0.17	0.17	0.17	0.17
Sat Flow, veh/h	1767	3159	1598	1795	3272	1610	1298	937	753	1325	773	905
Grp Volume(v), veh/h	18	1098	89	24	1001	3	128	0	92	1	0	89
Grp Sat Flow(s), veh/h/ln	1767	1580	1598	1795	1636	1610	1298	0	1690	1325	0	1678
Q Serve(g_s), s	0.4	19.3	2.1	0.5	15.8	0.1	8.7	0.0	4.3	0.1	0.0	4.2
Cycle Q Clear(g_c), s	0.4	19.3	2.1	0.5	15.8	0.1	12.9	0.0	4.3	4.4	0.0	4.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.45	1.00		0.54
Lane Grp Cap(c), veh/h	353	1885	953	307	1968	969	236	0	283	238	0	281
V/C Ratio(X)	0.05	0.58	0.09	0.08	0.51	0.00	0.54	0.00	0.33	0.00	0.00	0.32
Avail Cap(c_a), veh/h	417	1885	953	363	1968	969	270	0	327	273	0	324
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	8.0	11.2	7.8	8.7	10.3	7.2	38.6	0.0	33.0	34.9	0.0	33.0
Incr Delay (d2), s/veh	0.1	1.3	0.2	0.1	0.9	0.0	1.9	0.0	0.7	0.0	0.0	0.6
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	5.7	0.6	0.1	4.7	0.0	2.7	0.0	1.7	0.0	0.0	1.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	8.1	12.5	7.9	8.8	11.2	7.2	40.5	0.0	33.7	34.9	0.0	33.6
LnGrp LOS	A	B	A	A	B	A	D		C	C		C
Approach Vol, veh/h		1205			1028			220			90	
Approach Delay, s/veh		12.1			11.2			37.7			33.6	
Approach LOS		B			B			D			C	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.1	61.2		20.6	8.6	60.8		20.6				
Change Period (Y+Rc), s	6.3	7.1		5.6	6.3	7.1		5.6				
Max Green Setting (Gmax), s	5.1	48.5		17.4	5.1	48.5		17.4				
Max Q Clear Time (g_c+I1), s	2.4	17.8		14.9	2.5	21.3		6.4				
Green Ext Time (p_c), s	0.0	7.3		0.2	0.0	8.4		0.2				
Intersection Summary												
HCM 7th Control Delay, s/veh			14.7									
HCM 7th LOS			B									

Appendix E

2030 Intersection Capacity Analysis

Worksheets

HCM 7th TWSC
1: Oxley Rd & SR 50 (Cortez Rd)

2030 AM Ex
07/11/2024

Intersection							
Int Delay, s/veh	0.2						
Movement	EBU	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↰	↱↰		↱	↱↰		↱
Traffic Vol, veh/h	0	892	8	5	1284	0	26
Future Vol, veh/h	0	892	8	5	1284	0	26
Conflicting Peds, #/hr	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	-	None	-	None	-	None
Storage Length	400	-	-	450	-	-	0
Veh in Median Storage, #	-	0	-	-	0	0	-
Grade, %	-	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92	92
Heavy Vehicles, %	55	12	0	25	11	0	0
Mvmt Flow	0	970	9	5	1396	0	28

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	1396	0	0	978	0	489
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	7.5	-	-	4.6	-	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	3.05	-	-	2.45	-	3.3
Pot Cap-1 Maneuver	110	-	-	577	-	530
Stage 1	-	-	-	-	0	-
Stage 2	-	-	-	-	0	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	110	-	-	577	-	530
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s/v	0	0.04	12.17
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBU	EBT	EBR	WBL	WBT
Capacity (veh/h)	530	110	-	-	577	-
HCM Lane V/C Ratio	0.053	-	-	-	0.009	-
HCM Control Delay (s/veh)	12.2	0	-	-	11.3	-
HCM Lane LOS	B	A	-	-	B	-
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-

HCM 7th Signalized Intersection Summary
2: Emerson Rd & SR 50 (Cortez Rd)

2030 AM Ex
07/11/2024

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	63	736	285	120	920	1	291	88	76	1	106	26
Future Volume (veh/h)	63	736	285	120	920	1	291	88	76	1	106	26
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	1663	1885	1885	1722	1900	1856	1826	1826	1900	1841	1663
Adj Flow Rate, veh/h	68	800	310	130	1000	1	316	96	83	1	115	28
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	3	16	1	1	12	0	3	5	5	0	4	16
Cap, veh/h	245	1247	630	288	1346	662	418	300	260	389	475	116
Arrive On Green	0.05	0.39	0.39	0.06	0.41	0.41	0.33	0.33	0.33	0.33	0.33	0.33
Sat Flow, veh/h	1767	3159	1598	1795	3272	1610	1235	904	781	1224	1430	348
Grp Volume(v), veh/h	68	800	310	130	1000	1	316	0	179	1	0	143
Grp Sat Flow(s),veh/h/ln	1767	1580	1598	1795	1636	1610	1235	0	1685	1224	0	1778
Q Serve(g_s), s	2.0	18.5	13.1	3.8	23.3	0.0	22.5	0.0	7.1	0.1	0.0	5.3
Cycle Q Clear(g_c), s	2.0	18.5	13.1	3.8	23.3	0.0	27.7	0.0	7.1	7.2	0.0	5.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.46	1.00		0.20
Lane Grp Cap(c), veh/h	245	1247	630	288	1346	662	418	0	560	389	0	591
V/C Ratio(X)	0.28	0.64	0.49	0.45	0.74	0.00	0.76	0.00	0.32	0.00	0.00	0.24
Avail Cap(c_a), veh/h	265	1247	630	291	1346	662	425	0	569	396	0	601
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	17.7	22.1	20.5	16.9	22.5	15.6	31.9	0.0	22.5	25.1	0.0	21.8
Incr Delay (d2), s/veh	0.6	2.5	2.7	1.1	3.7	0.0	7.4	0.0	0.3	0.0	0.0	0.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	6.5	4.8	1.5	8.6	0.0	7.1	0.0	2.7	0.0	0.0	2.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	18.3	24.6	23.2	18.0	26.2	15.6	39.3	0.0	22.8	25.1	0.0	22.0
LnGrp LOS	B	C	C	B	C	B	D		C	C		C
Approach Vol, veh/h	1178			1131			495			144		
Approach Delay, s/veh	23.9			25.2			33.4			22.1		
Approach LOS	C			C			C			C		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.4	44.1		35.5	11.9	42.6		35.5				
Change Period (Y+Rc), s	6.3	7.1		5.6	6.3	7.1		5.6				
Max Green Setting (Gmax), s	5.1	35.5		30.4	5.7	34.9		30.4				
Max Q Clear Time (g_c+l1), s	4.0	25.3		29.7	5.8	20.5		9.2				
Green Ext Time (p_c), s	0.0	4.5		0.2	0.0	5.3		0.6				
Intersection Summary												
HCM 7th Control Delay, s/veh	25.9											
HCM 7th LOS	C											

HCM 7th TWSC
3: Emerson Rd & Emerson Oaks

2030 AM Ex
07/11/2024

Intersection

Int Delay, s/veh 1.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	Y			↑	↑	
Traffic Vol, veh/h	55	3	1	406	494	25
Future Vol, veh/h	55	3	1	406	494	25
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	4	2	0
Mvmt Flow	60	3	1	441	537	27

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	994	551	564
Stage 1	551	-	-
Stage 2	443	-	-
Critical Hdwy	6.4	6.2	4.1
Critical Hdwy Stg 1	5.4	-	-
Critical Hdwy Stg 2	5.4	-	-
Follow-up Hdwy	3.5	3.3	2.2
Pot Cap-1 Maneuver	274	538	1018
Stage 1	582	-	-
Stage 2	651	-	-
Platoon blocked, %			
Mov Cap-1 Maneuver	274	538	1018
Mov Cap-2 Maneuver	274	-	-
Stage 1	581	-	-
Stage 2	651	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v21.49		0.02	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	4	-	281	-	-
HCM Lane V/C Ratio	0.001	-	0.225	-	-
HCM Control Delay (s/veh)	8.5	0	21.5	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0	-	0.8	-	-

Intersection

Int Delay, s/veh 7.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W		T			T
Traffic Vol, veh/h	1	26	0	1	12	1
Future Vol, veh/h	1	26	0	1	12	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	1	28	0	1	13	1

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	28	1	0
Stage 1	1	-	-
Stage 2	27	-	-
Critical Hdwy	6.4	6.2	4.1
Critical Hdwy Stg 1	5.4	-	-
Critical Hdwy Stg 2	5.4	-	-
Follow-up Hdwy	3.5	3.3	2.2
Pot Cap-1 Maneuver	992	1090	1635
Stage 1	1028	-	-
Stage 2	1001	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	984	1090	1635
Mov Cap-2 Maneuver	984	-	-
Stage 1	1028	-	-
Stage 2	993	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	8.41	0	6.66
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	1086	1634
HCM Lane V/C Ratio	-	-	0.027	0.008
HCM Control Delay (s/veh)	-	-	8.4	7.2
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0

HCM 7th TWSC
1: Oxley Rd & SR 50 (Cortez Rd)

2030 PM Ex
07/11/2024

Intersection

Int Delay, s/veh 0.2

Movement	EBU	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↱	↱↲		↲	↱↱		↲
Traffic Vol, veh/h	0	1360	18	8	1308	0	19
Future Vol, veh/h	0	1360	18	8	1308	0	19
Conflicting Peds, #/hr	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	-	None	-	None	-	None
Storage Length	400	-	-	450	-	-	0
Veh in Median Storage, #	-	0	-	-	0	0	-
Grade, %	-	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92	92
Heavy Vehicles, %	55	12	0	25	11	0	0
Mvmt Flow	0	1478	20	9	1422	0	21

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	1422	0	0	1498	0	- 749
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	7.5	-	-	4.6	-	- 6.9
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	3.05	-	-	2.45	-	- 3.3
Pot Cap-1 Maneuver	105	-	-	346	-	0 359
Stage 1	-	-	-	-	-	0 -
Stage 2	-	-	-	-	-	0 -
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	105	-	-	346	-	- 359
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s/v	0	0.1	15.64
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBU	EBT	EBR	WBL	WBT
Capacity (veh/h)	359	105	-	-	346	-
HCM Lane V/C Ratio	0.058	-	-	-	0.025	-
HCM Control Delay (s/veh)	15.6	0	-	-	15.7	-
HCM Lane LOS	C	A	-	-	C	-
HCM 95th %tile Q(veh)	0.2	0	-	-	0.1	-

HCM 7th Signalized Intersection Summary
2: Emerson Rd & SR 50 (Cortez Rd)

2030 PM Ex
07/11/2024

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	34	1158	125	30	1055	4	159	62	46	1	53	55
Future Volume (veh/h)	34	1158	125	30	1055	4	159	62	46	1	53	55
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	1663	1885	1885	1722	1900	1856	1826	1826	1900	1841	1663
Adj Flow Rate, veh/h	37	1259	136	33	1147	4	173	67	50	1	58	60
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	3	16	1	1	12	0	3	5	5	0	4	16
Cap, veh/h	281	1714	867	229	1768	870	277	209	156	283	178	184
Arrive On Green	0.03	0.54	0.54	0.03	0.54	0.54	0.22	0.22	0.22	0.22	0.22	0.22
Sat Flow, veh/h	1767	3159	1598	1795	3272	1610	1264	971	725	1295	829	857
Grp Volume(v), veh/h	37	1259	136	33	1147	4	173	0	117	1	0	118
Grp Sat Flow(s), veh/h/ln	1767	1580	1598	1795	1636	1610	1264	0	1695	1295	0	1686
Q Serve(g_s), s	0.8	27.3	3.8	0.7	22.3	0.1	12.0	0.0	5.2	0.1	0.0	5.3
Cycle Q Clear(g_c), s	0.8	27.3	3.8	0.7	22.3	0.1	17.4	0.0	5.2	5.3	0.0	5.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.43	1.00		0.51
Lane Grp Cap(c), veh/h	281	1714	867	229	1768	870	277	0	365	283	0	363
V/C Ratio(X)	0.13	0.73	0.16	0.14	0.65	0.00	0.62	0.00	0.32	0.00	0.00	0.33
Avail Cap(c_a), veh/h	320	1714	867	273	1768	870	278	0	365	284	0	364
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	11.4	15.7	10.3	12.9	14.6	9.5	37.1	0.0	29.8	32.0	0.0	29.8
Incr Delay (d2), s/veh	0.2	2.8	0.4	0.3	1.9	0.0	4.3	0.0	0.5	0.0	0.0	0.5
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	0.3	8.7	1.2	0.2	7.3	0.0	3.8	0.0	2.1	0.0	0.0	2.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	11.6	18.5	10.7	13.2	16.5	9.5	41.4	0.0	30.3	32.0	0.0	30.3
LnGrp LOS	B	B	B	B	B	A	D		C	C		C
Approach Vol, veh/h		1432			1184			290			119	
Approach Delay, s/veh		17.6			16.4			36.9			30.3	
Approach LOS		B			B			D			C	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.3	55.7		25.0	9.1	55.9		25.0				
Change Period (Y+Rc), s	6.3	7.1		5.6	6.3	7.1		5.6				
Max Green Setting (Gmax), s	5.0	46.6		19.4	5.0	46.6		19.4				
Max Q Clear Time (g_c+l1), s	2.8	24.3		19.4	2.7	29.3		7.3				
Green Ext Time (p_c), s	0.0	7.9		0.0	0.0	8.3		0.4				
Intersection Summary												
HCM 7th Control Delay, s/veh			19.5									
HCM 7th LOS			B									

HCM 7th TWSC
3: Emerson Rd & Emerson Oaks

2030 PM Ex
07/11/2024

Intersection						
Int Delay, s/veh	0.9					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	Y			Y	Y	
Traffic Vol, veh/h	34	2	3	238	166	46
Future Vol, veh/h	34	2	3	238	166	46
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	4	2	0
Mvmt Flow	37	2	3	259	180	50

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	471	205	230	0	-	0
Stage 1	205	-	-	-	-	-
Stage 2	265	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	555	840	1349	-	-	-
Stage 1	834	-	-	-	-	-
Stage 2	784	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	554	840	1349	-	-	-
Mov Cap-2 Maneuver	554	-	-	-	-	-
Stage 1	831	-	-	-	-	-
Stage 2	784	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v11.85		0.1	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	22	-	564	-	-
HCM Lane V/C Ratio	0.002	-	0.069	-	-
HCM Control Delay (s/veh)	7.7	0	11.9	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0.2	-	-

Intersection

Int Delay, s/veh 6.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	1	16	3	1	22	4
Future Vol, veh/h	1	16	3	1	22	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	1	17	3	1	24	4

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	56	4	0
Stage 1	4	-	-
Stage 2	52	-	-
Critical Hdwy	6.4	6.2	4.1
Critical Hdwy Stg 1	5.4	-	-
Critical Hdwy Stg 2	5.4	-	-
Follow-up Hdwy	3.5	3.3	2.2
Pot Cap-1 Maneuver	957	1086	1630
Stage 1	1025	-	-
Stage 2	975	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	943	1086	1630
Mov Cap-2 Maneuver	943	-	-
Stage 1	1025	-	-
Stage 2	961	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	8.4	0	6.13
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	- 1076	1523	-
HCM Lane V/C Ratio	-	- 0.017	0.015	-
HCM Control Delay (s/veh)	-	- 8.4	7.2	0
HCM Lane LOS	-	- A	A	A
HCM 95th %tile Q(veh)	-	- 0.1	0	-

Appendix F

Turn Lane Analysis Worksheets

Guideline for determining the need for a major-road right-turn bay at a two-way stop-controlled intersection.

On Oxley @ West Driveway

INPUT

Roadway geometry:	2-lane roadway
Variable	Value
Major-road speed, mph:	30
Major-road volume (one direction), veh/h:	100
Right-turn volume, veh/h:	1

OUTPUT

Variable	Value
Limiting right-turn volume, veh/h:	1288006
Guidance for determining the need for a major-road right-turn bay for a 2-lane roadway:	
Do NOT add right-turn bay.	

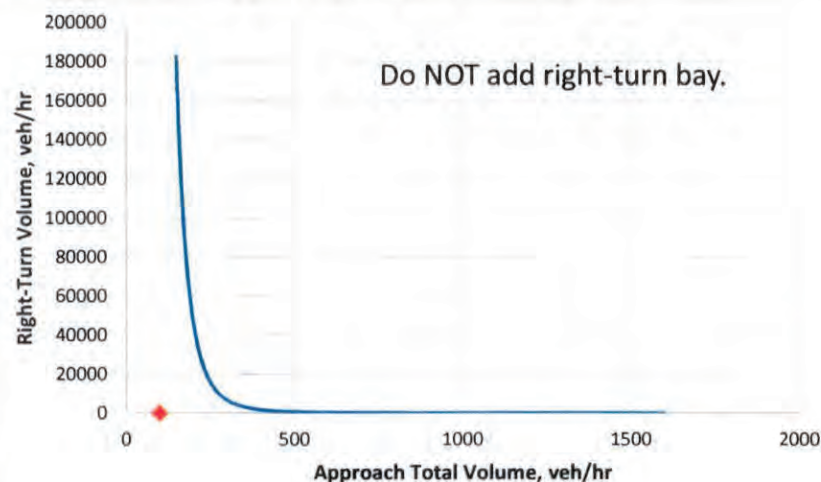


Figure 2 - 5. Guideline for determining the need for a major-road left-turn bay at a two-way stop-controlled intersection.

On Oxley @ West Site Drive

1	AADT	2,000	LT Vol:	22
2	K	0.090	D (opposing the LT):	0.45
3	85 %-ile Speed:	35		

4

5 CALIBRATION CONSTANTS

6	Variable	Value
7	Average time for making left-turn, s:	3.0
8	Critical headway, s:	5.0
9	Avg time for LT veh to clear the advancing lane, s:	1.9

10

11 2-lane roadway (English)

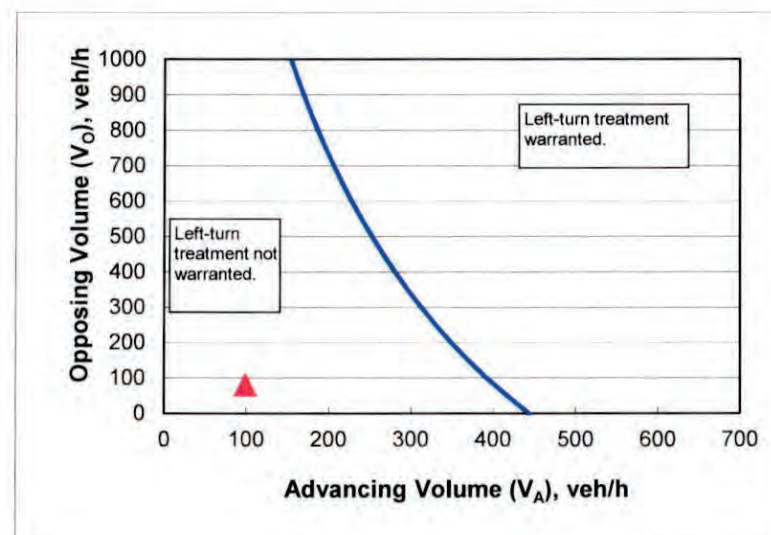
12	Variable	Value
13	Percent of left-turns in advancing volume (V _A), %:	22%
14	Advancing volume (V _A), veh/h:	99
15	Opposing volume (V _O), veh/h:	81

16

17

18 OUTPUT

19	Variable	Value
20	Limiting advancing volume (V _A), veh/h:	402
21	Daily volume at which warrant <u>is</u> met:	8,127
22	Guidance for determining the need for a major-road left-turn bay:	
23	Left-turn treatment NOT warranted in this case.	



Guideline for determining the need for a major-road right-turn bay at a two-way stop-controlled intersection.

On Emerson @ East Driveway

INPUT

Roadway geometry:	2-lane roadway
Variable	Value
Major-road speed, mph:	45
Major-road volume (one direction), veh/h:	515
Right-turn volume, veh/h:	21

OUTPUT

Variable	Value
Limiting right-turn volume, veh/h:	41
Guidance for determining the need for a major-road right-turn bay for a 2-lane roadway:	
Do NOT add right-turn bay.	

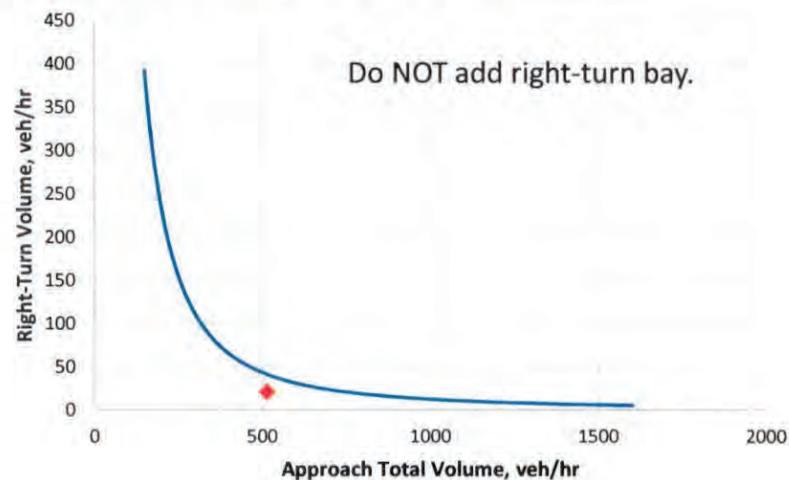


Figure 2 - 5. Guideline for determining the need for a major-road left-turn bay at a two-way stop-controlled intersection.

On Emerson @ East Site Drive

1	AADT	10,000	LT Vol:	3
2	K	0.090	D (opposing the LT):	0.45
3	85 %-ile Speed:	45		

CALIBRATION CONSTANTS

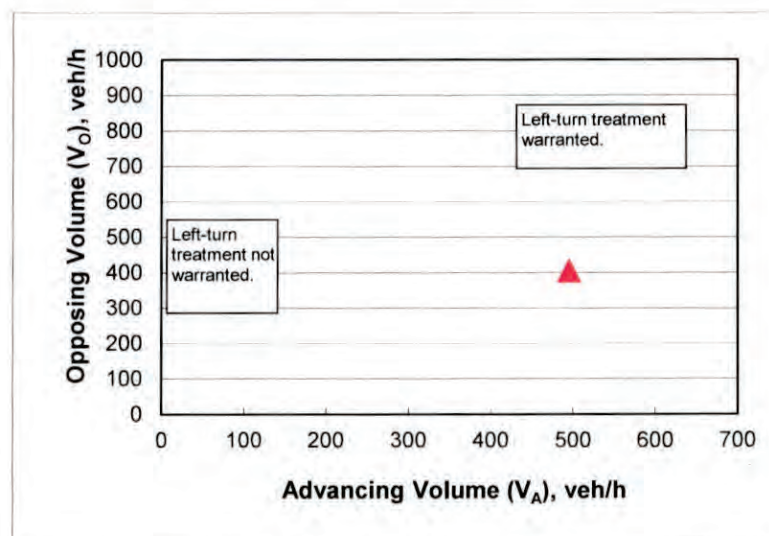
6	Variable	Value
7	Average time for making left-turn, s:	3.0
8	Critical headway, s:	5.0
9	Avg time for LT veh to clear the advancing lane, s:	1.9

2-lane roadway (English)

13	Variable	Value
14	Percent of left-turns in advancing volume (V_A), %:	1%
15	Advancing volume (V_A), veh/h:	495
16	Opposing volume (V_O), veh/h:	405

OUTPUT

19	Variable	Value
20	Limiting advancing volume (V_A), veh/h:	1323
21	Daily volume at which warrant <u>is</u> met:	26,726
22	Guidance for determining the need for a major-road left-turn bay:	
23	Left-turn treatment NOT warranted in this case.	



Guideline for determining the need for a major-road right-turn bay at a two-way stop-controlled intersection.

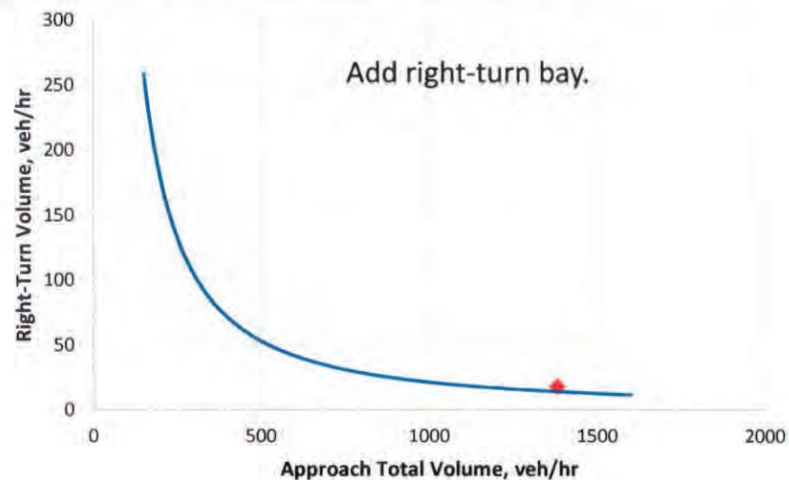
On SR 50 @ Oxley

INPUT

Roadway geometry:	4-lane roadway
Variable	Value
Major-road speed, mph:	50
Major-road volume (one direction), veh/h:	1381
Right-turn volume, veh/h:	18

OUTPUT

Variable	Value
Limiting right-turn volume, veh/h:	14
Guidance for determining the need for a major-road right-turn bay for a 4-lane roadway:	
Add right-turn bay.	



- Emerson Oaks is a proposed 223-unit townhome development estimated to generate 105 new a.m. peak hour trips, and 126 new p.m. peak hour trip-ends, the majority of which will travel westward on SR 50 (Cortez Rd).
- The project traffic is not estimated to consume 5% or more of the service volume of any major road in the area except for on Emerson Rd from the site to SR 50 (Cortez Rd).
- Year 2030 intersection level of service analysis indicates good conditions, meeting adopted County standards.
- A 240-foot long east-to-south right-turn lane on SR 50 (Cortez Rd) at Oxley Rd is recommended.
- Reconstruction of Oxley Rd from the west site driveway to SR 50 (Cortez Rd) is recommended to bring the road up to County standards.
- A south-to-west right turn lane on Emerson Rd at the east site driveway is recommended.
- One exiting traffic lane will serve the expected traffic demands on both the east and west site driveways, regulated by a "STOP" sign in accordance with the Manual on Uniform Traffic Control devices.

**HERNANDO COUNTY REZONING APPLICATION
MAPLE CROSSING
SUBMITTAL DOCUMENT D**

LIST OF EXPERTS FOR THE PUBLIC HEARINGS

Greg Stannard, Project Manager, Goodwin Mills Cawood, LLC

Area of Expertise: Engineering

Scott Stannard, Vice President, Goodwin Mills Cawood, LLC

Area of Expertise: Engineering

Cynthia Tarapani, Owner, Tarapani Planning Strategies

Area of Expertise: Planning

William E. Oliver, P.E., W.E. Oliver P.E., LLC

Area of Expertise: Transportation Engineering

