

**TRAFFIC ANALYSIS
FOR
MARRIOTT RESIDENCE INN
ST. PETERSBURG/CLEARWATER AIRPORT SITE (PIE)
PINELLAS COUNTY, FL**

**PREPARED FOR:
BAYWOOD HOTELS**

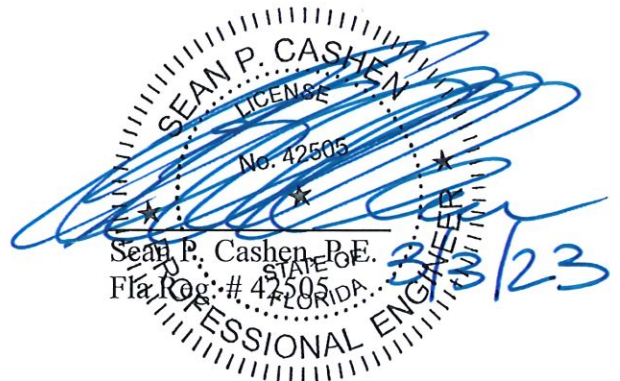
**PREPARED BY:
GULF COAST CONSULTING, INC.
MARCH 2023
PROJECT # 23-008**

TABLE OF CONTENTS

- I. INTRODUCTION
- II. EXISTING CONDITIONS
- III. FUTURE CONDITIONS WITH DEVELOPMENT
- IV. CONCLUSIONS AND RECOMMENDATIONS



Robert Pergolizzi, AICP/PTP
AICP # 9023 / PTP #133



I. INTRODUCTION

The applicant is seeking rezoning approval to develop a 3.3+/- acre parcel located on the north side of Ulmerton Road (SR 688) between 40th Street and Roosevelt Boulevard immediately west of the Cracker Barrel restaurant. (See Figure 1) The site is currently vacant and is accessed by a right-in/right-out driveway to Ulmerton Road that presently provides access to the Cracker Barrel. The rezoning involves a “transient accommodations overlay” to develop a 130 room Residence Inn hotel which requires a traffic analysis as part of the rezoning process. This traffic analysis was prepared to evaluate the traffic impacts of the proposed Marriott Residence Inn hotel.

II. EXISTING CONDITIONS

The adjacent segment of Ulmerton Road (SR 688) is presently eight-lanes divided and auxiliary lanes. A previously existing traffic signal at Ulmerton Road / 40th Street/Cracker Barrel Access Road was removed and was relocated to the Roosevelt Boulevard (SR 686) intersection. Ulmerton Road is an arterial with a posted speed of 45 MPH and is controlled by the traffic signals at 38th Street to the east and the SR 686 interchange to the west. Due to median modifications the existing 40th Street/Cracker Barrel access road is now limited to right-in/right out movements. This has created additional U-turns at the signalized intersection of 38th Street to the east and at the SR 686 interchange to the west.

To establish existing conditions, AM peak period (7-9 AM) and PM peak period (4-6 PM) intersection turning movement counts were conducted at the following intersections in February 2023.

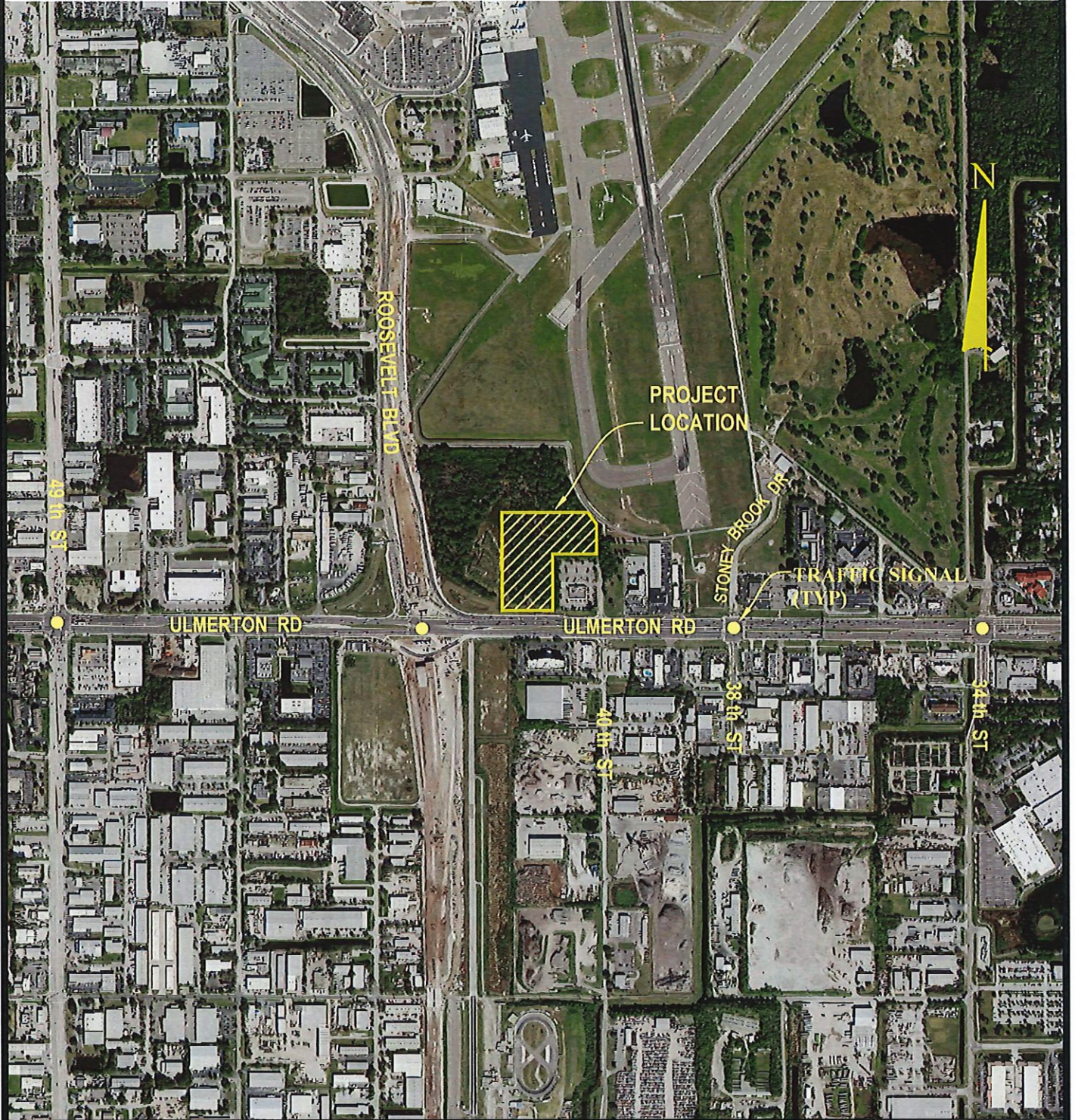
- Ulmerton Road / SR 686 (Roosevelt Blvd) (signal)
- Ulmerton Road / 40th Street /Cracker Barrel Access Road (stop – right-in/right-out)
- Ulmerton Road / 38th Street / Stoneybrook Drive (Signal)

Traffic counts were adjusted to peak season equivalents using FDOT seasonal adjustment factors and the peak hour/peak season traffic volumes are shown in Figure 2. The intersections were analyzed using the SYNCHRO software. The existing operating conditions are shown in Table 1 and the SYNCHRO printouts are included in Appendix A.

TABLE 1 - EXISTING INTERSECTION CONDITIONS (2023)

INTERSECTION LOCATION	AM LOS	DELAY (SEC/VEH)	ICU %	PM LOS	DELAY (SEC/VEH)	ICU %
Ulmerton Rd / SR 686	D	36.2	80.6%	C	24.7	72.5%
Ulmerton Rd/40 th St Cracker Barrel Drive	C*	17.1	66.4%	C*	21.4	67.6
Ulmerton Rd / 38 th St.	C	22.2	83.4	C	25.1	87.8%

* = LOS for SBRT exiting Cracker Barrel access driveway



PROJECT LOCATION - MARRIOTT RESIDENCE INN

PROJECT NO:
23-008



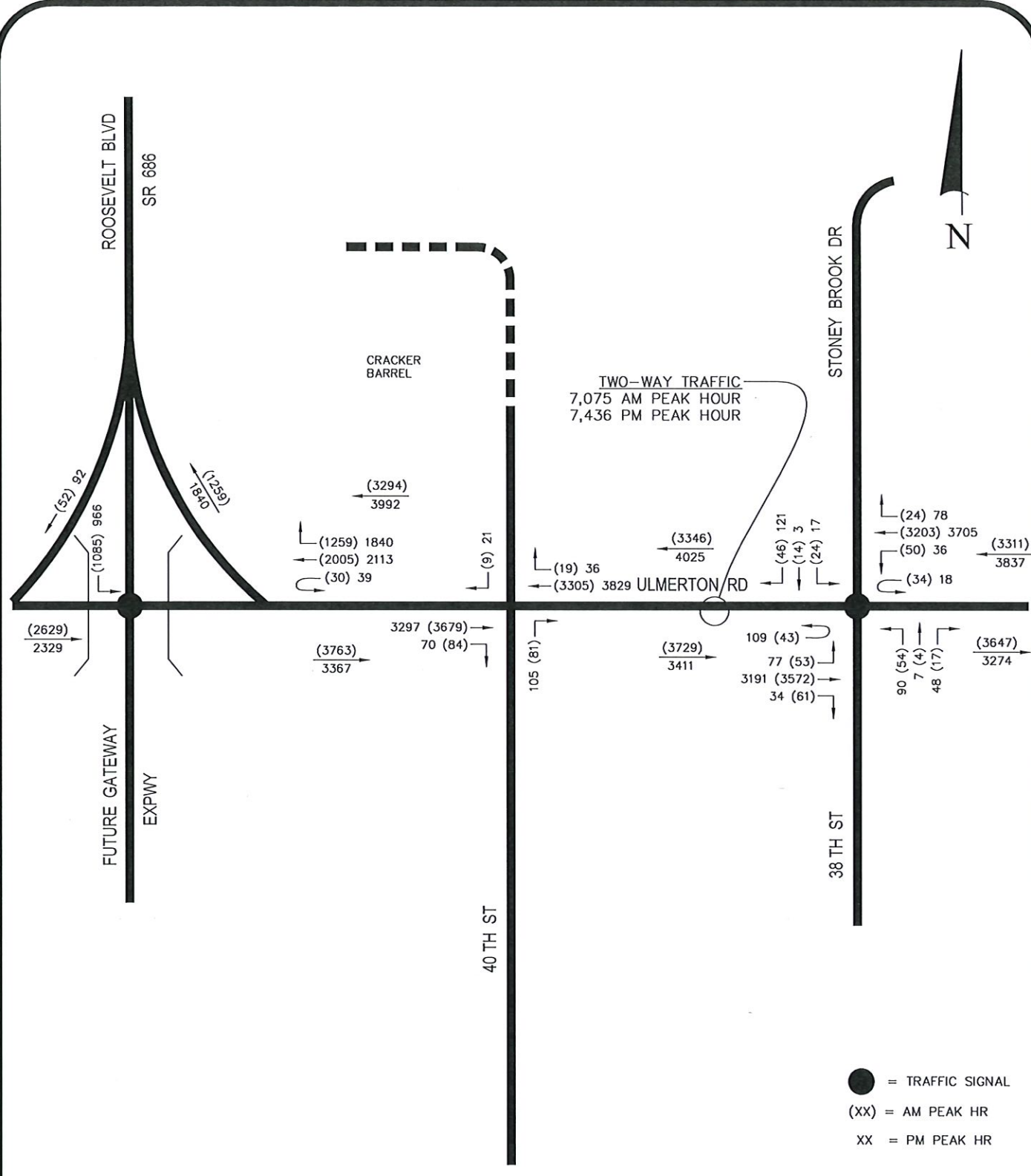
Gulf Coast Consulting, Inc.
Land Development Consulting

DATE:
03/2023

DRAWN BY:
GJS

FIGURE:

1



EXISTING PEAK HOUR/PEAK SEASON TRAFFIC (2023)

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23-008



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FIGURE:

2

Right turns from the existing 40th Street/Cracker Barrel driveway are assisted by the presence of a traffic signal at the 38th Street intersection to the east which creates gaps in WB traffic allowing vehicles to exit onto Ulmerton Road.

The improvements to Ulmerton Road and the Roosevelt Boulevard interchange have created an 8-lane divided arterial section with exclusive left and right turn lanes at intersections. Based on the seasonally adjusted traffic counts the adjacent segment of Ulmerton Road carries 7,075 vehicles during the AM peak hour and 7,436 vehicles during the PM peak hour. Traffic is extremely heavy, however, due to long cycle lengths and signal timings that heavily favor Ulmerton Road, EB/WB through movements are operating at LOS D or better during the peak hours.

III. FUTURE CONDITIONS WITH DEVELOPMENT

Research of FDOT Annual Traffic Counts (AADT History) for the count station on the adjacent segment of Ulmerton Road shows no growth has occurred since 2016 This may be partially due to the opening of CR 296 with an interchange with I-275 that serves as a parallel reliever to Ulmerton Road. The opening of the Gateway Expressway will also be a reliever for Ulmerton Road, although not considered in this report.

Expected buildout of the proposed hotel project is 2024. Trip generation estimates were made using ITE Trip Generation, 11th Edition rates for Land Use Code 310 (Hotel). The trip generation is shown below in Table 2.

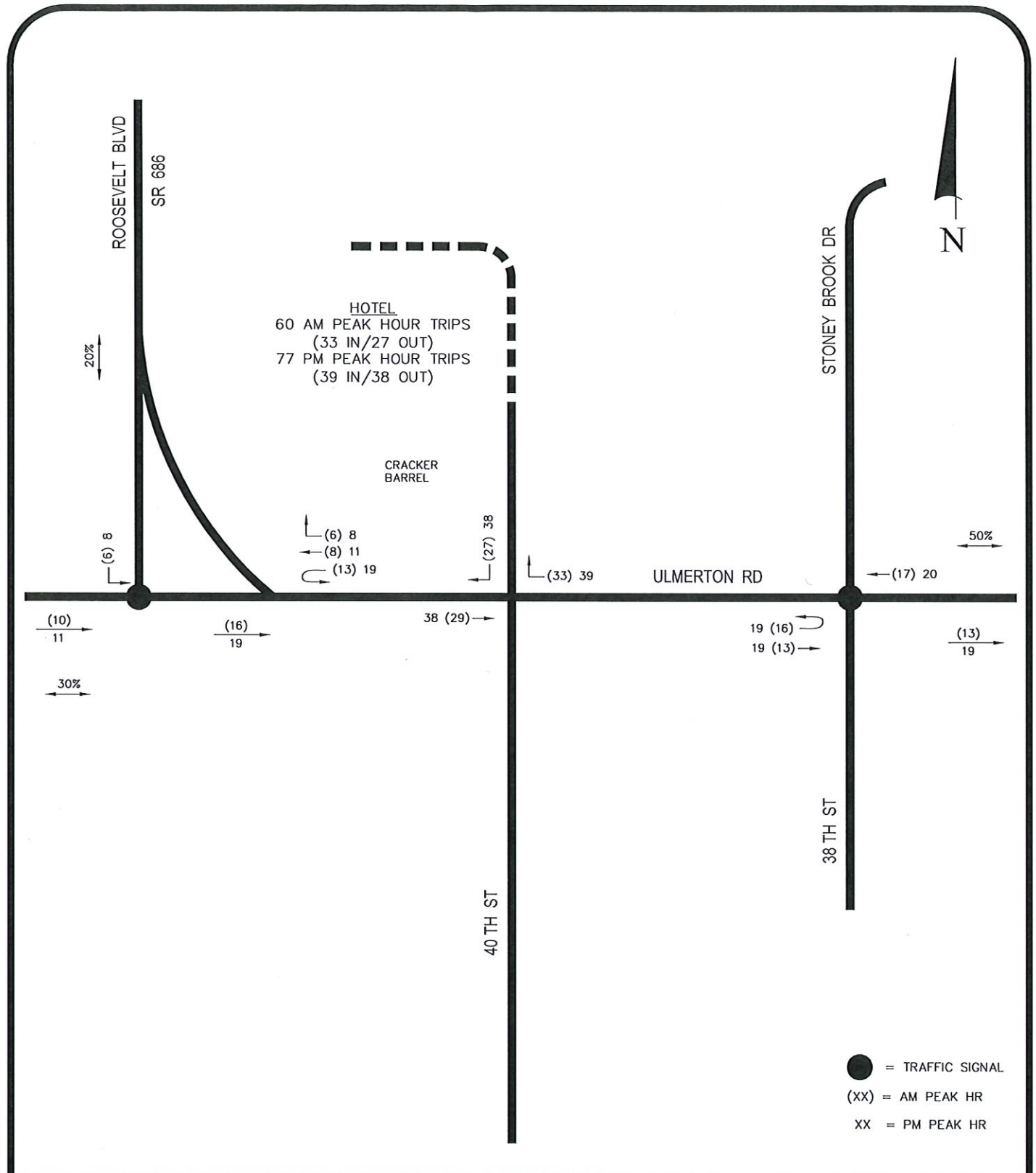
TABLE 2 – TRIP GENERATION ESTIMATES

LAND USE	ITE LUC	DAILY TRIPS	AM PEAK HOUR TRIPS (IN/OUT)	PM PEAK HOUR TRIPS (IN/OUT)
Hotel 130 rooms	310	1,039	60 (33/27)	77 (39/38)
TOTAL		1,039	60 (33/27)	77 (39/38)

The proposed development is expected to generate 1,039 daily trips of which 60 would occur during the AM peak hour and 77 would occur during the PM peak hour. Project traffic was distributed to the surrounding roadway system based on the following percentages and as shown in Figure 3.

- 50% East on Ulmerton Road
- 50% West on Ulmerton Road (20% to SR 686, 30% to Ulmerton Rd)

Project hotel/Cracker Barrel access is limited to a right-in/right-out connection to Ulmerton Road due to a raised median in Ulmerton Road. The intersections were analyzed to consider future operations with the full project in place. Expected future traffic is shown in Figure 4, intersection conditions are shown in Table 3 and the SYNCHRO printouts are included in Appendix B.



PROJECT TRAFFIC DISTRIBUTION

PROJECT NO:
23-008



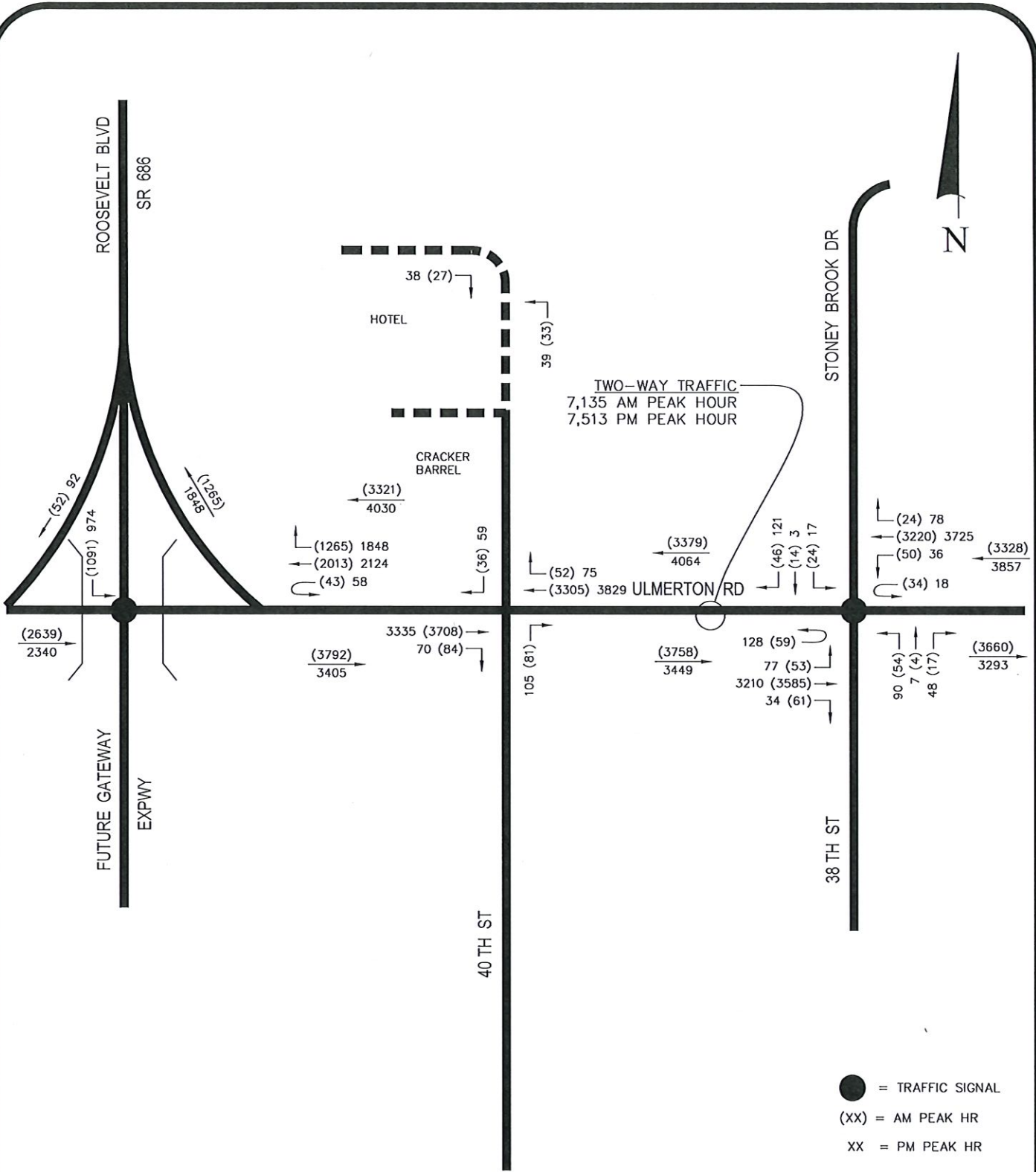
Gulf Coast Consulting, Inc.
 Land Development Consulting
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 13825 ICOT BLVD., SUITE 605
 Clearwater, Florida 33760
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DATE:
03/2023

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GJS

FIGURE:

3



FUTURE PEAK HOUR/PEAK SEASON TRAFFIC

PROJECT NO:
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DATE:
03/2023

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FIGURE:

4

TABLE 3 - FUTURE INTERSECTION CONDITIONS WITH HOTEL

INTERSECTION LOCATION	AM LOS	DELAY (SEC/VEH)	ICU %	PM LOS	DELAY (SEC/VEH)	ICU %
Ulmerton Rd / SR 686	D	38.0	80.9%	C	26.3	75.9%
Ulmerton Rd / 40 th St/ Cracker Barrel Drive	C*	18.7	66.8%	D*	25.7	69%
Ulmerton Rd / 38 th St.	C	22.8	83.6%	C	26.0	88.6%

* = LOS for SBRT exiting Cracker Barrel/Hotel driveway

As shown above, the southbound approach at the Ulmerton Road/40th Street/Cracker Barrel-Hotel driveway would have moderate delays in entering Ulmerton Road during the PM peak hour. Gaps created by the SR 686 signal will help alleviate delays. Queues at the “Stop” sign within this driveway are expected to be up to 25 feet (1 vehicle) maximum during the PM peak hour. Incoming traffic will consist of free-flowing right turns, which would not be expected to queue into Ulmerton Road.

The full project development will add U-turns to the 38th Street intersection to the east, and the SR 686 interchange to the west, as these are the nearest locations where U-turns are permitted. The hotel project traffic impacts are minimal accounting for approximately 1% of the capacity of Ulmerton Road. With the hotel impacts included, the intersections would operate at LOS D or better, and the EB/WB through movements on Ulmerton Road would continue to operate at LOS D or better during both the AM and PM peak hours. Peak hour traffic on Ulmerton Road would increase to 7,135 vehicles during the AM peak hour and 7,513 vehicles during the PM peak hour.

IV. CONCLUSIONS AND RECOMMENDATIONS

The proposed development of the property with a 130-room hotel would generate 1,039 daily trips with 60 trips occurring in the AM peak hour and 77 trips during the PM peak hour. The SB approach of the existing driveway at the intersection with Ulmerton Road would have moderate delays during the PM peak hour. Internal queues at this driveway are expected to be 25 feet and not more than 1 vehicle.

U-turns will be created at adjacent signalized intersections at 38th Street and at SR 686 interchange. The turn lane lengths at these intersections are more than sufficient to accommodate these additional turns. Overall intersection operations would be at LOS D or better during the peak hours. The EB/WB through movements along Ulmerton Road would continue to operate at LOS D or better during the AM & PM peak hours.

The opening of the Gateway Expressway is expected to significantly reduce future traffic on this segment of Ulmerton Road by providing a direct connection from the Bayside Bridge/Roosevelt Boulevard to CR 296 and I-275.

APPENDIX A

2021 PEAK SEASON FACTOR CATEGORY REPORT - REPORT TYPE: ALL
 CATEGORY: 1500 PINELLAS COUNTYWIDE

WEEK	DATES	SF	MOCF: 0.96 PSCF
1	01/01/2021 - 01/02/2021	0.99	1.03
2	01/03/2021 - 01/09/2021	1.07	1.11
3	01/10/2021 - 01/16/2021	1.15	1.20
4	01/17/2021 - 01/23/2021	1.13	1.18
5	01/24/2021 - 01/30/2021	1.11	1.16
6	01/31/2021 - 02/06/2021	1.09	1.14
7	02/07/2021 - 02/13/2021	1.07	1.11
8	02/14/2021 - 02/20/2021	1.05	1.09
9	02/21/2021 - 02/27/2021	1.03	1.07
10	02/28/2021 - 03/06/2021	1.01	1.05
11	03/07/2021 - 03/13/2021	0.99	1.03
12	03/14/2021 - 03/20/2021	0.97	1.01
13	03/21/2021 - 03/27/2021	0.97	1.01
*14	03/28/2021 - 04/03/2021	0.97	1.01
*15	04/04/2021 - 04/10/2021	0.97	1.01
*16	04/11/2021 - 04/17/2021	0.97	1.01
*17	04/18/2021 - 04/24/2021	0.96	1.00
*18	04/25/2021 - 05/01/2021	0.96	1.00
*19	05/02/2021 - 05/08/2021	0.95	0.99
*20	05/09/2021 - 05/15/2021	0.95	0.99
*21	05/16/2021 - 05/22/2021	0.95	0.99
*22	05/23/2021 - 05/29/2021	0.95	0.99
*23	05/30/2021 - 06/05/2021	0.95	0.99
*24	06/06/2021 - 06/12/2021	0.95	0.99
*25	06/13/2021 - 06/19/2021	0.96	1.00
*26	06/20/2021 - 06/26/2021	0.97	1.01
27	06/27/2021 - 07/03/2021	0.98	1.02
28	07/04/2021 - 07/10/2021	0.99	1.03
29	07/11/2021 - 07/17/2021	1.00	1.04
30	07/18/2021 - 07/24/2021	1.01	1.05
31	07/25/2021 - 07/31/2021	1.02	1.06
32	08/01/2021 - 08/07/2021	1.03	1.07
33	08/08/2021 - 08/14/2021	1.04	1.08
34	08/15/2021 - 08/21/2021	1.04	1.08
35	08/22/2021 - 08/28/2021	1.04	1.08
36	08/29/2021 - 09/04/2021	1.04	1.08
37	09/05/2021 - 09/11/2021	1.04	1.08
38	09/12/2021 - 09/18/2021	1.04	1.08
39	09/19/2021 - 09/25/2021	1.02	1.06
40	09/26/2021 - 10/02/2021	1.01	1.05
41	10/03/2021 - 10/09/2021	1.00	1.04
42	10/10/2021 - 10/16/2021	0.98	1.02
43	10/17/2021 - 10/23/2021	0.99	1.03
44	10/24/2021 - 10/30/2021	0.99	1.03
45	10/31/2021 - 11/06/2021	0.99	1.03
46	11/07/2021 - 11/13/2021	1.00	1.04
47	11/14/2021 - 11/20/2021	1.00	1.04
48	11/21/2021 - 11/27/2021	1.00	1.04
49	11/28/2021 - 12/04/2021	1.00	1.04
50	12/05/2021 - 12/11/2021	1.00	1.04
51	12/12/2021 - 12/18/2021	0.99	1.03
52	12/19/2021 - 12/25/2021	1.07	1.11
53	12/26/2021 - 12/31/2021	1.15	1.20

COUNTS
 1.07 - TMC 2/23/23

* PEAK SEASON

08-MAR-2022 12:36:28

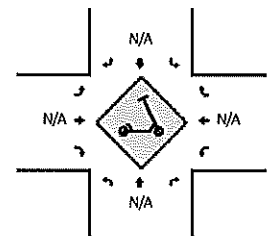
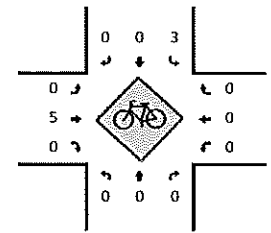
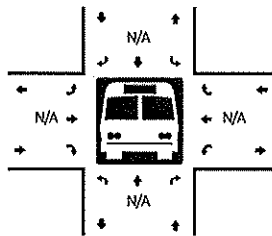
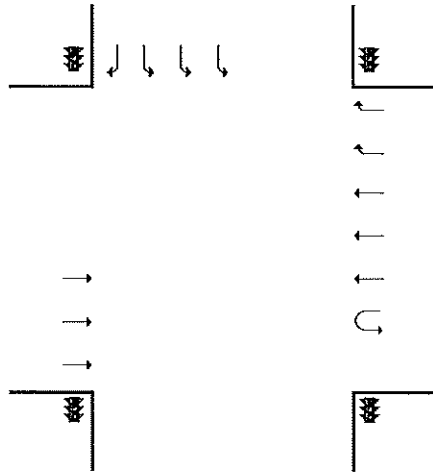
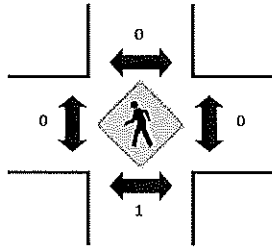
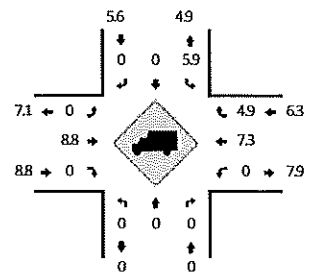
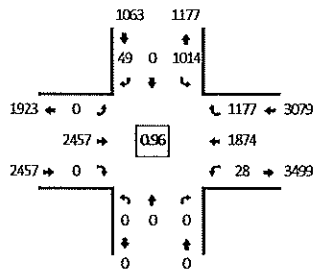
830UPD

7_1500_PKSEASON.TXT

LOCATION: Roosevelt Blvd West Signal -- Ulmerton Rd
 CITY/STATE: Pinellas, FL

QC JOB #: 16103201
 DATE: Thu, Feb 23 2023

Peak-Hour: 7:15 AM -- 8:15 AM
 Peak 15-Min: 7:30 AM -- 7:45 AM



R* = RTOR

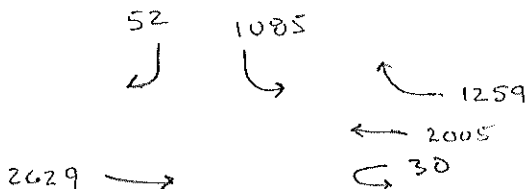
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	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*		
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7:15 AM	0	0	0	0	0	188	0	1	0	3	0	626	0	0	0	0	443	292	8	0	1561	
7:30 AM	0	0	0	0	0	285	0	2	0	9	0	615	0	0	0	0	484	320	6	0	1721	
7:45 AM	0	0	0	0	0	275	0	4	0	13	0	615	0	0	0	0	498	302	9	0	1716	6484
8:00 AM	0	0	0	0	0	266	0	3	0	14	0	601	0	0	0	0	449	263	5	0	1601	6599
8:15 AM	0	0	0	0	0	150	0	3	0	15	0	512	0	0	0	0	472	274	8	0	1434	6472
8:30 AM	0	0	0	0	0	221	0	2	0	10	0	590	0	0	0	0	467	281	4	0	1575	6326
8:45 AM	0	0	0	0	0	253	0	6	0	5	0	515	0	0	0	0	427	312	15	0	1533	6143
Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total	
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*		
All Vehicles	0	0	0	0	0	1140	0	44	0	36	0	2460	0	0	0	0	1936	1280	24	0	6920	
Heavy Trucks	0	0	0	0	0	88	0	0	0	0	0	164	0	0	0	0	172	40	0	0	464	
Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Pedestrians	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	
Bicycles	0	0	0	0	0	4	0	0	0	0	0	4	0	0	0	0	0	0	0	0	8	
Scooters	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

Comments:

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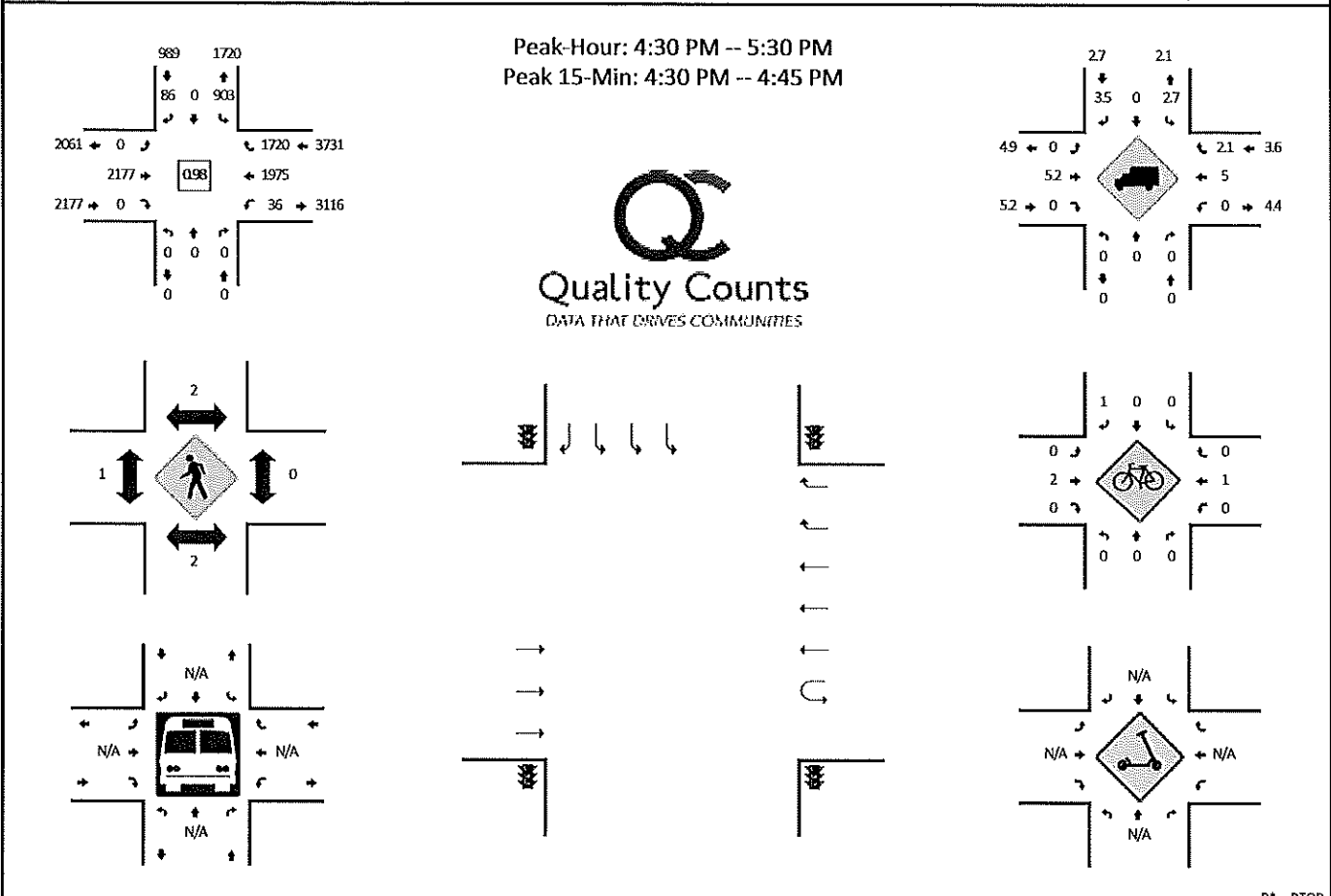
SOURCE: Quality Counts, LLC (<http://www.qualitycounts.net>) 1-877-580-2212

PSCF = 1.07



LOCATION: Roosevelt Blvd West Signal -- Ulmerton Rd
 CITY/STATE: Pinellas, FL

QC JOB #: 16103202
 DATE: Thu, Feb 23 2023

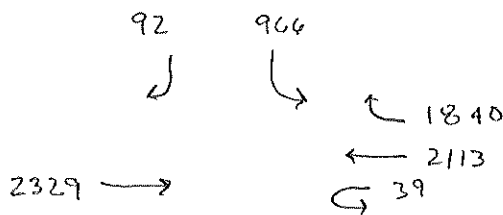


R* = RTOR

15-Min Count Period Beginning At	Roosevelt Blvd West Signal (Northbound)					Roosevelt Blvd West Signal (Southbound)					Ulmerton Rd (Eastbound)					Ulmerton Rd (Westbound)					Total	Hourly Totals
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4:15 PM	0	0	0	0	0	179	0	5	0	10	0	523	0	0	0	0	510	435	11	0	1673	
4:30 PM	0	0	0	0	0	226	0	4	0	13	0	605	0	0	0	0	473	426	10	0	1757	
4:45 PM	0	0	0	0	0	207	0	9	0	10	0	534	0	0	0	0	505	423	14	0	1702	6793
5:00 PM	0	0	0	0	0	258	0	2	0	24	0	540	0	0	0	0	477	413	6	0	1720	6852
5:15 PM	0	0	0	0	0	212	0	10	0	14	0	498	0	0	0	0	520	458	6	0	1718	6897
5:30 PM	0	0	0	0	0	235	0	7	0	22	0	487	0	0	0	0	464	393	10	0	1618	6758
5:45 PM	0	0	0	0	0	216	0	13	0	17	0	478	0	0	0	0	532	381	14	0	1651	6707
Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total	
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*		
All Vehicles	0	0	0	0	0	904	0	68	0	52	0	2420	0	0	0	0	1892	1704	40	0	7080	
Heavy Trucks	0	0	0	0	0	16	0	8	0	52	0	140	0	0	0	0	148	36	0	0	348	
Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Pedestrians	0	0	0	0	0	0	0	4	0	0	0	4	0	0	0	0	0	0	0	0	8	
Bicycles	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	4	
Scoters	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

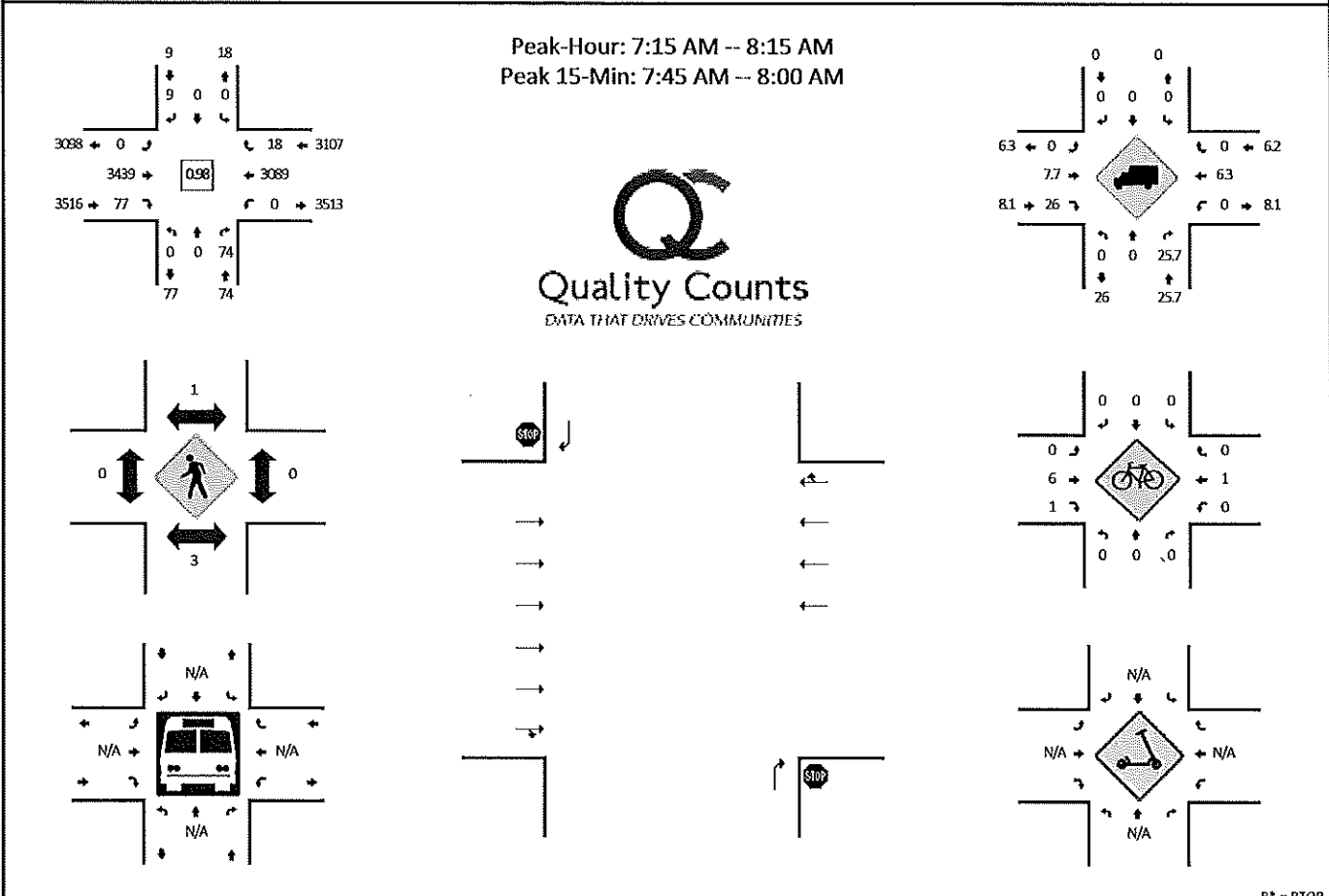
Comments:

PSCF = 1.07



LOCATION: Cracker Barrel Dwy/40th St N -- Ulmerton Rd
 CITY/STATE: Feather Sound, FL

QC JOB #: 16103203
 DATE: Thu, Feb 23 2023



15-Min Count Period Beginning At	Cracker Barrel Dwy/40th St N (Northbound)					Cracker Barrel Dwy/40th St N (Southbound)					Ulmerton Rd (Eastbound)					Ulmerton Rd (Westbound)					Total	Hourly Totals
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*		
7:00 AM	0	0	5	0	0	0	0	0	0	0	0	776	27	0	0	0	715	4	0	0	1527	
7:15 AM	0	0	12	0	0	0	0	3	0	0	0	838	21	0	0	0	739	7	0	0	1620	
7:30 AM	0	0	19	0	0	0	0	1	0	0	0	860	16	0	0	0	771	2	0	0	1669	
7:45 AM	0	0	14	0	0	0	0	2	0	0	0	852	20	0	0	0	824	5	0	0	1717	6533
8:00 AM	0	0	29	0	0	0	0	3	0	0	0	889	20	0	0	0	755	4	0	0	1700	6706
8:15 AM	0	0	16	0	0	0	0	5	0	0	0	689	10	0	0	0	718	8	0	0	1446	6532
8:30 AM	0	0	27	0	0	0	0	4	0	0	0	799	17	0	0	0	738	8	0	0	1593	6456
8:45 AM	0	0	31	0	0	0	0	10	0	0	0	756	24	0	0	0	745	10	0	0	1576	6315
Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total	
All Vehicles	0	0	56	0	0	0	0	8	0	0	0	3408	80	0	0	0	3296	20	0	0		6868
Heavy Trucks	0	0	12	0	0	0	0	0	0	0	0	212	28	0	0	0	196	0	0	0	448	
Buses																						
Pedestrians	0	4	0			0	0	0			0	0	0			0	0	0			4	
Bicycles											0	8	0			0	0	0			8	
Scooters																						

Comments:

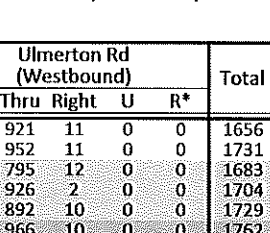
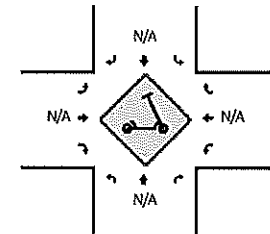
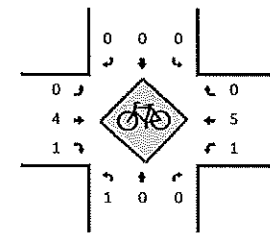
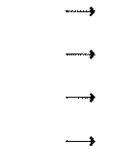
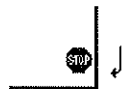
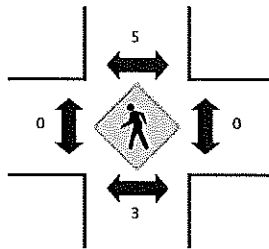
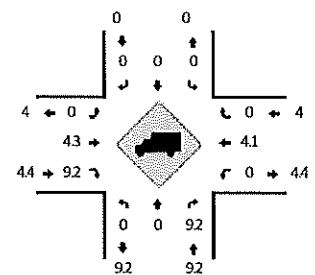
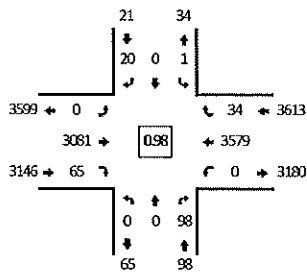
PSCF = 1.07

9
 ↓
 ↙ 19
 ← 3305
 3679 →
 84 →
 ↘
 81

LOCATION: Cracker Barrel Dwy/40th St N -- Ulmerton Rd
 CITY/STATE: Feather Sound, FL

QC JOB #: 16103204
 DATE: Thu, Feb 23 2023

Peak-Hour: 4:30 PM -- 5:30 PM
 Peak 15-Min: 5:15 PM -- 5:30 PM



R* = RTOR

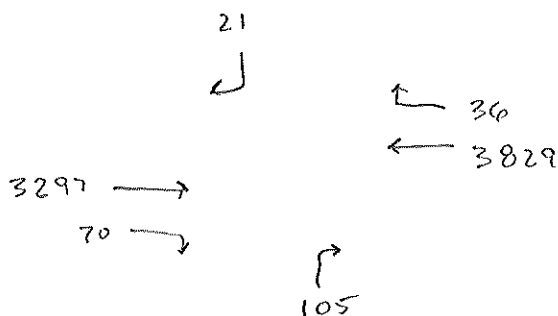
15-Min Count Period Beginning At	Cracker Barrel Dwy/40th St N (Northbound)					Cracker Barrel Dwy/40th St N (Southbound)					Ulmerton Rd (Eastbound)					Ulmerton Rd (Westbound)					Total	Hourly Totals
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*		
4:00 PM	0	0	23	0	0	0	0	5	0	0	0	672	24	0	0	0	921	11	0	0	1656	
4:15 PM	0	0	13	0	0	0	0	5	0	0	0	730	20	0	0	0	952	11	0	0	1731	
4:30 PM	0	0	24	0	0	0	0	7	0	0	0	832	13	0	0	0	795	12	0	0	1683	
4:45 PM	0	0	32	0	0	0	0	4	0	0	0	722	18	0	0	0	926	2	0	0	1704	6774
5:00 PM	0	0	20	0	0	1	0	5	0	0	0	782	19	0	0	0	892	10	0	0	1729	6847
5:15 PM	0	0	22	0	0	0	0	4	0	0	0	745	15	0	0	0	966	10	0	0	1762	6878
5:30 PM	0	0	9	0	0	0	0	14	0	0	0	724	11	0	0	0	841	6	0	0	1605	6800
5:45 PM	0	0	22	0	0	0	0	8	0	0	0	703	9	0	0	0	894	9	0	0	1645	6741
Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total	
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*		
All Vehicles	0	0	88	0	0	0	0	16	0	0	0	2980	60	0	0	0	3864	40	0	0	7048	
Heavy Trucks	0	0	0			0	0	0			0	88	8			0	128	0			224	
Buses																						
Pedestrians		0					0					0					0				0	
Bicycles	4	0	0			0	0	0			0	0	0			0	4	0			8	
Scoters																						

Comments:

Report generated on 3/1/2023 9:40 AM

SOURCE: Quality Counts, LLC (<http://www.qualitycounts.net>) 1-877-580-2212

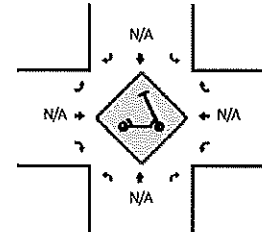
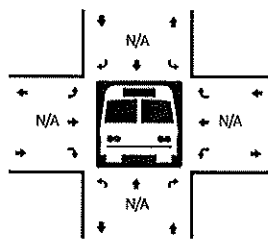
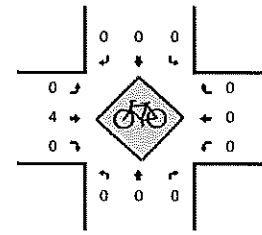
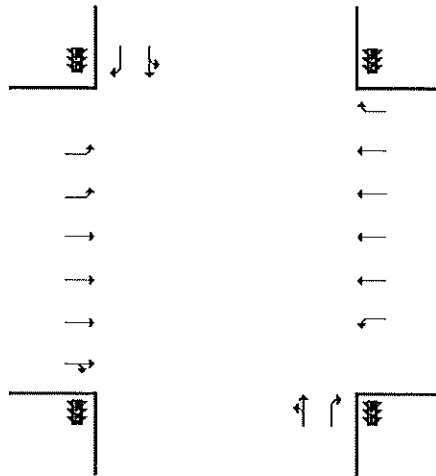
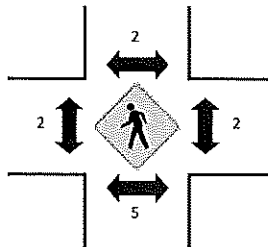
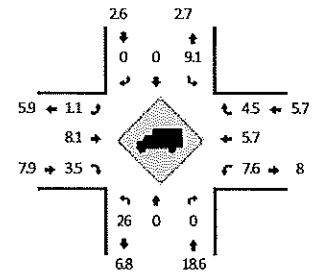
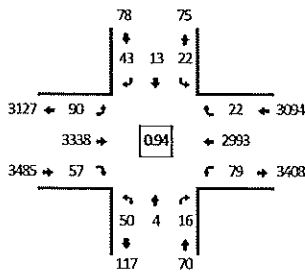
PSCF = 1.07



LOCATION: Stoneybrook Dr/38th St -- Ulmerton Rd
 CITY/STATE: Feather Sound, FL

QC JOB #: 16103205
 DATE: Thu, Feb 23 2023

Peak-Hour: 7:15 AM -- 8:15 AM
 Peak 15-Min: 8:00 AM -- 8:15 AM



R* = RTOR

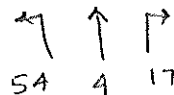
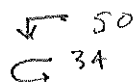
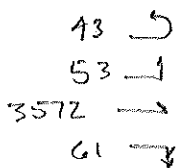
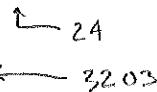
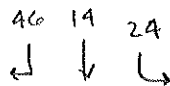
15-Min Count Period Beginning At	Stoneybrook Dr/38th St (Northbound)					Stoneybrook Dr/38th St (Southbound)					Ulmerton Rd (Eastbound)					Ulmerton Rd (Westbound)					Total	Hourly Totals
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*		
7:00 AM	13	0	2	0	5	4	2	8	0	8	9	773	7	1	0	16	718	6	12	1	1585	
7:15 AM	13	2	0	0	4	6	4	5	0	7	11	825	14	11	0	9	699	5	3	0	1618	
7:30 AM	12	1	0	0	3	8	3	9	0	3	6	823	11	15	1	14	740	8	10	0	1667	
7:45 AM	11	1	2	0	4	6	5	4	0	7	13	747	11	6	0	12	801	4	13	0	1647	6517
8:00 AM	14	0	0	0	3	2	1	5	0	3	19	943	19	9	1	12	753	4	6	1	1795	6727
8:15 AM	10	0	2	0	3	7	2	3	0	7	13	629	7	16	0	7	686	6	5	1	1404	6513
8:30 AM	13	0	2	0	10	8	4	3	0	8	21	788	13	14	0	12	697	10	6	0	1609	6455
8:45 AM	17	0	1	0	3	7	3	9	0	13	20	707	12	18	0	12	677	9	14	2	1524	6332
Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total	
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*		
All Vehicles	56	0	12	0	12	8	4	32	0	12	76	3772	80	36	4	48	3012	20	24	4	7212	
Heavy Trucks	8	0	0			0	0	0			4	324	0			4	148	0			488	
Buses																						
Pedestrians		4					8					0					4				16	
Bicycles	0	0	0			0	0	0			0	4	0			0	0	0			4	
Scoters																						

Comments:

Report generated on 3/1/2023 9:40 AM

SOURCE: Quality Counts, LLC (<http://www.qualitycounts.net>) 1-877-580-2212

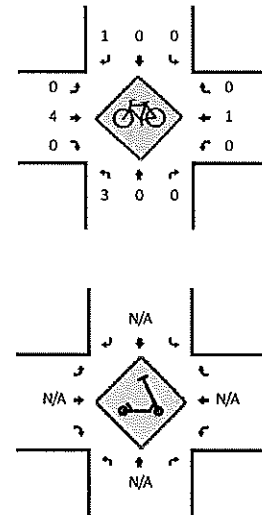
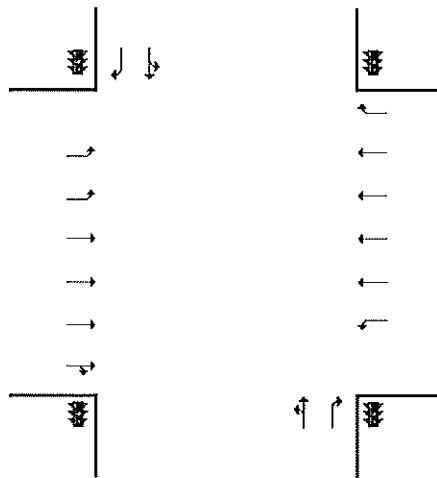
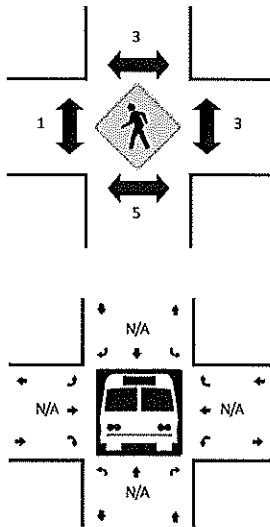
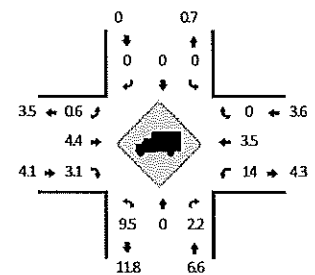
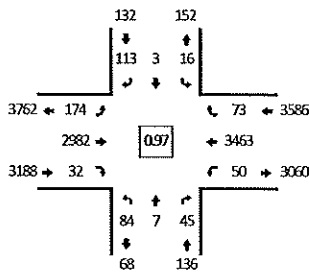
PSCF = 1.07



LOCATION: Stoneybrook Dr/38th St -- Ulmerton Rd
 CITY/STATE: Feather Sound, FL

QC JOB #: 16103206
 DATE: Thu, Feb 23 2023

Peak-Hour: 4:30 PM -- 5:30 PM
 Peak 15-Min: 4:30 PM -- 4:45 PM



R* = RTOR

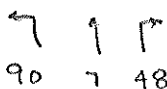
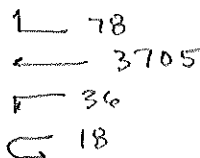
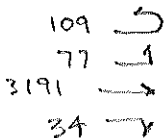
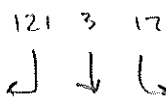
15-Min Count Period Beginning At	Stoneybrook Dr/38th St (Northbound)					Stoneybrook Dr/38th St (Southbound)					Ulmerton Rd (Eastbound)					Ulmerton Rd (Westbound)					Total	Hourly Totals
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*		
4:00 PM	30	1	4	0	10	5	4	22	0	4	15	621	11	20	2	10	859	8	10	3	1639	
4:15 PM	20	2	4	0	10	4	0	22	0	9	11	683	11	32	0	8	897	11	10	11	1745	
4:30 PM	23	1	0	0	11	6	1	15	0	7	12	811	9	32	0	11	858	11	4	10	1822	
4:45 PM	21	2	1	0	4	4	0	17	0	9	16	720	7	26	0	7	872	6	3	12	1727	6933
5:00 PM	22	0	4	0	13	3	1	17	0	13	22	723	7	23	0	10	826	10	9	8	1711	7005
5:15 PM	18	4	2	0	10	3	1	23	0	12	22	728	9	21	0	5	907	11	1	5	1782	7042
5:30 PM	16	1	3	0	12	9	2	19	0	4	20	677	13	23	2	8	816	8	5	3	1641	6861
5:45 PM	18	1	0	0	11	5	2	15	0	4	19	678	4	20	1	8	821	15	4	7	1633	6767
Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total	
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*		
All Vehicles	92	4	44	0	44	24	4	88	0	28	48	3244	36	128	0	44	3432	84	16	40	7400	
Heavy Trucks	16	0	0			0	0	0			4	184	4			8	144	0			360	
Buses																						
Pedestrians		4					8					0					4				16	
Bicycles	4	0	0			0	0	0			0	8	0			0	0	0			12	
Scooters																						

Comments:

Report generated on 3/1/2023 9:40 AM

SOURCE: Quality Counts, LLC (<http://www.qualitycounts.net>) 1-877-580-2212

$PSCF = 1.07$



Lanes, Volumes, Timings

3: ULMERTON RD & SR 686 RAMP

03/02/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑		↘	↑↑↑	↗				↗↗↗		↗
Traffic Volume (vph)	0	2629	0	30	2005	1259	0	0	0	1085	0	52
Future Volume (vph)	0	2629	0	30	2005	1259	0	0	0	1085	0	52
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	0.88	1.00	1.00	1.00	0.94	1.00	1.00
Frt						0.850						0.850
Flt Protected				0.950						0.950		
Satd. Flow (prot)	0	4759	0	1805	4893	2682	0	0	0	4802	0	1524
Flt Permitted				0.027						0.950		
Satd. Flow (perm)	0	4759	0	51	4893	2682	0	0	0	4802	0	1524
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						283						41
Link Speed (mph)		45			45			30				45
Link Distance (ft)		955			608			268				635
Travel Time (s)		14.5			9.2			6.1				9.6
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	9%	0%	0%	6%	6%	0%	0%	0%	6%	6%	6%
Adj. Flow (vph)	0	2739	0	31	2089	1311	0	0	0	1130	0	54
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	2739	0	31	2089	1311	0	0	0	1130	0	54
Turn Type		NA		pm+pt	NA	Free				Perm		Perm
Protected Phases		2		1	6							
Permitted Phases				6		Free				8		8
Detector Phase		2		1	6					8		8
Switch Phase												
Minimum Initial (s)		5.0		1.0	5.0					5.0		5.0
Minimum Split (s)		25.0		6.0	25.0					25.0		25.0
Total Split (s)		150.0		20.0	170.0					70.0		70.0
Total Split (%)		62.5%		8.3%	70.8%					29.2%		29.2%
Maximum Green (s)		143.0		15.0	163.0					63.0		63.0
Yellow Time (s)		5.0		4.0	5.0					5.0		5.0
All-Red Time (s)		2.0		1.0	2.0					2.0		2.0
Lost Time Adjust (s)		0.0		0.0	0.0					0.0		0.0
Total Lost Time (s)		7.0		5.0	7.0					7.0		7.0
Lead/Lag		Lag		Lead								
Lead-Lag Optimize?		Yes		Yes								
Vehicle Extension (s)		3.0		3.0	3.0					3.0		3.0
Recall Mode		Min		None	Min					None		None
Walk Time (s)		7.0			7.0					7.0		7.0
Flash Dont Walk (s)		11.0			11.0					11.0		11.0
Pedestrian Calls (#/hr)		0			0					0		0
Act Effct Green (s)		143.3		154.9	152.9	224.8				57.9		57.9
Actuated g/C Ratio		0.64		0.69	0.68	1.00				0.26		0.26
v/c Ratio		0.90		0.35	0.63	0.49				0.91		0.13
Control Delay		41.4		27.9	21.5	0.6				93.1		22.3
Queue Delay		0.0		0.0	0.0	0.0				0.0		0.0
Total Delay		41.4		27.9	21.5	0.6				93.1		22.3
LOS		D		C	C	A				F		C
Approach Delay		41.4			13.6							89.9

AM

Lanes, Volumes, Timings

3: ULMERTON RD & SR 686 RAMP

03/02/2023

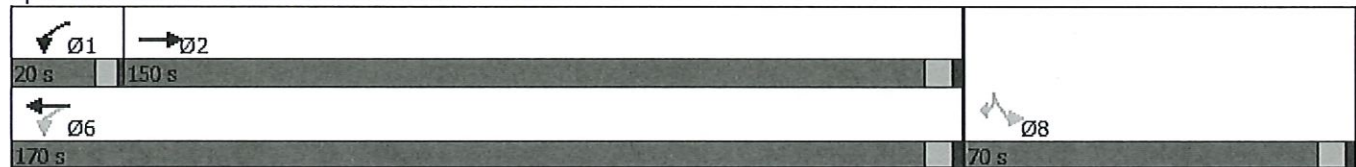


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS		D			B						F	
Queue Length 50th (ft)		1323		15	638	0				592		15
Queue Length 95th (ft)		1428		40	690	0				657		59
Internal Link Dist (ft)		875			528			188			555	
Turn Bay Length (ft)												
Base Capacity (vph)		3034		152	3555	2682				1348		457
Starvation Cap Reductn		0		0	0	0				0		0
Spillback Cap Reductn		0		0	0	0				0		0
Storage Cap Reductn		0		0	0	0				0		0
Reduced v/c Ratio		0.90		0.20	0.59	0.49				0.84		0.12

Intersection Summary

Area Type:	Other
Cycle Length:	240
Actuated Cycle Length:	224.8
Natural Cycle:	90
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.91
Intersection Signal Delay:	36.2
Intersection LOS:	D
Intersection Capacity Utilization:	80.6%
ICU Level of Service:	D
Analysis Period (min):	15

Splits and Phases: 3: ULMERTON RD & SR 686 RAMP



AM

Lanes, Volumes, Timings

3: ULMERTON RD & SR 686 RAMP

03/02/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑		↘	↑↑↑	↗				↗↗↗		↘
Traffic Volume (vph)	0	2329	0	39	2113	1840	0	0	0	966	0	92
Future Volume (vph)	0	2329	0	39	2113	1840	0	0	0	966	0	92
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	0.88	1.00	1.00	1.00	0.94	1.00	1.00
Frt						0.850						0.850
Flt Protected				0.950						0.950		
Satd. Flow (prot)	0	4940	0	1805	4988	2733	0	0	0	4942	0	1568
Flt Permitted				0.036						0.950		
Satd. Flow (perm)	0	4940	0	68	4988	2733	0	0	0	4942	0	1568
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						409						43
Link Speed (mph)		45			45			30				45
Link Distance (ft)		955			608			268				635
Travel Time (s)		14.5			9.2			6.1				9.6
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	0%	5%	0%	0%	4%	4%	0%	0%	0%	3%	3%	3%
Adj. Flow (vph)	0	2377	0	40	2156	1878	0	0	0	986	0	94
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	2377	0	40	2156	1878	0	0	0	986	0	94
Turn Type		NA		pm+pt	NA	Free				Perm		Perm
Protected Phases		2		1	6							
Permitted Phases				6		Free				8		8
Detector Phase		2		1	6					8		8
Switch Phase												
Minimum Initial (s)		5.0		1.0	5.0					5.0		5.0
Minimum Split (s)		25.0		6.0	25.0					25.0		25.0
Total Split (s)		140.0		20.0	160.0					70.0		70.0
Total Split (%)		60.9%		8.7%	69.6%					30.4%		30.4%
Maximum Green (s)		133.0		15.0	153.0					63.0		63.0
Yellow Time (s)		5.0		4.0	5.0					5.0		5.0
All-Red Time (s)		2.0		1.0	2.0					2.0		2.0
Lost Time Adjust (s)		0.0		0.0	0.0					0.0		0.0
Total Lost Time (s)		7.0		5.0	7.0					7.0		7.0
Lead/Lag		Lag		Lead								
Lead-Lag Optimize?		Yes		Yes								
Vehicle Extension (s)		3.0		3.0	3.0					3.0		3.0
Recall Mode		Min		None	Min					None		None
Walk Time (s)		7.0			7.0					7.0		7.0
Flash Dont Walk (s)		11.0			11.0					11.0		11.0
Pedestrian Calls (#/hr)		0			0					0		0
Act Effct Green (s)		106.1		117.5	115.4	176.3				46.1		46.1
Actuated g/C Ratio		0.60		0.67	0.65	1.00				0.26		0.26
v/c Ratio		0.80		0.34	0.66	0.69				0.76		0.21
Control Delay		30.0		20.6	19.4	1.4				67.0		34.1
Queue Delay		0.0		0.0	0.0	0.0				0.0		0.0
Total Delay		30.0		20.6	19.4	1.4				67.0		34.1
LOS		C		C	B	A				E		C
Approach Delay		30.0			11.1							64.1

PM

Lanes, Volumes, Timings
 3: ULMERTON RD & SR 686 RAMP

03/02/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS		C			B						E	
Queue Length 50th (ft)		786		15	538	0				379		46
Queue Length 95th (ft)		973		40	661	0				527		117
Internal Link Dist (ft)		875			528			188			555	
Turn Bay Length (ft)												
Base Capacity (vph)		3764		201	4223	2733				1868		619
Starvation Cap Reductn		0		0	0	0				0		0
Spillback Cap Reductn		0		0	0	0				0		0
Storage Cap Reductn		0		0	0	0				0		0
Reduced v/c Ratio		0.63		0.20	0.51	0.69				0.53		0.15

Intersection Summary

Area Type: Other

Cycle Length: 230

Actuated Cycle Length: 176.3

Natural Cycle: 75

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.80

Intersection Signal Delay: 24.7

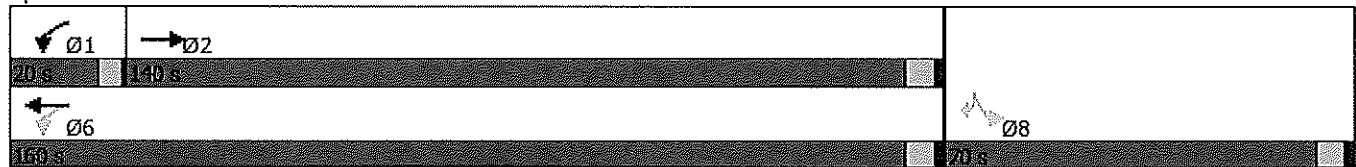
Intersection Capacity Utilization: 72.5%

Analysis Period (min): 15

Intersection LOS: C

ICU Level of Service: C

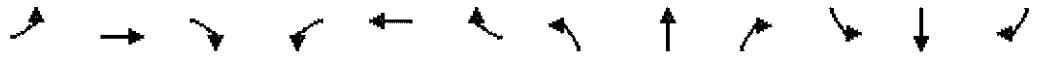
Splits and Phases: 3: ULMERTON RD & SR 686 RAMP



PM

HCM Unsignalized Intersection Capacity Analysis
 4: 40th Street/40th St -Cracker Barrel & Ulmerton Rd

03/02/2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		TTT			TTT				T			T
Traffic Volume (veh/h)	0	3679	84	0	3305	19	0	0	81	0	0	9
Future Volume (Veh/h)	0	3679	84	0	3305	19	0	0	81	0	0	9
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Hourly flow rate (vph)	0	3754	86	0	3372	19	0	0	83	0	0	9
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	3391			3840			4649	7188	982	4403	7222	852
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	3391			3840			4649	7188	982	4403	7222	852
tC, single (s)	4.1			4.2			7.5	6.5	7.4	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.3			3.5	4.0	3.5	3.5	4.0	3.3
p0 queue free %	100			100			100	100	61	100	100	97
cM capacity (veh/h)	82			47			0	0	210	0	0	307

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	WB 4	NB 1	SB 1
Volume Total	1073	1073	1073	622	963	963	963	501	83	9
Volume Left	0	0	0	0	0	0	0	0	0	0
Volume Right	0	0	0	86	0	0	0	19	83	9
cSH	1700	1700	1700	1700	1700	1700	1700	1700	210	307
Volume to Capacity	0.63	0.63	0.63	0.37	0.57	0.57	0.57	0.29	0.39	0.03
Queue Length 95th (ft)	0	0	0	0	0	0	0	0	44	2
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	32.8	17.1
Lane LOS									D	C
Approach Delay (s)	0.0				0.0				32.8	17.1
Approach LOS									D	C

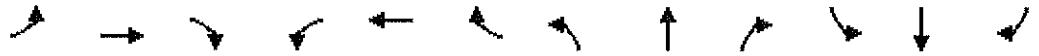
Intersection Summary	
Average Delay	0.4
Intersection Capacity Utilization	66.4%
Analysis Period (min)	15
ICU Level of Service	C

SBRT
 CRACKER BARREL

AM

HCM Unsignalized Intersection Capacity Analysis
 4: 40th Street/40th St -Cracker Barrel & Ulmerton Rd

03/02/2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑↑			↑↑↑↑				↑			↑
Traffic Volume (veh/h)	0	3297	70	0	3829	36	0	0	105	0	0	21
Future Volume (Veh/h)	0	3297	70	0	3829	36	0	0	105	0	0	21
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Hourly flow rate (vph)	0	3364	71	0	3907	37	0	0	107	0	0	21
Pedestrians		5			3			3			5	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		3.5			3.5			3.5			3.5	
Percent Blockage		0			0			0			0	
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	3949			3438			4405	7352	882	4882	7368	1005
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
yCu, unblocked vol	3949			3438			4405	7352	882	4882	7368	1005
tC, single (s)	4.1			4.2			7.5	6.5	7.4	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.3			3.5	4.0	3.5	3.5	4.0	3.3
p0 queue free %	100			100			100	100	57	100	100	91
cM capacity (veh/h)	48			69			0	0	246	0	0	241
Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	WB 4	NB 1	SB 1		
Volume Total	961	961	961	552	1116	1116	1116	595	107	21		
Volume Left	0	0	0	0	0	0	0	0	0	0		
Volume Right	0	0	0	71	0	0	0	37	107	21		
cSH	1700	1700	1700	1700	1700	1700	1700	1700	246	241		
Volume to Capacity	0.57	0.57	0.57	0.32	0.66	0.66	0.66	0.35	0.43	0.09		
Queue Length 95th (ft)	0	0	0	0	0	0	0	0	52	7		
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	30.4	21.4		
Lane LOS									D	C		
Approach Delay (s)	0.0				0.0				30.4	21.4		
Approach LOS									D	C		
Intersection Summary												
Average Delay			0.5									
Intersection Capacity Utilization			67.6%			ICU Level of Service			C			
Analysis Period (min)			15									

SBR7
 CRACKER BARREL

PM

Lanes, Volumes, Timings

3: 38TH STREET/STONEBROOK DR & ULMERTON RD

03/02/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖↖			↖		↗		↖	↗		↖	↗
Traffic Volume (vph)	96	3572	61	84	3203	24	54	4	17	24	14	46
Future Volume (vph)	96	3572	61	84	3203	24	54	4	17	24	14	46
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	1000		0	375		900	350		350	300		300
Storage Lanes	2		0	1		1	0		1	0		1
Taper Length (ft)	25			25		25			25			25
Lane Util. Factor	0.97	0.86	0.86	1.00	0.86	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00	1.00		1.00		0.98		0.99	0.98		0.99	0.98
Frt		0.997				0.850			0.850			0.850
Flt Protected	0.950			0.950				0.955			0.969	
Satd. Flow (prot)	3242	6028	0	1703	6166	1524	0	1538	1369	0	1787	1568
Flt Permitted	0.950			0.950				0.710			0.751	
Satd. Flow (perm)	3242	6028	0	1703	6166	1492	0	1134	1340	0	1378	1535
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2				45			50			50
Link Speed (mph)		45			45			30			30	
Link Distance (ft)		702			805			381			291	
Travel Time (s)		10.6			12.2			8.7			6.6	
Confl. Peds. (#/hr)	2		5	5		2	2		2	2		2
Confl. Bikes (#/hr)			4									
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	8%	8%	8%	6%	6%	6%	18%	18%	18%	3%	3%	3%
Adj. Flow (vph)	102	3800	65	89	3407	26	57	4	18	26	15	49
Shared Lane Traffic (%)												
Lane Group Flow (vph)	102	3865	0	89	3407	26	0	61	18	0	41	49
Turn Type	Prot	NA		Prot	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	1	6		5	2			4			8	
Permitted Phases						2	4		4	8		8
Detector Phase	1	6		5	2	2	4	4	4	8	8	8
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	11.0	23.0		10.0	23.0	23.0	22.0	22.0	22.0	22.0	22.0	22.0
Total Split (s)	35.0	155.0		35.0	155.0	155.0	50.0	50.0	50.0	50.0	50.0	50.0
Total Split (%)	14.6%	64.6%		14.6%	64.6%	64.6%	20.8%	20.8%	20.8%	20.8%	20.8%	20.8%
Maximum Green (s)	28.0	148.0		29.0	148.0	148.0	44.0	44.0	44.0	44.0	44.0	44.0
Yellow Time (s)	5.0	5.0		4.0	5.0	5.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Lost Time (s)	7.0	7.0		6.0	7.0	7.0		6.0	6.0		6.0	6.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes						
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Min		None	Min	Min	None	None	None	None	None	None
Walk Time (s)		5.0			5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Flash Dont Walk (s)		11.0			11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)		0			0	0	0	0	0	0	0	0
Act Effct Green (s)	11.7	148.3		15.8	151.4	151.4		16.1	16.1		16.1	16.1
Actuated g/C Ratio	0.06	0.74		0.08	0.76	0.76		0.08	0.08		0.08	0.08

AM

Lanes, Volumes, Timings

3: 38TH STREET/STONEBROOK DR & ULMERTON RD

03/02/2023

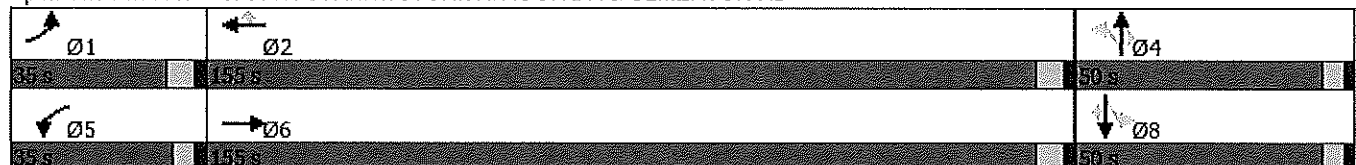


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.54	0.86		0.66	0.73	0.02		0.67	0.12		0.37	0.29
Control Delay	102.9	22.3		113.1	14.8	0.5		122.8	1.5		96.6	22.0
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Delay	102.9	22.3		113.1	14.8	0.5		122.8	1.5		96.6	22.0
LOS	F	C		F	B	A		F	A		F	C
Approach Delay		24.4			17.1			95.2			56.0	
Approach LOS		C			B			F			E	
Queue Length 50th (ft)	68	975		116	643	0		79	0		52	0
Queue Length 95th (ft)	110	1286		193	831	3		144	0		102	47
Internal Link Dist (ft)		622			725			301			211	
Turn Bay Length (ft)	1000			375		900			350			300
Base Capacity (vph)	456	4488		248	4685	1144		250	335		304	378
Starvation Cap Reductn	0	0		0	0	0		0	0		0	0
Spillback Cap Reductn	0	0		0	0	0		0	0		0	0
Storage Cap Reductn	0	0		0	0	0		0	0		0	0
Reduced v/c Ratio	0.22	0.86		0.36	0.73	0.02		0.24	0.05		0.13	0.13

Intersection Summary

Area Type: Other
 Cycle Length: 240
 Actuated Cycle Length: 199.2
 Natural Cycle: 110
 Control Type: Semi Act-Uncoord
 Maximum v/c Ratio: 0.86
 Intersection Signal Delay: 22.2
 Intersection Capacity Utilization: 83.4%
 Analysis Period (min) 15
 Intersection LOS: C
 ICU Level of Service E

Splits and Phases: 3: 38TH STREET/STONEBROOK DR & ULMERTON RD



AM

Lanes, Volumes, Timings

3: 38TH STREET/STONEBROOK DR & ULMERTON RD

03/02/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	186	3191	34	54	3705	78	90	7	48	17	3	121
Future Volume (vph)	186	3191	34	54	3705	78	90	7	48	17	3	121
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	1000		0	375		900	350		350	300		300
Storage Lanes	2		0	1		1	0		1	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.97	0.86	0.86	1.00	0.86	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00	1.00		1.00		0.97		1.00	0.97		0.99	0.98
Frt		0.998				0.850			0.850			0.850
Flt Protected	0.950			0.950				0.956			0.959	
Satd. Flow (prot)	3367	6268	0	1736	6285	1553	0	1698	1509	0	1822	1615
Flt Permitted	0.950			0.950				0.726			0.680	
Satd. Flow (perm)	3367	6268	0	1735	6285	1514	0	1284	1467	0	1281	1587
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1				80			52			125
Link Speed (mph)		45			45			30			30	
Link Distance (ft)		702			805			381			291	
Travel Time (s)		10.6			12.2			8.7			6.6	
Confl. Peds. (#/hr)	3		5	5		3	1		3	3		1
Confl. Bikes (#/hr)			4			1			3			1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	7%	7%	7%	0%	0%	0%
Adj. Flow (vph)	192	3290	35	56	3820	80	93	7	49	18	3	125
Shared Lane Traffic (%)												
Lane Group Flow (vph)	192	3325	0	56	3820	80	0	100	49	0	21	125
Turn Type	Prot	NA		Prot	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	1	6		5	2			4			8	
Permitted Phases						2	4		4	8		8
Detector Phase	1	6		5	2	2	4	4	4	8	8	8
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	11.0	23.0		11.0	23.0	23.0	22.0	22.0	22.0	22.0	22.0	22.0
Total Split (s)	35.0	145.0		35.0	145.0	145.0	50.0	50.0	50.0	50.0	50.0	50.0
Total Split (%)	15.2%	63.0%		15.2%	63.0%	63.0%	21.7%	21.7%	21.7%	21.7%	21.7%	21.7%
Maximum Green (s)	28.0	138.0		28.0	138.0	138.0	44.0	44.0	44.0	44.0	44.0	44.0
Yellow Time (s)	5.0	5.0		5.0	5.0	5.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Lost Time (s)	7.0	7.0		7.0	7.0	7.0		6.0	6.0		6.0	6.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes						
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Min		None	Min	Min	None	None	None	None	None	None
Walk Time (s)		5.0			5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Flash Dont Walk (s)		11.0			11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)		0			0	0	0	0	0	0	0	0
Act Effct Green (s)	16.5	143.1		11.7	138.3	138.3		20.5	20.5		20.5	20.5
Actuated g/C Ratio	0.08	0.73		0.06	0.71	0.71		0.10	0.10		0.10	0.10

PM

Lanes, Volumes, Timings

3: 38TH STREET/STONEBROOK DR & ULMERTON RD

03/02/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.68	0.72		0.54	0.86	0.07		0.74	0.24		0.16	0.45
Control Delay	99.9	17.1		109.5	25.3	2.2		115.9	18.2		82.0	16.0
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Delay	99.9	17.1		109.5	25.3	2.2		115.9	18.2		82.0	16.0
LOS	F	B		F	C	A		F	B		F	B
Approach Delay		21.6			26.0			83.8			25.5	
Approach LOS		C			C			F			C	
Queue Length 50th (ft)	125	660		71	1001	0		127	0		25	0
Queue Length 95th (ft)	181	878		132	1285	22		206	43		59	70
Internal Link Dist (ft)		622			725			301			211	
Turn Bay Length (ft)	1000			375		900			350			300
Base Capacity (vph)	483	4590		249	4449	1095		289	371		289	455
Starvation Cap Reductn	0	0		0	0	0		0	0		0	0
Spillback Cap Reductn	0	0		0	0	0		0	0		0	0
Storage Cap Reductn	0	0		0	0	0		0	0		0	0
Reduced v/c Ratio	0.40	0.72		0.22	0.86	0.07		0.35	0.13		0.07	0.27

Intersection Summary

Area Type: Other
 Cycle Length: 230
 Actuated Cycle Length: 195.4
 Natural Cycle: 100
 Control Type: Semi Act-Uncoord
 Maximum v/c Ratio: 0.86
 Intersection Signal Delay: 25.1
 Intersection Capacity Utilization: 87.8%
 Analysis Period (min): 15

Intersection LOS: C
 ICU Level of Service E

Splits and Phases: 3: 38TH STREET/STONEBROOK DR & ULMERTON RD

Ø1	Ø2	Ø4
35 s	145 s	80 s
Ø5	Ø6	Ø8
35 s	145 s	80 s

RM

COUNTY: 15
 STATION: 0034
 DESCRIPTION: SR 688/ULMERTON RD, E OF SR 686/ROOSEVELT BLVD (N)
 START DATE: 06/16/2021
 START TIME: 1100

TIME	DIRECTION: E				DIRECTION: W				COMBINED TOTAL		
	1ST	2ND	3RD	4TH	TOTAL	1ST	2ND	3RD		4TH	TOTAL
0000	137	85	70	105	397	147	145	106	83	481	
0100	101	64	37	52	254	106	102	73	47	328	
0200	52	68	45	48	213	46	54	43	37	180	
0300	48	70	67	89	274	64	58	72	74	268	
0400	93	86	135	145	459	73	93	168	227	561	
0500	203	227	270	355	1055	197	208	313	371	1089	
0600	349	408	550	618	1925	353	400	520	651	1924	
0700	573	634	756	800	2763	574	671	740	770	2755	
0800	746	666	702	742	2856	657	792	737	698	2884	
0900	641	646	622	632	2541	731	586	651	561	2529	
1000	556	640	659	565	2420	588	635	657	587	2467	
1100	589	573	591	686	2439	486	627	527	625	2265	
1200	643	692	654	681	2670	653	663	682	640	2638	
1300	628	592	583	648	2451	712	601	706	665	2684	
1400	642	639	713	774	2768	694	762	714	716	2886	
1500	702	719	768	649	2838	721	777	705	766	2969	
1600	681	771	782	722	2956	826	845	887	833	3391	
1700	715	838	700	769	3022	848	927	798	850	3423	
1800	673	600	566	516	2355	706	766	664	584	2720	
1900	511	437	398	400	1746	548	497	469	449	1963	
2000	259	332	334	285	1345	403	440	350	321	1514	
2100	259	332	237	239	1067	399	258	284	261	1202	
2200	189	231	178	184	782	254	254	230	220	958	
2300	201	229	204	184	818	222	215	153	147	737	
24-HOUR TOTALS:					42414					44816	87230

DIRECTION: E		DIRECTION: W		COMBINED DIRECTIONS	
HOUR	VOLUME	HOUR	VOLUME	HOUR	VOLUME
A.M.	730	730	2959	730	5927
P.M.	1630	1630	3495	1630	6552
DAILY	1630	1630	3495	1630	6552
TRUCK PERCENTAGE	7.09	6.32	6.69		

CLASSIFICATION SUMMARY DATABASE

DIR	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	TOTTRK	TOTVOL
E	45	29729	9632	130	1520	391	44	382	504	18	12	4	3	0	0	3008	42414
W	30	31847	10108	164	1509	291	37	341	452	22	11	2	2	0	0	2831	44816

APPENDIX B

FLORIDA DEPARTMENT OF TRANSPORTATION
 TRANSPORTATION STATISTICS OFFICE
 2021 HISTORICAL AADT REPORT

COUNTY: 15 - PINELLAS

SITE: 0034 - SR 688/ULMERTON RD, E OF SR 686/ROOSEVELT BLVD (N)

YEAR	AADT	DIRECTION 1	DIRECTION 2	*K FACTOR	D FACTOR	T FACTOR
2021	84000 C	E 41000	W 43000	9.00	53.00	6.80
2020	77500 C	E 37500	W 40000	9.00	55.30	7.90
2019	83500 F	E 39500	W 44000	9.00	55.70	5.40
2018	83000 C	E 39500	W 43500	9.00	55.50	5.40
2017	83500 T	E 39000	W 42500	9.00	54.50	7.10
2016	81500 S	E 38000	W 41500	9.00	55.90	5.60
2015	79500 F	E 37000	W 40500	9.00	55.00	5.60
2014	77500 C	E 37000	W 40500	9.00	55.40	5.60
2013	83000 C	E 41000	W 42000	9.00	55.20	5.40
2012	82500 C	E 40000	W 42500	9.00	55.00	5.40
2011	86500 C	E 43500	W 43000	9.00	56.50	5.80
2010	89000 C	E 44000	W 45000	10.52	55.26	5.60
2009	88500 C	E 43000	W 45500	10.53	55.79	5.30
2008	79500 F	E 35500	W 44000	10.29	58.46	5.50
2007	81500 C	E 36500	W 45000	10.31	99.99	5.50
2006	96000 C	E 44000	W 52000	9.88	58.53	4.20

2016-2021 5 yr growth rate = 0.6 %/year

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

Land Use: 310

Hotel

Description

A hotel is a place of lodging that provides sleeping accommodations and supporting facilities such as a full-service restaurant, cocktail lounge, meeting rooms, banquet room, and convention facilities. A hotel typically provides a swimming pool or another recreational facility such as a fitness room. All suites hotel (Land Use 311), business hotel (Land Use 312), motel (Land Use 320), and resort hotel (Land Use 330) are related uses.

Additional Data

Twenty-five studies provided information on occupancy rates at the time the studies were conducted. The average occupancy rate for these studies was approximately 82 percent.

Some properties in this land use provide guest transportation services (e.g., airport shuttle, limousine service, golf course shuttle service) which may have an impact on the overall trip generation rates.

The technical appendices provide supporting information on time-of-day distributions for this land use. The appendices can be accessed through either the ITETripGen web app or the trip generation resource page on the ITE website (<https://www.ite.org/technical-resources/topics/trip-and-parking-generation/>).

The sites were surveyed in the 1980s, the 1990s, the 2000s, and the 2010s in California, District of Columbia, Florida, Georgia, Indiana, Minnesota, New York, Ontario (CAN), Pennsylvania, South Dakota, Texas, Vermont, Virginia, and Washington.

For all lodging uses, it is important to collect data on occupied rooms as well as total rooms in order to accurately predict trip generation characteristics for the site.

Trip generation at a hotel may be related to the presence of supporting facilities such as convention facilities, restaurants, meeting/banquet space, and retail facilities. Future data submissions should specify the presence of these amenities. Reporting the level of activity at the supporting facilities such as full, empty, partially active, number of people attending a meeting/banquet during observation may also be useful in further analysis of this land use.

Source Numbers

170, 260, 262, 277, 280, 301, 306, 357, 422, 507, 577, 728, 867, 872, 925, 951, 1009, 1021, 1026, 1046

Hotel (310)

Vehicle Trip Ends vs: Rooms
On a: Weekday

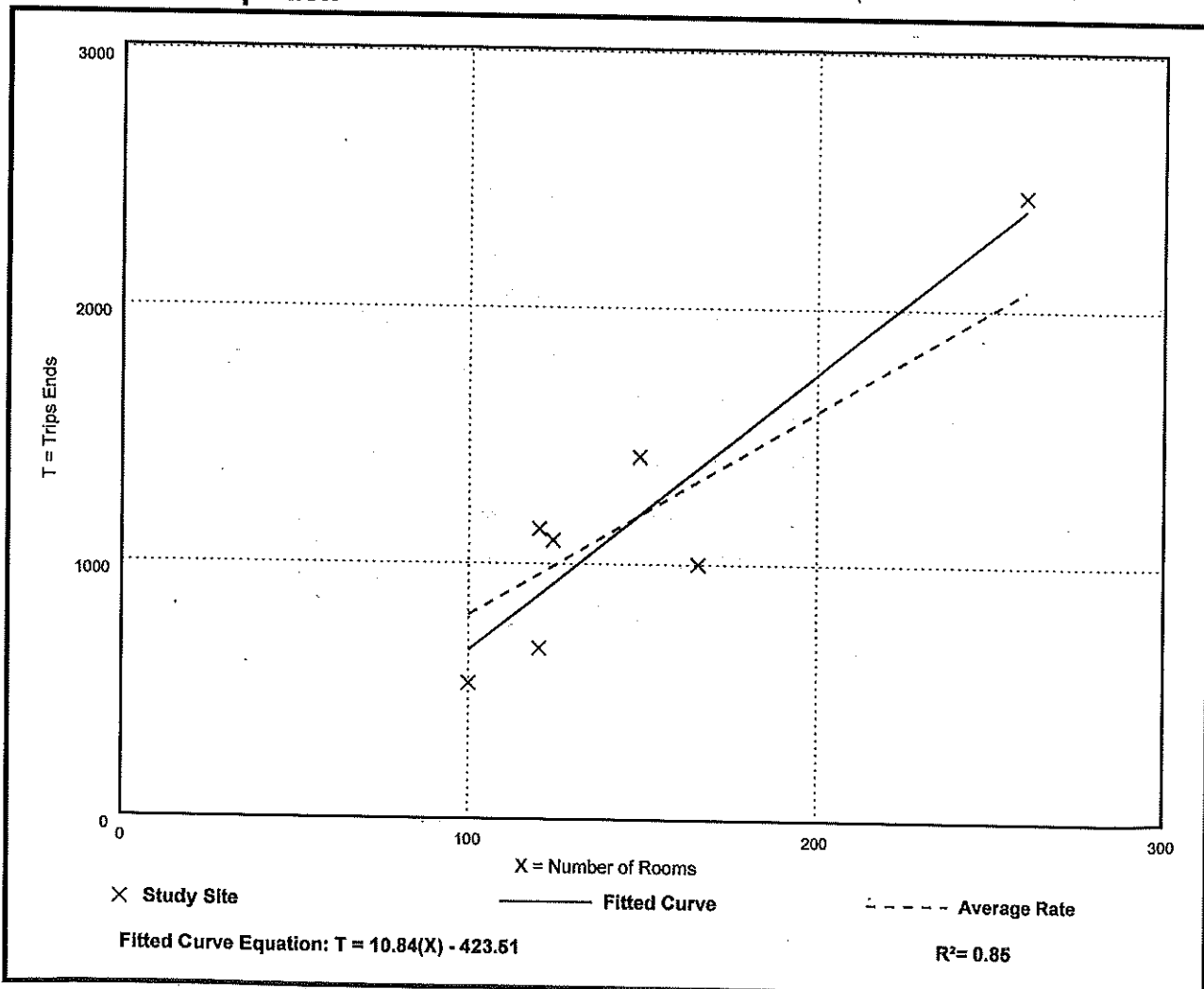
Setting/Location: General Urban/Suburban
Number of Studies: 7
Avg. Num. of Rooms: 148
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per Room

Average Rate	Range of Rates	Standard Deviation
7.99	5.31 - 9.53	1.92

Data Plot and Equation

*130 rooms * 7.99 = 1,039 data trips.*



Hotel (310)

Vehicle Trip Ends vs: Rooms

On a: Weekday,

Peak Hour of Adjacent Street Traffic,
One Hour Between 7 and 9 a.m.

Setting/Location: General Urban/Suburban

Number of Studies: 28

Avg. Num. of Rooms: 182

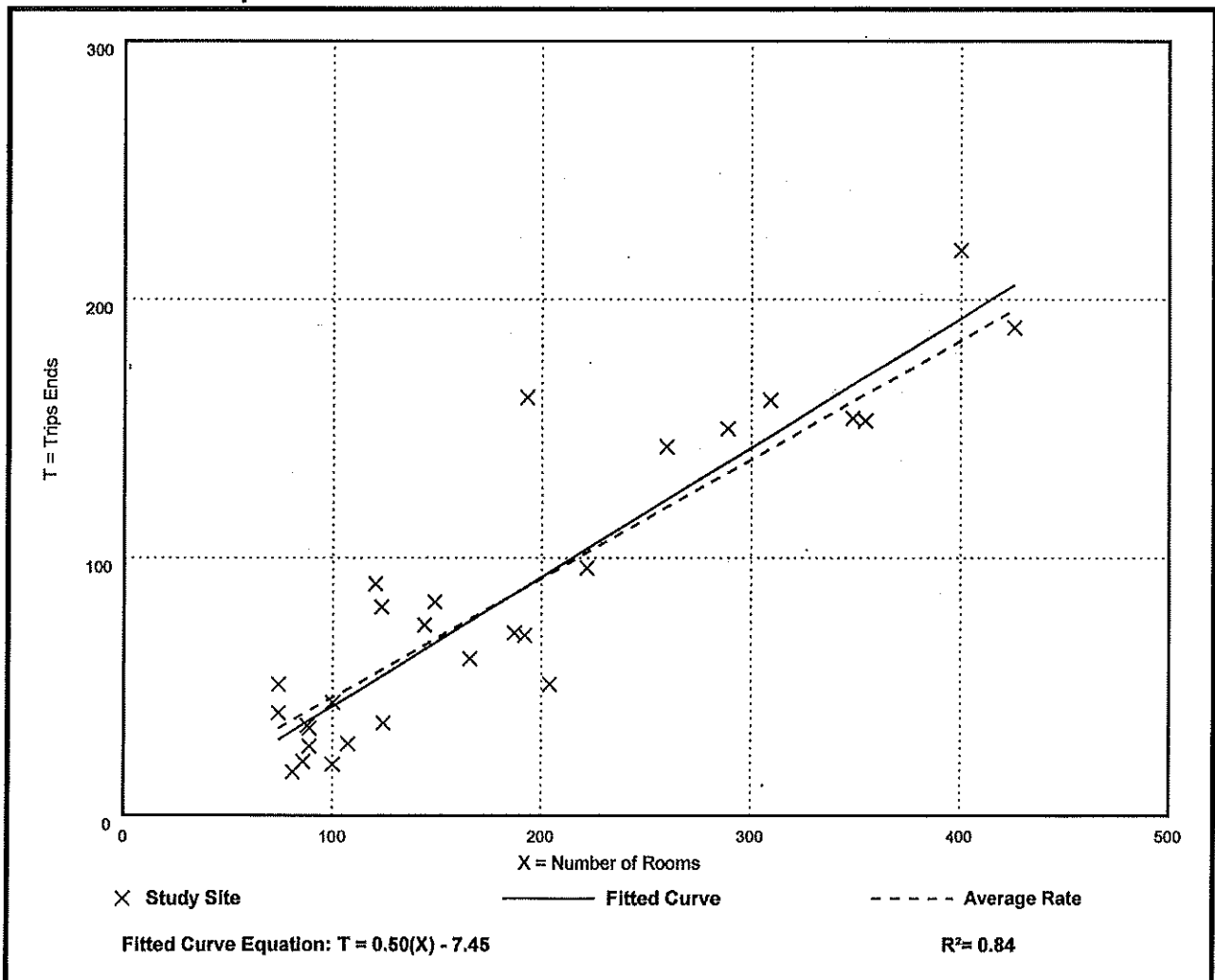
Directional Distribution: 56% entering, 44% exiting

Vehicle Trip Generation per Room

Average Rate	Range of Rates	Standard Deviation
0.46	0.20 - 0.84	0.14

Data Plot and Equation

130 x 0.46 = 60 AM PEAK HR TRIPS (33/21)



Hotel (310)

Vehicle Trip Ends vs: Rooms

On a: Weekday,

Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 p.m.

Setting/Location: General Urban/Suburban

Number of Studies: 31

Avg. Num. of Rooms: 186

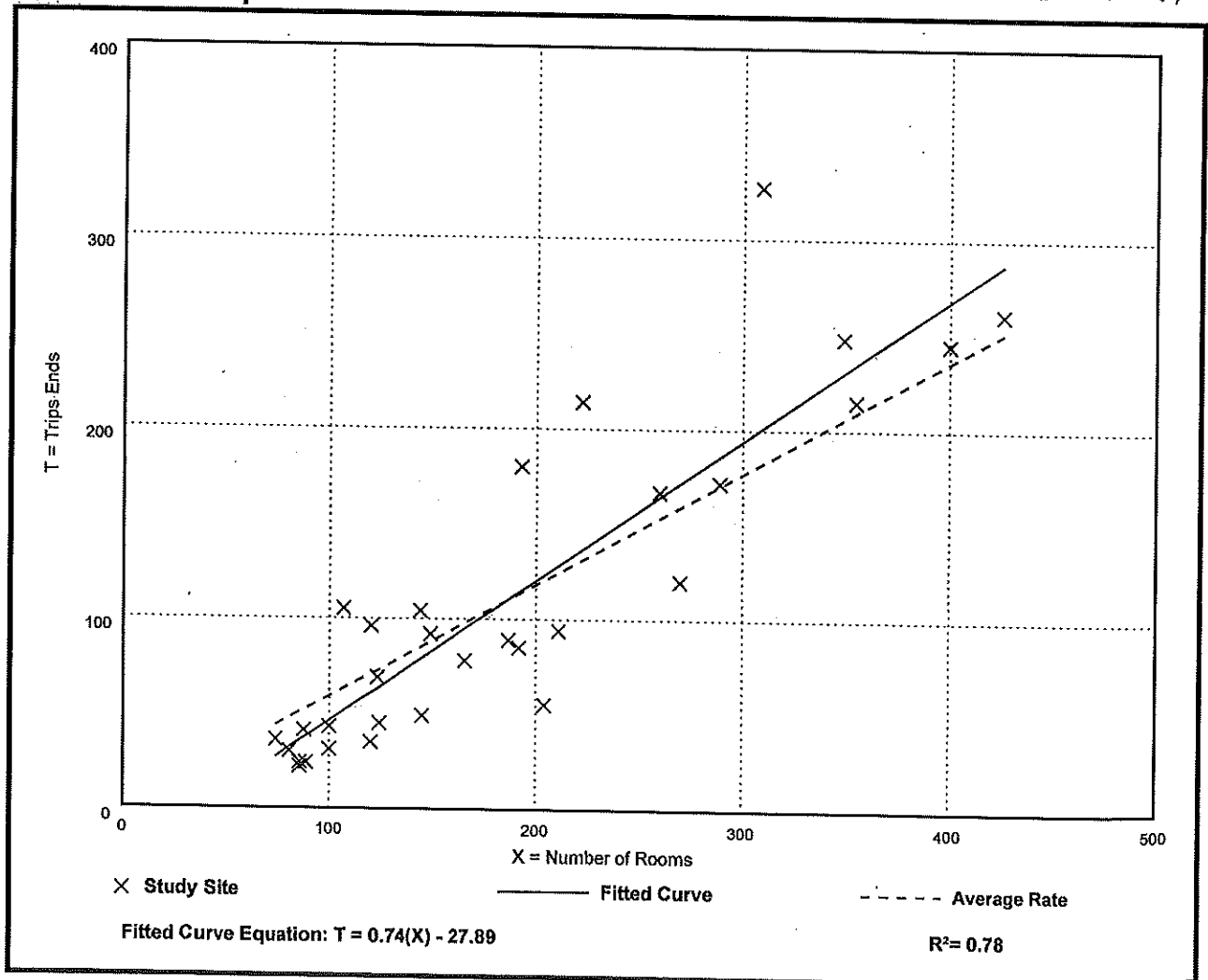
Directional Distribution: 51% entering, 49% exiting

Vehicle Trip Generation per Room

Average Rate	Range of Rates	Standard Deviation
0.59	0.26 - 1.06	0.22

Data Plot and Equation

$130 = 0.59 = 77 \text{ PM PEAK HOUR TRIPS (39/38)}$



Lanes, Volumes, Timings
 3: ULMERTON RD & SR 686 RAMP

03/03/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑		↘	↑↑↑	↗				↗↗↗		↘
Traffic Volume (vph)	0	2639	0	43	2013	1265	0	0	0	1091	0	52
Future Volume (vph)	0	2639	0	43	2013	1265	0	0	0	1091	0	52
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	0.88	1.00	1.00	1.00	0.94	1.00	1.00
Frt						0.850						0.850
Flt Protected				0.950						0.950		
Satd. Flow (prot)	0	4759	0	1805	4893	2682	0	0	0	4802	0	1524
Flt Permitted				0.027						0.950		
Satd. Flow (perm)	0	4759	0	51	4893	2682	0	0	0	4802	0	1524
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						283						41
Link Speed (mph)		45			45			30				45
Link Distance (ft)		955			608			268				635
Travel Time (s)		14.5			9.2			6.1				9.6
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	9%	0%	0%	6%	6%	0%	0%	0%	6%	6%	6%
Adj. Flow (vph)	0	2749	0	45	2097	1318	0	0	0	1136	0	54
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	2749	0	45	2097	1318	0	0	0	1136	0	54
Turn Type		NA		pm+pt	NA	Free				Perm		Perm
Protected Phases		2		1	6							
Permitted Phases				6		Free				8		8
Detector Phase		2		1	6					8		8
Switch Phase												
Minimum Initial (s)		5.0		1.0	5.0					5.0		5.0
Minimum Split (s)		25.0		6.0	25.0					25.0		25.0
Total Split (s)		150.0		20.0	170.0					70.0		70.0
Total Split (%)		62.5%		8.3%	70.8%					29.2%		29.2%
Maximum Green (s)		143.0		15.0	163.0					63.0		63.0
Yellow Time (s)		5.0		4.0	5.0					5.0		5.0
All-Red Time (s)		2.0		1.0	2.0					2.0		2.0
Lost Time Adjust (s)		0.0		0.0	0.0					0.0		0.0
Total Lost Time (s)		7.0		5.0	7.0					7.0		7.0
Lead/Lag		Lag		Lead								
Lead-Lag Optimize?		Yes		Yes								
Vehicle Extension (s)		3.0		3.0	3.0					3.0		3.0
Recall Mode		Min		None	Min					None		None
Walk Time (s)		7.0			7.0					7.0		7.0
Flash Dont Walk (s)		11.0			11.0					11.0		11.0
Pedestrian Calls (#/hr)		0			0					0		0
Act Effct Green (s)		143.1		158.0	156.0	228.9				58.8		58.8
Actuated g/C Ratio		0.63		0.69	0.68	1.00				0.26		0.26
v/c Ratio		0.92		0.47	0.63	0.49				0.92		0.13
Control Delay		45.0		43.5	21.7	0.6				95.2		22.5
Queue Delay		0.0		0.0	0.0	0.0				0.0		0.0
Total Delay		45.0		43.5	21.7	0.6				95.2		22.5
LOS		D		D	C	A				F		C
Approach Delay		45.0			13.9							91.9

AM

Lanes, Volumes, Timings

3: ULMERTON RD & SR 686 RAMP

03/03/2023



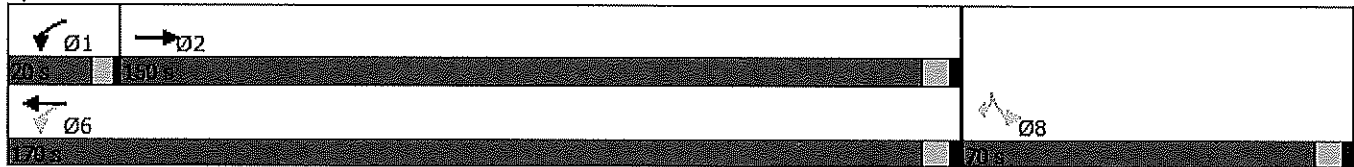
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS		D			B						F	
Queue Length 50th (ft)		1354		22	647	0				598		15
Queue Length 95th (ft)		1479		70	693	0				671		60
Internal Link Dist (ft)		875			528			188			555	
Turn Bay Length (ft)												
Base Capacity (vph)		2975		150	3486	2682				1322		449
Starvation Cap Reductn		0		0	0	0				0		0
Spillback Cap Reductn		0		0	0	0				0		0
Storage Cap Reductn		0		0	0	0				0		0
Reduced v/c Ratio		0.92		0.30	0.60	0.49				0.86		0.12

Intersection Summary

Area Type: Other
 Cycle Length: 240
 Actuated Cycle Length: 228.9
 Natural Cycle: 90
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.92
 Intersection Signal Delay: 38.0
 Intersection Capacity Utilization: 80.9%
 Analysis Period (min) 15

Intersection LOS: D
 ICU Level of Service D

Splits and Phases: 3: ULMERTON RD & SR 686 RAMP



Lanes, Volumes, Timings
 3: ULMERTON RD & SR 686 RAMP

03/03/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑		↘	↑↑↑	↗				↗		↘
Traffic Volume (vph)	0	2340	0	58	2124	1848	0	0	0	974	0	92
Future Volume (vph)	0	2340	0	58	2124	1848	0	0	0	974	0	92
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	0.88	1.00	1.00	1.00	0.94	1.00	1.00
Fr't						0.850						0.850
Flt Protected				0.950						0.950		
Satd. Flow (prot)	0	4940	0	1805	4988	2733	0	0	0	4942	0	1568
Flt Permitted				0.035						0.950		
Satd. Flow (perm)	0	4940	0	66	4988	2733	0	0	0	4942	0	1568
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						409						43
Link Speed (mph)		45			45			30				45
Link Distance (ft)		955			608			268				635
Travel Time (s)		14.5			9.2			6.1				9.6
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	0%	5%	0%	0%	4%	4%	0%	0%	0%	3%	3%	3%
Adj. Flow (vph)	0	2388	0	59	2167	1886	0	0	0	994	0	94
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	2388	0	59	2167	1886	0	0	0	994	0	94
Turn Type		NA		pm+pt	NA	Free				Perm		Perm
Protected Phases		2		1	6							
Permitted Phases				6		Free				8		8
Detector Phase		2		1	6					8		8
Switch Phase												
Minimum Initial (s)		5.0		1.0	5.0					5.0		5.0
Minimum Split (s)		25.0		6.0	25.0					25.0		25.0
Total Split (s)		140.0		20.0	160.0					70.0		70.0
Total Split (%)		60.9%		8.7%	69.6%					30.4%		30.4%
Maximum Green (s)		133.0		15.0	153.0					63.0		63.0
Yellow Time (s)		5.0		4.0	5.0					5.0		5.0
All-Red Time (s)		2.0		1.0	2.0					2.0		2.0
Lost Time Adjust (s)		0.0		0.0	0.0					0.0		0.0
Total Lost Time (s)		7.0		5.0	7.0					7.0		7.0
Lead/Lag		Lag		Lead								
Lead-Lag Optimize?		Yes		Yes								
Vehicle Extension (s)		3.0		3.0	3.0					3.0		3.0
Recall Mode		Min		None	Min					None		None
Walk Time (s)		7.0			7.0					7.0		7.0
Flash Dont Walk (s)		11.0			11.0					11.0		11.0
Pedestrian Calls (#/hr)		0			0					0		0
Act Effct Green (s)		108.8		124.7	122.6	184.4				47.3		47.3
Actuated g/C Ratio		0.59		0.68	0.66	1.00				0.26		0.26
v/c Ratio		0.82		0.47	0.65	0.69				0.78		0.22
Control Delay		33.2		36.3	19.5	1.5				70.4		34.3
Queue Delay		0.0		0.0	0.0	0.0				0.0		0.0
Total Delay		33.2		36.3	19.5	1.5				70.4		34.3
LOS		C		D	B	A				E		C
Approach Delay		33.2			11.5							67.3

PM

Lanes, Volumes, Timings

3: ULMERTON RD & SR 686 RAMP

03/03/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS		C			B						E	
Queue Length 50th (ft)		815		23	549	0				395		47
Queue Length 95th (ft)		1052		82	691	0				543		118
Internal Link Dist (ft)		875			528			188			555	
Turn Bay Length (ft)												
Base Capacity (vph)		3685		190	4154	2733				1746		581
Starvation Cap Reductn		0		0	0	0				0		0
Spillback Cap Reductn		0		0	0	0				0		0
Storage Cap Reductn		0		0	0	0				0		0
Reduced v/c Ratio		0.65		0.31	0.52	0.69				0.57		0.16

Intersection Summary

Area Type: Other
 Cycle Length: 230
 Actuated Cycle Length: 184.4
 Natural Cycle: 75
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.82
 Intersection Signal Delay: 26.3
 Intersection Capacity Utilization: 75.9%
 Analysis Period (min) 15

Intersection LOS: C
 ICU Level of Service D

Splits and Phases: 3: ULMERTON RD & SR 686 RAMP

Ø1	Ø2	
20 s	140 s	
Ø6		Ø8
160 s		70 s

PM

HCM Unsignalized Intersection Capacity Analysis
 4: 40th Street/40th St -Cracker Barrel & Ulmerton Rd

03/03/2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		TTTB			TTTB				T			T
Traffic Volume (veh/h)	0	3708	84	0	3305	52	0	0	81	0	0	36
Future Volume (Veh/h)	0	3708	84	0	3305	52	0	0	81	0	0	36
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Hourly flow rate (vph)	0	3784	86	0	3372	53	0	0	83	0	0	37
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	3425			3870			4707	7252	989	4428	7268	870
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	3425			3870			4707	7252	989	4428	7268	870
tC, single (s)	4.1			4.2			7.5	6.5	7.4	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.3			3.5	4.0	3.5	3.5	4.0	3.3
p0.queue free %	100			100			100	100	60	100	100	88
cM capacity (veh/h)	79			45			0	0	208	0	0	299

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	WB 4	NB 1	SB 1
Volume Total	1081	1081	1081	627	963	963	963	535	83	37
Volume Left	0	0	0	0	0	0	0	0	0	0
Volume Right	0	0	0	86	0	0	0	53	83	37
cSH	1700	1700	1700	1700	1700	1700	1700	1700	208	299
Volume to Capacity	0.64	0.64	0.64	0.37	0.57	0.57	0.57	0.31	0.40	0.12
Queue Length 95th (ft)	0	0	0	0	0	0	0	0	45	10
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	33.4	18.7
Lane LOS									D	C
Approach Delay (s)	0.0				0.0				33.4	18.7
Approach LOS									D	C

Intersection Summary	
Average Delay	0.5
Intersection Capacity Utilization	66.8%
Analysis Period (min)	15
ICU Level of Service	C

SBR T
 HOTEL / CRACKER
 BARREL

Am

HCM Unsignalized Intersection Capacity Analysis
 4: 40th Street/40th St -Cracker Barrel & Ulmerton Rd

03/03/2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations									↑			↑
Traffic Volume (veh/h)	0	3335	70	0	3829	75	0	0	105	0	0	59
Future Volume (Veh/h)	0	3335	70	0	3829	75	0	0	105	0	0	59
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Hourly flow rate (vph)	0	3403	71	0	3907	77	0	0	107	0	0	60
Pedestrians		5			3			3			5	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		3.5			3.5			3.5			3.5	
Percent Blockage		0			0			0			0	
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	3989			3477			4483	7430	892	4911	7428	1025
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	3989			3477			4483	7430	892	4911	7428	1025
tC, single (s)	4.1			4.2			7.5	6.5	7.4	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.3			3.5	4.0	3.5	3.5	4.0	3.3
p0 queue free %	100			100			100	100	56	100	100	74
cM capacity (veh/h)	46			66			0	0	242	0	0	234

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	WB 4	NB 1	SB 1
Volume Total	972	972	972	557	1116	1116	1116	635	107	60
Volume Left	0	0	0	0	0	0	0	0	0	0
Volume Right	0	0	0	71	0	0	0	77	107	60
cSH	1700	1700	1700	1700	1700	1700	1700	1700	242	234
Volume to Capacity	0.57	0.57	0.57	0.33	0.66	0.66	0.66	0.37	0.44	0.26
Queue Length 95th (ft)	0	0	0	0	0	0	0	0	53	25
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	31.1	25.7
Lane LOS									D	D
Approach Delay (s)	0.0				0.0				31.1	25.7
Approach LOS									D	D

Intersection Summary	
Average Delay	0.6
Intersection Capacity Utilization	69.0%
Analysis Period (min)	15
ICU Level of Service	C

S B R T
 HOTEL/CRACKER
 BARREL

Lanes, Volumes, Timings

3: 38TH STREET/STONEBROOK DR & ULMERTON RD

03/03/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	112	3585	61	84	3220	24	54	4	17	24	14	46
Future Volume (vph)	112	3585	61	84	3220	24	54	4	17	24	14	46
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	1000		0	375		900	350		350	300		300
Storage Lanes	2		0	1		1	0		1	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.97	0.86	0.86	1.00	0.86	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00	1.00		1.00		0.98		0.99	0.98		0.99	0.98
Frt		0.997				0.850			0.850			0.850
Flt Protected	0.950			0.950				0.955			0.969	
Satd. Flow (prot)	3242	6028	0	1703	6166	1524	0	1538	1369	0	1787	1568
Flt Permitted	0.950			0.950				0.710			0.751	
Satd. Flow (perm)	3242	6028	0	1703	6166	1492	0	1134	1340	0	1378	1535
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2				45			50			50
Link Speed (mph)		45			45			30			30	
Link Distance (ft)		702			805			381			291	
Travel Time (s)		10.6			12.2			8.7			6.6	
Confl. Peds. (#/hr)	2		5	5		2	2		2	2		2
Confl. Bikes (#/hr)			4									
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	8%	8%	8%	6%	6%	6%	18%	18%	18%	3%	3%	3%
Adj. Flow (vph)	119	3814	65	89	3426	26	57	4	18	26	15	49
Shared Lane Traffic (%)												
Lane Group Flow (vph)	119	3879	0	89	3426	26	0	61	18	0	41	49
Turn Type	Prot	NA		Prot	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	1	6		5	2			4			8	
Permitted Phases						2	4		4	8		8
Detector Phase	1	6		5	2	2	4	4	4	8	8	8
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	11.0	23.0		10.0	23.0	23.0	22.0	22.0	22.0	22.0	22.0	22.0
Total Split (s)	35.0	155.0		35.0	155.0	155.0	50.0	50.0	50.0	50.0	50.0	50.0
Total Split (%)	14.6%	64.6%		14.6%	64.6%	64.6%	20.8%	20.8%	20.8%	20.8%	20.8%	20.8%
Maximum Green (s)	28.0	148.0		29.0	148.0	148.0	44.0	44.0	44.0	44.0	44.0	44.0
Yellow Time (s)	5.0	5.0		4.0	5.0	5.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Lost Time (s)	7.0	7.0		6.0	7.0	7.0		6.0	6.0		6.0	6.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes						
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Min		None	Min	Min	None	None	None	None	None	None
Walk Time (s)		5.0			5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Flash Dont Walk (s)		11.0			11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)		0			0	0	0	0	0	0	0	0
Act Effct Green (s)	12.7	148.3		15.8	150.3	150.3		16.1	16.1		16.1	16.1
Actuated g/C Ratio	0.06	0.74		0.08	0.75	0.75		0.08	0.08		0.08	0.08

Lanes, Volumes, Timings

3: 38TH STREET/STONEBROOK DR & ULMERTON RD

03/03/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.57	0.86		0.66	0.74	0.02		0.67	0.12		0.37	0.29
Control Delay	102.9	22.5		113.1	15.5	0.6		122.8	1.5		96.6	22.0
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Delay	102.9	22.5		113.1	15.5	0.6		122.8	1.5		96.6	22.0
LOS	F	C		F	B	A		F	A		F	C
Approach Delay		24.9			17.9			95.2			56.0	
Approach LOS		C			B			F			E	
Queue Length 50th (ft)	79	985		116	667	0		79	0		52	0
Queue Length 95th (ft)	125	1298		193	863	4		144	0		102	47
Internal Link Dist (ft)		622			725			301			211	
Turn Bay Length (ft)	1000			375		900			350			300
Base Capacity (vph)	456	4488		248	4653	1137		250	335		304	378
Starvation Cap Reductn	0	0		0	0	0		0	0		0	0
Spillback Cap Reductn	0	0		0	0	0		0	0		0	0
Storage Cap Reductn	0	0		0	0	0		0	0		0	0
Reduced v/c Ratio	0.26	0.86		0.36	0.74	0.02		0.24	0.05		0.13	0.13

Intersection Summary

Area Type:	Other
Cycle Length:	240
Actuated Cycle Length:	199.2
Natural Cycle:	110
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	0.86
Intersection Signal Delay:	22.8
Intersection Capacity Utilization:	83.6%
Analysis Period (min):	15
Intersection LOS:	C
ICU Level of Service:	E

Splits and Phases: 3: 38TH STREET/STONEBROOK DR & ULMERTON RD

Ø1	Ø2	Ø4
Ø5	Ø6	Ø8

Lanes, Volumes, Timings

3: 38TH STREET/STONEBROOK DR & ULMERTON RD

03/03/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	205	3210	34	54	3725	78	90	7	48	17	3	121
Future Volume (vph)	205	3210	34	54	3725	78	90	7	48	17	3	121
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	1000		0	375		900	350		350	300		300
Storage Lanes	2		0	1		1	0		1	0		1
Taper Length (ft)	25			25		25			25			
Lane Util. Factor	0.97	0.86	0.86	1.00	0.86	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00	1.00		1.00		0.97		1.00	0.97		0.99	0.98
Frt		0.998				0.850			0.850			0.850
Flt Protected	0.950			0.950				0.956			0.959	
Satd. Flow (prot)	3367	6268	0	1736	6285	1553	0	1698	1509	0	1822	1615
Flt Permitted	0.950			0.950				0.726			0.680	
Satd. Flow (perm)	3367	6268	0	1735	6285	1514	0	1284	1467	0	1281	1587
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1				80			52			125
Link Speed (mph)		45			45			30			30	
Link Distance (ft)		702			805			381			291	
Travel Time (s)		10.6			12.2			8.7			6.6	
Confl. Peds. (#/hr)	3		5	5		3	1		3	3		1
Confl. Bikes (#/hr)			4			1			3			1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	7%	7%	7%	0%	0%	0%
Adj. Flow (vph)	211	3309	35	56	3840	80	93	7	49	18	3	125
Shared Lane Traffic (%)												
Lane Group Flow (vph)	211	3344	0	56	3840	80	0	100	49	0	21	125
Turn Type	Prot	NA		Prot	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	1	6		5	2			4			8	
Permitted Phases						2	4		4	8		8
Detector Phase	1	6		5	2	2	4	4	4	8	8	8
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	11.0	23.0		11.0	23.0	23.0	22.0	22.0	22.0	22.0	22.0	22.0
Total Split (s)	35.0	145.0		35.0	145.0	145.0	50.0	50.0	50.0	50.0	50.0	50.0
Total Split (%)	15.2%	63.0%		15.2%	63.0%	63.0%	21.7%	21.7%	21.7%	21.7%	21.7%	21.7%
Maximum Green (s)	28.0	138.0		28.0	138.0	138.0	44.0	44.0	44.0	44.0	44.0	44.0
Yellow Time (s)	5.0	5.0		5.0	5.0	5.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Lost Time (s)	7.0	7.0		7.0	7.0	7.0		6.0	6.0		6.0	6.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes						
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Min		None	Min	Min	None	None	None	None	None	None
Walk Time (s)		5.0			5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Flash Dont Walk (s)		11.0			11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)		0			0	0	0	0	0	0	0	0
Act Effct Green (s)	17.7	144.2		11.7	138.3	138.3		20.7	20.7		20.7	20.7
Actuated g/C Ratio	0.09	0.73		0.06	0.70	0.70		0.11	0.11		0.11	0.11

Lanes, Volumes, Timings

3: 38TH STREET/STONEBROOK DR & ULMERTON RD

03/03/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.70	0.73		0.54	0.87	0.07		0.75	0.24		0.16	0.45
Control Delay	100.3	17.2		110.3	26.5	2.2		116.8	18.3		82.7	16.1
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Delay	100.3	17.2		110.3	26.5	2.2		116.8	18.3		82.7	16.1
LOS	F	B		F	C	A		F	B		F	B
Approach Delay		22.2			27.2			84.4			25.7	
Approach LOS		C			C			F			C	
Queue Length 50th (ft)	139	669		72	1041	0		128	0		25	0
Queue Length 95th (ft)	198	892		133	1335	23		208	44		59	71
Internal Link Dist (ft)		622			725			301			211	
Turn Bay Length (ft)	1000			375		900			350			300
Base Capacity (vph)	480	4596		247	4419	1088		287	369		287	452
Starvation Cap Reductn	0	0		0	0	0		0	0		0	0
Spillback Cap Reductn	0	0		0	0	0		0	0		0	0
Storage Cap Reductn	0	0		0	0	0		0	0		0	0
Reduced v/c Ratio	0.44	0.73		0.23	0.87	0.07		0.35	0.13		0.07	0.28

Intersection Summary

Area Type: Other

Cycle Length: 230

Actuated Cycle Length: 196.7

Natural Cycle: 100

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.87

Intersection Signal Delay: 26.0

Intersection LOS: C

Intersection Capacity Utilization: 88.6%

ICU Level of Service E

Analysis Period (min) 15

Splits and Phases: 3: 38TH STREET/STONEBROOK DR & ULMERTON RD

Ø1 35 s	Ø2 145 s	Ø4 30 s
Ø5 35 s	Ø6 145 s	Ø8 30 s