**D**esigning**E**xcellence

# **Traffic Impact Study**

Our Daily Bread Food Pantry
City of Marco Island
Collier County, FL

#### **PREPARED BY:**

Davidson Engineering, Inc. 4365 Radio Road, Suite 201 Naples, Florida 34104

Updated: October 25, 2024 July 23, 2024



This item has been digitally signed and sealed by Lee Alan Davidson P.E. on the date adjacent to the seal.

Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

Lee A. Davidson, P.E. License No. 90969 Company ID No. 9496



## **Table of Contents**

Introduction and Methodology	1
Proposed Improvements	
Site Access and Build-out Year	
Trip Generation	
Trip Distribution and Assignment	
Background Traffic	4
Existing and Future Roadway Network	4
Project Impacts to Area Roadway Network – Roadway Link Analysis	5
Significance Test	5
Concurrency Analysis	5
Operational and Turn Lane Analysis	6
Conclusion	6

Appendix A: Project Site Plan

Appendix B: Trip Distribution Map

Appendix C: 2023 AUIR



#### Introduction and Methodology

This traffic impact statement is prepared to meet the SDP application requirements for the proposed Our Daily Bread Food Pantry (ODBFP) development. The development proposes to reconfigure an existing ±4,250 SF drive-in bank building into a food pantry building with a ±890 SF addition, in total ±5,140 SF of food pantry use. The previously developed property is 1.15 acres in size. The site is located at 1818 San Marco Road, Marco Island, Florida. The site is zoned C-3. Refer to Figure 1 below for the project location and Appendix A for a proposed site plan.

The ODBFP development will conduct a "Minor Study" TIS as it adheres to all the criteria in the City of Marco Guidelines for such. The analysis is based on the available Land Use categories provided in the 11th Edition of the ITE Trip Generation Manual and provides the highest and best use scenario with respect to the project's proposed trip generation. Being that the proposed Drive-In Food Pantry use for the site is not included in the latest ITE book, the trips generated by the development will be calculated using the Small Office Building use (712) for Weekdays and Fast-Food Restaurant with Drive-Through Window and No Indoor Seating use (LUC 935) for Saturdays, as they are the most applicable alternatives. Background traffic is extracted from the 2023 Collier County's historical Annual Update and Inventory Reports (AUIR).



Figure 1: Project Location



#### **Proposed Improvements**

The ODBFP development proposes to reconfigure an existing  $\pm 4,250$  SF drive-in bank building into a food pantry building. The project also proposes an  $\pm 890$  SF building addition, for a total  $\pm 5,140$  SF of food pantry use. Table 1 details the land use code and units for the proposed development.

Table 1: Net/ New Trip Generation for Proposed Conditions

Time Period	Deve	ITE Land Use Code	Size		
		Drive-in Food			
Weekday	Proposed Pantry		LUC 712 – Small Office Building	712	±5,140 SF
			LUC 935 - Fast-Food Restaurant		1 Drive-
		Drive-in Food	with Drive-Through Window and		through
Saturday	Proposed	Pantry	No Indoor Seating	935	Window

#### Site Access and Build-out Year

The site proposes to maintain the existing access point onto the San Marco Rd. Right-of-way. No additional driveway connections are proposed. The site also features an interconnection with the site to the west improving the overall site circulation. The projected operational year is 2025.

#### **Trip Generation**

Trip generation rates are per the Institute of Transportation Engineers publication, *Trip Generation Manual*, 11th Edition. Table 2 & 2A illustrate a summary of the trips generated by the proposed use and their entering/exiting breakdown per the percentages provided by the ITE Trip Generation Manual. Given the proposed Drive-in Food Pantry use and intended operation time (Saturdays), the Fast-Food Restaurant with Drive-Through Window and No Indoor Seating use (LUC 935) is most representative of the traffic impacts generated by the development. The small office building use (LUC 712) will be representative of the weekday AM/PM traffic given its broad encompassing use of buildings under 10,000 sf. The most intensive trip generation was dictated by LUC 935, as such the forthcoming analysis will be conducted using this use.



**Table 2: Summary of Site Trip Generation-Weekday** 

Land Use	Time Period	Equation	Calculated Traffic	Entering	Exiting
Small Office Building	Weekday	Average Rate = 14.39 per 1,000 SF GFA	74	37 (50%)	37 (50%)
(712) (GFA) 5,140 SF	A.M. Peak Hour (Adjacent)	Average Rate = 1.67 per 1,000 SF GFA	9	7 (82%)	2 (18%)
	P.M. Peak Hour (Adjacent)	Average Rate = 2.16 per 1,000 SF GFA	11	4 (34%)	7 (66%)

<sup>\*</sup> Calculated and distributed trips rounded to the nearest whole number.

Table 3A: Summary of Site Trip Generation-Saturday

Land Use	Time Period	Equation	Calculated Traffic	Entering	Exiting
Fast-Food Restaurant with Drive-Through Window and No Indoor Seating (935) (per DT service window lane) 1 Service Window	Saturday (Peak hour of Generator)	Average Rate = 130.67 per Drive Through Service Window Lane	131	66 (50%)	65 (50%)

<sup>\*</sup> Calculated and distributed trips rounded to the nearest whole number.

## Trip Distribution and Assignment

The traffic generated by the proposed development is assigned to the nearest local roadway and concurrency links using basic knowledge of the surrounding area and the 2023 Collier County AUIR data. Significantly impacted roadways are identified based on the proposed projects highest peak hour trip generation of the adjacent street traffic. The nearest impacted roadway link accounted for in the AUIR is Collier Blvd. link 38.0 stretching from Mainsnail Dr. to Marco Island Bridge. Per 2023 Collier County AUIR, the peak direction along Collier Blvd. (Link 38.0) is north. The total trips accounted for are representative of the worst case scenario Saturday peak hour of generation for the proposed development. Per the proposed Drive-in Food Pantry use and the sites location, 40% of the total generated trips are expected to originate and be internally captured within Marco Island. This is represented as the 40% split south from Marco Island Bridge direction (see Table 3). The site generated trip distribution is shown in Table 3 and is graphically depicted in Appendix B.



Table 4: Project Traffic Distribution for Saturday Peak Hour, Peak Direction

		Total Trips	North Tow Mains	vard/From nail Dr.	South Fro Island	
		VPH	VPH*	% Split	VPH*	% Split
Saturday (Peak hour of	Enter	66	40	60	26	40
Generator)	Exit	65	39	60	26	40

<sup>\*</sup> Trips distributed are rounded to nearest whole number.

### **Background Traffic**

The background traffic is conservatively evaluated, the historical growth rate shows the following over the last five years: Per the Growth Rate Calculations provided by Collier County in the AUIR a minimum average growth rate of 2.00% is used to determine the projects expected traffic two years after the 2025 build-out; refer to Table 4.

**Table 5: Background Traffic without Project (2027)** 

Roadway Link	Roadway Link	2023 AUIR Peak Hr. Peak Dir	Projected T	2027 Projected Peak Hr, Peak Dir Background		
	Direction	Hr, Peak Dir Volume	2024	2025	2026	Total Volume w/out Project
Collier Blvd. (ID# 38.0)	Mainsnail Dr. to Marco Island Bridge	1,830	1,867	1,904	1,942	1,981

### **Existing and Future Roadway Network**

The existing roadway conditions are also extracted from the 2023 AUIR. The 2027 roadway conditions are based on the current Collier County *Growth Management Division Five Year Work Program*. Based on the roadway's current level of service (LOS) and remaining capacity, the LOS is anticipated to remain the same through 2027. The existing and future roadway conditions are illustrated in Table 5.

**Table 6: Existing and Future Roadway Conditions** 

Roadway Link	Roadway Link Location Roadway LOS		Existing LOS	Exist. Peak Dir, Peak Hr Service Volume	Min. LOS Standard	Future 2027 Roadway
Collier Blvd. (ID# 38.0)	Mainsnail Dr. to Marco Island Bridge	4D	D	2,200	D	4D



#### Project Impacts to Area Roadway Network – Roadway Link Analysis

Collier County's Transportation Planning Services department developed Level of Service (LOS) volumes for all major roadway links; these were evaluated to determine the project's impact on the roadway network two years after build-out, 2027. Table 6 illustrates the LOS impacts of the project on the roadway network closest to.

Table 7: Roadway Link LOS -- With and Without the Project in the Year 2027

Roadway Link	CC AUIR Link ID #	Roadway Link Location	2027 PH, PD Service Volume	2027 PH, PD Volume w/out Project	2027 PH, PD Volume w/Project	Remaining PH, PD Service Volume Capacity w/Project	% Service Volume Impacted by Project	Min LOS exceeded with Project? Yes/No
Collier Blvd.	38.0	Mainsnail Dr. to Marco Island Bridge	2,200	1,981	2,021	179	1.8%	No

Table Note-PH, PD = Peak Hour, Peak Direction for Peak Trips.

Based on the TIS criterion, this project does not create any significant or adverse impacts to the area's roadway network.

## Significance Test

As shown below in Table 7 the adjacent concurrency link is not found to be significantly impacted on Collier Blvd. during the Peak Hour traffic. The traffic generated by the proposed development will have a maximum of only a 1.8% Peak Directional (North bound) impact on Collier Blvd. As such, additional concurrency segments do not require analysis under the 2%-2%-3% review criteria.

**Table 8: Peak Hour, Peak Direction Significance Test** 

				2023	Network	Peak Hour	
			Existing	Service	Peak	PD Site	%
Link	Roadway	Lanes	LOS	Volume	Direction	Trips	Impact
38.0	Collier Blvd.	4D	D	2,200	North	40	1.8

#### **Concurrency Analysis**

The projected operational year is 2025. Per the Collier County TIS guidelines, site plan applications with build-out horizon two years or less are to provide a concurrency analysis based on AUIR. So, Table 8 and 9, below, calculate the anticipated plus project trip volume for Link 38.0.



Table 9: 2023 AUIR Traffic Volume (Based on Collier County 2023 AUIR Data)

Link	Roadway	Pk Hr, Pk Dir Service Volume	PK Hr, Pk Dir Volume	Total Trip Bank	2023 PK Hr, Pk Dir. AUIR Vol.
38.0	Collier Blvd.	2,200	1,830 (NB)	50	1,880

Table 10: Peak Hour, Peak Direction LOS Link Concurrency Analysis

		Peak Ho	our, Peak D	irection Traffic		
		2023				
		AUIR	Project	(AUIR + Trip	Service	Within
Link	From	Vol.	Traffic	Bank+ Project)	Capacity*	Capacity?
38.0	Collier Blvd.	1,830	40 (NB)	1,920	2,200	Yes

Based on the Level of Service link analysis, this project does not create any significant or adverse impacts to the roadway network during the 2023 peak hour, peak direction traffic volume. Therefore, no additional concurrency analysis is required.

#### Operational and Turn Lane Analysis

The ODBFP development is proposing to maintain the existing driveway connection located on San Marco Rd., a public two-lane divided right-of-way. The site will indirectly contribute to the trips being accounted for on link 38.0, via Barfield Drive. As such, Collier Blvd. will be referenced for the operation and turn lane analysis. According to Collier County ROW Handbook, Section III.A.1.a, the criterion for left- and right-hand turn lanes on multi-lane divided roadways are as follows:

- "Left turns... only when the projected traffic volume at the proposed opening (two-way total) averages 150 vph...".
- "Right turn lanes shall always be provided for existing multi-lane divided roadways...".

The total number of left turn trips into the site are equivalent to 66 trips (during Saturday peak hour via San Marco Rd.). Likewise, the right turn trips generated out from the site are equivalent to 39 trips (during Saturday peak hour. Being that the site has existing Left and right turn-in access, and the additional trips have minimal impact, no additional turn lane improvements are required. See Appendix B for the proposed turn lane analysis.

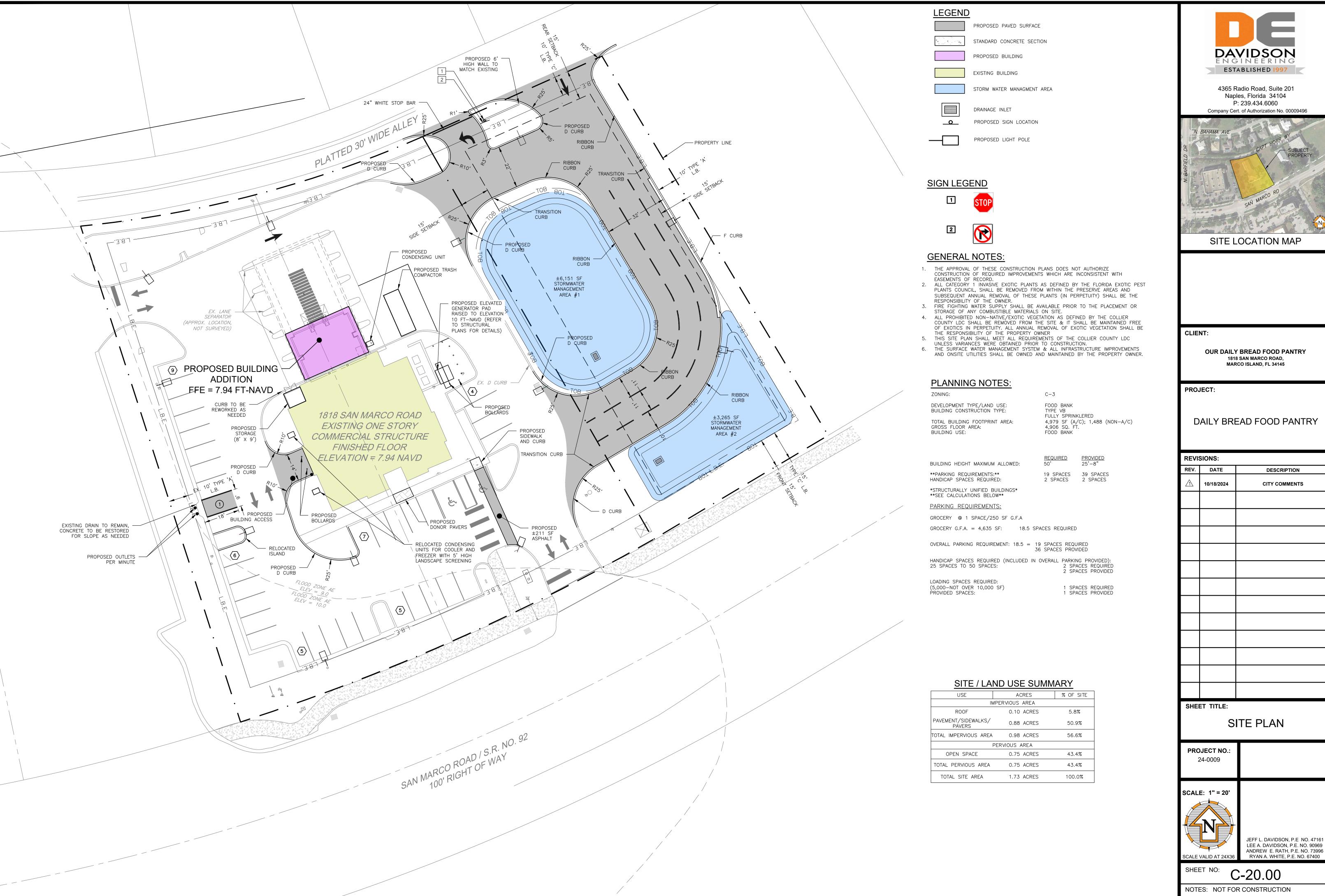
#### Conclusion

The proposed development creates an increase in the peak hour trips due to the proposed use; however, this project will not cause adverse effects to the surrounding roadway network.



# Appendix A

Project Site Plan





4365 Radio Road, Suite 201 Naples, Florida 34104 P: 239.434.6060



SITE LOCATION MAP

OUR DAILY BREAD FOOD PANTRY 1818 SAN MARCO ROAD, MARCO ISLAND, FL 34145

DAILY BREAD FOOD PANTRY

DESCRIPTION CITY COMMENTS

JEFF L. DAVIDSON, P.E NO. 47161 LEE A. DAVIDSON, P.E. NO. 90969

C-20.00

NOTES: NOT FOR CONSTRUCTION



# **Appendix B**Trip Distribution Map





Appendix C 2023 AUIR

Attachment "F"

Collier County Annual Update and Inventory Report (AUIR) Based on Adopted LOS, Trip Bank and Traffic Counts

Peak

2022

Net

Percent

											r 1	2023	2022	Net	rereent			2023		2023	Transc	
											Hour 1	Peak	Peak	Change	Change		2023	Counts +	2023	w/TB	Counts	Trip Bank
											Peak Dir	Hour	Hour	In Volume	In Volume	Total	Counts +	Trip Bank	Counts +	L	Year	Year
		TCMA or					Exist	Cnt.	Min		Service	Peak Dir	Peak Dir	From	From	Trip	Trip Bank	Remaining	Trip Bank	O	Expected	Expected
ID#	CIE#	TCEA	Road#	Link	From	To	Road	Sta.	Std *	Dir	Volume	Volume	Volume	2022	2022	Bank	Volume	Capacity	V/C	S	Deficient	Deficient
1.0			GP 14				45				2 200	1120	1.100	2.60	22.1.10/	4.5	1126	1061	<b>51</b> (0)			
1.0		NW-TCMA		Airport Road	Immokalee Road	Vanderbilt Beach Road	4D	554	D	N	2,200	1120	1480	-360	-32.14%	16	1136	1064	51.6%	В		
2.1	55	NW-TCMA	CR31	Airport Road	Vanderbilt Beach Road	Orange Blossom Drive	6D	599	E	N	3,000	2190	2250	-60	-2.74%	35	2225	775	74.2%	C		
2.2	55	NW-TCMA	CR31	Airport Road	Orange Blossom Drive	Pine Ridge Road	6D	503	Е	N	3,000	2270	2160	110	4.85%	53	2323	677	77.4%	D		
3.0	39		CR31	Airport Road	Pine Ridge Road	Golden Gate Parkway	6D	502	E	N	3,000	2150	2180	-30	-1.40%	14	2164	836	72.1%	C		
4.0			CR31	Airport Road	Golden Gate Parkway	Radio Road	6D	533	E	N	2,800	2090	2210	-120	-5.74%	0	2090	710	74.6%	C		
5.0	3	man.	CR31	Airport Road	Radio Road	Davis Boulevard	6D	553	Е	N	2,800	2080	2080	0	0.00%	0	2080	720	74.3%	C		
6.0	3	TCEA	CR31	Airport Road	Davis Boulevard	US 41 (Tamiami Trail)	6D	552	Е	S	2,700	1470	1550	-80	-5.44%	90	1560	1140	57.8%	С		
7.0	2.1	TCEA(pt)	CD 065	Bayshore Drive	US 41 (Tamiami Trail)	Thomasson Drive	4D	521	D	S	1,800	730	730	0	0.00%	183	913	887	50.7%	В		
8.0	31		CR 865	Bonita Beach Road	West of Vanderbilt Drive	Hickory Boulevard	4D	653	D	E	1,900	1000	1100	-100	-10.00%	0	1000	900	52.6%	В		
9.0				Carson Road	Lake Trafford Road	Immokalee Drive	2U	610	D	N	600	290	290	0	0.00%	40	330	270	55.0%	В		
10.0	33		GD 00	County Barn Road	Davis Boulevard	Rattlesnake Hammock Road	2U	519	D	S	900	380	370	10	2.63%	86	466	434	51.8%	В		
11.0			CR29	CR 29	US 41 (Tamiami Trail)	Everglades City	2U	582A	D	S	1,000	180	180	0	0.00%	10	190	810	19.0%	В		
12.0		TCEA	SR84	Davis Boulevard	US 41 (Tamiami Trail)	Airport Road	6D	558	Е	E	2,700	1420	1410	10	0.70%	55	1475	1225	54.6%	C		
13.0	48		SR84	Davis Boulevard	Airport Road	Lakewood Boulevard	4D	559	D	E	2,000	1460	1470	-10	-0.68%	0	1460	540	73.0%	C		
14.0	49	EC-TCMA	SR84	Davis Boulevard	Lakewood Boulevard	County Barn Road	4D	658	D	Е	2,000	1660	1630	30	1.81%	56	1716	284	85.8%	D		2031
15.0	83	EC-TCMA	SR84	Davis Boulevard	County Barn Road	Santa Barbara Boulevard	4D	538	D	Е	2,200	1500	1410	90	6.00%	138	1638	562	74.5%	C		
16.1	83	EC-TCMA	SR84	Davis Boulevard	Santa Barbara Boulevard	Radio Road	6D	560	E	Е	3,300	860	840	20	2.33%	155	1015	2285	30.8%	В		
16.2	83	EC-TCMA	SR84	Davis Boulevard	Radio Road	Collier Boulevard	6D	601	Е	W	3,300	1220	1250	-30	-2.46%	245	1465	1835	44.4%	В		
17.0	62		CR876	Golden Gate Boulevard	Collier Boulevard	Wilson Boulevard	4D	531	D	Е	2,300	2030	1960	70	3.45%	17	2047	253	89.0%	D		2029
18.0			CR886	Golden Gate Parkway	US 41 (Tamiami Trail)	Goodlette-Frank Road	6D	530	Е	Е	2,700	1790	1630	160	8.94%	0	1790	910	66.3%	C		
19.0	5		CR886	Golden Gate Parkway	Goodlette-Frank Road	Airport Road	6D	507	Е	Е	3,550	3010	2770	240	7.97%	0	3010	540	84.8%	D		2032
20.1	74		CR886	Golden Gate Parkway	Airport Road	Livingston Road	6D	508	Е	Е	3,550	3240	3140	100	3.09%	19	3259	291	91.8%	D	2027	2026
20.2	74	EC-TCMA	CR886	Golden Gate Parkway	Livingston Road	I-75	6D	691	Е	Е	3,550	3370	3340	30	0.89%	0	3370	180	94.9%	D	2026	2026
21.0	74	EC-TCMA	CR886	Golden Gate Parkway	I-75	Santa Barbara Boulevard	6D	509	Е	Е	3,300	2270	2020	250	11.01%	10	2280	1020	69.1%	C		
22.0		EC-TCMA	CR886	Golden Gate Parkway	Santa Barbara Boulevard	Collier Boulevard	4D	605	D *	Е	1,980	1520	1450	70	4.61%	53	1573	407	79.4%	D		
23.0	19	NW-TCMA	CR851	Goodlette-Frank Road	Immokalee Road	Vanderbilt Beach Road	2U	594	D	N	1,000	700	720	-20	-2.86%	5	705	295	70.5%	C		
24.1	65	NW-TCMA	CR851	Goodlette-Frank Road	Vanderbilt Beach Road	Orange Blossom Drive	4D	595	Е	N	2,400	1410	1390	20	1.42%	75	1485	915	61.9%	C		
24.2	65	NW-TCMA	CR851	Goodlette-Frank Road	Orange Blossom Drive	Pine Ridge Road	6D	581	Е	N	2,400	1630	1620	10	0.61%	3	1633	767	68.0%	C		
25.0	88		CR851	Goodlette-Frank Road	Pine Ridge Road	Golden Gate Parkway	6D	505	E	N	3,000	1880	1860	20	1.06%	1	1881	1119	62.7%	C		
26.0			CR851	Goodlette-Frank Road	Golden Gate Parkway	US 41 (Tamiami Trail)	6D	504	E	S	2,700	2760	2660	100	3.62%	4	2764	(64)	102.4%	F	Existing	Existing
27.0	87	EC-TCMA		Green Boulevard	Santa Barbara Boulevard	Collier Boulevard	2U	642	D	Е	900	750	680	70	9.33%	0	750	150	83.3%	D		2033
29.0		NW-TCMA		Gulfshore Drive	111th Avenue	Vanderbilt Beach Road	2U	583a	D	N	800	220	220	0	0.00%	0	220	580	27.5%	В		
30.1	37		CR951	Collier Boulevard	Immokalee Road	Vanderbilt Beach Road	6D	655	Е	N	3,000	1870	1810	60	3.21%	386	2256	744	75.2%	D		
30.2	37		CR951	Collier Boulevard	Vanderbilt Beach Road	Golden Gate Boulevard	6D	584	Е	S	3,000	1580	1490	90	5.70%	93	1673	1327	55.8%	C		
31.1	85		CR951	Collier Boulevard	Golden Gate Boulevard	Pine Ridge Road	6D	536	Е	N	3,000	2530	2590	-60	-2.37%	107	2637	363	87.9%	D		2030
31.2	85	EC-TCMA	CR951	Collier Boulevard	Pine Ridge Road	Green Boulevard	6D	536	E	N	3,000	2530	2590	-60	-2.37%	91	2621	379	87.4%	D		2031
32.1	76	EC-TCMA	CR951	Collier Boulevard	Green Boulevard	Golden Gate Pwky	4D	525	D	N	2,300	1470	1410	60	4.08%	27	1497	803	65.1%	C		
32.2	76	EC-TCMA	CR951	Collier Boulevard	Golden Gate Pwky	Golden Gate Main Canal	4D	607	D	N	2,300	1980	1780	200	10.10%	234	2214	86	96.3%	D		2025
32.3	76	EC-TCMA	CR951	Collier Boulevard	Golden Gate Main Canal	I-75	8D	607	E	N	3,600	1980	1780	200	10.10%	387	2367	1233	65.8%	C		
33.0	61	EC-TCMA	SR951	Collier Boulevard	I-75	Davis Boulevard	8D	573	E	N	3,600	3020	3170	-150	-4.97%	293	3313	287	92.0%	D		2028
34.0	86		CR951	Collier Boulevard	Davis Boulevard	Rattlesnake Hammock Road	6D	602	Е	N	3,000	2120	2270	-150	-7.08%	650	2770	230	92.3%	D		2029
35.0	86		CR951	Collier Boulevard	Rattlesnake Hammock Road	US 41 (Tamiami Trail)	6D	603	E	N	3,200	2250	2230	20	0.89%	434	2684	516	83.9%	D		
36.1	12		SR951	Collier Boulevard	US 41 (Tamiami Trail)	Wal-Mart Driveway	6D	557	E	N	2,500	2310	2420	-110	-4.76%	173	2483	17	99.3%	E	2027	2024
36.2			SR951	Collier Boulevard	Wal-Mart Driveway	Manatee Road	4D	557	D	N	2,000	2310	2420	-110	-4.76%	140	2450	(450)	122.5%	F	Existing	Existing
37.0	12		SR951	Collier Boulevard	Manatee Road	Mainsail Drive	4D	627	D	N	2,200	1830	1810	20	1.09%	161	1991	209	90.5%	D		2029
38.0	51		SR951	Collier Boulevard	Mainsail Drive	Marco Island Bridge	4D	627	D	N	2,200	1830	1810	20	1.09%	50	1880	320	85.5%	D		2032
39.0	64	NW-TCMA	CR846	111th Avenue N.	Gulfshore Drive	Vanderbilt Drive	2U	585	D	Е	700	330	390	-60	-18.18%	0	330	370	47.1%	В		
40.0	1	NW-TCMA	CR846	111th Avenue N.	Vanderbilt Drive	US 41 (Tamiami Trail)	2U	613	D	Е	900	610	700	-90	-14.75%	0	610	290	67.8%	C		
41.1	6	NW-TCMA	CR846	Immokalee Road	US 41 (Tamiami Trail)	Goodlette-Frank Road	6D	566	E	E	3,100	1990	2070	-80	-4.02%	25	2015	1085	65.0%	C		

2023 Traffic

2023