

TRAFFIC IMPACT ANALYSIS

Lindy Lane Residential Development Coos Bay, Oregon

March 17, 2020

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SANDOW
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Traffic Impact Analysis

Lindy Lane



RENEWAL 06/30/20

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Coos Bay , Oregon
March 17, 2020

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EXECUTIVE SUMMARY

This report describes the Traffic Impact Analysis and findings prepared for the proposed Lindy Lane residential development in Coos Bay, Oregon. The proposed development is located at Tax Lot 600 of assessors map 25S-13W-28 and lots 900 and 903 of assessors map 25S-13W-21C. The site is located at the southern terminus of Lindy Lane, south of Ocean Boulevard. The site is contained within approximately 70 acres and is currently vacant. The development proposal is 447 manufactured homes. A single access connection is proposed via Lindy Lane at Ocean Blvd.

FINDINGS

The analysis concludes the following:

- All intersections operate within the mobility standards for Coos Bay, with the exception of Newmark at Broadway. Newmark at Broadway operates at a LOS E under the no-build conditions for the year 2028 and the addition of development trips does not worsen the level of service. Therefore, no mitigation is recommended at this location
- Lindy Lane is classified as a local street and has a 50-foot right-of-way. The street cross-section applicable to Lindy Lane is the Standard Residential Street. The standards for a Standard Residential Street is 10 feet. The anticipated levels and type of traffic on Lindy lane are sufficiently and safely accommodated with the standard lane widths and sidewalks widths for the cross-section a Standard Residential Street which conforms to the City of Coos Bay 28-foot Standard Residential Standard Table 3-1 within the adopted Ordinance No. 479 for the City of Coos Bay Engineering Design Standards. The only discussion aspect would be if on-street parking is required as only 4 homes are located within this improvement region.
- At the Lindy Lane/Ocean Blvd intersection, due to the high volume of left turns in conjunction with the current roadway striping of merging from 2 lanes to one lane, and the roadway curvature just to the east, it is recommended that a westbound left-turn pocket be striped.

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1.0 INTRODUCTION

This report describes the Traffic Impact Analysis and findings prepared for the proposed Lindy Lane residential development in Coos Bay, Oregon. The proposed development is located at Tax Lot 600 of assessors map 25S-13W-28 and lots 900 and 903 of assessors map 25S-13W-21C. The site is located at the southern terminus of Lindy Lane, south of Ocean Boulevard. The site is contained within approximately 70 acres and is currently vacant. The development proposal is 447 manufactured homes. A single access connection is proposed via Lindy Lane at Ocean Blvd.

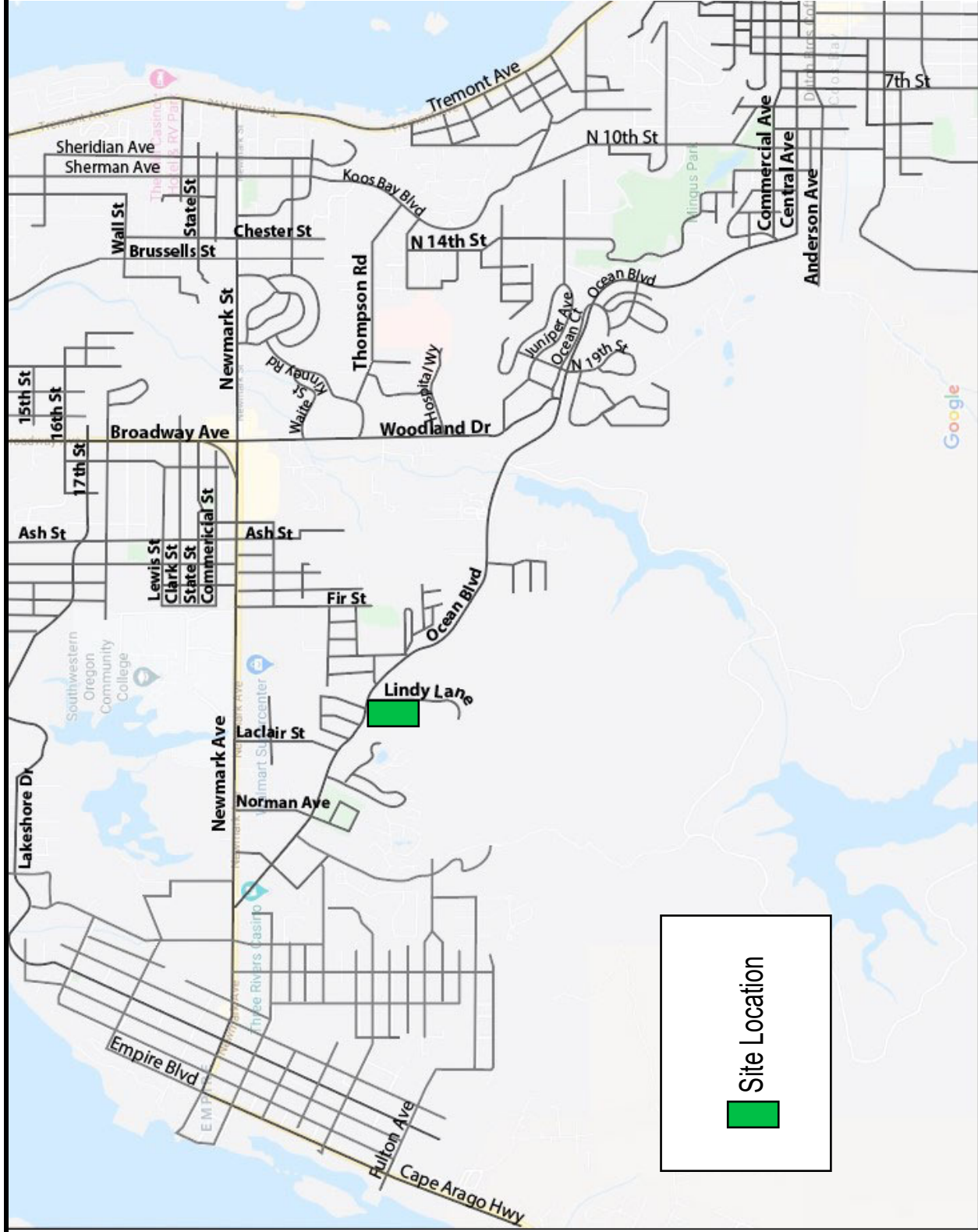
The preliminary site plan is included in Appendix A, and Figure 1 illustrates the site location.

1.2 SCOPE OF ANALYSIS

The traffic study is performed in accordance with the City of Coos Bay analysis methodology and procedures. The City of Coos Bay Scope of Work is included in Appendix B. The traffic impacts are evaluated for the weekday AM and PM peak hours (7:30 AM to 8:30 AM and 4:30 PM to 5:30 PM). The following intersections were coordinated with the City to be included within the Study:

- Newmark Ave @ Empire Blvd
- Newmark Ave @ Ocean Blvd
- Newmark Ave @ Laclair St
- Ocean Blvd @ Laclair St
- Ocean Blvd @ Lindy Lane
- Broadway Ave @ 16th St
- Newmark Ave @ Broadway Ave
- Woodland Dr @ Thompson Rd
- Ocean Blvd @ Woodland Dr
- Central Ave @ 10th St
- 7th St @ Commercial Ave
- 7th St @ Central Ave
- 7th St @ Anderson Ave

The operational analysis is performed for the existing year (year 2020), the year of completion (year 2021), and the future year 2028.



Lindy Lane Coos Bay, Oregon

Figure 1: Vicinity Map and Site Location

2.0 DEVELOPMENT TRIP GENERATION

The trip generation for the development is estimated using the information contained within the ITE Trip Generation Manual 10th Edition. The proposed development is 447 manufactured dwelling units. The most closely matched ITE Land Use Code is 210- Single-Family Detached Housing. The trip generation estimates for the AM and PM Peak Hour are illustrated in Table 1.

TABLE 1: AM AND PM PEAK HOUR TRIP GENERATION

ITE Land Use	Size (Unit)	Trip Generation					
		Rate	Trips	% In	% Out	Trips In	Trips Out
AM							
210- Single Family Residential	447 Units	Eqn ¹	322	25%	75%	81	241
PM							
210- Single Family Residential	447 units	Eqn ²	455	63%	37%	287	168

Eqn¹= 0.71(x)+4.80 Eqn²= exp(Ln(x) +0.20)

2.2 SITE TRIP DISTRIBUTION

The development trips were distributed through the study area network using the distribution within the previous TIA as a base, with modifications for existing observed travel patterns and the location of reasonable origins and destinations.

- West on Newmark- 10%
- South/East toward Commercial Street- 30%
- Commercial/businesses along Newmark- 15%
- North of Newmark- 30%
- East of Broadway on Newmark- 15%

Vehicle trip distribution is shown in Figure 2 for the AM Peak Hour and Figure 3 for the PM Peak Hour.

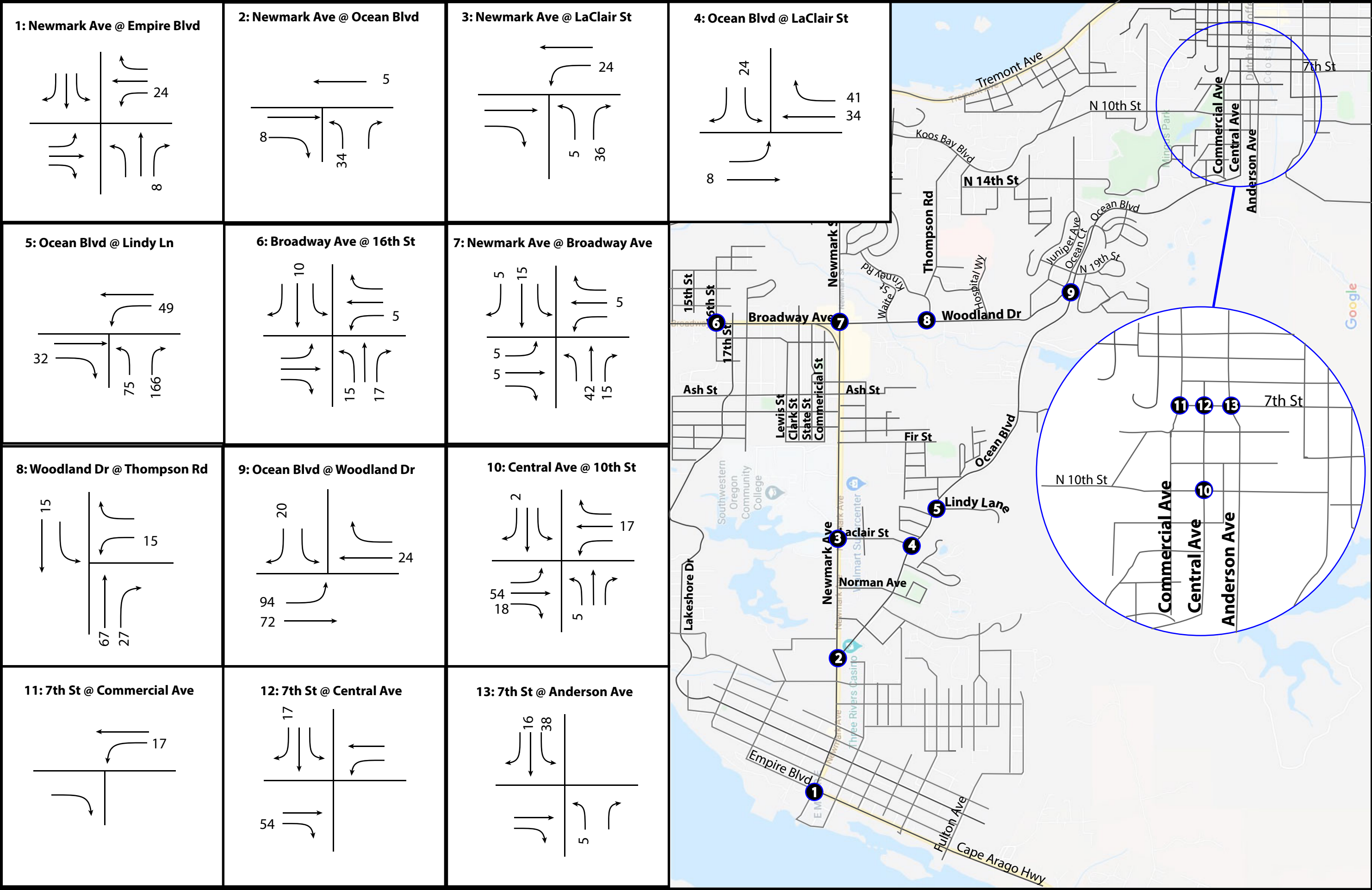


Figure 2: 2020 Existing AM Peak Hour Development Trips

Lindy Lane TIA

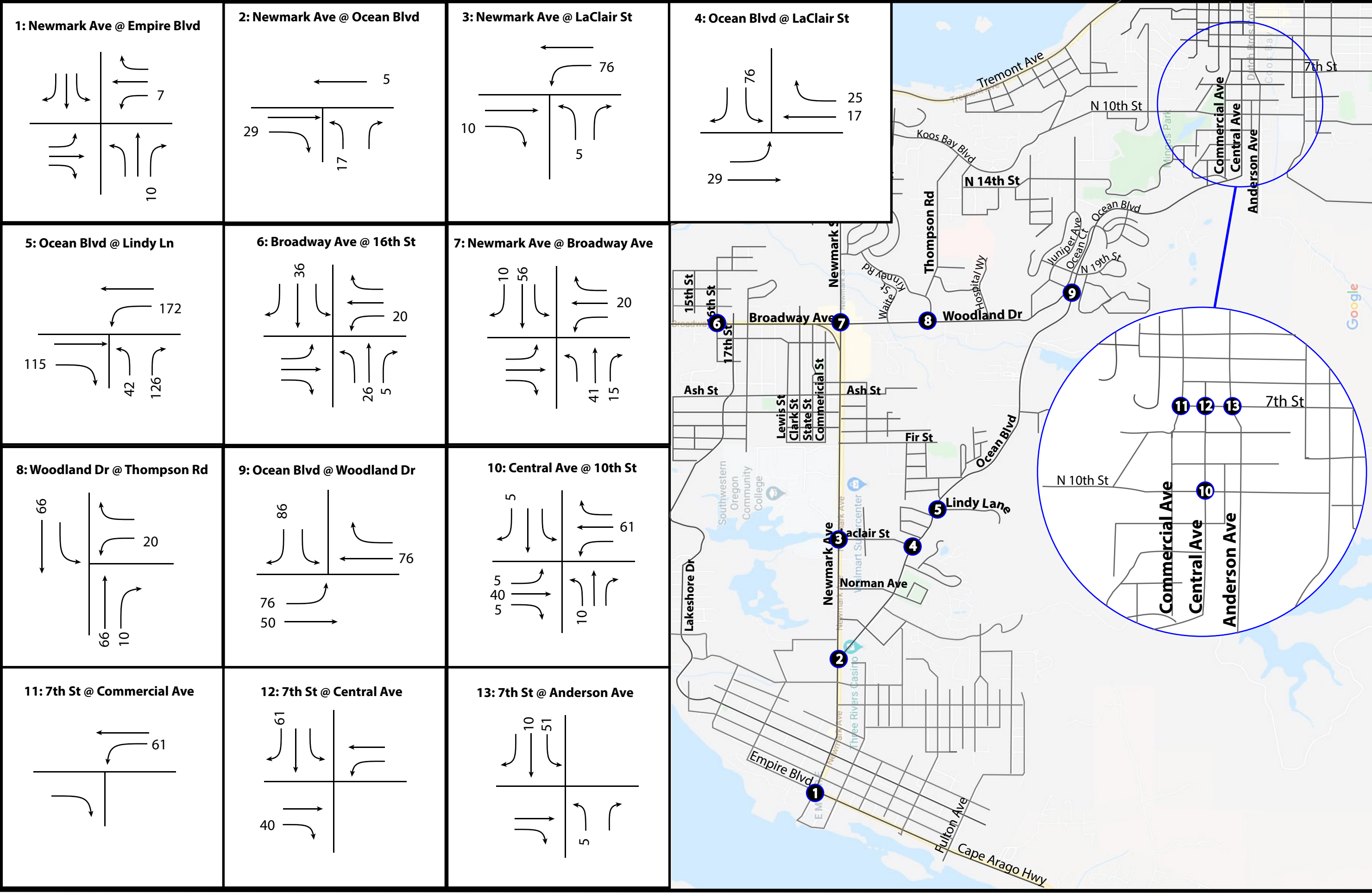


Figure 3: PM Peak Hour Development Trip Distribution

Lindy Lane TIA

3.0 EXISTING ROADWAY CONDITIONS

3.1 STREET NETWORK

Major roadways within the study area are Ocean Blvd, Newmark Ave, Broadway Ave, Woodland Ave, Central Ave, Commercial Ave, Anderson Ave. Table 2 illustrates the roadway characteristics within the study area. Figure 4 provides roadway geometry and intersection control.

TABLE 2: ROADWAY CHARACTERISTICS WITHIN STUDY AREA

Characteristics within Study Area	Ocean Blvd	Newmark Ave	Broadway Ave	Woodland Ave	Central Ave	Commercial Ave	Anderson Ave
Functional Classification	Arterial	Arterial	Principal Arterial	Arterial	Arterial	Arterial	Arterial
Posted Speed	35-40	30-35	30-35	35	30	20	20
Lanes per Direction	1-2	1-2	2	1	1-2	2	2
Center Left Turn Lane	Intermittent	TWLTL	TWLTL	TWLTL	TWLTL	None	None
Median Restrictions	None	None	None	None	None	None	None
Bikes Lanes Present	Intermittent	Intermittent	No	No	No	No	No
Sidewalks Present	Yes	Yes	Yes	Yes	Yes	Yes	Yes
On-Street Parking	No	Intermittent	No	No	Intermittent	Intermittent	Intermittent

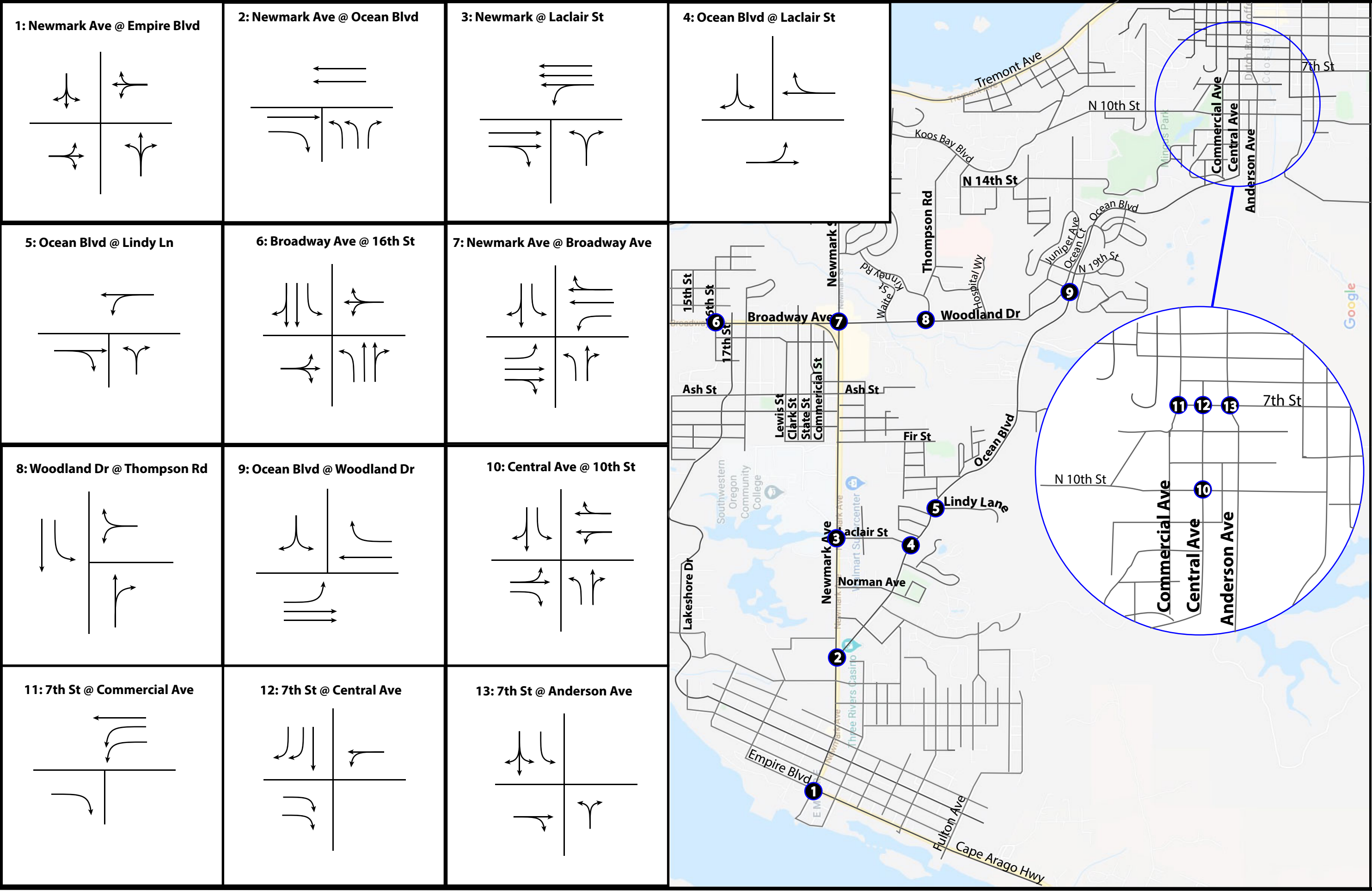


Figure 4 : Lane Configuration

Lindy Lane TIA

4.0 TRAFFIC VOLUMES

4.1 INTERSECTION TURNING MOVEMENT COUNTS

A majority of the traffic volumes used in this analysis were taken from the previous Ocean Grove TIA for this site and from the City of Coos Bay/North Bend Draft Updated TSP (Tech Memo 6). These traffic counts, while a few years old, were taken closer/during the peak month of the year. Therefore, these counts were deemed reliable for this project. Appendix C contains the traffic volumes.

The counts not available within the other studies were taken during the first week of March. Those counts were taken at :

- Broadway & 16th
- Woodland & Thompson
- 10th & Central
- 7th & Commercial
- 7th & Central
- 7th & Anderson

The traffic count data is included in Appendix C.

4.2 SEASONAL ADJUSTMENT FACTOR

Application of a seasonal adjustment factor accounts for the fact that through volumes along State Highway recreational routes tend to fluctuate from month to month due to changes in recreational behavior, etc. The seasonal adjustment factor was determined using the methodology outlined in ODOT's *ANALYSIS PROCEDURES MANUAL (APM)*. The seasonal adjustment considers the "commuter" trend, as described within ODOT's *2018 SEASONAL TREND TABLE*.

The traffic counts taken for this project were collected in March. The season adjustment factor was calculated comparing the factor for a March count with the factor for the peak month, June. The seasonal adjustment factor for the "commuter" trend is 1.10. The seasonal adjustment calculation is included in Appendix C.

The 30th H.V Traffic Counts from the previous TIA & TSP are already adjusted to peak season numbers. Therefore, there is no additional seasonal adjustment needed. The seasonal adjustment factor is only applied to the new March counts.

4.3 FUTURE YEAR BACKGROUND VOLUMES

The traffic volumes from the previous TIA were collected in 2013. The traffic volumes from the TSP were collected in 2017. To represent the current year traffic volumes, the counts were grown to the year 2020 traffic volumes using the City's growth rate of 1% per year (requested in the SOW). The year 2020 traffic volumes were then further grown to 2021 (year of completion) and year 2028 (City's future year) using the 1% growth rate. Appendix C contains the future year background volumes.

4.4 PIPELINE TRIPS

Other approved but not completed development projects within the study area will add additional vehicle traffic to the studied intersections (pipeline trips). The pipeline trips to include in the study were provided by the City of Coos Bay. The pipeline trips were added to the seasonally adjusted background volumes.

Figures 5 and 6 contain the year 2020 AM and PM Peak Hour Background volumes, respectively.

Figures 7 and 8 contain the year 2021 AM and PM Peak Hour Background volumes, respectively.

Figures 9 and 10 contain the year 2028 AM and PM Peak Hour Background volumes, respectively.

4.5 FUTURE YEAR BUILD VOLUMES

Vehicle trips generated by the proposed development, as discussed in Section 2.0, were added to the Year 2021 and 2028 background traffic volumes rendering the year 2021 and 2028 Build volumes.

Figures 11 and 12 include the year 2021 AM and PM Peak Hour volumes with development, respectively.

Figures 13 and 14 include the year 2028 AM and PM Peak Hour volumes with developments, respectively.

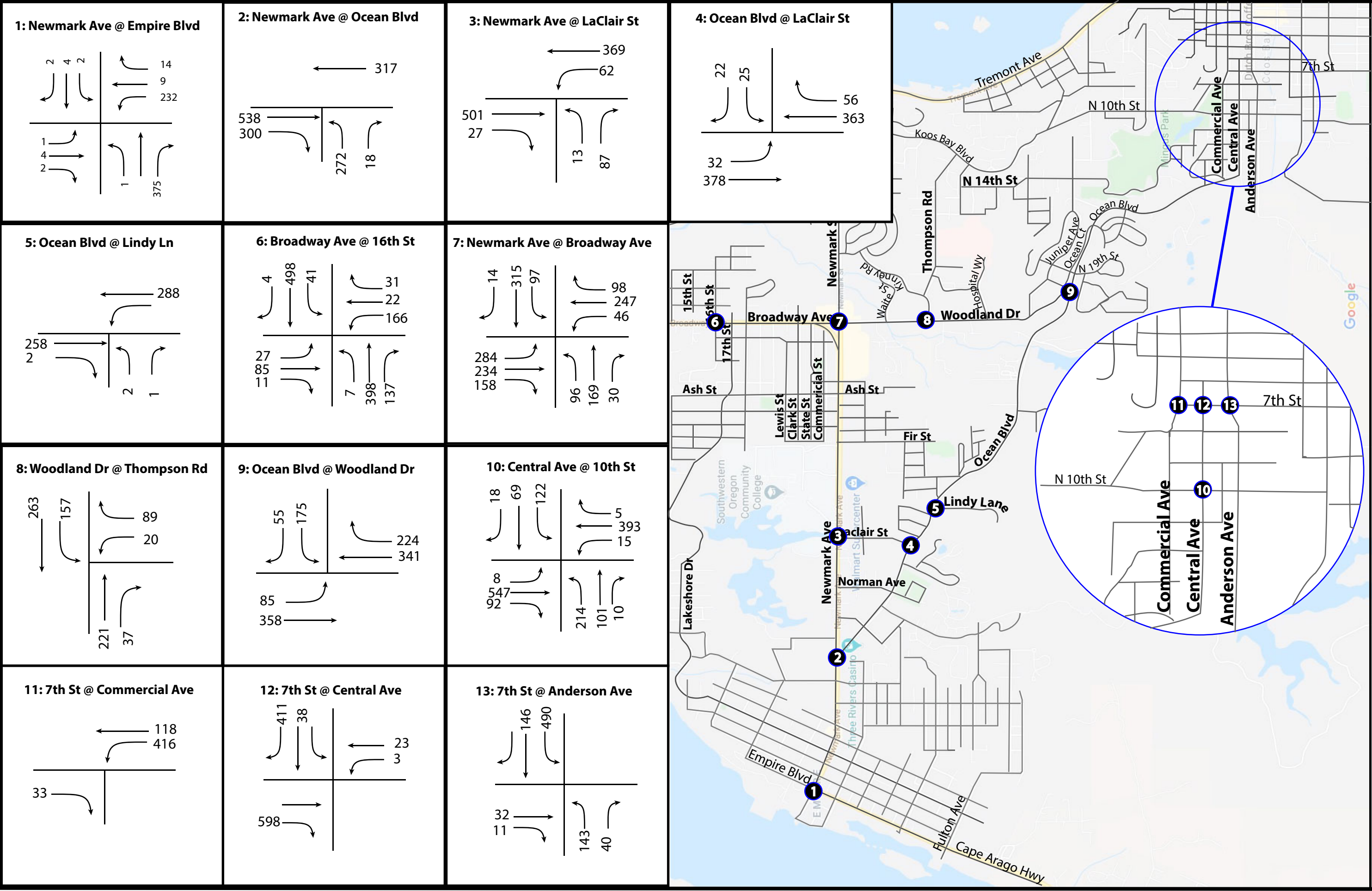


Figure 5: 2020 AM Existing Peak Hour Traffic

Lindy Lane TIA

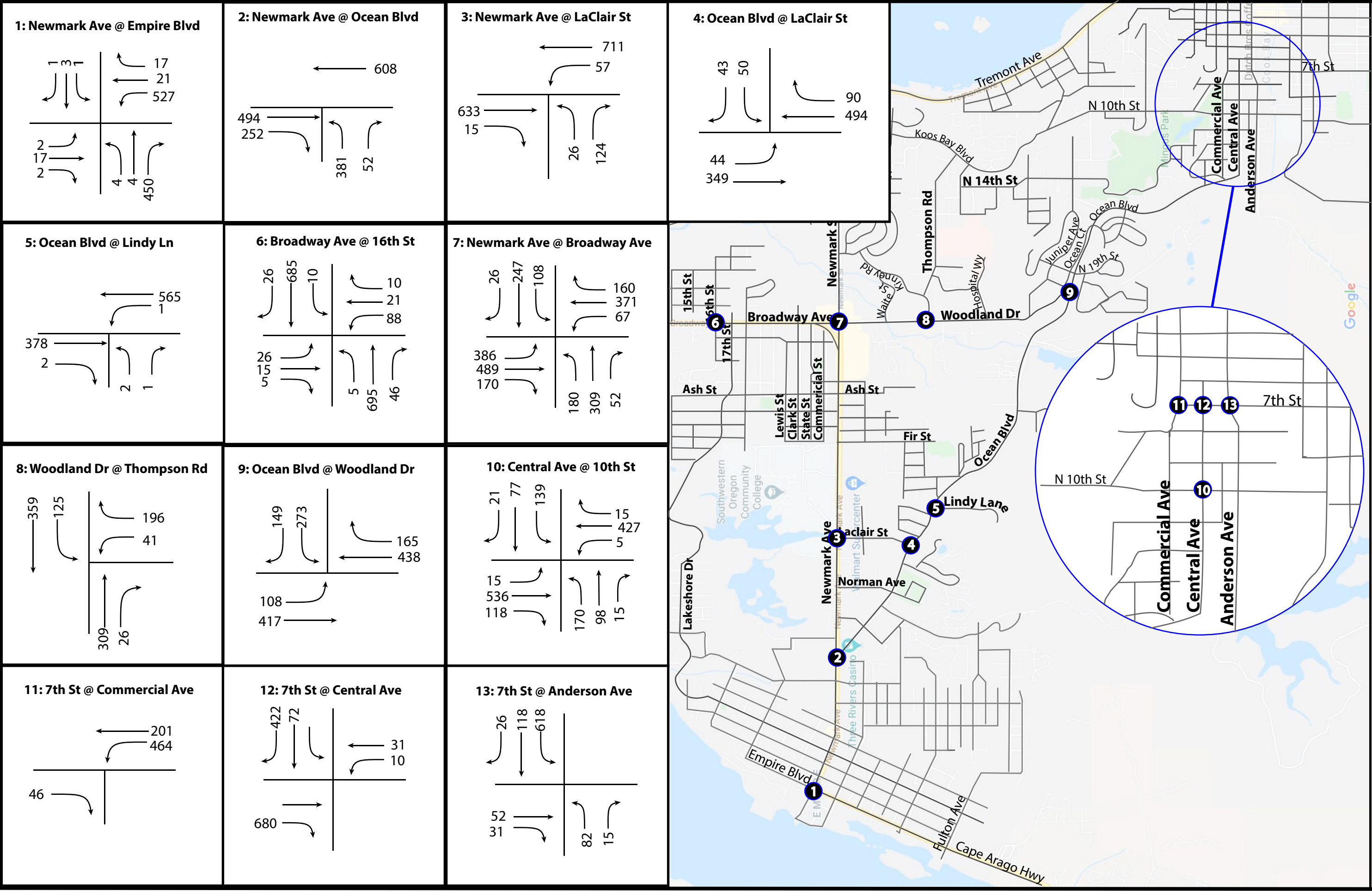
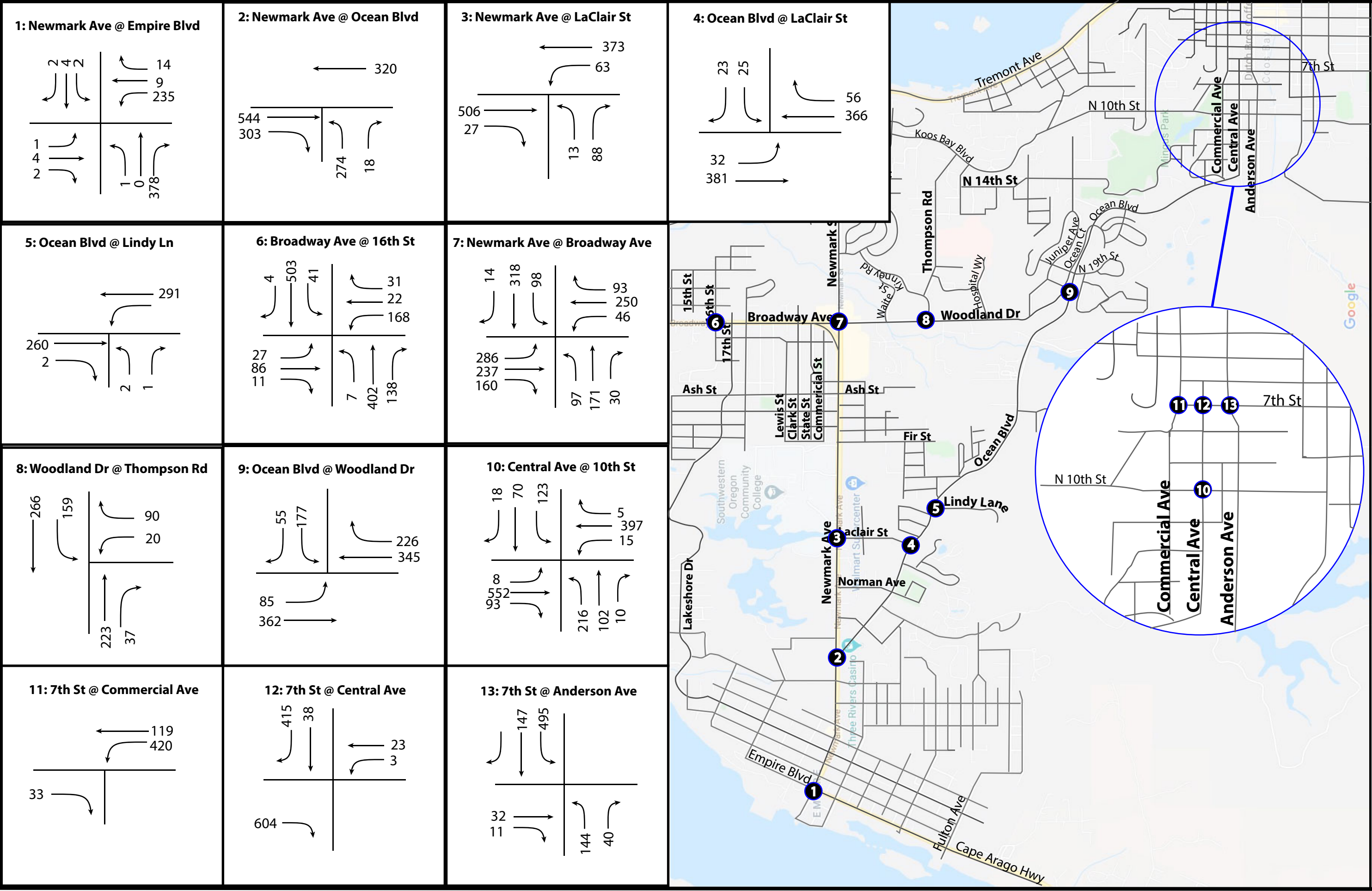


Figure 6: 2020 Existing PM Peak Hour Volumes

Lindy Lane TIA



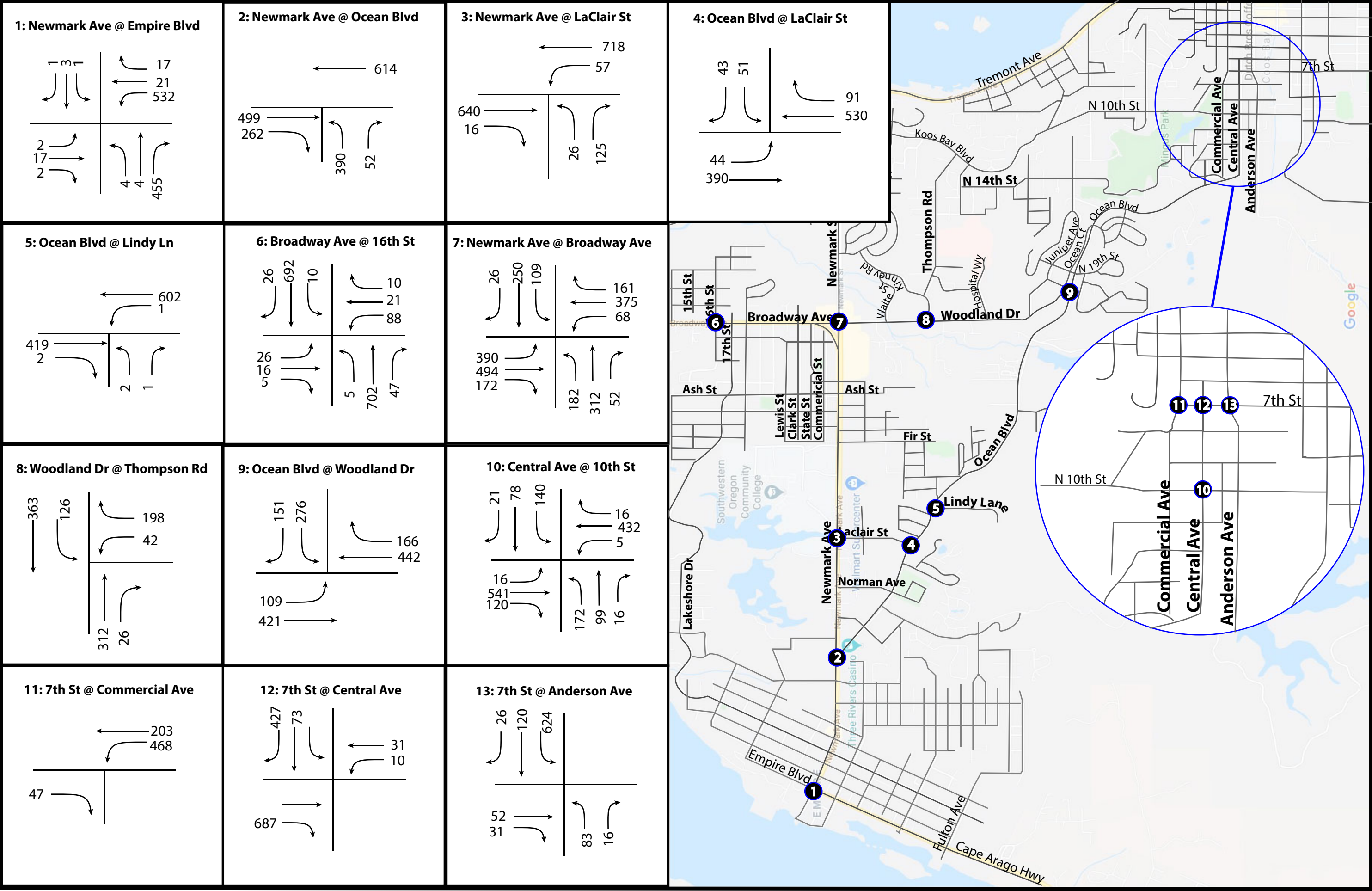
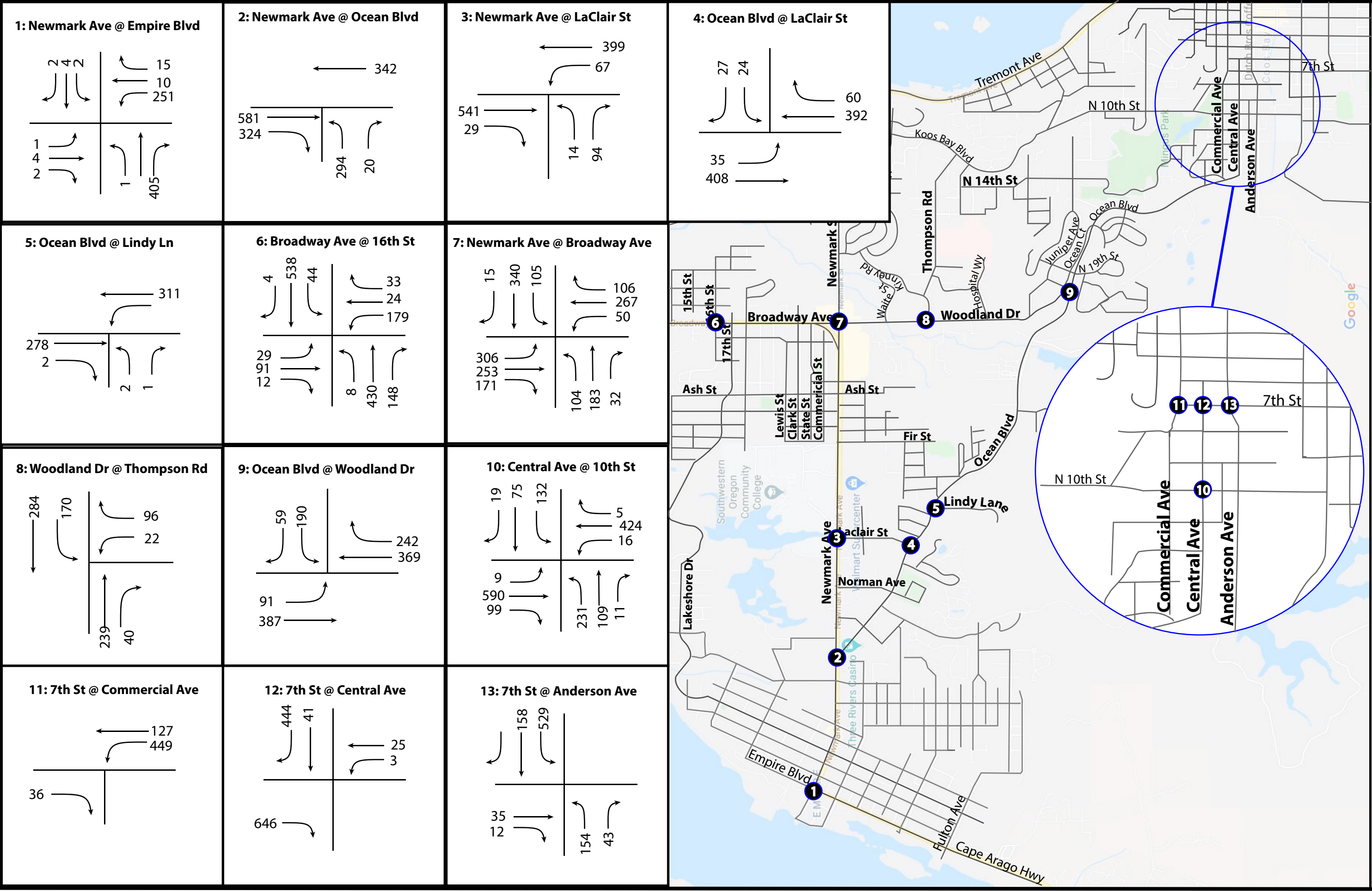
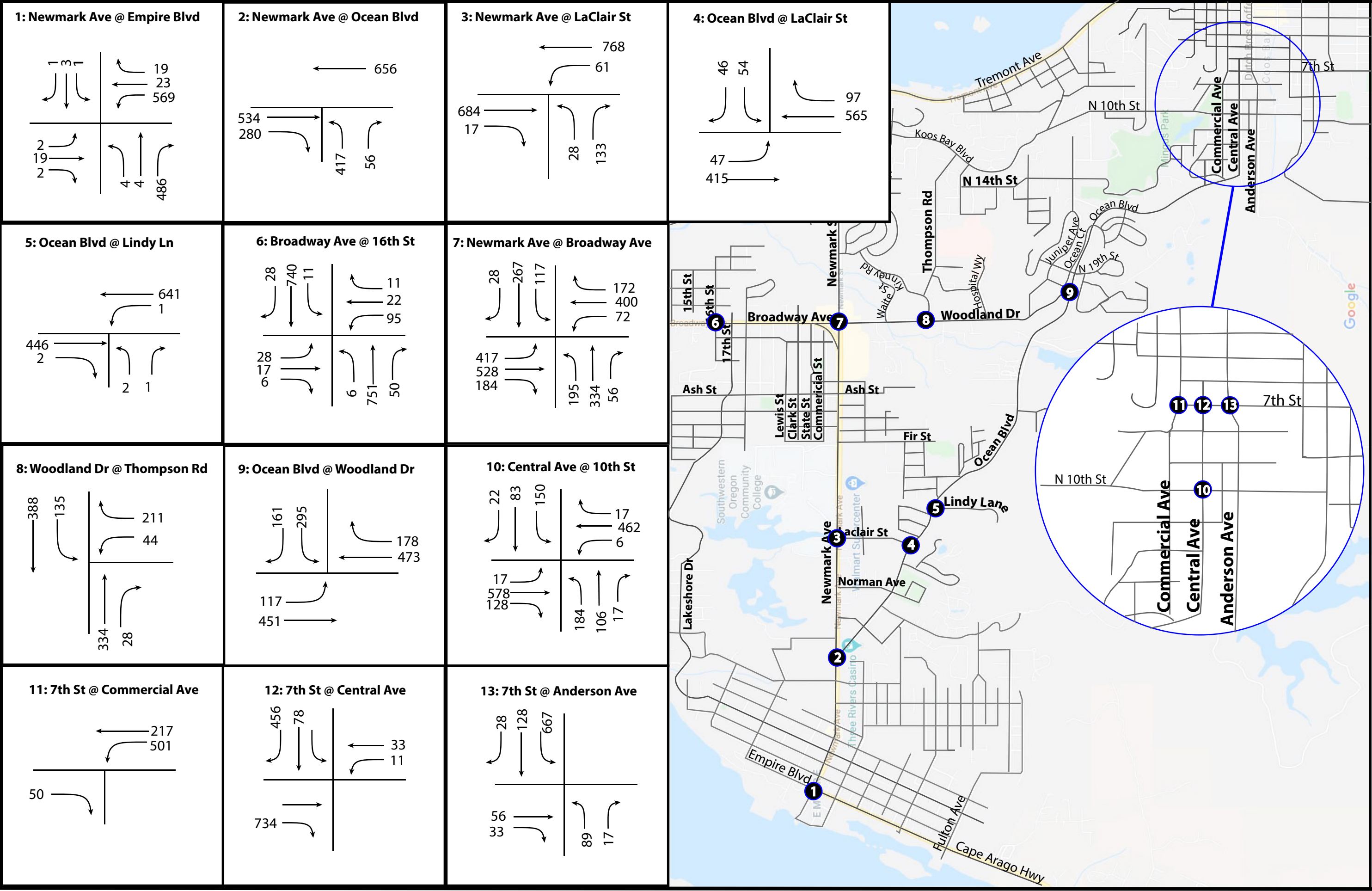
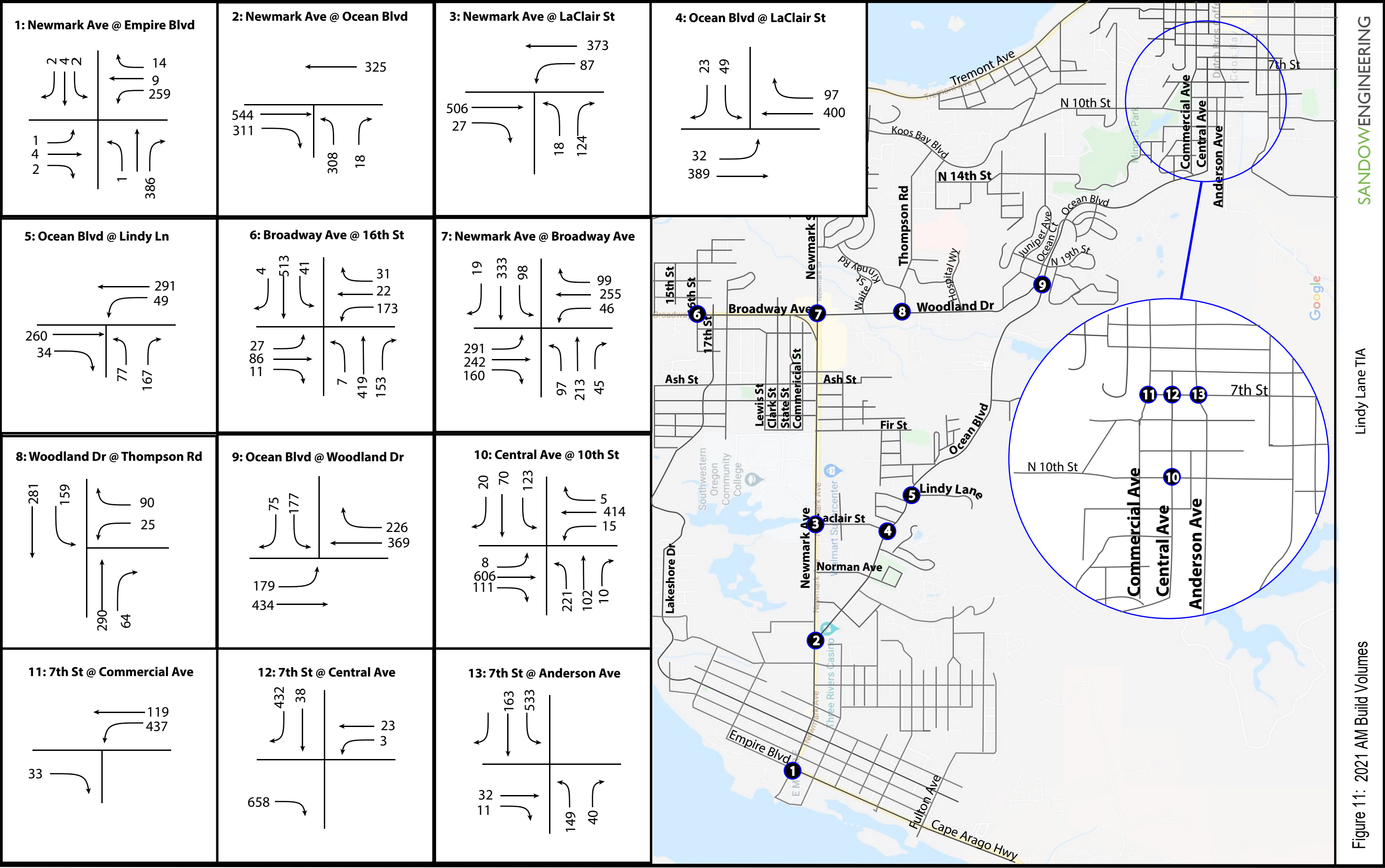


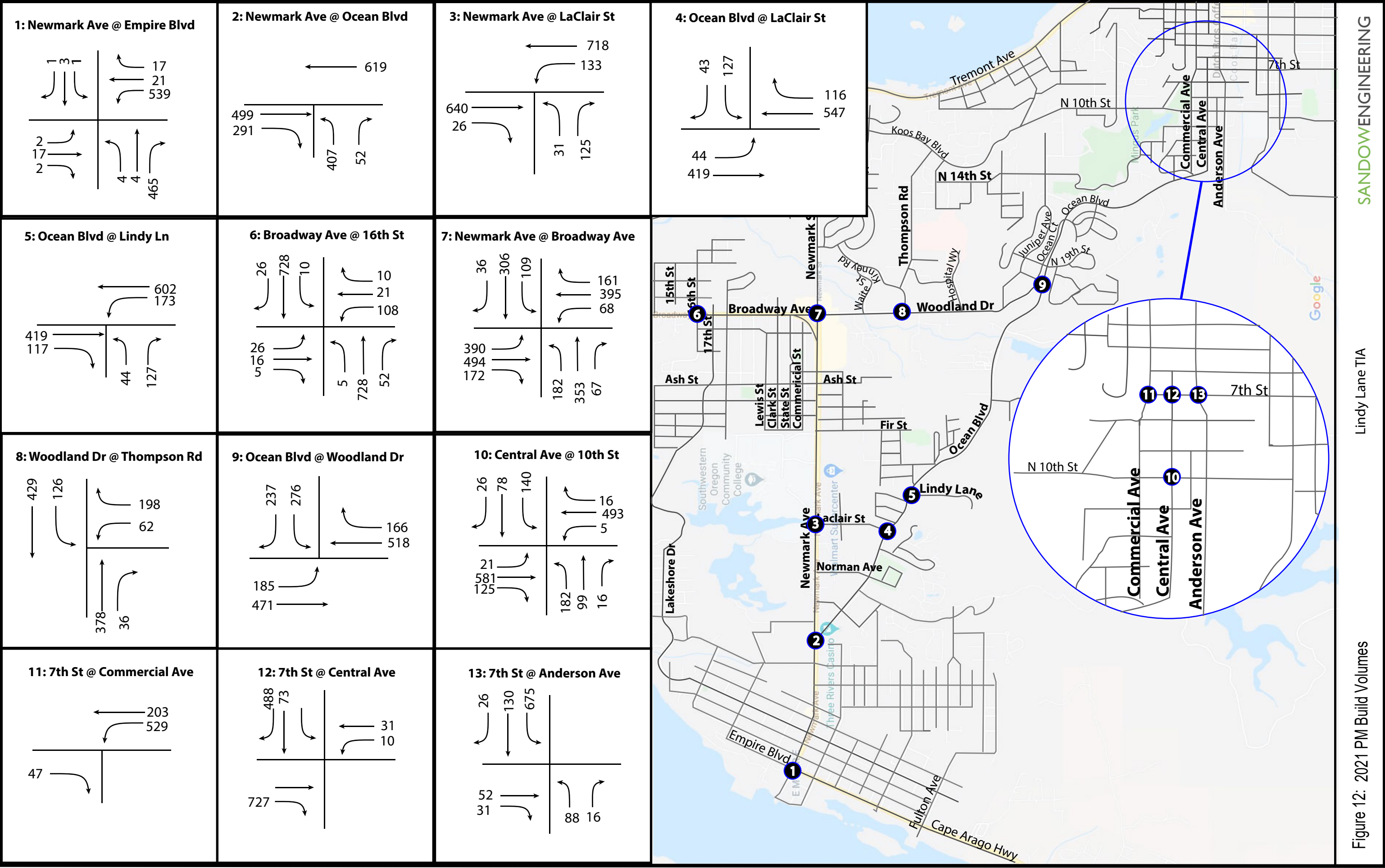
Figure 8: 2021 PM Background Volumes

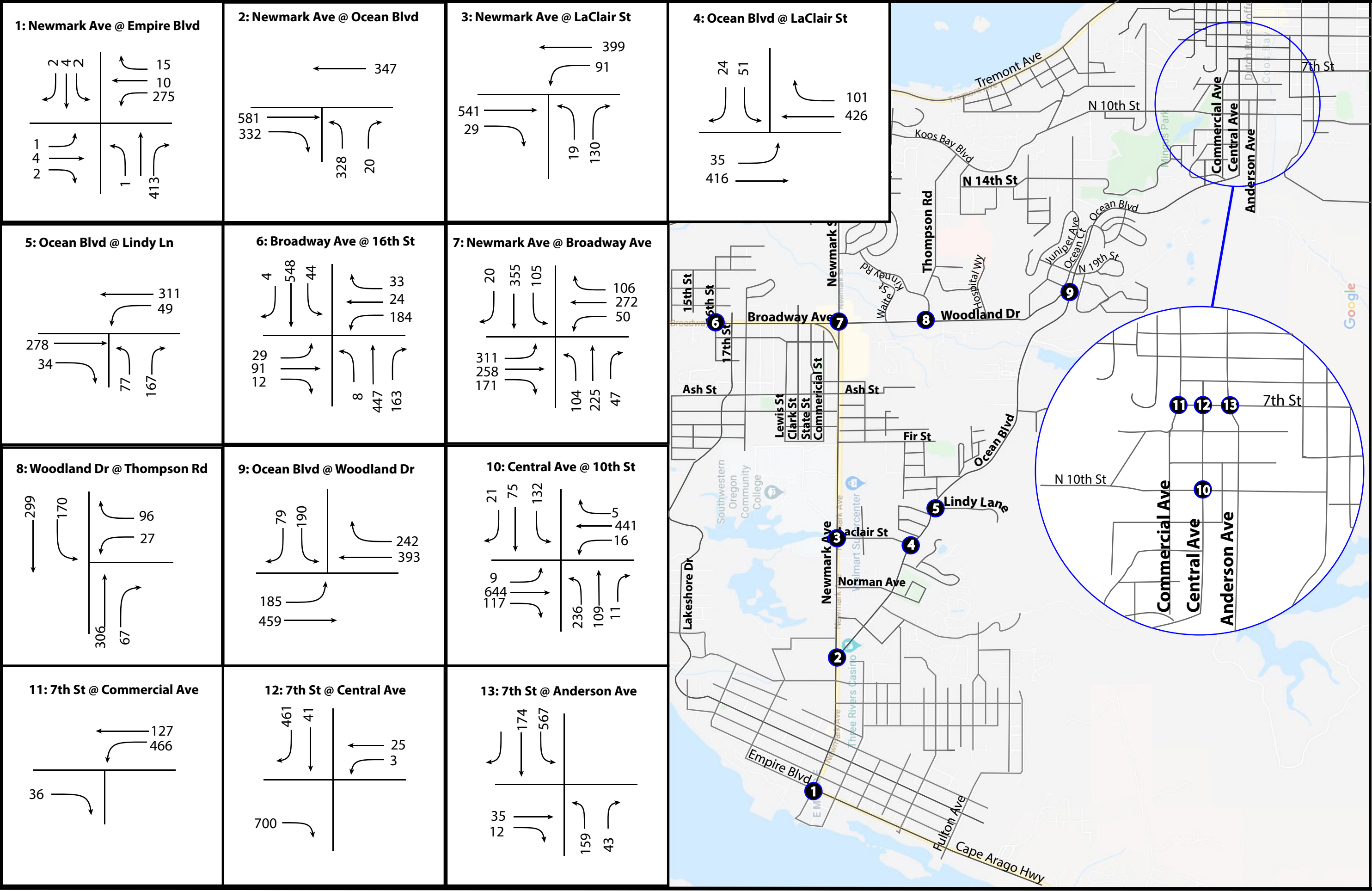
Lindy Lane TIA

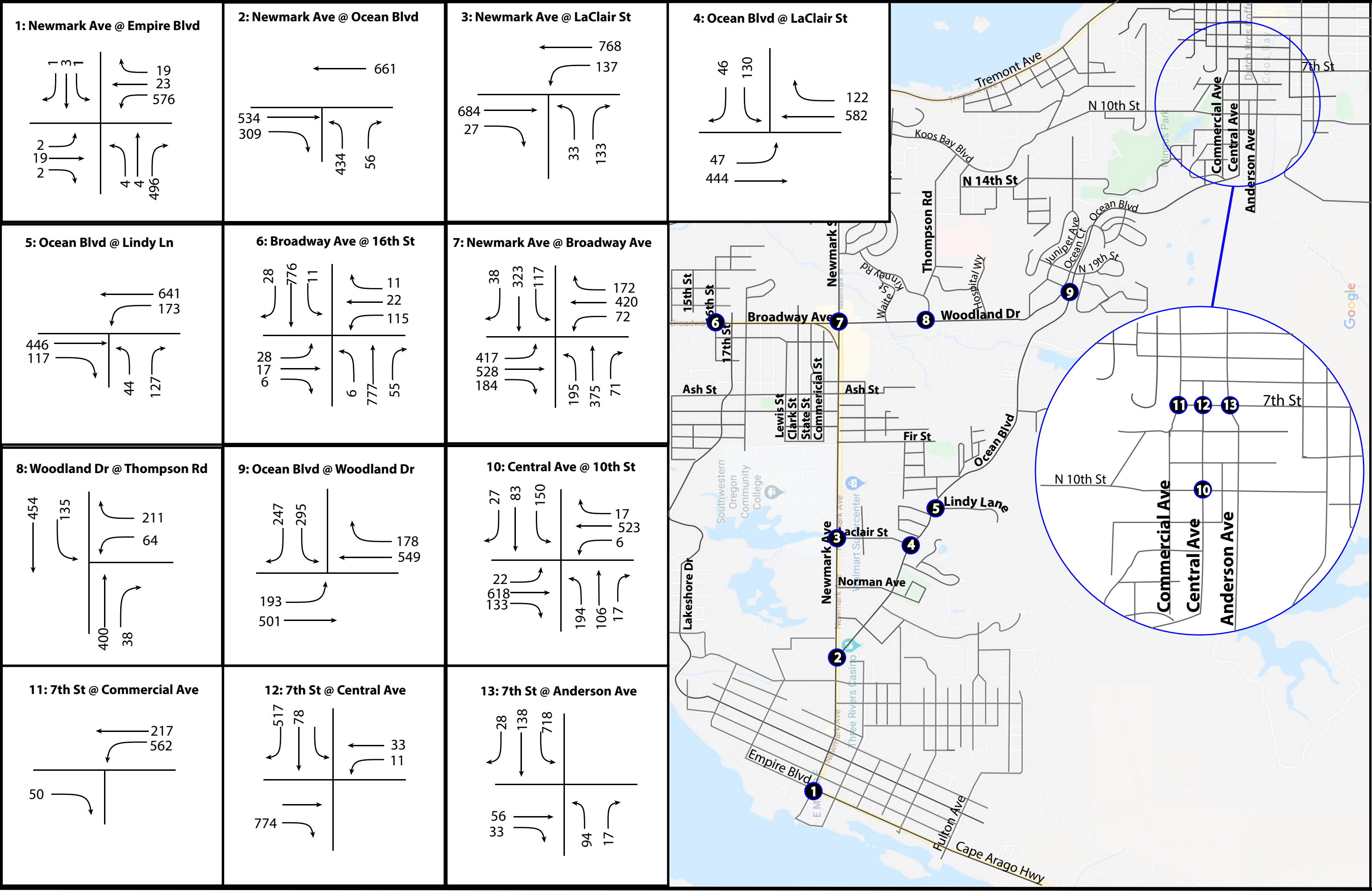












5.0 INTERSECTION EVALUATION

5.1 PERFORMANCE MEASURES

The studied intersections were evaluated for Level of Service (LOS). LOS is a measure of performance that is based on the Highway Capacity Manual (HCM). LOS is a concept developed to quantify the degree of comfort (including such elements as travel time, number of stops, total amount of stopped delay, and impediments caused by other vehicles) afforded to drivers as they travel through an intersection. It was developed to quantify the quality of service of transportation facilities. LOS is based on average delay, defined as the average total elapsed time from when a vehicle stops at the end of a queue until the vehicle departs from the stop line. The average delay is measured in seconds per vehicle per hour and then translated into a grade or “level of service” for each intersection. LOS ranges from A to F, with A indicating the most desirable condition and F indicating the most unsatisfactory condition. The City of Coos Bay has a level of service threshold of LOS D for all intersections. The LOS criteria, as defined by the Highway Capacity Manual, for signalized intersections, is provided in Table 3.

TABLE 3: HCM LEVEL OF SERVICE FOR INTERSECTIONS

	Stopped Delay Per Vehicle (Seconds per Vehicle)	
	Unsignalized Intersections	Signalized Intersections
A	≤ 10.0	≤ 10
B	> 10.0 and ≤ 15.0	> 10 and ≤ 20
C	> 15.0 and ≤ 25.0	> 20 and ≤ 35
D	> 25.0 and ≤ 35.0	> 35 and ≤ 55
E	> 35.0 and ≤ 50.0	> 55 and ≤ 80
F	> 50.0	> 80

5.2 INTERSECTION ANALYSIS RESULTS

A performance analysis was conducted for the year 2020 existing conditions, the year 2021, and year 2028 background conditions; and year 2021 and year 2028 full build-out conditions during the AM and PM peak hour. The results of the analysis are illustrated in Table 4 for the AM Peak Hour and Table 5 for the PM Peak Hour. The SYNCHRO outputs are provided in Appendix D.

TABLE 4: INTERSECTION PERFORMANCE- AM PEAK HOUR

Intersection	Mobility Standard	2020 Existing	2021 No-Build	2021 Build	2028 No-Build	2028 Build
Newmark @ Empire	D	C	C	C	C	C
Newmark @ Ocean	D	B	B	B	B	B
Newmark @ Laclair	D	C	C	C	C	C
Ocean @ Laclair	D	C	C	C	C	C
Ocean @ Lindy	D	B	B	C	B	C
Broadway @ 16th	D	C	C	C	C	C
Newmark @ Broadway	D	D	D	D	D	D
Woodland @ Thompson	D	C	C	C	C	C
Ocean @ Woodland	D	C	C	C	C	C
Central @ 10 th	D	C	C	D	D	D
7 th @ Commercial	D	B	B	B	B	B
7 th @ Central	D	A	A	A	A	A
7 th @ Anderson	D	D	D	D	D	D

*results for stop-controlled intersections are reported for the critical approach only.

As illustrated in Table 4, all studied intersections operate better than the mobility standard under both existing and build conditions for the AM peak hours

TABLE 5: INTERSECTION PERFORMANCE- PM PEAK HOUR

Intersection	Mobility Standard	2020 Existing	2021 No-Build	2021 Build	2028 No-Build	2028 Build
Newmark @ Empire	D	C	C	C	C	C
Newmark @ Ocean	D	B	B	B	B	B
Newmark @ Laclair	D	B	B	C	C	C
Ocean @ Laclair	D	C	C	D	C	D
Ocean @ Lindy	D	B	B	D	B	D
Broadway @ 16th	D	B	B	B	B	B
Newmark @ Broadway	D	D	D	D	E	E
Woodland @ Thompson	D	C	C	C	C	C
Ocean @ Woodland	D	C	C	D	D	D
Central @ 10th	D	C	C	C	C	C
7th @ Commercial	D	B	B	B	B	B
7th @ Central	D	A	A	A	A	A
7th @ Anderson	D	D	D	D	D	D

As illustrated in Table 5, all studied intersections operate better than the mobility standard under both the existing and build conditions for the PM Peak Hours. With the exception of Newmark at Broadway. Newmark at Broadway operates at a LOS E under the no-build conditions for the year 2028, and the addition of development trips does not worsen the level of service.

5.3 QUEUING ANALYSIS

A queuing analysis was conducted for the studied intersections for the year 2020, the year 2021, and the year 2028 during the AM and PM peak hours for both the build and no-build conditions. The analysis was performed using SimTraffic 9, a microsimulation software tool that uses the HCM defined criteria to estimate the queuing of vehicles within the study area. The average and 95th percentile queuing results are illustrated in Table 6 for the year 2020, Table 7 for the year 2021, and Table 8 for the year 2028. All results are rounded to 25 feet to better represent the total number of vehicles in the queue, as the average space one vehicle typically occupies is 25 feet. The SimTraffic outputs are provided in Appendix E.

TABLE 6: INTERSECTION QUEUING YEAR 2020

Movement	Available Storage (Feet)	AM		PM	
		No-Build (Feet)		No-Build (Feet)	
		Avg	95 th Percentile	Avg	95 th Percentile
Empire at Newmark					
Eastbound	100	25	25	25	50
Northbound	400+	25	25	50	100
Southbound	400+	25	50	25	25
Newmark at Ocean Blvd					
Eastbound	500+	175	250	150	250
Westbound L	500+	75	150	100	200
Northbound L	500+	50	100	125	175
Newmark at LaClair					
Eastbound TR	500+	125	200	150	250
Westbound L	600	50	100	75	150
Westbound T	500+	100	175	150	250
Northbound L	200	50	75	75	100
Ocean at LaClair					
Southbound LR	500+	25	75	50	100
Eastbound LT	TWLTL	25	100	50	125
Ocean at Lindy					
Northbound LR	500+	25	25	25	25
Westbound L	500+	0	0	25	25
Broadway at 16th					
Eastbound LTR	500+	75	125	50	75
Westbound LTR	500+	125	200	75	150
Northbound L	TWLTL	25	50	25	50
Northbound TR	500+	100	200	75	150
Southbound L	TWLTL	50	100	50	50
Southbound TR	500+	50	125	75	150

Broadway at Newmark

Eastbound L	TWLT	175	250	250	325
Eastbound TR	500+	125	225	250	400
Westbound L	100	50	125	100	200
Westbound TR	500+	100	200	425	725
Northbound L	200	75	150	175	275
Northbound TR	500+	100	200	225	350
Southbound L	120	100	225	75	150
Southbound TR	500+	200	350	125	225

Broadway at Thompson

Westbound L	85	25	50	25	50
Westbound R	500+	25	50	50	75
Northbound TR	500+	25	50	25	50
Southbound L	TWLT	50	75	50	75

Ocean at Woodland

Eastbound L	250	75	125	100	150
Eastbound T	500+	75	150	75	150
Westbound T	500+	175	300	225	325
Westbound TR	500+	75	175	75	225
Southbound L	75	100	175	175	250
Southbound R	500+	75	75	75	75

Central at 10th

Eastbound LT	500+	250	425	250	375
Eastbound R	270	75	175	100	200
Westbound LR	500+	100	200	150	225
Westbound TR	500+	100	200	75	175
Northbound L	100	150	225	100	175
Northbound TR	500+	75	125	75	125
Southbound L	100	100	150	100	150
Southbound TR	500+	75	125	75	125

Commercial at 7th

Eastbound R	500+	25	50	25	50
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Central at 7th

Southbound T	75	25	50	0	0
Westbound LT	75	50	50	25	50

Anderson at 7th

Eastbound TR	500+	25	50	50	75
Northbound LTR	500+	50	75	50	75

TABLE 7: INTERSECTION QUEUING YEAR 2021

Movement	Available Storage (Feet)	AM				PM			
		No-Build (Feet)		Build (Feet)		No-Build (Feet)		Build (Feet)	
		Avg	95 th Percentile	Avg	95 th Percentile	Avg	95 th Percentile	Avg	95 th Percentile
Empire at Newmark									
Eastbound	100	25	50	25	50	25	50	25	50
Northbound	400+	25	50	25	50	25	125	25	125
Southbound	400+	25	50	25	50	25	50	25	50
Newmark at Ocean Blvd									
Eastbound	500+	200	300	175	275	150	250	150	250
Westbound	500+	75	125	50	125	100	175	75	150
Northbound L	500+	50	100	50	100	125	175	125	200
Newmark at LaClair									
Eastbound TR	500+	125	225	125	125	125	225	150	250
Westbound L	600	50	100	70	125	50	125	100	250
Westbound T	500+	100	175	100	150	150	225	150	225
Northbound	200	50	75	50	100	75	100	75	125
Ocean at LaClair									
Southbound LR	500+	25	75	50	100	50	125	125	250
Eastbound LT	TWLTL	25	100	25	125	50	150	75	200
Ocean at Lindy									
Northbound LR	500+	25	25	75	150	25	25	100	175
Westbound LT	500+	0	0	25	75	0	0	175	350
Broadway at 16th									
Eastbound LTR	500+	75	125	75	125	50	100	50	75
Westbound LTR	500+	125	200	125	200	700	150	100	175
Northbound L	TWLTL	25	50	25	50	25	50	25	25
Northbound TR	500+	100	175	100	200	75	150	100	150
Southbound L	TWLTL	50	100	50	75	25	50	25	50
Southbound TR	500+	100	175	100	200	150	300	100	150
Broadway at Newmark									
Eastbound L	TWLTL	200	275	200	300	250	300	250	325
Eastbound TR	500+	125	225	125	275	250	400	250	425
Westbound L	100	50	125	75	150	100	175	100	200
Westbound TR	500+	150	225	175	275	375	600	425	600
Northbound L	200	100	150	100	175	175	300	200	325
Northbound TR	500+	125	225	150	250	250	450	325	600

Southbound L	120	100	200	125	200	125	200	150	250
Southbound TR	500+	175	325	200	350	200	325	275	450

Broadway at Thompson

Westbound L	85	25	50	25	50	25	50	25	50
Westbound R	500+	25	50	25	50	50	100	50	100
Northbound TR	500+	25	25	25	75	25	25	25	50
Southbound L	TWLTL	25	50	50	100	25	75	50	75

Ocean at Woodland

Eastbound L	250	100	125	125	175	75	150	150	250
Eastbound T	500+	75	125	75	125	100	150	125	250
Westbound T	500+	175	275	200	350	250	450	425	800
Westbound TR	500+	75	150	75	200	75	225	150	350
Southbound	75	100	175	100	200	200	325	275	475

Central at 10th

Eastbound LT	500+	250	400	300	475	250	400	300	475
Eastbound R	270	100	200	100	200	100	225	100	200
Westbound LR	500+	150	250	175	275	125	200	150	250
Westbound TR	500+	75	175	100	225	75	150	100	200
Northbound L	100	150	275	150	250	125	200	125	225
Northbound TR	500+	100	150	75	150	75	125	75	150
Southbound L	100	100	150	75	150	100	175	100	150
Southbound TR	500+	50	100	50	100	75	125	75	125

Commercial at 7th

Eastbound R	500+	25	50	25	50	25	50	25	50
-------------	------	----	----	----	----	----	----	----	----

Central at 7th

Southbound T	75	25	50	25	50	0	0	0	0
Westbound LT	75	0	0	0	0	25	50	25	50

Anderson at 7th

Eastbound TR	500+	25	50	25	50	50	75	50	75
Northbound LTR	500+	50	100	50	100	50	75	50	75

TABLE 8: INTERSECTION QUEUING YEAR 2028

Movement	Available Storage (Feet)	AM				PM			
		No-Build (Feet)		Build (Feet)		No-Build (Feet)		Build (Feet)	
		Avg	95 th Percentile	Avg	95 th Percentile	Avg	95 th Percentile	Avg	95 th Percentile
Empire at Newmark									
Eastbound	100	25	50	25	50	25	50	25	50
Westbound	200+	0	0	0	0	25	25	0	0
Northbound	400+	25	50	25	50	50	125	50	125
Southbound	400+	25	50	25	50	25	25	25	25
Newmark at Ocean Blvd									
Eastbound	500+	200	300	200	300	175	300	200	325
Westbound	500+	75	125	50	125	100	200	125	50
Northbound L	500+	50	100	50	125	125	200	75	125
Newmark at LaClair									
Eastbound TR	500+	125	225	150	225	150	250	150	250
Westbound L	600	50	125	100	125	75	175	125	200
Westbound T	500+	100	175	100	150	150	275	150	225
Northbound	200	50	100	50	100	75	150	75	125
Ocean at LaClair									
Southbound LR	500+	25	75	50	100	75	125	200	350
Eastbound LT	TWLTL	25	100	50	150	50	150	75	200
Ocean at Lindy									
Northbound LR	500+	25	25	100	175	25	25	100	175
Westbound LT	500+	0	0	25	100	25	25	200	350
Broadway at 16th									
Eastbound LTR	500+	75	125	75	150	50	100	50	100
Westbound LTR	500+	125	225	150	225	100	150	100	175
Northbound L	TWLTL	100	75	25	50	25	25	25	25
Northbound TR	500+	125	200	125	225	100	150	75	150
Southbound L	TWLTL	50	100	50	125	25	50	25	50
Southbound TR	500+	125	225	125	250	100	150	100	175
Broadway at Newmark									
Eastbound L	TWLTL	200	300	200	300	250	325	250	325
Eastbound TR	500+	150	300	150	300	275	425	250	425
Westbound L	100	75	150	75	150	125	200	100	200
Westbound TR	500+	175	300	175	300	550	925	650	1050
Northbound L	200	100	175	100	150	200	325	225	325
Northbound TR	500+	125	200	150	250	325	700	425	850
Southbound L	120	125	225	150	250	125	225	150	250
Southbound TR	500+	225	375	250	450	225	350	300	475

Broadway at Thompson									
Westbound L	85	25	50	25	50	25	50	50	75
Westbound R	500+	25	50	25	50	50	100	50	100
Northbound TR	500+	25	50	25	50	25	50	25	50
Southbound L	TWLT	50	75	50	100	50	75	50	100
Ocean at Woodland									
Eastbound L	250	75	125	250	300	100	150	150	350
Eastbound T	500+	75	125	250	350	100	150	125	225
Westbound T	500+	175	275	225	375	250	400	400	725
Westbound TR	500+	60	150	100	225	100	275	175	375
Southbound	500+	125	200	125	225	200	300	300	525
Central at 10th									
Eastbound LT	500+	300	475	400	525	275	475	400	550
Eastbound R	270	100	200	100	250	100	225	125	225
Westbound LR	500+	150	250	200	350	150	225	175	300
Westbound TR	500+	100	225	150	300	75	175	125	225
Northbound L	100	150	275	175	275	125	200	175	250
Northbound TR	500+	75	150	100	175	75	125	75	125
Southbound L	100	100	175	125	200	100	175	100	175
Southbound TR	500+	75	125	100	125	75	125	75	150
Commercial at 7th									
Eastbound R	500+	25	50	25	50	25	50	25	50
Central at 7th									
Southbound T	75	25	50	25	50	0	0	0	0
Westbound LT	75	0	0	0	0	25	50	25	50
Anderson at 7th									
Eastbound TR	500+	25	50	25	50	50	75	50	75
Northbound LTR	500+	50	100	50	100	50	75	50	75

As shown in the tables, the development does not substantially increase the queuing conditions over the no-build.

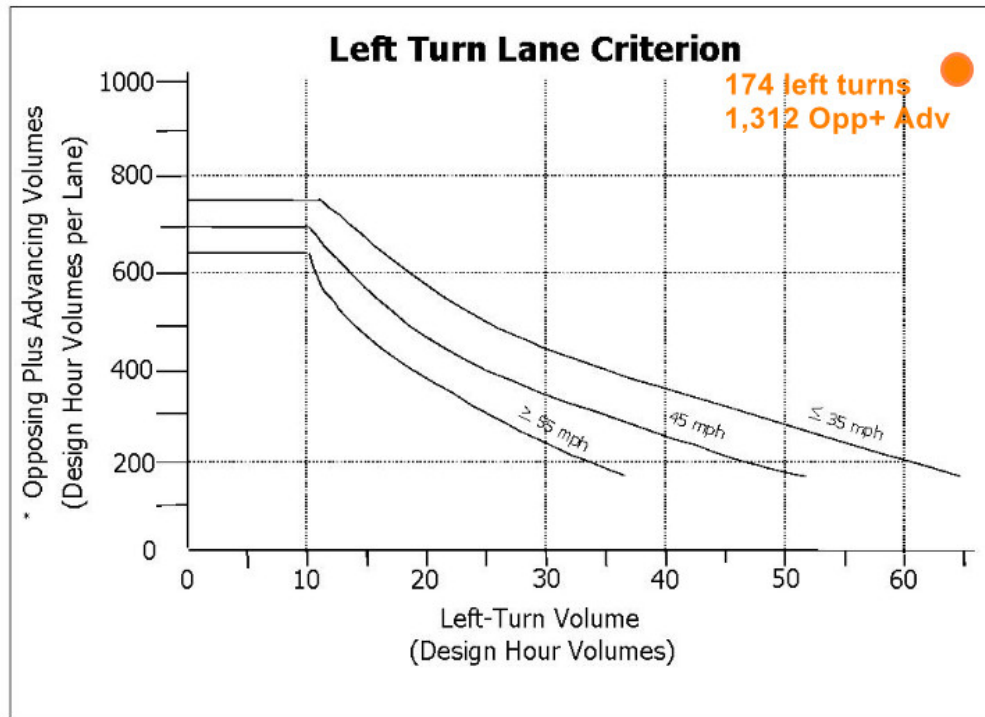
6.0 LINDY LANE

Lindy Lane is classified as a local street within the City's TSP. As it terminates into the development site, the roadway will primarily serve the needs of the new residential development and the few existing residential uses along Lindy Lane. Lindy Lane is classified as a local street and has a 50-foot right-of-way. The City of Coos Bay Engineering Design Standards for a Standard Residential Street is 50 feet of right-of-way width, 5' sidewalks on both sides, and 10' travel lanes. The anticipated levels of traffic on Lindy lane are sufficiently and safely accommodated with the lane widths and sidewalks widths for the cross-section a Standard Residential Street.

7.0 INTERSECTION IMPROVEMENT RECOMMENDATION

Lindy Lane at Ocean Grove is shown to operate at a level of service that meets the City's standards. However, the 95th percentile queue for the PM peak hour is estimated at 350 feet for the yeay 2028 PM peak hour. Due to the high volume of left turns in conjunction with the current roadway striping of merging from 2 lanes to one lane, and the roadway curvature just to the east, it is recommended that a westbound left-turn pocket be striped.

The ODOT analysis procedures manual has guidance to when the turn lane volumes and volumes on a roadway are high enough to install a left-turn pocket. The traffic volumes are 174 left turns and 1,312 total vehicles along Ocean Blvd during the PM peak hour. As demonstrated in the following graphic, the left turn pocket meets the ODOT criteria for installation.



*(Advancing Volume/Number of Advancing Through Lanes) + (Opposing Volume/Number of Opposing Through Lanes)

Opposing left turns are not counted as opposing volumes

It is recommended that the existing roadway be restriped to reduce the travel lanes from 2 in each direction to 1 in each direction and a center two-way left-turn lane. The striping will start at Merrill Street to the east, create the left turn pocket at 100 feet of storage, and provide the taper and lane merge necessary to allow safe operations.

8.0 CONCLUSION

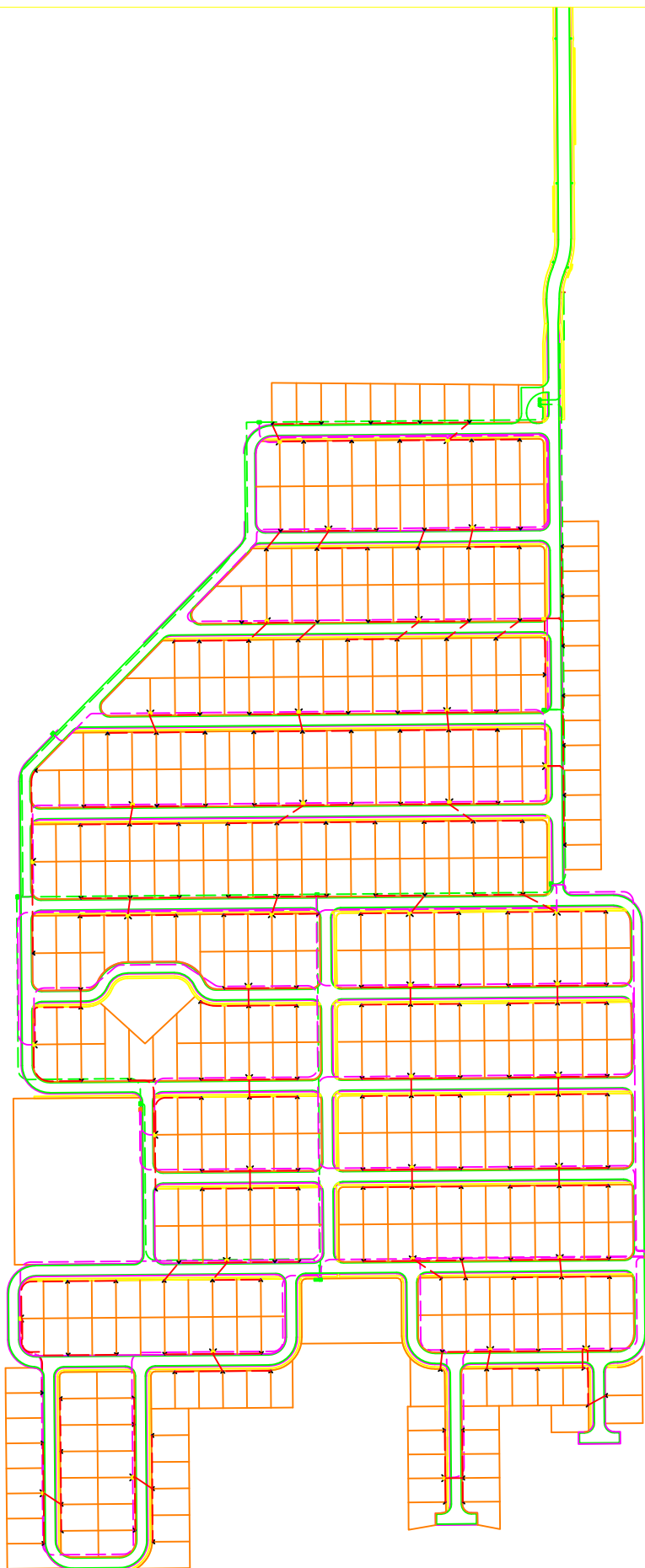
This report describes the Traffic Impact Analysis and findings prepared for the proposed Lindy Lane residential development in Coos Bay, Oregon. The proposed development is located at Tax Lot 600 of assessors map 25S-13W-28. The site is located at the southern terminus of Lindy Lane, south of Ocean Boulevard. The site is contained within 40 acres and is currently vacant. The development proposal is 447 manufactured homes. A single access connection is proposed via Lindy Lane at Ocean Blvd.

8.1 FINDINGS

The analysis concludes the following findings:

- All intersections operate within the mobility standards for Coos Bay, with the exception of Newmark at Broadway. Newmark at Broadway operates at a LOS E under the no-build conditions for the year 2028 and the addition of development trips does not worsen the level of service. Therefore, no mitigation is recommended at this location
- Lindy Lane is classified as a local street and has a 50-foot right-of-way. The street cross-section applicable to Lindy Lane is the Standard Residential Street. The standards for a Standard Residential Street is 10 feet. The anticipated levels and type of traffic on Lindy lane are sufficiently and safely accommodated with the standard lane widths and sidewalks widths for the cross-section a Standard Residential Street which conforms to the City of Coos Bay 28-foot Standard Residential Standard Table 3-1 within the adopted Ordinance No. 479 for the City of Coos Bay Engineering Design Standards. The only discussion aspect would be if on-street parking is required as only 4 homes are located within this improvement region.
- At the Lindy Lane/Ocean Blvd intersection, due to the high volume of left turns in conjunction with the current roadway striping of merging from 2 lanes to one lane, and the roadway curvature just to the east, it is recommended that a westbound left-turn pocket be striped.

Lindy Lane TIA



Lindy Lane TIA

SOUTHERN OREGON TRANSPORTATION ENGINEERING, LLC

319 Eastwood Drive - Medford, Or. 97504 – Phone (541) 608-9923 – Email: Kim.parducci@gmail.com

Date: December 31, 2019

To: Jennifer Wirsing, Engineering Service Coordinator
City of Coos Bay
500 Central Avenue
Coos Bay, Oregon 97420

Re: Scoping Letter for the Gateway Oasis 420-unit Manufactured Home Subdivision

The proposed development includes a 420-unit manufactured home subdivision located at the southern end of Lindy Lane. A single access is proposed through Lindy Lane, which is currently classified as a Neighborhood Route. All development traffic will use Lindy Lane to access the transportation system at Ocean Boulevard, which is classified as a Major Arterial. Previous analyses for this site were submitted to the City for review that resulted in the following conditions of approval:

1. Lindy Lane from Ocean Boulevard to project site: Improve Lindy Lane to a Neighborhood Route (50' right of way, 2-12' travel lanes, 2-6' bike lanes, 2-5' sidewalks)
2. Ocean Boulevard at the Lindy Lane Intersection: Right Turn Lane.
3. Ocean Boulevard at Knife River Driveway Intersection: Right Turn Lane.
4. Ocean Boulevard: Restriping of Ocean Boulevard from a 4-lane to a 2-lane roadway with a two-way left-turn lane with bicycle lanes from approximately N. 19th Street to Merrill Street.

It is our understanding that the applicant is seeking to remove condition #3 and modify conditions #1 and #4. These conditions of approval can be re-visited through a new traffic impact analysis (TIA) prepared by a licensed traffic engineer in the State of Oregon. Analyses are required to follow the City's current TIA guidelines. The general format is as follows and pertains to City of Coos Bay facilities.

1. A TIA shall evaluate existing, design, and future year scenarios with and without proposed development. The design year(s) shall include each phase of development through ultimate build out with a future year of 2028 until the City's Transportation System Plan (TSP) Update is finalized.
2. The study area shall include site access points and any intersection where the proposed development contributes 25 or more trips during the a.m. and p.m. peak hours to determine compliance with City performance standards.
3. Development trip generations shall utilize the most recent edition of the Institute of Transportation Engineers (ITE) *Trip Generation* to estimate daily and peak hour trips to/from the development. All assumptions and adjustments regarding pass-by, diverted link, and internal trips shall be calculated in accordance with ITE methodology and documented in the analysis.

4. Trip distributions to/from the site and within the transportation system previously approved can be kept the same. At intersections not previously analyzed, distributions should either follow existing traffic patterns or use a current transportation model. If alternate splits are used to distribute development trips then justification must be provided and approved by the City prior to submittal of the TIA.
5. Turning movement counts where signal modifications or signals are being proposed shall be a minimum of 12-hours long, with 15-minute breakdowns in the a.m. and p.m. peak hours, unless pre-approved for a lesser time. For all other intersections, counts shall be at least 2-hours long and taken during the a.m. and p.m. peak periods, with 15-minute breakdowns. Counts must be no longer than two years old to be applicable, unless older data is determined by the City to be more reliable than current counts. For previous analyses, traffic counts were gathered in May of 2013 which were considered to include reliable count data. If other counts are available and determined to be reliable then they too can be used in the analysis. At intersections where no count data is available, new counts will need to be gathered when determined to be acceptable in accordance with ODOT's Analysis Procedures Manual (APM).
6. In-process or previously approved development traffic in the surrounding area shall be included as background traffic if not already included in existing count data and will be provided by the City. The only recent development in the local area is a 15,000 square foot gaming facility and restaurant located along the southwest corner of Wallace Street and Ocean Boulevard. Trip distributions are attached.
7. All traffic volumes shall be seasonally adjusted to represent peak conditions in accordance with ODOT's *Analysis Procedures Manual* (APM). For design year and future year analyses, area growth shall be assumed at 1% per year.
8. Level of service analyses shall follow operational procedures per the current *Highway Capacity Manual* (HCM). Ideal saturation flow rates greater than 1750 vehicles per hour per lane shall be justified by field measurements. Queue lengths reported in the analysis shall be determined from simulations and reported as the 95th percentile length rounded to the nearest 25' increment, in accordance with ODOT's APM. Actual peak hour factors shall be used for existing conditions and calculated for each intersection or approach depending upon the peaking characteristics of an intersection. For new intersections, default peak hour factors shall be used in accordance with ODOT's APM.
9. Intersection sight distance shall be evaluated at site driveways and proposed new approaches in accordance with the American Association of State Highway and Transportation Officials (AASHTO) *Policy on Geometric Design* methodologies.
10. Left and right turn lanes shall be evaluated on facilities where none are currently provided and follow procedures outlined in ODOT's APM.
11. Stop-controlled intersections shall be evaluated for signal warrants per the *Manual on Uniform Traffic Control Devices* (MUTCD) if the level of service is determined to be below performance standards.

12. Pedestrian, bicycle, and transit services shall be evaluated on-site and within the study area to address compliance with the City's Transportation System Plan goals and policies.
13. The TIA shall determine all improvements and/or mitigation measures necessary to meet City performance standards. For each phase of development, improvements shall be identified to accommodate additional traffic generated by this project.

It is recommended that the TIA format follow the City's Traffic Impact Analysis Guidelines provided with this scoping letter.

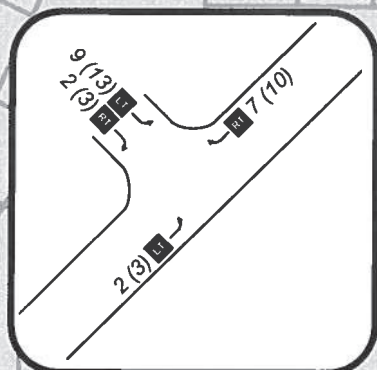
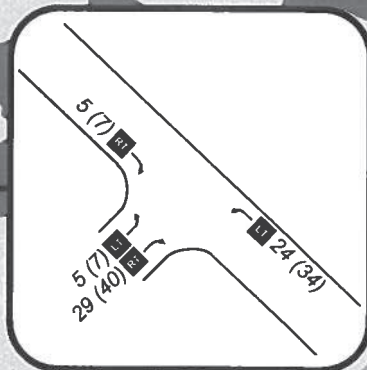
Sincerely,



Kimberly Parducci, PE PTOE

SOUTHERN OREGON TRANSPORTATION ENGINEERING, LLC

Attachments: City of Coos Bay Traffic Impact Analysis Guidelines



S Empire Blvd

Newmark Ave
15%

Newmark Ave
20%

Wallace St

60%

Ocean Blvd NW

5%

COOS BAY CASINO
Coos Bay, Oregon

Figure 3: Trip Distribution & Project Trips

xxx (xxx) = Project Trips
Weekday Pk Hr (Saturday Pk Hr)



Studied
Intersection



Project
Driveway

SITE

JRH TRANSPORTATION ENGINEERING
4765 Village Plaza Loop, Suite 201
Eugene, Oregon 97401 (TEL.) 541.687.1081
www.jrhweb.com





City of Coos Bay
Public Works and Development Department
500 Central Avenue, Coos Bay, OR 97420
PH 541-269-8918 – FAX 541-269-8916
www.coosbay.org

Traffic Impact Analysis Guidelines

STUDY AND REPORT FORMAT

- 1) Introduction and Summary
 - a) Purpose of the report and study objectives
 - b) Executive summary
 - (1) Site location and study area
 - (2) Development description
 - (3) Principal findings
 - (4) Conclusions
 - (5) Recommendations
- 2) Proposed Development
 - a) Site location
 - b) Land use and intensity
 - c) Site plan (readable version shall be provided)
 - (1) Access geometrics
 - d) Development phasing and timing
- 3) Study Area Conditions
 - a) Study area
 - (1) Area of significant traffic impact
 - (2) Influence area
 - b) Land use
 - (1) Existing land use
 - (2) Anticipated future development
 - c) Site accessibility
 - (1) Existing and future area roadway system
- 4) Analysis of Existing Conditions
 - a) Physical characteristics
 - (1) Roadway characteristics
 - (2) Traffic control devices
 - (3) Transit service

- (4) Pedestrian/bicycle facilities
 - (5) Existing transportation demand management
 - b) Traffic volumes
 - (1) Daily, morning, and afternoon peak periods (two hours), and others as required
 - c) Level of service
 - (1) Morning peak hour, afternoon peak hour, and other as required
 - d) Safety
 - e) Data sources
- 5) Projected Traffic
 - a) Site traffic forecasting (each horizon year)
 - (1) Trip generations
 - (2) Mode split
 - (3) Pass-by traffic (if applicable)
 - (4) Trip distribution
 - (5) Trip assignment
 - b) Non-site traffic forecasting (each horizon year)
 - (1) Projections of non-site traffic by ODOT or other source. For larger developments and study areas, a more comprehensive method may be required which includes: trip generation, trip distribution, modal split and trip assignment.
 - c) Total traffic (each horizon year)
- 6) Traffic and Improvement Analysis
 - a) Site access
 - b) Level of service analysis
 - (1) Without project including programmed improvements (each horizon year)
 - (2) With project including programmed improvements (each horizon year)
 - c) Roadway improvements
 - (1) Improvements programmed by the City of Coos Bay, ODOT or others to accommodate non-site traffic
 - (2) Additional alternative improvements to accommodate site traffic
 - d) Traffic Safety
 - (1) Sight distance
 - (2) Acceleration/deceleration lanes, left-turn lanes
 - (3) Adequacy of location and design of driveway or site access
 - e) Pedestrian considerations
 - f) Speed considerations
 - g) Traffic control needs
 - h) Traffic signal needs (base plus each year in five-year horizon)
 - i) Conformance with the City of Coos Bay Transportation System Plan

7) Conclusions

8) Recommendations

- a) Site access
- b) Roadway improvements
 - (1) Phasing
- c) Conformance with the City of Coos Bay Transportation System Plan
- d) Other

9) Appendices

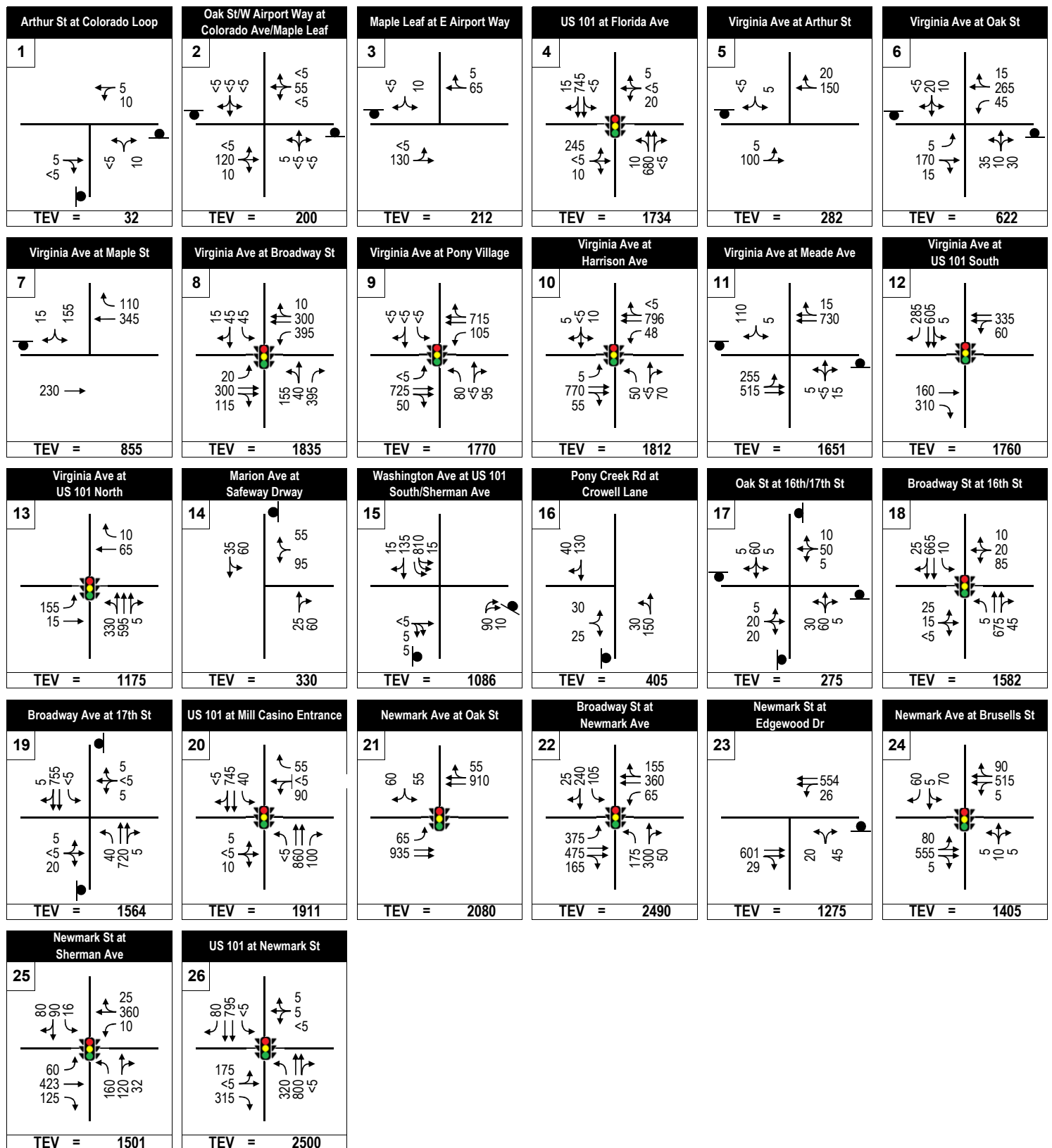
- a) Traffic counts
- b) Capacity analyses worksheets
- c) Traffic signal needs studies
- d) Accident data and summaries

The traffic impact analysis shall be prepared under the supervision of a Professional Traffic Engineer or qualified Civil Engineer registered in the State of Oregon. The report shall be sealed and signed by the engineer.

The latest edition of the Institute of Transportation Engineers' "Trip Generation" shall be used for selecting trip generation rates.

All assumptions shall be discussed in the study narrative. All data sources shall be referenced and all supporting data will accompany the study.

Lindy Lane TIA



Legend

→ Allowable Movement

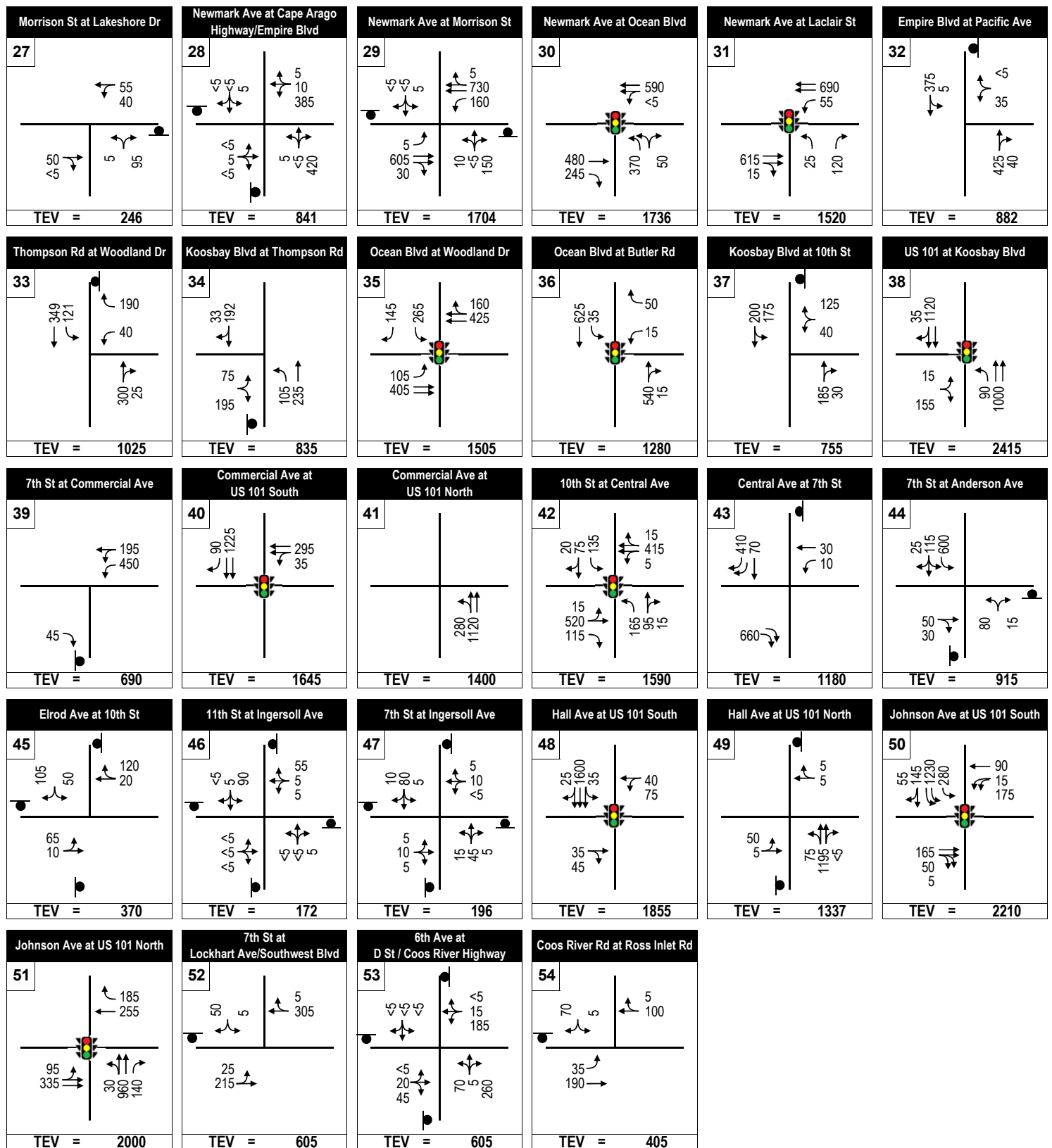
TEV Total Entering Volume

🚦 Signalized Intersection

● STOP Controlled Approach



Figure 6
Existing (2017)
PM Peak Hour (4:30 - 5:30 PM)
Turn Movement Volumes
North Bend



Legend

→ Allowable Movement

TEV Total Entering Volume

🚦 Signalized Intersection

● STOP Controlled Approach



Figure 7
Existing (2017)
PM Peak Hour (4:30 - 5:30 PM)
Turn Movement Volumes
Coos Bay

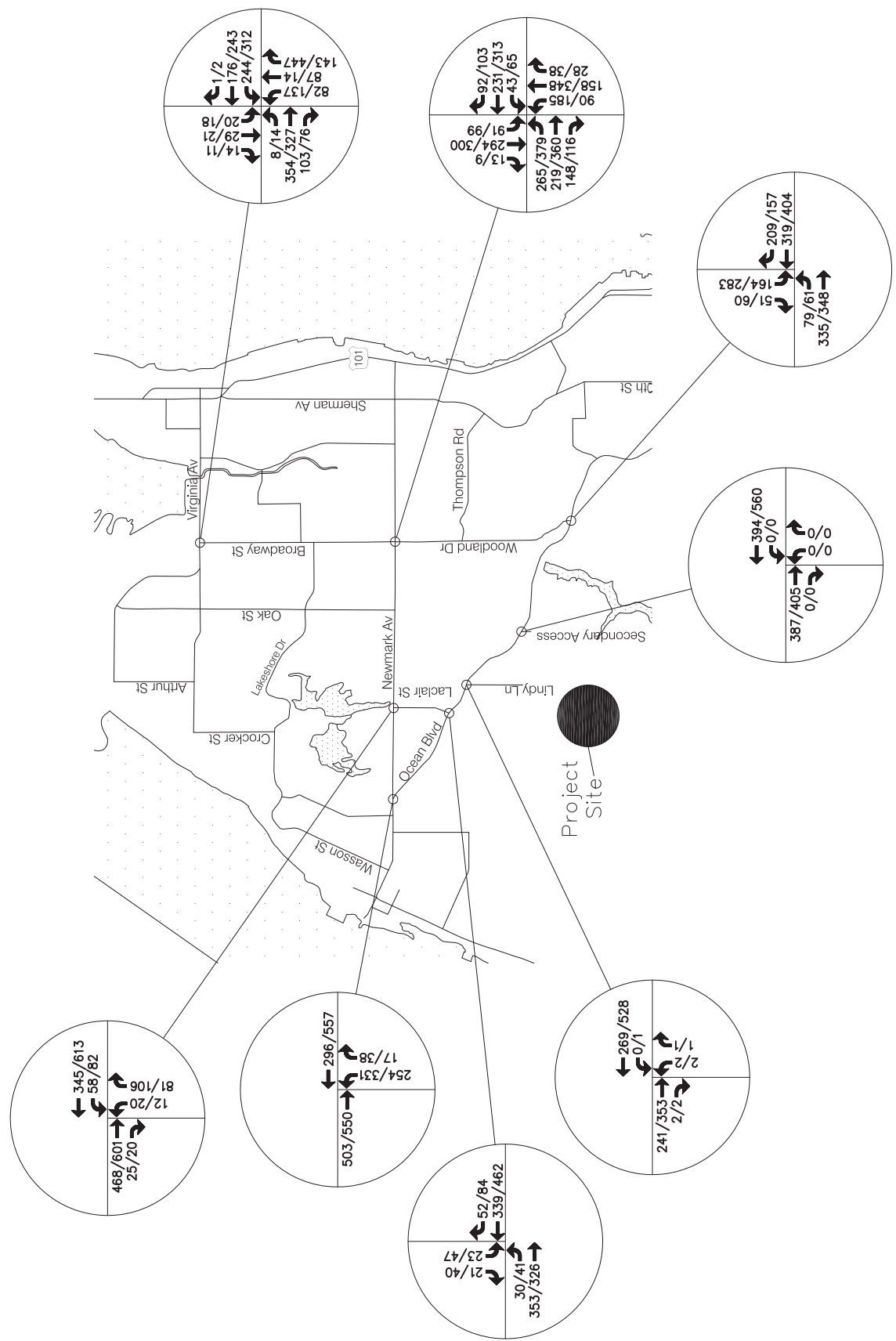


FIGURE 5
2013 Existing A.M. and P.M.
Peak Hour Traffic Volumes

LEGEND
128/150
A.M. and P.M. Peak Hour
Traffic Volumes



Intersection: 6: Broadway @ 16th										City: 0												
Counter: 0										Date: Saturday, January 0, 1900												
Total of All Vehicles																						
Time Period		Southbound			Westbound			Northbound			Eastbound			15 Minute Volume	Hourly Volume	Pedestrians						
		Right	Thru	Left	Approach Total	Right	Thru	Left	Approach Total	Right	Thru	Left	Approach Total			SB	WB	NB	EB			
7:00	7:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
7:15	7:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
7:30	7:45	2	108	18	128	6	31	43	38	87	0	125	2	30	8	40	336	0	0			
7:45	8:00	1	140	15	156	9	60	84	64	113	4	181	5	33	9	47	468	804	0			
8:00	8:15	1	126	6	133	9	7	49	65	22	77	1	100	4	10	6	20	318	0			
8:15	8:30	0	124	2	126	1	0	26	27	13	85	2	100	0	4	8	261	1383	0			
8:30	8:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1047	0	0			
8:45	9:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	579	0	0			
9:00	9:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	261	0	0			
9:15	9:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
Count Period Total		4	498	41		31	22	166		137	362	7		11	77	27		1383	0			
PM Peak Hour Count Summary																						
Peak Volumes		Southbound			Westbound			Northbound			Eastbound			Approach		Approach		Pedestrians				
		Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Right	Left	SB	WB	NB	EB	
PHF		0.50	0.89	0.57	0.87	0.52	0.61	0.69	0.65	0.54	0.80	0.44	0.70	0.55	0.58	0.75	0.61	0.74	0	0	0	0
% Trucks		0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0	0	0

Seasonally Adjusted Peak Hour

156	33		123		999		456						
	←		→		↓		↑						
	123		123		498		41						
	←		→		T		L						
					R		PED						
					7.55%		7.55%						
					91.71%		7.55%						
					Southbound								
					4		0						
					6								
					0		0						
					27								
					85								
					11								
					Ped								
					22.00%								
					69.03%								
					8.96%								
					Eastbound								
					0		137						
					7		398						
					L		T						
					Ped		R						
					1.3%		73.4%						
					%		25.3%						
					Northbound								
					675		542						
					↓		↑						
							1217						
					6: Broadway @ 16th								
					31		219						
					↑		←						
					R		14.16%						
					22		10.05%						
					←		T						
					166		L						
					0		75.80%						
					Ped		%						
					0		263						
					Westbound								
							482						

Seasonal Adjustment Factor
1.00

Pedestrians and Cars

	- - (- i
--	--

Trucks

Bikes

Pedestrians

[illegible]

Intersection: 8: Woodland @ Thompson										City: 0											
Counter: 0										Date: Saturday, January 0, 1900											
Total of All Vehicles																					
Time Period		Southbound				Westbound				Northbound				Eastbound				15 Minute Volume		Hourly Volume	
		Right	Thru	Left	Approach Total	Right	Thru	Left	Approach Total	Right	Thru	Left	Approach Total	Right	Thru	Left	Approach Total				
7:00	7:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
7:15	7:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
7:30	7:45	60	34	94	25	5	30	10	48	0	58	0	182	0	0	0	0	0	0		
7:45	8:00	73	62	135	24	6	30	13	53	0	66	0	231	0	0	0	0	0	0		
8:00	8:15	47	29	76	17	7	24	8	54	0	62	0	162	575	0	0	0	0	0		
8:15	8:30	83	32	115	23	2	25	6	46	0	52	0	192	767	0	0	0	0	0		
8:30	8:45	0	0	0	0	0	0	0	0	0	0	0	0	585	0	0	0	0	0		
8:45	9:00	0	0	0	0	0	0	0	0	0	0	0	0	354	0	0	0	0	0		
9:00	9:15	0	0	0	0	0	0	0	0	0	0	0	0	192	0	0	0	0	0		
9:15	9:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Count Period Total		0	263	157	89	0	20	0	37	201	0	0	0	0	0	0	0	0	0		
PM Peak Hour Count Summary																					
Peak Volumes		Southbound				Westbound				Northbound				Eastbound				Pedestrians			
		Right	Thru	Left	Approach	Right	Thru	Left	Approach	Right	Thru	Left	Approach	Right	Thru	Left	Approach	SB	WB	NB	EB
PHF	0	263	157	420	89	0	20	109	37	201	0	238	0	0	0	0	767	0	0	0	0
% Trucks	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0.83				

[illegible]

8: Woodland @ Thompson
Pedestrians and Cars

Time Period	Southbound			Westbound			Northbound			Eastbound			15 Minute Volume	Hourly Volume
	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left		
7:00 AM	0				0				0				0	
7:15 AM	0				0				0				0	
7:30 AM	0				0				0				0	
7:45 AM	0				0				0				0	0
8:00 AM	0				0				0				0	0
8:15 AM	0				0				0				0	0
8:30 AM	0				0				0				0	0
8:45 AM	0				0				0				0	0
9:00 AM	0				0				0				0	0
9:15 AM	0				0				0				0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	
Peak Hour	0	0	0	0	0	0	0	0	0	0	0	0	0	

Trucks

Time Period	Southbound			Westbound			Northbound			Eastbound			15 Minute Volume	Hourly Volume
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left		
7:00 AM													0	
7:15 AM													0	
7:30 AM													0	0
7:45 AM													0	0
8:00 AM													0	0
8:15 AM													0	0
8:30 AM													0	0
8:45 AM													0	0
9:00 AM													0	0
9:15 AM													0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	
Peak Hour	0	0	0	0	0	0	0	0	0	0	0	0	0	

Bikes

Time Period	Southbound			Westbound			Northbound			Eastbound			SB	WB	NB	EB
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left				
7:00 AM													0	0	0	0
7:15 AM													0	0	0	0
7:30 AM													0	0	0	0
7:45 AM													0	0	0	0
8:00 AM													0	0	0	0
8:15 AM													0	0	0	0
8:30 AM													0	0	0	0
8:45 AM													0	0	0	0
9:00 AM													0	0	0	0
9:15 AM													0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Peak Hour	0	0	0	0	0	0	0	0	0	0	0	0				

Pedestrians

Time Period	NE			NW			SW			SE			SB	WB	NB	EB
	Left	Right	Total	Left	Right	Total	Left	Right	Total	Left	Right	Total				
7:00 AM			0			0			0			0	0	0	0	0
7:15 AM			0			0			0			0	0	0	0	0
7:30 AM			0			0			0			0	0	0	0	0
7:45 AM			0			0			0			0	0	0	0	0
8:00 AM			0			0			0			0	0	0	0	0
8:15 AM			0			0			0			0	0	0	0	0
8:30 AM			0			0			0			0	0	0	0	0
8:45 AM			0			0			0			0	0	0	0	0
9:00 AM			0			0			0			0	0	0	0	0
9:15 AM			0			0			0			0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Peak Hour	0	0	0	0	0	0	0	0	0	0	0	0				

[illegible]

Pedestrians and Cars

Trucks

Bikes

Pedestrians

[illegible]

Seasonally Adjusted Peak Hour

151	118				11: 7th @ Commercial				Westbound				534	
	33				0				0				0	
	118				0				0				0	
	33				0				0				0	
	118				0				0				0	
Eastbound					11: 7th @ Commercial					Westbound				
118					0					0				
33					0					0				
118					0					0				
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Pedestrians and Cars

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Trucks

Bikes

Pedestrians

[illegible]

Intersection: 12: 7th @ Central Ave (Ocean)																		City: 0						
Counter: 0																		Date: Saturday, January 0, 1900						
Total of All Vehicles																								
Time Period	Southbound				Westbound				Northbound				Eastbound				15 Minute Volume	Pedestrians						
	Right	Thru	Left	Approach Total	Right	Thru	Left	Approach Total	Right	Thru	Left	Approach Total	Right	Thru	Left	Approach Total		SB	WB	NB	EB			
7:00	7:15	38	5	0	43	0	1	0	1	0	0	0	76	0	0	0	76	0	0	0	0			
7:15	7:30	76	7	0	83	0	2	0	2	0	0	0	109	0	0	0	109	194	0	0	0			
7:30	7:45	118	12	0	130	0	6	2	8	0	0	0	142	0	0	0	142	280	0	0	0			
7:45	8:00	121	14	0	135	0	7	0	7	0	0	0	209	0	0	0	209	351	0	0	0			
8:00	8:15	94	5	0	99	0	7	1	8	0	0	0	139	0	0	0	139	246	0	0	0			
8:15	8:30	78	7	0	85	0	3	0	3	0	0	0	108	0	0	0	108	196	0	0	0			
8:30	8:45	84	11	0	95	0	2	1	3	0	0	0	111	0	0	0	111	209	0	0	0			
8:45	9:00	74	8	0	82	0	4	1	5	0	0	0	111	0	0	0	111	198	0	0	0			
9:00	9:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	603	0	0	0			
9:15	9:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	407	0	0	0			
Count Period Total		683	69	0	0	0	32	5	0	0	0	0	1005	0	0	0	0	1794	0	0	0	0		
																		PM Peak Hour Count Summary						
Peak Volumes	Southbound				Approach	Westbound				Approach	Northbound				Approach	Eastbound				Approach	Pedestrians			
	Right	Thru	Left			Right	Thru	Left			Right	Thru	Left			Right	Thru	Left			SB	WB	NB	EB
	411	38	0	449	0	23	3	26	0	0	0	0	0	0	598	0	0	0	598	0	0	0	0	
	PHF	0.85	0.68	0.00	0.83	0.00	0.82	0.38	0.81	0.00	0.00	0.00	0.00	0.00	0.72	0.00	0.00	0.00	0.72	0.76				
Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0					
% Trucks	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%					

Seasonally Adjusted Peak Hour									
1032		434		Ped		0		449	
		100.00%		L		↑		↓	
		0.00%		T		→		Southbound	
		0.00%		R		→		0	
		598		Eastbound		0		449	
						0		↓	
						0		↑	
						0		0	
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Pedestrians and Cars

[illegible]

Trucks

[illegible]

Bikes

[illegible]

Pedestrians

[illegible]

186	Seasonally Adjusted Peak Hour																
	143		Ped		0		13		636								
	43		L		0		0		↑								
	↔		%		25.64%		22.96%		0.00%								
			%		74.36%		0.00%		PED								
			0.00%		0		0		0								
			%		0		0		0								
	13: 7th @ Anderson																
			0		143		0		40								
			Ped		L		T		R								
		%		21.9%		0.0%		78.1%									
		157		↓		↑		183									
Northbound																	
340																	
Westbound																	
		0		R		#DIV/0!		0									
		0		T		#DIV/0!		562									
		0		L		#DIV/0!		562									
		0		Ped		%		562									

Seasonal Adjustment Factor

1.100

Seasonal Adjustment Factor
1.00

Pedestrians and Cars

Time Period

Trucks

Bikes

Pedestrians

[illegible]

EDIT Highlighted

Base Year	2020
Target Year	2021
Years of Growth	1
Growth Rate Per Year	0.01
Growth Factor	1.01

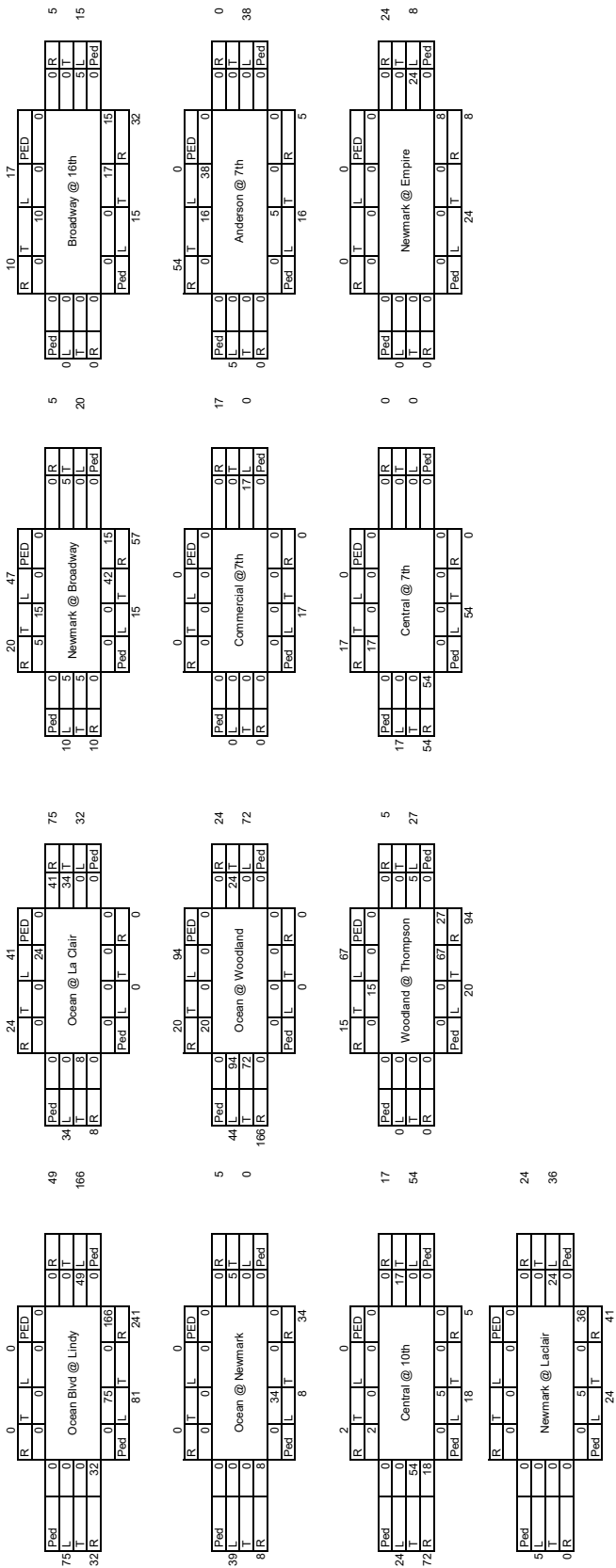
2021 AM Volumes Background

[illegible]

	Base	2020 AM	Volumes
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[illegible]

AM Trip Distribution



Existing 2020 PM Adjusted Volumes

2013	0				0			
	R	T	L	PED	R	T	L	PED
	0	0	0	0	0	0	0	0
	567	0	0	0	Ocean Blvd @ Lindy			
	380	378	1	0	565	1	0	0
2017	3				3			
	R	T	L	PED	R	T	L	PED
	0	2	0	1	0	2	0	1
	567	0	0	0	Ocean Blvd @ Newmark			
	380	378	1	0	565	1	0	0
2019	129				129			
	R	T	L	PED	R	T	L	PED
	21	77	139	0	21	77	139	0
	618	0	0	0	Central @ 10th			
	670	515	427	0	15	427	0	0

2013	93				134			
	R	T	L	PED	R	T	L	PED
	43	0	30	0	43	0	30	0
	537	44	0	0	Ocean @ La Clair			
	383	349	0	0	90	494	0	0
2017	422				273			
	R	T	L	PED	R	T	L	PED
	149	0	273	0	149	0	273	0
	587	108	0	0	Ocean @ Woodland			
	525	417	0	0	165	438	0	0
2019	484				505			
	R	T	L	PED	R	T	L	PED
	0	0	0	0	0	0	0	0
	448	0	0	0	Woodland @ Thompson			
	690	0	0	0	196	41	0	0

2017	384				855			
	R	T	L	PED	R	T	L	PED
	26	247	105	0	26	247	105	0
	577	386	0	0	Newmark @ Broadway			
	1045	489	67	0	160	371	67	0
2019	0				0			
	R	T	L	PED	R	T	L	PED
	0	0	0	0	0	0	0	0
	201	0	0	0	Commercial @ 7th			
	46	46	0	0	201	464	0	0
2017	494				0			
	R	T	L	PED	R	T	L	PED
	422	72	0	0	0	0	0	0
	453	0	0	0	Central @ 7th			
	680	660	10	0	0	0	0	0

2017	721				731			
	R	T	L	PED	R	T	L	PED
	26	685	10	0	26	685	10	0
	52	0	0	0	Broadway @ 16th			
	46	15	0	0	10	21	86	0
2019	762				0			
	R	T	L	PED	R	T	L	PED
	26	118	618	0	0	0	0	0
	108	0	0	0	Anderson @ 7th			
	824	31	0	0	0	82	0	15
2019	5				23			
	R	T	L	PED	R	T	L	PED
	1	3	1	0	0	0	0	0
	263	2	0	0	Newmark @ Empire			
	212	17	0	0	527	21	0	0
2017	0				0			
	R	T	L	PED	R	T	L	PED
	0	0	0	0	0	0	0	0
	736	633	0	0	Newmark @ Lachar			
	649	15	0	0	0	26	0	124

Existi	2020	PM	Volumes
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Year	Phase	Direction	Count	Location	Year	Phase	Direction	Count	Location
2013	Ped	R	0	PED	2017	Ped	R	0	PED
530	L	0	0	0	960	L	0	0	0
355	T	353	0	0	725	T	48	0	0
529	R	0	0	0	595	R	245	0	0
354	L	528	0	0	530	L	500	0	0
367	T	326	0	0	510	T	405	0	0
546	R	0	0	0	570	R	0	0	0
373	L	41	0	0	565	L	105	0	0
546	T	84	0	0	670	T	425	0	0
373	R	462	0	0	670	R	0	0	0
546	L	0	0	0	670	L	0	0	0
546	T	0	0	0	670	T	0	0	0
546	R	0	0	0	670	R	0	0	0
546	L	0	0	0	670	L	0	0	0
546	T	0	0	0	670	T	0	0	0
546	R	0	0	0	670	R	0	0	0
546	L	0	0	0	670	L	0	0	0
546	T	0	0	0	670	T	0	0	0
546	R	0	0	0	670	R	0	0	0
546	L	0	0	0	670	L	0	0	0
546	T	0	0	0	670	T	0	0	0
546	R	0	0	0	670	R	0	0	0
546	L	0	0	0	670	L	0	0	0
546	T	0	0	0	670	T	0	0	0
546	R	0	0	0	670	R	0	0	0
546	L	0	0	0	670	L	0	0	0
546	T	0	0	0	670	T	0	0	0
546	R	0	0	0	670	R	0	0	0
546	L	0	0	0	670	L	0	0	0
546	T	0	0	0	670	T	0	0	0
546	R	0	0	0	670	R	0	0	0
546	L	0	0	0	670	L	0	0	0
546	T	0	0	0	670	T	0	0	0
546	R	0	0	0	670	R	0	0	0
546	L	0	0	0	670	L	0	0	0
546	T	0	0	0	670	T	0	0	0
546	R	0	0	0	670	R	0	0	0
546	L	0	0	0	670	L	0	0	0
546	T	0	0	0	670	T	0	0	0
546	R	0	0	0	670	R	0	0	0
546	L	0	0	0	670	L	0	0	0
546	T	0	0	0	670	T	0	0	0
546	R	0	0	0	670	R	0	0	0
546	L	0	0	0	670	L	0	0	0
546	T	0	0	0	670	T	0	0	0
546	R	0	0	0	670	R	0	0	0
546	L	0	0	0	670	L	0	0	0
546	T	0	0	0	670	T	0	0	0
546	R	0	0	0	670	R	0	0	0
546	L	0	0	0	670	L	0	0	0
546	T	0	0						

PM Trip Distribution

[illegible]

PM Trip Distribution

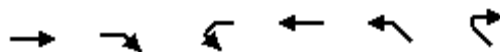
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Lindy Lane TIA

HCM Signalized Intersection Capacity Analysis

2: Ocean Blvd

03/13/2020



Movement	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations	↑	↑		↑↑	↑↑	↑
Traffic Volume (vph)	538	300	0	317	272	18
Future Volume (vph)	538	300	0	317	272	18
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.5	4.5		4.5	4.5	4.5
Lane Util. Factor	1.00	1.00		0.95	0.97	1.00
Frt	1.00	0.85		1.00	1.00	0.85
Flt Protected	1.00	1.00		1.00	0.95	1.00
Satd. Flow (prot)	1716	1458		3260	3162	1458
Flt Permitted	1.00	1.00		1.00	0.95	1.00
Satd. Flow (perm)	1716	1458		3260	3162	1458
Peak-hour factor, PHF	0.78	0.78	0.78	0.78	0.78	0.78
Adj. Flow (vph)	690	385	0	406	349	23
RTOR Reduction (vph)	0	192	0	0	0	14
Lane Group Flow (vph)	690	193	0	406	349	9
Turn Type	NA	Perm		NA	Prot	Perm
Protected Phases	4			8	2	
Permitted Phases		4				2
Actuated Green, G (s)	38.2	38.2		38.2	29.1	29.1
Effective Green, g (s)	38.2	38.2		38.2	29.1	29.1
Actuated g/C Ratio	0.50	0.50		0.50	0.38	0.38
Clearance Time (s)	4.5	4.5		4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	859	729		1632	1205	556
v/s Ratio Prot	c0.40			0.12	c0.11	
v/s Ratio Perm		0.13				0.01
v/c Ratio	0.80	0.26		0.25	0.29	0.02
Uniform Delay, d1	15.9	11.0		10.9	16.4	14.7
Progression Factor	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	5.5	0.2		0.1	0.6	0.1
Delay (s)	21.4	11.2		10.9	17.0	14.7
Level of Service	C	B		B	B	B
Approach Delay (s)	17.7			10.9	16.9	
Approach LOS	B			B	B	

Intersection Summary

HCM 2000 Control Delay	16.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	76.3	Sum of lost time (s)	9.0
Intersection Capacity Utilization	46.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis

3: Laclair st & Newmark Ave

03/13/2020

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↘	↑↑	↘	
Traffic Volume (vph)	501	27	62	369	13	87
Future Volume (vph)	501	27	62	369	13	87
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.5		4.5	4.5	4.5	
Lane Util. Factor	0.95		1.00	0.95	1.00	
Frt	0.99		1.00	1.00	0.88	
Flt Protected	1.00		0.95	1.00	0.99	
Satd. Flow (prot)	3235		1630	3260	1504	
Flt Permitted	1.00		0.95	1.00	0.99	
Satd. Flow (perm)	3235		1630	3260	1504	
Peak-hour factor, PHF	0.75	0.75	0.75	0.75	0.75	0.75
Adj. Flow (vph)	668	36	83	492	17	116
RTOR Reduction (vph)	3	0	0	0	67	0
Lane Group Flow (vph)	701	0	83	492	66	0
Turn Type	NA		Prot	NA	Prot	
Protected Phases	4		3	8	2	
Permitted Phases						
Actuated Green, G (s)	23.2		7.8	35.5	32.4	
Effective Green, g (s)	23.2		7.8	35.5	32.4	
Actuated g/C Ratio	0.30		0.10	0.46	0.42	
Clearance Time (s)	4.5		4.5	4.5	4.5	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	975		165	1504	633	
v/s Ratio Prot	c0.22		c0.05	0.15	c0.04	
v/s Ratio Perm						
v/c Ratio	0.72		0.50	0.33	0.10	
Uniform Delay, d1	23.9		32.7	13.1	13.5	
Progression Factor	1.00		1.00	1.00	1.00	
Incremental Delay, d2	2.6		2.4	0.1	0.3	
Delay (s)	26.5		35.1	13.3	13.8	
Level of Service	C		D	B	B	
Approach Delay (s)	26.5			16.4	13.8	
Approach LOS	C			B	B	
Intersection Summary						
HCM 2000 Control Delay			21.2		HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio			0.38			
Actuated Cycle Length (s)			76.9		Sum of lost time (s)	13.5
Intersection Capacity Utilization			38.0%		ICU Level of Service	A
Analysis Period (min)			15			
c Critical Lane Group						

Intersection

Int Delay, s/veh 1.2

Movement	SBL	SBR	SEL	SET	NWT	NWR
Lane Configurations						
Traffic Vol, veh/h	25	22	32	378	363	56
Future Vol, veh/h	25	22	32	378	363	56
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	72	72	72	72	72	72
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	35	31	44	525	504	78

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	1156	543	582
Stage 1	543	-	-
Stage 2	613	-	-
Critical Hdwy	6.42	6.22	4.12
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	2.218
Pot Cap-1 Maneuver	217	540	992
Stage 1	582	-	-
Stage 2	541	-	-
Platoon blocked, %			
Mov Cap-1 Maneuver	203	540	992
Mov Cap-2 Maneuver	340	-	-
Stage 1	545	-	-
Stage 2	541	-	-

Approach	SB	SE	NW
HCM Control Delay, s	15.4	0.7	0
HCM LOS	C		

Minor Lane/Major Mvmt	NWT	NWR	SEL	SET	SBLn1
Capacity (veh/h)	-	-	992	-	411
HCM Lane V/C Ratio	-	-	0.045	-	0.159
HCM Control Delay (s)	-	-	8.8	0	15.4
HCM Lane LOS	-	-	A	A	C
HCM 95th %tile Q(veh)	-	-	0.1	-	0.6

Intersection

Int Delay, s/veh 0.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	258	2	0	288	2	1
Future Vol, veh/h	258	2	0	288	2	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	84	84	84	84	84	84
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	307	2	0	343	2	1

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	309
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.12
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.218
Pot Cap-1 Maneuver	-	-	1252
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	1252
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	11.2
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	584	-	-	1252	-
HCM Lane V/C Ratio	0.006	-	-	-	-
HCM Control Delay (s)	11.2	-	-	0	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-

HCM Signalized Intersection Capacity Analysis

6: Broadway St & 16th St

03/13/2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔		↔	↔		↔	↔	
Traffic Volume (vph)	27	85	11	166	22	31	7	398	137	41	498	4
Future Volume (vph)	27	85	11	166	22	31	7	398	137	41	498	4
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)		4.5			4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frt		0.99			0.98		1.00	0.96		1.00	1.00	
Flt Protected		0.99			0.96		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1677			1621		1630	3135		1630	3256	
Flt Permitted		0.90			0.63		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1524			1068		1630	3135		1630	3256	
Peak-hour factor, PHF	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74
Adj. Flow (vph)	36	115	15	224	30	42	9	538	185	55	673	5
RTOR Reduction (vph)	0	3	0	0	6	0	0	23	0	0	0	0
Lane Group Flow (vph)	0	163	0	0	290	0	9	700	0	55	678	0
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)		29.2			29.2		0.9	47.2		6.9	53.2	
Effective Green, g (s)		29.2			29.2		0.9	47.2		6.9	53.2	
Actuated g/C Ratio		0.30			0.30		0.01	0.49		0.07	0.55	
Clearance Time (s)		4.5			4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		459			322		15	1528		116	1789	
v/s Ratio Prot							0.01	c0.22		c0.03	0.21	
v/s Ratio Perm		0.11			c0.27							
v/c Ratio		0.35			0.90		0.60	0.46		0.47	0.38	
Uniform Delay, d1		26.4			32.4		47.8	16.4		43.2	12.4	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.5			26.2		51.0	1.0		3.0	0.6	
Delay (s)		26.9			58.6		98.8	17.4		46.2	13.0	
Level of Service		C			E		F	B		D	B	
Approach Delay (s)		26.9			58.6			18.4			15.5	
Approach LOS		C			E			B			B	
Intersection Summary												
HCM 2000 Control Delay		24.2			HCM 2000 Level of Service			C				
HCM 2000 Volume to Capacity ratio		0.61										
Actuated Cycle Length (s)		96.8			Sum of lost time (s)			13.5				
Intersection Capacity Utilization		52.1%			ICU Level of Service			A				
Analysis Period (min)		15										
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

7: Broadway St & Newmark Ave

03/13/2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	284	234	158	46	247	98	96	169	30	97	315	14
Future Volume (vph)	284	234	158	46	247	98	96	169	30	97	315	14
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frt	1.00	0.94		1.00	0.96		1.00	0.98		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1630	3063		1630	3121		1630	1676		1630	1704	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1630	3063		1630	3121		1630	1676		1630	1704	
Peak-hour factor, PHF	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Adj. Flow (vph)	355	292	198	58	309	122	120	211	38	121	394	18
RTOR Reduction (vph)	0	102	0	0	37	0	0	6	0	0	1	0
Lane Group Flow (vph)	355	389	0	58	395	0	120	243	0	121	411	0
Turn Type	Prot	NA		Prot	NA		Prot	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)	27.4	40.4		7.2	20.2		11.0	34.7		11.6	35.3	
Effective Green, g (s)	27.4	40.4		7.2	20.2		11.0	34.7		11.6	35.3	
Actuated g/C Ratio	0.24	0.36		0.06	0.18		0.10	0.31		0.10	0.32	
Clearance Time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	399	1105		104	563		160	519		168	537	
v/s Ratio Prot	c0.22	0.13		0.04	c0.13		0.07	0.15		c0.07	c0.24	
v/s Ratio Perm												
v/c Ratio	0.89	0.35		0.56	0.70		0.75	0.47		0.72	0.76	
Uniform Delay, d1	40.8	26.2		50.8	43.0		49.1	31.2		48.6	34.6	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	20.7	0.2		6.3	3.9		17.8	3.0		14.1	10.0	
Delay (s)	61.5	26.4		57.1	47.0		66.9	34.2		62.7	44.5	
Level of Service	E	C		E	D		E	C		E	D	
Approach Delay (s)		41.1			48.2			44.8			48.6	
Approach LOS		D			D			D			D	
Intersection Summary												
HCM 2000 Control Delay			45.1			HCM 2000 Level of Service				D		
HCM 2000 Volume to Capacity ratio			0.79									
Actuated Cycle Length (s)			111.9			Sum of lost time (s)			18.0			
Intersection Capacity Utilization			67.6%			ICU Level of Service			C			
Analysis Period (min)			15									
c Critical Lane Group												

Intersection

Int Delay, s/veh 3.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	20	89	221	37	157	263
Future Vol, veh/h	20	89	221	37	157	263
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	Free	-	None
Storage Length	81	0	-	-	100	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	83	83	83	83	83	83
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	24	107	266	45	189	317

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	961	266	0
Stage 1	266	-	-
Stage 2	695	-	-
Critical Hdwy	6.42	6.22	-
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	-
Pot Cap-1 Maneuver	284	773	-
Stage 1	779	-	-
Stage 2	495	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	243	773	-
Mov Cap-2 Maneuver	345	-	-
Stage 1	779	-	-
Stage 2	423	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.5	0	3.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBTWBLn1WBLn2	SBL	SBT
Capacity (veh/h)	- 345 773	1298	-
HCM Lane V/C Ratio	- 0.07 0.139	0.146	-
HCM Control Delay (s)	- 16.2 10.4	8.2	-
HCM Lane LOS	- C B	A	-
HCM 95th %tile Q(veh)	- 0.2 0.5	0.5	-

HCM Signalized Intersection Capacity Analysis

9: Ocean Blvd & Woodland Dr

03/13/2020



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	85	358	341	224	175	55
Future Volume (vph)	85	358	341	224	175	55
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	
Frt	1.00	1.00	1.00	0.85	0.97	
Flt Protected	0.95	1.00	1.00	1.00	0.96	
Satd. Flow (prot)	1630	3260	1716	1458	1599	
Flt Permitted	0.95	1.00	1.00	1.00	0.96	
Satd. Flow (perm)	1630	3260	1716	1458	1599	
Peak-hour factor, PHF	0.79	0.79	0.79	0.79	0.79	0.79
Adj. Flow (vph)	108	453	432	284	222	70
RTOR Reduction (vph)	0	0	0	194	8	0
Lane Group Flow (vph)	108	453	432	90	284	0
Turn Type	Prot	NA	NA	Perm	Prot	
Protected Phases	7	4	8		6	
Permitted Phases				8		
Actuated Green, G (s)	11.9	47.1	30.7	30.7	40.3	
Effective Green, g (s)	11.9	47.1	30.7	30.7	40.3	
Actuated g/C Ratio	0.12	0.49	0.32	0.32	0.42	
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	201	1592	546	464	668	
v/s Ratio Prot	c0.07	0.14	c0.25		c0.18	
v/s Ratio Perm				0.06		
v/c Ratio	0.54	0.28	0.79	0.19	0.42	
Uniform Delay, d1	39.7	14.6	29.9	23.9	19.8	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	2.8	0.1	7.7	0.2	2.0	
Delay (s)	42.4	14.7	37.6	24.1	21.8	
Level of Service	D	B	D	C	C	
Approach Delay (s)		20.1	32.2		21.8	
Approach LOS		C	C		C	

Intersection Summary

HCM 2000 Control Delay	26.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	96.4	Sum of lost time (s)	13.5
Intersection Capacity Utilization	50.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis

10: Central Ave & 10th St

03/13/2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↰	↱		↰↱		↰	↱		↰	↱	
Traffic Volume (vph)	8	547	92	15	393	5	214	101	10	122	69	18
Future Volume (vph)	8	547	92	15	393	5	214	101	10	122	69	18
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)		4.5	4.5		4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor		1.00	1.00		0.95		1.00	1.00		1.00	1.00	
Frt		1.00	0.85		1.00		1.00	0.99		1.00	0.97	
Flt Protected		1.00	1.00		1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1714	1458		3248		1630	1692		1630	1662	
Flt Permitted		0.99	1.00		0.84		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1702	1458		2743		1630	1692		1630	1662	
Peak-hour factor, PHF	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78
Adj. Flow (vph)	10	701	118	19	504	6	274	129	13	156	88	23
RTOR Reduction (vph)	0	0	37	0	1	0	0	3	0	0	7	0
Lane Group Flow (vph)	0	711	81	0	528	0	274	139	0	156	104	0
Turn Type	Perm	NA	Perm	Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8								
Actuated Green, G (s)		49.3	49.3		49.3		21.1	26.9		15.2	21.0	
Effective Green, g (s)		49.3	49.3		49.3		21.1	26.9		15.2	21.0	
Actuated g/C Ratio		0.47	0.47		0.47		0.20	0.26		0.14	0.20	
Clearance Time (s)		4.5	4.5		4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)		3.0	3.0		3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		799	685		1289		327	433		236	332	
v/s Ratio Prot							c0.17	c0.08		0.10	0.06	
v/s Ratio Perm		c0.42	0.06		0.19							
v/c Ratio		0.89	0.12		0.41		0.84	0.32		0.66	0.31	
Uniform Delay, d1		25.3	15.6		18.3		40.3	31.6		42.4	35.8	
Progression Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		11.9	0.1		0.2		16.8	2.0		6.8	2.4	
Delay (s)		37.2	15.7		18.5		57.1	33.6		49.2	38.2	
Level of Service		D	B		B		E	C		D	D	
Approach Delay (s)		34.1			18.5			49.1			44.6	
Approach LOS		C			B			D			D	
Intersection Summary												
HCM 2000 Control Delay			34.5									
HCM 2000 Volume to Capacity ratio			0.75									
Actuated Cycle Length (s)			104.9							13.5		
Intersection Capacity Utilization			65.2%									
Analysis Period (min)			15									
c Critical Lane Group												

Intersection

Int Delay, s/veh 0.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	33	0	0	416	118
Future Vol, veh/h	0	33	0	0	416	118
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	-	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	81	81	81	81	81	81
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	41	0	0	514	146

Major/Minor	Minor2	Major2
Conflicting Flow All	- 330	- 0
Stage 1	- -	- -
Stage 2	- -	- -
Critical Hdwy	- 6.94	- -
Critical Hdwy Stg 1	- -	- -
Critical Hdwy Stg 2	- -	- -
Follow-up Hdwy	- 3.32	- -
Pot Cap-1 Maneuver	0 666	- -
Stage 1	0 -	- -
Stage 2	0 -	- -
Platoon blocked, %		- -
Mov Cap-1 Maneuver	- 666	- -
Mov Cap-2 Maneuver	- -	- -
Stage 1	- -	- -
Stage 2	- -	- -

Approach	EB	SB
HCM Control Delay, s	10.8	0
HCM LOS	B	

Minor Lane/Major Mvmt	EBLn1	SBT	SBR
Capacity (veh/h)	666	-	-
HCM Lane V/C Ratio	0.061	-	-
HCM Control Delay (s)	10.8	-	-
HCM Lane LOS	B	-	-
HCM 95th %tile Q(veh)	0.2	-	-

Intersection												
Int Delay, s/veh	0											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations			↑↑		↑						↑	↑↑
Traffic Vol, veh/h	0	0	598	3	23	0	0	0	0	0	38	411
Future Vol, veh/h	0	0	598	3	23	0	0	0	0	0	38	411
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	Free	-	-	None	-	-	None	-	-	Free
Storage Length	-	-	0	-	-	-	-	-	-	-	-	0
Veh in Median Storage, #	-	-	-	-	0	-	-	-	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	76	76	76	76	76	76	76	76	76	76	76	76
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	787	4	30	0	0	0	0	0	50	541

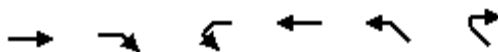
Major/Minor	Major2			Minor2		
Conflicting Flow All	0	0	0	-	38	-
Stage 1	-	-	-	-	38	-
Stage 2	-	-	-	-	0	-
Critical Hdwy	4.12	-	-	-	6.52	-
Critical Hdwy Stg 1	-	-	-	-	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	2.218	-	-	-	4.018	-
Pot Cap-1 Maneuver	-	-	0	0	854	0
Stage 1	-	-	0	0	863	0
Stage 2	-	-	0	0	-	0
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	-	0	-
Mov Cap-2 Maneuver	-	-	-	-	0	-
Stage 1	-	-	-	-	0	-
Stage 2	-	-	-	-	0	-

Approach	WB			SB		
HCM Control Delay, s						
HCM LOS	-					
Minor Lane/Major Mvmt	WBL	WBT	SBLn1	SBLn2	SBLn3	
Capacity (veh/h)	-	-	-	-	-	
HCM Lane V/C Ratio	-	-	-	-	-	
HCM Control Delay (s)	-	-	-	0	0	
HCM Lane LOS	-	-	-	A	A	
HCM 95th %tile Q(veh)	-	-	-	-	-	

HCM Signalized Intersection Capacity Analysis

2: Ocean Blvd & Newmark

03/13/2020



Movement	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations	↑	↑		↑↑	↑↑	↑
Traffic Volume (vph)	499	262	0	614	390	52
Future Volume (vph)	499	262	0	614	390	52
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.5	4.5		4.5	4.5	4.5
Lane Util. Factor	1.00	1.00		0.95	0.97	1.00
Frt	1.00	0.85		1.00	1.00	0.85
Flt Protected	1.00	1.00		1.00	0.95	1.00
Satd. Flow (prot)	1716	1458		3260	3162	1458
Flt Permitted	1.00	1.00		1.00	0.95	1.00
Satd. Flow (perm)	1716	1458		3260	3162	1458
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	542	285	0	667	424	57
RTOR Reduction (vph)	0	106	0	0	0	40
Lane Group Flow (vph)	542	179	0	667	424	17
Turn Type	NA	Perm		NA	Prot	Perm
Protected Phases	4			8	2	
Permitted Phases		4				2
Actuated Green, G (s)	75.5	75.5		75.5	35.5	35.5
Effective Green, g (s)	75.5	75.5		75.5	35.5	35.5
Actuated g/C Ratio	0.63	0.63		0.63	0.30	0.30
Clearance Time (s)	4.5	4.5		4.5	4.5	4.5
Lane Grp Cap (vph)	1079	917		2051	935	431
v/s Ratio Prot	c0.32			0.20	c0.13	
v/s Ratio Perm		0.12				0.01
v/c Ratio	0.50	0.20		0.33	0.45	0.04
Uniform Delay, d1	12.1	9.4		10.4	34.4	30.1
Progression Factor	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	1.7	0.5		0.4	1.6	0.2
Delay (s)	13.7	9.9		10.8	35.9	30.3
Level of Service	B	A		B	D	C
Approach Delay (s)	12.4			10.8	35.3	
Approach LOS	B			B	D	

Intersection Summary

HCM 2000 Control Delay	17.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	48.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis

3: Laclair st & Newmark Ave

03/13/2020

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↘	↑↑	↘	
Traffic Volume (vph)	640	16	57	718	26	125
Future Volume (vph)	640	16	57	718	26	125
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.5		4.5	4.5	4.5	
Lane Util. Factor	0.95		1.00	0.95	1.00	
Frt	1.00		1.00	1.00	0.89	
Flt Protected	1.00		0.95	1.00	0.99	
Satd. Flow (prot)	3248		1630	3260	1511	
Flt Permitted	1.00		0.95	1.00	0.99	
Satd. Flow (perm)	3248		1630	3260	1511	
Peak-hour factor, PHF	0.84	0.84	0.84	0.84	0.84	0.84
Adj. Flow (vph)	762	19	68	855	31	149
RTOR Reduction (vph)	1	0	0	0	89	0
Lane Group Flow (vph)	780	0	68	855	91	0
Turn Type	NA		Prot	NA	Prot	
Protected Phases	4		3	8	2	
Permitted Phases						
Actuated Green, G (s)	25.9		7.3	37.7	31.3	
Effective Green, g (s)	25.9		7.3	37.7	31.3	
Actuated g/C Ratio	0.33		0.09	0.48	0.40	
Clearance Time (s)	4.5		4.5	4.5	4.5	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	1078		152	1575	606	
v/s Ratio Prot	c0.24		0.04	c0.26	c0.06	
v/s Ratio Perm						
v/c Ratio	0.72		0.45	0.54	0.15	
Uniform Delay, d1	22.9		33.4	14.1	14.9	
Progression Factor	1.00		1.00	1.00	1.00	
Incremental Delay, d2	2.4		2.1	0.4	0.5	
Delay (s)	25.3		35.5	14.5	15.4	
Level of Service	C		D	B	B	
Approach Delay (s)	25.3			16.0	15.4	
Approach LOS	C			B	B	
Intersection Summary						
HCM 2000 Control Delay			19.8		HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.44			
Actuated Cycle Length (s)			78.0		Sum of lost time (s)	13.5
Intersection Capacity Utilization			45.1%		ICU Level of Service	A
Analysis Period (min)			15			
c Critical Lane Group						

Intersection

Int Delay, s/veh 1.9

Movement SBL SBR SEL SET NWT NWR

Lane Configurations 

Traffic Vol, veh/h 51 43 44 390 530 91

Future Vol, veh/h 51 43 44 390 530 91

Conflicting Peds, #/hr 0 0 0 0 0 0

Sign Control Stop Stop Free Free Free Free

RT Channelized - None - None - None

Storage Length 0 - - - - -

Veh in Median Storage, # 0 - - 0 0 -

Grade, % 0 - - 0 0 -

Peak Hour Factor 85 85 85 85 85 85

Heavy Vehicles, % 2 2 2 2 2 2

Mvmt Flow 60 51 52 459 624 107

Major/Minor Minor2 Major1 Major2

Conflicting Flow All 1241 678 731 0 - 0

Stage 1 678 - - - - -

Stage 2 563 - - - - -

Critical Hdwy 6.42 6.22 4.12 - - -

Critical Hdwy Stg 1 5.42 - - - - -

Critical Hdwy Stg 2 5.42 - - - - -

Follow-up Hdwy 3.518 3.318 2.218 - - -

Pot Cap-1 Maneuver 193 452 873 - - -

Stage 1 504 - - - - -

Stage 2 570 - - - - -

Platoon blocked, % - - -

Mov Cap-1 Maneuver 178 452 873 - - -

Mov Cap-2 Maneuver 313 - - - - -

Stage 1 464 - - - - -

Stage 2 570 - - - - -

Approach SB SE NW

HCM Control Delay, s 19.1 1 0

HCM LOS C

Minor Lane/Major Mvmt NWT NWR SEL SET SBLn1

Capacity (veh/h) - - 873 - 364

HCM Lane V/C Ratio - - 0.059 - 0.304

HCM Control Delay (s) - - 9.4 0 19.1

HCM Lane LOS - - A A C

HCM 95th %tile Q(veh) - - 0.2 - 1.3

Intersection

Int Delay, s/veh 0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	419	2	1	602	2	1
Future Vol, veh/h	419	2	1	602	2	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	466	2	1	669	2	1

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	468
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.12
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.218
Pot Cap-1 Maneuver	-	-	1094
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	1094
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	13.8
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	411	-	-	1094	-
HCM Lane V/C Ratio	0.008	-	-	0.001	-
HCM Control Delay (s)	13.8	-	-	8.3	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0	-

HCM Signalized Intersection Capacity Analysis

6: Broadway St & 16th St

03/13/2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔		↔	↔		↔	↔	
Traffic Volume (vph)	26	15	5	88	21	10	5	695	46	10	685	26
Future Volume (vph)	26	15	5	88	21	10	5	695	46	10	685	26
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)		4.5			4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frt		0.98			0.99		1.00	0.99		1.00	0.99	
Flt Protected		0.97			0.96		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1643			1636		1630	3230		1630	3242	
Flt Permitted		0.83			0.79		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1400			1347		1630	3230		1630	3242	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	29	17	6	98	23	11	6	772	51	11	761	29
RTOR Reduction (vph)	0	4	0	0	3	0	0	3	0	0	1	0
Lane Group Flow (vph)	0	48	0	0	129	0	6	820	0	11	789	0
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)		14.7			14.7		1.2	68.8		1.3	68.9	
Effective Green, g (s)		14.7			14.7		1.2	68.8		1.3	68.9	
Actuated g/C Ratio		0.15			0.15		0.01	0.70		0.01	0.70	
Clearance Time (s)		4.5			4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		209			201		19	2260		21	2272	
v/s Ratio Prot							0.00	c0.25		c0.01	0.24	
v/s Ratio Perm		0.03			c0.10							
v/c Ratio		0.23			0.64		0.32	0.36		0.52	0.35	
Uniform Delay, d1		36.8			39.3		48.1	5.9		48.2	5.8	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.6			6.5		9.3	0.5		21.6	0.4	
Delay (s)		37.4			45.9		57.5	6.4		69.8	6.2	
Level of Service		D			D		E	A		E	A	
Approach Delay (s)		37.4			45.9			6.8			7.1	
Approach LOS		D			D			A			A	
Intersection Summary												
HCM 2000 Control Delay			10.6									
HCM 2000 Volume to Capacity ratio			0.41									
Actuated Cycle Length (s)			98.3									
Intersection Capacity Utilization			39.7%									
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

7: Broadway St & Newmark Ave

03/13/2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	386	489	170	67	371	160	180	309	52	108	247	26
Future Volume (vph)	386	489	170	67	371	160	180	309	52	108	247	26
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frt	1.00	0.96		1.00	0.95		1.00	0.98		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1630	3134		1630	3113		1630	1679		1630	1691	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1630	3134		1630	3113		1630	1679		1630	1691	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	415	526	183	72	399	172	194	332	56	116	266	28
RTOR Reduction (vph)	0	28	0	0	40	0	0	5	0	0	3	0
Lane Group Flow (vph)	415	681	0	72	531	0	194	383	0	116	291	0
Turn Type	Prot	NA		Prot	NA		Prot	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)	31.5	47.6		8.3	24.4		15.4	34.7		9.9	29.2	
Effective Green, g (s)	31.5	47.6		8.3	24.4		15.4	34.7		9.9	29.2	
Actuated g/C Ratio	0.27	0.40		0.07	0.21		0.13	0.29		0.08	0.25	
Clearance Time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	433	1258		114	640		211	491		136	416	
v/s Ratio Prot	c0.25	0.22		0.04	c0.17		c0.12	c0.23		0.07	0.17	
v/s Ratio Perm												
v/c Ratio	0.96	0.54		0.63	0.83		0.92	0.78		0.85	0.70	
Uniform Delay, d1	42.9	27.1		53.6	45.1		50.9	38.4		53.6	40.7	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	32.3	0.5		10.9	8.7		39.8	11.6		37.3	9.4	
Delay (s)	75.2	27.6		64.5	53.8		90.7	50.0		90.9	50.1	
Level of Service	E	C		E	D		F	D		F	D	
Approach Delay (s)		45.2			55.0			63.6			61.6	
Approach LOS		D			D			E			E	
Intersection Summary												
HCM 2000 Control Delay			53.8				HCM 2000 Level of Service			D		
HCM 2000 Volume to Capacity ratio			0.89									
Actuated Cycle Length (s)			118.5				Sum of lost time (s)			18.0		
Intersection Capacity Utilization			82.5%				ICU Level of Service			E		
Analysis Period (min)			15									
c Critical Lane Group												

Intersection

Int Delay, s/veh 4.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	41	196	309	26	125	359
Future Vol, veh/h	41	196	309	26	125	359
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	Free	-	None
Storage Length	81	0	-	-	100	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	46	218	343	29	139	399

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	1020	343	0
Stage 1	343	-	-
Stage 2	677	-	-
Critical Hdwy	6.42	6.22	-
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	-
Pot Cap-1 Maneuver	262	700	-
Stage 1	719	-	-
Stage 2	505	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	232	700	-
Mov Cap-2 Maneuver	348	-	-
Stage 1	719	-	-
Stage 2	447	-	-

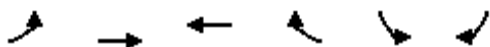
Approach	WB	NB	SB
HCM Control Delay, s	13.2	0	2.2
HCM LOS	B		

Minor Lane/Major Mvmt	NBTWBLn1WBLn2	SBL	SBT
Capacity (veh/h)	- 348 700	1216	-
HCM Lane V/C Ratio	- 0.131 0.311	0.114	-
HCM Control Delay (s)	- 16.9 12.4	8.3	-
HCM Lane LOS	- C B	A	-
HCM 95th %tile Q(veh)	- 0.4 1.3	0.4	-

HCM Signalized Intersection Capacity Analysis

9: Ocean Blvd & Woodland Dr

03/13/2020



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	108	417	438	165	273	149
Future Volume (vph)	108	417	438	165	273	149
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	
Frt	1.00	1.00	1.00	0.85	0.95	
Flt Protected	0.95	1.00	1.00	1.00	0.97	
Satd. Flow (prot)	1630	3260	1716	1458	1583	
Flt Permitted	0.95	1.00	1.00	1.00	0.97	
Satd. Flow (perm)	1630	3260	1716	1458	1583	
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	121	469	492	185	307	167
RTOR Reduction (vph)	0	0	0	107	15	0
Lane Group Flow (vph)	121	469	492	78	459	0
Turn Type	Prot	NA	NA	Perm	Prot	
Protected Phases	7	4	8		6	
Permitted Phases				8		
Actuated Green, G (s)	13.0	53.0	35.5	35.5	46.0	
Effective Green, g (s)	13.0	53.0	35.5	35.5	46.0	
Actuated g/C Ratio	0.12	0.49	0.33	0.33	0.43	
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	196	1599	564	479	674	
v/s Ratio Prot	c0.07	0.14	c0.29		c0.29	
v/s Ratio Perm				0.05		
v/c Ratio	0.62	0.29	0.87	0.16	0.68	
Uniform Delay, d1	45.1	16.4	34.1	25.7	25.1	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	5.7	0.1	13.9	0.2	5.5	
Delay (s)	50.8	16.5	48.0	25.9	30.6	
Level of Service	D	B	D	C	C	
Approach Delay (s)		23.5	42.0		30.6	
Approach LOS		C	D		C	

Intersection Summary

HCM 2000 Control Delay	32.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	108.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	69.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis

10: Central Ave & 10th St

03/13/2020

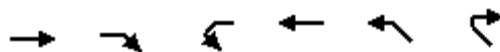
												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↰	↱		↰↱		↰	↱		↰	↱	
Traffic Volume (vph)	15	536	118	5	427	15	170	98	15	139	77	21
Future Volume (vph)	15	536	118	5	427	15	170	98	15	139	77	21
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)		4.5	4.5		4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor		1.00	1.00		0.95		1.00	1.00		1.00	1.00	
Frt		1.00	0.85		1.00		1.00	0.98		1.00	0.97	
Flt Protected		1.00	1.00		1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1713	1458		3242		1630	1682		1630	1660	
Flt Permitted		0.98	1.00		0.95		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1686	1458		3082		1630	1682		1630	1660	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	16	583	128	5	464	16	185	107	16	151	84	23
RTOR Reduction (vph)	0	0	51	0	2	0	0	4	0	0	8	0
Lane Group Flow (vph)	0	599	77	0	483	0	185	119	0	151	99	0
Turn Type	Perm	NA	Perm	Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8								
Actuated Green, G (s)		38.6	38.6		38.6		15.5	24.5		13.5	22.5	
Effective Green, g (s)		38.6	38.6		38.6		15.5	24.5		13.5	22.5	
Actuated g/C Ratio		0.43	0.43		0.43		0.17	0.27		0.15	0.25	
Clearance Time (s)		4.5	4.5		4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)		3.0	3.0		3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		722	624		1320		280	457		244	414	
v/s Ratio Prot							c0.11	c0.07		0.09	0.06	
v/s Ratio Perm		c0.36	0.05		0.16							
v/c Ratio		0.83	0.12		0.37		0.66	0.26		0.62	0.24	
Uniform Delay, d1		22.8	15.5		17.5		34.8	25.7		35.9	27.0	
Progression Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		7.8	0.1		0.2		5.7	1.4		4.6	1.4	
Delay (s)		30.7	15.6		17.6		40.6	27.1		40.5	28.3	
Level of Service		C	B		B		D	C		D	C	
Approach Delay (s)		28.0			17.6			35.2			35.5	
Approach LOS		C			B			D			D	
Intersection Summary												
HCM 2000 Control Delay			27.5				HCM 2000 Level of Service			C		
HCM 2000 Volume to Capacity ratio			0.63									
Actuated Cycle Length (s)			90.1				Sum of lost time (s)			13.5		
Intersection Capacity Utilization			68.1%				ICU Level of Service			C		
Analysis Period (min)			15									
c Critical Lane Group												

Intersection													
Int Delay, s/veh	3.3												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations			↑↑		↑						↑	↑↑	
Traffic Vol, veh/h	0	0	680	10	31	0	0	0	0	0	72	422	
Future Vol, veh/h	0	0	680	10	31	0	0	0	0	0	72	422	
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0	
Sign Control	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	
RT Channelized	-	-	Free	-	-	None	-	-	None	-	-	Free	
Storage Length	-	-	0	-	-	-	-	-	-	-	-	0	
Veh in Median Storage, #	-	-	-	-	0	-	-	-	-	-	0	-	
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-	
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92	
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	
Mvmt Flow	0	0	739	11	34	0	0	0	0	0	78	459	
Major/Minor			Minor1					Major2					
Conflicting Flow All			78		78	-				-		-	0
Stage 1			0		0	-				-		-	-
Stage 2			78		78	-				-		-	-
Critical Hdwy			6.42		6.52	-				-		-	-
Critical Hdwy Stg 1			-		-	-				-		-	-
Critical Hdwy Stg 2			5.42		5.52	-				-		-	-
Follow-up Hdwy			3.518		4.018	-				-		-	-
Pot Cap-1 Maneuver			925		812	0				0		-	0
Stage 1			-		-	0				0		-	0
Stage 2			945		830	0				0		-	0
Platoon blocked, %												-	
Mov Cap-1 Maneuver			925		0	-				-		-	-
Mov Cap-2 Maneuver			925		0	-				-		-	-
Stage 1			-		0	-				-		-	-
Stage 2			945		0	-				-		-	-
Approach			WB					SB					
HCM Control Delay, s			9.1					0					
HCM LOS			A										
Minor Lane/Major Mvmt	WBLn1	SBT											
Capacity (veh/h)	925	-											
HCM Lane V/C Ratio	0.048	-											
HCM Control Delay (s)	9.1	-											
HCM Lane LOS	A	-											
HCM 95th %tile Q(veh)	0.2	-											

HCM Signalized Intersection Capacity Analysis

2: Ocean Blvd

03/13/2020



Movement	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations	↑	↑		↑↑	↑↑	↑
Traffic Volume (vph)	544	303	0	320	274	18
Future Volume (vph)	544	303	0	320	274	18
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.5	4.5		4.5	4.5	4.5
Lane Util. Factor	1.00	1.00		0.95	0.97	1.00
Frt	1.00	0.85		1.00	1.00	0.85
Flt Protected	1.00	1.00		1.00	0.95	1.00
Satd. Flow (prot)	1716	1458		3260	3162	1458
Flt Permitted	1.00	1.00		1.00	0.95	1.00
Satd. Flow (perm)	1716	1458		3260	3162	1458
Peak-hour factor, PHF	0.78	0.78	0.78	0.78	0.78	0.78
Adj. Flow (vph)	697	388	0	410	351	23
RTOR Reduction (vph)	0	192	0	0	0	14
Lane Group Flow (vph)	697	196	0	410	351	9
Turn Type	NA	Perm		NA	Prot	Perm
Protected Phases	4			8	2	
Permitted Phases		4				2
Actuated Green, G (s)	38.7	38.7		38.7	29.1	29.1
Effective Green, g (s)	38.7	38.7		38.7	29.1	29.1
Actuated g/C Ratio	0.50	0.50		0.50	0.38	0.38
Clearance Time (s)	4.5	4.5		4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	864	734		1642	1198	552
v/s Ratio Prot	c0.41			0.13	c0.11	
v/s Ratio Perm		0.13				0.01
v/c Ratio	0.81	0.27		0.25	0.29	0.02
Uniform Delay, d1	15.9	10.9		10.8	16.7	14.9
Progression Factor	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	5.6	0.2		0.1	0.6	0.1
Delay (s)	21.5	11.1		10.9	17.3	15.0
Level of Service	C	B		B	B	B
Approach Delay (s)	17.8			10.9	17.1	
Approach LOS	B			B	B	

Intersection Summary

HCM 2000 Control Delay	16.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	76.8	Sum of lost time (s)	9.0
Intersection Capacity Utilization	47.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis

3: Laclair st & Newmark Ave

03/13/2020

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↘	↑↑	↘	
Traffic Volume (vph)	506	27	63	373	13	88
Future Volume (vph)	506	27	63	373	13	88
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.5		4.5	4.5	4.5	
Lane Util. Factor	0.95		1.00	0.95	1.00	
Frt	0.99		1.00	1.00	0.88	
Flt Protected	1.00		0.95	1.00	0.99	
Satd. Flow (prot)	3235		1630	3260	1504	
Flt Permitted	1.00		0.95	1.00	0.99	
Satd. Flow (perm)	3235		1630	3260	1504	
Peak-hour factor, PHF	0.75	0.75	0.75	0.75	0.75	0.75
Adj. Flow (vph)	675	36	84	497	17	117
RTOR Reduction (vph)	3	0	0	0	68	0
Lane Group Flow (vph)	708	0	84	497	66	0
Turn Type	NA		Prot	NA	Prot	
Protected Phases	4		3	8	2	
Permitted Phases						
Actuated Green, G (s)	23.7		7.9	36.1	32.5	
Effective Green, g (s)	23.7		7.9	36.1	32.5	
Actuated g/C Ratio	0.31		0.10	0.47	0.42	
Clearance Time (s)	4.5		4.5	4.5	4.5	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	988		165	1516	629	
v/s Ratio Prot	c0.22		c0.05	0.15	c0.04	
v/s Ratio Perm						
v/c Ratio	0.72		0.51	0.33	0.10	
Uniform Delay, d1	24.0		33.0	13.1	13.7	
Progression Factor	1.00		1.00	1.00	1.00	
Incremental Delay, d2	2.5		2.5	0.1	0.3	
Delay (s)	26.5		35.5	13.2	14.0	
Level of Service	C		D	B	B	
Approach Delay (s)	26.5			16.4	14.0	
Approach LOS	C			B	B	
Intersection Summary						
HCM 2000 Control Delay			21.2		HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio			0.38			
Actuated Cycle Length (s)			77.6		Sum of lost time (s)	13.5
Intersection Capacity Utilization			38.2%		ICU Level of Service	A
Analysis Period (min)			15			
c Critical Lane Group						

Intersection

Int Delay, s/veh 1.2

Movement SBL SBR SEL SET NWT NWR

Lane Configurations 

Traffic Vol, veh/h 25 23 32 381 366 56

Future Vol, veh/h 25 23 32 381 366 56

Conflicting Peds, #/hr 0 0 0 0 0 0

Sign Control Stop Stop Free Free Free Free

RT Channelized - None - None - None

Storage Length 0 - - - - -

Veh in Median Storage, # 0 - - 0 0 -

Grade, % 0 - - 0 0 -

Peak Hour Factor 72 72 72 72 72 72

Heavy Vehicles, % 2 2 2 2 2 2

Mvmt Flow 35 32 44 529 508 78

Major/Minor Minor2 Major1 Major2

Conflicting Flow All 1164 547 586 0 - 0

Stage 1 547 - - - - -

Stage 2 617 - - - - -

Critical Hdwy 6.42 6.22 4.12 - - -

Critical Hdwy Stg 1 5.42 - - - - -

Critical Hdwy Stg 2 5.42 - - - - -

Follow-up Hdwy 3.518 3.318 2.218 - - -

Pot Cap-1 Maneuver 215 537 989 - - -

Stage 1 580 - - - - -

Stage 2 538 - - - - -

Platoon blocked, % - - -

Mov Cap-1 Maneuver 201 537 989 - - -

Mov Cap-2 Maneuver 338 - - - - -

Stage 1 543 - - - - -

Stage 2 538 - - - - -

Approach SB SE NW

HCM Control Delay, s 15.4 0.7 0

HCM LOS C

Minor Lane/Major Mvmt NWT NWR SEL SET SBLn1

Capacity (veh/h) - - 989 - 411

HCM Lane V/C Ratio - - 0.045 - 0.162

HCM Control Delay (s) - - 8.8 0 15.4

HCM Lane LOS - - A A C

HCM 95th %tile Q(veh) - - 0.1 - 0.6

Intersection

Int Delay, s/veh 0.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	260	2	0	291	2	1
Future Vol, veh/h	260	2	0	291	2	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	84	84	84	84	84	84
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	310	2	0	346	2	1

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	312
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.12
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.218
Pot Cap-1 Maneuver	-	-	1248
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	1248
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	11.2
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	582	-	-	1248	-
HCM Lane V/C Ratio	0.006	-	-	-	-
HCM Control Delay (s)	11.2	-	-	0	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-

HCM Signalized Intersection Capacity Analysis

6: Broadway St & 16th St

03/13/2020

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔		↔	↔		↔	↔	
Traffic Volume (vph)	27	86	11	168	22	31	7	402	138	41	503	4
Future Volume (vph)	27	86	11	168	22	31	7	402	138	41	503	4
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)		4.5			4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frt		0.99			0.98		1.00	0.96		1.00	1.00	
Flt Protected		0.99			0.96		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1677			1622		1630	3135		1630	3256	
Flt Permitted		0.90			0.63		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1524			1065		1630	3135		1630	3256	
Peak-hour factor, PHF	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74
Adj. Flow (vph)	36	116	15	227	30	42	9	543	186	55	680	5
RTOR Reduction (vph)	0	3	0	0	6	0	0	22	0	0	0	0
Lane Group Flow (vph)	0	164	0	0	293	0	9	707	0	55	685	0
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)		29.7			29.7		0.9	47.3		6.9	53.3	
Effective Green, g (s)		29.7			29.7		0.9	47.3		6.9	53.3	
Actuated g/C Ratio		0.30			0.30		0.01	0.49		0.07	0.55	
Clearance Time (s)		4.5			4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		464			324		15	1522		115	1781	
v/s Ratio Prot							0.01	c0.23		c0.03	0.21	
v/s Ratio Perm		0.11			c0.27							
v/c Ratio		0.35			0.90		0.60	0.46		0.48	0.38	
Uniform Delay, d1		26.4			32.5		48.1	16.6		43.5	12.6	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.5			27.0		51.0	1.0		3.1	0.6	
Delay (s)		26.8			59.4		99.1	17.7		46.6	13.3	
Level of Service		C			E		F	B		D	B	
Approach Delay (s)		26.8			59.4			18.7			15.8	
Approach LOS		C			E			B			B	
Intersection Summary												
HCM 2000 Control Delay		24.5			HCM 2000 Level of Service			C				
HCM 2000 Volume to Capacity ratio		0.62										
Actuated Cycle Length (s)		97.4			Sum of lost time (s)			13.5				
Intersection Capacity Utilization		52.3%			ICU Level of Service			A				
Analysis Period (min)		15										
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

7: Broadway St & Newmark Ave

03/13/2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	286	237	160	46	250	99	97	171	30	98	318	14
Future Volume (vph)	286	237	160	46	250	99	97	171	30	98	318	14
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frt	1.00	0.94		1.00	0.96		1.00	0.98		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1630	3063		1630	3121		1630	1677		1630	1705	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1630	3063		1630	3121		1630	1677		1630	1705	
Peak-hour factor, PHF	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Adj. Flow (vph)	358	296	200	58	312	124	121	214	38	122	398	18
RTOR Reduction (vph)	0	95	0	0	34	0	0	5	0	0	1	0
Lane Group Flow (vph)	358	401	0	58	403	0	121	247	0	123	415	0
Turn Type	Prot	NA		Prot	NA		Prot	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)	29.2	43.1		7.4	21.3		11.2	38.7		12.3	39.8	
Effective Green, g (s)	29.2	43.1		7.4	21.3		11.2	38.7		12.3	39.8	
Actuated g/C Ratio	0.24	0.36		0.06	0.18		0.09	0.32		0.10	0.33	
Clearance Time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	398	1104		100	556		152	543		167	567	
v/s Ratio Prot	c0.22	0.13		0.04	c0.13		0.07	0.15		c0.08	c0.24	
v/s Ratio Perm												
v/c Ratio	0.90	0.36		0.58	0.73		0.80	0.46		0.74	0.73	
Uniform Delay, d1	43.7	28.1		54.5	46.3		53.0	32.0		52.0	35.1	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	22.3	0.2		7.9	4.7		24.3	2.7		15.5	8.1	
Delay (s)	66.1	28.3		62.5	51.0		77.4	34.8		67.5	43.2	
Level of Service	E	C		E	D		E	C		E	D	
Approach Delay (s)		44.1			52.4			48.6			48.8	
Approach LOS		D			D			D			D	
Intersection Summary												
HCM 2000 Control Delay			47.8			HCM 2000 Level of Service				D		
HCM 2000 Volume to Capacity ratio			0.79									
Actuated Cycle Length (s)			119.5			Sum of lost time (s)			18.0			
Intersection Capacity Utilization			68.1%			ICU Level of Service			C			
Analysis Period (min)			15									
c Critical Lane Group												

Intersection

Int Delay, s/veh 3.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	20	90	223	37	159	266
Future Vol, veh/h	20	90	223	37	159	266
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	Free	-	None
Storage Length	81	0	-	-	100	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	83	83	83	83	83	83
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	24	108	269	45	192	320

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	973	269	0
Stage 1	269	-	-
Stage 2	704	-	-
Critical Hdwy	6.42	6.22	-
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	-
Pot Cap-1 Maneuver	280	770	-
Stage 1	776	-	-
Stage 2	490	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	239	770	-
Mov Cap-2 Maneuver	340	-	-
Stage 1	776	-	-
Stage 2	417	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.5	0	3.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBTWBLn1WBLn2	SBL	SBT
Capacity (veh/h)	- 340 770 1295	-	-
HCM Lane V/C Ratio	- 0.071 0.141 0.148	-	-
HCM Control Delay (s)	- 16.4 10.4 8.3	-	-
HCM Lane LOS	- C B A	-	-
HCM 95th %tile Q(veh)	- 0.2 0.5 0.5	-	-

HCM Signalized Intersection Capacity Analysis

9: Ocean Blvd & Woodland Dr

03/13/2020



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	85	362	345	226	177	55
Future Volume (vph)	85	362	345	226	177	55
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	
Frt	1.00	1.00	1.00	0.85	0.97	
Flt Protected	0.95	1.00	1.00	1.00	0.96	
Satd. Flow (prot)	1630	3260	1716	1458	1600	
Flt Permitted	0.95	1.00	1.00	1.00	0.96	
Satd. Flow (perm)	1630	3260	1716	1458	1600	
Peak-hour factor, PHF	0.79	0.79	0.79	0.79	0.79	0.79
Adj. Flow (vph)	108	458	437	286	224	70
RTOR Reduction (vph)	0	0	0	194	8	0
Lane Group Flow (vph)	108	458	437	92	286	0
Turn Type	Prot	NA	NA	Perm	Prot	
Protected Phases	7	4	8		6	
Permitted Phases				8		
Actuated Green, G (s)	11.7	47.3	31.1	31.1	40.3	
Effective Green, g (s)	11.7	47.3	31.1	31.1	40.3	
Actuated g/C Ratio	0.12	0.49	0.32	0.32	0.42	
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	197	1596	552	469	667	
v/s Ratio Prot	c0.07	0.14	c0.25		c0.18	
v/s Ratio Perm				0.06		
v/c Ratio	0.55	0.29	0.79	0.20	0.43	
Uniform Delay, d1	40.0	14.6	29.8	23.7	20.0	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	3.1	0.1	7.6	0.2	2.0	
Delay (s)	43.1	14.7	37.4	23.9	22.0	
Level of Service	D	B	D	C	C	
Approach Delay (s)		20.1	32.1		22.0	
Approach LOS		C	C		C	

Intersection Summary

HCM 2000 Control Delay	25.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	96.6	Sum of lost time (s)	13.5
Intersection Capacity Utilization	50.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis

10: Central Ave & 10th St

03/13/2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	8	552	93	15	397	5	216	102	10	123	70	18
Future Volume (vph)	8	552	93	15	397	5	216	102	10	123	70	18
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)		4.5	4.5		4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor		1.00	1.00		0.95		1.00	1.00		1.00	1.00	
Frt		1.00	0.85		1.00		1.00	0.99		1.00	0.97	
Flt Protected		1.00	1.00		1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1714	1458		3249		1630	1692		1630	1663	
Flt Permitted		0.99	1.00		0.84		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1702	1458		2735		1630	1692		1630	1663	
Peak-hour factor, PHF	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78
Adj. Flow (vph)	10	708	119	19	509	6	277	131	13	158	90	23
RTOR Reduction (vph)	0	0	36	0	1	0	0	3	0	0	7	0
Lane Group Flow (vph)	0	718	83	0	533	0	277	141	0	158	106	0
Turn Type	Perm	NA	Perm	Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8								
Actuated Green, G (s)		50.1	50.1		50.1		21.3	26.9		15.4	21.0	
Effective Green, g (s)		50.1	50.1		50.1		21.3	26.9		15.4	21.0	
Actuated g/C Ratio		0.47	0.47		0.47		0.20	0.25		0.15	0.20	
Clearance Time (s)		4.5	4.5		4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)		3.0	3.0		3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		805	689		1293		327	429		237	329	
v/s Ratio Prot							c0.17	c0.08		0.10	0.06	
v/s Ratio Perm		c0.42	0.06		0.20							
v/c Ratio		0.89	0.12		0.41		0.85	0.33		0.67	0.32	
Uniform Delay, d1		25.4	15.6		18.3		40.7	32.2		42.8	36.3	
Progression Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		12.2	0.1		0.2		18.0	2.0		6.9	2.6	
Delay (s)		37.6	15.7		18.5		58.7	34.2		49.7	38.9	
Level of Service		D	B		B		E	C		D	D	
Approach Delay (s)		34.5			18.5			50.3			45.2	
Approach LOS		C			B			D			D	
Intersection Summary												
HCM 2000 Control Delay			35.0				HCM 2000 Level of Service			C		
HCM 2000 Volume to Capacity ratio			0.76									
Actuated Cycle Length (s)			105.9				Sum of lost time (s)			13.5		
Intersection Capacity Utilization			65.6%				ICU Level of Service			C		
Analysis Period (min)			15									
c Critical Lane Group												

Intersection

Int Delay, s/veh 0.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	33	0	0	420	119
Future Vol, veh/h	0	33	0	0	420	119
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	-	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	81	81	81	81	81	81
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	41	0	0	519	147

Major/Minor	Minor2	Major2
Conflicting Flow All	- 333	- 0
Stage 1	- -	- -
Stage 2	- -	- -
Critical Hdwy	- 6.94	- -
Critical Hdwy Stg 1	- -	- -
Critical Hdwy Stg 2	- -	- -
Follow-up Hdwy	- 3.32	- -
Pot Cap-1 Maneuver	0 663	- -
Stage 1	0 -	- -
Stage 2	0 -	- -
Platoon blocked, %		- -
Mov Cap-1 Maneuver	- 663	- -
Mov Cap-2 Maneuver	- -	- -
Stage 1	- -	- -
Stage 2	- -	- -

Approach	EB	SB
HCM Control Delay, s	10.8	0
HCM LOS	B	

Minor Lane/Major Mvmt	EBLn1	SBT	SBR
Capacity (veh/h)	663	-	-
HCM Lane V/C Ratio	0.061	-	-
HCM Control Delay (s)	10.8	-	-
HCM Lane LOS	B	-	-
HCM 95th %tile Q(veh)	0.2	-	-

Intersection												
Int Delay, s/veh	0											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations			TT		TT						TT	TT
Traffic Vol, veh/h	0	0	604	3	23	0	0	0	0	0	38	415
Future Vol, veh/h	0	0	604	3	23	0	0	0	0	0	38	415
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	Free	-	-	None	-	-	None	-	-	Free
Storage Length	-	-	0	-	-	-	-	-	-	-	-	0
Veh in Median Storage, #	-	-	-	-	0	-	-	-	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	76	76	76	76	76	76	76	76	76	76	76	76
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	795	4	30	0	0	0	0	0	50	546

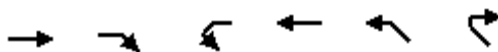
Major/Minor	Major2			Minor2		
Conflicting Flow All	0	0	0	-	38	-
Stage 1	-	-	-	-	38	-
Stage 2	-	-	-	-	0	-
Critical Hdwy	4.12	-	-	-	6.52	-
Critical Hdwy Stg 1	-	-	-	-	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	2.218	-	-	-	4.018	-
Pot Cap-1 Maneuver	-	-	0	0	854	0
Stage 1	-	-	0	0	863	0
Stage 2	-	-	0	0	-	0
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	-	0	-
Mov Cap-2 Maneuver	-	-	-	-	0	-
Stage 1	-	-	-	-	0	-
Stage 2	-	-	-	-	0	-

Approach	WB			SB		
HCM Control Delay, s						
HCM LOS	-					
Minor Lane/Major Mvmt	WBL	WBT	SBLn1	SBLn2	SBLn3	
Capacity (veh/h)	-	-	-	-	-	
HCM Lane V/C Ratio	-	-	-	-	-	
HCM Control Delay (s)	-	-	-	0	0	
HCM Lane LOS	-	-	-	A	A	
HCM 95th %tile Q(veh)	-	-	-	-	-	

HCM Signalized Intersection Capacity Analysis

2: Ocean Blvd

03/13/2020



Movement	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations	↑	↑		↑↑	↑↑	↑
Traffic Volume (vph)	544	311	0	325	308	18
Future Volume (vph)	544	311	0	325	308	18
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.5	4.5		4.5	4.5	4.5
Lane Util. Factor	1.00	1.00		0.95	0.97	1.00
Frt	1.00	0.85		1.00	1.00	0.85
Flt Protected	1.00	1.00		1.00	0.95	1.00
Satd. Flow (prot)	1716	1458		3260	3162	1458
Flt Permitted	1.00	1.00		1.00	0.95	1.00
Satd. Flow (perm)	1716	1458		3260	3162	1458
Peak-hour factor, PHF	0.78	0.78	0.78	0.78	0.78	0.78
Adj. Flow (vph)	697	399	0	417	395	23
RTOR Reduction (vph)	0	197	0	0	0	14
Lane Group Flow (vph)	697	202	0	417	395	9
Turn Type	NA	Perm		NA	Prot	Perm
Protected Phases	4			8	2	
Permitted Phases		4				2
Actuated Green, G (s)	38.9	38.9		38.9	29.1	29.1
Effective Green, g (s)	38.9	38.9		38.9	29.1	29.1
Actuated g/C Ratio	0.51	0.51		0.51	0.38	0.38
Clearance Time (s)	4.5	4.5		4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	866	736		1646	1194	551
v/s Ratio Prot	c0.41			0.13	c0.12	
v/s Ratio Perm		0.14				0.01
v/c Ratio	0.80	0.27		0.25	0.33	0.02
Uniform Delay, d1	15.9	10.9		10.8	17.0	15.0
Progression Factor	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	5.5	0.2		0.1	0.7	0.1
Delay (s)	21.4	11.1		10.9	17.8	15.0
Level of Service	C	B		B	B	B
Approach Delay (s)	17.6			10.9	17.6	
Approach LOS	B			B	B	

Intersection Summary

HCM 2000 Control Delay	16.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	77.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	48.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis

3: Laclair st & Newmark Ave

03/13/2020

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↙	↑↑	↖	
Traffic Volume (vph)	506	27	87	373	18	124
Future Volume (vph)	506	27	87	373	18	124
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.5		4.5	4.5	4.5	
Lane Util. Factor	0.95		1.00	0.95	1.00	
Frt	0.99		1.00	1.00	0.88	
Flt Protected	1.00		0.95	1.00	0.99	
Satd. Flow (prot)	3235		1630	3260	1504	
Flt Permitted	1.00		0.95	1.00	0.99	
Satd. Flow (perm)	3235		1630	3260	1504	
Peak-hour factor, PHF	0.75	0.75	0.75	0.75	0.75	0.75
Adj. Flow (vph)	675	36	116	497	24	165
RTOR Reduction (vph)	3	0	0	0	101	0
Lane Group Flow (vph)	708	0	116	497	88	0
Turn Type	NA		Prot	NA	Prot	
Protected Phases	4		3	8	2	
Permitted Phases						
Actuated Green, G (s)	24.9		11.4	40.8	31.9	
Effective Green, g (s)	24.9		11.4	40.8	31.9	
Actuated g/C Ratio	0.30		0.14	0.50	0.39	
Clearance Time (s)	4.5		4.5	4.5	4.5	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	985		227	1628	587	
v/s Ratio Prot	c0.22		c0.07	0.15	c0.06	
v/s Ratio Perm						
v/c Ratio	0.72		0.51	0.31	0.15	
Uniform Delay, d1	25.3		32.6	12.1	16.1	
Progression Factor	1.00		1.00	1.00	1.00	
Incremental Delay, d2	2.5		1.9	0.1	0.5	
Delay (s)	27.8		34.5	12.2	16.7	
Level of Service	C		C	B	B	
Approach Delay (s)	27.8			16.4	16.7	
Approach LOS	C			B	B	
Intersection Summary						
HCM 2000 Control Delay			21.8		HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio			0.42			
Actuated Cycle Length (s)			81.7		Sum of lost time (s)	13.5
Intersection Capacity Utilization			42.0%		ICU Level of Service	A
Analysis Period (min)			15			
c Critical Lane Group						

Intersection

Int Delay, s/veh 1.7

Movement	SBL	SBR	SEL	SET	NWT	NWR
Lane Configurations						
Traffic Vol, veh/h	49	23	32	389	400	97
Future Vol, veh/h	49	23	32	389	400	97
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	72	72	72	72	72	72
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	68	32	44	540	556	135

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	1252	624	691
Stage 1	624	-	-
Stage 2	628	-	-
Critical Hdwy	6.42	6.22	4.12
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	2.218
Pot Cap-1 Maneuver	190	485	904
Stage 1	534	-	-
Stage 2	532	-	-
Platoon blocked, %			
Mov Cap-1 Maneuver	177	485	904
Mov Cap-2 Maneuver	315	-	-
Stage 1	497	-	-
Stage 2	532	-	-

Approach	SB	SE	NW
HCM Control Delay, s	19.1	0.7	0
HCM LOS	C		

Minor Lane/Major Mvmt	NWT	NWR	SEL	SET	SBLn1
Capacity (veh/h)	-	-	904	-	355
HCM Lane V/C Ratio	-	-	0.049	-	0.282
HCM Control Delay (s)	-	-	9.2	0	19.1
HCM Lane LOS	-	-	A	A	C
HCM 95th %tile Q(veh)	-	-	0.2	-	1.1

Intersection

Int Delay, s/veh 5.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	260	34	49	291	77	167
Future Vol, veh/h	260	34	49	291	77	167
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	84	84	84	84	84	84
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	310	40	58	346	92	199

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	350
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.12
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.218
Pot Cap-1 Maneuver	-	-	1209
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	1209
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.2	16.5
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	601	-	-	1209	-
HCM Lane V/C Ratio	0.483	-	-	0.048	-
HCM Control Delay (s)	16.5	-	-	8.1	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	2.6	-	-	0.2	-

HCM Signalized Intersection Capacity Analysis

6: Broadway St & 16th St

03/13/2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	27	86	11	173	22	31	7	419	153	41	513	4
Future Volume (vph)	27	86	11	173	22	31	7	419	153	41	513	4
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)		4.5			4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frt		0.99			0.98		1.00	0.96		1.00	1.00	
Flt Protected		0.99			0.96		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1677			1622		1630	3129		1630	3256	
Flt Permitted		0.90			0.63		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1522			1066		1630	3129		1630	3256	
Peak-hour factor, PHF	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74
Adj. Flow (vph)	36	116	15	234	30	42	9	566	207	55	693	5
RTOR Reduction (vph)	0	3	0	0	6	0	0	25	0	0	0	0
Lane Group Flow (vph)	0	164	0	0	300	0	9	748	0	55	698	0
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)		30.6			30.6		0.9	47.3		6.9	53.3	
Effective Green, g (s)		30.6			30.6		0.9	47.3		6.9	53.3	
Actuated g/C Ratio		0.31			0.31		0.01	0.48		0.07	0.54	
Clearance Time (s)		4.5			4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		473			331		14	1505		114	1765	
v/s Ratio Prot							0.01	c0.24		c0.03	0.21	
v/s Ratio Perm		0.11			c0.28							
v/c Ratio		0.35			0.91		0.64	0.50		0.48	0.40	
Uniform Delay, d1		26.1			32.5		48.5	17.4		44.0	13.1	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.4			26.9		71.2	1.2		3.2	0.7	
Delay (s)		26.6			59.3		119.7	18.6		47.2	13.8	
Level of Service		C			E		F	B		D	B	
Approach Delay (s)		26.6			59.3			19.7			16.2	
Approach LOS		C			E			B			B	
Intersection Summary												
HCM 2000 Control Delay			25.0									
HCM 2000 Volume to Capacity ratio			0.64									
Actuated Cycle Length (s)			98.3									
Intersection Capacity Utilization			53.7%									
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

7: Broadway St & Newmark Ave

03/13/2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	291	242	160	46	255	99	97	213	45	98	333	19
Future Volume (vph)	291	242	160	46	255	99	97	213	45	98	333	19
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frt	1.00	0.94		1.00	0.96		1.00	0.97		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1630	3065		1630	3123		1630	1671		1630	1702	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1630	3065		1630	3123		1630	1671		1630	1702	
Peak-hour factor, PHF	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Adj. Flow (vph)	364	302	200	58	319	124	121	266	56	122	416	24
RTOR Reduction (vph)	0	89	0	0	33	0	0	6	0	0	1	0
Lane Group Flow (vph)	364	414	0	58	410	0	121	316	0	123	439	0
Turn Type	Prot	NA		Prot	NA		Prot	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)	29.6	43.7		7.4	21.5		11.2	38.6		12.3	39.7	
Effective Green, g (s)	29.6	43.7		7.4	21.5		11.2	38.6		12.3	39.7	
Actuated g/C Ratio	0.25	0.36		0.06	0.18		0.09	0.32		0.10	0.33	
Clearance Time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	402	1116		100	559		152	537		167	563	
v/s Ratio Prot	c0.22	0.14		0.04	c0.13		0.07	0.19		c0.08	c0.26	
v/s Ratio Perm												
v/c Ratio	0.91	0.37		0.58	0.73		0.80	0.59		0.74	0.78	
Uniform Delay, d1	43.8	28.0		54.8	46.5		53.3	34.1		52.3	36.2	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	23.3	0.2		7.9	5.0		24.3	4.7		15.5	10.2	
Delay (s)	67.1	28.3		62.7	51.5		77.6	38.7		67.8	46.4	
Level of Service	E	C		E	D		E	D		E	D	
Approach Delay (s)		44.6			52.8			49.3			51.1	
Approach LOS		D			D			D			D	
Intersection Summary												
HCM 2000 Control Delay			48.7			HCM 2000 Level of Service				D		
HCM 2000 Volume to Capacity ratio			0.81									
Actuated Cycle Length (s)			120.0			Sum of lost time (s)			18.0			
Intersection Capacity Utilization			69.7%			ICU Level of Service			C			
Analysis Period (min)			15									
c Critical Lane Group												

Intersection

Int Delay, s/veh 3.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	25	90	290	64	159	281
Future Vol, veh/h	25	90	290	64	159	281
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	Free	-	None
Storage Length	81	0	-	-	100	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	83	83	83	83	83	83
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	30	108	349	77	192	339

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	1072	349	0
Stage 1	349	-	-
Stage 2	723	-	-
Critical Hdwy	6.42	6.22	-
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	-
Pot Cap-1 Maneuver	244	694	-
Stage 1	714	-	-
Stage 2	481	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	205	694	-
Mov Cap-2 Maneuver	318	-	-
Stage 1	714	-	-
Stage 2	405	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12.5	0	3.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBTWBLn1WBLn2	SBL	SBT
Capacity (veh/h)	- 318 694	1210	-
HCM Lane V/C Ratio	- 0.095 0.156	0.158	-
HCM Control Delay (s)	- 17.5 11.1	8.5	-
HCM Lane LOS	- C B	A	-
HCM 95th %tile Q(veh)	- 0.3 0.6	0.6	-

HCM Signalized Intersection Capacity Analysis

9: Ocean Blvd & Woodland Dr

03/13/2020



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	179	434	369	226	177	75
Future Volume (vph)	179	434	369	226	177	75
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	
Frt	1.00	1.00	1.00	0.85	0.96	
Flt Protected	0.95	1.00	1.00	1.00	0.97	
Satd. Flow (prot)	1630	3260	1716	1458	1591	
Flt Permitted	0.95	1.00	1.00	1.00	0.97	
Satd. Flow (perm)	1630	3260	1716	1458	1591	
Peak-hour factor, PHF	0.79	0.79	0.79	0.79	0.79	0.79
Adj. Flow (vph)	227	549	467	286	224	95
RTOR Reduction (vph)	0	0	0	178	12	0
Lane Group Flow (vph)	227	549	467	108	307	0
Turn Type	Prot	NA	NA	Perm	Prot	
Protected Phases	7	4	8		6	
Permitted Phases				8		
Actuated Green, G (s)	19.0	57.4	33.9	33.9	36.2	
Effective Green, g (s)	19.0	57.4	33.9	33.9	36.2	
Actuated g/C Ratio	0.19	0.56	0.33	0.33	0.35	
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	301	1823	566	481	561	
v/s Ratio Prot	c0.14	0.17	c0.27		c0.19	
v/s Ratio Perm				0.07		
v/c Ratio	0.75	0.30	0.83	0.22	0.55	
Uniform Delay, d1	39.6	12.0	31.6	24.8	26.6	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	10.2	0.1	9.5	0.2	3.8	
Delay (s)	49.8	12.1	41.1	25.1	30.5	
Level of Service	D	B	D	C	C	
Approach Delay (s)		23.1	35.0		30.5	
Approach LOS		C	D		C	

Intersection Summary

HCM 2000 Control Delay	29.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	102.6	Sum of lost time (s)	13.5
Intersection Capacity Utilization	58.7%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis

10: Central Ave & 10th St

03/13/2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↰	↱		↰↱		↰	↱		↰	↱	
Traffic Volume (vph)	8	606	111	15	414	5	221	102	10	123	70	18
Future Volume (vph)	8	606	111	15	414	5	221	102	10	123	70	18
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)		4.5	4.5		4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor		1.00	1.00		0.95		1.00	1.00		1.00	1.00	
Frt		1.00	0.85		1.00		1.00	0.99		1.00	0.97	
Flt Protected		1.00	1.00		1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1715	1458		3249		1630	1692		1630	1663	
Flt Permitted		0.99	1.00		0.81		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1702	1458		2648		1630	1692		1630	1663	
Peak-hour factor, PHF	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78
Adj. Flow (vph)	10	777	142	19	531	6	283	131	13	158	90	23
RTOR Reduction (vph)	0	0	38	0	1	0	0	3	0	0	7	0
Lane Group Flow (vph)	0	787	104	0	555	0	283	141	0	158	106	0
Turn Type	Perm	NA	Perm	Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8								
Actuated Green, G (s)		56.0	56.0		56.0		22.1	27.0		15.9	20.8	
Effective Green, g (s)		56.0	56.0		56.0		22.1	27.0		15.9	20.8	
Actuated g/C Ratio		0.50	0.50		0.50		0.20	0.24		0.14	0.19	
Clearance Time (s)		4.5	4.5		4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)		3.0	3.0		3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		847	726		1319		320	406		230	307	
v/s Ratio Prot							c0.17	c0.08		0.10	0.06	
v/s Ratio Perm		c0.46	0.07		0.21							
v/c Ratio		0.93	0.14		0.42		0.88	0.35		0.69	0.34	
Uniform Delay, d1		26.3	15.2		17.9		43.9	35.4		45.9	39.9	
Progression Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		16.1	0.1		0.2		23.8	2.3		8.2	3.0	
Delay (s)		42.5	15.3		18.1		67.7	37.7		54.1	42.9	
Level of Service		D	B		B		E	D		D	D	
Approach Delay (s)		38.3			18.1			57.6			49.4	
Approach LOS		D			B			E			D	
Intersection Summary												
HCM 2000 Control Delay		38.3					HCM 2000 Level of Service			D		
HCM 2000 Volume to Capacity ratio		0.80										
Actuated Cycle Length (s)		112.4					Sum of lost time (s)		13.5			
Intersection Capacity Utilization		69.0%					ICU Level of Service		C			
Analysis Period (min)		15										
c Critical Lane Group												

Intersection

Int Delay, s/veh 0.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	33	0	0	420	437
Future Vol, veh/h	0	33	0	0	420	437
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	-	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	81	81	81	81	81	81
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	41	0	0	519	540

Major/Minor	Minor2	Major2
Conflicting Flow All	- 530	- 0
Stage 1	- -	- -
Stage 2	- -	- -
Critical Hdwy	- 6.94	- -
Critical Hdwy Stg 1	- -	- -
Critical Hdwy Stg 2	- -	- -
Follow-up Hdwy	- 3.32	- -
Pot Cap-1 Maneuver	0 493	- -
Stage 1	0 -	- -
Stage 2	0 -	- -
Platoon blocked, %		- -
Mov Cap-1 Maneuver	- 493	- -
Mov Cap-2 Maneuver	- -	- -
Stage 1	- -	- -
Stage 2	- -	- -

Approach	EB	SB
HCM Control Delay, s	13	0
HCM LOS	B	

Minor Lane/Major Mvmt	EBLn1	SBT	SBR
Capacity (veh/h)	493	-	-
HCM Lane V/C Ratio	0.083	-	-
HCM Control Delay (s)	13	-	-
HCM Lane LOS	B	-	-
HCM 95th %tile Q(veh)	0.3	-	-

Intersection

Int Delay, s/veh 0

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	658	3	23	0	0	0	0	0	38	432
Future Vol, veh/h	0	0	658	3	23	0	0	0	0	0	38	432
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	Free	-	-	None	-	-	None	-	-	Free
Storage Length	-	-	0	-	-	-	-	-	-	-	-	0
Veh in Median Storage, #	-	-	-	-	0	-	-	-	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	76	76	76	76	76	76	76	76	76	76	76	76
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	866	4	30	0	0	0	0	0	50	568

Major/Minor	Major2	Minor2
Conflicting Flow All	0 0 0	- 38 -
Stage 1	- - -	- 38 -
Stage 2	- - -	- 0 -
Critical Hdwy	4.12 - -	- 6.52 -
Critical Hdwy Stg 1	- - -	- 5.52 -
Critical Hdwy Stg 2	- - -	- - -
Follow-up Hdwy	2.218 - -	- 4.018 -
Pot Cap-1 Maneuver	- - 0	0 854 0
Stage 1	- - 0	0 863 0
Stage 2	- - 0	0 - 0
Platoon blocked, %	-	
Mov Cap-1 Maneuver	- - -	- 0 -
Mov Cap-2 Maneuver	- - -	- 0 -
Stage 1	- - -	- 0 -
Stage 2	- - -	- 0 -

Approach	WB	SB
HCM Control Delay, s		
HCM LOS		-

Minor Lane/Major Mvmt	WBL	WBT	SBLn1	SBLn2	SBLn3
Capacity (veh/h)	-	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	-	-	-	0	0
HCM Lane LOS	-	-	-	A	A
HCM 95th %tile Q(veh)	-	-	-	-	-

Lanes, Volumes, Timings
1: Empire Blvd & Newmark Ave

03/13/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	17	2	532	21	17	4	4	455	1	3	1
Future Volume (vph)	2	17	2	532	21	17	4	4	455	1	3	1
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.988			0.996			0.867			0.973	
Flt Protected		0.995			0.955						0.990	
Satd. Flow (prot)	0	1687	0	0	1632	0	0	1487	0	0	1653	0
Flt Permitted		0.995			0.955						0.990	
Satd. Flow (perm)	0	1687	0	0	1632	0	0	1487	0	0	1653	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		429			1136			2875			1334	
Travel Time (s)		9.8			25.8			65.3			30.3	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	2	18	2	560	22	18	4	4	479	1	3	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	22	0	0	600	0	0	487	0	0	5	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane					Yes							
Headway Factor	1.11	1.11	1.11	1.11	1.11	1.11	1.11	1.11	1.11	1.11	1.11	1.11
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Free			Yield			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	79.0%											
Analysis Period (min)	15											
	ICU Level of Service D											

Lanes, Volumes, Timings

2: Ocean Blvd & Newmark

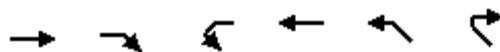
03/13/2020

						
Lane Group	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations						
Traffic Volume (vph)	499	262	0	614	390	52
Future Volume (vph)	499	262	0	614	390	52
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750
Storage Length (ft)		0	0		300	0
Storage Lanes		1	0		2	1
Taper Length (ft)			25		25	
Lane Util. Factor	1.00	1.00	1.00	0.95	0.97	1.00
Frt		0.850				0.850
Flt Protected					0.950	
Satd. Flow (prot)	1716	1458	0	3260	3162	1458
Flt Permitted					0.950	
Satd. Flow (perm)	1716	1458	0	3260	3162	1458
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		285				57
Link Speed (mph)	30			30	30	
Link Distance (ft)	1863			1417	2914	
Travel Time (s)	42.3			32.2	66.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	542	285	0	667	424	57
Shared Lane Traffic (%)						
Lane Group Flow (vph)	542	285	0	667	424	57
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	24	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane	Yes			Yes	Yes	
Headway Factor	1.11	1.11	1.11	1.11	1.11	1.11
Turning Speed (mph)		9	15		15	9
Turn Type	NA	Perm		NA	Prot	Perm
Protected Phases	4			8	2	
Permitted Phases		4				2
Minimum Split (s)	22.5	22.5		42.5	22.5	22.5
Total Split (s)	80.0	80.0		80.0	40.0	40.0
Total Split (%)	66.7%	66.7%		66.7%	33.3%	33.3%
Maximum Green (s)	75.5	75.5		75.5	35.5	35.5
Yellow Time (s)	3.5	3.5		3.5	3.5	3.5
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5		4.5	4.5	4.5
Lead/Lag						
Lead-Lag Optimize?						
Walk Time (s)				7.0		
Flash Dont Walk (s)				31.0		
Pedestrian Calls (#/hr)				0		
Act Effect Green (s)	75.5	75.5		75.5	35.5	35.5
Actuated g/C Ratio	0.63	0.63		0.63	0.30	0.30
v/c Ratio	0.50	0.28		0.33	0.45	0.12

Lanes, Volumes, Timings

2: Ocean Blvd & Newmark

03/13/2020



Lane Group	EBT	EBR	WBL	WBT	NWL	NWR
Control Delay	14.1	1.7		10.9	36.3	8.6
Queue Delay	0.0	0.0		0.0	0.0	0.0
Total Delay	14.1	1.7		10.9	36.3	8.6
LOS	B	A		B	D	A
Approach Delay	9.8			10.9	33.0	
Approach LOS	A			B	C	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 2:NWL and 6:, Start of Green

Natural Cycle: 65

Control Type: Pretimed

Maximum v/c Ratio: 0.50

Intersection Signal Delay: 15.8

Intersection LOS: B

Intersection Capacity Utilization 48.1%

ICU Level of Service A

Analysis Period (min) 15

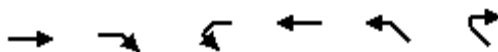
Splits and Phases: 2: Ocean Blvd & Newmark

 Ø2 (L)	 Ø4
40 s	80 s
	 Ø8
	80 s

HCM Signalized Intersection Capacity Analysis

2: Ocean Blvd & Newmark

03/13/2020



Movement	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations	↑	↑		↑↑	↑↑	↑
Traffic Volume (vph)	499	262	0	614	390	52
Future Volume (vph)	499	262	0	614	390	52
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.5	4.5		4.5	4.5	4.5
Lane Util. Factor	1.00	1.00		0.95	0.97	1.00
Frt	1.00	0.85		1.00	1.00	0.85
Flt Protected	1.00	1.00		1.00	0.95	1.00
Satd. Flow (prot)	1716	1458		3260	3162	1458
Flt Permitted	1.00	1.00		1.00	0.95	1.00
Satd. Flow (perm)	1716	1458		3260	3162	1458
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	542	285	0	667	424	57
RTOR Reduction (vph)	0	106	0	0	0	40
Lane Group Flow (vph)	542	179	0	667	424	17
Turn Type	NA	Perm		NA	Prot	Perm
Protected Phases	4			8	2	
Permitted Phases		4				2
Actuated Green, G (s)	75.5	75.5		75.5	35.5	35.5
Effective Green, g (s)	75.5	75.5		75.5	35.5	35.5
Actuated g/C Ratio	0.63	0.63		0.63	0.30	0.30
Clearance Time (s)	4.5	4.5		4.5	4.5	4.5
Lane Grp Cap (vph)	1079	917		2051	935	431
v/s Ratio Prot	c0.32			0.20	c0.13	
v/s Ratio Perm		0.12				0.01
v/c Ratio	0.50	0.20		0.33	0.45	0.04
Uniform Delay, d1	12.1	9.4		10.4	34.4	30.1
Progression Factor	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	1.7	0.5		0.4	1.6	0.2
Delay (s)	13.7	9.9		10.8	35.9	30.3
Level of Service	B	A		B	D	C
Approach Delay (s)	12.4			10.8	35.3	
Approach LOS	B			B	D	

Intersection Summary

HCM 2000 Control Delay	17.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	48.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Lanes, Volumes, Timings
3: Laclair st & Newmark Ave

03/13/2020

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↙	↑↑	↖	
Traffic Volume (vph)	640	16	57	718	26	125
Future Volume (vph)	640	16	57	718	26	125
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750
Storage Length (ft)		0	150		0	0
Storage Lanes		0	1		1	0
Taper Length (ft)			25		25	
Lane Util. Factor	0.95	0.95	1.00	0.95	1.00	1.00
Frt	0.996				0.888	
Flt Protected			0.950		0.991	
Satd. Flow (prot)	3247	0	1630	3260	1510	0
Flt Permitted			0.950		0.991	
Satd. Flow (perm)	3247	0	1630	3260	1510	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	2				149	
Link Speed (mph)	30			30	30	
Link Distance (ft)	1063			3833	1219	
Travel Time (s)	24.2			87.1	27.7	
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84
Adj. Flow (vph)	762	19	68	855	31	149
Shared Lane Traffic (%)						
Lane Group Flow (vph)	781	0	68	855	180	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane	Yes					
Headway Factor	1.11	1.11	1.11	1.11	1.11	1.11
Turning Speed (mph)		9	15		15	9
Number of Detectors	2		1	2	1	
Detector Template	Thru		Left	Thru	Left	
Leading Detector (ft)	100		20	100	20	
Trailing Detector (ft)	0		0	0	0	
Detector 1 Position(ft)	0		0	0	0	
Detector 1 Size(ft)	6		20	6	20	
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	
Detector 2 Position(ft)	94			94		
Detector 2 Size(ft)	6			6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA		Prot	NA	Prot	
Protected Phases	4		3	8	2	
Permitted Phases						

Lanes, Volumes, Timings
3: Laclair st & Newmark Ave

03/13/2020

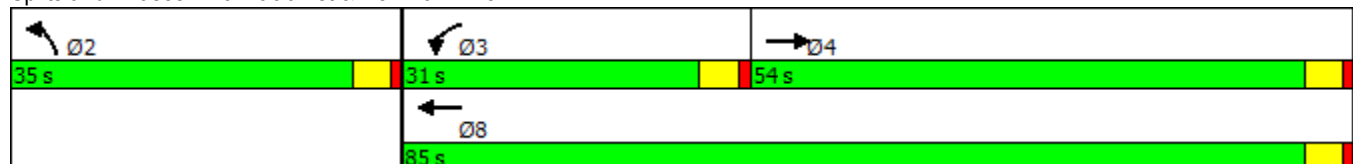
	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Detector Phase	4		3	8	2	
Switch Phase						
Minimum Initial (s)	5.0		5.0	5.0	5.0	
Minimum Split (s)	22.5		9.5	22.5	22.5	
Total Split (s)	54.0		31.0	85.0	35.0	
Total Split (%)	45.0%		25.8%	70.8%	29.2%	
Maximum Green (s)	49.5		26.5	80.5	30.5	
Yellow Time (s)	3.5		3.5	3.5	3.5	
All-Red Time (s)	1.0		1.0	1.0	1.0	
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	
Total Lost Time (s)	4.5		4.5	4.5	4.5	
Lead/Lag	Lag		Lead			
Lead-Lag Optimize?	Yes		Yes			
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Recall Mode	None		None	None	Max	
Walk Time (s)	7.0			7.0	7.0	
Flash Dont Walk (s)	11.0			11.0	11.0	
Pedestrian Calls (#/hr)	0			0	0	
Act Effect Green (s)	25.9		8.9	36.7	31.3	
Actuated g/C Ratio	0.34		0.12	0.48	0.41	
v/c Ratio	0.72		0.36	0.55	0.26	
Control Delay	26.9		39.9	15.0	6.7	
Queue Delay	0.0		0.0	0.0	0.0	
Total Delay	26.9		39.9	15.0	6.7	
LOS	C		D	B	A	
Approach Delay	26.9			16.9	6.7	
Approach LOS	C			B	A	

Intersection Summary

Area Type: Other
 Cycle Length: 120
 Actuated Cycle Length: 77.2
 Natural Cycle: 60
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.72
 Intersection Signal Delay: 20.1
 Intersection Capacity Utilization 45.1%
 Analysis Period (min) 15

Intersection LOS: C
 ICU Level of Service A

Splits and Phases: 3: Laclair st & Newmark Ave



HCM Signalized Intersection Capacity Analysis

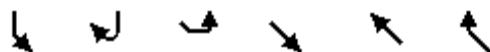
3: Laclair st & Newmark Ave

03/13/2020

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↙	↑↑	↘	
Traffic Volume (vph)	640	16	57	718	26	125
Future Volume (vph)	640	16	57	718	26	125
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.5		4.5	4.5	4.5	
Lane Util. Factor	0.95		1.00	0.95	1.00	
Frt	1.00		1.00	1.00	0.89	
Flt Protected	1.00		0.95	1.00	0.99	
Satd. Flow (prot)	3248		1630	3260	1511	
Flt Permitted	1.00		0.95	1.00	0.99	
Satd. Flow (perm)	3248		1630	3260	1511	
Peak-hour factor, PHF	0.84	0.84	0.84	0.84	0.84	0.84
Adj. Flow (vph)	762	19	68	855	31	149
RTOR Reduction (vph)	1	0	0	0	89	0
Lane Group Flow (vph)	780	0	68	855	91	0
Turn Type	NA		Prot	NA	Prot	
Protected Phases	4		3	8	2	
Permitted Phases						
Actuated Green, G (s)	25.9		7.3	37.7	31.3	
Effective Green, g (s)	25.9		7.3	37.7	31.3	
Actuated g/C Ratio	0.33		0.09	0.48	0.40	
Clearance Time (s)	4.5		4.5	4.5	4.5	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	1078		152	1575	606	
v/s Ratio Prot	c0.24		0.04	c0.26	c0.06	
v/s Ratio Perm						
v/c Ratio	0.72		0.45	0.54	0.15	
Uniform Delay, d1	22.9		33.4	14.1	14.9	
Progression Factor	1.00		1.00	1.00	1.00	
Incremental Delay, d2	2.4		2.1	0.4	0.5	
Delay (s)	25.3		35.5	14.5	15.4	
Level of Service	C		D	B	B	
Approach Delay (s)	25.3			16.0	15.4	
Approach LOS	C			B	B	
Intersection Summary						
HCM 2000 Control Delay			19.8		HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.44			
Actuated Cycle Length (s)			78.0		Sum of lost time (s)	13.5
Intersection Capacity Utilization			45.1%		ICU Level of Service	A
Analysis Period (min)			15			
c Critical Lane Group						

Lanes, Volumes, Timings
4: Ocean Blvd & Laclair St

03/13/2020



Lane Group	SBL	SBR	SEL	SET	NWT	NWR
Lane Configurations						
Traffic Volume (vph)	51	43	44	390	530	91
Future Volume (vph)	51	43	44	390	530	91
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.938				0.980	
Flt Protected	0.974			0.995		
Satd. Flow (prot)	1567	0	0	1707	1681	0
Flt Permitted	0.974			0.995		
Satd. Flow (perm)	1567	0	0	1707	1681	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	414			2914	911	
Travel Time (s)	9.4			66.2	20.7	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	60	51	52	459	624	107
Shared Lane Traffic (%)						
Lane Group Flow (vph)	111	0	0	511	731	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane				Yes	Yes	
Headway Factor	1.11	1.11	1.11	1.11	1.11	1.11
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 74.8% ICU Level of Service D

Analysis Period (min) 15

Intersection

Int Delay, s/veh 1.9

Movement SBL SBR SEL SET NWT NWR

Lane Configurations 

Traffic Vol, veh/h 51 43 44 390 530 91

Future Vol, veh/h 51 43 44 390 530 91

Conflicting Peds, #/hr 0 0 0 0 0 0

Sign Control Stop Stop Free Free Free Free

RT Channelized - None - None - None

Storage Length 0 - - - - -

Veh in Median Storage, # 0 - - 0 0 -

Grade, % 0 - - 0 0 -

Peak Hour Factor 85 85 85 85 85 85

Heavy Vehicles, % 2 2 2 2 2 2

Mvmt Flow 60 51 52 459 624 107

Major/Minor Minor2 Major1 Major2

Conflicting Flow All 1241 678 731 0 - 0

Stage 1 678 - - - - -

Stage 2 563 - - - - -

Critical Hdwy 6.42 6.22 4.12 - - -

Critical Hdwy Stg 1 5.42 - - - - -

Critical Hdwy Stg 2 5.42 - - - - -

Follow-up Hdwy 3.518 3.318 2.218 - - -

Pot Cap-1 Maneuver 193 452 873 - - -

Stage 1 504 - - - - -

Stage 2 570 - - - - -

Platoon blocked, % - - -

Mov Cap-1 Maneuver 178 452 873 - - -

Mov Cap-2 Maneuver 313 - - - - -

Stage 1 464 - - - - -

Stage 2 570 - - - - -

Approach SB SE NW

HCM Control Delay, s 19.1 1 0

HCM LOS C

Minor Lane/Major Mvmt NWT NWR SEL SET SBLn1

Capacity (veh/h) - - 873 - 364

HCM Lane V/C Ratio - - 0.059 - 0.304

HCM Control Delay (s) - - 9.4 0 19.1

HCM Lane LOS - - A A C

HCM 95th %tile Q(veh) - - 0.2 - 1.3

Lanes, Volumes, Timings

5: Lindy Ln & Ocean Blvd

03/13/2020

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↗			↖	↘↗	
Traffic Volume (vph)	419	2	1	602	2	1
Future Volume (vph)	419	2	1	602	2	1
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750
Storage Length (ft)		0	280		0	0
Storage Lanes		0	0		1	0
Taper Length (ft)			25		25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.999				0.955	
Flt Protected					0.968	
Satd. Flow (prot)	1714	0	0	1716	1586	0
Flt Permitted					0.968	
Satd. Flow (perm)	1714	0	0	1716	1586	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	911			294	853	
Travel Time (s)	20.7			6.7	19.4	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	466	2	1	669	2	1
Shared Lane Traffic (%)						
Lane Group Flow (vph)	468	0	0	670	3	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane	Yes			Yes		
Headway Factor	1.11	1.11	1.11	1.11	1.11	1.11
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	45.3%			ICU Level of Service A		
Analysis Period (min)	15					

Intersection

Int Delay, s/veh 0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	419	2	1	602	2	1
Future Vol, veh/h	419	2	1	602	2	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	466	2	1	669	2	1

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	468
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.12
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.218
Pot Cap-1 Maneuver	-	-	1094
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	1094
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	13.8
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	411	-	-	1094	-
HCM Lane V/C Ratio	0.008	-	-	0.001	-
HCM Control Delay (s)	13.8	-	-	8.3	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0	-

Lanes, Volumes, Timings
6: Broadway St & 16th St

03/13/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	26	16	5	88	21	10	5	702	47	10	728	692
Future Volume (vph)	26	16	5	88	21	10	5	702	47	10	728	692
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Storage Length (ft)	0		0	0		0	150		0	150		0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.985			0.989			0.991			0.927	
Flt Protected		0.973			0.964		0.950			0.950		
Satd. Flow (prot)	0	1644	0	0	1636	0	1630	3230	0	1630	3022	0
Flt Permitted		0.830			0.784		0.950			0.950		
Satd. Flow (perm)	0	1403	0	0	1330	0	1630	3230	0	1630	3022	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		5			3			12			414	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		961			1605			2058			556	
Travel Time (s)		21.8			36.5			46.8			12.6	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	29	18	6	98	23	11	6	780	52	11	809	769
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	53	0	0	132	0	6	832	0	11	1578	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.11	1.11	1.11	1.11	1.11	1.11	1.11	1.11	1.11	1.11	1.11	1.11
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								

Lanes, Volumes, Timings

6: Broadway St & 16th St

03/13/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	4	4		8	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	22.5	22.5		22.5	22.5		9.5	22.5		9.5	22.5	
Total Split (s)	27.0	27.0		27.0	27.0		10.0	83.0		10.0	83.0	
Total Split (%)	22.5%	22.5%		22.5%	22.5%		8.3%	69.2%		8.3%	69.2%	
Maximum Green (s)	22.5	22.5		22.5	22.5		5.5	78.5		5.5	78.5	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		4.5			4.5		4.5	4.5		4.5	4.5	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	Max		None	Max	
Walk Time (s)	7.0	7.0		7.0	7.0			7.0			7.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0			11.0			11.0	
Pedestrian Calls (#/hr)	0	0		0	0			0			0	
Act Effect Green (s)		15.6			15.6		5.5	82.7		5.5	82.7	
Actuated g/C Ratio		0.14			0.14		0.05	0.76		0.05	0.76	
v/c Ratio		0.26			0.69		0.07	0.34		0.13	0.66	
Control Delay		40.4			61.1		53.4	5.6		55.1	7.0	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay		40.4			61.1		53.4	5.6		55.1	7.0	
LOS		D			E		D	A		E	A	
Approach Delay		40.4			61.1			5.9			7.4	
Approach LOS		D			E			A			A	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 109.2

Natural Cycle: 75

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.69

Intersection Signal Delay: 10.3

Intersection LOS: B

Intersection Capacity Utilization 63.4%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 6: Broadway St & 16th St

		
Ø1	Ø2	Ø4
10 s	83 s	27 s
		
Ø5	Ø6	Ø8
10 s	83 s	27 s

HCM Signalized Intersection Capacity Analysis

6: Broadway St & 16th St

03/13/2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	26	16	5	88	21	10	5	702	47	10	728	692
Future Volume (vph)	26	16	5	88	21	10	5	702	47	10	728	692
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)		4.5			4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frt		0.98			0.99		1.00	0.99		1.00	0.93	
Flt Protected		0.97			0.96		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1644			1636		1630	3229		1630	3022	
Flt Permitted		0.83			0.78		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1402			1330		1630	3229		1630	3022	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	29	18	6	98	23	11	6	780	52	11	809	769
RTOR Reduction (vph)	0	4	0	0	3	0	0	3	0	0	110	0
Lane Group Flow (vph)	0	49	0	0	129	0	6	829	0	11	1468	0
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)		15.6			15.6		1.0	82.7		1.0	82.7	
Effective Green, g (s)		15.6			15.6		1.0	82.7		1.0	82.7	
Actuated g/C Ratio		0.14			0.14		0.01	0.73		0.01	0.73	
Clearance Time (s)		4.5			4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		193			183		14	2367		14	2215	
v/s Ratio Prot							0.00	0.26		c0.01	c0.49	
v/s Ratio Perm		0.03			c0.10							
v/c Ratio		0.25			0.71		0.43	0.35		0.79	0.66	
Uniform Delay, d1		43.4			46.4		55.6	5.4		55.8	7.8	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.7			11.8		19.7	0.4		130.6	1.6	
Delay (s)		44.1			58.2		75.3	5.8		186.4	9.4	
Level of Service		D			E		E	A		F	A	
Approach Delay (s)		44.1			58.2			6.3			10.6	
Approach LOS		D			E			A			B	
Intersection Summary												
HCM 2000 Control Delay		12.3										
HCM 2000 Volume to Capacity ratio		0.67										
Actuated Cycle Length (s)		112.8								13.5		
Intersection Capacity Utilization		63.4%										
Analysis Period (min)		15										
c Critical Lane Group												

Lanes, Volumes, Timings
7: Broadway St & Newmark Ave

03/13/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	390	494	172	68	375	161	182	312	52	109	250	36
Future Volume (vph)	390	494	172	68	375	161	182	312	52	109	250	36
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Storage Length (ft)	350		0	115		0	240		0	180		300
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.961			0.955			0.979			0.981	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1630	3133	0	1630	3113	0	1630	1680	0	1630	1683	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1630	3133	0	1630	3113	0	1630	1680	0	1630	1683	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		47			50			7			6	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		336			1722			1883			578	
Travel Time (s)		7.6			39.1			42.8			13.1	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	419	531	185	73	403	173	196	335	56	117	269	39
Shared Lane Traffic (%)												
Lane Group Flow (vph)	419	716	0	73	576	0	196	391	0	117	308	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.11	1.11	1.11	1.11	1.11	1.11	1.11	1.11	1.11	1.11	1.11	1.11
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA		Prot	NA		Prot	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												

Lanes, Volumes, Timings
7: Broadway St & Newmark Ave

03/13/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	9.5	29.5		9.5	29.5		9.5	29.5		9.5	29.5	
Total Split (s)	37.0	50.7		15.8	29.5		20.0	39.1		14.4	33.5	
Total Split (%)	30.8%	42.3%		13.2%	24.6%		16.7%	32.6%		12.0%	27.9%	
Maximum Green (s)	32.5	46.2		11.3	25.0		15.5	34.6		9.9	29.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	Max		None	Max	
Walk Time (s)		7.0			7.0			7.0			7.0	
Flash Dont Walk (s)		18.0			18.0			18.0			18.0	
Pedestrian Calls (#/hr)		0			0			0			0	
Act Effect Green (s)	31.7	47.9		9.7	23.5		15.5	34.7		9.9	29.0	
Actuated g/C Ratio	0.27	0.41		0.08	0.20		0.13	0.29		0.08	0.25	
v/c Ratio	0.96	0.55		0.55	0.87		0.92	0.78		0.85	0.74	
Control Delay	76.6	27.6		68.0	56.7		94.4	50.5		100.3	52.3	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	76.6	27.6		68.0	56.7		94.4	50.5		100.3	52.3	
LOS	E	C		E	E		F	D		F	D	
Approach Delay		45.7			58.0			65.2			65.5	
Approach LOS		D			E			E			E	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 117.8

Natural Cycle: 110

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.96

Intersection Signal Delay: 55.7

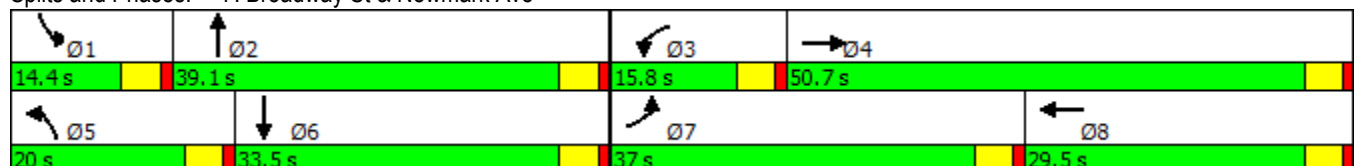
Intersection LOS: E

Intersection Capacity Utilization 83.1%

ICU Level of Service E

Analysis Period (min) 15

Splits and Phases: 7: Broadway St & Newmark Ave



HCM Signalized Intersection Capacity Analysis

7: Broadway St & Newmark Ave

03/13/2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	390	494	172	68	375	161	182	312	52	109	250	36
Future Volume (vph)	390	494	172	68	375	161	182	312	52	109	250	36
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frt	1.00	0.96		1.00	0.95		1.00	0.98		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1630	3133		1630	3113		1630	1679		1630	1683	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1630	3133		1630	3113		1630	1679		1630	1683	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	419	531	185	73	403	173	196	335	56	117	269	39
RTOR Reduction (vph)	0	28	0	0	40	0	0	5	0	0	5	0
Lane Group Flow (vph)	419	688	0	73	536	0	196	386	0	117	303	0
Turn Type	Prot	NA		Prot	NA		Prot	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)	31.7	47.9		8.3	24.5		15.5	34.6		9.9	29.0	
Effective Green, g (s)	31.7	47.9		8.3	24.5		15.5	34.6		9.9	29.0	
Actuated g/C Ratio	0.27	0.40		0.07	0.21		0.13	0.29		0.08	0.24	
Clearance Time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	435	1264		113	642		212	489		135	411	
v/s Ratio Prot	c0.26	0.22		0.04	c0.17		c0.12	c0.23		0.07	0.18	
v/s Ratio Perm												
v/c Ratio	0.96	0.54		0.65	0.84		0.92	0.79		0.87	0.74	
Uniform Delay, d1	42.9	27.1		53.8	45.2		51.0	38.7		53.7	41.4	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	33.5	0.5		12.0	9.2		41.1	12.2		40.3	11.3	
Delay (s)	76.4	27.5		65.8	54.4		92.1	50.9		94.0	52.6	
Level of Service	E	C		E	D		F	D		F	D	
Approach Delay (s)		45.6			55.7			64.7			64.0	
Approach LOS		D			E			E			E	
Intersection Summary												
HCM 2000 Control Delay			54.7			HCM 2000 Level of Service				D		
HCM 2000 Volume to Capacity ratio			0.89									
Actuated Cycle Length (s)			118.7			Sum of lost time (s)			18.0			
Intersection Capacity Utilization			83.1%			ICU Level of Service			E			
Analysis Period (min)			15									
c Critical Lane Group												

Lanes, Volumes, Timings
8: Thompson Rd & Broadway St

03/13/2020

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	42	198	312	26	126	363
Future Volume (vph)	42	198	312	26	126	363
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750
Storage Length (ft)	81	0		10	100	
Storage Lanes	1	1		0	1	
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850	0.990			
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1630	1458	1699	0	1630	1716
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1630	1458	1699	0	1630	1716
Link Speed (mph)	30		30			30
Link Distance (ft)	1194		1724			1883
Travel Time (s)	27.1		39.2			42.8
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	47	220	347	29	140	403
Shared Lane Traffic (%)						
Lane Group Flow (vph)	47	220	376	0	140	403
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		12			12
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane			Yes			
Headway Factor	1.11	1.11	1.11	1.11	1.11	1.11
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	40.5%			ICU Level of Service A		
Analysis Period (min)	15					

HCM 2010 TWSC
8: Thompson Rd & Broadway St

03/13/2020

Intersection

Int Delay, s/veh 4.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	42	198	312	26	126	363
Future Vol, veh/h	42	198	312	26	126	363
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	Free	-	None
Storage Length	81	0	-	-	100	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	47	220	347	29	140	403

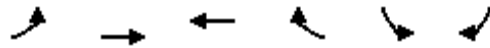
Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	1030	347	0
Stage 1	347	-	-
Stage 2	683	-	-
Critical Hdwy	6.42	6.22	-
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	-
Pot Cap-1 Maneuver	259	696	-
Stage 1	716	-	-
Stage 2	502	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	229	696	-
Mov Cap-2 Maneuver	345	-	-
Stage 1	716	-	-
Stage 2	444	-	-

Approach	WB	NB	SB
HCM Control Delay, s	13.3	0	2.2
HCM LOS	B		

Minor Lane/Major Mvmt	NBTWBLn1WBLn2	SBL	SBT
Capacity (veh/h)	- 345 696	1212	-
HCM Lane V/C Ratio	- 0.135 0.316	0.116	-
HCM Control Delay (s)	- 17.1 12.5	8.4	-
HCM Lane LOS	- C B	A	-
HCM 95th %tile Q(veh)	- 0.5 1.4	0.4	-

Lanes, Volumes, Timings
9: Ocean Blvd & Woodland Dr

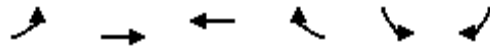
03/13/2020



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	109	421	442	166	276	151
Future Volume (vph)	109	421	442	166	276	151
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750
Storage Length (ft)	150			200	70	70
Storage Lanes	1			1	0	0
Taper Length (ft)	100				0	
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00
Frt				0.850	0.952	
Flt Protected	0.950				0.969	
Satd. Flow (prot)	1630	3260	1716	1458	1583	0
Flt Permitted	0.950				0.969	
Satd. Flow (perm)	1630	3260	1716	1458	1583	0
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				159	26	
Link Speed (mph)		30	30		30	
Link Distance (ft)		2203	1173		1536	
Travel Time (s)		50.1	26.7		34.9	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	122	473	497	187	310	170
Shared Lane Traffic (%)						
Lane Group Flow (vph)	122	473	497	187	480	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane		Yes	Yes			
Headway Factor	1.11	1.11	1.11	1.11	1.11	1.11
Turning Speed (mph)	15			9	15	9
Number of Detectors	1	2	2	1	1	
Detector Template	Left	Thru	Thru	Right	Left	
Leading Detector (ft)	20	100	100	20	20	
Trailing Detector (ft)	0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0	
Detector 1 Size(ft)	20	6	6	20	20	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94	94			
Detector 2 Size(ft)		6	6			
Detector 2 Type		Cl+Ex	Cl+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			
Turn Type	Prot	NA	NA	Perm	Prot	
Protected Phases	7	4	8		6	
Permitted Phases				8		

Lanes, Volumes, Timings
9: Ocean Blvd & Woodland Dr

03/13/2020



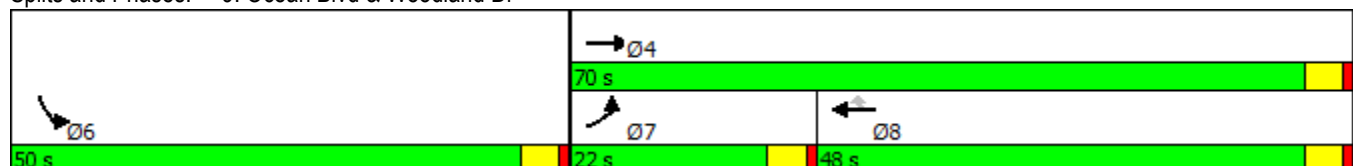
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Detector Phase	7	4	8	8	6	
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	9.5	28.5	28.5	28.5	28.5	
Total Split (s)	22.0	70.0	48.0	48.0	50.0	
Total Split (%)	18.3%	58.3%	40.0%	40.0%	41.7%	
Maximum Green (s)	17.5	65.5	43.5	43.5	45.5	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?	Yes		Yes	Yes		
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	None	Max	
Walk Time (s)		7.0	7.0	7.0	7.0	
Flash Dont Walk (s)		17.0	17.0	17.0	17.0	
Pedestrian Calls (#/hr)		0	0	0	0	
Act Effect Green (s)	13.1	53.5	35.8	35.8	46.0	
Actuated g/C Ratio	0.12	0.49	0.33	0.33	0.42	
v/c Ratio	0.63	0.29	0.88	0.32	0.70	
Control Delay	61.3	16.3	52.2	7.7	33.2	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	61.3	16.3	52.2	7.7	33.2	
LOS	E	B	D	A	C	
Approach Delay		25.6	40.0		33.2	
Approach LOS		C	D		C	

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 108.6
Natural Cycle: 70
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.88
Intersection Signal Delay: 33.3
Intersection Capacity Utilization 69.7%
Analysis Period (min) 15

Intersection LOS: C
ICU Level of Service C

Splits and Phases: 9: Ocean Blvd & Woodland Dr



HCM Signalized Intersection Capacity Analysis

9: Ocean Blvd & Woodland Dr

03/13/2020



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	109	421	442	166	276	151
Future Volume (vph)	109	421	442	166	276	151
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	
Frt	1.00	1.00	1.00	0.85	0.95	
Flt Protected	0.95	1.00	1.00	1.00	0.97	
Satd. Flow (prot)	1630	3260	1716	1458	1583	
Flt Permitted	0.95	1.00	1.00	1.00	0.97	
Satd. Flow (perm)	1630	3260	1716	1458	1583	
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	122	473	497	187	310	170
RTOR Reduction (vph)	0	0	0	106	15	0
Lane Group Flow (vph)	122	473	497	81	465	0
Turn Type	Prot	NA	NA	Perm	Prot	
Protected Phases	7	4	8		6	
Permitted Phases				8		
Actuated Green, G (s)	13.1	53.4	35.8	35.8	46.0	
Effective Green, g (s)	13.1	53.4	35.8	35.8	46.0	
Actuated g/C Ratio	0.12	0.49	0.33	0.33	0.42	
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	196	1605	566	481	671	
v/s Ratio Prot	c0.07	0.15	c0.29		c0.29	
v/s Ratio Perm				0.06		
v/c Ratio	0.62	0.29	0.88	0.17	0.69	
Uniform Delay, d1	45.3	16.3	34.2	25.7	25.4	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	6.0	0.1	14.4	0.2	5.8	
Delay (s)	51.3	16.4	48.6	25.9	31.3	
Level of Service	D	B	D	C	C	
Approach Delay (s)		23.6	42.4		31.3	
Approach LOS		C	D		C	

Intersection Summary

HCM 2000 Control Delay	33.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	108.4	Sum of lost time (s)	13.5
Intersection Capacity Utilization	69.7%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Lanes, Volumes, Timings
10: Central Ave & 10th St

03/13/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	16	541	120	5	432	16	172	99	16	140	78	21
Future Volume (vph)	16	541	120	5	432	16	172	99	16	140	78	21
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Storage Length (ft)	0		140	0		0	0		0	0		0
Storage Lanes	0		1	0		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.995			0.980			0.968	
Flt Protected		0.999			0.999		0.950			0.950		
Satd. Flow (prot)	0	1714	1458	0	3240	0	1630	1681	0	1630	1661	0
Flt Permitted		0.981			0.950		0.950			0.950		
Satd. Flow (perm)	0	1683	1458	0	3081	0	1630	1681	0	1630	1661	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			90		4			6			10	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		433			290			519			775	
Travel Time (s)		9.8			6.6			11.8			17.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	17	588	130	5	470	17	187	108	17	152	85	23
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	605	130	0	492	0	187	125	0	152	108	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.11	1.11	1.11	1.11	1.11	1.11	1.11	1.11	1.11	1.11	1.11	1.11
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100	20	20	100		20	100		20	100	
Trailing Detector (ft)	0	0	0	0	0		0	0		0	0	
Detector 1 Position(ft)	0	0	0	0	0		0	0		0	0	
Detector 1 Size(ft)	20	6	20	20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA	Perm	Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8								

Lanes, Volumes, Timings

10: Central Ave & 10th St

03/13/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	4	4	4	8	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5		9.5	22.5		9.5	22.5	
Total Split (s)	68.0	68.0	68.0	68.0	68.0		28.0	28.2		23.8	24.0	
Total Split (%)	56.7%	56.7%	56.7%	56.7%	56.7%		23.3%	23.5%		19.8%	20.0%	
Maximum Green (s)	63.5	63.5	63.5	63.5	63.5		23.5	23.7		19.3	19.5	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0	0.0		0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		4.5	4.5		4.5		4.5	4.5		4.5	4.5	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							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	
Recall Mode	None	None	None	None	None		None	Max		None	Max	
Walk Time (s)	7.0	7.0	7.0	7.0	7.0			7.0			7.0	
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0			11.0			11.0	
Pedestrian Calls (#/hr)	0	0	0	0	0			0			0	
Act Effect Green (s)		39.3	39.3		39.3		15.7	24.5		13.6	22.4	
Actuated g/C Ratio		0.43	0.43		0.43		0.17	0.27		0.15	0.25	
v/c Ratio		0.84	0.19		0.37		0.67	0.27		0.63	0.26	
Control Delay		34.1	6.4		17.8		50.0	32.3		51.6	33.2	
Queue Delay		0.0	0.0		0.0		0.0	0.0		0.0	0.0	
Total Delay		34.1	6.4		17.8		50.0	32.3		51.6	33.2	
LOS		C	A		B		D	C		D	C	
Approach Delay		29.2			17.8			42.9			43.9	
Approach LOS		C			B			D			D	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 91.3

Natural Cycle: 75

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.84

Intersection Signal Delay: 30.6

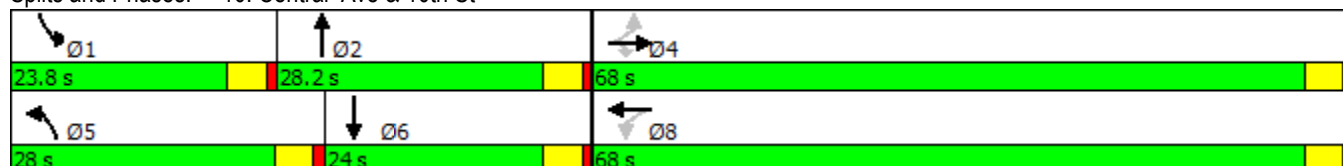
Intersection LOS: C

Intersection Capacity Utilization 69.4%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 10: Central Ave & 10th St



HCM Signalized Intersection Capacity Analysis

10: Central Ave & 10th St

03/13/2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↰	↱		↰↱		↰	↱		↰	↱	
Traffic Volume (vph)	16	541	120	5	432	16	172	99	16	140	78	21
Future Volume (vph)	16	541	120	5	432	16	172	99	16	140	78	21
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)		4.5	4.5		4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor		1.00	1.00		0.95		1.00	1.00		1.00	1.00	
Frt		1.00	0.85		0.99		1.00	0.98		1.00	0.97	
Flt Protected		1.00	1.00		1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1713	1458		3241		1630	1681		1630	1661	
Flt Permitted		0.98	1.00		0.95		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1684	1458		3082		1630	1681		1630	1661	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	17	588	130	5	470	17	187	108	17	152	85	23
RTOR Reduction (vph)	0	0	51	0	2	0	0	4	0	0	8	0
Lane Group Flow (vph)	0	605	79	0	490	0	187	121	0	152	100	0
Turn Type	Perm	NA	Perm	Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8								
Actuated Green, G (s)		39.3	39.3		39.3		15.7	24.6		13.5	22.4	
Effective Green, g (s)		39.3	39.3		39.3		15.7	24.6		13.5	22.4	
Actuated g/C Ratio		0.43	0.43		0.43		0.17	0.27		0.15	0.25	
Clearance Time (s)		4.5	4.5		4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)		3.0	3.0		3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		728	630		1332		281	454		242	409	
v/s Ratio Prot							c0.11	c0.07		0.09	0.06	
v/s Ratio Perm		c0.36	0.05		0.16							
v/c Ratio		0.83	0.13		0.37		0.67	0.27		0.63	0.25	
Uniform Delay, d1		22.9	15.5		17.4		35.1	26.1		36.3	27.5	
Progression Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		8.0	0.1		0.2		5.8	1.4		5.0	1.4	
Delay (s)		30.9	15.6		17.6		41.0	27.5		41.4	28.9	
Level of Service		C	B		B		D	C		D	C	
Approach Delay (s)		28.2			17.6			35.6			36.2	
Approach LOS		C			B			D			D	
Intersection Summary												
HCM 2000 Control Delay			27.7				HCM 2000 Level of Service			C		
HCM 2000 Volume to Capacity ratio			0.64									
Actuated Cycle Length (s)			90.9				Sum of lost time (s)			13.5		
Intersection Capacity Utilization			69.4%				ICU Level of Service			C		
Analysis Period (min)			15									
c Critical Lane Group												

Lanes, Volumes, Timings

11: Commercial Ave

03/13/2020



Lane Group	EBL	EBR	NBL	NBR	SWL	SWR
Lane Configurations		↰			↰↰↰	
Traffic Volume (vph)	0	47	0	0	468	203
Future Volume (vph)	0	47	0	0	468	203
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750
Lane Util. Factor	1.00	1.00	1.00	1.00	0.97	0.95
Frt		0.865			0.955	
Flt Protected					0.966	
Satd. Flow (prot)	0	1484	0	0	3071	0
Flt Permitted					0.966	
Satd. Flow (perm)	0	1484	0	0	3071	0
Link Speed (mph)	30		30		30	
Link Distance (ft)	384		240		1269	
Travel Time (s)	8.7		5.5		28.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	51	0	0	509	221
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	51	0	0	730	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Right
Median Width(ft)	0		0		24	
Link Offset(ft)	0		0		0	
Crosswalk Width(ft)	16		16		16	
Two way Left Turn Lane						
Headway Factor	1.11	1.11	1.11	1.11	1.11	1.11
Turning Speed (mph)	15	9	15	9	15	9
Sign Control	Stop		Stop		Free	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 24.8% ICU Level of Service A

Analysis Period (min) 15

Lanes, Volumes, Timings

12:

03/13/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	687	10	33	0	0	0	0	0	73	427
Future Volume (vph)	0	0	687	10	33	0	0	0	0	0	73	427
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Lane Util. Factor	1.00	1.00	0.88	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.88
Frt			0.850									0.850
Flt Protected					0.988							
Satd. Flow (prot)	0	0	2567	0	1695	0	0	0	0	0	1716	2567
Flt Permitted					0.988							
Satd. Flow (perm)	0	0	2567	0	1695	0	0	0	0	0	1716	2567
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		266			151			237			240	
Travel Time (s)		6.0			3.4			5.4			5.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	747	11	36	0	0	0	0	0	79	464
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	747	0	47	0	0	0	0	0	79	464
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.11	1.11	1.11	1.11	1.11	1.11	1.11	1.11	1.11	1.11	1.11	1.11
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Stop			Stop			Free	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	43.6%											
Analysis Period (min)	15											
ICU Level of Service A												

Intersection													
Int Delay, s/veh	3.4												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations			↑↑		↑						↑	↑↑	
Traffic Vol, veh/h	0	0	687	10	33	0	0	0	0	0	73	427	
Future Vol, veh/h	0	0	687	10	33	0	0	0	0	0	73	427	
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0	
Sign Control	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	
RT Channelized	-	-	Free	-	-	None	-	-	None	-	-	Free	
Storage Length	-	-	0	-	-	-	-	-	-	-	-	0	
Veh in Median Storage, #	-	-	-	-	0	-	-	-	-	-	0	-	
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-	
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92	
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	
Mvmt Flow	0	0	747	11	36	0	0	0	0	0	79	464	
Major/Minor				Minor1				Major2					
Conflicting Flow All				79	79	-					-	-	0
Stage 1				0	0	-					-	-	-
Stage 2				79	79	-					-	-	-
Critical Hdwy				6.42	6.52	-					-	-	-
Critical Hdwy Stg 1				-	-	-					-	-	-
Critical Hdwy Stg 2				5.42	5.52	-					-	-	-
Follow-up Hdwy				3.518	4.018	-					-	-	-
Pot Cap-1 Maneuver				924	811	0					0	-	0
Stage 1				-	-	0					0	-	0
Stage 2				944	829	0					0	-	0
Platoon blocked, %												-	
Mov Cap-1 Maneuver				924	0	-					-	-	-
Mov Cap-2 Maneuver				924	0	-					-	-	-
Stage 1				-	0	-					-	-	-
Stage 2				944	0	-					-	-	-
Approach				WB				SB					
HCM Control Delay, s				9.1				0					
HCM LOS				A									
Minor Lane/Major Mvmt	WBLn1	SBT											
Capacity (veh/h)	924	-											
HCM Lane V/C Ratio	0.051	-											
HCM Control Delay (s)	9.1	-											
HCM Lane LOS	A	-											
HCM 95th %tile Q(veh)	0.2	-											

Lanes, Volumes, Timings
13: 7th St & Anderson Ave

03/13/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	52	31	0	0	0	83	0	16	624	120	26
Future Volume (vph)	0	52	31	0	0	0	83	0	16	624	120	26
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00
Frt		0.950						0.979			0.990	
Flt Protected								0.960		0.950	0.970	
Satd. Flow (prot)	0	1630	0	0	0	0	0	1612	0	1548	1565	0
Flt Permitted								0.960		0.950	0.970	
Satd. Flow (perm)	0	1630	0	0	0	0	0	1612	0	1548	1565	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		706			1059			883			237	
Travel Time (s)		16.0			24.1			20.1			5.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	57	34	0	0	0	90	0	17	678	130	28
Shared Lane Traffic (%)										39%		
Lane Group Flow (vph)	0	91	0	0	0	0	0	107	0	414	422	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.11	1.11	1.11	1.11	1.11	1.11	1.11	1.11	1.11	1.11	1.11	1.11
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Free	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	44.1%						ICU Level of Service A					
Analysis Period (min)	15											

Lanes, Volumes, Timings
17: Newmark Ave

03/13/2020



Lane Group	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations		↑↑	↑			↑
Traffic Volume (vph)	0	1129	623	0	0	0
Future Volume (vph)	0	1129	623	0	0	0
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00
Frnt						
Flt Protected						
Satd. Flow (prot)	0	3260	1716	0	0	1716
Flt Permitted						
Satd. Flow (perm)	0	3260	1716	0	0	1716
Link Speed (mph)		30	30		30	
Link Distance (ft)		3833	470		1094	
Travel Time (s)		87.1	10.7		24.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1227	677	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1227	677	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		0	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.11	1.11	1.11	1.11	1.11	1.11
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	38.9%
Analysis Period (min)	15
	ICU Level of Service A

Lanes, Volumes, Timings
54: Broadway St

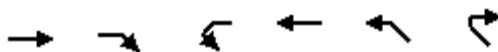
03/13/2020

						
Lane Group	NBL	NBT	SBT	SBR	NEL	NER
Lane Configurations		 				
Traffic Volume (vph)	0	923	412	0	0	0
Future Volume (vph)	0	923	412	0	0	0
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00
Frt						
Flt Protected						
Satd. Flow (prot)	0	3260	1716	1716	0	0
Flt Permitted						
Satd. Flow (perm)	0	3260	1716	1716	0	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		578	2058		1094	
Travel Time (s)		13.1	46.8		24.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1003	448	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1003	448	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		0	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.11	1.11	1.11	1.11	1.11	1.11
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type: Unsignalized						
Intersection Capacity Utilization 31.0%						
ICU Level of Service A						
Analysis Period (min) 15						

HCM Signalized Intersection Capacity Analysis

2: Ocean Blvd & Newmark

03/13/2020



Movement	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations	↑	↑		↑↑	↑↑	↑
Traffic Volume (vph)	499	291	0	619	407	52
Future Volume (vph)	499	291	0	619	407	52
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.5	4.5		4.5	4.5	4.5
Lane Util. Factor	1.00	1.00		0.95	0.97	1.00
Frt	1.00	0.85		1.00	1.00	0.85
Flt Protected	1.00	1.00		1.00	0.95	1.00
Satd. Flow (prot)	1716	1458		3260	3162	1458
Flt Permitted	1.00	1.00		1.00	0.95	1.00
Satd. Flow (perm)	1716	1458		3260	3162	1458
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	542	316	0	673	442	57
RTOR Reduction (vph)	0	117	0	0	0	40
Lane Group Flow (vph)	542	199	0	673	442	17
Turn Type	NA	Perm		NA	Prot	Perm
Protected Phases	4			8	2	
Permitted Phases		4				2
Actuated Green, G (s)	75.5	75.5		75.5	35.5	35.5
Effective Green, g (s)	75.5	75.5		75.5	35.5	35.5
Actuated g/C Ratio	0.63	0.63		0.63	0.30	0.30
Clearance Time (s)	4.5	4.5		4.5	4.5	4.5
Lane Grp Cap (vph)	1079	917		2051	935	431
v/s Ratio Prot	c0.32			0.21	c0.14	
v/s Ratio Perm		0.14				0.01
v/c Ratio	0.50	0.22		0.33	0.47	0.04
Uniform Delay, d1	12.1	9.6		10.4	34.6	30.1
Progression Factor	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	1.7	0.5		0.4	1.7	0.2
Delay (s)	13.7	10.1		10.8	36.3	30.3
Level of Service	B	B		B	D	C
Approach Delay (s)	12.4			10.8	35.6	
Approach LOS	B			B	D	

Intersection Summary

HCM 2000 Control Delay	17.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	48.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis

3: Laclair st & Newmark Ave

03/13/2020

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↘	↑↑	↘	
Traffic Volume (vph)	640	26	133	718	31	125
Future Volume (vph)	640	26	133	718	31	125
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.5		4.5	4.5	4.5	
Lane Util. Factor	0.95		1.00	0.95	1.00	
Frt	0.99		1.00	1.00	0.89	
Flt Protected	1.00		0.95	1.00	0.99	
Satd. Flow (prot)	3241		1630	3260	1515	
Flt Permitted	1.00		0.95	1.00	0.99	
Satd. Flow (perm)	3241		1630	3260	1515	
Peak-hour factor, PHF	0.84	0.84	0.84	0.84	0.84	0.84
Adj. Flow (vph)	762	31	158	855	37	149
RTOR Reduction (vph)	3	0	0	0	96	0
Lane Group Flow (vph)	790	0	158	855	90	0
Turn Type	NA		Prot	NA	Prot	
Protected Phases	4		3	8	2	
Permitted Phases						
Actuated Green, G (s)	28.4		14.0	46.9	31.0	
Effective Green, g (s)	28.4		14.0	46.9	31.0	
Actuated g/C Ratio	0.33		0.16	0.54	0.36	
Clearance Time (s)	4.5		4.5	4.5	4.5	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	1059		262	1759	540	
v/s Ratio Prot	c0.24		c0.10	0.26	c0.06	
v/s Ratio Perm						
v/c Ratio	0.75		0.60	0.49	0.17	
Uniform Delay, d1	26.0		33.9	12.5	19.1	
Progression Factor	1.00		1.00	1.00	1.00	
Incremental Delay, d2	2.9		3.9	0.2	0.7	
Delay (s)	28.9		37.8	12.7	19.8	
Level of Service	C		D	B	B	
Approach Delay (s)	28.9			16.6	19.8	
Approach LOS	C			B	B	
Intersection Summary						
HCM 2000 Control Delay			21.8		HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio			0.47			
Actuated Cycle Length (s)			86.9		Sum of lost time (s)	13.5
Intersection Capacity Utilization			49.6%		ICU Level of Service	A
Analysis Period (min)			15			
c Critical Lane Group						

Intersection

Int Delay, s/veh 4.6

Movement SBL SBR SEL SET NWT NWR

Lane Configurations 

Traffic Vol, veh/h 127 43 44 419 547 116

Future Vol, veh/h 127 43 44 419 547 116

Conflicting Peds, #/hr 0 0 0 0 0 0

Sign Control Stop Stop Free Free Free Free

RT Channelized - None - None - None

Storage Length 0 - - - - -

Veh in Median Storage, # 0 - - 0 0 -

Grade, % 0 - - 0 0 -

Peak Hour Factor 85 85 85 85 85 85

Heavy Vehicles, % 2 2 2 2 2 2

Mvmt Flow 149 51 52 493 644 136

Major/Minor Minor2 Major1 Major2

Conflicting Flow All 1309 712 780 0 - 0

Stage 1 712 - - - - -

Stage 2 597 - - - - -

Critical Hdwy 6.42 6.22 4.12 - - -

Critical Hdwy Stg 1 5.42 - - - - -

Critical Hdwy Stg 2 5.42 - - - - -

Follow-up Hdwy 3.518 3.318 2.218 - - -

Pot Cap-1 Maneuver 176 432 837 - - -

Stage 1 486 - - - - -

Stage 2 550 - - - - -

Platoon blocked, % - - -

Mov Cap-1 Maneuver 161 432 837 - - -

Mov Cap-2 Maneuver 296 - - - - -

Stage 1 444 - - - - -

Stage 2 550 - - - - -

Approach SB SE NW

HCM Control Delay, s 32.9 0.9 0

HCM LOS D

Minor Lane/Major Mvmt NWT NWR SEL SET SBLn1

Capacity (veh/h) - - 837 - 322

HCM Lane V/C Ratio - - 0.062 - 0.621

HCM Control Delay (s) - - 9.6 0 32.9

HCM Lane LOS - - A A D

HCM 95th %tile Q(veh) - - 0.2 - 3.9

Intersection

Int Delay, s/veh 4.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	419	117	173	602	44	127
Future Vol, veh/h	419	117	173	602	44	127
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	466	130	192	669	49	141

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	596
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.12
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.218
Pot Cap-1 Maneuver	-	-	980
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	980
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	2.1	25.8
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	359	-	-	980	-
HCM Lane V/C Ratio	0.529	-	-	0.196	-
HCM Control Delay (s)	25.8	-	-	9.6	0
HCM Lane LOS	D	-	-	A	A
HCM 95th %tile Q(veh)	3	-	-	0.7	-

HCM Signalized Intersection Capacity Analysis

6: Broadway St & 16th St

03/13/2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	26	16	5	108	21	10	5	728	52	10	728	26
Future Volume (vph)	26	16	5	108	21	10	5	728	52	10	728	26
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)		4.5			4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frt		0.98			0.99		1.00	0.99		1.00	0.99	
Flt Protected		0.97			0.96		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1644			1635		1630	3227		1630	3243	
Flt Permitted		0.83			0.78		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1411			1330		1630	3227		1630	3243	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	29	18	6	120	23	11	6	809	58	11	809	29
RTOR Reduction (vph)	0	4	0	0	3	0	0	3	0	0	1	0
Lane Group Flow (vph)	0	49	0	0	151	0	6	864	0	11	837	0
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)		16.3			16.3		1.2	67.4		1.3	67.5	
Effective Green, g (s)		16.3			16.3		1.2	67.4		1.3	67.5	
Actuated g/C Ratio		0.17			0.17		0.01	0.68		0.01	0.69	
Clearance Time (s)		4.5			4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		233			220		19	2208		21	2222	
v/s Ratio Prot							0.00	c0.27		c0.01	0.26	
v/s Ratio Perm		0.03			c0.11							
v/c Ratio		0.21			0.69		0.32	0.39		0.52	0.38	
Uniform Delay, d1		35.5			38.7		48.2	6.7		48.3	6.6	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.5			8.7		9.3	0.5		21.6	0.5	
Delay (s)		36.0			47.4		57.6	7.2		69.9	7.1	
Level of Service		D			D		E	A		E	A	
Approach Delay (s)		36.0			47.4			7.6			7.9	
Approach LOS		D			D			A			A	
Intersection Summary												
HCM 2000 Control Delay		11.7			HCM 2000 Level of Service			B				
HCM 2000 Volume to Capacity ratio		0.45										
Actuated Cycle Length (s)		98.5			Sum of lost time (s)			13.5				
Intersection Capacity Utilization		43.0%			ICU Level of Service			A				
Analysis Period (min)		15										
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

7: Broadway St & Newmark Ave

03/13/2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	390	494	172	68	395	161	182	353	67	109	306	36
Future Volume (vph)	390	494	172	68	395	161	182	353	67	109	306	36
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
Lane Util. Factor	1.00	*1.00		1.00	0.95		1.00	1.00		1.00	1.00	
Frt	1.00	0.96		1.00	0.96		1.00	0.98		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1630	3298		1630	3118		1646	1691		1662	1722	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1630	3298		1630	3118		1646	1691		1662	1722	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	419	531	185	73	425	173	196	380	72	117	329	39
RTOR Reduction (vph)	0	31	0	0	37	0	0	5	0	0	4	0
Lane Group Flow (vph)	419	685	0	73	561	0	196	447	0	117	364	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	1%	1%	1%	0%	0%	0%
Turn Type	Prot	NA		Prot	NA		Prot	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)	32.0	49.2		7.9	25.1		15.9	37.1		9.5	30.7	
Effective Green, g (s)	32.0	49.2		7.9	25.1		15.9	37.1		9.5	30.7	
Actuated g/C Ratio	0.27	0.42		0.07	0.21		0.14	0.32		0.08	0.26	
Clearance Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	443	1378		109	664		222	533		134	449	
v/s Ratio Prot	c0.26	0.21		0.04	c0.18		c0.12	c0.26		0.07	0.21	
v/s Ratio Perm												
v/c Ratio	0.95	0.50		0.67	0.84		0.88	0.84		0.87	0.81	
Uniform Delay, d1	42.0	25.2		53.6	44.4		50.0	37.5		53.5	40.8	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	29.2	0.3		14.5	9.7		31.1	14.5		42.1	14.7	
Delay (s)	71.2	25.4		68.1	54.1		81.1	52.0		95.6	55.5	
Level of Service	E	C		E	D		F	D		F	E	
Approach Delay (s)		42.3			55.6			60.8			65.2	
Approach LOS		D			E			E			E	
Intersection Summary												
HCM 2000 Control Delay			53.2			HCM 2000 Level of Service				D		
HCM 2000 Volume to Capacity ratio			0.90									
Actuated Cycle Length (s)			117.7			Sum of lost time (s)			14.0			
Intersection Capacity Utilization			85.4%			ICU Level of Service			E			
Analysis Period (min)			15									
c Critical Lane Group												

Intersection

Int Delay, s/veh 4.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	62	198	378	36	126	429
Future Vol, veh/h	62	198	378	36	126	429
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	Free	-	None
Storage Length	81	0	-	-	100	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	69	220	420	40	140	477

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	1177	420	0
Stage 1	420	-	-
Stage 2	757	-	-
Critical Hdwy	6.42	6.22	-
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	-
Pot Cap-1 Maneuver	211	633	-
Stage 1	663	-	-
Stage 2	463	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	185	633	-
Mov Cap-2 Maneuver	307	-	-
Stage 1	663	-	-
Stage 2	406	-	-

Approach	WB	NB	SB
HCM Control Delay, s	15.2	0	2
HCM LOS	C		

Minor Lane/Major Mvmt	NBTWBLn1WBLn2	SBL	SBT
Capacity (veh/h)	- 307 633	1139	-
HCM Lane V/C Ratio	- 0.224 0.348	0.123	-
HCM Control Delay (s)	- 20.1 13.7	8.6	-
HCM Lane LOS	- C B	A	-
HCM 95th %tile Q(veh)	- 0.8 1.6	0.4	-

HCM Signalized Intersection Capacity Analysis

9: Ocean Blvd & Woodland Dr

03/13/2020



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	185	471	518	166	276	237
Future Volume (vph)	185	471	518	166	276	237
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	
Frt	1.00	1.00	1.00	0.85	0.94	
Flt Protected	0.95	1.00	1.00	1.00	0.97	
Satd. Flow (prot)	1630	3260	1716	1458	1567	
Flt Permitted	0.95	1.00	1.00	1.00	0.97	
Satd. Flow (perm)	1630	3260	1716	1458	1567	
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	208	529	582	187	310	266
RTOR Reduction (vph)	0	0	0	88	25	0
Lane Group Flow (vph)	208	529	582	99	551	0
Turn Type	Prot	NA	NA	Perm	Prot	
Protected Phases	7	4	8		6	
Permitted Phases				8		
Actuated Green, G (s)	16.9	63.4	42.0	42.0	45.6	
Effective Green, g (s)	16.9	63.4	42.0	42.0	45.6	
Actuated g/C Ratio	0.14	0.54	0.36	0.36	0.39	
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	233	1751	610	518	605	
v/s Ratio Prot	c0.13	0.16	c0.34		c0.35	
v/s Ratio Perm				0.07		
v/c Ratio	0.89	0.30	0.95	0.19	0.91	
Uniform Delay, d1	49.7	15.1	37.1	26.3	34.3	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	31.9	0.1	25.3	0.2	20.2	
Delay (s)	81.6	15.2	62.4	26.5	54.4	
Level of Service	F	B	E	C	D	
Approach Delay (s)		33.9	53.7		54.4	
Approach LOS		C	D		D	

Intersection Summary

HCM 2000 Control Delay	46.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	118.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	84.3%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis

10: Central Ave & 10th St

03/13/2020

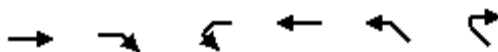
												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	21	581	125	5	493	16	182	99	16	140	78	26
Future Volume (vph)	21	581	125	5	493	16	182	99	16	140	78	26
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)		4.5	4.5		4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor		1.00	1.00		0.95		1.00	1.00		1.00	1.00	
Frt		1.00	0.85		1.00		1.00	0.98		1.00	0.96	
Flt Protected		1.00	1.00		1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1713	1458		3243		1630	1681		1630	1652	
Flt Permitted		0.97	1.00		0.95		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1666	1458		3085		1630	1681		1630	1652	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	23	632	136	5	536	17	198	108	17	152	85	28
RTOR Reduction (vph)	0	0	47	0	2	0	0	4	0	0	9	0
Lane Group Flow (vph)	0	655	89	0	556	0	198	121	0	152	104	0
Turn Type	Perm	NA	Perm	Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8								
Actuated Green, G (s)		44.1	44.1		44.1		16.6	24.5		14.0	21.9	
Effective Green, g (s)		44.1	44.1		44.1		16.6	24.5		14.0	21.9	
Actuated g/C Ratio		0.46	0.46		0.46		0.17	0.25		0.15	0.23	
Clearance Time (s)		4.5	4.5		4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)		3.0	3.0		3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		764	669		1415		281	428		237	376	
v/s Ratio Prot							c0.12	c0.07		0.09	0.06	
v/s Ratio Perm		c0.39	0.06		0.18							
v/c Ratio		0.86	0.13		0.39		0.70	0.28		0.64	0.28	
Uniform Delay, d1		23.2	15.0		17.2		37.4	28.7		38.7	30.6	
Progression Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		9.4	0.1		0.2		7.8	1.6		5.8	1.8	
Delay (s)		32.6	15.1		17.3		45.2	30.4		44.5	32.4	
Level of Service		C	B		B		D	C		D	C	
Approach Delay (s)		29.6			17.3			39.5			39.3	
Approach LOS		C			B			D			D	
Intersection Summary												
HCM 2000 Control Delay			29.0				HCM 2000 Level of Service			C		
HCM 2000 Volume to Capacity ratio			0.68									
Actuated Cycle Length (s)			96.1				Sum of lost time (s)			13.5		
Intersection Capacity Utilization			76.8%				ICU Level of Service			D		
Analysis Period (min)			15									
c Critical Lane Group												

Intersection													
Int Delay, s/veh	3.4												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations			↑↑		↑						↑	↑↑	
Traffic Vol, veh/h	0	0	727	10	33	0	0	0	0	0	73	488	
Future Vol, veh/h	0	0	727	10	33	0	0	0	0	0	73	488	
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0	
Sign Control	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	
RT Channelized	-	-	Free	-	-	None	-	-	None	-	-	Free	
Storage Length	-	-	0	-	-	-	-	-	-	-	-	0	
Veh in Median Storage, #	-	-	-	-	0	-	-	-	-	-	0	-	
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-	
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92	
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	
Mvmt Flow	0	0	790	11	36	0	0	0	0	0	79	530	
Major/Minor				Minor1				Major2					
Conflicting Flow All				79	79	-				-	-	0	
Stage 1				0	0	-				-	-	-	
Stage 2				79	79	-				-	-	-	
Critical Hdwy				6.42	6.52	-				-	-	-	
Critical Hdwy Stg 1				-	-	-				-	-	-	
Critical Hdwy Stg 2				5.42	5.52	-				-	-	-	
Follow-up Hdwy				3.518	4.018	-				-	-	-	
Pot Cap-1 Maneuver				924	811	0				0	-	0	
Stage 1				-	-	0				0	-	0	
Stage 2				944	829	0				0	-	0	
Platoon blocked, %													-
Mov Cap-1 Maneuver				924	0	-				-	-	-	
Mov Cap-2 Maneuver				924	0	-				-	-	-	
Stage 1				-	0	-				-	-	-	
Stage 2				944	0	-				-	-	-	
Approach				WB				SB					
HCM Control Delay, s				9.1				0					
HCM LOS				A									
Minor Lane/Major Mvmt	WBLn1	SBT											
Capacity (veh/h)	924	-											
HCM Lane V/C Ratio	0.051	-											
HCM Control Delay (s)	9.1	-											
HCM Lane LOS	A	-											
HCM 95th %tile Q(veh)	0.2	-											

HCM Signalized Intersection Capacity Analysis

2: Ocean Blvd

03/13/2020



Movement	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations	↑	↑		↑↑	↑↑	↑
Traffic Volume (vph)	581	324	0	342	294	20
Future Volume (vph)	581	324	0	342	294	20
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.5	4.5		4.5	4.5	4.5
Lane Util. Factor	1.00	1.00		0.95	0.97	1.00
Frt	1.00	0.85		1.00	1.00	0.85
Flt Protected	1.00	1.00		1.00	0.95	1.00
Satd. Flow (prot)	1716	1458		3260	3162	1458
Flt Permitted	1.00	1.00		1.00	0.95	1.00
Satd. Flow (perm)	1716	1458		3260	3162	1458
Peak-hour factor, PHF	0.78	0.78	0.78	0.78	0.78	0.78
Adj. Flow (vph)	745	415	0	438	377	26
RTOR Reduction (vph)	0	195	0	0	0	17
Lane Group Flow (vph)	745	220	0	438	377	9
Turn Type	NA	Perm		NA	Prot	Perm
Protected Phases	4			8	2	
Permitted Phases		4				2
Actuated Green, G (s)	43.3	43.3		43.3	29.2	29.2
Effective Green, g (s)	43.3	43.3		43.3	29.2	29.2
Actuated g/C Ratio	0.53	0.53		0.53	0.36	0.36
Clearance Time (s)	4.5	4.5		4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	911	774		1732	1132	522
v/s Ratio Prot	c0.43			0.13	c0.12	
v/s Ratio Perm		0.15				0.01
v/c Ratio	0.82	0.28		0.25	0.33	0.02
Uniform Delay, d1	15.8	10.5		10.3	19.1	16.9
Progression Factor	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	5.8	0.2		0.1	0.8	0.1
Delay (s)	21.6	10.8		10.4	19.8	17.0
Level of Service	C	B		B	B	B
Approach Delay (s)	17.7			10.4	19.7	
Approach LOS	B			B	B	

Intersection Summary

HCM 2000 Control Delay	16.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	81.5	Sum of lost time (s)	9.0
Intersection Capacity Utilization	49.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis

3: Laclair st & Newmark Ave

03/13/2020

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↙	↑↑	↘	
Traffic Volume (vph)	541	29	67	399	14	94
Future Volume (vph)	541	29	67	399	14	94
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.5		4.5	4.5	4.5	
Lane Util. Factor	0.95		1.00	0.95	1.00	
Frt	0.99		1.00	1.00	0.88	
Flt Protected	1.00		0.95	1.00	0.99	
Satd. Flow (prot)	3235		1630	3260	1505	
Flt Permitted	1.00		0.95	1.00	0.99	
Satd. Flow (perm)	3235		1630	3260	1505	
Peak-hour factor, PHF	0.75	0.75	0.75	0.75	0.75	0.75
Adj. Flow (vph)	721	39	89	532	19	125
RTOR Reduction (vph)	4	0	0	0	75	0
Lane Group Flow (vph)	756	0	89	532	69	0
Turn Type	NA		Prot	NA	Prot	
Protected Phases	4		3	8	2	
Permitted Phases						
Actuated Green, G (s)	24.7		8.1	37.3	30.5	
Effective Green, g (s)	24.7		8.1	37.3	30.5	
Actuated g/C Ratio	0.32		0.11	0.49	0.40	
Clearance Time (s)	4.5		4.5	4.5	4.5	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	1040		171	1583	597	
v/s Ratio Prot	c0.23		c0.05	0.16	c0.05	
v/s Ratio Perm						
v/c Ratio	0.73		0.52	0.34	0.11	
Uniform Delay, d1	23.1		32.5	12.1	14.6	
Progression Factor	1.00		1.00	1.00	1.00	
Incremental Delay, d2	2.6		2.8	0.1	0.4	
Delay (s)	25.6		35.4	12.3	15.0	
Level of Service	C		D	B	B	
Approach Delay (s)	25.6			15.6	15.0	
Approach LOS	C			B	B	
Intersection Summary						
HCM 2000 Control Delay			20.5		HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio			0.41			
Actuated Cycle Length (s)			76.8		Sum of lost time (s)	13.5
Intersection Capacity Utilization			39.8%		ICU Level of Service	A
Analysis Period (min)			15			
c Critical Lane Group						

Intersection

Int Delay, s/veh 1.2

Movement SBL SBR SEL SET NWT NWR

Lane Configurations 

Traffic Vol, veh/h 27 24 35 408 392 60

Future Vol, veh/h 27 24 35 408 392 60

Conflicting Peds, #/hr 0 0 0 0 0 0

Sign Control Stop Stop Free Free Free Free

RT Channelized - None - None - None

Storage Length 0 - - - - -

Veh in Median Storage, # 0 - - 0 0 -

Grade, % 0 - - 0 0 -

Peak Hour Factor 72 72 72 72 72 72

Heavy Vehicles, % 2 2 2 2 2 2

Mvmt Flow 38 33 49 567 544 83

Major/Minor Minor2 Major1 Major2

Conflicting Flow All 1251 586 627 0 - 0

Stage 1 586 - - - - -

Stage 2 665 - - - - -

Critical Hdwy 6.42 6.22 4.12 - - -

Critical Hdwy Stg 1 5.42 - - - - -

Critical Hdwy Stg 2 5.42 - - - - -

Follow-up Hdwy 3.518 3.318 2.218 - - -

Pot Cap-1 Maneuver 190 510 955 - - -

Stage 1 556 - - - - -

Stage 2 511 - - - - -

Platoon blocked, % - - -

Mov Cap-1 Maneuver 176 510 955 - - -

Mov Cap-2 Maneuver 314 - - - - -

Stage 1 514 - - - - -

Stage 2 511 - - - - -

Approach SB SE NW

HCM Control Delay, s 16.5 0.7 0

HCM LOS C

Minor Lane/Major Mvmt NWT NWR SEL SET SBLn1

Capacity (veh/h) - - 955 - 383

HCM Lane V/C Ratio - - 0.051 - 0.185

HCM Control Delay (s) - - 9 0 16.5

HCM Lane LOS - - A A C

HCM 95th %tile Q(veh) - - 0.2 - 0.7

Intersection

Int Delay, s/veh 0.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	278	2	0	311	2	1
Future Vol, veh/h	278	2	0	311	2	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	84	84	84	84	84	84
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	331	2	0	370	2	1

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	333
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.12
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.218
Pot Cap-1 Maneuver	-	-	1226
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	1226
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	11.4
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	563	-	-	1226	-
HCM Lane V/C Ratio	0.006	-	-	-	-
HCM Control Delay (s)	11.4	-	-	0	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-

HCM Signalized Intersection Capacity Analysis

6: Broadway St & 16th St

03/13/2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	29	91	12	179	24	33	8	430	148	44	538	4
Future Volume (vph)	29	91	12	179	24	33	8	430	148	44	538	4
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)		4.5			4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frt		0.99			0.98		1.00	0.96		1.00	1.00	
Flt Protected		0.99			0.96		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1677			1622		1630	3135		1630	3256	
Flt Permitted		0.89			0.63		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1511			1052		1630	3135		1630	3256	
Peak-hour factor, PHF	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74
Adj. Flow (vph)	39	123	16	242	32	45	11	581	200	59	727	5
RTOR Reduction (vph)	0	3	0	0	6	0	0	23	0	0	0	0
Lane Group Flow (vph)	0	175	0	0	313	0	11	758	0	59	732	0
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)		32.7			32.7		0.9	47.4		7.1	53.6	
Effective Green, g (s)		32.7			32.7		0.9	47.4		7.1	53.6	
Actuated g/C Ratio		0.32			0.32		0.01	0.47		0.07	0.53	
Clearance Time (s)		4.5			4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		490			341		14	1475		114	1733	
v/s Ratio Prot							0.01	c0.24		c0.04	0.22	
v/s Ratio Perm		0.12			c0.30							
v/c Ratio		0.36			0.92		0.79	0.51		0.52	0.42	
Uniform Delay, d1		26.0			32.7		49.8	18.6		45.1	14.2	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.4			28.5		130.6	1.3		3.9	0.8	
Delay (s)		26.4			61.2		180.4	19.9		49.1	15.0	
Level of Service		C			E		F	B		D	B	
Approach Delay (s)		26.4			61.2			22.1			17.5	
Approach LOS		C			E			C			B	
Intersection Summary												
HCM 2000 Control Delay		26.7										
HCM 2000 Volume to Capacity ratio		0.66										
Actuated Cycle Length (s)		100.7								13.5		
Intersection Capacity Utilization		54.4%								A		
Analysis Period (min)		15										
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

7: Broadway St & Newmark Ave

03/13/2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	311	258	171	50	267	106	104	183	32	105	340	15
Future Volume (vph)	311	258	171	50	267	106	104	183	32	105	340	15
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frt	1.00	0.94		1.00	0.96		1.00	0.98		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1630	3065		1630	3121		1630	1677		1630	1705	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1630	3065		1630	3121		1630	1677		1630	1705	
Peak-hour factor, PHF	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Adj. Flow (vph)	389	322	214	62	334	132	130	229	40	131	425	19
RTOR Reduction (vph)	0	88	0	0	34	0	0	5	0	0	1	0
Lane Group Flow (vph)	389	449	0	63	433	0	130	264	0	131	443	0
Turn Type	Prot	NA		Prot	NA		Prot	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)	31.2	45.8		7.6	22.2		11.4	38.3		12.7	39.6	
Effective Green, g (s)	31.2	45.8		7.6	22.2		11.4	38.3		12.7	39.6	
Actuated g/C Ratio	0.25	0.37		0.06	0.18		0.09	0.31		0.10	0.32	
Clearance Time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	415	1146		101	566		151	524		169	551	
v/s Ratio Prot	c0.24	0.15		0.04	c0.14		0.08	0.16		c0.08	c0.26	
v/s Ratio Perm												
v/c Ratio	0.94	0.39		0.62	0.76		0.86	0.50		0.78	0.80	
Uniform Delay, d1	44.6	28.1		56.0	47.6		54.7	34.3		53.5	37.8	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	28.6	0.2		11.4	6.1		36.3	3.4		19.6	11.8	
Delay (s)	73.2	28.3		67.4	53.7		91.0	37.7		73.1	49.6	
Level of Service	E	C		E	D		F	D		E	D	
Approach Delay (s)		47.2			55.3			55.1			55.0	
Approach LOS		D			E			E			D	
Intersection Summary												
HCM 2000 Control Delay			52.1			HCM 2000 Level of Service				D		
HCM 2000 Volume to Capacity ratio			0.84									
Actuated Cycle Length (s)			122.4			Sum of lost time (s)			18.0			
Intersection Capacity Utilization			72.1%			ICU Level of Service			C			
Analysis Period (min)			15									
c Critical Lane Group												

Intersection

Int Delay, s/veh 3.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	22	96	239	40	170	299
Future Vol, veh/h	22	96	239	40	170	299
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	Free	-	None
Storage Length	81	0	-	-	100	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	83	83	83	83	83	83
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	27	116	288	48	205	360

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	1058	288	0
Stage 1	288	-	-
Stage 2	770	-	-
Critical Hdwy	6.42	6.22	-
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	-
Pot Cap-1 Maneuver	249	751	0
Stage 1	761	-	0
Stage 2	457	-	0
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	209	751	-
Mov Cap-2 Maneuver	312	-	-
Stage 1	761	-	-
Stage 2	383	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12	0	3
HCM LOS	B		

Minor Lane/Major Mvmt	NBTWBLn1WBLn2	SBL	SBT
Capacity (veh/h)	- 312 751 1274	-	-
HCM Lane V/C Ratio	- 0.085 0.154 0.161	-	-
HCM Control Delay (s)	- 17.6 10.7 8.4	-	-
HCM Lane LOS	- C B A	-	-
HCM 95th %tile Q(veh)	- 0.3 0.5 0.6	-	-

HCM Signalized Intersection Capacity Analysis

9: Ocean Blvd & Woodland Dr

03/13/2020



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	91	387	369	242	190	59
Future Volume (vph)	91	387	369	242	190	59
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	
Frt	1.00	1.00	1.00	0.85	0.97	
Flt Protected	0.95	1.00	1.00	1.00	0.96	
Satd. Flow (prot)	1630	3260	1716	1458	1600	
Flt Permitted	0.95	1.00	1.00	1.00	0.96	
Satd. Flow (perm)	1630	3260	1716	1458	1600	
Peak-hour factor, PHF	0.79	0.79	0.79	0.79	0.79	0.79
Adj. Flow (vph)	115	490	467	306	241	75
RTOR Reduction (vph)	0	0	0	199	8	0
Lane Group Flow (vph)	115	490	467	107	308	0
Turn Type	Prot	NA	NA	Perm	Prot	
Protected Phases	7	4	8		6	
Permitted Phases				8		
Actuated Green, G (s)	12.2	50.4	33.7	33.7	40.2	
Effective Green, g (s)	12.2	50.4	33.7	33.7	40.2	
Actuated g/C Ratio	0.12	0.51	0.34	0.34	0.40	
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	199	1649	580	493	645	
v/s Ratio Prot	c0.07	0.15	c0.27		c0.19	
v/s Ratio Perm				0.07		
v/c Ratio	0.58	0.30	0.81	0.22	0.48	
Uniform Delay, d1	41.3	14.3	30.0	23.5	21.9	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	4.0	0.1	8.0	0.2	2.5	
Delay (s)	45.3	14.4	38.0	23.7	24.5	
Level of Service	D	B	D	C	C	
Approach Delay (s)		20.3	32.3		24.5	
Approach LOS		C	C		C	

Intersection Summary

HCM 2000 Control Delay	26.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	99.6	Sum of lost time (s)	13.5
Intersection Capacity Utilization	53.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis

10: Central Ave & 10th St

03/13/2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↰	↱		↰↱		↰	↱		↰	↱	
Traffic Volume (vph)	9	590	99	16	424	5	231	109	11	132	75	19
Future Volume (vph)	9	590	99	16	424	5	231	109	11	132	75	19
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)		4.5	4.5		4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor		1.00	1.00		0.95		1.00	1.00		1.00	1.00	
Frt		1.00	0.85		1.00		1.00	0.99		1.00	0.97	
Flt Protected		1.00	1.00		1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1714	1458		3249		1630	1692		1630	1664	
Flt Permitted		0.99	1.00		0.81		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1697	1458		2625		1630	1692		1630	1664	
Peak-hour factor, PHF	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78
Adj. Flow (vph)	12	756	127	21	544	6	296	140	14	169	96	24
RTOR Reduction (vph)	0	0	35	0	1	0	0	3	0	0	7	0
Lane Group Flow (vph)	0	768	92	0	570	0	296	151	0	169	113	0
Turn Type	Perm	NA	Perm	Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8								
Actuated Green, G (s)		54.9	54.9		54.9		22.6	27.0		16.3	20.7	
Effective Green, g (s)		54.9	54.9		54.9		22.6	27.0		16.3	20.7	
Actuated g/C Ratio		0.49	0.49		0.49		0.20	0.24		0.15	0.19	
Clearance Time (s)		4.5	4.5		4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)		3.0	3.0		3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		834	716		1290		329	408		237	308	
v/s Ratio Prot							c0.18	c0.09		0.10	0.07	
v/s Ratio Perm		c0.45	0.06		0.22							
v/c Ratio		0.92	0.13		0.44		0.90	0.37		0.71	0.37	
Uniform Delay, d1		26.4	15.4		18.5		43.4	35.3		45.5	39.8	
Progression Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		15.3	0.1		0.2		25.7	2.6		9.7	3.3	
Delay (s)		41.7	15.5		18.7		69.2	37.8		55.2	43.1	
Level of Service		D	B		B		E	D		E	D	
Approach Delay (s)		38.0			18.7			58.5			50.2	
Approach LOS		D			B			E			D	
Intersection Summary												
HCM 2000 Control Delay			38.8									
HCM 2000 Volume to Capacity ratio			0.81									
Actuated Cycle Length (s)			111.7							13.5		
Intersection Capacity Utilization			69.6%									
Analysis Period (min)			15									
c Critical Lane Group												

Intersection

Int Delay, s/veh 0.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	36	0	0	449	127
Future Vol, veh/h	0	36	0	0	449	127
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	-	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	81	81	81	81	81	81
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	44	0	0	554	157

Major/Minor	Minor2	Major2
Conflicting Flow All	- 356	- 0
Stage 1	- -	- -
Stage 2	- -	- -
Critical Hdwy	- 6.94	- -
Critical Hdwy Stg 1	- -	- -
Critical Hdwy Stg 2	- -	- -
Follow-up Hdwy	- 3.32	- -
Pot Cap-1 Maneuver	0 640	- -
Stage 1	0 -	- -
Stage 2	0 -	- -
Platoon blocked, %		- -
Mov Cap-1 Maneuver	- 640	- -
Mov Cap-2 Maneuver	- -	- -
Stage 1	- -	- -
Stage 2	- -	- -

Approach	EB	SB
HCM Control Delay, s	11	0
HCM LOS	B	

Minor Lane/Major Mvmt	EBLn1	SBT	SBR
Capacity (veh/h)	640	-	-
HCM Lane V/C Ratio	0.069	-	-
HCM Control Delay (s)	11	-	-
HCM Lane LOS	B	-	-
HCM 95th %tile Q(veh)	0.2	-	-

Intersection												
Int Delay, s/veh	0											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations			↑↑		↑						↑	↑↑
Traffic Vol, veh/h	0	0	646	3	25	0	0	0	0	0	41	444
Future Vol, veh/h	0	0	646	3	25	0	0	0	0	0	41	444
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	Free	-	-	None	-	-	None	-	-	Free
Storage Length	-	-	0	-	-	-	-	-	-	-	-	0
Veh in Median Storage, #	-	-	-	-	0	-	-	-	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	76	76	76	76	76	76	76	76	76	76	76	76
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	850	4	33	0	0	0	0	0	54	584

Major/Minor	Major2			Minor2		
Conflicting Flow All	0	0	0	-	41	-
Stage 1	-	-	-	-	41	-
Stage 2	-	-	-	-	0	-
Critical Hdwy	4.12	-	-	-	6.52	-
Critical Hdwy Stg 1	-	-	-	-	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	2.218	-	-	-	4.018	-
Pot Cap-1 Maneuver	-	-	0	0	851	0
Stage 1	-	-	0	0	861	0
Stage 2	-	-	0	0	-	0
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	-	0	-
Mov Cap-2 Maneuver	-	-	-	-	0	-
Stage 1	-	-	-	-	0	-
Stage 2	-	-	-	-	0	-

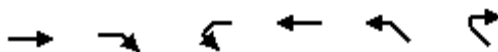
Approach	WB	SB
HCM Control Delay, s		
HCM LOS		-

Minor Lane/Major Mvmt	WBL	WBT	SBLn1	SBLn2	SBLn3
Capacity (veh/h)	-	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	-	-	-	0	0
HCM Lane LOS	-	-	-	A	A
HCM 95th %tile Q(veh)	-	-	-	-	-

HCM Signalized Intersection Capacity Analysis

2: Ocean Blvd & Newmark

03/13/2020



Movement	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations	↑	↑		↑↑	↑↑	↑
Traffic Volume (vph)	581	332	0	347	308	20
Future Volume (vph)	581	332	0	347	308	20
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.5	4.5		4.5	4.5	4.5
Lane Util. Factor	1.00	1.00		0.95	0.97	1.00
Frt	1.00	0.85		1.00	1.00	0.85
Flt Protected	1.00	1.00		1.00	0.95	1.00
Satd. Flow (prot)	1716	1458		3260	3162	1458
Flt Permitted	1.00	1.00		1.00	0.95	1.00
Satd. Flow (perm)	1716	1458		3260	3162	1458
Peak-hour factor, PHF	0.78	0.78	0.78	0.78	0.78	0.78
Adj. Flow (vph)	745	426	0	445	395	26
RTOR Reduction (vph)	0	199	0	0	0	17
Lane Group Flow (vph)	745	227	0	445	395	9
Turn Type	NA	Perm		NA	Prot	Perm
Protected Phases	4			8	2	
Permitted Phases		4				2
Actuated Green, G (s)	43.5	43.5		43.5	29.2	29.2
Effective Green, g (s)	43.5	43.5		43.5	29.2	29.2
Actuated g/C Ratio	0.53	0.53		0.53	0.36	0.36
Clearance Time (s)	4.5	4.5		4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	913	776		1735	1130	521
v/s Ratio Prot	c0.43			0.14	c0.12	
v/s Ratio Perm		0.16				0.01
v/c Ratio	0.82	0.29		0.26	0.35	0.02
Uniform Delay, d1	15.8	10.6		10.3	19.3	17.0
Progression Factor	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	5.7	0.2		0.1	0.9	0.1
Delay (s)	21.5	10.8		10.4	20.1	17.0
Level of Service	C	B		B	C	B
Approach Delay (s)	17.6			10.4	19.9	
Approach LOS	B			B	B	

Intersection Summary

HCM 2000 Control Delay	16.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	81.7	Sum of lost time (s)	9.0
Intersection Capacity Utilization	50.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis

3: Laclair st & Newmark Ave

03/13/2020

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	541	29	91	399	19	130
Future Volume (vph)	541	29	91	399	19	130
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.5		4.5	4.5	4.5	
Lane Util. Factor	0.95		1.00	0.95	1.00	
Frt	0.99		1.00	1.00	0.88	
Flt Protected	1.00		0.95	1.00	0.99	
Satd. Flow (prot)	3235		1630	3260	1504	
Flt Permitted	1.00		0.95	1.00	0.99	
Satd. Flow (perm)	3235		1630	3260	1504	
Peak-hour factor, PHF	0.75	0.75	0.75	0.75	0.75	0.75
Adj. Flow (vph)	721	39	121	532	25	173
RTOR Reduction (vph)	4	0	0	0	107	0
Lane Group Flow (vph)	756	0	121	532	91	0
Turn Type	NA		Prot	NA	Prot	
Protected Phases	4		3	8	2	
Permitted Phases						
Actuated Green, G (s)	26.5		11.8	42.8	31.9	
Effective Green, g (s)	26.5		11.8	42.8	31.9	
Actuated g/C Ratio	0.32		0.14	0.51	0.38	
Clearance Time (s)	4.5		4.5	4.5	4.5	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	1024		229	1667	573	
v/s Ratio Prot	c0.23		c0.07	0.16	c0.06	
v/s Ratio Perm						
v/c Ratio	0.74		0.53	0.32	0.16	
Uniform Delay, d1	25.5		33.4	11.9	17.1	
Progression Factor	1.00		1.00	1.00	1.00	
Incremental Delay, d2	2.8		2.2	0.1	0.6	
Delay (s)	28.3		35.6	12.1	17.7	
Level of Service	C		D	B	B	
Approach Delay (s)	28.3			16.4	17.7	
Approach LOS	C			B	B	
Intersection Summary						
HCM 2000 Control Delay			22.2		HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio			0.44			
Actuated Cycle Length (s)			83.7		Sum of lost time (s)	13.5
Intersection Capacity Utilization			43.8%		ICU Level of Service	A
Analysis Period (min)			15			
c Critical Lane Group						

Intersection

Int Delay, s/veh 1.8

Movement SBL SBR SEL SET NWT NWR

Lane Configurations 

Traffic Vol, veh/h 51 24 35 416 426 101

Future Vol, veh/h 51 24 35 416 426 101

Conflicting Peds, #/hr 0 0 0 0 0 0

Sign Control Stop Stop Free Free Free Free

RT Channelized - None - None - None

Storage Length 0 - - - - -

Veh in Median Storage, # 0 - - 0 0 -

Grade, % 0 - - 0 0 -

Peak Hour Factor 72 72 72 72 72 72

Heavy Vehicles, % 2 2 2 2 2 2

Mvmt Flow 71 33 49 578 592 140

Major/Minor Minor2 Major1 Major2

Conflicting Flow All 1338 662 732 0 - 0

Stage 1 662 - - - - -

Stage 2 676 - - - - -

Critical Hdwy 6.42 6.22 4.12 - - -

Critical Hdwy Stg 1 5.42 - - - - -

Critical Hdwy Stg 2 5.42 - - - - -

Follow-up Hdwy 3.518 3.318 2.218 - - -

Pot Cap-1 Maneuver 169 462 873 - - -

Stage 1 513 - - - - -

Stage 2 505 - - - - -

Platoon blocked, % - - -

Mov Cap-1 Maneuver 155 462 873 - - -

Mov Cap-2 Maneuver 293 - - - - -

Stage 1 470 - - - - -

Stage 2 505 - - - - -

Approach SB SE NW

HCM Control Delay, s 20.7 0.7 0

HCM LOS C

Minor Lane/Major Mvmt NWT NWR SEL SET SBLn1

Capacity (veh/h) - - 873 - 332

HCM Lane V/C Ratio - - 0.056 - 0.314

HCM Control Delay (s) - - 9.4 0 20.7

HCM Lane LOS - - A A C

HCM 95th %tile Q(veh) - - 0.2 - 1.3

Intersection

Int Delay, s/veh 5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	278	34	49	311	77	167
Future Vol, veh/h	278	34	49	311	77	167
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	84	84	84	84	84	84
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	331	40	58	370	92	199

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	371
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.12
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.218
Pot Cap-1 Maneuver	-	-	1188
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	1188
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.1	17.2
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	582	-	-	1188	-
HCM Lane V/C Ratio	0.499	-	-	0.049	-
HCM Control Delay (s)	17.2	-	-	8.2	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	2.8	-	-	0.2	-

HCM Signalized Intersection Capacity Analysis

6: Broadway St & 16th St

03/13/2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	29	91	12	184	24	33	8	447	163	44	548	4
Future Volume (vph)	29	91	12	184	24	33	8	447	163	44	548	4
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)		4.5			4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frt		0.99			0.98		1.00	0.96		1.00	1.00	
Flt Protected		0.99			0.96		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1677			1622		1630	3129		1630	3257	
Flt Permitted		0.89			0.62		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1509			1052		1630	3129		1630	3257	
Peak-hour factor, PHF	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74
Adj. Flow (vph)	39	123	16	249	32	45	11	604	220	59	741	5
RTOR Reduction (vph)	0	3	0	0	6	0	0	26	0	0	0	0
Lane Group Flow (vph)	0	175	0	0	320	0	11	798	0	59	746	0
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)		33.6			33.6		0.9	47.5		7.1	53.7	
Effective Green, g (s)		33.6			33.6		0.9	47.5		7.1	53.7	
Actuated g/C Ratio		0.33			0.33		0.01	0.47		0.07	0.53	
Clearance Time (s)		4.5			4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		498			347		14	1461		113	1719	
v/s Ratio Prot							0.01	c0.26		c0.04	0.23	
v/s Ratio Perm		0.12			c0.30							
v/c Ratio		0.35			0.92		0.79	0.55		0.52	0.43	
Uniform Delay, d1		25.8			32.8		50.3	19.4		45.7	14.7	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.4			29.2		130.6	1.5		4.3	0.8	
Delay (s)		26.2			62.0		180.9	20.9		50.0	15.5	
Level of Service		C			E		F	C		D	B	
Approach Delay (s)		26.2			62.0			23.0			18.0	
Approach LOS		C			E			C			B	
Intersection Summary												
HCM 2000 Control Delay			27.3									
HCM 2000 Volume to Capacity ratio			0.69									
Actuated Cycle Length (s)			101.7									
Intersection Capacity Utilization			55.8%									
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

7: Broadway St & Newmark Ave

03/13/2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	311	258	171	50	272	106	104	225	47	105	355	20
Future Volume (vph)	311	258	171	50	272	106	104	225	47	105	355	20
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frt	1.00	0.94		1.00	0.96		1.00	0.97		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1630	3065		1630	3122		1630	1671		1630	1702	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1630	3065		1630	3122		1630	1671		1630	1702	
Peak-hour factor, PHF	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Adj. Flow (vph)	389	322	214	62	340	132	130	281	59	131	444	25
RTOR Reduction (vph)	0	88	0	0	33	0	0	6	0	0	1	0
Lane Group Flow (vph)	389	449	0	63	440	0	130	334	0	131	468	0
Turn Type	Prot	NA		Prot	NA		Prot	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)	31.2	46.2		7.6	22.6		11.4	38.3		12.7	39.6	
Effective Green, g (s)	31.2	46.2		7.6	22.6		11.4	38.3		12.7	39.6	
Actuated g/C Ratio	0.25	0.38		0.06	0.18		0.09	0.31		0.10	0.32	
Clearance Time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	414	1153		100	574		151	521		168	548	
v/s Ratio Prot	c0.24	0.15		0.04	c0.14		0.08	0.20		c0.08	c0.27	
v/s Ratio Perm												
v/c Ratio	0.94	0.39		0.63	0.77		0.86	0.64		0.78	0.85	
Uniform Delay, d1	44.9	28.0		56.2	47.6		54.9	36.4		53.7	38.9	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	29.0	0.2		12.2	6.0		36.3	6.0		20.1	15.5	
Delay (s)	73.9	28.2		68.4	53.6		91.2	42.3		73.8	54.4	
Level of Service	E	C		E	D		F	D		E	D	
Approach Delay (s)		47.4			55.4			55.8			58.6	
Approach LOS		D			E			E			E	
Intersection Summary												
HCM 2000 Control Delay			53.3			HCM 2000 Level of Service				D		
HCM 2000 Volume to Capacity ratio			0.86									
Actuated Cycle Length (s)			122.8			Sum of lost time (s)			18.0			
Intersection Capacity Utilization			73.4%			ICU Level of Service			D			
Analysis Period (min)			15									
c Critical Lane Group												

Intersection

Int Delay, s/veh 3.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	27	96	306	67	170	299
Future Vol, veh/h	27	96	306	67	170	299
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	Free	-	None
Storage Length	81	0	-	-	100	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	83	83	83	83	83	83
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	33	116	369	81	205	360

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	1139	369	0
Stage 1	369	-	-
Stage 2	770	-	-
Critical Hdwy	6.42	6.22	-
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	-
Pot Cap-1 Maneuver	223	677	0
Stage 1	699	-	0
Stage 2	457	-	0
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	185	677	-
Mov Cap-2 Maneuver	297	-	-
Stage 1	699	-	-
Stage 2	378	-	-

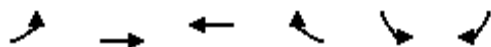
Approach	WB	NB	SB
HCM Control Delay, s	13	0	3.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBTWBLn1WBLn2	SBL	SBT
Capacity (veh/h)	- 297 677 1190	-	-
HCM Lane V/C Ratio	- 0.11 0.171 0.172	-	-
HCM Control Delay (s)	- 18.6 11.4 8.7	-	-
HCM Lane LOS	- C B A	-	-
HCM 95th %tile Q(veh)	- 0.4 0.6 0.6	-	-

HCM Signalized Intersection Capacity Analysis

9: Ocean Blvd & Woodland Dr

03/13/2020



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	185	459	393	242	190	79
Future Volume (vph)	185	459	393	242	190	79
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	
Frt	1.00	1.00	1.00	0.85	0.96	
Flt Protected	0.95	1.00	1.00	1.00	0.97	
Satd. Flow (prot)	1630	3260	1716	1458	1592	
Flt Permitted	0.95	1.00	1.00	1.00	0.97	
Satd. Flow (perm)	1630	3260	1716	1458	1592	
Peak-hour factor, PHF	0.79	0.79	0.79	0.79	0.79	0.79
Adj. Flow (vph)	234	581	497	306	241	100
RTOR Reduction (vph)	0	0	0	176	12	0
Lane Group Flow (vph)	234	581	497	130	329	0
Turn Type	Prot	NA	NA	Perm	Prot	
Protected Phases	7	4	8		6	
Permitted Phases				8		
Actuated Green, G (s)	19.7	60.3	36.1	36.1	36.2	
Effective Green, g (s)	19.7	60.3	36.1	36.1	36.2	
Actuated g/C Ratio	0.19	0.57	0.34	0.34	0.34	
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	304	1863	587	498	546	
v/s Ratio Prot	c0.14	0.18	c0.29		c0.21	
v/s Ratio Perm				0.09		
v/c Ratio	0.77	0.31	0.85	0.26	0.60	
Uniform Delay, d1	40.7	11.8	32.1	25.1	28.7	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	11.2	0.1	10.9	0.3	4.9	
Delay (s)	51.9	11.9	43.0	25.3	33.6	
Level of Service	D	B	D	C	C	
Approach Delay (s)		23.4	36.3		33.6	
Approach LOS		C	D		C	

Intersection Summary

HCM 2000 Control Delay	30.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	105.5	Sum of lost time (s)	13.5
Intersection Capacity Utilization	61.5%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis

10: Central Ave & 10th St

03/13/2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↰	↱		↰↱		↰	↱		↰	↱	
Traffic Volume (vph)	9	644	117	16	441	5	236	109	11	132	75	21
Future Volume (vph)	9	644	117	16	441	5	236	109	11	132	75	21
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)		4.5	4.5		4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor		1.00	1.00		0.95		1.00	1.00		1.00	1.00	
Frt		1.00	0.85		1.00		1.00	0.99		1.00	0.97	
Flt Protected		1.00	1.00		1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1714	1458		3249		1630	1692		1630	1659	
Flt Permitted		0.99	1.00		0.78		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1698	1458		2524		1630	1692		1630	1659	
Peak-hour factor, PHF	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78
Adj. Flow (vph)	12	826	150	21	565	6	303	140	14	169	96	27
RTOR Reduction (vph)	0	0	36	0	0	0	0	3	0	0	8	0
Lane Group Flow (vph)	0	838	114	0	592	0	303	151	0	169	115	0
Turn Type	Perm	NA	Perm	Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8								
Actuated Green, G (s)		60.2	60.2		60.2		23.1	26.8		16.8	20.5	
Effective Green, g (s)		60.2	60.2		60.2		23.1	26.8		16.8	20.5	
Actuated g/C Ratio		0.51	0.51		0.51		0.20	0.23		0.14	0.17	
Clearance Time (s)		4.5	4.5		4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)		3.0	3.0		3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		871	748		1295		320	386		233	289	
v/s Ratio Prot							c0.19	c0.09		0.10	0.07	
v/s Ratio Perm		c0.49	0.08		0.23							
v/c Ratio		0.96	0.15		0.46		0.95	0.39		0.73	0.40	
Uniform Delay, d1		27.5	15.1		18.2		46.5	38.3		48.0	42.9	
Progression Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		21.6	0.1		0.3		36.1	3.0		10.7	4.0	
Delay (s)		49.1	15.2		18.4		82.6	41.3		58.7	47.0	
Level of Service		D	B		B		F	D		E	D	
Approach Delay (s)		43.9			18.4			68.7			53.8	
Approach LOS		D			B			E			D	
Intersection Summary												
HCM 2000 Control Delay			43.5									HCM 2000 Level of Service D
HCM 2000 Volume to Capacity ratio			0.85									
Actuated Cycle Length (s)			117.3								13.5	Sum of lost time (s)
Intersection Capacity Utilization			73.0%									ICU Level of Service C
Analysis Period (min)			15									
c Critical Lane Group												

Intersection

Int Delay, s/veh 0.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	36	0	0	466	127
Future Vol, veh/h	0	36	0	0	466	127
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	-	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	81	81	81	81	81	81
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	44	0	0	575	157

Major/Minor	Minor2	Major2
Conflicting Flow All	- 366	- 0
Stage 1	- -	- -
Stage 2	- -	- -
Critical Hdwy	- 6.94	- -
Critical Hdwy Stg 1	- -	- -
Critical Hdwy Stg 2	- -	- -
Follow-up Hdwy	- 3.32	- -
Pot Cap-1 Maneuver	0 631	- -
Stage 1	0 -	- -
Stage 2	0 -	- -
Platoon blocked, %		- -
Mov Cap-1 Maneuver	- 631	- -
Mov Cap-2 Maneuver	- -	- -
Stage 1	- -	- -
Stage 2	- -	- -

Approach	EB	SB
HCM Control Delay, s	11.1	0
HCM LOS	B	

Minor Lane/Major Mvmt	EBLn1	SBT	SBR
Capacity (veh/h)	631	-	-
HCM Lane V/C Ratio	0.07	-	-
HCM Control Delay (s)	11.1	-	-
HCM Lane LOS	B	-	-
HCM 95th %tile Q(veh)	0.2	-	-

Intersection												
Int Delay, s/veh	0											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations			↑↑		↑						↑	↑↑
Traffic Vol, veh/h	0	0	700	3	25	0	0	0	0	0	41	461
Future Vol, veh/h	0	0	700	3	25	0	0	0	0	0	41	461
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	Free	-	-	None	-	-	None	-	-	Free
Storage Length	-	-	0	-	-	-	-	-	-	-	-	0
Veh in Median Storage, #	-	-	-	-	0	-	-	-	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	76	76	76	76	76	76	76	76	76	76	76	76
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	921	4	33	0	0	0	0	0	54	607

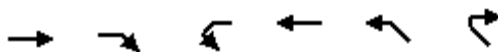
Major/Minor	Major2			Minor2		
Conflicting Flow All	0	0	0	-	41	-
Stage 1	-	-	-	-	41	-
Stage 2	-	-	-	-	0	-
Critical Hdwy	4.12	-	-	-	6.52	-
Critical Hdwy Stg 1	-	-	-	-	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	2.218	-	-	-	4.018	-
Pot Cap-1 Maneuver	-	-	0	0	851	0
Stage 1	-	-	0	0	861	0
Stage 2	-	-	0	0	-	0
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	-	0	-
Mov Cap-2 Maneuver	-	-	-	-	0	-
Stage 1	-	-	-	-	0	-
Stage 2	-	-	-	-	0	-

Approach	WB			SB		
HCM Control Delay, s						
HCM LOS	-					
Minor Lane/Major Mvmt	WBL	WBT	SBLn1	SBLn2	SBLn3	
Capacity (veh/h)	-	-	-	-	-	
HCM Lane V/C Ratio	-	-	-	-	-	
HCM Control Delay (s)	-	-	-	0	0	
HCM Lane LOS	-	-	-	A	A	
HCM 95th %tile Q(veh)	-	-	-	-	-	

HCM Signalized Intersection Capacity Analysis

2: Ocean Blvd & Newmark

03/13/2020



Movement	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations	↑	↑		↑↑	↑↑	↑
Traffic Volume (vph)	534	309	0	661	434	56
Future Volume (vph)	534	309	0	661	434	56
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.5	4.5		4.5	4.5	4.5
Lane Util. Factor	1.00	1.00		0.95	0.97	1.00
Frt	1.00	0.85		1.00	1.00	0.85
Flt Protected	1.00	1.00		1.00	0.95	1.00
Satd. Flow (prot)	1716	1458		3260	3162	1458
Flt Permitted	1.00	1.00		1.00	0.95	1.00
Satd. Flow (perm)	1716	1458		3260	3162	1458
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	580	336	0	718	472	61
RTOR Reduction (vph)	0	193	0	0	0	33
Lane Group Flow (vph)	580	143	0	718	472	28
Turn Type	NA	Perm		NA	Prot	Perm
Protected Phases	4			8	2	
Permitted Phases		4				2
Actuated Green, G (s)	34.1	34.1		34.1	37.0	37.0
Effective Green, g (s)	34.1	34.1		34.1	37.0	37.0
Actuated g/C Ratio	0.43	0.43		0.43	0.46	0.46
Clearance Time (s)	4.5	4.5		4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	730	620		1387	1460	673
v/s Ratio Prot	c0.34			0.22	c0.15	
v/s Ratio Perm		0.10				0.02
v/c Ratio	0.79	0.23		0.52	0.32	0.04
Uniform Delay, d1	20.0	14.6		16.9	13.6	11.8
Progression Factor	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	6.0	0.2		0.3	0.6	0.1
Delay (s)	25.9	14.8		17.3	14.2	11.9
Level of Service	C	B		B	B	B
Approach Delay (s)	21.9			17.3	14.0	
Approach LOS	C			B	B	

Intersection Summary

HCM 2000 Control Delay	18.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	80.1	Sum of lost time (s)	9.0
Intersection Capacity Utilization	51.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis

3: Laclair st & Newmark Ave

03/13/2020

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↘	↑↑	↘	
Traffic Volume (vph)	684	27	137	768	33	133
Future Volume (vph)	684	27	137	768	33	133
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.5		4.5	4.5	4.5	
Lane Util. Factor	0.95		1.00	0.95	1.00	
Frt	0.99		1.00	1.00	0.89	
Flt Protected	1.00		0.95	1.00	0.99	
Satd. Flow (prot)	3241		1630	3260	1515	
Flt Permitted	1.00		0.95	1.00	0.99	
Satd. Flow (perm)	3241		1630	3260	1515	
Peak-hour factor, PHF	0.84	0.84	0.84	0.84	0.84	0.84
Adj. Flow (vph)	814	32	163	914	39	158
RTOR Reduction (vph)	3	0	0	0	105	0
Lane Group Flow (vph)	843	0	163	914	92	0
Turn Type	NA		Prot	NA	Prot	
Protected Phases	4		3	8	2	
Permitted Phases						
Actuated Green, G (s)	30.3		14.3	49.1	29.0	
Effective Green, g (s)	30.3		14.3	49.1	29.0	
Actuated g/C Ratio	0.35		0.16	0.56	0.33	
Clearance Time (s)	4.5		4.5	4.5	4.5	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	1127		267	1837	504	
v/s Ratio Prot	c0.26		c0.10	0.28	c0.06	
v/s Ratio Perm						
v/c Ratio	0.75		0.61	0.50	0.18	
Uniform Delay, d1	25.0		33.8	11.5	20.6	
Progression Factor	1.00		1.00	1.00	1.00	
Incremental Delay, d2	2.8		4.1	0.2	0.8	
Delay (s)	27.8		37.9	11.7	21.4	
Level of Service	C		D	B	C	
Approach Delay (s)	27.8			15.7	21.4	
Approach LOS	C			B	C	
Intersection Summary						
HCM 2000 Control Delay			21.1		HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio			0.50			
Actuated Cycle Length (s)			87.1		Sum of lost time (s)	13.5
Intersection Capacity Utilization			51.8%		ICU Level of Service	A
Analysis Period (min)			15			
c Critical Lane Group						

Intersection

Int Delay, s/veh 4.7

Movement	SBL	SBR	SEL	SET	NWT	NWR
Lane Configurations						
Traffic Vol, veh/h	130	46	47	444	582	122
Future Vol, veh/h	130	46	47	444	582	122
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	153	54	55	522	685	144

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	1317	685	829
Stage 1	685	-	-
Stage 2	632	-	-
Critical Hdwy	6.42	6.22	4.12
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	2.218
Pot Cap-1 Maneuver	174	448	803
Stage 1	500	-	-
Stage 2	530	-	-
Platoon blocked, %			
Mov Cap-1 Maneuver	157	448	803
Mov Cap-2 Maneuver	294	-	-
Stage 1	452	-	-
Stage 2	530	-	-

Approach	SB	SE	NW
HCM Control Delay, s	34.1	0.9	0
HCM LOS	D		

Minor Lane/Major Mvmt	NWT	NWR	SEL	SET	SBLn1
Capacity (veh/h)	-	-	803	-	323
HCM Lane V/C Ratio	-	-	0.069	-	0.641
HCM Control Delay (s)	-	-	9.8	0	34.1
HCM Lane LOS	-	-	A	A	D
HCM 95th %tile Q(veh)	-	-	0.2	-	4.2

Intersection

Int Delay, s/veh 4.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	446	117	173	641	44	127
Future Vol, veh/h	446	117	173	641	44	127
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	496	130	192	712	49	141

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	626
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.12
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.218
Pot Cap-1 Maneuver	-	-	956
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	956
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	2.1	28.3
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	339	-	-	956	-
HCM Lane V/C Ratio	0.56	-	-	0.201	-
HCM Control Delay (s)	28.3	-	-	9.7	0
HCM Lane LOS	D	-	-	A	A
HCM 95th %tile Q(veh)	3.3	-	-	0.7	-

HCM Signalized Intersection Capacity Analysis

6: Broadway St & 16th St

03/13/2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔		↔	↔		↔	↔	
Traffic Volume (vph)	28	17	6	115	22	11	6	777	55	11	776	28
Future Volume (vph)	28	17	6	115	22	11	6	777	55	11	776	28
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)		4.5			4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frt		0.98			0.99		1.00	0.99		1.00	0.99	
Flt Protected		0.97			0.96		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1643			1635		1630	3228		1630	3243	
Flt Permitted		0.83			0.77		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1404			1316		1630	3228		1630	3243	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	31	19	7	128	24	12	7	863	61	12	862	31
RTOR Reduction (vph)	0	5	0	0	2	0	0	3	0	0	1	0
Lane Group Flow (vph)	0	52	0	0	162	0	7	921	0	12	892	0
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)		17.6			17.6		1.2	67.2		1.3	67.3	
Effective Green, g (s)		17.6			17.6		1.2	67.2		1.3	67.3	
Actuated g/C Ratio		0.18			0.18		0.01	0.67		0.01	0.68	
Clearance Time (s)		4.5			4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		248			232		19	2177		21	2191	
v/s Ratio Prot							0.00	c0.29		c0.01	0.27	
v/s Ratio Perm		0.04			c0.12							
v/c Ratio		0.21			0.70		0.37	0.42		0.57	0.41	
Uniform Delay, d1		35.1			38.5		48.8	7.4		48.9	7.2	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.4			8.8		11.7	0.6		32.5	0.6	
Delay (s)		35.5			47.2		60.5	8.0		81.3	7.8	
Level of Service		D			D		E	A		F	A	
Approach Delay (s)		35.5			47.2			8.4			8.8	
Approach LOS		D			D			A			A	
Intersection Summary												
HCM 2000 Control Delay		12.4			HCM 2000 Level of Service			B				
HCM 2000 Volume to Capacity ratio		0.48										
Actuated Cycle Length (s)		99.6			Sum of lost time (s)			13.5				
Intersection Capacity Utilization		45.4%			ICU Level of Service			A				
Analysis Period (min)		15										
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

7: Broadway St & Newmark Ave

03/13/2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	417	528	184	72	420	172	195	375	71	117	323	38
Future Volume (vph)	417	528	184	72	420	172	195	375	71	117	323	38
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frt	1.00	0.96		1.00	0.96		1.00	0.98		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1630	3133		1630	3118		1630	1675		1630	1688	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1630	3133		1630	3118		1630	1675		1630	1688	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	448	568	198	77	452	185	210	403	76	126	347	41
RTOR Reduction (vph)	0	27	0	0	37	0	0	6	0	0	4	0
Lane Group Flow (vph)	448	739	0	77	600	0	210	473	0	126	384	0
Turn Type	Prot	NA		Prot	NA		Prot	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)	32.5	48.9		9.1	25.5		15.7	34.6		9.9	28.8	
Effective Green, g (s)	32.5	48.9		9.1	25.5		15.7	34.6		9.9	28.8	
Actuated g/C Ratio	0.27	0.41		0.08	0.21		0.13	0.29		0.08	0.24	
Clearance Time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	439	1271		123	659		212	480		133	403	
v/s Ratio Prot	c0.27	0.24		0.05	c0.19		c0.13	c0.28		0.08	0.23	
v/s Ratio Perm												
v/c Ratio	1.02	0.58		0.63	0.91		0.99	0.99		0.95	0.95	
Uniform Delay, d1	44.0	27.8		54.0	46.4		52.3	42.7		55.0	45.2	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	48.2	0.7		9.6	16.8		58.9	37.8		61.3	34.5	
Delay (s)	92.2	28.5		63.6	63.2		111.3	80.5		116.4	79.7	
Level of Service	F	C		E	E		F	F		F	E	
Approach Delay (s)		52.0			63.2			89.9			88.7	
Approach LOS		D			E			F			F	
Intersection Summary												
HCM 2000 Control Delay			68.9			HCM 2000 Level of Service			E			
HCM 2000 Volume to Capacity ratio			1.00									
Actuated Cycle Length (s)			120.5			Sum of lost time (s)			18.0			
Intersection Capacity Utilization			91.8%			ICU Level of Service			F			
Analysis Period (min)			15									
c Critical Lane Group												

Intersection

Int Delay, s/veh 4.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	64	211	400	38	135	454
Future Vol, veh/h	64	211	400	38	135	454
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	Free	-	None
Storage Length	81	0	-	-	100	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	71	234	444	42	150	504

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	1248	444	0
Stage 1	444	-	-
Stage 2	804	-	-
Critical Hdwy	6.42	6.22	-
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	-
Pot Cap-1 Maneuver	191	614	-
Stage 1	646	-	-
Stage 2	440	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	165	614	-
Mov Cap-2 Maneuver	287	-	-
Stage 1	646	-	-
Stage 2	381	-	-

Approach	WB	NB	SB
HCM Control Delay, s	16.1	0	2
HCM LOS	C		

Minor Lane/Major Mvmt	NBTWBLn1WBLn2	SBL	SBT
Capacity (veh/h)	- 287 614 1116	-	-
HCM Lane V/C Ratio	- 0.248 0.382 0.134	-	-
HCM Control Delay (s)	- 21.6 14.4 8.7	-	-
HCM Lane LOS	- C B A	-	-
HCM 95th %tile Q(veh)	- 1 1.8 0.5	-	-

HCM Signalized Intersection Capacity Analysis

9: Ocean Blvd & Woodland Dr

03/13/2020



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	193	501	535	178	295	247
Future Volume (vph)	193	501	535	178	295	247
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	
Frt	1.00	1.00	1.00	0.85	0.94	
Flt Protected	0.95	1.00	1.00	1.00	0.97	
Satd. Flow (prot)	1630	3260	1716	1458	1567	
Flt Permitted	0.95	1.00	1.00	1.00	0.97	
Satd. Flow (perm)	1630	3260	1716	1458	1567	
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	217	563	601	200	331	278
RTOR Reduction (vph)	0	0	0	90	25	0
Lane Group Flow (vph)	217	563	601	110	584	0
Turn Type	Prot	NA	NA	Perm	Prot	
Protected Phases	7	4	8		6	
Permitted Phases				8		
Actuated Green, G (s)	17.2	64.8	43.1	43.1	45.5	
Effective Green, g (s)	17.2	64.8	43.1	43.1	45.5	
Actuated g/C Ratio	0.14	0.54	0.36	0.36	0.38	
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	235	1770	619	526	597	
v/s Ratio Prot	c0.13	0.17	c0.35		c0.37	
v/s Ratio Perm				0.08		
v/c Ratio	0.92	0.32	0.97	0.21	0.98	
Uniform Delay, d1	50.4	15.0	37.5	26.3	36.4	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	38.2	0.1	28.8	0.2	31.7	
Delay (s)	88.6	15.2	66.3	26.5	68.1	
Level of Service	F	B	E	C	E	
Approach Delay (s)		35.6	56.4		68.1	
Approach LOS		D	E		E	

Intersection Summary

HCM 2000 Control Delay	52.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.97		
Actuated Cycle Length (s)	119.3	Sum of lost time (s)	13.5
Intersection Capacity Utilization	87.6%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis

10: Central Ave & 10th St

03/13/2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↰	↱		↰↱		↰	↱		↰	↱	
Traffic Volume (vph)	22	618	133	6	523	17	194	106	17	150	83	27
Future Volume (vph)	22	618	133	6	523	17	194	106	17	150	83	27
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)		4.5	4.5		4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor		1.00	1.00		0.95		1.00	1.00		1.00	1.00	
Frt		1.00	0.85		1.00		1.00	0.98		1.00	0.96	
Flt Protected		1.00	1.00		1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1713	1458		3243		1630	1681		1630	1653	
Flt Permitted		0.97	1.00		0.95		0.95	1.00		0.67	1.00	
Satd. Flow (perm)		1662	1458		3075		1630	1681		1153	1653	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	24	672	145	7	568	18	211	115	18	163	90	29
RTOR Reduction (vph)	0	0	45	0	2	0	0	4	0	0	9	0
Lane Group Flow (vph)	0	696	100	0	591	0	211	129	0	163	110	0
Turn Type	Perm	NA	Perm	Perm	NA		Prot	NA		Perm	NA	
Protected Phases		4			8		5	2			6	
Permitted Phases	4		4	8						6		
Actuated Green, G (s)		50.7	50.7		50.7		17.9	50.9		28.5	28.5	
Effective Green, g (s)		50.7	50.7		50.7		17.9	50.9		28.5	28.5	
Actuated g/C Ratio		0.46	0.46		0.46		0.16	0.46		0.26	0.26	
Clearance Time (s)		4.5	4.5		4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)		3.0	3.0		3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		761	668		1409		263	773		297	425	
v/s Ratio Prot							c0.13	0.08			0.07	
v/s Ratio Perm		c0.42	0.07		0.19					c0.14		
v/c Ratio		0.91	0.15		0.42		0.80	0.17		0.55	0.26	
Uniform Delay, d1		27.9	17.4		20.1		44.6	17.4		35.5	32.7	
Progression Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		15.5	0.1		0.2		16.0	0.5		7.1	1.5	
Delay (s)		43.4	17.5		20.3		60.7	17.9		42.6	34.1	
Level of Service		D	B		C		E	B		D	C	
Approach Delay (s)		38.9			20.3			44.1			39.0	
Approach LOS		D			C			D			D	
Intersection Summary												
HCM 2000 Control Delay			34.4				HCM 2000 Level of Service			C		
HCM 2000 Volume to Capacity ratio			0.79									
Actuated Cycle Length (s)			110.6				Sum of lost time (s)			13.5		
Intersection Capacity Utilization			84.1%				ICU Level of Service			E		
Analysis Period (min)			15									
c Critical Lane Group												

Intersection

Int Delay, s/veh 0.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	50	0	0	562	217
Future Vol, veh/h	0	50	0	0	562	217
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	-	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	54	0	0	611	236

Major/Minor	Minor2	Major2
Conflicting Flow All	- 424	- 0
Stage 1	- -	- -
Stage 2	- -	- -
Critical Hdwy	- 6.94	- -
Critical Hdwy Stg 1	- -	- -
Critical Hdwy Stg 2	- -	- -
Follow-up Hdwy	- 3.32	- -
Pot Cap-1 Maneuver	0 579	- -
Stage 1	0 -	- -
Stage 2	0 -	- -
Platoon blocked, %		- -
Mov Cap-1 Maneuver	- 579	- -
Mov Cap-2 Maneuver	- -	- -
Stage 1	- -	- -
Stage 2	- -	- -

Approach	EB	SB
HCM Control Delay, s	11.9	0
HCM LOS	B	

Minor Lane/Major Mvmt	EBLn1	SBT	SBR
Capacity (veh/h)	579	-	-
HCM Lane V/C Ratio	0.094	-	-
HCM Control Delay (s)	11.9	-	-
HCM Lane LOS	B	-	-
HCM 95th %tile Q(veh)	0.3	-	-

Intersection

Int Delay, s/veh 3.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations			↑↑		↑						↑	↑↑
Traffic Vol, veh/h	0	0	774	11	33	0	0	0	0	0	78	517
Future Vol, veh/h	0	0	774	11	33	0	0	0	0	0	78	517
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free
RT Channelized	-	-	Free	-	-	None	-	-	None	-	-	Free
Storage Length	-	-	0	-	-	-	-	-	-	-	-	0
Veh in Median Storage, #	-	-	-	-	0	-	-	-	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	841	12	36	0	0	0	0	0	85	562

Major/Minor	Minor1	Major2
Conflicting Flow All	85 85	- - 0
Stage 1	0 0	- - -
Stage 2	85 85	- - -
Critical Hdwy	6.42 6.52	- - -
Critical Hdwy Stg 1	- -	- - -
Critical Hdwy Stg 2	5.42 5.52	- - -
Follow-up Hdwy	3.518 4.018	- - -
Pot Cap-1 Maneuver	916 805	0 - 0
Stage 1	- -	0 - 0
Stage 2	938 824	0 - 0
Platoon blocked, %		-
Mov Cap-1 Maneuver	916 0	- - -
Mov Cap-2 Maneuver	916 0	- - -
Stage 1	- 0	- - -
Stage 2	938 0	- - -

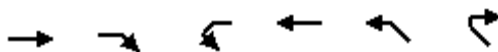
Approach	WB	SB
HCM Control Delay, s	9.1	0
HCM LOS	A	

Minor Lane/Major Mvmt	WBLn1	SBT
Capacity (veh/h)	916	-
HCM Lane V/C Ratio	0.052	-
HCM Control Delay (s)	9.1	-
HCM Lane LOS	A	-
HCM 95th %tile Q(veh)	0.2	-

HCM Signalized Intersection Capacity Analysis

2: Ocean Blvd

03/13/2020



Movement	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations	↑	↑		↑↑	↑↑	↑
Traffic Volume (vph)	581	324	0	342	294	20
Future Volume (vph)	581	324	0	342	294	20
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.5	4.5		4.5	4.5	4.5
Lane Util. Factor	1.00	1.00		0.95	0.97	1.00
Frt	1.00	0.85		1.00	1.00	0.85
Flt Protected	1.00	1.00		1.00	0.95	1.00
Satd. Flow (prot)	1716	1458		3260	3162	1458
Flt Permitted	1.00	1.00		1.00	0.95	1.00
Satd. Flow (perm)	1716	1458		3260	3162	1458
Peak-hour factor, PHF	0.78	0.78	0.78	0.78	0.78	0.78
Adj. Flow (vph)	745	415	0	438	377	26
RTOR Reduction (vph)	0	195	0	0	0	17
Lane Group Flow (vph)	745	220	0	438	377	9
Turn Type	NA	Perm		NA	Prot	Perm
Protected Phases	4			8	2	
Permitted Phases		4				2
Actuated Green, G (s)	43.3	43.3		43.3	29.2	29.2
Effective Green, g (s)	43.3	43.3		43.3	29.2	29.2
Actuated g/C Ratio	0.53	0.53		0.53	0.36	0.36
Clearance Time (s)	4.5	4.5		4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	911	774		1732	1132	522
v/s Ratio Prot	c0.43			0.13	c0.12	
v/s Ratio Perm		0.15				0.01
v/c Ratio	0.82	0.28		0.25	0.33	0.02
Uniform Delay, d1	15.8	10.5		10.3	19.1	16.9
Progression Factor	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	5.8	0.2		0.1	0.8	0.1
Delay (s)	21.6	10.8		10.4	19.8	17.0
Level of Service	C	B		B	B	B
Approach Delay (s)	17.7			10.4	19.7	
Approach LOS	B			B	B	

Intersection Summary

HCM 2000 Control Delay	16.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	81.5	Sum of lost time (s)	9.0
Intersection Capacity Utilization	49.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis

3: Laclair st & Newmark Ave

03/13/2020

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↘	↑↑	↘	
Traffic Volume (vph)	541	29	67	399	14	94
Future Volume (vph)	541	29	67	399	14	94
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.5		4.5	4.5	4.5	
Lane Util. Factor	0.95		1.00	0.95	1.00	
Frt	0.99		1.00	1.00	0.88	
Flt Protected	1.00		0.95	1.00	0.99	
Satd. Flow (prot)	3235		1630	3260	1505	
Flt Permitted	1.00		0.95	1.00	0.99	
Satd. Flow (perm)	3235		1630	3260	1505	
Peak-hour factor, PHF	0.75	0.75	0.75	0.75	0.75	0.75
Adj. Flow (vph)	721	39	89	532	19	125
RTOR Reduction (vph)	4	0	0	0	75	0
Lane Group Flow (vph)	756	0	89	532	69	0
Turn Type	NA		Prot	NA	Prot	
Protected Phases	4		3	8	2	
Permitted Phases						
Actuated Green, G (s)	24.7		8.1	37.3	30.5	
Effective Green, g (s)	24.7		8.1	37.3	30.5	
Actuated g/C Ratio	0.32		0.11	0.49	0.40	
Clearance Time (s)	4.5		4.5	4.5	4.5	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	1040		171	1583	597	
v/s Ratio Prot	c0.23		c0.05	0.16	c0.05	
v/s Ratio Perm						
v/c Ratio	0.73		0.52	0.34	0.11	
Uniform Delay, d1	23.1		32.5	12.1	14.6	
Progression Factor	1.00		1.00	1.00	1.00	
Incremental Delay, d2	2.6		2.8	0.1	0.4	
Delay (s)	25.6		35.4	12.3	15.0	
Level of Service	C		D	B	B	
Approach Delay (s)	25.6			15.6	15.0	
Approach LOS	C			B	B	
Intersection Summary						
HCM 2000 Control Delay			20.5		HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio			0.41			
Actuated Cycle Length (s)			76.8		Sum of lost time (s)	13.5
Intersection Capacity Utilization			39.8%		ICU Level of Service	A
Analysis Period (min)			15			
c Critical Lane Group						

Intersection

Int Delay, s/veh 1.2

Movement SBL SBR SEL SET NWT NWR

Lane Configurations 

Traffic Vol, veh/h 27 24 35 408 392 60

Future Vol, veh/h 27 24 35 408 392 60

Conflicting Peds, #/hr 0 0 0 0 0 0

Sign Control Stop Stop Free Free Free Free

RT Channelized - None - None - None

Storage Length 0 - - - - -

Veh in Median Storage, # 0 - - 0 0 -

Grade, % 0 - - 0 0 -

Peak Hour Factor 72 72 72 72 72 72

Heavy Vehicles, % 2 2 2 2 2 2

Mvmt Flow 38 33 49 567 544 83

Major/Minor Minor2 Major1 Major2

Conflicting Flow All 1251 586 627 0 - 0

Stage 1 586 - - - - -

Stage 2 665 - - - - -

Critical Hdwy 6.42 6.22 4.12 - - -

Critical Hdwy Stg 1 5.42 - - - - -

Critical Hdwy Stg 2 5.42 - - - - -

Follow-up Hdwy 3.518 3.318 2.218 - - -

Pot Cap-1 Maneuver 190 510 955 - - -

Stage 1 556 - - - - -

Stage 2 511 - - - - -

Platoon blocked, % - - -

Mov Cap-1 Maneuver 176 510 955 - - -

Mov Cap-2 Maneuver 314 - - - - -

Stage 1 514 - - - - -

Stage 2 511 - - - - -

Approach SB SE NW

HCM Control Delay, s 16.5 0.7 0

HCM LOS C

Minor Lane/Major Mvmt NWT NWR SEL SET SBLn1

Capacity (veh/h) - - 955 - 383

HCM Lane V/C Ratio - - 0.051 - 0.185

HCM Control Delay (s) - - 9 0 16.5

HCM Lane LOS - - A A C

HCM 95th %tile Q(veh) - - 0.2 - 0.7

Intersection

Int Delay, s/veh 0.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	278	2	0	311	2	1
Future Vol, veh/h	278	2	0	311	2	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	84	84	84	84	84	84
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	331	2	0	370	2	1

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	333
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.12
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.218
Pot Cap-1 Maneuver	-	-	1226
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	1226
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	11.4
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	563	-	-	1226	-
HCM Lane V/C Ratio	0.006	-	-	-	-
HCM Control Delay (s)	11.4	-	-	0	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-

HCM Signalized Intersection Capacity Analysis

6: Broadway St & 16th St

03/13/2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	29	91	12	179	24	33	8	430	148	44	538	4
Future Volume (vph)	29	91	12	179	24	33	8	430	148	44	538	4
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)		4.5			4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frt		0.99			0.98		1.00	0.96		1.00	1.00	
Flt Protected		0.99			0.96		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1677			1622		1630	3135		1630	3256	
Flt Permitted		0.89			0.63		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1511			1052		1630	3135		1630	3256	
Peak-hour factor, PHF	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74
Adj. Flow (vph)	39	123	16	242	32	45	11	581	200	59	727	5
RTOR Reduction (vph)	0	3	0	0	6	0	0	23	0	0	0	0
Lane Group Flow (vph)	0	175	0	0	313	0	11	758	0	59	732	0
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)		32.7			32.7		0.9	47.4		7.1	53.6	
Effective Green, g (s)		32.7			32.7		0.9	47.4		7.1	53.6	
Actuated g/C Ratio		0.32			0.32		0.01	0.47		0.07	0.53	
Clearance Time (s)		4.5			4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		490			341		14	1475		114	1733	
v/s Ratio Prot							0.01	c0.24		c0.04	0.22	
v/s Ratio Perm		0.12			c0.30							
v/c Ratio		0.36			0.92		0.79	0.51		0.52	0.42	
Uniform Delay, d1		26.0			32.7		49.8	18.6		45.1	14.2	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.4			28.5		130.6	1.3		3.9	0.8	
Delay (s)		26.4			61.2		180.4	19.9		49.1	15.0	
Level of Service		C			E		F	B		D	B	
Approach Delay (s)		26.4			61.2			22.1			17.5	
Approach LOS		C			E			C			B	
Intersection Summary												
HCM 2000 Control Delay		26.7										
HCM 2000 Volume to Capacity ratio		0.66										
Actuated Cycle Length (s)		100.7										
Intersection Capacity Utilization		54.4%										
Analysis Period (min)		15										
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

7: Broadway St & Newmark Ave

03/13/2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	311	258	171	50	267	106	104	183	32	105	340	15
Future Volume (vph)	311	258	171	50	267	106	104	183	32	105	340	15
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frt	1.00	0.94		1.00	0.96		1.00	0.98		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1630	3065		1630	3121		1630	1677		1630	1705	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1630	3065		1630	3121		1630	1677		1630	1705	
Peak-hour factor, PHF	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Adj. Flow (vph)	389	322	214	62	334	132	130	229	40	131	425	19
RTOR Reduction (vph)	0	88	0	0	34	0	0	5	0	0	1	0
Lane Group Flow (vph)	389	449	0	63	433	0	130	264	0	131	443	0
Turn Type	Prot	NA		Prot	NA		Prot	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)	31.2	45.8		7.6	22.2		11.4	38.3		12.7	39.6	
Effective Green, g (s)	31.2	45.8		7.6	22.2		11.4	38.3		12.7	39.6	
Actuated g/C Ratio	0.25	0.37		0.06	0.18		0.09	0.31		0.10	0.32	
Clearance Time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	415	1146		101	566		151	524		169	551	
v/s Ratio Prot	c0.24	0.15		0.04	c0.14		0.08	0.16		c0.08	c0.26	
v/s Ratio Perm												
v/c Ratio	0.94	0.39		0.62	0.76		0.86	0.50		0.78	0.80	
Uniform Delay, d1	44.6	28.1		56.0	47.6		54.7	34.3		53.5	37.8	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	28.6	0.2		11.4	6.1		36.3	3.4		19.6	11.8	
Delay (s)	73.2	28.3		67.4	53.7		91.0	37.7		73.1	49.6	
Level of Service	E	C		E	D		F	D		E	D	
Approach Delay (s)		47.2			55.3			55.1			55.0	
Approach LOS		D			E			E			D	
Intersection Summary												
HCM 2000 Control Delay			52.1			HCM 2000 Level of Service				D		
HCM 2000 Volume to Capacity ratio			0.84									
Actuated Cycle Length (s)			122.4			Sum of lost time (s)			18.0			
Intersection Capacity Utilization			72.1%			ICU Level of Service			C			
Analysis Period (min)			15									
c Critical Lane Group												

Intersection

Int Delay, s/veh 3.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	22	96	239	40	170	299
Future Vol, veh/h	22	96	239	40	170	299
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	Free	-	None
Storage Length	81	0	-	-	100	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	83	83	83	83	83	83
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	27	116	288	48	205	360

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	1058	288	0
Stage 1	288	-	-
Stage 2	770	-	-
Critical Hdwy	6.42	6.22	-
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	-
Pot Cap-1 Maneuver	249	751	-
Stage 1	761	-	-
Stage 2	457	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	209	751	-
Mov Cap-2 Maneuver	312	-	-
Stage 1	761	-	-
Stage 2	383	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12	0	3
HCM LOS	B		

Minor Lane/Major Mvmt	NBTWBLn1WBLn2	SBL	SBT
Capacity (veh/h)	- 312 751 1274	-	-
HCM Lane V/C Ratio	- 0.085 0.154 0.161	-	-
HCM Control Delay (s)	- 17.6 10.7 8.4	-	-
HCM Lane LOS	- C B A	-	-
HCM 95th %tile Q(veh)	- 0.3 0.5 0.6	-	-

HCM Signalized Intersection Capacity Analysis

9: Ocean Blvd & Woodland Dr

03/13/2020



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	91	387	369	242	190	59
Future Volume (vph)	91	387	369	242	190	59
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	
Frt	1.00	1.00	1.00	0.85	0.97	
Flt Protected	0.95	1.00	1.00	1.00	0.96	
Satd. Flow (prot)	1630	3260	1716	1458	1600	
Flt Permitted	0.95	1.00	1.00	1.00	0.96	
Satd. Flow (perm)	1630	3260	1716	1458	1600	
Peak-hour factor, PHF	0.79	0.79	0.79	0.79	0.79	0.79
Adj. Flow (vph)	115	490	467	306	241	75
RTOR Reduction (vph)	0	0	0	199	8	0
Lane Group Flow (vph)	115	490	467	107	308	0
Turn Type	Prot	NA	NA	Perm	Prot	
Protected Phases	7	4	8		6	
Permitted Phases				8		
Actuated Green, G (s)	12.2	50.4	33.7	33.7	40.2	
Effective Green, g (s)	12.2	50.4	33.7	33.7	40.2	
Actuated g/C Ratio	0.12	0.51	0.34	0.34	0.40	
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	199	1649	580	493	645	
v/s Ratio Prot	c0.07	0.15	c0.27		c0.19	
v/s Ratio Perm				0.07		
v/c Ratio	0.58	0.30	0.81	0.22	0.48	
Uniform Delay, d1	41.3	14.3	30.0	23.5	21.9	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	4.0	0.1	8.0	0.2	2.5	
Delay (s)	45.3	14.4	38.0	23.7	24.5	
Level of Service	D	B	D	C	C	
Approach Delay (s)		20.3	32.3		24.5	
Approach LOS		C	C		C	

Intersection Summary

HCM 2000 Control Delay	26.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	99.6	Sum of lost time (s)	13.5
Intersection Capacity Utilization	53.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis

10: Central Ave & 10th St

03/13/2020

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↰	↱		↰↱		↰	↱		↰	↱	
Traffic Volume (vph)	9	590	99	16	424	5	231	109	11	132	75	19
Future Volume (vph)	9	590	99	16	424	5	231	109	11	132	75	19
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)		4.5	4.5		4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor		1.00	1.00		0.95		1.00	1.00		1.00	1.00	
Frt		1.00	0.85		1.00		1.00	0.99		1.00	0.97	
Flt Protected		1.00	1.00		1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1714	1458		3249		1630	1692		1630	1664	
Flt Permitted		0.99	1.00		0.81		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1697	1458		2625		1630	1692		1630	1664	
Peak-hour factor, PHF	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78
Adj. Flow (vph)	12	756	127	21	544	6	296	140	14	169	96	24
RTOR Reduction (vph)	0	0	35	0	1	0	0	3	0	0	7	0
Lane Group Flow (vph)	0	768	92	0	570	0	296	151	0	169	113	0
Turn Type	Perm	NA	Perm	Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8								
Actuated Green, G (s)		54.9	54.9		54.9		22.6	27.0		16.3	20.7	
Effective Green, g (s)		54.9	54.9		54.9		22.6	27.0		16.3	20.7	
Actuated g/C Ratio		0.49	0.49		0.49		0.20	0.24		0.15	0.19	
Clearance Time (s)		4.5	4.5		4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)		3.0	3.0		3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		834	716		1290		329	408		237	308	
v/s Ratio Prot							c0.18	c0.09		0.10	0.07	
v/s Ratio Perm		c0.45	0.06		0.22							
v/c Ratio		0.92	0.13		0.44		0.90	0.37		0.71	0.37	
Uniform Delay, d1		26.4	15.4		18.5		43.4	35.3		45.5	39.8	
Progression Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		15.3	0.1		0.2		25.7	2.6		9.7	3.3	
Delay (s)		41.7	15.5		18.7		69.2	37.8		55.2	43.1	
Level of Service		D	B		B		E	D		E	D	
Approach Delay (s)		38.0			18.7			58.5			50.2	
Approach LOS		D			B			E			D	
Intersection Summary												
HCM 2000 Control Delay			38.8				HCM 2000 Level of Service			D		
HCM 2000 Volume to Capacity ratio			0.81									
Actuated Cycle Length (s)			111.7				Sum of lost time (s)			13.5		
Intersection Capacity Utilization			69.6%				ICU Level of Service			C		
Analysis Period (min)			15									
c Critical Lane Group												

Intersection

Int Delay, s/veh 0.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	36	0	0	449	127
Future Vol, veh/h	0	36	0	0	449	127
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	-	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	81	81	81	81	81	81
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	44	0	0	554	157

Major/Minor	Minor2	Major2
Conflicting Flow All	- 356	- 0
Stage 1	- -	- -
Stage 2	- -	- -
Critical Hdwy	- 6.94	- -
Critical Hdwy Stg 1	- -	- -
Critical Hdwy Stg 2	- -	- -
Follow-up Hdwy	- 3.32	- -
Pot Cap-1 Maneuver	0 640	- -
Stage 1	0 -	- -
Stage 2	0 -	- -
Platoon blocked, %		- -
Mov Cap-1 Maneuver	- 640	- -
Mov Cap-2 Maneuver	- -	- -
Stage 1	- -	- -
Stage 2	- -	- -

Approach	EB	SB
HCM Control Delay, s	11	0
HCM LOS	B	

Minor Lane/Major Mvmt	EBLn1	SBT	SBR
Capacity (veh/h)	640	-	-
HCM Lane V/C Ratio	0.069	-	-
HCM Control Delay (s)	11	-	-
HCM Lane LOS	B	-	-
HCM 95th %tile Q(veh)	0.2	-	-

Intersection												
Int Delay, s/veh	0											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations			↑↑		↑						↑	↑↑
Traffic Vol, veh/h	0	0	646	3	25	0	0	0	0	0	41	444
Future Vol, veh/h	0	0	646	3	25	0	0	0	0	0	41	444
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	Free	-	-	None	-	-	None	-	-	Free
Storage Length	-	-	0	-	-	-	-	-	-	-	-	0
Veh in Median Storage, #	-	-	-	-	0	-	-	-	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	76	76	76	76	76	76	76	76	76	76	76	76
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	850	4	33	0	0	0	0	0	54	584

Major/Minor	Major2			Minor2		
Conflicting Flow All	0	0	0	-	41	-
Stage 1	-	-	-	-	41	-
Stage 2	-	-	-	-	0	-
Critical Hdwy	4.12	-	-	-	6.52	-
Critical Hdwy Stg 1	-	-	-	-	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	2.218	-	-	-	4.018	-
Pot Cap-1 Maneuver	-	-	0	0	851	0
Stage 1	-	-	0	0	861	0
Stage 2	-	-	0	0	-	0
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	-	0	-
Mov Cap-2 Maneuver	-	-	-	-	0	-
Stage 1	-	-	-	-	0	-
Stage 2	-	-	-	-	0	-

Approach	WB			SB		
HCM Control Delay, s						
HCM LOS	-					
Minor Lane/Major Mvmt	WBL	WBT	SBLn1	SBLn2	SBLn3	
Capacity (veh/h)	-	-	-	-	-	
HCM Lane V/C Ratio	-	-	-	-	-	
HCM Control Delay (s)	-	-	-	0	0	
HCM Lane LOS	-	-	-	A	A	
HCM 95th %tile Q(veh)	-	-	-	-	-	

Lindy Lane TIA

Intersection: 1: Empire Blvd & Newmark Ave, Interval #1

Movement	EB	NB	SB
Directions Served	LTR	LTR	LTR
Maximum Queue (ft)	24	11	18
Average Queue (ft)	4	0	3
95th Queue (ft)	21	0	16
Link Distance (ft)	401	2847	1306
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 1: Empire Blvd & Newmark Ave, Interval #2

Movement	EB	NB	SB
Directions Served	LTR	LTR	LTR
Maximum Queue (ft)	25	26	31
Average Queue (ft)	5	2	10
95th Queue (ft)	23	18	33
Link Distance (ft)	401	2847	1306
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 1: Empire Blvd & Newmark Ave, All Intervals

Movement	EB	NB	SB
Directions Served	LTR	LTR	LTR
Maximum Queue (ft)	25	37	31
Average Queue (ft)	5	1	8
95th Queue (ft)	22	16	30
Link Distance (ft)	401	2847	1306
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 2: Ocean Blvd, Interval #1

Movement	EB	WB	WB	NW	NW
Directions Served	T	T	T	L	L
Maximum Queue (ft)	258	110	108	80	94
Average Queue (ft)	198	62	58	43	60
95th Queue (ft)	282	120	123	89	103
Link Distance (ft)	1798	1330	1330		
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)				300	300
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 2: Ocean Blvd, Interval #2

Movement	EB	WB	WB	NW	NW
Directions Served	T	T	T	L	L
Maximum Queue (ft)	249	140	141	69	71
Average Queue (ft)	149	67	59	16	36
95th Queue (ft)	228	129	131	47	66
Link Distance (ft)	1798	1330	1330		
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)				300	300
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 2: Ocean Blvd, All Intervals

Movement	EB	WB	WB	NW	NW
Directions Served	T	T	T	L	L
Maximum Queue (ft)	288	140	141	81	102
Average Queue (ft)	161	66	59	22	41
95th Queue (ft)	248	127	129	62	79
Link Distance (ft)	1798	1330	1330		
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)				300	300
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 3: Laclair st & Newmark Ave, Interval #1

Movement	EB	EB	WB	WB	WB	NB
Directions Served	T	TR	L	T	T	LR
Maximum Queue (ft)	198	206	97	168	172	58
Average Queue (ft)	123	131	57	101	112	34
95th Queue (ft)	198	208	112	176	191	64
Link Distance (ft)	1001	1001		3783	3783	1145
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)			150			
Storage Blk Time (%)				1		
Queuing Penalty (veh)				1		

Intersection: 3: Laclair st & Newmark Ave, Interval #2

Movement	EB	EB	WB	WB	WB	NB
Directions Served	T	TR	L	T	T	LR
Maximum Queue (ft)	166	183	91	152	163	77
Average Queue (ft)	90	100	41	70	76	33
95th Queue (ft)	151	166	86	133	141	65
Link Distance (ft)	1001	1001		3783	3783	1145
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)			150			
Storage Blk Time (%)				0		
Queuing Penalty (veh)				0		

Intersection: 3: Laclair st & Newmark Ave, All Intervals

Movement	EB	EB	WB	WB	WB	NB
Directions Served	T	TR	L	T	T	LR
Maximum Queue (ft)	198	210	117	178	181	78
Average Queue (ft)	98	108	45	78	85	33
95th Queue (ft)	166	179	94	147	158	65
Link Distance (ft)	1001	1001		3783	3783	1145
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)			150			
Storage Blk Time (%)				1		
Queuing Penalty (veh)				0		

Intersection: 4: Ocean Blvd & Laclair St, Interval #1

Movement	SB	SE
Directions Served	LR	LT
Maximum Queue (ft)	63	120
Average Queue (ft)	30	34
95th Queue (ft)	63	115
Link Distance (ft)	341	2802
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 4: Ocean Blvd & Laclair St, Interval #2

Movement	SB	SE
Directions Served	LR	LT
Maximum Queue (ft)	70	106
Average Queue (ft)	23	17
95th Queue (ft)	55	64
Link Distance (ft)	341	2802
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 4: Ocean Blvd & Laclair St, All Intervals

Movement	SB	SE
Directions Served	LR	LT
Maximum Queue (ft)	70	138
Average Queue (ft)	25	21
95th Queue (ft)	57	79
Link Distance (ft)	341	2802
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 5: Lindy Ln & Ocean Blvd, Interval #1

Movement	NB
Directions Served	LR
Maximum Queue (ft)	10
Average Queue (ft)	1
95th Queue (ft)	11
Link Distance (ft)	784
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 5: Lindy Ln & Ocean Blvd, Interval #2

Movement	NB
Directions Served	LR
Maximum Queue (ft)	20
Average Queue (ft)	2
95th Queue (ft)	13
Link Distance (ft)	784
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 5: Lindy Ln & Ocean Blvd, All Intervals

Movement	NB
Directions Served	LR
Maximum Queue (ft)	25
Average Queue (ft)	2
95th Queue (ft)	12
Link Distance (ft)	784
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 6: Broadway St & 16th St, Interval #1

Movement	EB	WB	NB	NB	NB	SB	SB	SB
Directions Served	LTR	LTR	L	T	TR	L	T	TR
Maximum Queue (ft)	158	226	32	192	221	119	217	178
Average Queue (ft)	77	149	8	109	137	50	136	81
95th Queue (ft)	146	228	34	191	228	108	228	175
Link Distance (ft)	915	1559		2002	2002		528	528
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)			150			150		
Storage Blk Time (%)				3		0	5	
Queuing Penalty (veh)				0		0	3	

Intersection: 6: Broadway St & 16th St, Interval #2

Movement	EB	WB	NB	NB	NB	SB	SB	SB
Directions Served	LTR	LTR	L	T	TR	L	T	TR
Maximum Queue (ft)	129	202	31	147	168	104	141	98
Average Queue (ft)	59	104	6	56	79	36	73	27
95th Queue (ft)	113	178	25	118	150	80	131	70
Link Distance (ft)	915	1559		2002	2002		528	528
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)			150			150		
Storage Blk Time (%)				0			0	
Queuing Penalty (veh)				0			0	

Intersection: 6: Broadway St & 16th St, All Intervals

Movement	EB	WB	NB	NB	NB	SB	SB	SB
Directions Served	LTR	LTR	L	T	TR	L	T	TR
Maximum Queue (ft)	159	226	39	192	229	140	217	178
Average Queue (ft)	64	115	7	69	93	39	88	40
95th Queue (ft)	122	197	27	146	180	88	169	110
Link Distance (ft)	915	1559		2002	2002		528	528
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)			150			150		
Storage Blk Time (%)				1		0	1	
Queuing Penalty (veh)				0		0	1	

Intersection: 7: Broadway St & Newmark Ave, Interval #1

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	TR	L	TR
Maximum Queue (ft)	251	206	231	125	304	252	163	254	204	379
Average Queue (ft)	174	116	150	58	187	111	93	124	134	274
95th Queue (ft)	269	227	260	136	305	246	170	235	242	427
Link Distance (ft)		275	275		1676	1676		1809		443
Upstream Blk Time (%)	1	0	1							1
Queuing Penalty (veh)	0	0	2							7
Storage Bay Dist (ft)	350			115			240		180	
Storage Blk Time (%)	1	0			36			2	1	25
Queuing Penalty (veh)	1	0			21			2	2	31

Intersection: 7: Broadway St & Newmark Ave, Interval #2

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	TR	L	TR
Maximum Queue (ft)	250	236	229	125	207	172	146	200	204	340
Average Queue (ft)	156	81	112	36	124	71	66	89	87	157
95th Queue (ft)	237	181	198	92	195	152	122	165	180	285
Link Distance (ft)		275	275		1676	1676		1809		443
Upstream Blk Time (%)	0	0	0							0
Queuing Penalty (veh)	0	0	0							0
Storage Bay Dist (ft)	350			115			240		180	
Storage Blk Time (%)	0	0		0	16			0	1	6
Queuing Penalty (veh)	0	0		0	7			0	2	6

Intersection: 7: Broadway St & Newmark Ave, All Intervals

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	TR	L	TR
Maximum Queue (ft)	265	256	255	139	304	252	173	255	205	397
Average Queue (ft)	161	89	121	42	139	80	73	97	98	185
95th Queue (ft)	246	195	217	105	235	182	137	187	200	343
Link Distance (ft)		275	275		1676	1676		1809		443
Upstream Blk Time (%)	0	0	0							0
Queuing Penalty (veh)	0	0	1							2
Storage Bay Dist (ft)	350			115			240		180	
Storage Blk Time (%)	0	0		0	21			1	1	11
Queuing Penalty (veh)	0	0		0	10			1	2	12

Intersection: 8: Thompson Rd & Broadway St, Interval #1

Movement	WB	WB	NB	SB
Directions Served	L	R	TR	L
Maximum Queue (ft)	30	66	36	70
Average Queue (ft)	12	26	10	40
95th Queue (ft)	33	60	45	78
Link Distance (ft)		1148	1652	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	81			100
Storage Blk Time (%)		0		0
Queuing Penalty (veh)		0		0

Intersection: 8: Thompson Rd & Broadway St, Interval #2

Movement	WB	WB	NB	SB	SB
Directions Served	L	R	TR	L	T
Maximum Queue (ft)	34	56	69	80	30
Average Queue (ft)	9	20	7	25	1
95th Queue (ft)	28	41	38	66	25
Link Distance (ft)		1148	1652		1809
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)	81			100	
Storage Blk Time (%)				0	
Queuing Penalty (veh)				0	

Intersection: 8: Thompson Rd & Broadway St, All Intervals

Movement	WB	WB	NB	SB	SB
Directions Served	L	R	TR	L	T
Maximum Queue (ft)	38	68	78	88	30
Average Queue (ft)	10	22	8	29	1
95th Queue (ft)	29	46	40	70	21
Link Distance (ft)		1148	1652		1809
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)	81			100	
Storage Blk Time (%)		0		0	
Queuing Penalty (veh)		0		0	

Intersection: 9: Ocean Blvd & Woodland Dr, Interval #1

Movement	EB	EB	EB	WB	WB	SB
Directions Served	L	T	T	T	R	LR
Maximum Queue (ft)	142	132	142	330	248	207
Average Queue (ft)	83	80	82	207	98	108
95th Queue (ft)	142	136	150	317	231	199
Link Distance (ft)		2175	2175	1139		1459
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)	150				200	
Storage Blk Time (%)	0	0		9		
Queuing Penalty (veh)	1	0		26		

Intersection: 9: Ocean Blvd & Woodland Dr, Interval #2

Movement	EB	EB	EB	WB	WB	SB
Directions Served	L	T	T	T	R	LR
Maximum Queue (ft)	134	111	140	306	204	185
Average Queue (ft)	55	63	65	159	57	76
95th Queue (ft)	104	102	114	259	144	150
Link Distance (ft)		2175	2175	1139		1459
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)	150				200	
Storage Blk Time (%)	0	0		3		
Queuing Penalty (veh)	0	0		6		

Intersection: 9: Ocean Blvd & Woodland Dr, All Intervals

Movement	EB	EB	EB	WB	WB	SB
Directions Served	L	T	T	T	R	LR
Maximum Queue (ft)	152	132	155	343	289	220
Average Queue (ft)	61	67	69	171	67	83
95th Queue (ft)	117	112	125	279	171	165
Link Distance (ft)		2175	2175	1139		1459
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)	150				200	
Storage Blk Time (%)	0	0		5		
Queuing Penalty (veh)	0	0		11		

Intersection: 10: Central Ave & 10th St, Interval #1

Movement	EB	EB	B58	WB	WB	B59	B59	NB	NB	SB	SB
Directions Served	LT	R	T	LT	TR	T	T	L	TR	L	TR
Maximum Queue (ft)	440	165	147	283	230	91	88	262	156	176	122
Average Queue (ft)	333	78	46	200	139	30	16	189	93	102	73
95th Queue (ft)	511	195	168	321	255	128	92	276	159	183	139
Link Distance (ft)	368		702	228	228	274	274	477	477	735	735
Upstream Blk Time (%)	13			18	2						
Queuing Penalty (veh)	0			52	5						
Storage Bay Dist (ft)		140									
Storage Blk Time (%)	32	0									
Queuing Penalty (veh)	38	1									

Intersection: 10: Central Ave & 10th St, Interval #2

Movement	EB	EB	B58	WB	WB	B59	NB	NB	SB	SB
Directions Served	LT	R	T	LT	TR	T	L	TR	L	TR
Maximum Queue (ft)	400	165	90	237	202	20	225	105	163	84
Average Queue (ft)	212	62	4	126	58	1	108	52	73	47
95th Queue (ft)	355	165	45	210	156	17	180	96	130	83
Link Distance (ft)	368		702	228	228	274	477	477	735	735
Upstream Blk Time (%)	1			1	0					
Queuing Penalty (veh)	0			2	0					
Storage Bay Dist (ft)		140								
Storage Blk Time (%)	18	0								
Queuing Penalty (veh)	15	0								

Intersection: 10: Central Ave & 10th St, All Intervals

Movement	EB	EB	B58	WB	WB	B59	B59	NB	NB	SB	SB
Directions Served	LT	R	T	LT	TR	T	T	L	TR	L	TR
Maximum Queue (ft)	445	165	151	286	230	91	88	270	156	181	127
Average Queue (ft)	241	66	14	144	78	8	4	128	62	80	53
95th Queue (ft)	416	173	90	252	195	62	43	222	120	147	102
Link Distance (ft)	368		702	228	228	274	274	477	477	735	735
Upstream Blk Time (%)	4			5	0						
Queuing Penalty (veh)	0			14	1						
Storage Bay Dist (ft)		140									
Storage Blk Time (%)	22	0									
Queuing Penalty (veh)	21	0									

Intersection: 11: Commercial Ave, Interval #1

Movement	EB
Directions Served	R
Maximum Queue (ft)	36
Average Queue (ft)	20
95th Queue (ft)	44
Link Distance (ft)	332
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 11: Commercial Ave, Interval #2

Movement	EB
Directions Served	R
Maximum Queue (ft)	32
Average Queue (ft)	18
95th Queue (ft)	39
Link Distance (ft)	332
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 11: Commercial Ave, All Intervals

Movement	EB
Directions Served	R
Maximum Queue (ft)	41
Average Queue (ft)	19
95th Queue (ft)	40
Link Distance (ft)	332
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 12: , Interval #1

Movement	EB	EB	SB	SB
Directions Served	R	R	T	R
Maximum Queue (ft)	73	102	35	11
Average Queue (ft)	22	32	23	3
95th Queue (ft)	74	98	41	23
Link Distance (ft)	195	195	176	176
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 12: , Interval #2

Movement	EB	EB	SB	SB
Directions Served	R	R	T	R
Maximum Queue (ft)	74	111	30	28
Average Queue (ft)	8	19	17	1
95th Queue (ft)	44	74	37	18
Link Distance (ft)	195	195	176	176
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 12: , All Intervals

Movement	EB	EB	SB	SB
Directions Served	R	R	T	R
Maximum Queue (ft)	88	117	38	28
Average Queue (ft)	11	22	18	2
95th Queue (ft)	53	81	39	19
Link Distance (ft)	195	195	176	176
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 13: 7th St & Anderson Ave, Interval #1

Movement	EB	NB	SB	SB
Directions Served	TR	LTR	L	LTR
Maximum Queue (ft)	65	86	4	6
Average Queue (ft)	26	50	1	1
95th Queue (ft)	55	84	7	9
Link Distance (ft)	646	544	201	201
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 13: 7th St & Anderson Ave, Interval #2

Movement	EB	NB	SB
Directions Served	TR	LTR	LTR
Maximum Queue (ft)	56	84	4
Average Queue (ft)	20	34	0
95th Queue (ft)	47	65	4
Link Distance (ft)	646	544	201
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 13: 7th St & Anderson Ave, All Intervals

Movement	EB	NB	SB	SB
Directions Served	TR	LTR	L	LTR
Maximum Queue (ft)	70	95	4	10
Average Queue (ft)	22	38	0	0
95th Queue (ft)	49	71	3	5
Link Distance (ft)	646	544	201	201
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 17: Newmark Ave, Interval #1

Movement

Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 17: Newmark Ave, Interval #2

Movement

EB

Directions Served T
Maximum Queue (ft) 9
Average Queue (ft) 0
95th Queue (ft) 7
Link Distance (ft) 3783
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 17: Newmark Ave, All Intervals

Movement

EB

Directions Served T
Maximum Queue (ft) 9
Average Queue (ft) 0
95th Queue (ft) 6
Link Distance (ft) 3783
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 54: Broadway St, Interval #1

Movement	SB
Directions Served	T
Maximum Queue (ft)	48
Average Queue (ft)	12
95th Queue (ft)	78
Link Distance (ft)	2002
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 54: Broadway St, Interval #2

Movement	
Directions Served	
Maximum Queue (ft)	
Average Queue (ft)	
95th Queue (ft)	
Link Distance (ft)	
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 54: Broadway St, All Intervals

Movement	SB
Directions Served	T
Maximum Queue (ft)	48
Average Queue (ft)	3
95th Queue (ft)	36
Link Distance (ft)	2002
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Network Summary

Network wide Queuing Penalty, Interval #1: 196
Network wide Queuing Penalty, Interval #2: 39
Network wide Queuing Penalty, All Intervals: 78

Intersection: 1: Empire Blvd & Newmark Ave, Interval #1

Movement	EB	NB	SB
Directions Served	LTR	LTR	LTR
Maximum Queue (ft)	36	89	18
Average Queue (ft)	15	23	3
95th Queue (ft)	42	79	19
Link Distance (ft)	401	2847	1306
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 1: Empire Blvd & Newmark Ave, Interval #2

Movement	EB	B35	NB	SB
Directions Served	LTR	T	LTR	LTR
Maximum Queue (ft)	52	11	169	30
Average Queue (ft)	17	1	26	4
95th Queue (ft)	46	10	104	20
Link Distance (ft)	401	1798	2847	1306
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 1: Empire Blvd & Newmark Ave, All Intervals

Movement	EB	B35	NB	SB
Directions Served	LTR	T	LTR	LTR
Maximum Queue (ft)	52	11	169	30
Average Queue (ft)	17	1	25	4
95th Queue (ft)	45	9	98	20
Link Distance (ft)	401	1798	2847	1306
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 2: Ocean Blvd & Newmark, Interval #1

Movement	EB	WB	WB	NW	NW	NW
Directions Served	T	T	T	L	L	R
Maximum Queue (ft)	224	144	138	143	163	9
Average Queue (ft)	147	71	68	95	106	1
95th Queue (ft)	242	160	158	146	167	14
Link Distance (ft)	1798	1330	1330			2802
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)				300	300	
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 2: Ocean Blvd & Newmark, Interval #2

Movement	EB	WB	WB	NW	NW	NW
Directions Served	T	T	T	L	L	R
Maximum Queue (ft)	252	197	215	156	182	95
Average Queue (ft)	145	93	92	98	112	8
95th Queue (ft)	244	186	186	147	165	70
Link Distance (ft)	1798	1330	1330			2802
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)				300	300	
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 2: Ocean Blvd & Newmark, All Intervals

Movement	EB	WB	WB	NW	NW	NW
Directions Served	T	T	T	L	L	R
Maximum Queue (ft)	257	201	219	163	182	95
Average Queue (ft)	146	87	86	97	111	7
95th Queue (ft)	244	181	181	147	166	61
Link Distance (ft)	1798	1330	1330			2802
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)				300	300	
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 3: Laclair st & Newmark Ave, Interval #1

Movement	EB	EB	WB	WB	WB	NB
Directions Served	T	TR	L	T	T	LR
Maximum Queue (ft)	180	183	116	176	193	83
Average Queue (ft)	113	113	43	112	125	46
95th Queue (ft)	183	192	92	177	205	87
Link Distance (ft)	1001	1001		3783	3783	1145
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)			150			
Storage Blk Time (%)				3		
Queuing Penalty (veh)				2		

Intersection: 3: Laclair st & Newmark Ave, Interval #2

Movement	EB	EB	WB	WB	WB	NB
Directions Served	T	TR	L	T	T	LR
Maximum Queue (ft)	275	271	169	249	249	127
Average Queue (ft)	130	134	60	133	142	53
95th Queue (ft)	235	236	140	227	233	102
Link Distance (ft)	1001	1001		3783	3783	1145
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)			150			
Storage Blk Time (%)			0	6		
Queuing Penalty (veh)			0	4		

Intersection: 3: Laclair st & Newmark Ave, All Intervals

Movement	EB	EB	WB	WB	WB	NB
Directions Served	T	TR	L	T	T	LR
Maximum Queue (ft)	275	272	169	249	249	127
Average Queue (ft)	126	129	56	128	138	52
95th Queue (ft)	225	227	131	217	227	99
Link Distance (ft)	1001	1001		3783	3783	1145
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)			150			
Storage Blk Time (%)			0	6		
Queuing Penalty (veh)			0	3		

Intersection: 4: Ocean Blvd & Laclair St, Interval #1

Movement	SB	SE
Directions Served	LR	LT
Maximum Queue (ft)	76	84
Average Queue (ft)	47	30
95th Queue (ft)	84	87
Link Distance (ft)	341	2802
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 4: Ocean Blvd & Laclair St, Interval #2

Movement	SB	SE	NW
Directions Served	LR	LT	TR
Maximum Queue (ft)	128	168	9
Average Queue (ft)	49	40	1
95th Queue (ft)	95	114	7
Link Distance (ft)	341	2802	832
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 4: Ocean Blvd & Laclair St, All Intervals

Movement	SB	SE	NW
Directions Served	LR	LT	TR
Maximum Queue (ft)	128	168	9
Average Queue (ft)	48	37	1
95th Queue (ft)	93	108	6
Link Distance (ft)	341	2802	832
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 5: Lindy Ln & Ocean Blvd, Interval #1

Movement	NB
Directions Served	LR
Maximum Queue (ft)	14
Average Queue (ft)	2
95th Queue (ft)	13
Link Distance (ft)	784
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 5: Lindy Ln & Ocean Blvd, Interval #2

Movement	WB	NB
Directions Served	LT	LR
Maximum Queue (ft)	26	20
Average Queue (ft)	1	2
95th Queue (ft)	17	12
Link Distance (ft)	217	784
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 5: Lindy Ln & Ocean Blvd, All Intervals

Movement	WB	NB
Directions Served	LT	LR
Maximum Queue (ft)	26	20
Average Queue (ft)	1	2
95th Queue (ft)	15	12
Link Distance (ft)	217	784
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 6: Broadway St & 16th St, Interval #1

Movement	EB	WB	NB	NB	NB	SB	SB	SB
Directions Served	LTR	LTR	L	T	TR	L	T	TR
Maximum Queue (ft)	72	126	31	113	123	37	109	67
Average Queue (ft)	41	70	11	52	70	15	69	29
95th Queue (ft)	80	128	33	118	128	40	121	67
Link Distance (ft)	915	1559		2002	2002		528	528
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)			150			150		
Storage Blk Time (%)							0	
Queuing Penalty (veh)							0	

Intersection: 6: Broadway St & 16th St, Interval #2

Movement	EB	WB	NB	NB	NB	SB	SB	SB
Directions Served	LTR	LTR	L	T	TR	L	T	TR
Maximum Queue (ft)	72	156	44	138	152	59	159	120
Average Queue (ft)	32	74	7	47	68	10	70	29
95th Queue (ft)	66	132	30	113	132	37	131	72
Link Distance (ft)	915	1559		2002	2002		528	528
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)			150			150		
Storage Blk Time (%)				0			0	
Queuing Penalty (veh)				0			0	

Intersection: 6: Broadway St & 16th St, All Intervals

Movement	EB	WB	NB	NB	NB	SB	SB	SB
Directions Served	LTR	LTR	L	T	TR	L	T	TR
Maximum Queue (ft)	85	165	44	138	152	59	159	120
Average Queue (ft)	35	73	8	49	69	11	70	29
95th Queue (ft)	70	131	31	114	131	38	129	71
Link Distance (ft)	915	1559		2002	2002		528	528
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)			150			150		
Storage Blk Time (%)				0			0	
Queuing Penalty (veh)				0			0	

Intersection: 7: Broadway St & Newmark Ave, Interval #1

Movement	EB	EB	EB	B14	B14	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	TR	T	T	L	T	TR	L	TR	L	TR
Maximum Queue (ft)	274	336	280	126	32	140	366	333	238	375	146	229
Average Queue (ft)	247	255	205	50	7	84	240	190	135	187	72	136
95th Queue (ft)	311	410	310	201	49	175	341	332	244	331	142	227
Link Distance (ft)		275	275	214	214		1676	1676		1809		443
Upstream Blk Time (%)	13	15	2	4								
Queuing Penalty (veh)	0	84	9	24								
Storage Bay Dist (ft)	350					115			240		180	
Storage Blk Time (%)	13	15				1	55		1	5		6
Queuing Penalty (veh)	31	57				3	37		3	10		6

Intersection: 7: Broadway St & Newmark Ave, Interval #2

Movement	EB	EB	EB	B14	B14	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	TR	T	T	L	T	TR	L	TR	L	TR
Maximum Queue (ft)	274	353	323	127	72	140	667	648	264	425	173	226
Average Queue (ft)	239	236	194	17	4	92	471	438	170	217	72	122
95th Queue (ft)	301	393	295	85	42	179	769	757	278	348	140	208
Link Distance (ft)		275	275	214	214		1676	1676		1809		443
Upstream Blk Time (%)	8	10	1		0							
Queuing Penalty (veh)	0	57	8		0							
Storage Bay Dist (ft)	350					115			240		180	
Storage Blk Time (%)	8	10				5	74		2	5		4
Queuing Penalty (veh)	21	39				9	50		9	10		4

Intersection: 7: Broadway St & Newmark Ave, All Intervals

Movement	EB	EB	EB	B14	B14	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	TR	T	T	L	T	TR	L	TR	L	TR
Maximum Queue (ft)	274	356	324	168	79	140	667	648	264	449	187	242
Average Queue (ft)	241	241	197	25	5	90	415	378	162	210	72	126
95th Queue (ft)	304	397	299	123	44	178	726	714	272	346	141	213
Link Distance (ft)		275	275	214	214		1676	1676		1809		443
Upstream Blk Time (%)	10	11	1	1	0							
Queuing Penalty (veh)	0	63	8	6	0							
Storage Bay Dist (ft)	350					115			240		180	
Storage Blk Time (%)	10	11				4	69		2	5		4
Queuing Penalty (veh)	23	43				8	47		7	10		5

Intersection: 8: Thompson Rd & Broadway St, Interval #1

Movement	WB	WB	NB	SB
Directions Served	L	R	TR	L
Maximum Queue (ft)	44	71	70	64
Average Queue (ft)	20	42	19	29
95th Queue (ft)	46	75	81	69
Link Distance (ft)		1148	1652	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	81			100
Storage Blk Time (%)	0	1		0
Queuing Penalty (veh)	1	0		0

Intersection: 8: Thompson Rd & Broadway St, Interval #2

Movement	WB	WB	NB	SB
Directions Served	L	R	TR	L
Maximum Queue (ft)	51	87	62	75
Average Queue (ft)	19	36	8	28
95th Queue (ft)	43	73	38	63
Link Distance (ft)		1148	1652	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	81			100
Storage Blk Time (%)	0	1		0
Queuing Penalty (veh)	0	0		0

Intersection: 8: Thompson Rd & Broadway St, All Intervals

Movement	WB	WB	NB	SB
Directions Served	L	R	TR	L
Maximum Queue (ft)	60	95	88	75
Average Queue (ft)	19	37	11	28
95th Queue (ft)	44	74	52	65
Link Distance (ft)		1148	1652	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	81			100
Storage Blk Time (%)	0	1		0
Queuing Penalty (veh)	0	0		0

Intersection: 9: Ocean Blvd & Woodland Dr, Interval #1

Movement	EB	EB	EB	WB	WB	SB
Directions Served	L	T	T	T	R	LR
Maximum Queue (ft)	131	125	133	332	290	244
Average Queue (ft)	82	81	82	225	84	158
95th Queue (ft)	145	127	138	333	225	260
Link Distance (ft)		2175	2175	1139		1459
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)	150				200	
Storage Blk Time (%)	2	0		13		
Queuing Penalty (veh)	4	0		21		

Intersection: 9: Ocean Blvd & Woodland Dr, Interval #2

Movement	EB	EB	EB	WB	WB	SB
Directions Served	L	T	T	T	R	LR
Maximum Queue (ft)	175	153	155	355	254	337
Average Queue (ft)	85	75	84	217	74	159
95th Queue (ft)	150	133	139	327	211	289
Link Distance (ft)		2175	2175	1139		1459
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)	150				200	
Storage Blk Time (%)	1	0		11		
Queuing Penalty (veh)	2	0		19		

Intersection: 9: Ocean Blvd & Woodland Dr, All Intervals

Movement	EB	EB	EB	WB	WB	SB
Directions Served	L	T	T	T	R	LR
Maximum Queue (ft)	187	154	159	366	290	337
Average Queue (ft)	84	77	84	219	77	158
95th Queue (ft)	149	132	139	329	214	283
Link Distance (ft)		2175	2175	1139		1459
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)	150				200	
Storage Blk Time (%)	1	0		12		
Queuing Penalty (veh)	2	0		19		

Intersection: 10: Central Ave & 10th St, Interval #1

Movement	EB	EB	B58	WB	WB	NB	NB	SB	SB
Directions Served	LT	R	T	LT	TR	L	TR	L	TR
Maximum Queue (ft)	394	165	23	208	184	146	77	145	103
Average Queue (ft)	233	71	1	132	72	89	50	94	59
95th Queue (ft)	364	179	6	204	174	158	88	148	113
Link Distance (ft)	368		702	228	228	477	477	735	735
Upstream Blk Time (%)	2			0	0				
Queuing Penalty (veh)	0			0	0				
Storage Bay Dist (ft)		140							
Storage Blk Time (%)	22	0							
Queuing Penalty (veh)	26	0							

Intersection: 10: Central Ave & 10th St, Interval #2

Movement	EB	EB	B58	WB	WB	NB	NB	SB	SB
Directions Served	LT	R	T	LT	TR	L	TR	L	TR
Maximum Queue (ft)	406	165	26	241	174	204	124	168	124
Average Queue (ft)	239	82	2	130	64	104	55	93	48
95th Queue (ft)	379	195	15	205	153	175	106	151	98
Link Distance (ft)	368		702	228	228	477	477	735	735
Upstream Blk Time (%)	1			1					
Queuing Penalty (veh)	0			1					
Storage Bay Dist (ft)		140							
Storage Blk Time (%)	23	0							
Queuing Penalty (veh)	27	1							

Intersection: 10: Central Ave & 10th St, All Intervals

Movement	EB	EB	B58	WB	WB	NB	NB	SB	SB
Directions Served	LT	R	T	LT	TR	L	TR	L	TR
Maximum Queue (ft)	422	165	40	244	205	205	125	168	128
Average Queue (ft)	238	79	1	131	66	100	54	94	51
95th Queue (ft)	375	192	14	205	159	172	102	150	102
Link Distance (ft)	368		702	228	228	477	477	735	735
Upstream Blk Time (%)	1			0	0				
Queuing Penalty (veh)	0			1	0				
Storage Bay Dist (ft)		140							
Storage Blk Time (%)	22	0							
Queuing Penalty (veh)	26	0							

Intersection: 11: Commercial Ave, Interval #1

Movement	EB	SW
Directions Served	R	LR
Maximum Queue (ft)	34	4
Average Queue (ft)	17	1
95th Queue (ft)	39	6
Link Distance (ft)	326	1244
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 11: Commercial Ave, Interval #2

Movement	EB	SW
Directions Served	R	LR
Maximum Queue (ft)	40	20
Average Queue (ft)	20	1
95th Queue (ft)	38	11
Link Distance (ft)	326	1244
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 11: Commercial Ave, All Intervals

Movement	EB	SW
Directions Served	R	LR
Maximum Queue (ft)	41	20
Average Queue (ft)	20	1
95th Queue (ft)	38	10
Link Distance (ft)	326	1244
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 12: , Interval #1

Movement	EB	EB	WB	SB
Directions Served	R	R	LT	R
Maximum Queue (ft)	73	87	34	52
Average Queue (ft)	17	21	22	10
95th Queue (ft)	65	81	45	50
Link Distance (ft)	195	195	104	158
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 12: , Interval #2

Movement	EB	EB	WB	SB	SB
Directions Served	R	R	LT	R	R
Maximum Queue (ft)	91	122	46	82	11
Average Queue (ft)	13	38	23	12	1
95th Queue (ft)	60	102	45	55	9
Link Distance (ft)	195	195	104	158	158
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 12: , All Intervals

Movement	EB	EB	WB	SB	SB
Directions Served	R	R	LT	R	R
Maximum Queue (ft)	99	125	50	86	11
Average Queue (ft)	14	34	23	12	0
95th Queue (ft)	61	98	45	54	8
Link Distance (ft)	195	195	104	158	158
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 13: 7th St & Anderson Ave, Interval #1

Movement	EB	NB	SB	SB
Directions Served	TR	LTR	L	LTR
Maximum Queue (ft)	53	47	4	8
Average Queue (ft)	35	28	1	1
95th Queue (ft)	57	48	7	6
Link Distance (ft)	646	832	201	201
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 13: 7th St & Anderson Ave, Interval #2

Movement	EB	NB	SB	SB
Directions Served	TR	LTR	L	LTR
Maximum Queue (ft)	81	67	4	4
Average Queue (ft)	33	29	0	0
95th Queue (ft)	64	53	4	3
Link Distance (ft)	646	832	201	201
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 13: 7th St & Anderson Ave, All Intervals

Movement	EB	NB	SB	SB
Directions Served	TR	LTR	L	LTR
Maximum Queue (ft)	81	71	9	8
Average Queue (ft)	34	28	0	0
95th Queue (ft)	63	52	5	4
Link Distance (ft)	646	832	201	201
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 17: Newmark Ave, Interval #1

Movement	EB
Directions Served	T
Maximum Queue (ft)	53
Average Queue (ft)	11
95th Queue (ft)	86
Link Distance (ft)	3783
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 17: Newmark Ave, Interval #2

Movement	
Directions Served	
Maximum Queue (ft)	
Average Queue (ft)	
95th Queue (ft)	
Link Distance (ft)	
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 17: Newmark Ave, All Intervals

Movement	EB
Directions Served	T
Maximum Queue (ft)	53
Average Queue (ft)	3
95th Queue (ft)	40
Link Distance (ft)	3783
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 54: Broadway St, Interval #1

Movement

Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 54: Broadway St, Interval #2

Movement

Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 54: Broadway St, All Intervals

Movement

Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Network Summary

Network wide Queuing Penalty, Interval #1: 320
Network wide Queuing Penalty, Interval #2: 260
Network wide Queuing Penalty, All Intervals: 275

Intersection: 1: Empire Blvd & Newmark Ave, Interval #1

Movement	EB	NB	SB
Directions Served	LTR	LTR	LTR
Maximum Queue (ft)	18	47	31
Average Queue (ft)	3	12	10
95th Queue (ft)	16	80	33
Link Distance (ft)	401	2847	1306
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 1: Empire Blvd & Newmark Ave, Interval #2

Movement	EB	NB	SB
Directions Served	LTR	LTR	LTR
Maximum Queue (ft)	31	49	35
Average Queue (ft)	7	4	7
95th Queue (ft)	28	26	29
Link Distance (ft)	401	2847	1306
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 1: Empire Blvd & Newmark Ave, All Intervals

Movement	EB	NB	SB
Directions Served	LTR	LTR	LTR
Maximum Queue (ft)	31	69	36
Average Queue (ft)	6	5	8
95th Queue (ft)	26	45	30
Link Distance (ft)	401	2847	1306
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 2: Ocean Blvd, Interval #1

Movement	EB	EB	WB	WB	NW	NW	NW
Directions Served	T	R	T	T	L	L	R
Maximum Queue (ft)	312	47	123	123	84	104	9
Average Queue (ft)	213	7	56	54	50	65	1
95th Queue (ft)	318	71	123	122	98	119	14
Link Distance (ft)	1798	1798	1330	1330			2802
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)					300	300	
Storage Blk Time (%)							
Queuing Penalty (veh)							

Intersection: 2: Ocean Blvd, Interval #2

Movement	EB	WB	WB	NW	NW
Directions Served	T	T	T	L	L
Maximum Queue (ft)	285	134	130	66	71
Average Queue (ft)	171	56	45	22	36
95th Queue (ft)	263	112	107	57	65
Link Distance (ft)	1798	1330	1330		
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)				300	300
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 2: Ocean Blvd, All Intervals

Movement	EB	EB	WB	WB	NW	NW	NW
Directions Served	T	R	T	T	L	L	R
Maximum Queue (ft)	325	47	148	142	84	105	9
Average Queue (ft)	181	2	56	47	28	43	0
95th Queue (ft)	281	34	115	111	72	85	7
Link Distance (ft)	1798	1798	1330	1330			2802
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)					300	300	
Storage Blk Time (%)							
Queuing Penalty (veh)							

Intersection: 3: Laclair st & Newmark Ave, Interval #1

Movement	EB	EB	WB	WB	WB	NB
Directions Served	T	TR	L	T	T	LR
Maximum Queue (ft)	218	221	87	161	171	101
Average Queue (ft)	154	161	53	96	104	50
95th Queue (ft)	249	253	90	167	181	107
Link Distance (ft)	1001	1001		3783	3783	1145
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)			150			
Storage Blk Time (%)				1		
Queuing Penalty (veh)				1		

Intersection: 3: Laclair st & Newmark Ave, Interval #2

Movement	EB	EB	WB	WB	WB	NB
Directions Served	T	TR	L	T	T	LR
Maximum Queue (ft)	213	228	115	142	152	62
Average Queue (ft)	98	109	47	73	82	28
95th Queue (ft)	179	195	94	125	140	57
Link Distance (ft)	1001	1001		3783	3783	1145
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)			150			
Storage Blk Time (%)			0	0		
Queuing Penalty (veh)			1	0		

Intersection: 3: Laclair st & Newmark Ave, All Intervals

Movement	EB	EB	WB	WB	WB	NB
Directions Served	T	TR	L	T	T	LR
Maximum Queue (ft)	241	246	119	170	176	105
Average Queue (ft)	112	121	48	78	87	34
95th Queue (ft)	205	217	94	138	153	74
Link Distance (ft)	1001	1001		3783	3783	1145
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)			150			
Storage Blk Time (%)			0	0		
Queuing Penalty (veh)			0	0		

Intersection: 4: Ocean Blvd & Laclair St, Interval #1

Movement	SB	SE
Directions Served	LR	LT
Maximum Queue (ft)	65	130
Average Queue (ft)	35	44
95th Queue (ft)	69	146
Link Distance (ft)	341	2802
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 4: Ocean Blvd & Laclair St, Interval #2

Movement	SB	SE
Directions Served	LR	LT
Maximum Queue (ft)	51	66
Average Queue (ft)	22	14
95th Queue (ft)	51	50
Link Distance (ft)	341	2802
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 4: Ocean Blvd & Laclair St, All Intervals

Movement	SB	SE
Directions Served	LR	LT
Maximum Queue (ft)	66	130
Average Queue (ft)	25	21
95th Queue (ft)	57	84
Link Distance (ft)	341	2802
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 5: Lindy Ln & Ocean Blvd, Interval #1

Movement	NB
Directions Served	LR
Maximum Queue (ft)	10
Average Queue (ft)	1
95th Queue (ft)	8
Link Distance (ft)	784
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 5: Lindy Ln & Ocean Blvd, Interval #2

Movement	NB
Directions Served	LR
Maximum Queue (ft)	25
Average Queue (ft)	2
95th Queue (ft)	15
Link Distance (ft)	784
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 5: Lindy Ln & Ocean Blvd, All Intervals

Movement	NB
Directions Served	LR
Maximum Queue (ft)	25
Average Queue (ft)	2
95th Queue (ft)	13
Link Distance (ft)	784
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 6: Broadway St & 16th St, Interval #1

Movement	EB	WB	NB	NB	NB	SB	SB	SB
Directions Served	LTR	LTR	L	T	TR	L	T	TR
Maximum Queue (ft)	125	246	18	183	226	84	222	168
Average Queue (ft)	77	157	7	100	124	47	125	72
95th Queue (ft)	137	249	26	172	217	91	224	169
Link Distance (ft)	915	1559		2002	2002		528	528
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)			150			150		
Storage Blk Time (%)				2			4	
Queuing Penalty (veh)				0			2	

Intersection: 6: Broadway St & 16th St, Interval #2

Movement	EB	WB	NB	NB	NB	SB	SB	SB
Directions Served	LTR	LTR	L	T	TR	L	T	TR
Maximum Queue (ft)	135	180	40	130	162	103	170	82
Average Queue (ft)	59	101	8	58	81	32	78	28
95th Queue (ft)	113	158	30	115	145	74	145	70
Link Distance (ft)	915	1559		2002	2002		528	528
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)			150			150		
Storage Blk Time (%)				0		0	1	
Queuing Penalty (veh)				0		0	0	

Intersection: 6: Broadway St & 16th St, All Intervals

Movement	EB	WB	NB	NB	NB	SB	SB	SB
Directions Served	LTR	LTR	L	T	TR	L	T	TR
Maximum Queue (ft)	142	246	40	187	226	108	227	168
Average Queue (ft)	64	114	7	68	92	36	90	39
95th Queue (ft)	120	192	29	136	170	79	172	107
Link Distance (ft)	915	1559		2002	2002		528	528
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)			150			150		
Storage Blk Time (%)				1		0	1	
Queuing Penalty (veh)				0		0	1	

Intersection: 7: Broadway St & Newmark Ave, Interval #1

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	TR	L	TR
Maximum Queue (ft)	267	284	242	121	251	246	132	212	204	341
Average Queue (ft)	203	124	145	58	181	137	86	141	126	234
95th Queue (ft)	286	271	251	131	273	272	141	237	223	402
Link Distance (ft)		275	275		1676	1676		1809		443
Upstream Blk Time (%)	2	1	0							1
Queuing Penalty (veh)	0	4	0							6
Storage Bay Dist (ft)	350			115			240		180	
Storage Blk Time (%)	2	1		1	39			1	2	20
Queuing Penalty (veh)	3	3		1	23			1	7	25

Intersection: 7: Broadway St & Newmark Ave, Interval #2

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	TR	L	TR
Maximum Queue (ft)	257	258	257	132	217	200	161	240	186	306
Average Queue (ft)	174	82	117	42	123	72	76	107	78	149
95th Queue (ft)	254	185	210	105	194	158	142	195	156	257
Link Distance (ft)		275	275		1676	1676		1809		443
Upstream Blk Time (%)	0	0	0							
Queuing Penalty (veh)	0	1	1							
Storage Bay Dist (ft)	350			115			240		180	
Storage Blk Time (%)	0	0		0	15			1	0	5
Queuing Penalty (veh)	0	1		0	6			1	0	5

Intersection: 7: Broadway St & Newmark Ave, All Intervals

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	TR	L	TR
Maximum Queue (ft)	269	291	264	139	261	251	164	253	204	366
Average Queue (ft)	181	92	124	46	137	88	78	115	90	170
95th Queue (ft)	265	212	222	113	224	198	142	208	180	308
Link Distance (ft)		275	275		1676	1676		1809		443
Upstream Blk Time (%)	1	0	0							0
Queuing Penalty (veh)	0	1	0							2
Storage Bay Dist (ft)	350			115			240		180	
Storage Blk Time (%)	1	0		0	21			1	1	9
Queuing Penalty (veh)	1	1		0	10			1	2	10

Intersection: 8: Thompson Rd & Broadway St, Interval #1

Movement	WB	WB	NB	SB
Directions Served	L	R	TR	L
Maximum Queue (ft)	22	40	17	72
Average Queue (ft)	11	21	4	31
95th Queue (ft)	29	40	31	72
Link Distance (ft)		1148	1652	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	81			100
Storage Blk Time (%)		0		0
Queuing Penalty (veh)		0		0

Intersection: 8: Thompson Rd & Broadway St, Interval #2

Movement	WB	WB	NB	SB	SB
Directions Served	L	R	TR	L	T
Maximum Queue (ft)	26	48	37	76	36
Average Queue (ft)	10	20	3	23	2
95th Queue (ft)	28	38	20	61	29
Link Distance (ft)		1148	1652		1809
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)	81			100	
Storage Blk Time (%)				0	
Queuing Penalty (veh)				0	

Intersection: 8: Thompson Rd & Broadway St, All Intervals

Movement	WB	WB	NB	SB	SB
Directions Served	L	R	TR	L	T
Maximum Queue (ft)	26	53	43	88	36
Average Queue (ft)	10	20	3	25	1
95th Queue (ft)	28	39	23	64	25
Link Distance (ft)		1148	1652		1809
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)	81			100	
Storage Blk Time (%)		0		0	
Queuing Penalty (veh)		0		0	

Intersection: 9: Ocean Blvd & Woodland Dr, Interval #1

Movement	EB	EB	EB	WB	WB	SB
Directions Served	L	T	T	T	R	LR
Maximum Queue (ft)	116	107	117	327	169	188
Average Queue (ft)	68	76	80	212	86	115
95th Queue (ft)	120	119	129	361	209	198
Link Distance (ft)		2175	2175	1139		1459
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)	150				200	
Storage Blk Time (%)		0		10		
Queuing Penalty (veh)		0		28		

Intersection: 9: Ocean Blvd & Woodland Dr, Interval #2

Movement	EB	EB	EB	WB	WB	SB
Directions Served	L	T	T	T	R	LR
Maximum Queue (ft)	117	104	130	231	169	179
Average Queue (ft)	62	60	67	146	50	73
95th Queue (ft)	108	99	113	223	111	151
Link Distance (ft)		2175	2175	1139		1459
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)	150				200	
Storage Blk Time (%)	0			1		
Queuing Penalty (veh)	0			2		

Intersection: 9: Ocean Blvd & Woodland Dr, All Intervals

Movement	EB	EB	EB	WB	WB	SB
Directions Served	L	T	T	T	R	LR
Maximum Queue (ft)	122	117	130	329	174	199
Average Queue (ft)	63	64	70	162	59	83
95th Queue (ft)	111	106	118	272	143	167
Link Distance (ft)		2175	2175	1139		1459
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)	150				200	
Storage Blk Time (%)	0	0		3		
Queuing Penalty (veh)	0	0		9		

Intersection: 10: Central Ave & 10th St, Interval #1

Movement	EB	EB	B58	WB	WB	B59	B59	NB	NB	SB	SB
Directions Served	LT	R	T	LT	TR	T	T	L	TR	L	TR
Maximum Queue (ft)	411	143	214	280	226	84	61	310	184	192	128
Average Queue (ft)	311	83	95	196	123	16	9	236	105	109	71
95th Queue (ft)	480	194	456	305	259	91	68	358	183	202	140
Link Distance (ft)	368		702	228	228	274	274	477	477	735	735
Upstream Blk Time (%)	12		4	12	2						
Queuing Penalty (veh)	0		0	35	6						
Storage Bay Dist (ft)		140									
Storage Blk Time (%)	33	0									
Queuing Penalty (veh)	39	1									

Intersection: 10: Central Ave & 10th St, Interval #2

Movement	EB	EB	B58	WB	WB	NB	NB	SB	SB
Directions Served	LT	R	T	LT	TR	L	TR	L	TR
Maximum Queue (ft)	399	165	159	203	160	206	136	147	86
Average Queue (ft)	210	73	18	116	47	110	56	74	40
95th Queue (ft)	353	180	191	185	127	182	110	129	78
Link Distance (ft)	368		702	228	228	477	477	735	735
Upstream Blk Time (%)	2		1	0	0				
Queuing Penalty (veh)	0		0	0	0				
Storage Bay Dist (ft)		140							
Storage Blk Time (%)	18	0							
Queuing Penalty (veh)	15	0							

Intersection: 10: Central Ave & 10th St, All Intervals

Movement	EB	EB	B58	WB	WB	B59	B59	NB	NB	SB	SB
Directions Served	LT	R	T	LT	TR	T	T	L	TR	L	TR
Maximum Queue (ft)	425	165	214	280	230	84	61	314	194	192	128
Average Queue (ft)	234	76	37	135	65	4	2	140	68	82	48
95th Queue (ft)	400	184	276	234	176	42	32	265	138	153	100
Link Distance (ft)	368		702	228	228	274	274	477	477	735	735
Upstream Blk Time (%)	4		2	3	1						
Queuing Penalty (veh)	0		0	9	2						
Storage Bay Dist (ft)		140									
Storage Blk Time (%)	22	0									
Queuing Penalty (veh)	21	0									

Intersection: 11: Commercial Ave, Interval #1

Movement	EB
Directions Served	R
Maximum Queue (ft)	32
Average Queue (ft)	20
95th Queue (ft)	39
Link Distance (ft)	332
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 11: Commercial Ave, Interval #2

Movement	EB
Directions Served	R
Maximum Queue (ft)	51
Average Queue (ft)	20
95th Queue (ft)	44
Link Distance (ft)	332
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 11: Commercial Ave, All Intervals

Movement	EB
Directions Served	R
Maximum Queue (ft)	51
Average Queue (ft)	20
95th Queue (ft)	43
Link Distance (ft)	332
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 12: , Interval #1

Movement	EB	EB	SB	SB
Directions Served	R	R	T	R
Maximum Queue (ft)	71	93	36	10
Average Queue (ft)	18	30	25	1
95th Queue (ft)	70	97	42	15
Link Distance (ft)	195	195	176	176
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 12: , Interval #2

Movement	EB	EB	SB	SB	SB
Directions Served	R	R	T	R	R
Maximum Queue (ft)	77	88	31	21	8
Average Queue (ft)	10	17	17	1	0
95th Queue (ft)	48	66	37	13	7
Link Distance (ft)	195	195	176	176	176
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 12: , All Intervals

Movement	EB	EB	SB	SB	SB
Directions Served	R	R	T	R	R
Maximum Queue (ft)	84	105	40	21	8
Average Queue (ft)	12	21	19	1	0
95th Queue (ft)	54	75	39	13	6
Link Distance (ft)	195	195	176	176	176
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 13: 7th St & Anderson Ave, Interval #1

Movement	EB	NB	SB
Directions Served	TR	LTR	L
Maximum Queue (ft)	51	130	4
Average Queue (ft)	26	66	0
95th Queue (ft)	57	139	0
Link Distance (ft)	646	544	201
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 13: 7th St & Anderson Ave, Interval #2

Movement	EB	NB	SB	SB
Directions Served	TR	LTR	L	LTR
Maximum Queue (ft)	51	70	4	4
Average Queue (ft)	20	32	0	0
95th Queue (ft)	43	56	5	4
Link Distance (ft)	646	544	201	201
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 13: 7th St & Anderson Ave, All Intervals

Movement	EB	NB	SB	SB
Directions Served	TR	LTR	L	LTR
Maximum Queue (ft)	56	130	9	4
Average Queue (ft)	22	40	0	0
95th Queue (ft)	47	88	5	3
Link Distance (ft)	646	544	201	201
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 17: Newmark Ave, Interval #1

Movement

Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 17: Newmark Ave, Interval #2

Movement

Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 17: Newmark Ave, All Intervals

Movement

Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 54: Broadway St, Interval #1

Movement	SB
Directions Served	T
Maximum Queue (ft)	32
Average Queue (ft)	9
95th Queue (ft)	61
Link Distance (ft)	2002
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 54: Broadway St, Interval #2

Movement	
Directions Served	
Maximum Queue (ft)	
Average Queue (ft)	
95th Queue (ft)	
Link Distance (ft)	
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 54: Broadway St, All Intervals

Movement	SB
Directions Served	T
Maximum Queue (ft)	32
Average Queue (ft)	2
95th Queue (ft)	29
Link Distance (ft)	2002
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Network Summary

Network wide Queuing Penalty, Interval #1: 185
Network wide Queuing Penalty, Interval #2: 34
Network wide Queuing Penalty, All Intervals: 72

Queuing and Blocking Report
2021 AM Build

03/13/2020

Intersection: 1: Empire Blvd & Newmark Ave, Interval #1

Movement	EB	NB	SB
Directions Served	LTR	LTR	LTR
Maximum Queue (ft)	25	60	30
Average Queue (ft)	10	12	9
95th Queue (ft)	33	64	32
Link Distance (ft)	401	2847	1306
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 1: Empire Blvd & Newmark Ave, Interval #2

Movement	EB	NB	SB
Directions Served	LTR	LTR	LTR
Maximum Queue (ft)	31	59	31
Average Queue (ft)	7	3	10
95th Queue (ft)	28	28	33
Link Distance (ft)	401	2847	1306
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 1: Empire Blvd & Newmark Ave, All Intervals

Movement	EB	NB	SB
Directions Served	LTR	LTR	LTR
Maximum Queue (ft)	31	91	31
Average Queue (ft)	8	5	10
95th Queue (ft)	29	39	33
Link Distance (ft)	401	2847	1306
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Queuing and Blocking Report
2021 AM Build

03/13/2020

Intersection: 2: Ocean Blvd, Interval #1

Movement	EB	WB	WB	NW	NW
Directions Served	T	T	T	L	L
Maximum Queue (ft)	337	127	129	118	119
Average Queue (ft)	226	71	62	62	73
95th Queue (ft)	352	128	129	115	124
Link Distance (ft)	1798	1330	1330		
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)				300	300
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 2: Ocean Blvd, Interval #2

Movement	EB	WB	WB	NW	NW
Directions Served	T	T	T	L	L
Maximum Queue (ft)	259	128	125	71	84
Average Queue (ft)	146	56	51	26	39
95th Queue (ft)	231	116	109	64	73
Link Distance (ft)	1798	1330	1330		
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)				300	300
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 2: Ocean Blvd, All Intervals

Movement	EB	WB	WB	NW	NW
Directions Served	T	T	T	L	L
Maximum Queue (ft)	353	135	147	118	119
Average Queue (ft)	165	60	54	35	47
95th Queue (ft)	277	120	115	84	93
Link Distance (ft)	1798	1330	1330		
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)				300	300
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 3: Laclair st & Newmark Ave, Interval #1

Movement	EB	EB	WB	WB	WB	NB
Directions Served	T	TR	L	T	T	LR
Maximum Queue (ft)	246	238	113	114	152	80
Average Queue (ft)	150	150	64	75	89	49
95th Queue (ft)	266	261	113	131	163	89
Link Distance (ft)	1001	1001		3783	3783	1145
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)			150			
Storage Blk Time (%)			0			
Queuing Penalty (veh)			0			

Intersection: 3: Laclair st & Newmark Ave, Interval #2

Movement	EB	EB	WB	WB	WB	NB
Directions Served	T	TR	L	T	T	LR
Maximum Queue (ft)	187	203	124	137	159	91
Average Queue (ft)	100	107	59	67	77	40
95th Queue (ft)	169	181	108	115	136	76
Link Distance (ft)	1001	1001		3783	3783	1145
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)			150			
Storage Blk Time (%)			0	0		
Queuing Penalty (veh)			0	0		

Intersection: 3: Laclair st & Newmark Ave, All Intervals

Movement	EB	EB	WB	WB	WB	NB
Directions Served	T	TR	L	T	T	LR
Maximum Queue (ft)	246	246	125	138	168	96
Average Queue (ft)	112	117	60	69	80	42
95th Queue (ft)	202	207	109	120	144	80
Link Distance (ft)	1001	1001		3783	3783	1145
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)			150			
Storage Blk Time (%)			0	0		
Queuing Penalty (veh)			0	0		

Intersection: 4: Ocean Blvd & Laclair St, Interval #1

Movement	SB	SE	NW
Directions Served	LR	LT	TR
Maximum Queue (ft)	104	197	9
Average Queue (ft)	56	44	1
95th Queue (ft)	110	173	10
Link Distance (ft)	341	2802	832
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 4: Ocean Blvd & Laclair St, Interval #2

Movement	SB	SE	NW
Directions Served	LR	LT	TR
Maximum Queue (ft)	88	119	8
Average Queue (ft)	37	19	0
95th Queue (ft)	73	78	5
Link Distance (ft)	341	2802	832
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 4: Ocean Blvd & Laclair St, All Intervals

Movement	SB	SE	NW
Directions Served	LR	LT	TR
Maximum Queue (ft)	104	226	13
Average Queue (ft)	41	25	1
95th Queue (ft)	85	108	6
Link Distance (ft)	341	2802	832
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 5: Lindy Ln & Ocean Blvd, Interval #1

Movement	WB	NB
Directions Served	LT	LR
Maximum Queue (ft)	79	177
Average Queue (ft)	29	90
95th Queue (ft)	87	201
Link Distance (ft)	217	784
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 5: Lindy Ln & Ocean Blvd, Interval #2

Movement	EB	WB	NB
Directions Served	TR	LT	LR
Maximum Queue (ft)	4	68	130
Average Queue (ft)	0	14	63
95th Queue (ft)	4	49	112
Link Distance (ft)	832	217	784
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 5: Lindy Ln & Ocean Blvd, All Intervals

Movement	EB	WB	NB
Directions Served	TR	LT	LR
Maximum Queue (ft)	4	90	186
Average Queue (ft)	0	17	69
95th Queue (ft)	3	60	141
Link Distance (ft)	832	217	784
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 6: Broadway St & 16th St, Interval #1

Movement	EB	WB	NB	NB	NB	SB	SB	SB
Directions Served	LTR	LTR	L	T	TR	L	T	TR
Maximum Queue (ft)	151	250	31	227	237	87	224	181
Average Queue (ft)	95	162	9	125	147	40	156	97
95th Queue (ft)	152	264	31	234	250	89	235	196
Link Distance (ft)	915	1559		2002	2002		528	528
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)			150			150		
Storage Blk Time (%)				6		0	7	
Queuing Penalty (veh)				1		0	4	

Intersection: 6: Broadway St & 16th St, Interval #2

Movement	EB	WB	NB	NB	NB	SB	SB	SB
Directions Served	LTR	LTR	L	T	TR	L	T	TR
Maximum Queue (ft)	130	191	39	157	192	73	186	132
Average Queue (ft)	58	107	6	59	86	27	83	29
95th Queue (ft)	109	171	26	130	165	65	156	87
Link Distance (ft)	915	1559		2002	2002		528	528
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)			150			150		
Storage Blk Time (%)				0			1	
Queuing Penalty (veh)				0			0	

Intersection: 6: Broadway St & 16th St, All Intervals

Movement	EB	WB	NB	NB	NB	SB	SB	SB
Directions Served	LTR	LTR	L	T	TR	L	T	TR
Maximum Queue (ft)	154	255	39	227	237	95	224	181
Average Queue (ft)	67	120	7	75	100	30	100	46
95th Queue (ft)	125	205	27	169	197	72	191	130
Link Distance (ft)	915	1559		2002	2002		528	528
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)			150			150		
Storage Blk Time (%)				2		0	3	
Queuing Penalty (veh)				0		0	1	

Intersection: 7: Broadway St & Newmark Ave, Interval #1

Movement	EB	EB	EB	B14	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	TR	T	L	T	TR	L	TR	L	TR
Maximum Queue (ft)	257	289	238	21	139	286	261	195	297	204	415
Average Queue (ft)	204	166	148	3	68	218	163	112	169	150	268
95th Queue (ft)	301	358	245	24	158	310	296	212	301	232	430
Link Distance (ft)		275	275	214		1676	1676		1809		443
Upstream Blk Time (%)	3	3	0								0
Queuing Penalty (veh)	0	13	0								2
Storage Bay Dist (ft)	350				115			240		180	
Storage Blk Time (%)	3	3			2	46		5	1	27	
Queuing Penalty (veh)	5	12			3	27		6	2	33	

Intersection: 7: Broadway St & Newmark Ave, Interval #2

Movement	EB	EB	EB	B14	B14	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	TR	T	T	L	T	TR	L	TR	L	TR
Maximum Queue (ft)	271	292	239	4	6	140	252	229	185	245	204	372
Average Queue (ft)	173	89	118	0	0	48	140	84	71	121	87	164
95th Queue (ft)	268	200	195	4	5	119	228	189	148	216	174	299
Link Distance (ft)		275	275	214	214		1676	1676		1809		443
Upstream Blk Time (%)	1	1	0									0
Queuing Penalty (veh)	0	2	1									0
Storage Bay Dist (ft)	350					115			240		180	
Storage Blk Time (%)	1	1				0	25		0	0	8	
Queuing Penalty (veh)	1	1				1	11		0	0	7	

Intersection: 7: Broadway St & Newmark Ave, All Intervals

Movement	EB	EB	EB	B14	B14	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	TR	T	T	L	T	TR	L	TR	L	TR
Maximum Queue (ft)	273	328	256	25	6	140	286	272	243	303	204	422
Average Queue (ft)	180	108	126	1	0	52	159	103	81	133	102	189
95th Queue (ft)	279	253	210	12	5	130	264	229	169	243	199	349
Link Distance (ft)		275	275	214	214		1676	1676		1809		443
Upstream Blk Time (%)	1	1	0									0
Queuing Penalty (veh)	0	5	1									1
Storage Bay Dist (ft)	350					115			240		180	
Storage Blk Time (%)	1	1				1	30		1	0	12	
Queuing Penalty (veh)	2	4				1	15		2	1	13	

Intersection: 8: Thompson Rd & Broadway St, Interval #1

Movement	WB	WB	NB	SB	SB
Directions Served	L	R	TR	L	T
Maximum Queue (ft)	38	42	61	87	30
Average Queue (ft)	16	21	18	49	4
95th Queue (ft)	40	39	70	89	46
Link Distance (ft)		1148	1652		1809
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)	81			100	
Storage Blk Time (%)				1	
Queuing Penalty (veh)				2	

Intersection: 8: Thompson Rd & Broadway St, Interval #2

Movement	WB	WB	NB	SB
Directions Served	L	R	TR	L
Maximum Queue (ft)	40	52	82	92
Average Queue (ft)	13	23	12	34
95th Queue (ft)	34	43	51	76
Link Distance (ft)		1148	1652	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	81			100
Storage Blk Time (%)	0	0		0
Queuing Penalty (veh)	0	0		0

Intersection: 8: Thompson Rd & Broadway St, All Intervals

Movement	WB	WB	NB	SB	SB
Directions Served	L	R	TR	L	T
Maximum Queue (ft)	51	53	84	102	30
Average Queue (ft)	14	22	13	37	1
95th Queue (ft)	36	42	56	81	22
Link Distance (ft)		1148	1652		1809
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)	81			100	
Storage Blk Time (%)	0	0		0	
Queuing Penalty (veh)	0	0		1	

Intersection: 9: Ocean Blvd & Woodland Dr, Interval #1

Movement	EB	EB	EB	WB	WB	SB
Directions Served	L	T	T	T	R	LR
Maximum Queue (ft)	194	142	139	439	290	194
Average Queue (ft)	133	86	89	264	117	119
95th Queue (ft)	210	152	149	469	286	215
Link Distance (ft)		2175	2175	1131		1458
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)	150				200	
Storage Blk Time (%)	8	0		16		
Queuing Penalty (veh)	22	0		47		

Intersection: 9: Ocean Blvd & Woodland Dr, Interval #2

Movement	EB	EB	EB	WB	WB	SB
Directions Served	L	T	T	T	R	LR
Maximum Queue (ft)	185	142	141	277	214	197
Average Queue (ft)	93	63	71	162	60	87
95th Queue (ft)	154	116	122	256	140	170
Link Distance (ft)		2175	2175	1131		1458
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)	150				200	
Storage Blk Time (%)	2	0		4		
Queuing Penalty (veh)	3	0		9		

Intersection: 9: Ocean Blvd & Woodland Dr, All Intervals

Movement	EB	EB	EB	WB	WB	SB
Directions Served	L	T	T	T	R	LR
Maximum Queue (ft)	207	157	148	439	290	201
Average Queue (ft)	103	69	75	187	73	95
95th Queue (ft)	173	127	131	335	189	184
Link Distance (ft)		2175	2175	1131		1458
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)	150				200	
Storage Blk Time (%)	3	0		7		
Queuing Penalty (veh)	8	0		19		

Intersection: 10: Central Ave & 10th St, Interval #1

Movement	EB	EB	B58	WB	WB	B59	NB	NB	SB	SB
Directions Served	LT	R	T	LT	TR	T	L	TR	L	TR
Maximum Queue (ft)	440	165	482	276	223	22	292	155	158	127
Average Queue (ft)	376	87	173	204	145	4	196	92	109	69
95th Queue (ft)	516	207	565	296	271	30	336	166	171	129
Link Distance (ft)	368		702	228	228	274	477	477	735	735
Upstream Blk Time (%)	23		3	9	2					
Queuing Penalty (veh)	0		0	27	7					
Storage Bay Dist (ft)		140								
Storage Blk Time (%)	38	0								
Queuing Penalty (veh)	54	1								

Intersection: 10: Central Ave & 10th St, Interval #2

Movement	EB	EB	B58	WB	WB	B59	B59	NB	NB	SB	SB
Directions Served	LT	R	T	LT	TR	T	T	L	TR	L	TR
Maximum Queue (ft)	440	165	370	293	223	66	56	221	139	147	104
Average Queue (ft)	267	75	39	146	75	8	5	122	53	81	44
95th Queue (ft)	435	187	232	260	189	58	47	204	114	138	90
Link Distance (ft)	368		702	228	228	274	274	477	477	735	735
Upstream Blk Time (%)	7			7	1						
Queuing Penalty (veh)	0			15	3						
Storage Bay Dist (ft)		140									
Storage Blk Time (%)	26	0									
Queuing Penalty (veh)	26	0									

Intersection: 10: Central Ave & 10th St, All Intervals

Movement	EB	EB	B58	WB	WB	B59	B59	NB	NB	SB	SB
Directions Served	LT	R	T	LT	TR	T	T	L	TR	L	TR
Maximum Queue (ft)	440	165	509	300	243	83	56	295	167	168	127
Average Queue (ft)	293	78	71	160	92	7	4	140	63	87	50
95th Queue (ft)	472	192	344	276	219	52	41	252	132	150	103
Link Distance (ft)	368		702	228	228	274	274	477	477	735	735
Upstream Blk Time (%)	11		1	8	2						
Queuing Penalty (veh)	0		0	18	4						
Storage Bay Dist (ft)		140									
Storage Blk Time (%)	29	0									
Queuing Penalty (veh)	33	1									

Intersection: 11: Commercial Ave, Interval #1

Movement	EB	SB
Directions Served	R	TR
Maximum Queue (ft)	38	51
Average Queue (ft)	21	7
95th Queue (ft)	44	42
Link Distance (ft)	332	1249
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 11: Commercial Ave, Interval #2

Movement	EB	SB
Directions Served	R	TR
Maximum Queue (ft)	48	51
Average Queue (ft)	17	4
95th Queue (ft)	42	30
Link Distance (ft)	332	1249
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 11: Commercial Ave, All Intervals

Movement	EB	SB
Directions Served	R	TR
Maximum Queue (ft)	51	68
Average Queue (ft)	18	5
95th Queue (ft)	43	33
Link Distance (ft)	332	1249
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 12: , Interval #1

Movement	EB	EB	SB	SB
Directions Served	R	R	T	R
Maximum Queue (ft)	83	94	38	32
Average Queue (ft)	23	33	22	5
95th Queue (ft)	83	103	42	29
Link Distance (ft)	195	195	176	176
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 12: , Interval #2

Movement	EB	EB	SB	SB
Directions Served	R	R	T	R
Maximum Queue (ft)	92	137	35	22
Average Queue (ft)	10	22	15	1
95th Queue (ft)	55	90	38	13
Link Distance (ft)	195	195	176	176
Upstream Blk Time (%)		0		
Queuing Penalty (veh)		0		
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 12: , All Intervals

Movement	EB	EB	SB	SB
Directions Served	R	R	T	R
Maximum Queue (ft)	101	141	42	44
Average Queue (ft)	13	25	17	2
95th Queue (ft)	63	94	39	18
Link Distance (ft)	195	195	176	176
Upstream Blk Time (%)		0		
Queuing Penalty (veh)		0		
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 13: 7th St & Anderson Ave, Interval #1

Movement	EB	NB	SB	SB
Directions Served	TR	LTR	L	LTR
Maximum Queue (ft)	61	86	4	4
Average Queue (ft)	30	54	1	1
95th Queue (ft)	60	94	7	6
Link Distance (ft)	646	544	201	201
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 13: 7th St & Anderson Ave, Interval #2

Movement	EB	NB	SB
Directions Served	TR	LTR	LTR
Maximum Queue (ft)	54	85	4
Average Queue (ft)	23	37	0
95th Queue (ft)	46	69	4
Link Distance (ft)	646	544	201
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 13: 7th St & Anderson Ave, All Intervals

Movement	EB	NB	SB	SB
Directions Served	TR	LTR	L	LTR
Maximum Queue (ft)	68	100	4	4
Average Queue (ft)	25	41	0	0
95th Queue (ft)	50	78	3	4
Link Distance (ft)	646	544	201	201
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 17: Newmark Ave, Interval #1

Movement

Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 17: Newmark Ave, Interval #2

Movement

Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 17: Newmark Ave, All Intervals

Movement

Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 54: Broadway St, Interval #1

Movement	SB
Directions Served	T
Maximum Queue (ft)	26
Average Queue (ft)	4
95th Queue (ft)	30
Link Distance (ft)	2002
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 54: Broadway St, Interval #2

Movement	
Directions Served	
Maximum Queue (ft)	
Average Queue (ft)	
95th Queue (ft)	
Link Distance (ft)	
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 54: Broadway St, All Intervals

Movement	SB
Directions Served	T
Maximum Queue (ft)	26
Average Queue (ft)	1
95th Queue (ft)	14
Link Distance (ft)	2002
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Network Summary

Network wide Queuing Penalty, Interval #1: 270
Network wide Queuing Penalty, Interval #2: 82
Network wide Queuing Penalty, All Intervals: 129

Intersection: 1: Empire Blvd & Newmark Ave, Interval #1

Movement	EB	NB	SB
Directions Served	LTR	LTR	LTR
Maximum Queue (ft)	35	101	18
Average Queue (ft)	18	24	4
95th Queue (ft)	44	90	22
Link Distance (ft)	401	2847	1306
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 1: Empire Blvd & Newmark Ave, Interval #2

Movement	EB	B35	NB	SB
Directions Served	LTR	T	LTR	LTR
Maximum Queue (ft)	40	6	211	30
Average Queue (ft)	15	0	30	3
95th Queue (ft)	41	4	118	18
Link Distance (ft)	401	1798	2847	1306
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 1: Empire Blvd & Newmark Ave, All Intervals

Movement	EB	B35	NB	SB
Directions Served	LTR	T	LTR	LTR
Maximum Queue (ft)	40	6	211	31
Average Queue (ft)	16	0	28	3
95th Queue (ft)	42	3	112	19
Link Distance (ft)	401	1798	2847	1306
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 2: Ocean Blvd & Newmark, Interval #1

Movement	EB	WB	WB	NW	NW	NW
Directions Served	T	T	T	L	L	R
Maximum Queue (ft)	209	165	153	141	155	11
Average Queue (ft)	149	92	84	97	105	2
95th Queue (ft)	221	179	171	155	168	17
Link Distance (ft)	1798	1330	1330			2802
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)				300	300	
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 2: Ocean Blvd & Newmark, Interval #2

Movement	EB	WB	WB	B32	NW	NW	NW
Directions Served	T	T	T	T	L	L	R
Maximum Queue (ft)	296	194	192	222	154	168	33
Average Queue (ft)	145	83	81	10	99	109	2
95th Queue (ft)	252	159	167	184	144	154	16
Link Distance (ft)	1798	1330	1330	1001			2802
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)					300	300	
Storage Blk Time (%)							
Queuing Penalty (veh)							

Intersection: 2: Ocean Blvd & Newmark, All Intervals

Movement	EB	WB	WB	B32	NW	NW	NW
Directions Served	T	T	T	T	L	L	R
Maximum Queue (ft)	296	203	193	222	167	179	45
Average Queue (ft)	146	85	81	8	99	108	2
95th Queue (ft)	246	165	168	159	147	159	17
Link Distance (ft)	1798	1330	1330	1001			2802
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)					300	300	
Storage Blk Time (%)							
Queuing Penalty (veh)							

Intersection: 3: Laclair st & Newmark Ave, Interval #1

Movement	EB	EB	WB	WB	WB	NB
Directions Served	T	TR	L	T	T	LR
Maximum Queue (ft)	212	222	81	183	197	103
Average Queue (ft)	128	128	45	125	139	63
95th Queue (ft)	238	248	82	200	214	112
Link Distance (ft)	1001	1001		3783	3783	1145
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)			150			
Storage Blk Time (%)				5		
Queuing Penalty (veh)				3		

Intersection: 3: Laclair st & Newmark Ave, Interval #2

Movement	EB	EB	WB	WB	WB	NB
Directions Served	T	TR	L	T	T	LR
Maximum Queue (ft)	222	250	129	229	244	110
Average Queue (ft)	120	124	52	123	135	51
95th Queue (ft)	196	214	116	210	229	95
Link Distance (ft)	1001	1001		3783	3783	1145
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)			150			
Storage Blk Time (%)				5		
Queuing Penalty (veh)				2		

Intersection: 3: Laclair st & Newmark Ave, All Intervals

Movement	EB	EB	WB	WB	WB	NB
Directions Served	T	TR	L	T	T	LR
Maximum Queue (ft)	250	263	131	234	244	115
Average Queue (ft)	122	125	51	123	136	54
95th Queue (ft)	208	223	109	208	226	100
Link Distance (ft)	1001	1001		3783	3783	1145
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)			150			
Storage Blk Time (%)				5		
Queuing Penalty (veh)				3		

Intersection: 4: Ocean Blvd & Laclair St, Interval #1

Movement	SB	SE	NW
Directions Served	LR	LT	TR
Maximum Queue (ft)	113	194	19
Average Queue (ft)	62	68	3
95th Queue (ft)	117	218	23
Link Distance (ft)	341	2802	832
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 4: Ocean Blvd & Laclair St, Interval #2

Movement	SB	SE	NW
Directions Served	LR	LT	TR
Maximum Queue (ft)	122	133	5
Average Queue (ft)	49	30	0
95th Queue (ft)	96	93	4
Link Distance (ft)	341	2802	832
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 4: Ocean Blvd & Laclair St, All Intervals

Movement	SB	SE	NW
Directions Served	LR	LT	TR
Maximum Queue (ft)	129	202	19
Average Queue (ft)	52	39	1
95th Queue (ft)	102	135	12
Link Distance (ft)	341	2802	832
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 5: Lindy Ln & Ocean Blvd, Interval #1

Movement	NB
Directions Served	LR
Maximum Queue (ft)	19
Average Queue (ft)	5
95th Queue (ft)	22
Link Distance (ft)	784
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 5: Lindy Ln & Ocean Blvd, Interval #2

Movement	NB
Directions Served	LR
Maximum Queue (ft)	24
Average Queue (ft)	2
95th Queue (ft)	13
Link Distance (ft)	784
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 5: Lindy Ln & Ocean Blvd, All Intervals

Movement	NB
Directions Served	LR
Maximum Queue (ft)	25
Average Queue (ft)	3
95th Queue (ft)	16
Link Distance (ft)	784
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 6: Broadway St & 16th St, Interval #1

Movement	EB	WB	NB	NB	NB	SB	SB	SB
Directions Served	LTR	LTR	L	T	TR	L	T	TR
Maximum Queue (ft)	65	139	30	112	119	34	298	363
Average Queue (ft)	35	86	10	50	64	11	126	191
95th Queue (ft)	72	153	32	114	127	35	282	372
Link Distance (ft)	915	1559		2002	2002		528	528
Upstream Blk Time (%)								0
Queuing Penalty (veh)								0
Storage Bay Dist (ft)			150			150		
Storage Blk Time (%)							4	
Queuing Penalty (veh)							0	

Intersection: 6: Broadway St & 16th St, Interval #2

Movement	EB	WB	NB	NB	NB	SB	SB	SB
Directions Served	LTR	LTR	L	T	TR	L	T	TR
Maximum Queue (ft)	103	161	39	149	145	43	212	310
Average Queue (ft)	38	82	9	51	70	12	88	124
95th Queue (ft)	82	143	32	119	134	38	174	266
Link Distance (ft)	915	1559		2002	2002		528	528
Upstream Blk Time (%)								0
Queuing Penalty (veh)								0
Storage Bay Dist (ft)			150			150		
Storage Blk Time (%)				0			1	
Queuing Penalty (veh)				0			0	

Intersection: 6: Broadway St & 16th St, All Intervals

Movement	EB	WB	NB	NB	NB	SB	SB	SB
Directions Served	LTR	LTR	L	T	TR	L	T	TR
Maximum Queue (ft)	107	174	39	149	153	47	303	414
Average Queue (ft)	38	83	10	51	68	11	97	140
95th Queue (ft)	79	146	32	118	133	37	208	300
Link Distance (ft)	915	1559		2002	2002		528	528
Upstream Blk Time (%)								0
Queuing Penalty (veh)								0
Storage Bay Dist (ft)			150			150		
Storage Blk Time (%)				0			2	
Queuing Penalty (veh)				0			0	

Intersection: 7: Broadway St & Newmark Ave, Interval #1

Movement	EB	EB	EB	B14	B14	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	TR	T	T	L	T	TR	L	TR	L	TR
Maximum Queue (ft)	273	330	280	76	43	139	445	425	245	391	204	275
Average Queue (ft)	240	247	203	20	7	93	335	303	166	277	112	181
95th Queue (ft)	308	387	303	122	67	169	521	502	278	519	206	287
Link Distance (ft)		275	275	214	214		1676	1676		1809		443
Upstream Blk Time (%)	9	12	1	1	0							
Queuing Penalty (veh)	0	72	7	5	0							
Storage Bay Dist (ft)	350					115			240		180	
Storage Blk Time (%)	9	12				2	68		1	13	1	10
Queuing Penalty (veh)	24	49				4	50		3	25	3	12

Intersection: 7: Broadway St & Newmark Ave, Interval #2

Movement	EB	EB	EB	B14	B14	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	TR	T	T	L	T	TR	L	TR	L	TR
Maximum Queue (ft)	274	348	302	76	38	140	607	591	256	450	204	323
Average Queue (ft)	240	212	177	7	2	91	363	317	168	226	107	186
95th Queue (ft)	299	374	285	41	25	178	613	604	280	432	196	314
Link Distance (ft)		275	275	214	214		1676	1676		1809		443
Upstream Blk Time (%)	5	6	2									
Queuing Penalty (veh)	0	33	8									
Storage Bay Dist (ft)	350					115			240		180	
Storage Blk Time (%)	5	6				3	69		0	8	1	10
Queuing Penalty (veh)	12	23				6	45		1	15	2	11

Intersection: 7: Broadway St & Newmark Ave, All Intervals

Movement	EB	EB	EB	B14	B14	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	TR	T	T	L	T	TR	L	TR	L	TR
Maximum Queue (ft)	274	348	315	115	53	140	607	591	256	500	204	323
Average Queue (ft)	240	220	183	10	3	92	357	314	167	238	108	185
95th Queue (ft)	301	380	291	69	39	176	593	582	280	456	198	307
Link Distance (ft)		275	275	214	214		1676	1676		1809		443
Upstream Blk Time (%)	6	7	1	0	0							
Queuing Penalty (veh)	0	43	8	1	0							
Storage Bay Dist (ft)	350					115			240		180	
Storage Blk Time (%)	6	7				3	69		0	9	1	10
Queuing Penalty (veh)	15	29				5	47		2	17	2	11

Intersection: 8: Thompson Rd & Broadway St, Interval #1

Movement	WB	WB	NB	SB
Directions Served	L	R	TR	L
Maximum Queue (ft)	52	105	29	63
Average Queue (ft)	22	52	7	30
95th Queue (ft)	53	122	42	69
Link Distance (ft)		1148	1652	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	81			100
Storage Blk Time (%)		3		0
Queuing Penalty (veh)		1		0

Intersection: 8: Thompson Rd & Broadway St, Interval #2

Movement	WB	WB	NB	SB
Directions Served	L	R	TR	L
Maximum Queue (ft)	51	74	24	62
Average Queue (ft)	20	35	2	26
95th Queue (ft)	43	66	14	58
Link Distance (ft)		1148	1652	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	81			100
Storage Blk Time (%)		0		0
Queuing Penalty (veh)		0		0

Intersection: 8: Thompson Rd & Broadway St, All Intervals

Movement	WB	WB	NB	SB
Directions Served	L	R	TR	L
Maximum Queue (ft)	60	118	38	71
Average Queue (ft)	21	39	3	27
95th Queue (ft)	46	84	24	61
Link Distance (ft)		1148	1652	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	81			100
Storage Blk Time (%)		1		0
Queuing Penalty (veh)		0		0

Intersection: 9: Ocean Blvd & Woodland Dr, Interval #1

Movement	EB	EB	EB	WB	WB	SB
Directions Served	L	T	T	T	R	LR
Maximum Queue (ft)	131	135	157	463	245	335
Average Queue (ft)	83	84	98	288	91	211
95th Queue (ft)	141	144	169	538	255	364
Link Distance (ft)		2175	2175	1139		1459
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)	150				200	
Storage Blk Time (%)	1	0		21		
Queuing Penalty (veh)	2	0		38		

Intersection: 9: Ocean Blvd & Woodland Dr, Interval #2

Movement	EB	EB	EB	WB	WB	SB
Directions Served	L	T	T	T	R	LR
Maximum Queue (ft)	156	140	155	472	290	317
Average Queue (ft)	75	73	82	235	70	166
95th Queue (ft)	137	124	142	394	210	288
Link Distance (ft)		2175	2175	1139		1459
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)	150				200	
Storage Blk Time (%)	1	0		13		
Queuing Penalty (veh)	2	0		21		

Intersection: 9: Ocean Blvd & Woodland Dr, All Intervals

Movement	EB	EB	EB	WB	WB	SB
Directions Served	L	T	T	T	R	LR
Maximum Queue (ft)	169	157	166	528	290	363
Average Queue (ft)	77	76	86	248	75	177
95th Queue (ft)	139	129	150	437	222	311
Link Distance (ft)		2175	2175	1139		1459
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)	150				200	
Storage Blk Time (%)	1	0		15		
Queuing Penalty (veh)	2	0		25		

Intersection: 10: Central Ave & 10th St, Interval #1

Movement	EB	EB	B58	WB	WB	NB	NB	SB	SB
Directions Served	LT	R	T	LT	TR	L	TR	L	TR
Maximum Queue (ft)	417	165	27	189	137	192	118	200	112
Average Queue (ft)	291	118	5	121	54	128	64	123	63
95th Queue (ft)	445	216	33	186	127	208	122	219	125
Link Distance (ft)	368		702	228	228	477	477	735	735
Upstream Blk Time (%)	5			0					
Queuing Penalty (veh)	0			1					
Storage Bay Dist (ft)		140							
Storage Blk Time (%)	30	0							
Queuing Penalty (veh)	38	1							

Intersection: 10: Central Ave & 10th St, Interval #2

Movement	EB	EB	B58	WB	WB	B59	B59	NB	NB	SB	SB
Directions Served	LT	R	T	LT	TR	T	T	L	TR	L	TR
Maximum Queue (ft)	405	165	50	231	189	30	24	208	120	170	134
Average Queue (ft)	231	88	2	118	59	1	1	102	54	86	56
95th Queue (ft)	368	199	26	193	146	25	20	172	104	152	110
Link Distance (ft)	368		702	228	228	274	274	477	477	735	735
Upstream Blk Time (%)	1			1	0						
Queuing Penalty (veh)	0			1	0						
Storage Bay Dist (ft)		140									
Storage Blk Time (%)	20	0									
Queuing Penalty (veh)	24	1									

Intersection: 10: Central Ave & 10th St, All Intervals

Movement	EB	EB	B58	WB	WB	B59	B59	NB	NB	SB	SB
Directions Served	LT	R	T	LT	TR	T	T	L	TR	L	TR
Maximum Queue (ft)	429	165	66	238	189	30	24	212	124	217	150
Average Queue (ft)	246	95	3	118	58	1	1	108	57	95	57
95th Queue (ft)	393	205	28	192	141	21	17	183	109	174	114
Link Distance (ft)	368		702	228	228	274	274	477	477	735	735
Upstream Blk Time (%)	2			1	0						
Queuing Penalty (veh)	0			1	0						
Storage Bay Dist (ft)		140									
Storage Blk Time (%)	23	0									
Queuing Penalty (veh)	28	1									

Intersection: 11: Commercial Ave, Interval #1

Movement	EB	SW	SW
Directions Served	R	L	LR
Maximum Queue (ft)	28	4	18
Average Queue (ft)	19	1	3
95th Queue (ft)	36	7	28
Link Distance (ft)	326	1244	1244
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 11: Commercial Ave, Interval #2

Movement	EB	SW
Directions Served	R	LR
Maximum Queue (ft)	38	6
Average Queue (ft)	18	0
95th Queue (ft)	37	0
Link Distance (ft)	326	1244
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 11: Commercial Ave, All Intervals

Movement	EB	SW	SW
Directions Served	R	L	LR
Maximum Queue (ft)	38	4	24
Average Queue (ft)	18	0	1
95th Queue (ft)	37	3	13
Link Distance (ft)	326	1244	1244
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 12: , Interval #1

Movement	EB	EB	WB	SB	SB
Directions Served	R	R	LT	R	R
Maximum Queue (ft)	45	83	38	76	21
Average Queue (ft)	12	29	25	19	3
95th Queue (ft)	55	88	48	70	32
Link Distance (ft)	195	195	104	158	158
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 12: , Interval #2

Movement	EB	EB	WB	SB	SB
Directions Served	R	R	LT	R	R
Maximum Queue (ft)	80	111	51	69	21
Average Queue (ft)	16	31	23	9	1
95th Queue (ft)	64	93	48	44	17
Link Distance (ft)	195	195	104	158	158
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 12: , All Intervals

Movement	EB	EB	WB	SB	SB
Directions Served	R	R	LT	R	R
Maximum Queue (ft)	88	119	51	86	42
Average Queue (ft)	15	30	24	11	1
95th Queue (ft)	62	91	48	52	22
Link Distance (ft)	195	195	104	158	158
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 13: 7th St & Anderson Ave, Interval #1

Movement	EB	NB	SB
Directions Served	TR	LTR	LTR
Maximum Queue (ft)	59	52	12
Average Queue (ft)	35	30	2
95th Queue (ft)	59	52	14
Link Distance (ft)	646	832	201
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 13: 7th St & Anderson Ave, Interval #2

Movement	EB	NB	SB
Directions Served	TR	LTR	LTR
Maximum Queue (ft)	90	63	4
Average Queue (ft)	33	28	0
95th Queue (ft)	64	52	4
Link Distance (ft)	646	832	201
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 13: 7th St & Anderson Ave, All Intervals

Movement	EB	NB	SB
Directions Served	TR	LTR	LTR
Maximum Queue (ft)	90	67	12
Average Queue (ft)	33	28	1
95th Queue (ft)	63	52	7
Link Distance (ft)	646	832	201
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 17: Newmark Ave, Interval #1

Movement	EB
Directions Served	T
Maximum Queue (ft)	6
Average Queue (ft)	1
95th Queue (ft)	9
Link Distance (ft)	3783
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 17: Newmark Ave, Interval #2

Movement	
Directions Served	
Maximum Queue (ft)	
Average Queue (ft)	
95th Queue (ft)	
Link Distance (ft)	
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 17: Newmark Ave, All Intervals

Movement	EB
Directions Served	T
Maximum Queue (ft)	6
Average Queue (ft)	0
95th Queue (ft)	4
Link Distance (ft)	3783
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 54: Broadway St, Interval #1

Movement

Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 54: Broadway St, Interval #2

Movement

Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 54: Broadway St, All Intervals

Movement

Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Network Summary

Network wide Queuing Penalty, Interval #1: 340
Network wide Queuing Penalty, Interval #2: 207
Network wide Queuing Penalty, All Intervals: 241

Intersection: 1: Empire Blvd & Newmark Ave, Interval #1

Movement	EB	NB	SB
Directions Served	LTR	LTR	LTR
Maximum Queue (ft)	31	90	24
Average Queue (ft)	15	28	4
95th Queue (ft)	40	92	21
Link Distance (ft)	401	2847	1306
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 1: Empire Blvd & Newmark Ave, Interval #2

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	44	4	136	31
Average Queue (ft)	16	0	21	5
95th Queue (ft)	43	4	90	23
Link Distance (ft)	401	1074	2847	1306
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 1: Empire Blvd & Newmark Ave, All Intervals

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	44	4	153	31
Average Queue (ft)	16	0	23	5
95th Queue (ft)	42	3	90	23
Link Distance (ft)	401	1074	2847	1306
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 2: Ocean Blvd & Newmark, Interval #1

Movement	EB	WB	WB	NW	NW	NW
Directions Served	T	T	T	L	L	R
Maximum Queue (ft)	240	165	157	188	217	66
Average Queue (ft)	150	89	84	105	122	10
95th Queue (ft)	256	168	164	174	204	89
Link Distance (ft)	1798	1330	1330			2802
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)				300	300	
Storage Blk Time (%)						0
Queuing Penalty (veh)						0

Intersection: 2: Ocean Blvd & Newmark, Interval #2

Movement	EB	WB	WB	NW	NW	NW
Directions Served	T	T	T	L	L	R
Maximum Queue (ft)	303	160	167	170	186	85
Average Queue (ft)	145	70	65	101	115	8
95th Queue (ft)	252	140	145	150	170	64
Link Distance (ft)	1798	1330	1330			2802
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)				300	300	
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 2: Ocean Blvd & Newmark, All Intervals

Movement	EB	WB	WB	NW	NW	NW
Directions Served	T	T	T	L	L	R
Maximum Queue (ft)	312	176	179	199	217	131
Average Queue (ft)	146	75	69	102	117	8
95th Queue (ft)	253	148	150	157	180	71
Link Distance (ft)	1798	1330	1330			2802
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)				300	300	
Storage Blk Time (%)						0
Queuing Penalty (veh)						0

Intersection: 3: Laclair st & Newmark Ave, Interval #1

Movement	EB	EB	WB	WB	WB	NB
Directions Served	T	TR	L	T	T	LR
Maximum Queue (ft)	238	255	170	186	216	139
Average Queue (ft)	160	159	120	119	134	72
95th Queue (ft)	249	262	186	218	245	123
Link Distance (ft)	1001	1001		3783	3783	1145
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)			150			
Storage Blk Time (%)			3	5		
Queuing Penalty (veh)			13	7		

Intersection: 3: Laclair st & Newmark Ave, Interval #2

Movement	EB	EB	WB	WB	WB	NB
Directions Served	T	TR	L	T	T	LR
Maximum Queue (ft)	280	285	167	222	221	124
Average Queue (ft)	131	135	92	122	131	51
95th Queue (ft)	226	233	158	205	211	99
Link Distance (ft)	1001	1001		3783	3783	1145
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)			150			
Storage Blk Time (%)			1	4		
Queuing Penalty (veh)			4	4		

Intersection: 3: Laclair st & Newmark Ave, All Intervals

Movement	EB	EB	WB	WB	WB	NB
Directions Served	T	TR	L	T	T	LR
Maximum Queue (ft)	292	302	174	228	244	144
Average Queue (ft)	138	140	98	121	132	56
95th Queue (ft)	234	241	168	208	220	107
Link Distance (ft)	1001	1001		3783	3783	1145
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)			150			
Storage Blk Time (%)			2	4		
Queuing Penalty (veh)			7	5		

Intersection: 4: Ocean Blvd & Laclair St, Interval #1

Movement	SB	SE	NW
Directions Served	LR	LT	TR
Maximum Queue (ft)	238	323	9
Average Queue (ft)	154	73	2
95th Queue (ft)	270	224	12
Link Distance (ft)	341	2802	832
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 4: Ocean Blvd & Laclair St, Interval #2

Movement	SB	B34	SE	NW
Directions Served	LR	T	LT	TR
Maximum Queue (ft)	294	9	277	19
Average Queue (ft)	118	0	51	1
95th Queue (ft)	242	7	185	12
Link Distance (ft)	341	1145	2802	832
Upstream Blk Time (%)	1			
Queuing Penalty (veh)	1			
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 4: Ocean Blvd & Laclair St, All Intervals

Movement	SB	B34	SE	NW
Directions Served	LR	T	LT	TR
Maximum Queue (ft)	303	9	349	24
Average Queue (ft)	127	0	56	1
95th Queue (ft)	251	6	195	12
Link Distance (ft)	341	1145	2802	832
Upstream Blk Time (%)	1			
Queuing Penalty (veh)	1			
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 5: Lindy Ln & Ocean Blvd, Interval #1

Movement	EB	WB	B36	NB
Directions Served	TR	LT	T	LR
Maximum Queue (ft)	13	305	252	750
Average Queue (ft)	2	236	104	548
95th Queue (ft)	12	366	336	922
Link Distance (ft)	832	217	1288	784
Upstream Blk Time (%)		22		23
Queuing Penalty (veh)		0		0
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 5: Lindy Ln & Ocean Blvd, Interval #2

Movement	EB	WB	B36	B36	NB
Directions Served	TR	LT	T		LR
Maximum Queue (ft)	20	295	290	61	806
Average Queue (ft)	2	161	43	3	717
95th Queue (ft)	15	314	227	47	976
Link Distance (ft)	832	217	1288	1288	784
Upstream Blk Time (%)		11			62
Queuing Penalty (veh)		0			0
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 5: Lindy Ln & Ocean Blvd, All Intervals

Movement	EB	WB	B36	B36	NB
Directions Served	TR	LT	T		LR
Maximum Queue (ft)	24	309	339	61	808
Average Queue (ft)	2	179	57	2	676
95th Queue (ft)	14	336	259	41	991
Link Distance (ft)	832	217	1288	1288	784
Upstream Blk Time (%)		14			52
Queuing Penalty (veh)		0			0
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 6: Broadway St & 16th St, Interval #1

Movement	EB	WB	NB	NB	NB	SB	SB	SB
Directions Served	LTR	LTR	L	T	TR	L	T	TR
Maximum Queue (ft)	73	145	24	146	148	34	174	101
Average Queue (ft)	36	88	8	70	90	10	95	42
95th Queue (ft)	77	146	28	142	157	34	166	101
Link Distance (ft)	915	1559		2002	2002		528	528
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)			150			150		
Storage Blk Time (%)				1			1	
Queuing Penalty (veh)				0			0	

Intersection: 6: Broadway St & 16th St, Interval #2

Movement	EB	WB	NB	NB	NB	SB	SB	SB
Directions Served	LTR	LTR	L	T	TR	L	T	TR
Maximum Queue (ft)	82	179	31	141	161	39	161	98
Average Queue (ft)	31	88	6	57	77	11	76	33
95th Queue (ft)	72	159	24	118	146	36	142	80
Link Distance (ft)	915	1559		2002	2002		528	528
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)			150			150		
Storage Blk Time (%)				0			0	
Queuing Penalty (veh)				0			0	

Intersection: 6: Broadway St & 16th St, All Intervals

Movement	EB	WB	NB	NB	NB	SB	SB	SB
Directions Served	LTR	LTR	L	T	TR	L	T	TR
Maximum Queue (ft)	86	181	31	170	179	44	184	123
Average Queue (ft)	32	88	6	60	80	11	81	35
95th Queue (ft)	73	156	25	125	149	36	149	86
Link Distance (ft)	915	1559		2002	2002		528	528
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)			150			150		
Storage Blk Time (%)				0			1	
Queuing Penalty (veh)				0			0	

Intersection: 7: Broadway St & Newmark Ave, Interval #1

Movement	EB	EB	EB	B14	B14	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	TR	T	T	L	T	TR	L	TR	L	TR
Maximum Queue (ft)	274	356	302	107	13	140	546	503	264	498	204	404
Average Queue (ft)	257	275	199	21	2	105	383	349	206	351	135	279
95th Queue (ft)	292	412	310	116	15	185	567	552	323	671	241	433
Link Distance (ft)		275	275	214	214		1676	1676		1809		443
Upstream Blk Time (%)	13	14	2	1								2
Queuing Penalty (veh)	0	85	13	4								8
Storage Bay Dist (ft)	350					115			240		180	
Storage Blk Time (%)	13	14				3	80		6	18	1	29
Queuing Penalty (veh)	35	58				7	58		27	34	4	34

Intersection: 7: Broadway St & Newmark Ave, Interval #2

Movement	EB	EB	EB	B14	B14	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	TR	T	T	L	T	TR	L	TR	L	TR
Maximum Queue (ft)	274	350	319	230	128	140	812	793	265	655	205	415
Average Queue (ft)	244	248	192	41	18	89	619	587	182	302	132	264
95th Queue (ft)	309	408	307	176	114	174	997	986	300	547	237	429
Link Distance (ft)		275	275	214	214		1676	1676		1809		443
Upstream Blk Time (%)	12	16	2	2	0							2
Queuing Penalty (veh)	0	89	12	11	0							7
Storage Bay Dist (ft)	350					115			240		180	
Storage Blk Time (%)	12	16				3	77		6	13	2	27
Queuing Penalty (veh)	28	62				5	51		25	22	8	28

Intersection: 7: Broadway St & Newmark Ave, All Intervals

Movement	EB	EB	EB	B14	B14	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	TR	T	T	L	T	TR	L	TR	L	TR
Maximum Queue (ft)	274	356	332	230	128	140	812	793	265	674	205	443
Average Queue (ft)	247	254	194	36	14	93	562	529	188	314	133	268
95th Queue (ft)	307	411	308	164	99	178	942	928	307	581	238	431
Link Distance (ft)		275	275	214	214		1676	1676		1809		443
Upstream Blk Time (%)	12	16	2	2	0							2
Queuing Penalty (veh)	0	88	12	9	0							7
Storage Bay Dist (ft)	350					115			240		180	
Storage Blk Time (%)	12	16				3	77		6	14	2	27
Queuing Penalty (veh)	30	61				6	53		25	25	7	30

Intersection: 8: Thompson Rd & Broadway St, Interval #1

Movement	WB	WB	NB	SB
Directions Served	L	R	TR	L
Maximum Queue (ft)	59	98	30	77
Average Queue (ft)	26	49	8	36
95th Queue (ft)	60	93	37	81
Link Distance (ft)		1148	1652	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	81			100
Storage Blk Time (%)	0	2		0
Queuing Penalty (veh)	0	1		2

Intersection: 8: Thompson Rd & Broadway St, Interval #2

Movement	WB	WB	NB	SB
Directions Served	L	R	TR	L
Maximum Queue (ft)	76	117	62	80
Average Queue (ft)	26	38	5	32
95th Queue (ft)	57	80	32	71
Link Distance (ft)		1148	1652	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	81			100
Storage Blk Time (%)	0	0		0
Queuing Penalty (veh)	1	0		1

Intersection: 8: Thompson Rd & Broadway St, All Intervals

Movement	WB	WB	NB	SB
Directions Served	L	R	TR	L
Maximum Queue (ft)	84	122	62	88
Average Queue (ft)	26	41	5	33
95th Queue (ft)	58	84	33	74
Link Distance (ft)		1148	1652	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	81			100
Storage Blk Time (%)	0	1		0
Queuing Penalty (veh)	0	1		1

Intersection: 9: Ocean Blvd & Woodland Dr, Interval #1

Movement	EB	EB	EB	WB	WB	SB
Directions Served	L	T	T	T	R	LR
Maximum Queue (ft)	233	259	227	718	290	485
Average Queue (ft)	158	148	138	491	155	331
95th Queue (ft)	275	314	274	874	359	523
Link Distance (ft)		2175	2175	1139		1459
Upstream Blk Time (%)				3		
Queuing Penalty (veh)				0		
Storage Bay Dist (ft)	150				200	
Storage Blk Time (%)	27	2		36		
Queuing Penalty (veh)	71	5		66		

Intersection: 9: Ocean Blvd & Woodland Dr, Interval #2

Movement	EB	EB	EB	WB	WB	SB
Directions Served	L	T	T	T	R	LR
Maximum Queue (ft)	227	243	228	654	290	452
Average Queue (ft)	135	96	100	386	145	245
95th Queue (ft)	215	204	190	765	348	416
Link Distance (ft)		2175	2175	1139		1459
Upstream Blk Time (%)				2		
Queuing Penalty (veh)				0		
Storage Bay Dist (ft)	150				200	
Storage Blk Time (%)	10	1		30		
Queuing Penalty (veh)	22	1		47		

Intersection: 9: Ocean Blvd & Woodland Dr, All Intervals

Movement	EB	EB	EB	WB	WB	SB
Directions Served	L	T	T	T	R	LR
Maximum Queue (ft)	240	284	252	719	290	498
Average Queue (ft)	141	108	109	411	147	266
95th Queue (ft)	232	238	215	798	351	452
Link Distance (ft)		2175	2175	1139		1459
Upstream Blk Time (%)				2		
Queuing Penalty (veh)				0		
Storage Bay Dist (ft)	150				200	
Storage Blk Time (%)	14	1		31		
Queuing Penalty (veh)	34	2		52		

Intersection: 10: Central Ave & 10th St, Interval #1

Movement	EB	EB	B58	WB	WB	B59	NB	NB	SB	SB
Directions Served	LT	R	T	LT	TR	T	L	TR	L	TR
Maximum Queue (ft)	437	165	179	259	205	11	226	117	144	116
Average Queue (ft)	327	105	106	166	112	2	136	56	91	70
95th Queue (ft)	488	214	503	266	222	13	240	101	152	122
Link Distance (ft)	368		702	228	228	274	477	477	735	735
Upstream Blk Time (%)	14		8	3	0					
Queuing Penalty (veh)	0		0	9	0					
Storage Bay Dist (ft)		140								
Storage Blk Time (%)	36	0								
Queuing Penalty (veh)	49	1								

Intersection: 10: Central Ave & 10th St, Interval #2

Movement	EB	EB	B58	WB	WB	B59	B59	NB	NB	SB	SB
Directions Served	LT	R	T	LT	TR	T	T	L	TR	L	TR
Maximum Queue (ft)	439	165	364	274	216	9	4	235	165	172	111
Average Queue (ft)	287	82	81	135	76	0	0	119	63	90	57
95th Queue (ft)	464	195	398	214	178	6	3	207	136	153	102
Link Distance (ft)	368		702	228	228	274	274	477	477	735	735
Upstream Blk Time (%)	10		2	1	1						
Queuing Penalty (veh)	0		0	3	1						
Storage Bay Dist (ft)		140									
Storage Blk Time (%)	29	0									
Queuing Penalty (veh)	35	0									

Intersection: 10: Central Ave & 10th St, All Intervals

Movement	EB	EB	B58	WB	WB	B59	B59	NB	NB	SB	SB
Directions Served	LT	R	T	LT	TR	T	T	L	TR	L	TR
Maximum Queue (ft)	446	165	384	291	231	17	4	252	166	172	129
Average Queue (ft)	297	88	87	142	85	1	0	123	61	90	60
95th Queue (ft)	472	201	426	230	191	8	2	216	129	153	108
Link Distance (ft)	368		702	228	228	274	274	477	477	735	735
Upstream Blk Time (%)	11		4	2	0						
Queuing Penalty (veh)	0		0	4	1						
Storage Bay Dist (ft)		140									
Storage Blk Time (%)	31	0									
Queuing Penalty (veh)	39	1									

Intersection: 11: Commercial Ave, Interval #1

Movement	EB	SW
Directions Served	R	LR
Maximum Queue (ft)	47	15
Average Queue (ft)	24	2
95th Queue (ft)	52	17
Link Distance (ft)	326	1244
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 11: Commercial Ave, Interval #2

Movement	EB	SW
Directions Served	R	LR
Maximum Queue (ft)	43	28
Average Queue (ft)	19	2
95th Queue (ft)	40	14
Link Distance (ft)	326	1244
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 11: Commercial Ave, All Intervals

Movement	EB	SW
Directions Served	R	LR
Maximum Queue (ft)	61	40
Average Queue (ft)	21	2
95th Queue (ft)	44	15
Link Distance (ft)	326	1244
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 12: , Interval #1

Movement	EB	EB	WB	SB	SB
Directions Served	R	R	LT	R	R
Maximum Queue (ft)	82	110	34	70	22
Average Queue (ft)	19	41	23	22	3
95th Queue (ft)	80	113	45	75	24
Link Distance (ft)	195	195	104	158	158
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 12: , Interval #2

Movement	EB	EB	WB	SB	SB
Directions Served	R	R	LT	R	R
Maximum Queue (ft)	70	128	42	110	71
Average Queue (ft)	11	34	23	16	4
95th Queue (ft)	50	99	46	69	36
Link Distance (ft)	195	195	104	158	158
Upstream Blk Time (%)				0	0
Queuing Penalty (veh)				0	0
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 12: , All Intervals

Movement	EB	EB	WB	SB	SB
Directions Served	R	R	LT	R	R
Maximum Queue (ft)	84	137	46	115	74
Average Queue (ft)	13	35	23	17	4
95th Queue (ft)	59	102	46	71	33
Link Distance (ft)	195	195	104	158	158
Upstream Blk Time (%)				0	0
Queuing Penalty (veh)				0	0
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 13: 7th St & Anderson Ave, Interval #1

Movement	EB	NB	SB	SB
Directions Served	TR	LTR	L	LTR
Maximum Queue (ft)	68	64	4	10
Average Queue (ft)	40	33	1	1
95th Queue (ft)	70	67	7	12
Link Distance (ft)	646	832	201	201
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 13: 7th St & Anderson Ave, Interval #2

Movement	EB	NB	SB	SB
Directions Served	TR	LTR	L	LTR
Maximum Queue (ft)	83	81	5	15
Average Queue (ft)	33	30	0	1
95th Queue (ft)	65	57	5	12
Link Distance (ft)	646	832	201	201
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 13: 7th St & Anderson Ave, All Intervals

Movement	EB	NB	SB	SB
Directions Served	TR	LTR	L	LTR
Maximum Queue (ft)	83	87	9	21
Average Queue (ft)	35	31	0	1
95th Queue (ft)	67	60	6	12
Link Distance (ft)	646	832	201	201
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 17: Newmark Ave, Interval #1

Movement	EB
Directions Served	T
Maximum Queue (ft)	6
Average Queue (ft)	1
95th Queue (ft)	9
Link Distance (ft)	3783
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 17: Newmark Ave, Interval #2

Movement	EB
Directions Served	T
Maximum Queue (ft)	36
Average Queue (ft)	3
95th Queue (ft)	25
Link Distance (ft)	3783
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 17: Newmark Ave, All Intervals

Movement	EB
Directions Served	T
Maximum Queue (ft)	36
Average Queue (ft)	2
95th Queue (ft)	22
Link Distance (ft)	3783
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 54: Broadway St, Interval #1

Movement	SB
Directions Served	T
Maximum Queue (ft)	24
Average Queue (ft)	10
95th Queue (ft)	64
Link Distance (ft)	2002
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 54: Broadway St, Interval #2

Movement	SB
Directions Served	T
Maximum Queue (ft)	64
Average Queue (ft)	10
95th Queue (ft)	66
Link Distance (ft)	2002
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 54: Broadway St, All Intervals

Movement	SB
Directions Served	T
Maximum Queue (ft)	82
Average Queue (ft)	10
95th Queue (ft)	65
Link Distance (ft)	2002
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Network Summary

Network wide Queuing Penalty, Interval #1: 594
Network wide Queuing Penalty, Interval #2: 469
Network wide Queuing Penalty, All Intervals: 501

Intersection: 1: Empire Blvd & Newmark Ave, Interval #1

Movement	EB	NB	SB
Directions Served	LTR	LTR	LTR
Maximum Queue (ft)	31	11	31
Average Queue (ft)	7	3	10
95th Queue (ft)	28	24	33
Link Distance (ft)	401	2847	1306
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 1: Empire Blvd & Newmark Ave, Interval #2

Movement	EB	NB	SB
Directions Served	LTR	LTR	LTR
Maximum Queue (ft)	31	58	31
Average Queue (ft)	7	4	7
95th Queue (ft)	28	33	27
Link Distance (ft)	401	2847	1306
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 1: Empire Blvd & Newmark Ave, All Intervals

Movement	EB	NB	SB
Directions Served	LTR	LTR	LTR
Maximum Queue (ft)	31	59	31
Average Queue (ft)	7	4	8
95th Queue (ft)	28	31	29
Link Distance (ft)	401	2847	1306
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 2: Ocean Blvd, Interval #1

Movement	EB	WB	WB	NW	NW
Directions Served	T	T	T	L	L
Maximum Queue (ft)	336	131	122	95	89
Average Queue (ft)	236	72	68	54	56
95th Queue (ft)	344	139	139	104	90
Link Distance (ft)	1798	1330	1330		
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)				300	300
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 2: Ocean Blvd, Interval #2

Movement	EB	WB	WB	NW	NW
Directions Served	T	T	T	L	L
Maximum Queue (ft)	296	129	130	80	80
Average Queue (ft)	168	64	53	23	42
95th Queue (ft)	265	119	118	63	75
Link Distance (ft)	1798	1330	1330		
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)				300	300
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 2: Ocean Blvd, All Intervals

Movement	EB	WB	WB	NW	NW
Directions Served	T	T	T	L	L
Maximum Queue (ft)	344	144	141	95	93
Average Queue (ft)	184	66	57	30	45
95th Queue (ft)	295	124	124	78	81
Link Distance (ft)	1798	1330	1330		
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)				300	300
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 3: Laclair st & Newmark Ave, Interval #1

Movement	EB	EB	WB	WB	WB	NB
Directions Served	T	TR	L	T	T	LR
Maximum Queue (ft)	243	260	122	174	178	84
Average Queue (ft)	134	143	61	99	107	46
95th Queue (ft)	242	264	129	178	184	95
Link Distance (ft)	1001	1001		3783	3783	1145
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)			150			
Storage Blk Time (%)			1	2		
Queuing Penalty (veh)			2	2		

Intersection: 3: Laclair st & Newmark Ave, Interval #2

Movement	EB	EB	WB	WB	WB	NB
Directions Served	T	TR	L	T	T	LR
Maximum Queue (ft)	180	210	124	159	168	77
Average Queue (ft)	100	110	44	83	94	34
95th Queue (ft)	167	187	96	141	159	69
Link Distance (ft)	1001	1001		3783	3783	1145
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)			150			
Storage Blk Time (%)				0		
Queuing Penalty (veh)				0		

Intersection: 3: Laclair st & Newmark Ave, All Intervals

Movement	EB	EB	WB	WB	WB	NB
Directions Served	T	TR	L	T	T	LR
Maximum Queue (ft)	244	264	136	180	189	90
Average Queue (ft)	108	118	49	87	97	37
95th Queue (ft)	190	211	105	152	166	77
Link Distance (ft)	1001	1001		3783	3783	1145
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)			150			
Storage Blk Time (%)			0	1		
Queuing Penalty (veh)			1	1		

Intersection: 4: Ocean Blvd & Laclair St, Interval #1

Movement	SB	SE	NW
Directions Served	LR	LT	TR
Maximum Queue (ft)	68	119	10
Average Queue (ft)	31	56	1
95th Queue (ft)	74	161	16
Link Distance (ft)	341	2802	832
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 4: Ocean Blvd & Laclair St, Interval #2

Movement	SB	SE
Directions Served	LR	LT
Maximum Queue (ft)	76	94
Average Queue (ft)	25	16
95th Queue (ft)	58	63
Link Distance (ft)	341	2802
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 4: Ocean Blvd & Laclair St, All Intervals

Movement	SB	SE	NW
Directions Served	LR	LT	TR
Maximum Queue (ft)	90	138	10
Average Queue (ft)	27	26	0
95th Queue (ft)	63	97	7
Link Distance (ft)	341	2802	832
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 5: Lindy Ln & Ocean Blvd, Interval #1

Movement	NB
Directions Served	LR
Maximum Queue (ft)	5
Average Queue (ft)	1
95th Queue (ft)	10
Link Distance (ft)	784
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 5: Lindy Ln & Ocean Blvd, Interval #2

Movement	NB
Directions Served	LR
Maximum Queue (ft)	25
Average Queue (ft)	2
95th Queue (ft)	14
Link Distance (ft)	784
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 5: Lindy Ln & Ocean Blvd, All Intervals

Movement	NB
Directions Served	LR
Maximum Queue (ft)	25
Average Queue (ft)	2
95th Queue (ft)	13
Link Distance (ft)	784
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 6: Broadway St & 16th St, Interval #1

Movement	EB	WB	NB	NB	NB	SB	SB	SB
Directions Served	LTR	LTR	L	T	TR	L	T	TR
Maximum Queue (ft)	134	239	36	197	242	122	279	212
Average Queue (ft)	81	158	12	121	151	50	161	95
95th Queue (ft)	140	258	40	207	247	99	276	207
Link Distance (ft)	915	1559		2002	2002		528	528
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)			150			150		
Storage Blk Time (%)				3			8	
Queuing Penalty (veh)				0			5	

Intersection: 6: Broadway St & 16th St, Interval #2

Movement	EB	WB	NB	NB	NB	SB	SB	SB
Directions Served	LTR	LTR	L	T	TR	L	T	TR
Maximum Queue (ft)	138	198	38	130	159	76	182	122
Average Queue (ft)	64	112	5	62	89	32	87	34
95th Queue (ft)	116	187	25	116	152	68	156	91
Link Distance (ft)	915	1559		2002	2002		528	528
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)			150			150		
Storage Blk Time (%)				0			1	
Queuing Penalty (veh)				0			0	

Intersection: 6: Broadway St & 16th St, All Intervals

Movement	EB	WB	NB	NB	NB	SB	SB	SB
Directions Served	LTR	LTR	L	T	TR	L	T	TR
Maximum Queue (ft)	151	239	46	197	242	122	280	212
Average Queue (ft)	68	123	7	77	104	36	105	49
95th Queue (ft)	123	211	30	152	188	78	203	134
Link Distance (ft)	915	1559		2002	2002		528	528
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)			150			150		
Storage Blk Time (%)				1			3	
Queuing Penalty (veh)				0			1	

Intersection: 7: Broadway St & Newmark Ave, Interval #1

Movement	EB	EB	EB	B14	B14	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	TR	T	T	L	T	TR	L	TR	L	TR
Maximum Queue (ft)	267	259	226	26	10	139	368	335	176	199	196	400
Average Queue (ft)	219	151	152	4	1	88	238	200	103	124	133	260
95th Queue (ft)	282	304	239	33	16	161	398	363	175	207	224	433
Link Distance (ft)		275	275	214	214		1676	1676		1809		443
Upstream Blk Time (%)	4	4										0
Queuing Penalty (veh)	0	15										2
Storage Bay Dist (ft)	350					115			240		180	
Storage Blk Time (%)	4	4				2	53		0	0	3	25
Queuing Penalty (veh)	6	14				4	34		0	0	15	33

Intersection: 7: Broadway St & Newmark Ave, Interval #2

Movement	EB	EB	EB	B14	B14	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	TR	T	T	L	T	TR	L	TR	L	TR
Maximum Queue (ft)	271	319	291	65	13	140	290	288	170	214	204	394
Average Queue (ft)	194	120	123	6	1	51	153	93	84	97	98	188
95th Queue (ft)	291	284	229	43	8	124	258	219	157	176	194	343
Link Distance (ft)		275	275	214	214		1676	1676		1809		443
Upstream Blk Time (%)	1	2	1									0
Queuing Penalty (veh)	0	8	3									0
Storage Bay Dist (ft)	350					115			240		180	
Storage Blk Time (%)	1	2				0	26		0	1	11	
Queuing Penalty (veh)	2	7				0	12		0	2	11	

Intersection: 7: Broadway St & Newmark Ave, All Intervals

Movement	EB	EB	EB	B14	B14	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	TR	T	T	L	T	TR	L	TR	L	TR
Maximum Queue (ft)	274	342	293	69	20	140	376	346	191	227	204	416
Average Queue (ft)	200	127	130	5	1	60	174	119	88	103	106	205
95th Queue (ft)	292	291	234	41	11	138	308	274	163	186	205	373
Link Distance (ft)		275	275	214	214		1676	1676		1809		443
Upstream Blk Time (%)	2	3	1									0
Queuing Penalty (veh)	0	10	2									1
Storage Bay Dist (ft)	350					115			240		180	
Storage Blk Time (%)	2	3				1	33		0	0	1	15
Queuing Penalty (veh)	3	9				1	18		0	0	5	16

Intersection: 8: Thompson Rd & Broadway St, Interval #1

Movement	WB	WB	NB	SB
Directions Served	L	R	TR	L
Maximum Queue (ft)	35	49	52	86
Average Queue (ft)	13	22	10	37
95th Queue (ft)	36	42	44	82
Link Distance (ft)		1148	1652	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	81			100
Storage Blk Time (%)				0
Queuing Penalty (veh)				1

Intersection: 8: Thompson Rd & Broadway St, Interval #2

Movement	WB	WB	NB	SB
Directions Served	L	R	TR	L
Maximum Queue (ft)	26	48	80	94
Average Queue (ft)	10	20	12	31
95th Queue (ft)	28	36	50	73
Link Distance (ft)		1148	1652	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	81			100
Storage Blk Time (%)				0
Queuing Penalty (veh)				0

Intersection: 8: Thompson Rd & Broadway St, All Intervals

Movement	WB	WB	NB	SB
Directions Served	L	R	TR	L
Maximum Queue (ft)	35	52	80	99
Average Queue (ft)	10	20	11	33
95th Queue (ft)	30	38	49	75
Link Distance (ft)		1148	1652	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	81			100
Storage Blk Time (%)				0
Queuing Penalty (veh)				1

Intersection: 9: Ocean Blvd & Woodland Dr, Interval #1

Movement	EB	EB	EB	WB	WB	SB
Directions Served	L	T	T	T	R	LR
Maximum Queue (ft)	119	105	128	291	209	232
Average Queue (ft)	70	69	83	215	92	146
95th Queue (ft)	119	103	132	327	212	253
Link Distance (ft)		2175	2175	1139		1459
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)	150				200	
Storage Blk Time (%)	0			10		
Queuing Penalty (veh)	0			31		

Intersection: 9: Ocean Blvd & Woodland Dr, Interval #2

Movement	EB	EB	EB	WB	WB	SB
Directions Served	L	T	T	T	R	LR
Maximum Queue (ft)	108	112	132	287	130	190
Average Queue (ft)	58	64	72	155	50	86
95th Queue (ft)	101	100	114	243	80	163
Link Distance (ft)		2175	2175	1139		1459
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)	150				200	
Storage Blk Time (%)	0			3		
Queuing Penalty (veh)	0			7		

Intersection: 9: Ocean Blvd & Woodland Dr, All Intervals

Movement	EB	EB	EB	WB	WB	SB
Directions Served	L	T	T	T	R	LR
Maximum Queue (ft)	132	117	140	306	209	232
Average Queue (ft)	60	65	74	169	60	101
95th Queue (ft)	106	101	119	273	131	195
Link Distance (ft)		2175	2175	1139		1459
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)	150				200	
Storage Blk Time (%)	0			5		
Queuing Penalty (veh)	0			13		

Intersection: 10: Central Ave & 10th St, Interval #1

Movement	EB	EB	B58	WB	WB	B59	B59	NB	NB	SB	SB
Directions Served	LT	R	T	LT	TR	T	T	L	TR	L	TR
Maximum Queue (ft)	455	165	278	268	248	53	55	312	175	207	124
Average Queue (ft)	402	82	111	190	137	24	23	218	96	115	72
95th Queue (ft)	506	201	417	301	294	141	144	336	172	193	128
Link Distance (ft)	368		702	228	228	274	274	477	477	735	735
Upstream Blk Time (%)	23		3	12	5	0	0				
Queuing Penalty (veh)	0		0	37	16	0	1				
Storage Bay Dist (ft)		140									
Storage Blk Time (%)	39	0									
Queuing Penalty (veh)	50	0									

Intersection: 10: Central Ave & 10th St, Interval #2

Movement	EB	EB	B58	WB	WB	B59	NB	NB	SB	SB
Directions Served	LT	R	T	LT	TR	T	L	TR	L	TR
Maximum Queue (ft)	433	165	226	229	193	16	261	166	180	107
Average Queue (ft)	247	85	17	133	72	1	127	58	88	45
95th Queue (ft)	407	198	159	210	172	14	216	122	149	93
Link Distance (ft)	368		702	228	228	274	477	477	735	735
Upstream Blk Time (%)	4		0	1	0					
Queuing Penalty (veh)	0		0	2	0					
Storage Bay Dist (ft)		140								
Storage Blk Time (%)	23	0								
Queuing Penalty (veh)	21	1								

Intersection: 10: Central Ave & 10th St, All Intervals

Movement	EB	EB	B58	WB	WB	B59	B59	NB	NB	SB	SB
Directions Served	LT	R	T	LT	TR	T	T	L	TR	L	TR
Maximum Queue (ft)	455	165	278	280	248	69	55	330	187	223	133
Average Queue (ft)	284	84	40	146	88	7	6	149	68	95	52
95th Queue (ft)	469	199	245	242	212	67	67	265	140	163	105
Link Distance (ft)	368		702	228	228	274	274	477	477	735	735
Upstream Blk Time (%)	9		1	4	1	0	0				
Queuing Penalty (veh)	0		0	11	4	0	0				
Storage Bay Dist (ft)		140									
Storage Blk Time (%)	27	0									
Queuing Penalty (veh)	28	0									

Intersection: 11: Commercial Ave, Interval #1

Movement	EB	SB
Directions Served	R	TR
Maximum Queue (ft)	40	10
Average Queue (ft)	20	1
95th Queue (ft)	46	16
Link Distance (ft)	332	1250
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 11: Commercial Ave, Interval #2

Movement	EB	SB	SB
Directions Served	R	T	TR
Maximum Queue (ft)	40	11	10
Average Queue (ft)	19	1	0
95th Queue (ft)	42	9	9
Link Distance (ft)	332	1250	1250
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 11: Commercial Ave, All Intervals

Movement	EB	SB	SB
Directions Served	R	T	TR
Maximum Queue (ft)	47	11	20
Average Queue (ft)	19	0	1
95th Queue (ft)	43	8	11
Link Distance (ft)	332	1250	1250
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 12: , Interval #1

Movement	EB	EB	SB	SB
Directions Served	R	R	T	R
Maximum Queue (ft)	112	148	31	15
Average Queue (ft)	30	61	24	5
95th Queue (ft)	86	143	38	34
Link Distance (ft)	195	195	176	176
Upstream Blk Time (%)	0	1		
Queuing Penalty (veh)	0	3		
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 12: , Interval #2

Movement	EB	EB	SB	SB
Directions Served	R	R	T	R
Maximum Queue (ft)	101	136	40	67
Average Queue (ft)	16	27	20	4
95th Queue (ft)	68	97	40	30
Link Distance (ft)	195	195	176	176
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 12: , All Intervals

Movement	EB	EB	SB	SB
Directions Served	R	R	T	R
Maximum Queue (ft)	118	163	44	70
Average Queue (ft)	19	35	21	4
95th Queue (ft)	74	112	40	31
Link Distance (ft)	195	195	176	176
Upstream Blk Time (%)	0	0		
Queuing Penalty (veh)	0	1		
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 13: 7th St & Anderson Ave, Interval #1

Movement	EB	NB
Directions Served	TR	LTR
Maximum Queue (ft)	56	120
Average Queue (ft)	32	63
95th Queue (ft)	59	110
Link Distance (ft)	646	544
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 13: 7th St & Anderson Ave, Interval #2

Movement	EB	NB	SB	SB
Directions Served	TR	LTR	L	LTR
Maximum Queue (ft)	53	95	4	13
Average Queue (ft)	20	40	0	1
95th Queue (ft)	43	74	5	6
Link Distance (ft)	646	544	201	201
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 13: 7th St & Anderson Ave, All Intervals

Movement	EB	NB	SB	SB
Directions Served	TR	LTR	L	LTR
Maximum Queue (ft)	60	120	4	13
Average Queue (ft)	23	46	0	0
95th Queue (ft)	48	87	4	5
Link Distance (ft)	646	544	201	201
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 17: Newmark Ave, Interval #1

Movement

Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 17: Newmark Ave, Interval #2

Movement

Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 17: Newmark Ave, All Intervals

Movement

Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 54: Broadway St, Interval #1

Movement	SB
Directions Served	T
Maximum Queue (ft)	29
Average Queue (ft)	4
95th Queue (ft)	37
Link Distance (ft)	2002
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 54: Broadway St, Interval #2

Movement	SB
Directions Served	T
Maximum Queue (ft)	44
Average Queue (ft)	2
95th Queue (ft)	25
Link Distance (ft)	2002
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 54: Broadway St, All Intervals

Movement	SB
Directions Served	T
Maximum Queue (ft)	44
Average Queue (ft)	3
95th Queue (ft)	28
Link Distance (ft)	2002
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Network Summary

Network wide Queuing Penalty, Interval #1: 273
Network wide Queuing Penalty, Interval #2: 77
Network wide Queuing Penalty, All Intervals: 126

Intersection: 1: Empire Blvd & Newmark Ave, Interval #1

Movement	EB	NB	SB
Directions Served	LTR	LTR	LTR
Maximum Queue (ft)	30	29	16
Average Queue (ft)	8	6	6
95th Queue (ft)	31	39	28
Link Distance (ft)	401	2847	1306
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 1: Empire Blvd & Newmark Ave, Interval #2

Movement	EB	NB	SB
Directions Served	LTR	LTR	LTR
Maximum Queue (ft)	24	32	31
Average Queue (ft)	6	8	11
95th Queue (ft)	26	56	35
Link Distance (ft)	401	2847	1306
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 1: Empire Blvd & Newmark Ave, All Intervals

Movement	EB	NB	SB
Directions Served	LTR	LTR	LTR
Maximum Queue (ft)	31	61	35
Average Queue (ft)	7	7	9
95th Queue (ft)	28	50	33
Link Distance (ft)	401	2847	1306
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 2: Ocean Blvd, Interval #1

Movement	EB	EB	WB	WB	NW	NW	NW
Directions Served	T	R	T	T	L	L	R
Maximum Queue (ft)	297	84	85	91	100	110	9
Average Queue (ft)	211	17	54	42	64	68	2
95th Queue (ft)	325	113	107	103	113	126	17
Link Distance (ft)	1798	1798	1330	1330			2802
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)					300	300	
Storage Blk Time (%)							
Queuing Penalty (veh)							

Intersection: 2: Ocean Blvd, Interval #2

Movement	EB	WB	WB	NW	NW
Directions Served	T	T	T	L	L
Maximum Queue (ft)	241	116	110	68	90
Average Queue (ft)	160	52	45	26	47
95th Queue (ft)	240	113	107	78	89
Link Distance (ft)	1798	1330	1330		
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)				300	300
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 2: Ocean Blvd, All Intervals

Movement	EB	EB	WB	WB	NW	NW	NW
Directions Served	T	R	T	T	L	L	R
Maximum Queue (ft)	297	84	116	110	100	111	9
Average Queue (ft)	181	7	53	44	42	56	1
95th Queue (ft)	286	71	111	105	101	108	10
Link Distance (ft)	1798	1798	1330	1330			2802
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)					300	300	
Storage Blk Time (%)							
Queuing Penalty (veh)							

Intersection: 3: Laclair st & Newmark Ave, Interval #1

Movement	EB	EB	WB	WB	WB	NB
Directions Served	T	TR	L	T	T	LR
Maximum Queue (ft)	209	238	104	112	120	70
Average Queue (ft)	140	159	68	77	72	53
95th Queue (ft)	235	261	120	126	138	84
Link Distance (ft)	1001	1001		3783	3783	1145
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)			150			
Storage Blk Time (%)			0	0		
Queuing Penalty (veh)			1	0		

Intersection: 3: Laclair st & Newmark Ave, Interval #2

Movement	EB	EB	WB	WB	WB	NB
Directions Served	T	TR	L	T	T	LR
Maximum Queue (ft)	169	190	109	116	125	62
Average Queue (ft)	108	120	67	74	90	37
95th Queue (ft)	177	202	123	124	135	65
Link Distance (ft)	1001	1001		3783	3783	1145
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)			150			
Storage Blk Time (%)			0	0		
Queuing Penalty (veh)			0	0		

Intersection: 3: Laclair st & Newmark Ave, All Intervals

Movement	EB	EB	WB	WB	WB	NB
Directions Served	T	TR	L	T	T	LR
Maximum Queue (ft)	217	250	122	119	129	70
Average Queue (ft)	121	136	68	75	82	44
95th Queue (ft)	207	232	122	125	139	76
Link Distance (ft)	1001	1001		3783	3783	1145
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)			150			
Storage Blk Time (%)			0	0		
Queuing Penalty (veh)			0	0		

Intersection: 4: Ocean Blvd & Laclair St, Interval #1

Movement	SB	SE	NW
Directions Served	LR	LT	TR
Maximum Queue (ft)	97	166	4
Average Queue (ft)	50	68	1
95th Queue (ft)	113	184	7
Link Distance (ft)	341	2802	832
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 4: Ocean Blvd & Laclair St, Interval #2

Movement	SB	SE
Directions Served	LR	LT
Maximum Queue (ft)	76	44
Average Queue (ft)	42	13
95th Queue (ft)	83	44
Link Distance (ft)	341	2802
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 4: Ocean Blvd & Laclair St, All Intervals

Movement	SB	SE	NW
Directions Served	LR	LT	TR
Maximum Queue (ft)	97	166	4
Average Queue (ft)	45	36	0
95th Queue (ft)	97	126	5
Link Distance (ft)	341	2802	832
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 5: Lindy Ln & Ocean Blvd, Interval #1

Movement	WB	NB
Directions Served	LT	LR
Maximum Queue (ft)	67	176
Average Queue (ft)	30	113
95th Queue (ft)	89	194
Link Distance (ft)	217	784
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 5: Lindy Ln & Ocean Blvd, Interval #2

Movement	WB	NB
Directions Served	LT	LR
Maximum Queue (ft)	62	134
Average Queue (ft)	19	66
95th Queue (ft)	65	135
Link Distance (ft)	217	784
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 5: Lindy Ln & Ocean Blvd, All Intervals

Movement	WB	NB
Directions Served	LT	LR
Maximum Queue (ft)	74	187
Average Queue (ft)	23	86
95th Queue (ft)	76	169
Link Distance (ft)	217	784
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 6: Broadway St & 16th St, Interval #1

Movement	EB	WB	NB	NB	NB	SB	SB	SB
Directions Served	LTR	LTR	L	T	TR	L	T	TR
Maximum Queue (ft)	127	212	18	183	220	130	268	208
Average Queue (ft)	90	166	6	114	142	58	173	121
95th Queue (ft)	153	247	26	216	273	137	308	270
Link Distance (ft)	915	1559		2002	2002		528	528
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)			150			150		
Storage Blk Time (%)				5		0	11	
Queuing Penalty (veh)				1		0	7	

Intersection: 6: Broadway St & 16th St, Interval #2

Movement	EB	WB	NB	NB	NB	SB	SB	SB
Directions Served	LTR	LTR	L	T	TR	L	T	TR
Maximum Queue (ft)	98	193	28	146	162	70	126	72
Average Queue (ft)	58	111	9	66	86	32	82	30
95th Queue (ft)	106	181	32	145	165	71	136	71
Link Distance (ft)	915	1559		2002	2002		528	528
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)			150			150		
Storage Blk Time (%)				1			0	
Queuing Penalty (veh)				0			0	

Intersection: 6: Broadway St & 16th St, All Intervals

Movement	EB	WB	NB	NB	NB	SB	SB	SB
Directions Served	LTR	LTR	L	T	TR	L	T	TR
Maximum Queue (ft)	139	229	34	188	224	138	268	212
Average Queue (ft)	72	134	7	86	109	43	120	68
95th Queue (ft)	132	221	30	183	223	106	241	193
Link Distance (ft)	915	1559		2002	2002		528	528
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)			150			150		
Storage Blk Time (%)				2		0	4	
Queuing Penalty (veh)				0		0	3	

Intersection: 7: Broadway St & Newmark Ave, Interval #1

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	TR	L	TR
Maximum Queue (ft)	255	243	223	121	303	243	116	209	204	415
Average Queue (ft)	186	134	141	54	188	129	76	152	150	272
95th Queue (ft)	289	285	245	134	325	288	129	236	241	479
Link Distance (ft)		275	275		1676	1676		1809		443
Upstream Blk Time (%)	1	1	0							1
Queuing Penalty (veh)	0	5	0							6
Storage Bay Dist (ft)	350			115			240		180	
Storage Blk Time (%)	1	1			35			0	6	23
Queuing Penalty (veh)	1	5			22			1	26	31

Intersection: 7: Broadway St & Newmark Ave, Interval #2

Movement	EB	EB	EB	B14	B14	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	TR	T	T	L	T	TR	L	TR	L	TR
Maximum Queue (ft)	262	315	242	8	9	127	256	184	123	217	194	387
Average Queue (ft)	201	130	140	1	1	72	167	104	81	132	113	213
95th Queue (ft)	283	301	256	12	14	156	265	200	139	220	207	383
Link Distance (ft)		275	275	214	214		1676	1676		1809		443
Upstream Blk Time (%)	2	3	1									0
Queuing Penalty (veh)	0	10	2									0
Storage Bay Dist (ft)	350					115			240		180	
Storage Blk Time (%)	2	3				2	28			1	2	16
Queuing Penalty (veh)	3	8				2	13			1	8	15

Intersection: 7: Broadway St & Newmark Ave, All Intervals

Movement	EB	EB	EB	B14	B14	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	TR	T	T	L	T	TR	L	TR	L	TR
Maximum Queue (ft)	266	315	271	8	9	139	306	269	136	245	204	430
Average Queue (ft)	195	132	140	1	1	65	176	115	79	140	128	238
95th Queue (ft)	287	294	251	9	10	148	293	242	135	228	226	430
Link Distance (ft)		275	275	214	214		1676	1676		1809		443
Upstream Blk Time (%)	2	2	0									0
Queuing Penalty (veh)	0	8	1									3
Storage Bay Dist (ft)	350					115			240		180	
Storage Blk Time (%)	2	2				1	31			1	4	19
Queuing Penalty (veh)	2	6				1	17			1	15	21

Intersection: 8: Thompson Rd & Broadway St, Interval #1

Movement	WB	WB	NB	SB
Directions Served	L	R	TR	L
Maximum Queue (ft)	34	44	42	67
Average Queue (ft)	19	25	14	39
95th Queue (ft)	42	52	52	78
Link Distance (ft)		1148	1652	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	81			100
Storage Blk Time (%)		0		0
Queuing Penalty (veh)		0		2

Intersection: 8: Thompson Rd & Broadway St, Interval #2

Movement	WB	WB	NB	SB
Directions Served	L	R	TR	L
Maximum Queue (ft)	30	46	50	74
Average Queue (ft)	14	23	11	35
95th Queue (ft)	34	44	44	80
Link Distance (ft)		1148	1652	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	81			100
Storage Blk Time (%)				0
Queuing Penalty (veh)				0

Intersection: 8: Thompson Rd & Broadway St, All Intervals

Movement	WB	WB	NB	SB
Directions Served	L	R	TR	L
Maximum Queue (ft)	38	51	58	88
Average Queue (ft)	16	24	12	37
95th Queue (ft)	38	48	48	79
Link Distance (ft)		1148	1652	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	81			100
Storage Blk Time (%)		0		0
Queuing Penalty (veh)		0		1

Intersection: 9: Ocean Blvd & Woodland Dr, Interval #1

Movement	EB	EB	EB	WB	WB	SB
Directions Served	L	T	T	T	R	LR
Maximum Queue (ft)	250	643	617	416	205	218
Average Queue (ft)	227	373	333	255	129	109
95th Queue (ft)	288	774	716	432	310	223
Link Distance (ft)		2175	2175	1139		1459
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)	150				200	
Storage Blk Time (%)	84	0		12		
Queuing Penalty (veh)	245	0		36		

Intersection: 9: Ocean Blvd & Woodland Dr, Interval #2

Movement	EB	EB	EB	WB	WB	SB
Directions Served	L	T	T	T	R	LR
Maximum Queue (ft)	250	984	932	298	116	231
Average Queue (ft)	250	839	801	201	54	116
95th Queue (ft)	252	1180	1138	309	123	225
Link Distance (ft)		2175	2175	1139		1459
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)	150				200	
Storage Blk Time (%)	99	0		8		
Queuing Penalty (veh)	208	0		17		

Intersection: 9: Ocean Blvd & Woodland Dr, All Intervals

Movement	EB	EB	EB	WB	WB	SB
Directions Served	L	T	T	T	R	LR
Maximum Queue (ft)	250	984	932	422	205	235
Average Queue (ft)	240	645	606	223	85	113
95th Queue (ft)	284	1173	1128	372	227	224
Link Distance (ft)		2175	2175	1139		1459
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)	150				200	
Storage Blk Time (%)	93	0		9		
Queuing Penalty (veh)	223	0		25		

Intersection: 10: Central Ave & 10th St, Interval #1

Movement	EB	EB	B58	WB	WB	B59	B59	NB	NB	SB	SB
Directions Served	LT	R	T	LT	TR	T	T	L	TR	L	TR
Maximum Queue (ft)	446	138	470	279	248	107	80	271	171	184	108
Average Queue (ft)	399	80	297	225	176	59	46	214	98	121	69
95th Queue (ft)	520	197	738	350	317	198	179	304	185	209	117
Link Distance (ft)	368		702	228	228	274	274	477	477	735	735
Upstream Blk Time (%)	33		8	28	8	1	0				
Queuing Penalty (veh)	0		0	90	26	2	0				
Storage Bay Dist (ft)		140									
Storage Blk Time (%)	43	0									
Queuing Penalty (veh)	64	1									

Intersection: 10: Central Ave & 10th St, Interval #2

Movement	EB	EB	B58	WB	WB	B59	B59	NB	NB	SB	SB
Directions Served	LT	R	T	LT	TR	T	T	L	TR	L	TR
Maximum Queue (ft)	421	165	465	278	254	68	54	197	136	153	83
Average Queue (ft)	346	109	190	164	100	10	8	136	74	95	46
95th Queue (ft)	519	222	662	294	251	79	82	210	133	161	91
Link Distance (ft)	368		702	228	228	274	274	477	477	735	735
Upstream Blk Time (%)	20		6	8	3		0				
Queuing Penalty (veh)	0		0	17	6		0				
Storage Bay Dist (ft)		140									
Storage Blk Time (%)	36	0									
Queuing Penalty (veh)	38	1									

Intersection: 10: Central Ave & 10th St, All Intervals

Movement	EB	EB	B58	WB	WB	B59	B59	NB	NB	SB	SB
Directions Served	LT	R	T	LT	TR	T	T	L	TR	L	TR
Maximum Queue (ft)	449	165	523	306	276	112	80	272	176	201	108
Average Queue (ft)	368	97	235	189	131	30	24	168	84	106	55
95th Queue (ft)	527	213	702	327	291	142	131	272	158	185	106
Link Distance (ft)	368		702	228	228	274	274	477	477	735	735
Upstream Blk Time (%)	25		6	16	5	0	0				
Queuing Penalty (veh)	0		0	46	14	1	0				
Storage Bay Dist (ft)		140									
Storage Blk Time (%)	39	0									
Queuing Penalty (veh)	48	1									

Intersection: 11: Commercial Ave, Interval #1

Movement	EB
Directions Served	R
Maximum Queue (ft)	39
Average Queue (ft)	22
95th Queue (ft)	50
Link Distance (ft)	332
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 11: Commercial Ave, Interval #2

Movement	EB	SB
Directions Served	R	TR
Maximum Queue (ft)	36	6
Average Queue (ft)	17	1
95th Queue (ft)	42	9
Link Distance (ft)	332	1250
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 11: Commercial Ave, All Intervals

Movement	EB	SB
Directions Served	R	TR
Maximum Queue (ft)	43	6
Average Queue (ft)	19	1
95th Queue (ft)	46	7
Link Distance (ft)	332	1250
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 12: , Interval #1

Movement	EB	EB	SB	SB	SB
Directions Served	R	R	T	R	R
Maximum Queue (ft)	82	136	26	30	11
Average Queue (ft)	30	51	23	6	2
95th Queue (ft)	95	149	35	42	20
Link Distance (ft)	195	195	176	176	176
Upstream Blk Time (%)		1			
Queuing Penalty (veh)		4			
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 12: , Interval #2

Movement	EB	EB	SB	SB
Directions Served	R	R	T	R
Maximum Queue (ft)	52	106	26	10
Average Queue (ft)	13	36	20	1
95th Queue (ft)	59	111	37	16
Link Distance (ft)	195	195	176	176
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 12: , All Intervals

Movement	EB	EB	SB	SB	SB
Directions Served	R	R	T	R	R
Maximum Queue (ft)	82	157	26	41	11
Average Queue (ft)	20	42	21	3	1
95th Queue (ft)	77	128	37	29	13
Link Distance (ft)	195	195	176	176	176
Upstream Blk Time (%)		0			
Queuing Penalty (veh)		2			
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 13: 7th St & Anderson Ave, Interval #1

Movement	EB	NB
Directions Served	TR	LTR
Maximum Queue (ft)	65	120
Average Queue (ft)	36	71
95th Queue (ft)	76	133
Link Distance (ft)	646	544
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 13: 7th St & Anderson Ave, Interval #2

Movement	EB	NB	SB
Directions Served	TR	LTR	LTR
Maximum Queue (ft)	42	63	4
Average Queue (ft)	22	35	1
95th Queue (ft)	45	63	6
Link Distance (ft)	646	544	201
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 13: 7th St & Anderson Ave, All Intervals

Movement	EB	NB	SB
Directions Served	TR	LTR	LTR
Maximum Queue (ft)	69	120	4
Average Queue (ft)	28	50	0
95th Queue (ft)	61	104	5
Link Distance (ft)	646	544	201
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 17: Newmark Ave, Interval #1

Movement

Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 17: Newmark Ave, Interval #2

Movement

Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 17: Newmark Ave, All Intervals

Movement

Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 54: Broadway St, Interval #1

Movement	SB
Directions Served	T
Maximum Queue (ft)	26
Average Queue (ft)	5
95th Queue (ft)	48
Link Distance (ft)	2002
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 54: Broadway St, Interval #2

Movement	SB
Directions Served	T
Maximum Queue (ft)	15
Average Queue (ft)	2
95th Queue (ft)	23
Link Distance (ft)	2002
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 54: Broadway St, All Intervals

Movement	SB
Directions Served	T
Maximum Queue (ft)	42
Average Queue (ft)	3
95th Queue (ft)	36
Link Distance (ft)	2002
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Network Summary

Network wide Queuing Penalty, Interval #1: 574
Network wide Queuing Penalty, Interval #2: 349
Network wide Queuing Penalty, All Intervals: 439

Intersection: 1: Empire Blvd & Newmark Ave, Interval #1

Movement	EB	WB	B35	NB	SB
Directions Served	LTR	LTR	T	LTR	LTR
Maximum Queue (ft)	40	6	5	103	12
Average Queue (ft)	19	2	1	34	3
95th Queue (ft)	46	14	7	107	20
Link Distance (ft)	401	1074	1798	2847	1306
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 1: Empire Blvd & Newmark Ave, Interval #2

Movement	EB	WB	B35	B35	NB	SB
Directions Served	LTR	LTR	T		LTR	LTR
Maximum Queue (ft)	45	14	10	4	154	35
Average Queue (ft)	19	1	0	0	29	4
95th Queue (ft)	46	12	8	3	105	21
Link Distance (ft)	401	1074	1798	1798	2847	1306
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 1: Empire Blvd & Newmark Ave, All Intervals

Movement	EB	WB	B35	B35	NB	SB
Directions Served	LTR	LTR	T		LTR	LTR
Maximum Queue (ft)	48	21	14	4	164	35
Average Queue (ft)	19	1	0	0	30	4
95th Queue (ft)	46	12	8	3	105	21
Link Distance (ft)	401	1074	1798	1798	2847	1306
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 2: Ocean Blvd & Newmark, Interval #1

Movement	EB	WB	WB	NW	NW	NW
Directions Served	T	T	T	L	L	R
Maximum Queue (ft)	227	167	154	190	215	60
Average Queue (ft)	156	92	87	104	118	13
95th Queue (ft)	260	187	179	187	203	105
Link Distance (ft)	1798	1330	1330			2802
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)				300	300	
Storage Blk Time (%)					0	0
Queuing Penalty (veh)					0	1

Intersection: 2: Ocean Blvd & Newmark, Interval #2

Movement	EB	WB	WB	NW	NW	NW
Directions Served	T	T	T	L	L	R
Maximum Queue (ft)	350	182	197	187	195	82
Average Queue (ft)	171	89	85	104	115	7
95th Queue (ft)	301	172	177	163	181	52
Link Distance (ft)	1798	1330	1330			2802
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)				300	300	
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 2: Ocean Blvd & Newmark, All Intervals

Movement	EB	WB	WB	NW	NW	NW
Directions Served	T	T	T	L	L	R
Maximum Queue (ft)	350	202	200	209	228	142
Average Queue (ft)	167	89	86	104	116	8
95th Queue (ft)	292	176	178	170	187	68
Link Distance (ft)	1798	1330	1330			2802
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)				300	300	
Storage Blk Time (%)					0	0
Queuing Penalty (veh)					0	0

Intersection: 3: Laclair st & Newmark Ave, Interval #1

Movement	EB	EB	WB	WB	WB	NB
Directions Served	T	TR	L	T	T	LR
Maximum Queue (ft)	249	249	174	236	251	167
Average Queue (ft)	160	159	79	154	158	80
95th Queue (ft)	270	270	167	230	239	154
Link Distance (ft)	1001	1001		3783	3783	1145
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)			150			
Storage Blk Time (%)			1	11		
Queuing Penalty (veh)			4	8		

Intersection: 3: Laclair st & Newmark Ave, Interval #2

Movement	EB	EB	WB	WB	WB	NB
Directions Served	T	TR	L	T	T	LR
Maximum Queue (ft)	250	265	172	261	264	164
Average Queue (ft)	123	125	66	148	157	57
95th Queue (ft)	215	228	146	247	258	117
Link Distance (ft)	1001	1001		3783	3783	1145
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)			150			
Storage Blk Time (%)			0	9		
Queuing Penalty (veh)			0	5		

Intersection: 3: Laclair st & Newmark Ave, All Intervals

Movement	EB	EB	WB	WB	WB	NB
Directions Served	T	TR	L	T	T	LR
Maximum Queue (ft)	288	290	174	266	276	173
Average Queue (ft)	132	133	69	149	157	62
95th Queue (ft)	232	241	152	244	254	129
Link Distance (ft)	1001	1001		3783	3783	1145
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)			150			
Storage Blk Time (%)			0	9		
Queuing Penalty (veh)			1	6		

Intersection: 4: Ocean Blvd & Laclair St, Interval #1

Movement	SB	SE	NW
Directions Served	LR	LT	TR
Maximum Queue (ft)	126	175	4
Average Queue (ft)	79	69	1
95th Queue (ft)	152	182	10
Link Distance (ft)	341	2802	832
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 4: Ocean Blvd & Laclair St, Interval #2

Movement	SB	SE	NW
Directions Served	LR	LT	TR
Maximum Queue (ft)	143	168	25
Average Queue (ft)	55	41	2
95th Queue (ft)	111	117	14
Link Distance (ft)	341	2802	832
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 4: Ocean Blvd & Laclair St, All Intervals

Movement	SB	SE	NW
Directions Served	LR	LT	TR
Maximum Queue (ft)	159	201	25
Average Queue (ft)	60	48	1
95th Queue (ft)	124	136	13
Link Distance (ft)	341	2802	832
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 5: Lindy Ln & Ocean Blvd, Interval #1

Movement	WB	NB
Directions Served	LT	LR
Maximum Queue (ft)	24	15
Average Queue (ft)	3	2
95th Queue (ft)	36	14
Link Distance (ft)	217	784
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 5: Lindy Ln & Ocean Blvd, Interval #2

Movement	WB	NB
Directions Served	LT	LR
Maximum Queue (ft)	6	20
Average Queue (ft)	0	2
95th Queue (ft)	5	13
Link Distance (ft)	217	784
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 5: Lindy Ln & Ocean Blvd, All Intervals

Movement	WB	NB
Directions Served	LT	LR
Maximum Queue (ft)	30	25
Average Queue (ft)	1	2
95th Queue (ft)	18	14
Link Distance (ft)	217	784
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 6: Broadway St & 16th St, Interval #1

Movement	EB	WB	NB	NB	NB	SB	SB	SB
Directions Served	LTR	LTR	L	T	TR	L	T	TR
Maximum Queue (ft)	77	137	34	130	168	39	158	102
Average Queue (ft)	49	88	7	65	87	14	95	52
95th Queue (ft)	84	149	27	132	161	43	160	108
Link Distance (ft)	915	1559		2002	2002		528	528
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)			150			150		
Storage Blk Time (%)				0			1	
Queuing Penalty (veh)				0			0	

Intersection: 6: Broadway St & 16th St, Interval #2

Movement	EB	WB	NB	NB	NB	SB	SB	SB
Directions Served	LTR	LTR	L	T	TR	L	T	TR
Maximum Queue (ft)	98	168	37	136	152	44	166	141
Average Queue (ft)	41	80	5	57	74	13	80	34
95th Queue (ft)	88	139	24	118	135	39	141	92
Link Distance (ft)	915	1559		2002	2002		528	528
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)			150			150		
Storage Blk Time (%)				0			0	
Queuing Penalty (veh)				0			0	

Intersection: 6: Broadway St & 16th St, All Intervals

Movement	EB	WB	NB	NB	NB	SB	SB	SB
Directions Served	LTR	LTR	L	T	TR	L	T	TR
Maximum Queue (ft)	98	169	39	147	182	44	172	149
Average Queue (ft)	43	82	6	59	77	13	84	38
95th Queue (ft)	88	141	25	122	142	40	146	97
Link Distance (ft)	915	1559		2002	2002		528	528
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)			150			150		
Storage Blk Time (%)				0			1	
Queuing Penalty (veh)				0			0	

Intersection: 7: Broadway St & Newmark Ave, Interval #1

Movement	EB	EB	EB	B14	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	TR	T	L	T	TR	L	TR	L	TR
Maximum Queue (ft)	272	347	312	70	140	593	572	252	489	204	333
Average Queue (ft)	255	273	236	22	104	431	393	203	321	131	222
95th Queue (ft)	297	413	328	75	186	686	667	318	636	228	353
Link Distance (ft)		275	275	214		1676	1676		1809		443
Upstream Blk Time (%)	9	12	4								
Queuing Penalty (veh)	0	72	27								
Storage Bay Dist (ft)	350				115			240		180	
Storage Blk Time (%)	9	12			1	73		17	7	4	19
Queuing Penalty (veh)	25	53			3	57		70	15	13	25

Intersection: 7: Broadway St & Newmark Ave, Interval #2

Movement	EB	EB	EB	B14	B14	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	TR	T	T	L	T	TR	L	TR	L	TR
Maximum Queue (ft)	274	355	334	157	47	140	915	885	265	624	205	380
Average Queue (ft)	247	250	209	22	2	101	562	530	189	309	119	205
95th Queue (ft)	305	410	321	98	22	180	963	935	301	544	223	339
Link Distance (ft)		275	275	214	214		1676	1676		1809		443
Upstream Blk Time (%)	10	11	3	0								0
Queuing Penalty (veh)	0	62	14	0								0
Storage Bay Dist (ft)	350					115			240		180	
Storage Blk Time (%)	10	11				4	77		4	17	5	13
Queuing Penalty (veh)	25	46				7	54		14	32	14	15

Intersection: 7: Broadway St & Newmark Ave, All Intervals

Movement	EB	EB	EB	B14	B14	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	TR	T	T	L	T	TR	L	TR	L	TR
Maximum Queue (ft)	274	365	337	158	47	140	915	885	265	687	205	396
Average Queue (ft)	249	255	216	22	2	102	531	497	192	312	122	209
95th Queue (ft)	304	412	325	93	19	182	913	887	306	569	225	343
Link Distance (ft)		275	275	214	214		1676	1676		1809		443
Upstream Blk Time (%)	9	11	3	0								0
Queuing Penalty (veh)	0	65	17	0								0
Storage Bay Dist (ft)	350					115			240		180	
Storage Blk Time (%)	9	11				3	76		7	15	5	15
Queuing Penalty (veh)	25	48				6	55		28	28	14	17

Intersection: 8: Thompson Rd & Broadway St, Interval #1

Movement	WB	WB	NB	SB
Directions Served	L	R	TR	L
Maximum Queue (ft)	44	90	58	69
Average Queue (ft)	18	48	10	35
95th Queue (ft)	39	87	57	72
Link Distance (ft)		1148	1652	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	81			100
Storage Blk Time (%)	0	1		0
Queuing Penalty (veh)	0	1		0

Intersection: 8: Thompson Rd & Broadway St, Interval #2

Movement	WB	WB	NB	SB
Directions Served	L	R	TR	L
Maximum Queue (ft)	68	85	97	71
Average Queue (ft)	23	43	8	30
95th Queue (ft)	52	76	47	67
Link Distance (ft)		1148	1652	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	81			100
Storage Blk Time (%)	0	0		
Queuing Penalty (veh)	1	0		

Intersection: 8: Thompson Rd & Broadway St, All Intervals

Movement	WB	WB	NB	SB
Directions Served	L	R	TR	L
Maximum Queue (ft)	68	96	105	75
Average Queue (ft)	22	44	9	31
95th Queue (ft)	49	79	50	68
Link Distance (ft)		1148	1652	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	81			100
Storage Blk Time (%)	0	1		0
Queuing Penalty (veh)	1	0		0

Intersection: 9: Ocean Blvd & Woodland Dr, Interval #1

Movement	EB	EB	EB	WB	WB	SB
Directions Served	L	T	T	T	R	LR
Maximum Queue (ft)	131	132	134	463	290	276
Average Queue (ft)	91	85	94	302	153	206
95th Queue (ft)	151	131	135	463	350	329
Link Distance (ft)		2175	2175	1139		1459
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)	150				200	
Storage Blk Time (%)	2	0		25		
Queuing Penalty (veh)	5	0		49		

Intersection: 9: Ocean Blvd & Woodland Dr, Interval #2

Movement	EB	EB	EB	WB	WB	SB
Directions Served	L	T	T	T	R	LR
Maximum Queue (ft)	154	159	171	384	290	320
Average Queue (ft)	88	81	89	226	74	176
95th Queue (ft)	150	132	144	345	212	290
Link Distance (ft)		2175	2175	1139		1459
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)	150				200	
Storage Blk Time (%)	1	0		14		
Queuing Penalty (veh)	3	0		24		

Intersection: 9: Ocean Blvd & Woodland Dr, All Intervals

Movement	EB	EB	EB	WB	WB	SB
Directions Served	L	T	T	T	R	LR
Maximum Queue (ft)	160	160	171	466	290	329
Average Queue (ft)	89	82	90	244	93	183
95th Queue (ft)	150	132	142	385	257	301
Link Distance (ft)		2175	2175	1139		1459
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)	150				200	
Storage Blk Time (%)	1	0		17		
Queuing Penalty (veh)	3	0		30		

Intersection: 10: Central Ave & 10th St, Interval #1

Movement	EB	EB	B58	WB	WB	B59	NB	NB	SB	SB
Directions Served	LT	R	T	LT	TR	T	L	TR	L	TR
Maximum Queue (ft)	429	165	205	233	202	21	223	120	147	130
Average Queue (ft)	314	101	77	147	87	3	134	64	108	67
95th Queue (ft)	492	212	349	239	202	31	222	121	167	130
Link Distance (ft)	368		702	228	228	274	477	477	735	735
Upstream Blk Time (%)	13			4	1					
Queuing Penalty (veh)	0			10	2					
Storage Bay Dist (ft)		140								
Storage Blk Time (%)	30	0								
Queuing Penalty (veh)	41	1								

Intersection: 10: Central Ave & 10th St, Interval #2

Movement	EB	EB	B58	WB	WB	NB	NB	SB	SB
Directions Served	LT	R	T	LT	TR	L	TR	L	TR
Maximum Queue (ft)	445	165	126	236	200	214	154	183	154
Average Queue (ft)	265	90	11	126	65	112	63	91	61
95th Queue (ft)	441	203	80	205	155	192	125	157	117
Link Distance (ft)	368		702	228	228	477	477	735	735
Upstream Blk Time (%)	5			0	0				
Queuing Penalty (veh)	0			1	1				
Storage Bay Dist (ft)		140							
Storage Blk Time (%)	24	0							
Queuing Penalty (veh)	30	0							

Intersection: 10: Central Ave & 10th St, All Intervals

Movement	EB	EB	B58	WB	WB	B59	NB	NB	SB	SB
Directions Served	LT	R	T	LT	TR	T	L	TR	L	TR
Maximum Queue (ft)	457	165	231	259	219	21	253	164	192	154
Average Queue (ft)	277	92	27	131	71	1	117	63	95	63
95th Queue (ft)	457	205	181	214	168	15	200	124	161	121
Link Distance (ft)	368		702	228	228	274	477	477	735	735
Upstream Blk Time (%)	7			1	0					
Queuing Penalty (veh)	0			3	1					
Storage Bay Dist (ft)		140								
Storage Blk Time (%)	25	0								
Queuing Penalty (veh)	33	0								

Intersection: 11: Commercial Ave, Interval #1

Movement	EB	SW
Directions Served	R	LR
Maximum Queue (ft)	32	23
Average Queue (ft)	21	3
95th Queue (ft)	37	26
Link Distance (ft)	326	1244
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 11: Commercial Ave, Interval #2

Movement	EB	SW	SW
Directions Served	R	L	LR
Maximum Queue (ft)	44	11	21
Average Queue (ft)	20	1	1
95th Queue (ft)	41	9	15
Link Distance (ft)	326	1244	1244
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 11: Commercial Ave, All Intervals

Movement	EB	SW	SW
Directions Served	R	L	LR
Maximum Queue (ft)	44	11	39
Average Queue (ft)	20	0	2
95th Queue (ft)	40	8	18
Link Distance (ft)	326	1244	1244
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 12: , Interval #1

Movement	EB	EB	WB	SB	SB
Directions Served	R	R	LT	R	R
Maximum Queue (ft)	68	101	30	56	11
Average Queue (ft)	15	38	19	13	2
95th Queue (ft)	64	106	42	56	17
Link Distance (ft)	195	195	104	158	158
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 12: , Interval #2

Movement	EB	EB	WB	SB	SB
Directions Served	R	R	LT	R	R
Maximum Queue (ft)	76	117	48	68	11
Average Queue (ft)	14	38	24	8	1
95th Queue (ft)	58	101	46	41	9
Link Distance (ft)	195	195	104	158	158
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 12: , All Intervals

Movement	EB	EB	WB	SB	SB
Directions Served	R	R	LT	R	R
Maximum Queue (ft)	80	121	48	72	22
Average Queue (ft)	15	38	23	9	1
95th Queue (ft)	60	102	45	45	11
Link Distance (ft)	195	195	104	158	158
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 13: 7th St & Anderson Ave, Interval #1

Movement	EB	NB	SB
Directions Served	TR	LTR	LTR
Maximum Queue (ft)	60	55	4
Average Queue (ft)	35	31	1
95th Queue (ft)	65	55	6
Link Distance (ft)	646	832	201
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 13: 7th St & Anderson Ave, Interval #2

Movement	EB	NB	SB
Directions Served	TR	LTR	LTR
Maximum Queue (ft)	69	61	20
Average Queue (ft)	32	30	1
95th Queue (ft)	60	57	13
Link Distance (ft)	646	832	201
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 13: 7th St & Anderson Ave, All Intervals

Movement	EB	NB	SB
Directions Served	TR	LTR	LTR
Maximum Queue (ft)	77	62	24
Average Queue (ft)	33	30	1
95th Queue (ft)	61	56	11
Link Distance (ft)	646	832	201
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 17: Newmark Ave, Interval #1

Movement

Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 17: Newmark Ave, Interval #2

Movement

EB

Directions Served T
Maximum Queue (ft) 8
Average Queue (ft) 0
95th Queue (ft) 6
Link Distance (ft) 3783
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 17: Newmark Ave, All Intervals

Movement

EB

Directions Served T
Maximum Queue (ft) 8
Average Queue (ft) 0
95th Queue (ft) 6
Link Distance (ft) 3783
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 54: Broadway St, Interval #1

Movement

Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 54: Broadway St, Interval #2

Movement

SB

Directions Served T
Maximum Queue (ft) 18
Average Queue (ft) 1
95th Queue (ft) 15
Link Distance (ft) 2002
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 54: Broadway St, All Intervals

Movement

SB

Directions Served T
Maximum Queue (ft) 18
Average Queue (ft) 1
95th Queue (ft) 13
Link Distance (ft) 2002
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Network Summary

Network wide Queuing Penalty, Interval #1: 480
Network wide Queuing Penalty, Interval #2: 348
Network wide Queuing Penalty, All Intervals: 381

Intersection: 1: Empire Blvd & Newmark Ave, Interval #1

Movement	EB	NB	SB
Directions Served	LTR	LTR	LTR
Maximum Queue (ft)	30	104	18
Average Queue (ft)	13	17	3
95th Queue (ft)	38	89	19
Link Distance (ft)	401	2847	1306
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 1: Empire Blvd & Newmark Ave, Interval #2

Movement	EB	NB	SB
Directions Served	LTR	LTR	LTR
Maximum Queue (ft)	36	163	31
Average Queue (ft)	17	34	5
95th Queue (ft)	42	118	24
Link Distance (ft)	401	2847	1306
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 1: Empire Blvd & Newmark Ave, All Intervals

Movement	EB	NB	SB
Directions Served	LTR	LTR	LTR
Maximum Queue (ft)	36	167	31
Average Queue (ft)	16	30	5
95th Queue (ft)	41	112	23
Link Distance (ft)	401	2847	1306
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 2: Ocean Blvd & Newmark, Interval #1

Movement	EB	EB	WB	WB	NW	NW	NW
Directions Served	T	R	T	T	L	L	R
Maximum Queue (ft)	310	49	176	189	97	103	9
Average Queue (ft)	206	7	115	117	59	64	1
95th Queue (ft)	315	74	187	206	110	109	14
Link Distance (ft)	1798	1798	1330	1330			2802
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)					300	300	
Storage Blk Time (%)							
Queuing Penalty (veh)							

Intersection: 2: Ocean Blvd & Newmark, Interval #2

Movement	EB	WB	WB	NW	NW	NW
Directions Served	T	T	T	L	L	R
Maximum Queue (ft)	341	210	207	113	118	32
Average Queue (ft)	190	111	113	52	58	3
95th Queue (ft)	298	194	193	107	107	22
Link Distance (ft)	1798	1330	1330			2802
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)				300	300	
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 2: Ocean Blvd & Newmark, All Intervals

Movement	EB	EB	WB	WB	NW	NW	NW
Directions Served	T	R	T	T	L	L	R
Maximum Queue (ft)	361	49	210	207	117	122	32
Average Queue (ft)	194	2	112	114	54	59	2
95th Queue (ft)	303	35	192	196	108	107	20
Link Distance (ft)	1798	1798	1330	1330			2802
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)					300	300	
Storage Blk Time (%)							
Queuing Penalty (veh)							

Intersection: 3: Laclair st & Newmark Ave, Interval #1

Movement	EB	EB	WB	WB	WB	NB
Directions Served	T	TR	L	T	T	LR
Maximum Queue (ft)	255	260	174	248	228	139
Average Queue (ft)	167	170	123	139	147	71
95th Queue (ft)	282	277	196	244	248	145
Link Distance (ft)	1001	1001		3783	3783	1145
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)			150			
Storage Blk Time (%)			3	5		
Queuing Penalty (veh)			14	9		

Intersection: 3: Laclair st & Newmark Ave, Interval #2

Movement	EB	EB	WB	WB	WB	NB
Directions Served	T	TR	L	T	T	LR
Maximum Queue (ft)	284	298	174	234	232	143
Average Queue (ft)	138	140	102	128	138	60
95th Queue (ft)	238	244	178	216	223	113
Link Distance (ft)	1001	1001		3783	3783	1145
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)			150			
Storage Blk Time (%)			2	4		
Queuing Penalty (veh)			6	6		

Intersection: 3: Laclair st & Newmark Ave, All Intervals

Movement	EB	EB	WB	WB	WB	NB
Directions Served	T	TR	L	T	T	LR
Maximum Queue (ft)	302	313	174	256	238	160
Average Queue (ft)	145	147	107	131	140	63
95th Queue (ft)	251	254	184	223	229	122
Link Distance (ft)	1001	1001		3783	3783	1145
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)			150			
Storage Blk Time (%)			2	5		
Queuing Penalty (veh)			8	6		

Intersection: 4: Ocean Blvd & Laclair St, Interval #1

Movement	SB	B34	SE
Directions Served	LR	T	LT
Maximum Queue (ft)	354	135	281
Average Queue (ft)	238	30	90
95th Queue (ft)	452	124	251
Link Distance (ft)	341	1145	2802
Upstream Blk Time (%)	30		
Queuing Penalty (veh)	58		
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 4: Ocean Blvd & Laclair St, Interval #2

Movement	SB	B34	SE	NW
Directions Served	LR	T	LT	TR
Maximum Queue (ft)	391	143	229	18
Average Queue (ft)	184	18	49	1
95th Queue (ft)	388	137	173	10
Link Distance (ft)	341	1145	2802	832
Upstream Blk Time (%)	13			
Queuing Penalty (veh)	19			
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 4: Ocean Blvd & Laclair St, All Intervals

Movement	SB	B34	SE	NW
Directions Served	LR	T	LT	TR
Maximum Queue (ft)	398	200	346	18
Average Queue (ft)	197	21	59	1
95th Queue (ft)	407	135	196	9
Link Distance (ft)	341	1145	2802	832
Upstream Blk Time (%)	17			
Queuing Penalty (veh)	29			
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 5: Lindy Ln & Ocean Blvd, Interval #1

Movement	EB	WB	B36	NB
Directions Served	TR	LT	T	LR
Maximum Queue (ft)	13	300	375	662
Average Queue (ft)	2	229	93	420
95th Queue (ft)	14	364	351	767
Link Distance (ft)	832	217	1288	784
Upstream Blk Time (%)		24		11
Queuing Penalty (veh)		0		0
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 5: Lindy Ln & Ocean Blvd, Interval #2

Movement	EB	WB	B36	B36	NB
Directions Served	TR	LT	T		LR
Maximum Queue (ft)	35	304	543	11	827
Average Queue (ft)	4	172	74	0	786
95th Queue (ft)	22	329	333	9	869
Link Distance (ft)	832	217	1288	1288	784
Upstream Blk Time (%)		14			91
Queuing Penalty (veh)		0			0
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 5: Lindy Ln & Ocean Blvd, All Intervals

Movement	EB	WB	B36	B36	NB
Directions Served	TR	LT	T		LR
Maximum Queue (ft)	35	311	559	11	827
Average Queue (ft)	4	186	79	0	698
95th Queue (ft)	20	343	338	8	1015
Link Distance (ft)	832	217	1288	1288	784
Upstream Blk Time (%)		16			71
Queuing Penalty (veh)		0			0
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 6: Broadway St & 16th St, Interval #1

Movement	EB	WB	NB	NB	NB	SB	SB	SB
Directions Served	LTR	LTR	L	T	TR	L	T	TR
Maximum Queue (ft)	82	142	29	126	135	38	174	114
Average Queue (ft)	38	90	9	61	80	7	105	56
95th Queue (ft)	91	150	33	131	140	31	191	134
Link Distance (ft)	915	1559		2002	2002		528	528
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)			150			150		
Storage Blk Time (%)				0			2	
Queuing Penalty (veh)				0			0	

Intersection: 6: Broadway St & 16th St, Interval #2

Movement	EB	WB	NB	NB	NB	SB	SB	SB
Directions Served	LTR	LTR	L	T	TR	L	T	TR
Maximum Queue (ft)	94	169	36	137	155	42	170	122
Average Queue (ft)	34	90	5	61	76	12	86	44
95th Queue (ft)	75	152	24	126	141	37	159	104
Link Distance (ft)	915	1559		2002	2002		528	528
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)			150			150		
Storage Blk Time (%)				0			1	
Queuing Penalty (veh)				0			0	

Intersection: 6: Broadway St & 16th St, All Intervals

Movement	EB	WB	NB	NB	NB	SB	SB	SB
Directions Served	LTR	LTR	L	T	TR	L	T	TR
Maximum Queue (ft)	94	173	40	149	166	47	203	134
Average Queue (ft)	35	90	6	61	77	10	90	47
95th Queue (ft)	79	151	27	128	141	36	168	112
Link Distance (ft)	915	1559		2002	2002		528	528
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)			150			150		
Storage Blk Time (%)				0			1	
Queuing Penalty (veh)				0			0	

Intersection: 7: Broadway St & Newmark Ave, Interval #1

Movement	EB	EB	EB	B20	B20	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	TR	T	T	L	T	TR	L	TR	L	TR
Maximum Queue (ft)	274	343	314	80	17	140	801	780	264	498	204	395
Average Queue (ft)	260	268	217	29	6	96	557	531	198	330	135	283
95th Queue (ft)	286	417	352	103	39	173	874	854	317	521	234	457
Link Distance (ft)		275	275	214	214		1676	1676		1809		443
Upstream Blk Time (%)	12	14	4									3
Queuing Penalty (veh)	0	88	23									14
Storage Bay Dist (ft)	350					115			240		180	
Storage Blk Time (%)	12	14				2	80		4	19	3	30
Queuing Penalty (veh)	33	64				4	62		18	41	10	38

Intersection: 7: Broadway St & Newmark Ave, Interval #2

Movement	EB	EB	EB	B20	B20	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	TR	T	T	L	T	TR	L	TR	L	TR
Maximum Queue (ft)	274	354	340	211	106	140	1150	1136	265	858	205	453
Average Queue (ft)	245	248	208	35	10	98	864	832	224	446	145	293
95th Queue (ft)	307	411	325	147	72	184	1322	1289	324	919	246	470
Link Distance (ft)		275	275	214	214		1676	1676		1809		443
Upstream Blk Time (%)	11	14	3	1	0		0	0				6
Queuing Penalty (veh)	0	77	14	3	0		0	0				26
Storage Bay Dist (ft)	350					115			240		180	
Storage Blk Time (%)	11	14				4	80		7	29	12	26
Queuing Penalty (veh)	29	57				9	56		29	54	43	30

Intersection: 7: Broadway St & Newmark Ave, All Intervals

Movement	EB	EB	EB	B20	B20	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	TR	T	T	L	T	TR	L	TR	L	TR
Maximum Queue (ft)	274	354	344	213	106	140	1150	1141	265	880	205	453
Average Queue (ft)	249	253	210	34	9	98	790	759	218	418	142	291
95th Queue (ft)	305	414	332	137	66	182	1270	1237	324	848	243	467
Link Distance (ft)		275	275	214	214		1676	1676		1809		443
Upstream Blk Time (%)	11	14	3	0	0		0	0				5
Queuing Penalty (veh)	0	80	17	2	0		0	0				23
Storage Bay Dist (ft)	350					115			240		180	
Storage Blk Time (%)	11	14				4	80		6	26	10	27
Queuing Penalty (veh)	30	59				8	57		26	51	35	32

Intersection: 8: Thompson Rd & Broadway St, Interval #1

Movement	WB	WB	NB	SB
Directions Served	L	R	TR	L
Maximum Queue (ft)	66	77	54	60
Average Queue (ft)	30	46	10	37
95th Queue (ft)	65	77	57	75
Link Distance (ft)		1148	1652	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	81			100
Storage Blk Time (%)	1	0		0
Queuing Penalty (veh)	2	0		0

Intersection: 8: Thompson Rd & Broadway St, Interval #2

Movement	WB	WB	NB	SB	SB
Directions Served	L	R	TR	L	T
Maximum Queue (ft)	78	106	68	100	30
Average Queue (ft)	28	44	9	36	1
95th Queue (ft)	61	89	44	81	25
Link Distance (ft)		1148	1652		1809
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)	81			100	
Storage Blk Time (%)	1	2		0	
Queuing Penalty (veh)	1	1		1	

Intersection: 8: Thompson Rd & Broadway St, All Intervals

Movement	WB	WB	NB	SB	SB
Directions Served	L	R	TR	L	T
Maximum Queue (ft)	89	108	92	100	30
Average Queue (ft)	29	45	10	36	1
95th Queue (ft)	62	87	48	80	22
Link Distance (ft)		1148	1652		1809
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)	81			100	
Storage Blk Time (%)	1	1		0	
Queuing Penalty (veh)	1	1		1	

Intersection: 9: Ocean Blvd & Woodland Dr, Interval #1

Movement	EB	EB	EB	WB	WB	SB
Directions Served	L	T	T	T	R	LR
Maximum Queue (ft)	214	210	174	718	290	526
Average Queue (ft)	158	106	115	510	185	350
95th Queue (ft)	262	204	183	902	384	576
Link Distance (ft)		2175	2175	1139		1459
Upstream Blk Time (%)				0		
Queuing Penalty (veh)				0		
Storage Bay Dist (ft)	150				200	
Storage Blk Time (%)	19	1		43		
Queuing Penalty (veh)	54	2		85		

Intersection: 9: Ocean Blvd & Woodland Dr, Interval #2

Movement	EB	EB	EB	WB	WB	SB
Directions Served	L	T	T	T	R	LR
Maximum Queue (ft)	233	261	216	773	290	510
Average Queue (ft)	134	107	107	352	154	284
95th Queue (ft)	230	219	192	604	355	493
Link Distance (ft)		2175	2175	1139		1459
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)	150				200	
Storage Blk Time (%)	14	1		28		
Queuing Penalty (veh)	33	1		49		

Intersection: 9: Ocean Blvd & Woodland Dr, All Intervals

Movement	EB	EB	EB	WB	WB	SB
Directions Served	L	T	T	T	R	LR
Maximum Queue (ft)	233	266	235	805	290	562
Average Queue (ft)	140	107	109	390	162	300
95th Queue (ft)	239	215	191	703	364	518
Link Distance (ft)		2175	2175	1139		1459
Upstream Blk Time (%)				0		
Queuing Penalty (veh)				0		
Storage Bay Dist (ft)	150				200	
Storage Blk Time (%)	15	1		32		
Queuing Penalty (veh)	38	1		58		

Intersection: 10: Central Ave & 10th St, Interval #1

Movement	EB	EB	B58	WB	WB	B59	NB	NB	SB	SB
Directions Served	LT	R	T	LT	TR	T	L	TR	L	TR
Maximum Queue (ft)	459	165	424	273	206	30	243	127	154	124
Average Queue (ft)	416	117	188	187	117	5	157	50	112	61
95th Queue (ft)	516	219	558	288	233	38	260	122	166	122
Link Distance (ft)	368		702	228	228	274	477	477	735	735
Upstream Blk Time (%)	36		1	5	1					
Queuing Penalty (veh)	0		0	15	3					
Storage Bay Dist (ft)		140								
Storage Blk Time (%)	49	0								
Queuing Penalty (veh)	70	2								

Intersection: 10: Central Ave & 10th St, Interval #2

Movement	EB	EB	B58	WB	WB	B59	NB	NB	SB	SB
Directions Served	LT	R	T	LT	TR	T	L	TR	L	TR
Maximum Queue (ft)	467	165	562	278	232	11	262	132	186	166
Average Queue (ft)	378	109	158	158	101	1	159	57	97	72
95th Queue (ft)	529	220	479	249	219	7	248	116	159	140
Link Distance (ft)	368		702	228	228	274	477	477	735	735
Upstream Blk Time (%)	27		0	2	0					
Queuing Penalty (veh)	0		0	4	1					
Storage Bay Dist (ft)		140								
Storage Blk Time (%)	43	0								
Queuing Penalty (veh)	56	1								

Intersection: 10: Central Ave & 10th St, All Intervals

Movement	EB	EB	B58	WB	WB	B59	NB	NB	SB	SB
Directions Served	LT	R	T	LT	TR	T	L	TR	L	TR
Maximum Queue (ft)	471	165	622	293	242	36	285	160	198	166
Average Queue (ft)	387	111	165	165	105	2	159	55	100	70
95th Queue (ft)	531	220	499	261	223	19	251	118	162	136
Link Distance (ft)	368		702	228	228	274	477	477	735	735
Upstream Blk Time (%)	30		0	2	0					
Queuing Penalty (veh)	0		0	7	1					
Storage Bay Dist (ft)		140								
Storage Blk Time (%)	45	0								
Queuing Penalty (veh)	60	1								

Intersection: 11: Commercial Ave, Interval #1

Movement	EB	SB	SB
Directions Served	R	T	TR
Maximum Queue (ft)	46	3	9
Average Queue (ft)	30	0	1
95th Queue (ft)	52	4	14
Link Distance (ft)	332	1250	1250
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 11: Commercial Ave, Interval #2

Movement	EB	SB
Directions Served	R	TR
Maximum Queue (ft)	49	6
Average Queue (ft)	24	1
95th Queue (ft)	46	7
Link Distance (ft)	332	1250
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 11: Commercial Ave, All Intervals

Movement	EB	SB	SB
Directions Served	R	T	TR
Maximum Queue (ft)	58	3	15
Average Queue (ft)	25	0	1
95th Queue (ft)	48	2	9
Link Distance (ft)	332	1250	1250
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 12: , Interval #1

Movement	EB	EB	WB	SB
Directions Served	R	R	LT	R
Maximum Queue (ft)	59	70	38	59
Average Queue (ft)	14	32	22	12
95th Queue (ft)	56	81	48	55
Link Distance (ft)	195	195	104	176
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 12: , Interval #2

Movement	EB	EB	WB	SB
Directions Served	R	R	LT	R
Maximum Queue (ft)	82	122	56	77
Average Queue (ft)	15	35	22	14
95th Queue (ft)	63	101	48	57
Link Distance (ft)	195	195	104	176
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 12: , All Intervals

Movement	EB	EB	WB	SB
Directions Served	R	R	LT	R
Maximum Queue (ft)	82	122	56	81
Average Queue (ft)	15	34	22	13
95th Queue (ft)	61	96	48	57
Link Distance (ft)	195	195	104	176
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 13: 7th St & Anderson Ave, Interval #1

Movement	EB	NB	NB	SB	SB
Directions Served	TR	L	R	L	LTR
Maximum Queue (ft)	75	66	29	8	12
Average Queue (ft)	48	34	13	1	2
95th Queue (ft)	81	64	33	7	13
Link Distance (ft)	646	832	832	201	201
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 13: 7th St & Anderson Ave, Interval #2

Movement	EB	NB	NB	SB	SB
Directions Served	TR	L	R	L	LTR
Maximum Queue (ft)	85	76	30	13	8
Average Queue (ft)	40	29	11	1	0
95th Queue (ft)	72	59	29	9	5
Link Distance (ft)	646	832	832	201	201
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 13: 7th St & Anderson Ave, All Intervals

Movement	EB	NB	NB	SB	SB
Directions Served	TR	L	R	L	LTR
Maximum Queue (ft)	92	84	34	18	13
Average Queue (ft)	42	30	12	1	1
95th Queue (ft)	74	60	30	9	8
Link Distance (ft)	646	832	832	201	201
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 17: Newmark Ave, Interval #1

Movement

Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 17: Newmark Ave, Interval #2

Movement

EB

Directions Served T
Maximum Queue (ft) 394
Average Queue (ft) 18
95th Queue (ft) 322
Link Distance (ft) 3783
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 17: Newmark Ave, All Intervals

Movement

EB

Directions Served T
Maximum Queue (ft) 394
Average Queue (ft) 14
95th Queue (ft) 279
Link Distance (ft) 3783
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 54: Broadway St, Interval #1

Movement	SB
Directions Served	T
Maximum Queue (ft)	45
Average Queue (ft)	18
95th Queue (ft)	116
Link Distance (ft)	2002
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 54: Broadway St, Interval #2

Movement	SB
Directions Served	T
Maximum Queue (ft)	151
Average Queue (ft)	33
95th Queue (ft)	164
Link Distance (ft)	2002
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 54: Broadway St, All Intervals

Movement	SB
Directions Served	T
Maximum Queue (ft)	151
Average Queue (ft)	29
95th Queue (ft)	153
Link Distance (ft)	2002
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 58: Bend, Interval #1

Movement	WB
Directions Served	T
Maximum Queue (ft)	78
Average Queue (ft)	11
95th Queue (ft)	119
Link Distance (ft)	368
Upstream Blk Time (%)	0
Queuing Penalty (veh)	0
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 58: Bend, Interval #2

Movement	
Directions Served	
Maximum Queue (ft)	
Average Queue (ft)	
95th Queue (ft)	
Link Distance (ft)	
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 58: Bend, All Intervals

Movement	WB
Directions Served	T
Maximum Queue (ft)	78
Average Queue (ft)	3
95th Queue (ft)	56
Link Distance (ft)	368
Upstream Blk Time (%)	0
Queuing Penalty (veh)	0
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Network Summary

Network wide Queuing Penalty, Interval #1: 710
Network wide Queuing Penalty, Interval #2: 607
Network wide Queuing Penalty, All Intervals: 632

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