

MEMORANDUM May 1, 2024

Re: Bradley Place and Sunset Avenue Signal Warrant Analysis Town of Palm Beach, Florida Project № 24174.01.03

This study was conducted to evaluate the operation and safety of the intersection of Bradley Place and Sunset Avenue and determine if the intersection is projected to meet the criteria for signalization within a 5-year period. The intersection location is illustrated in **Figure 1**.

Existing Conditions

Bradley Place and Sunset Avenue is currently a two-way stop controlled (TWSC) intersection. Bradley Place is a 2-lane undivided roadway with a posted speed limit of 25 miles per hour (mph). Sunset Avenue is a 2-lane undivided roadway west of its intersection with Bradley Place and transitions to a one-way, eastbound directional segment east of the intersection. No posted speed limit was identified for Sunset Avenue, so a 25-mph speed limit was assumed. The intersection geometry consists of the following:

- Northbound Approach
 - One (1) left turn lane
 - One (1) through lane
 - One (1) right turn lane
- Southbound Approach
 - One (1) shared through/right turn lane
 - One (1) left turn lane
- Eastbound Approach
 - One (1) shared lane for all movements
- No Westbound Approach (One-way, eastbound directional segment)



Signal Warrant Analysis Project № 24174.01.03 May 1, 2024 Page 3 of 15

Turning movement counts were collected at the study intersection from 8:00 AM to 6:00 PM on April 16, 2024. Based on seasonal factor data obtained from the Florida Department of Transportation (FDOT) *Florida Traffic Online*, a seasonal correction factor of 1.03 was applied to the raw counts. The turning movement counts and the seasonal factor report are provided in the **Attachments**. The existing volumes at the intersection are provided in **Table 1**.

Begin		Bradley	PI (NB)		Bradley PI (SB))	Total		
Time	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	
8:00 AM	13	276	47	336	9	248	8	265	9	8	11	28	629
9:00 AM	19	331	54	404	11	274	8	293	7	8	14	29	726
10:00 AM	9	217	55	281	13	246	8	267	8	10	14	32	580
11:00 AM	7	208	75	290	16	291	12	319	6	12	13	31	640
12:00 PM	16	255	111	382	24	252	9	285	6	8	21	35	702
1:00 PM	14	214	165	393	25	253	13	291	7	7	24	38	722
2:00 PM	8	146	121	275	20	278	19	317	6	10	18	34	626
3:00 PM	6	176	102	284	11	318	9	338	6	10	7	23	645
4:00 PM	7	215	131	353	20	279	14	313	4	5	15	24	690
5:00 PM	20	191	94	305	15	253	9	277	10	9	14	33	615
Total	119	2,229	955	3,303	164	2,692	109	2,965	69	87	151	307	6,575

Table 12024 Existing Intersection Volumes

Projected Intersection Volumes

Projected traffic volumes were calculated by applying an annual growth rate to the existing approach volumes over five (5) years. For Bradley Place, the growth rate was determined based on five (5) years of historical annual average daily traffic (AADT) volumes obtained from the FDOT *Florida Traffic Online*. Since the growth rate was found to be less than 2%, a minimum 2% growth rate was applied to Bradley Place. Since no AADT data was available for Sunset Avenue, a 2% growth rate was assumed. The historical AADT data and the growth rate calculation sheet are provided in the **Attachments**. The projected volumes at the intersection are provided in **Table 2**.

Signal Warrant Analysis Project № 24174.01.03 May 1, 2024 Page 4 of 15

Begin		Bradley	PI (NB)		Bradley PI (SB))	Total		
Time	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	
8:00 AM	14	305	52	371	10	274	9	293	10	9	12	31	695
9:00 AM	21	365	60	446	12	303	9	324	8	9	15	32	802
10:00 AM	10	240	61	311	14	272	9	295	9	11	15	35	641
11:00 AM	8	230	83	321	18	321	13	352	7	13	14	34	707
12:00 PM	18	282	123	423	26	278	10	314	7	9	23	39	776
1:00 PM	15	236	182	433	28	279	14	321	8	8	26	42	796
2:00 PM	9	161	134	304	22	307	21	350	7	11	20	38	692
3:00 PM	7	194	113	314	12	351	10	373	7	11	8	26	713
4:00 PM	8	237	145	390	22	308	15	345	4	6	17	27	762
5:00 PM	22	211	104	337	17	279	10	306	11	10	15	36	679
Total	132	2,461	1,057	3,650	181	2,972	120	3,273	78	97	165	340	7,263

Table 22029 Projected Intersection Volumes

Crash History

A review of historical crash data at the study intersection was conducted to determine if there are any prevalent crash trends. Five (5) years of crash data from 2019 to 2023 was obtained for the intersection from *Signal Four Analytics* and is provided in the **Attachments**. A map of the crash locations is provided in **Figure 2**. A summary of the crash types and crash severities during the study period is provided in **Table 3** and **Table 4**, respectively.

Crash Type Total Percent Angle 5% Bicycle 11% Left Turn 12% Sideswipe 17% Rear End 11% Parked Vehicle 11% Single Vehicle 11% Other/Unknown 22% Total 100%

Table 3 Crash Type Summary





Signal Warrant Analysis Project № 24174.01.03 May 1, 2024 Page 6 of 15

Crash Severity	2019	2020	2021	2022	2023	Total	Percent
Fatal Injury - K	0	0	0	0	0	0	0%
Incapacitating Injury - A	0	0	0	0	0	0	0%
Non-Incapacitating Injury - B	0	2	0	0	0	2	11%
Possible Injury - C	0	0	2	1	0	3	17%
Property Damage Only - O	1	1	5	3	3	13	72%
Total	1	3	7	4	3	18	100%

Table 4Crash Severity Summary

A total of 18 crashes were reported at the intersection during the study period. The crash rate at the intersection was calculated using the following equation:

$$R = \frac{1,000,000 \ x \ C}{365 \ x \ N \ x \ V}$$

Where:

R is the intersection crash rate, expressed as the number of crashes per million entering vehicles

 $\boldsymbol{\mathcal{C}}$ is the number of crashes at the intersection during the study period

N is the number of years in the study period

V is the number of daily vehicles entering the intersection, calculated by dividing the peak hour traffic (9:00-10:00 AM) by a k-factor of 0.09

Accordingly, the crash rate was calculated as follows:

$$R = \frac{1,000,000 \ x \ 18}{365 \ x \ 5 \ x \ 7,833} = 1.26$$

The statewide average crash rate for this type of intersection (4-leg, urban, 4-5 lanes undivided) is 0.8, so the study intersection's crash rate is well above the average rate for similar intersections.

Signal Warrant Analysis Project № 24174.01.03 May 1, 2024 Page 7 of 15

Upon further evaluation of the crash data, the following was identified:

- A wide variety of crash types were reported during the study period, and no predominant crash type trends were identified.
- A majority of the reported crashes (72%) during the study period did not involve injuries. Of the remaining crashes, none resulted in serious injuries or fatalities. The low posted speed limit (25 mph) likely contributed to the lack of severe injuries.
- A vast majority of the crashes (94%) occurred on dry roadways in clear weather conditions.
- A majority of the crashes (83%) occurred during the day.
- Two (2) left turn crashes were reported during the study period. Both of these occurred as a result of westbound left-turning vehicles failing to yield to mainline traffic on Bradley Place.
- Two (2) parked vehicle crashes were reported during the study period. Both of these involved collisions with vehicles using on-street parking on Sunset Avenue.
- Two (2) single vehicle crashes were reported during the study period. Both of these involved westbound left turning vehicles, though it is unclear what caused either of the crashes.
- Multiple collisions between vehicles and bicycles were reported during the study period.

Signal Warrant Analysis

The intersection of Bradley Place and Sunset Avenue was analyzed to determine if it is projected to meet the criteria for signalization based on the warrants established in the *Manual on Uniform Traffic Control Devices (MUTCD)*. The *MUTCD* allows for reductions in the volumes required for satisfying Warrants 1, 2, 3, and 4 if the 85th percentile speed of the major street traffic is greater than 40 mph or when the intersection lies within the built-up area of an isolated community having a population less than 10,000. The following warrants were determined to be applicable to this intersection's signal warrant analysis:

Signal Warrant Analysis Project № 24174.01.03 May 1, 2024 Page 8 of 15

- Warrant 1 (A & B) Eight Hour Vehicular Volume
- Warrant 2 Four-Hour Vehicular Volume
- Warrant 3 Peak Hour
- Warrant 7 Crash Experience

A description of each warrant and the results of the analysis associated with each warrant are provided as follows:

Warrant 1 – Eight Hour Vehicular Volume

It is intended that Warrant 1 be treated as a single warrant. If Condition A is satisfied, then Warrant 1 is satisfied and analyses of Condition B and the combination of Conditions A and B are not needed. Similarly, if Condition B is satisfied, then Warrant 1 is satisfied and an analysis of the combination of Conditions A and B is not needed.

- Condition A The Minimum Vehicular Volume, Condition A, is intended for application at locations where a large volume of intersecting traffic is the principal reason to consider installing a traffic control signal.
- Condition B The Interruption of Continuous Traffic, Condition B, is intended for application at locations where Condition A is not satisfied and where the traffic volume on a major street is so heavy that traffic on a minor intersecting street suffers excessive delay or conflict in entering or crossing the major street.

Bradley Place has two (2) or more lanes on each of its approaches, and Sunset Avenue has one (1) lane on its eastbound approach. As the posted speed limit on Bradley Place is 25 mph, the 70% volume thresholds were not applied. The traffic thresholds established by the *MUTCD* for Warrant 1 are summarized in **Table 5**.

Signal Warrant Analysis Project № 24174.01.03 May 1, 2024 Page 9 of 15

Num tra	ber of lan ffic on eac	es for r ch appr	noving oach	Vehicle (tota	es/hour I of both	on major approad	street ches)	Vehicles/hour on higher-volume minor-street approach (one direction only)					
Condition A – Minimum Vehicular Volume													
<u>Majo</u>	r Street	<u>Mino</u>	<u>r Street</u>	<u>100%</u>	<u>80%</u>	<u>70%</u>	<u>56%</u>	<u>100%</u>	<u>80%</u>	<u>70%</u>	<u>56%</u>		
1	Lane	1	Lane	500	400	350	280	150	120	105	84		
2+	Lanes	1	Lane	600	480	420	336	150	120	105	84		
2+	Lanes	2+	Lanes	600	480	420	336	200	160	140	112		
1	Lane	2+	Lanes	500	400	350	280	200	160	140	112		
			Conditi	ion B – Ir	nterrupti	on of Co	ntinuous	Traffic					
<u>Majo</u>	r Street	<u>Mino</u>	r Street	<u>100%</u>	<u>80%</u>	<u>70%</u>	<u>56%</u>	<u>100%</u>	<u>80%</u>	<u>70%</u>	<u>56%</u>		
1	Lane	1	Lane	750	600	525	420	75	60	53	42		
2+	Lanes	1	Lane	900	720	630	504	75	60	53	42		
2+	Lanes	2+	Lanes	900	720	630	504	100	80	70	56		
1	Lane	2+	Lanes	750	600	525	420	100	80	70	56		

Table 5Warrant 1 – Traffic Thresholds

Manual on Uniform Traffic Control Devices, 2009 Edition, U.S. Department of Transportation, Federal Highway Administration.

The analysis of Warrant 1 was conducted using the projected traffic volumes at the intersection of Bradley Place and Sunset Avenue (presented in **Table 2**). The results of the analysis, summarized in **Table 6**, reveal that the projected traffic volumes do not meet the thresholds of Warrant 1. Therefore, the conditions for Warrant 1 are <u>not satisfied</u>.

Signal Warrant Analysis Project № 24174.01.03 May 1, 2024 Page 10 of 15

Begin	Total Both Approaches	Highest Approach		Warrant 1				
Time	Major Road	Minor Road	Condition A	Condition B	Both A & B			
8:00 AM	664	31						
9:00 AM	770	32						
10:00 AM	606	35						
11:00 AM	673	34						
12:00 PM	737	39						
1:00 PM	754	42						
2:00 PM	654	38						
3:00 PM	687	26						
4:00 PM	735	27						
5:00 PM	643	36						
	Но	urs Required	8	8	8			
	Но	urs Satisfied	sfied 0 0 (
V	olume Thresh	old Satisfied	N	N	N			
	Wa	rrant Results		Not Satisfied				

Table 6Warrant 1 – 2029 Projected Results

Warrant 2, Four-Hour Vehicular Volume

The Four-Hour Vehicular Volume signal warrant conditions are intended to be applied where the volume of intersecting traffic is the principal reason to consider installing a traffic control signal.

The analysis of Warrant 2 was conducted using the projected traffic volumes at the intersection of Bradley Place and Sunset Avenue (presented in **Table 2**). The results of the analysis, displayed in **Figure 3**, reveal that the projected traffic volumes do not meet the thresholds of Warrant 2. Therefore, the conditions for Warrant 2 are <u>not satisfied</u>.

Signal Warrant Analysis Project № 24174.01.03 May 1, 2024 Page 11 of 15



Figure 3. Warrant 2 – 2029 Projected Conditions

Warrant 3, Peak Hour

The Peak Hour signal warrant is intended for use at a location where traffic conditions are such that for a minimum of 1 hour of an average day, the minor street traffic suffers undue delay when entering or crossing the major street.

The analysis of Warrant 3 was conducted using the peak hour (9:00-10:00 AM) of the projected traffic volumes at the intersection of Bradley Place and Sunset Avenue (presented in **Table 2**). The results of the analysis, displayed in **Figure 4**, reveal that the projected traffic volumes do not meet the thresholds of Warrant 3. Additionally, the volume of traffic on the minor road approach is not projected to equal or exceed 100 vehicles during the peak hour. Therefore, the conditions for Warrant 3 are <u>not satisfied</u>.

Signal Warrant Analysis Project № 24174.01.03 May 1, 2024 Page 12 of 15



Figure 4. Warrant 3 – 2029 Projected Conditions

Warrant 7, Crash Experience

The Crash Experience signal warrant conditions are intended for application where the severity and frequency of crashes are the principal reasons to consider installing a traffic control signal. To satisfy the criteria of Warrant 7, the following two (2) conditions must be met:

- Five (5) or more reported crashes, of types susceptible to correction by a traffic control signal, have occurred within a 12-month period, each crash involving personal injury or property damage apparently exceeding the applicable requirements for a reportable crash.
- For each of any eight (8) hours of an average day, the vehicles per hour (vph) given in both of the 80 percent columns of Condition A or Condition B (presented in **Table 5**) exists on the major-street and the higher-volume minor-street approach, respectively, to the intersection. These major-street and minor-street volumes shall be for the same 8 hours. On the minor street, the higher volume shall not be required to be on the same approach during each of the 8 hours.

Signal Warrant Analysis Project № 24174.01.03 May 1, 2024 Page 13 of 15

Based on the crash type summary provided in **Table 3**, there is only one (1) year during the study period in which five (5) or more crashes occurred at the intersection. Within that year, only two (2) of the crashes could potentially be corrected with the installation of a signal, and one (1) of those crashes has already been corrected with the removal of the westbound approach. Additionally, the projected traffic volumes at the intersection (presented in **Table 2**) do not meet the 80% thresholds established in Warrant 1. Therefore, the conditions for Warrant 7 are <u>not</u> <u>satisfied</u>.

A summary of the results of the signal warrant analysis is provided in **Table 7** and the FDOT Traffic Signal Warrant Analysis Summary worksheets are provided in the **Attachments**.

	MUTCD Signal Warrants	Results
Warrant 1	Eight-Hour Vehicular Volume	Not Satisfied
Warrant 2	Four-Hour Vehicular Volume	Not Satisfied
Warrant 3	Peak Hour	Not Satisfied
Warrant 4	Pedestrian Volume	Not Applicable
Warrant 5	School Crossing	Not Applicable
Warrant 6	Coordinated Signal System	Not Applicable
Warrant 7	Crash Experience	Not Satisfied
Warrant 8	Roadway Network	Not Applicable
Warrant 9	Intersection Near a Grade Crossing	Not Applicable

Table 7Signal Warrant Analysis Summary

Based on the results of the analysis, the intersection of Bradley Place and Sunset Avenue does not meet the criteria for signalization.

Signal Warrant Analysis Project № 24174.01.03 May 1, 2024 Page 14 of 15

Operational Evaluation

A capacity analysis was performed for the study intersection under the existing and projected conditions using the methods of the *Highway Capacity Manual (HCM), 7th Edition* as applied in the *Synchro* analytical tool. For the purpose of the analysis, the peak hour of traffic (9:00-10:00 AM) was used. The detailed *HCM* analysis worksheets are provided in the **Attachments**. The results of the analysis, summarized in **Table 8**, reveal that the intersection currently operates at an adequate level of service (LOS) and is projected to continue to do so in five (5) years.

			-		-					
		Traffic	EB		WB		NB		SB	
Intersection	Scenario	Control	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
Bradley PI &	Existing	TWSC	12.7	В	-		8.0	А	8.4	А
Sunset Ave	Projected	1 1130	13.6	В			8.1	A	8.5	A

Table 8 Capacity Analysis

Delays expressed in seconds/vehicle

Based on field observations, there appears to be a considerable queue that forms at the southbound approach of Royal Poinciana Way and Bradley Place, which is located approximately 200 feet south of the study intersection. At certain times of the day, this queue extends into Bradley Place and Sunset Avenue and obstructs the movement of vehicles through the intersection. It is recommended that further evaluation of the Bradley Place corridor be conducted to better understand the source of the issue and provide guidance on potential mitigation measures.

Signal Warrant Analysis Project № 24174.01.03 May 1, 2024 Page 15 of 15

Conclusions

This study was conducted to evaluate the intersection of Bradley Place and Sunset Avenue for operation and safety and to determine if the intersection is projected to meet the criteria for signalization within the next 5 years. A summary of the findings of the study and the resulting recommendations are provided as follows:

Summary of Findings

- Bradley Place and Sunset Avenue is an existing 4-leg, two-way stop-controlled intersection. The eastern leg of the intersection was recently converted into a one-way, eastbound directional segment, so no westbound approach is provided at the intersection.
- The study intersection is not projected to meet the criteria for signalization within the next five (5) years based on the evaluation of Warrants 1, 2, 3, and 7. Therefore, a traffic signal is not recommended at the intersection.
- The study intersection currently operates at adequate LOS and is projected to continue to do so within the next five (5) years.
- In the past five (5) years, 18 crashes were reported at the study intersection. This results in a crash rate of 1.26 crashes per million entering vehicles, which is above the statewide average crash rate for intersections of this type. Despite this, no predominant crash type trends were identified at the intersection.
- Based on field observations, queues on the southbound approach of Royal Poinciana Way and Bradley Place appear to be obstructing traffic at the study intersection. It is recommended that further evaluation of the Bradley Place corridor be conducted to better understand and address the issue.

ATTACHMENTS

DE TRAFFIC

detraffic.com (386) 341-4186 Bradley PI at Sunset Ave Palm Beach County, FI

File Name: bradley at sunsetSite Code: 00000001Start Date: 4/16/2024Page No: 1

	Groups Printed- Automobiles - Commercial																
		Bradl	ley Pl			Sunse	et Ave			Brad	ey Pl			Sunse	et Ave		
		South	bound			West	oound			North	bound			Eastb	ound		
Start Time	Left	Thru	Right A	pp. Total	Left	Thru	Right Ap	p. Total	Left	Thru	Right Ap	p. Total	Left	Thru	Right A	op. Total	Int. Total
08:00 AM	0	59	1	60	0	0	0	0	2	52	7	61	2	2	2	6	127
08:15 AM	2	57	3	62	0	0	0	0	2	46	14	62	2	3	2	7	131
08:30 AM	3	67	1	71	0	0	0	0	4	62	14	80	3	2	4	9	160
08:45 AM	4	58	3	65	0	0	0	0	5	108	11	124	2	1	3	6	195
Total	9	241	8	258	0	0	0	0	13	268	46	327	9	8	11	28	613
09:00 AM	3	80	2	85	0	0	0	0	4	112	14	130	1	2	4	7	222
09:15 AM	3	63	2	68	0	0	0	0	7	78	13	98	2	1	5	8	174
09:30 AM	3	65	2	70	0	0	0	0	4	69	12	85	2	2	4	8	163
09:45 AM	2	58	2	62	0	0	0	0	3	62	13	78	2	3	1	6	146
Total	11	266	8	285	0	0	0	0	18	321	52	391	7	8	14	29	705
10:00 AM	4	53	1	58	0	0	0	0	4	65	13	82	1	1	3	5	145
10:15 AM	5	74	2	81	0	Ō	Ō	ō	2	56	17	75	4	3	3	10	166
10:30 AM	3	68	2	73	0	0	0	0	1	47	11	59	1	4	3	8	140
10:45 AM	1	44	3	48	0	0	0	0	2	43	12	57	2	2	5	9	114
Total	13	239	8	260	0	0	0	0	9	211	53	273	8	10	14	32	565
11:00 AM	2	65	3	70	0	0	0	0	1	57	19	77	1	3	3	7	154
11:15 AM	5	75	2	82	0	Ō	Ō	ō	3	58	13	74	1	3	2	6	162
11:30 AM	6	67	3	76	0	0	0	0	1	41	21	63	3	4	4	11	150
11:45 AM	3	76	4	83	0	0	0	0	2	46	20	68	1	2	4	7	158
Total	16	283	12	311	0	0	0	0	7	202	73	282	6	12	13	31	624
12:00 PM	4	67	2	73	0	0	0	0	2	46	27	75	1	1	3	5	153
12:15 PM	5	52	3	60	Ō	Ō	Ō	Ō	5	52	22	79	1	4	7	12	151
12:30 PM	7	71	2	80	0	0	0	0	2	87	34	123	3	3	4	10	213
12:45 PM	7	55	2	64	0	0	0	0	7	63	25	95	1	0	6	7	166
Total	23	245	9	277	0	0	0	0	16	248	108	372	6	8	20	34	683
01:00 PM	7	49	3	59	0	0	0	0	5	55	34	94	4	3	7	14	167
01:15 PM	10	56	2	68	Ō	Ō	Ō	ō	1	54	37	92	0	Ō	7	7	167
01:30 PM	3	66	6	75	0	0	0	0	7	67	57	131	1	3	7	11	217
01:45 PM	4	75	2	81	0	0	0	0	1	32	32	65	2	1	2	5	151
Total	24	246	13	283	0	0	0	0	14	208	160	382	7	7	23	37	702
02:00 PM	5	55	4	64	0	0	0	0	1	26	17	44	1	3	3	7	115
02:15 PM	5	77	4	86	0	0	0	0	2	33	26	61	2	4	4	10	157
02:30 PM	2	65	6	73	0	0	0	0	2	39	41	82	0	2	6	8	163
02:45 PM	7	73	4	84	0	0	0	0	3	44	33	80	3	1	4	8	172
Total	19	270	18	307	0	0	0	0	8	142	117	267	6	10	17	33	607

Groups Printed- Automobiles - Commercia

DE TRAFFIC

detraffic.com (386) 341-4186 Bradley PI at Sunset Ave Palm Beach County, FI

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File Name: bradley at sunsetSite Code: 00000001Start Date: 4/16/2024Page No: 2

						Gro	oups Prin	tea- Automol	biles - Com	mercial							
		Brad	ley Pl			Sunse	et Ave			Brad	ley Pl			Sunse	et Ave		
		South	bound			West	bound			North	bound			Eastb	ound		
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
03:00 PM	2	84	2	88	0	0	0	0	1	36	26	63	1	4	3	8	159
03:15 PM	3	80	2	85	0	0	0	0	1	43	16	60	2	2	1	5	150
03:30 PM	3	69	2	74	0	0	0	0	3	37	25	65	1	1	2	4	143
03:45 PM	3	76	3	82	0	0	0	0	1	55	32	88	2	3	1	6	176
Total	11	309	9	329	0	0	0	0	6	171	99	276	6	10	7	23	628
04:00 PM	3	70	3	76	0	0	0	0	1	57	32	90	0	1	3	4	170
04:15 PM	6	56	2	64	0	0	0	0	2	65	33	100	1	2	5	8	172
04:30 PM	5	68	8	81	0	0	0	0	1	56	34	91	3	1	4	8	180
04:45 PM	5	77	1	83	0	0	0	0	3	31	28	62	0	1	3	4	149
Total	19	271	14	304	0	0	0	0	7	209	127	343	4	5	15	24	671
05:00 PM	7	67	2	76	0	0	0	0	4	49	22	75	3	2	3	8	159
05:15 PM	2	76	2	80	0	0	0	0	8	60	29	97	2	2	4	8	185
05:30 PM	4	56	2	62	0	0	0	0	3	43	24	70	2	3	4	9	141
05:45 PM	2	47	3	52	0	0	0	0	4	33	16	53	3	2	3	8	113
Total	15	246	9	270	0	0	0	0	19	185	91	295	10	9	14	33	598
																ſ	
Grand Total	160	2616	108	2884	0	0	0	0	117	2165	926	3208	69	87	148	304	6396
Apprch %	5.5	90.7	3.7		0	0	0		3.6	67.5	28.9		22.7	28.6	48.7		
Total %	2.5	40.9	1.7	45.1	0	0	0	0	1.8	33.8	14.5	50.2	1.1	1.4	2.3	4.8	
Automobiles	131	2491	94	2716	0	0	0	0	112	2057	869	3038	64	84	129	277	6031
% Automobiles	81.9	95.2	87	94.2	0	0	0	0	95.7	95	93.8	94.7	92.8	96.6	87.2	91.1	94.3
Commercial	29	125	14	168	0	0	0	0	5	108	57	170	5	3	19	27	365
% Commercial	18.1	4.8	13	5.8	0	0	0	0	4.3	5	6.2	5.3	7.2	3.4	12.8	8.9	5.7

NB Approach	SB A	pproach	
EB Approach			
	Bradley Pl at Sunset Ave	Palm Bea	ch County
de Brattic	detraffic.com	Project	Sheet
	9239 Outlook Rock Trl. Windermere Fl. 34786	Number: 024-05	Number: 1

WEEK	DATES	SF	MOCF: 0.89 PSCF
1 2 3 * 4 * 5 * 7 * 8 * 10 * 11 * 12 * 13 * 14 * 15	$\begin{array}{rrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrr$	0.93 0.93 0.92 0.91 0.90 0.89 0.88 0.87 0.87 0.87 0.87 0.87 0.87 0.87	$ \begin{array}{c} 1.04\\ 1.04\\ 1.03\\ 1.02\\ 1.01\\ 1.00\\ 0.99\\ 0.98\\ 0.98\\ 0.98\\ 0.98\\ 0.98\\ 0.98\\ 0.99\\ 1.00\\ 1.01\\ 1.02\\ \end{array} $
*15 *16 17 18 20 21 22 23 24 25 27 28 30 31 32 34 35 36 37 389 41 42 43 44	$\begin{array}{rrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrr$	0.91 0.92 0.94 0.96 0.97 0.99 1.01 1.05 1.08 1.12 1.15 1.17 1.18 1.20 1.21 1.20 1.21 1.20 1.19 1.16 1.16 1.16 1.16 1.16 1.16 1.12 1.09 1.05 1.01 1.01 1.01	$ \begin{array}{c} 1.02\\ 1.03\\ 1.06\\ 1.08\\ 1.09\\ 1.11\\ 1.13\\ 1.18\\ 1.21\\ 1.26\\ 1.29\\ 1.31\\ 1.33\\ 1.35\\ 1.36\\ 1.35\\ 1.36\\ 1.35\\ 1.34\\ 1.33\\ 1.31\\ 1.30$
45 46 47 48 49 50 51 52 53	$\begin{array}{rrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrr$	1.01 1.01 1.01 0.99 0.97 0.95 0.93 0.93 0.93	1.13 1.13 1.13 1.11 1.09 1.07 1.04 1.04 1.03

* PEAK SEASON

23-FEB-2023 09:11:22

830UPD 4_9300_PKSEASON.TXT

FLORIDA DEPARTMENT OF TRANSPORTATION TRANSPORTATION STATISTICS OFFICE 2022 HISTORICAL AADT REPORT

COUNTY: 93 - PALM BEACH

SITE: 7430 - BRADLEY PL FROM ROYAL POINCIANA WAY TO COUNTRY CLUB RD (OFF SYSTEM CYCLE)

YEAR	AADT	DIF	RECTION 1	DIH	RECTION 2	*K FACTOR	D FACTOR	T FACTOR
2022	6100 C	Ν	2900	S	3200	9.00	60.70	8.30
2021	5300 V	N	2800	S	2500	9.00	58.50	4.90
2020	5300 R	N	2800	S	2500	9.00	57.60	6.30
2019	5500 Т	Ν	2900	S	2600	9.00	58.80	4.50
2018	5500 S	Ν	2900	S	2600	9.00	55.50	4.50
2017	5500 F	Ν	2900	S	2600	9.00	55.40	4.60
2016	5500 C	Ν	2900	S	2600	9.00	55.30	4.00
2015	4400 R		0		0	9.00	55.60	7.10
2014	4400 T					9.00	55.40	7.30
2013	4300 S		0		0	9.00	58.50	7.40
2012	4300 F		0		0	9.00	59.30	6.40
2011	4300 C	N	0	S	0	9.00	58.80	5.10

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



*Axle-Adjusted

REPORT_NUMBER	CRASH_YEAR LIGHT_CONDITION	WEATHER_CONDITION	ROAD_SURFACE_CONDITION	S4_CRASH_TYPE	S4_CRASH_SEVERITY_DETAIL
25160609	2022 Dark - Lighted	Clear	Dry	Opposing Sideswipe	No Injury
85932182	2020 Daylight	Clear	Dry	Parked Vehicle	No Injury
85931968	2019 Daylight	Clear	Dry	Unknown	No Injury
25160715	2023 Daylight	Clear	Dry	Same Direction Sideswipe	No Injury
85932412	2021 Daylight	Clear	Dry	Parked Vehicle	No Injury
25979851	2023 Daylight	Clear	Dry	Other	No Injury
25160382	2022 Daylight	Clear	Dry	Backed Into	No Injury
85932409	2021 Daylight	Clear	Dry	Single Vehicle	Possible Injury
25160500	2022 Daylight	Clear	Dry	Other	Possible Injury
85932244	2020 Daylight	Cloudy	Wet	Bicycle	Non-Incapacitating Injury
85932451	2021 Daylight	Clear	Dry	Right Angle	No Injury
85932399	2021 Daylight	Clear	Dry	Rear End	No Injury
85932402	2021 Dark - Lighted	Clear	Dry	Left Rear	No Injury
85932555	2021 Dark - Lighted	Clear	Dry	Rear End	No Injury
85932597	2021 Daylight	Clear	Dry	Single Vehicle	Possible Injury
25160508	2022 Daylight	Clear	Dry	Same Direction Sideswipe	No Injury
25979860	2023 Daylight	Clear	Dry	Left Leaving	No Injury
85932163	2020 Daylight	Clear	Dry	Bicycle	Non-Incapacitating Injury

		-	FRAF	State of Sta	of Florid SIGN	la Depa AL V	artment NAR	of Trar RAN	sportation	ARY		TRAFFIC ENG	INEERING 10/15
City County District		Pa 93 – I	lm Bead Palm Be Four	ch each					Engineer: Date:	A	OREP/TMC April 17, 202	24	
Major Street: Minor Street		Bradley PILanes:4MajorSunset AveLanes:1Minor									Approach Approach	Speed: Speed:	25 25
MUTCD Electro	nic Reference to Chapter 4: <u>http://mutcd.fhwa.dot.gov/pdfs/2009r1r2/part4.pdf</u>							<u>pdf</u>					
Volume Level	<u>Criteria</u>	and or 85	h_nerce	ntile of n	naior et	root > /	40 mph	(70 km	/h)2				
2. Is the in	tersection	n in a bui	lt-up are	a of an i	solated	comm	unity wi	tha po	pulation < 10,	000?	☐ Yes	⊡ No	
"70%" volu	me level	level may be used if Question 1 or 2 above is answered "Yes"								70%	☑ 100%		
(should only <u>Condition</u> Condition A intersecting signal.	Warrant 1 is satisfied if Condition A or Condition B is "100%" satisfied for eight hours. Warrant 1 is also satisfied if both Condition A and Condition B are "80%" satisfied (should only be applied after an adequate trial of other alternatives that could cause less delay and inconvenience to traffic has failed to solve the traffic problems). ☑ Yes □ No Condition A - Minimum Vehicular Volume Image: Condition A is intended for application at locations where a large volume of intersecting traffic is the principal reason to consider installing a traffic control 100% Satisfied: 80% Satisfied: □ Yes ☑ No												
Number o traffic o	f Lanes n each a	for movi approach	ng V	ehicles stree ap	per hou t (total oproacl	ir on m of boti nes)	najor- h	Vehic stree	les per hour o t (one directi	on minor- on only)	⊥ Yes	I NO	
Major		Minor	1	100% ^a	80%	b	70% ^c	100%	^a 80% ^b	70% ^c	-		
1		1		500	400		350	150	120	105			
2 or moi	e re	I 2 or more	•	600	480		420	200	120	105			
1		2 or more	;	500	400)	350	200	160	140			
^a Basic Minin ^b Used for co ^c May be use <i>Record 8 hig</i>	num hourl mbination d when th hest hour	y volume of Condit ie major-st rs and the	ions A ar reet spec correspo Eigh	nd B after ed exceed anding ma I t Highe s	adequa ls 40 mr <i>ior-stree</i> st Hou	te trial o oh or in i <u>t and m</u>	of other r an isolat <i>inor-stre</i>	emedial ed comr e <u>t volum</u>	measures nunity with a po res in the Instruc	pulation of locations Sheet	∎ ess than 10.0	000	
Street	8:00 AM	9:00 AM	11:00 AM	12:00 PM	1:00 PM	2:00 PM	3:00 PM	4:00 PM					
Major	664	770	673	737	754	654	687	735	Evicting V	olumos			
Minor	31	32	34	39	42	38	26	27		Giuilles			

🗌 No

🗹 No

🗹 No

🗹 No

State of Florida Department of Transportation TRAFFIC SIGNAL WARRANT SUMMARY

Condition B - Interruption of Continuous Traffic	Applicable:	🗹 Yes
Condition B is intended for application where Condition A is not satisfied and the	100% Satisfied:	🗌 Yes
traffic volume on a major street is so heavy that traffic on the minor intersecting	80% Satisfied:	🗌 Yes
street suffers excessive delay or conflict in entering or crossing the major street.	70% Satisfied:	🗌 Yes

Number of Lar traffic on ea	nes for moving ch approach	Vehicles stree ar	per hour o t (total of b pproaches	n major- ooth)	Vehicles per hour on minor- street (one direction only)				
Major	Minor	100% ^a	80% ^b	70% ^c	100% ^a	80% ^b	70% ^c		
1	1	750	600	525	75	60	53		
2 or more	1	900	720	630	75	60	53		
2 or more	2 or more	900	720	630	100	80	70		
1	2 or more	750	600	525	100	80	70		

^a Basic Minimum hourly volume

^b Used for combination of Conditions A and B after adequate trial of other remedial measures

^c May be used when the major-street speed exceeds 40 mph or in an isolated community with a population of less than 10,000

		Eiç	ght High	est Hou	rs			
Street	8:00 AM	MA 00:9	11:00 AM	12:00 PM	1:00 PM	2:00 PM	3:00 PM	4:00 PM
Major	664	770	673	737	754	654	687	735
Minor	31	32	34	39	42	38	26	27

Existing Volumes

		TRA	State of Flor	ida Departm	nent of T	Transp \NT	ortati SU	on MM	ARY	(Т	Fo RAFFIC	orm 750-020-01 ENGINEERING 10/15
C	City:	Palm B	each	_		E	ngine	er:			OREP/	тмс		
Cour Distr	nty: rict:	93 – Palm Fou	Beach r				Da	te:		A	pril 17	, 2024	•	
Major Stre	eet:		Bradley Pl			La	nes:	4		Major	Appro	ach Si	peed:	25
Minor Stre	eet:		Sunset Ave			La	nes:	1		Minor	Appro	ach Sl	peed:	25
MUTCD Elect	tronic Refe	rence to Cha	pter 4: <u>http://</u>	mutcd.fhwa	.dot.gov	v/pdfs/:	<u>2009ı</u>	1 <u>r2/pa</u>	art4.pd	<u>lf</u>				
Volume Leve	el Criteria										_		_	
1. Is the	posted spe	eed or 85th-p	ercentile of majo	r street > 40) mph (7	70 km/	h)?					Yes 🛓	⊻ No	
2. Is the	intersectio	n in a built-up	o area of an isola	ted commur	nity with	na pop	pulati	on < 10	0,000%	?		Yes 🛓	⊻ No	
"70%" vo	olume level	may be used	l if Question 1 or	2 above is	answer	ed "Ye	s"					Yes	✓ No	
WARRANT	2 - FOU	R-HOUR VI	EHICULAR VO	DLUME										
If all fou	r points lie	above the ap	propriate line, the	en the warra	ant is sa	atisfied			Applic	able:	√	Yes	No	
							<i></i>		Sati	sfied:	` 🛄	Yes	⊻ No	
				Plot lour v	olume co	ompina	tions (on the a	applica	ble ligu	ire belo	JW.		
100%	Volume Le	evel	500	FIGUI	RE 4C-	1: Cri	teria	for "1	00%"	Volu	me Le	vel		٦
Four	Volu	imes	Ŧ		\setminus	2 OF		ANES & 2	OR MORE	LANES				
Highest Hours	Major Street	Minor Street	400 400 400 EI EI			\checkmark								
9:00 AM	770	32	APPRO			/			OR MORE	LANES &	1 LANE			
12:00 PM	737	39	200 IINOR			\searrow	$\overline{}$			1 LANE &				_
1:00 PM	754	42	² О У 100 Н 100					\sim				\geq		_
4:00 PM	735	27	ЮH				2 7 4							*115 *80
70% \	Volume Le	vel	* Note: 115 vph a 80 vph a	0 400 5 MA applies as the low pplies as the low FIG (Community L	JOR STRE Wer threshower threshow WRE 40 LORE 40 LORE 1	0 700 EET - TO hold volum hd volume C-2: C	0 8 TAL OF ne for a e thresh riteri opulation	BOTH A minor stri hold for a a for "	00 10 APPROA reet appr minor st 70%" ve 70 km	000 1 ⁻ CHES - N roach wit treet appi Volui	100 12 VPH th two or roach wit me Le	200 1: more lan th one lan vel Major St	300 1 nes and ne. treet)	400
Four	Volu	imes	400 E											1
Highest	Major	Minor	2 2 300		\checkmark	2 OR N	IORE LAI	NES & 2 OF	R MORE LA	ANES				l
Hours	Street	Street	TREE			\searrow	2 OF	MORELA	NES & 1 L/	ANE				1
			NOR S NOR S 200		$ \rightarrow $	<	\sum	\checkmark						l
			MI NOLL					-	\rightarrow	1 LANE &	1 LANE			l
			100 면							\geq	\geq	\geq		*80
			0											*60
			U	200 300	400) 5	500	600	70	0	800	900	10	00
			* Note: 80 vph ar	M oplies as the low	AJOR STI	REET - T	OTAL C	DF BOTH	et appro	ACHES	• VPH • two or n	nore lane	es and	
			60 vph ar	oplies as the low	er thresho	ld volume	e thresh	old for a	minor st	reet appi	roach wit	h one lai	ne.	

	TRAFF	State of Florida	a Department AL WAR	t of Transp RANT	oortation SUMMA	RY	Fi TRAFFIC	orm 750-02 ENGINEE
City: County: District:	Palm Bea 93 – Palm B Four	ch each			Engineer: Date:	<u>م</u>	DREP/TMC pril 17, 2024	
Major Street: Minor Street:		Bradley Pl Sunset Ave			Lanes: 4 Lanes: 1	Major / Minor /	Approach Speed: Approach Speed:	25
MUTCD Electronic F	Reference to Chapter	4: <u>http://r</u>	mutcd.fhwa.d	lot.gov/pd	fs/2009r1r2/pa	rt4.pdf		
Volume Level Crite 1. Is the poster 2. Is the interse "70%" volume I	<u>ria</u> d speed or 85th-perce ection in a built-up ar evel may be used if (entile of major ea of an isolate Question 1 or 2	street > 40 n ed communit 2 above is an	nph (70 kn y with a p nswered "ץ	n/h)? opulation < 10 ′es"	,000?	 Yes ✓ No Yes ✓ No 100 	%
WARRANT 3 - PI If all three crited then the warran Unusual condition j warran	EAK HOUR ria are fulfilled <u>or</u> the nt is satisfied. ustifying use of nt:	e plotted point I ⁶⁰⁰ ┌┌	lies above the Plot volum FIGU	e appropri ne combina I RE 4C-3:	ate line, fitter the second seco	Applicable: Satisfied: <i>icable figure I</i>		
Record hour when cr and the corresponding in boxes pro Peak Hour 100 Time Majo 9:00 AM 71 Peak Hour 70 Time Time Majo	iteria are fulfilled g delay or volume ovided. 1% Volume r Vol. Minor Vol. 70 32 % Volume r Vol. Minor Vol.	MINOR STREET MICH VOLUME APPROACH - VPH 000 100 100 100 100 100 100 100 100 100			2 OR MORE LANES	0R MORE LANE	S	*15(
Crit 1. Delay on Min *(vehicle-t Approach Lanes Delay Criteria* Delay*	eria or Approach nours) 1 2 4.0 5.0	* Note: 150 vph a 100 vph a	MAJO applies as the lowe applies as the lowe FIGUF (Community Le	R STREET - T er threshold vo er threshold vo RE 4C-4: (ss than 10,00	OTAL OF BOTH APF olume for a minor stu olume threshold for a Criteria for "7 0 population or abov	PROACHES - VP eet approach wi a minor street ap 00%" Volun re 70 km/hr (40	H tit two or more lanes ar pproach with one lane. ne Level mph) on Major Street)	nd
Fulfilled?: 2. Volume on Min One-Direction *(vel Approach Lanes Volume Criteria* Volume* Fulfilled?: 3. Total Intersect	Yes No hor Approach No hicles per hour) 1 1 2 100 150 32 32 Yes No	MINOR STREET HIGH VOLUME APPROACH - VPH 000 000 000			2 OR MORE LAI	ANES & 1 CR MORE L	1 LANE	*10
Volume *(vehicle No. of Approaches Volume Criteria* Volume* Fulfilled?:	3 4 650 800 Yes No	0 300 * Note: 100 vph a 75 vph ap	400 500 MAJOR applies as the lower oplies as the lower	600 2 STREET - TO er threshold vol	700 800 TAL OF BOTH APPRO Jume for a minor str ume threshold for a	900 1000 DACHES - VPH reet approach wi minor street app	1100 1200 ith two or more lanes ar rroach with one lane.	1300 *75

	State of Florida TRAFFIC SIGN	a Department of Transportation AL WARRANT SUMN	/IARY		Т	Forr RAFFIC Ef	n 750-020-01 NGINEERING 10/15
City: County: District:	Palm Beach 93 – Palm Beach Four	Engineer: Date:		OR Apri	EP/TMC I 17, 2024		
Major Street: Minor Street: MUTCD Elect	Bradley PI Sunset Ave ronic Reference to Chapter 4: <u>http://m</u>	Lanes: Lanes: utcd.fhwa.dot.gov/pdfs/2009r1r2/j	4 N 1 N part4.pdf	/lajor App /linor App	oroach Spe oroach Spe	ed: ed:	25 25
WARRANT Record ho in the boxe	7 - CRASH EXPERIENCE burs where criteria are fulfilled, the corresponse as provided. The warrant is satisfied if all t	onding volume, and other informa three of the criteria are fulfilled.	ation	Applicab Satisfie	le: ⊻Yes ed: Yes	□ No ☑ No)
	Criteria	Hour	Vol Major	ume Minor	Met? Yes No	Fulfi Yes	lled? No
One of	Warrant 1, Condition A (80% satisfied)			Х			

Measure

Observed

Angle, Left Turn

tried:

Crash

Types:

Warrant 1, Condition B (80% satisfied)

Warrant 4, Pedestrian Volume at 80% of

volume requirements: # ped/hr for four

(4) hours or # ped/hr for one (1) hour.

Adequate trial of other remedial measure has failed

Five or more reported crashes, of types susceptible

3. to correction by signal, have occurred within a 12-

the 1. warrants

to the

right is

month period.

to reduce crash frequency.

met.

2.

Х

2

Number of crashes

per 12 months:

Х

Х

Х

0.8

Intersection

Int Delay, s/veh

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		- 4 >					٦	↑	1	٦	- îs	
Traffic Vol, veh/h	7	8	14	0	0	0	19	331	54	11	274	8
Future Vol, veh/h	7	8	14	0	0	0	19	331	54	11	274	8
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	90	-	0	105	-	-
Veh in Median Storage	, # -	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	14	2	19	2	2	2	5	2	12	8	9	11
Mvmt Flow	8	9	16	0	0	0	22	389	64	13	322	9

Major/Minor	Minor2			Major1			Major2			
Conflicting Flow All	787	851	327	332	0	0	453	0	0	
Stage 1	353	353	-	-	-	-	-	-	-	
Stage 2	434	498	-	-	-	-	-	-	-	
Critical Hdwy	6.54	6.52	6.39	4.15	-	-	4.18	-	-	
Critical Hdwy Stg 1	5.54	5.52	-	-	-	-	-	-	-	
Critical Hdwy Stg 2	5.54	5.52	-	-	-	-	-	-	-	
Follow-up Hdwy	3.626	4.018	3.471	2.245	-	-	2.272	-	-	
Pot Cap-1 Maneuver	344	297	677	1211	-	-	1077	-	-	
Stage 1	685	631	-	-	-	-	-	-	-	
Stage 2	628	544	-	-	-	-	-	-	-	
Platoon blocked, %					-	-		-	-	
Mov Cap-1 Maneuver	334	0	677	1211	-	-	1077	-	-	
Mov Cap-2 Maneuver	334	0	-	-	-	-	-	-	-	
Stage 1	673	0	-	-	-	-	-	-	-	
Stage 2	621	0	-	-	-	-	-	-	-	

Approach	EB	NB	SB	
HCM Control Del	ay, s/v12.66	0.38	0.31	
HCM LOS	В			

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	SBL	SBT	SBR
Capacity (veh/h)	1211	-	-	504	1077	-	-
HCM Lane V/C Ratio	0.018	-	-	0.068	0.012	-	-
HCM Control Delay (s/veh)	8	-	-	12.7	8.4	-	-
HCM Lane LOS	Α	-	-	В	А	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.2	0	-	-

0.9

Intersection

Int Delay, s/veh

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4					۲	1	1	٦	f,	
Traffic Vol, veh/h	8	9	15	0	0	0	21	365	60	12	303	9
Future Vol, veh/h	8	9	15	0	0	0	21	365	60	12	303	9
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	90	-	0	105	-	-
Veh in Median Storage	, # -	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	14	2	19	2	2	2	5	2	12	8	9	11
Mvmt Flow	9	11	18	0	0	0	25	429	71	14	356	11

Major/Minor	Minor2			Major1			Major2			
Conflicting Flow All	869	939	362	367	0	0	500	0	0	
Stage 1	390	390	-	-	-	-	-	-	-	
Stage 2	479	549	-	-	-	-	-	-	-	
Critical Hdwy	6.54	6.52	6.39	4.15	-	-	4.18	-	-	
Critical Hdwy Stg 1	5.54	5.52	-	-	-	-	-	-	-	
Critical Hdwy Stg 2	5.54	5.52	-	-	-	-	-	-	-	
Follow-up Hdwy	3.626	4.018	3.471	2.245	-	-	2.272	-	-	
Pot Cap-1 Maneuver	307	264	646	1175	-	-	1034	-	-	
Stage 1	659	608	-	-	-	-	-	-	-	
Stage 2	599	516	-	-	-	-	-	-	-	
Platoon blocked, %					-	-		-	-	
Mov Cap-1 Maneuver	297	0	646	1175	-	-	1034	-	-	
Mov Cap-2 Maneuver	297	0	-	-	-	-	-	-	-	
Stage 1	645	0	-	-	-	-	-	-	-	
Stage 2	591	0	-	-	-	-	-	-	-	

Approach	EB	NB	SB	
HCM Control Delay,	s/v13.55	0.38	0.32	
HCM LOS	В			

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	SBL	SBT	SBR
Capacity (veh/h)	1175	-	-	459	1034	-	-
HCM Lane V/C Ratio	0.021	-	-	0.082	0.014	-	-
HCM Control Delay (s/veh)	8.1	-	-	13.6	8.5	-	-
HCM Lane LOS	А	-	-	В	Α	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.3	0	-	-