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February 9, 2022

Mr. Jason Kambitsis
Senior Vice President of
Acquisitions and Development
A.R. Building Company
310 Seven Fields Boulevard
Seven Fields, PA 16046

Re: **One Metro Center**
Traffic Assessment-Supplemental Report
200-Unit Development
Warwick, Rhode Island
Pare Project No.: 21154.00

Dear Mr. Kambitsis:

Pare Corporation (Pare) has conducted an updated traffic analysis to determine the anticipated impacts to the surrounding roadway network for the Future Build Conditions with the a reduction in the number of units from 240-units to 200-units. As previously stated, the development will be located at the southeast corner of the Kilvert Street/Metro Center Boulevard intersection in Warwick, Rhode Island.

This letter evaluates the results of the Future (2026) Build condition analysis to determine the impact of the proposed development on the adjacent transportation network and provides recommendations as necessary.

FUTURE CONDITIONS

Traffic volumes in the study area were projected to the year 2026 to cover a five-year horizon from the existing 2021 condition. Two future (2026) scenarios were analyzed including a Future (2026) No-Build scenario and Future (2026) Build scenario. Under the Future (2026) No-Build scenario, the traffic volumes include existing traffic volumes and new traffic volumes associated with expected background growth and development. The Future (2026) scenario includes all traffic volumes under the Future (2026) No-Build scenario and traffic associated with the proposed Project.

Trip Generation

Trip generation for the proposed development was revised using the industry standard *Institute of Transportation Engineers (ITE) Trip Generation, 11th Edition*. The Trip Generation Manual provides traffic generation information for various land uses compiled from studies conducted by members nationwide. As part of our assessment, development trips were calculated using *Land Use Code (LUC) 221:Multifamily Housing (Mid-Rise)*. Based on the *Trip Generation* manual, mid-rise multifamily housing includes apartments, townhouses, and condominiums located within the same building with at least three other dwelling units that have between three and 10 floors. A summary of the trips generated from the ITE Trip Generation Manual for the proposed development is provided in Table 1 below using Land Use Code 221 Multifamily Housing (Mid-Rise).



8 BLACKSTONE VALLEY PLACE
LINCOLN, RI 02865
401.334.4100

10 LINCOLN ROAD, SUITE 210
FOXBORO, MA 02035
508.543.1755

14 BOBALA ROAD, SUITE 2B
HOLYOKE, MA 01040
413.507.3448



Table 1: Trip Generation Summary-Land Use Code 221 Multifamily Housing – 200 Dwelling Units

	WEEKDAY	AM PEAK HOUR TRIPS (7 am and 9 am)	PM PEAK HOUR TRIPS (4 pm and 6 pm)
Entering Volume	454 trips	18 trips	47 trips
Exiting Volume	454 trips	52 trips	32 trips
Total Volume	908 trips	70 trips	79 trips

Project Trip Distribution

Table 1 indicates the anticipated increase in traffic volumes being generated from the site during the AM and PM peak hours. These volumes are total trips that are further broken down to entering and exiting movements. These trips are further broken down on the roadway system based on the origin and/or destination based on existing traffic flows.

Future (2026) Build Traffic Volumes

The Future (2026) Build traffic volumes consist of the Future (2026) No-Build traffic volumes with the addition of the Project generated traffic volumes. The Future (2026) Build weekday a.m. peak hour and weekday p.m. peak hour traffic volumes are shown in Figure 1. A summary comparing the difference between the Existing (2021) conditions, Future (2026) No-Build Conditions, and Future (2026) Build Conditions is located in Table 2.

Table 2: Analysis Scenario Summary

Analysis Scenario		
Existing (2021) Conditions	Future (2026) No-Build Conditions	Future (2026) Build Conditions
Existing traffic volumes – these volumes are the peak hour traffic volumes collected in the intersection turning movement counts with the appropriate Covid-19 adjustment factor applied.	Future traffic volumes without the proposed development – these volumes are the existing traffic volumes inflated with a 0.5% annual growth rate over 5 years plus the anticipated traffic generated by the proposed 78-unit development east of the site on Kilvert Street. This represents the anticipated future conditions if the proposed development is not constructed	Future traffic volumes with the proposed development – these volumes include the volumes established under the Future (2026) No-Build Conditions plus the trips generated by the proposed development. This represents the anticipated future conditions if the proposed development is constructed



TRAFFIC CAPACITY ANALYSIS

Capacity analyses were completed for all the study intersections for Existing (2021), Future (2026) No-Build, and Future (2026) Build conditions. A capacity analysis characterizes intersections based on their level of service (LOS). LOS is a quality measure describing operational conditions within a traffic stream, generally in terms of service measures such as speed, travel times, traffic interruptions, etc. Six LOS are defined for each type of facility, from A to F, with A representing the best operating conditions and F representing the worst operating conditions. The LOS criteria, as defined by the 2010 Highway Capacity Manual¹ (HCM) for signalized and unsignalized intersections are provided in Table 3. Tables 4, 5 and 6 show the results of the capacity analysis.

Table 3: LOS Criteria for Signalized & Unsignalized Intersections

LOS	Signalized Intersections Delay Time (sec/veh)	Unsignalized Intersections Delay Time (sec/veh)
A	0-10	0-10
B	> 10-20	> 10-15
C	> 20-35	> 15-25
D	> 35-55	> 25-35
E	> 55-80	> 35-50
F	> 80	> 50

In general, the results of the capacity analysis indicate that the introduction of traffic associated with the proposed residential development to the adjacent roadway network has minimal impact on the study area. As indicated on the tables below, the following can be summarized when comparing the Future No-Build to Build Conditions:

- *Signalized intersection of Greenwich Boulevard/Metro Center Boulevard:* AM Peak Hour- There is no decrease in level of service (LOS). Greatest increase in delay for any approach is 0.2 seconds.

PM Peak Hour- There is one decrease in LOS. Left turn movement from Greenwich Boulevard from LOS C to LOS D. Increase in delay is 0.3 seconds. Greatest increase in queue is 1 vehicle.

- *Signalized Intersection of Kilvert Street/Jefferson Boulevard/Coronado Road:* AM Peak Hour- There is no decrease in level of service (LOS). Greatest increase in delay for any approach is 2.1 seconds.

PM Peak Hour- There is no decrease in LOS. Greatest increase in delay is 1.2 seconds.

¹ Highway Capacity Manual; Transportation Research Board; Washington, DC; 2010.



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- *Unsignalized Intersection Metro Center Boulevard/Coastway Boulevard* – AM Peak Hour- No decrease in LOS. Greatest increase in delay is from Coastway Boulevard with an increase of 0.3 seconds.

PM Peak Hour- Decrease in LOS for the Coastway Boulevard movements onto Metro Center Boulevard from LOS C to LOS D. The increase in delay is 1.9 seconds.

- *Unsignalized Intersection Metro Center Boulevard/Kilvert Street (Four-Way Stop)* – AM Peak Hour- No decrease in LOS. Greatest increase in delay is 0.7 seconds.

PM Peak Hour- Decrease in LOS for the Metro Center Boulevard approach from LOS C to LOS D. The increase in delay is 3.9 seconds.

- *Unsignalized Intersection Metro Center Boulevard/Proposed Site Entrance* – AM Peak Hour- LOS is B with a 12 second delay.

PM Peak Hour- LOS is C with a 15.4 second delay.



Table 4: Intersection Capacity Analysis Results - Signalized Intersections

Intersection	Movement		2021 Existing			2026 No-Build			2026 Build		
			LOS	Delay ¹	Queue Length ²	LOS	Delay ¹	Queue Length ²	LOS	Delay ¹	Queue Length ²
Greenwich Avenue (Route 5) & Metro Center Boulevard	<i>Weekday AM Peak Hour</i>										
	SE	L,T	C	32.1	194	C	32.6	212	C	32.6	215
	NW	T	C	15.9	192	C	26.4	197	C	26.8	197
		R	A	2.9	46	A	3.0	45	A	3.0	45
	SW	L	D	35.7	61	D	35.2	65	D	35.2	70
		R	A	4.9	27	A	4.9	31	A	4.8	31
	Intersection		C	22.4		C	22.9		C	23.0	
	<i>Weekday PM Peak Hour</i>										
	SE	L,T	F	297.1	#595	F	327.8	#617	F	335	#624
	NW	T	F	93.2	#372	F	81.9	#385	F	103.5	#385
		R	A	2.3	30	A	2.3	31	A	2.3	32
	SW	L	C	34.9	148	C	34.9	155	D	35.2	158
		R	A	7.1	115	A	7.3	122	A	7.3	122
	Intersection		F	145.5		F	159.4		F	161.9	
Jefferson Boulevard, Kilvert Street & Coronado Road	<i>Weekday AM Peak Hour</i>										
	EB	L	C	26.2	95	C	27.7	105	C	29.8	114
		TR	C	28.4	110	C	27.7	124	C	28.6	136
	WB	L	C	21.3	73	C	21.5	75	C	21.5	75
		T	C	33.3	157	C	34.7	165	C	34.9	168
		R	A	2.6	23	A	2.6	23	A	2.6	23
	NB	L	B	11.5	34	B	11.8	36	B	12.0	37
		T	C	28.2	147	C	29.6	153	C	29.7	154
		R	A	0.1	0	A	0.1	0	A	0.1	0
	SB	L	D	40.7	58	D	45.2	67	D	45.6	68
		TR	B	13.2	56	B	14.2	58	B	14.2	59
	Intersection		C	21.0		C	22.0		C	22.5	
	<i>Weekday PM Peak Hour</i>										
	EB	L	C	22.1	95	C	23.3	101	C	24.2	104
		TR	D	35.7	269	D	37.1	#310	D	38.3	#330
	WB	L	B	19.7	62	C	20.5	63	C	20.8	63
		T	C	26.7	161	C	27.1	174	C	27.5	184
		R	A	1.8	13	A	1.8	14	A	1.8	14
	NB	L	B	16.2	28	B	16.5	30	B	16.7	31
		T	D	35.7	92	D	36.1	94	D	36.3	94
		R	A	0.0	0	A	0.0	0	A	0.0	0
	SB	L	F	194.4	#173	F	216.0	#180	F	215.5	#177
	TR	B	19.6	165	C	20.2	172	C	20.4	174	
Intersection		C	34.3		D	36.2		D	36.4		

The 95th percentile volume exceeds capacity, queue may be longer.
 1. Delay is measured in seconds/vehicle.
 2. Queue Length shown represents the 95th percentile queue length in feet.



Table 5: Intersection Capacity Analysis Results - Unsignalized Intersections-AM Peak Hour

Intersection	Movement		Existing (2021)		Future (2026) No Build		Future (2026) Build	
			LOS (Delay ¹)	Queue Length ²	LOS (Delay ¹)	Queue Length ²	LOS (Delay ¹)	Queue Length ²
Coastway Boulevard, Driveway & Metro Center Boulevard	NB	L,R	B (12.9)	0.4	B (13.4)	0	B (13.7)	0.4
	SW	L,T	A (8.0)	0	A (8.1)	0	A (8.1)	0
	NE	T,R	A (0)	0	A (0)	0	A (0)	0
Metro Center Boulevard, Driveway & Kilvert Street	NE	L,T,R	A (9.8)	1.6	B (10.2)	1.8	B (10.8)	2.1
	SW	L,T,R	A(8.3)	0	A (8.4)	0	A (8.5)	0
	EB	L,T,R	A (8.1)	0.2	A (8.3)	0.2	A (8.4)	0.2
	WB	L,T,R	B (11.5)	2.2	B(12.3)	2.6	B (13.0)	2.9
Metro Center Boulevard & One Metro Proposed 240 Unit	WB	L,R	-	-	-	-	B (12.0)	0.3
	NE	T,R	-	-	-	-	-	-
	SW	L,T	-	-	-	-	A (7.9)	-

- 95th percentile volume exceeds capacity; queue may be longer; N/C – No Conflict.

1. Delay shown in seconds per vehicle.
2. Queue Length shown in vehicles.



Table 6: Intersection Capacity Analysis Results - Unsignalized Intersections-PM Peak Hour

Intersection	Movement		Existing (2021)		Future (2026) No Build		Future (2026) Build	
			LOS (Delay ¹)	Queue Length ²	LOS (Delay ¹)	Queue Length ²	LOS (Delay ¹)	Queue Length ²
Coastway Boulevard, Driveway & Metro Center Boulevard	NB	L,R	C (21.5)	1.5	C (24)	1.7	D (25.9)	1.8
	SW	L,T	A (8.1)	0	A (8.2)	0	A (8.3)	0
	NE	T,R	A (0)	0	A (0)	-	A (0)	-
Metro Center Boulevard, Driveway & Kilvert Street	NE	L,T,R	C (18.5)	4.8	C (22.7)	6.2	D (27.6)	7.3
	SW	L,T,R	B(13.3)	1.6	B (14.2)	1.9	B (14.9)	1.9
	EB	L,T,R	B (10.8)	0.5	B (11.3)	0.5	B (11.7)	0.6
	WB	L,T,R	D (29.3)	7.8	E (37.7)	9.6	E (49.2)	11.9
Metro Center Boulevard & One Metro Proposed 240 Unit	WB	L,R	-	-	-	-	C (15.4)	0.3
	NE	T,R	-	-	-	-	-	-
	SW	L,T	--	--	-	-	A (8.3)	0.1

- 95th percentile volume exceeds capacity; queue may be longer; N/C – No Conflict.

1. Delay shown in seconds per vehicle.
2. Queue Length shown in vehicles.



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Conclusions

Based on our capacity analysis, it has been found that the operations of the off-site intersections described above will not have any significant increase in delays at the intersections during the morning and afternoon peak hours when traffic volumes are heaviest. In addition, the proposed site entrance will also result at a very acceptable level of service. The proposed site was analyzed as part of this study with one access point on Metro Center Boulevard. If allowed by RIDEM for the second access point on Kilvert Street, this will have an improvement on the delays for the Metro Center Boulevard approach to the Metro Center Boulevard/Kilvert Street intersection.

As previously stated, the truck turning movements were reviewed for the Metro Center Boulevard/Kilvert Street intersection. In particular the right turn movement from Metro Center Boulevard onto Kilvert Street was reviewed. Encroachment of truck traffic into the Kilvert Street approach affects traffic flow at this intersection. As part of this project, DiPrete Engineering will be improving this intersection to better accommodate the truck traffic flow.

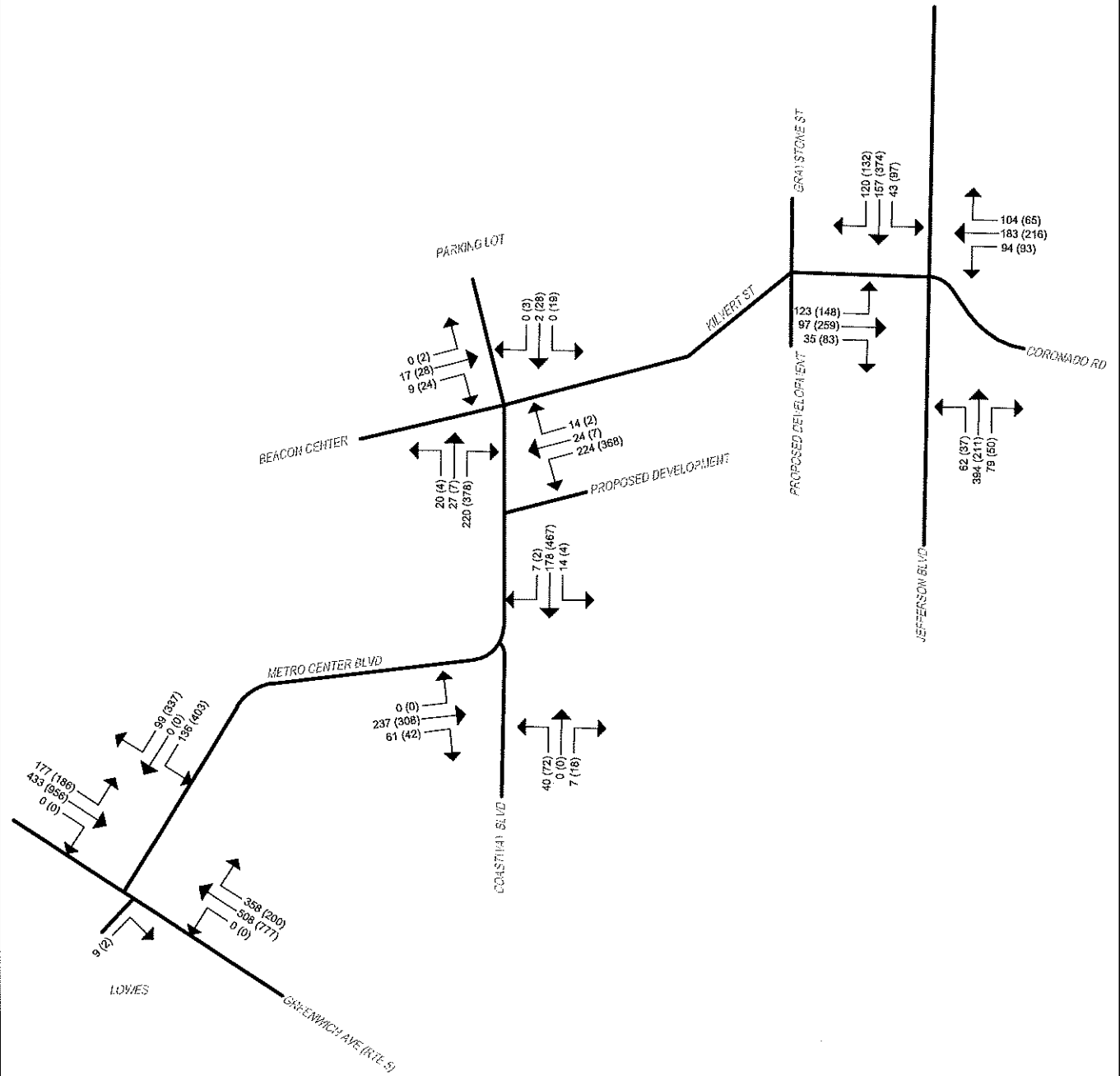
In summary, with the existing roadway system in the area and the projected traffic that is anticipated to be generated from the proposed development, no significant impacts to the traffic capacity or safety on the roadways and intersections are anticipated. Please feel free to contact me if you have any questions or need additional information.

Sincerely,

John P. Shevlin, P.E.
Senior Vice President

JPS/

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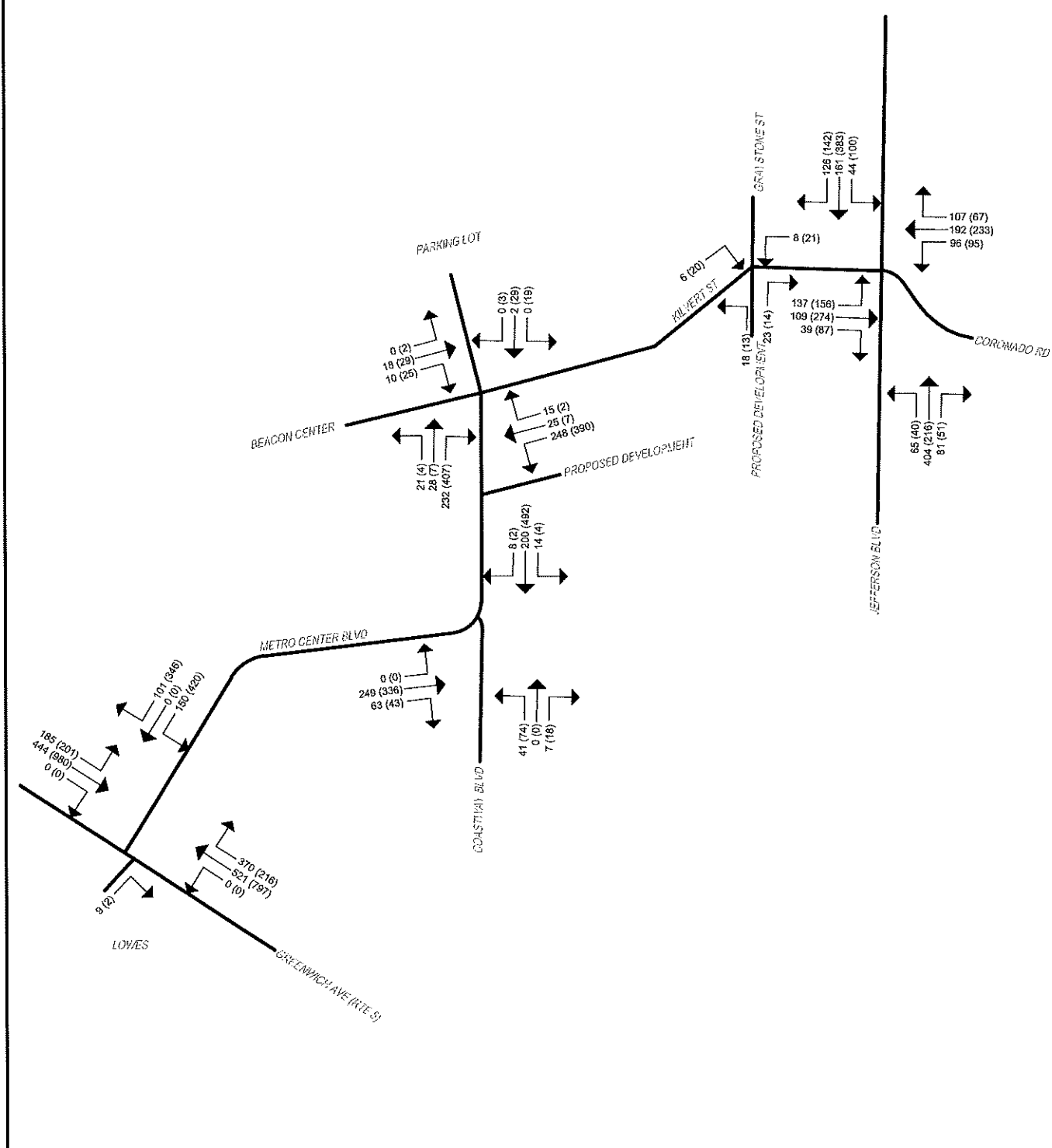
AM Volumes (PM Volumes)

PROJECT NO. 21154.00

DATE: JANUARY 2022



FIGURE 1
EXISTING (2021) TRAFFIC VOLUMES
7:00-9:00 AM and 4:00-6:00 PM
ROADWAY PEAK HOURS
WARWICK, RHODE ISLAND



AM Volumes (PM Volumes)

PROJECT NO. 21154.00

DATE: JANUARY 2022



FIGURE 2
 NO-BUILD (2026) TRAFFIC VOLUMES
 7:00-9:00 AM and 4:00-6:00 PM
 ROADWAY PEAK HOURS
 WARWICK, RHODE ISLAND

One Metro Center
 Warwick, Rhode Island
 Population Growth
 PARE Project No. 21154.00
 December 28, 2021



**Proposed 5 Story Building 1 Parking & 4 Residential Levels Above
 Land Use Code 221: Multifamily Housing (Mid-Rise)**

**Average Vehicle Trip Ends vs. Dwelling Units
 Dwelling Units**

200.0 Units

On a: Weekday

Average Rate:	$4.54 * 200$	908
Fitted Curve Equation:	$T = 4.77 * 200 - 46.46$	908
Trips Entering	$50\% * 908$	454
Trips Exiting	$50\% * 908$	454
		<u>908</u>

On a: Weekday, AM

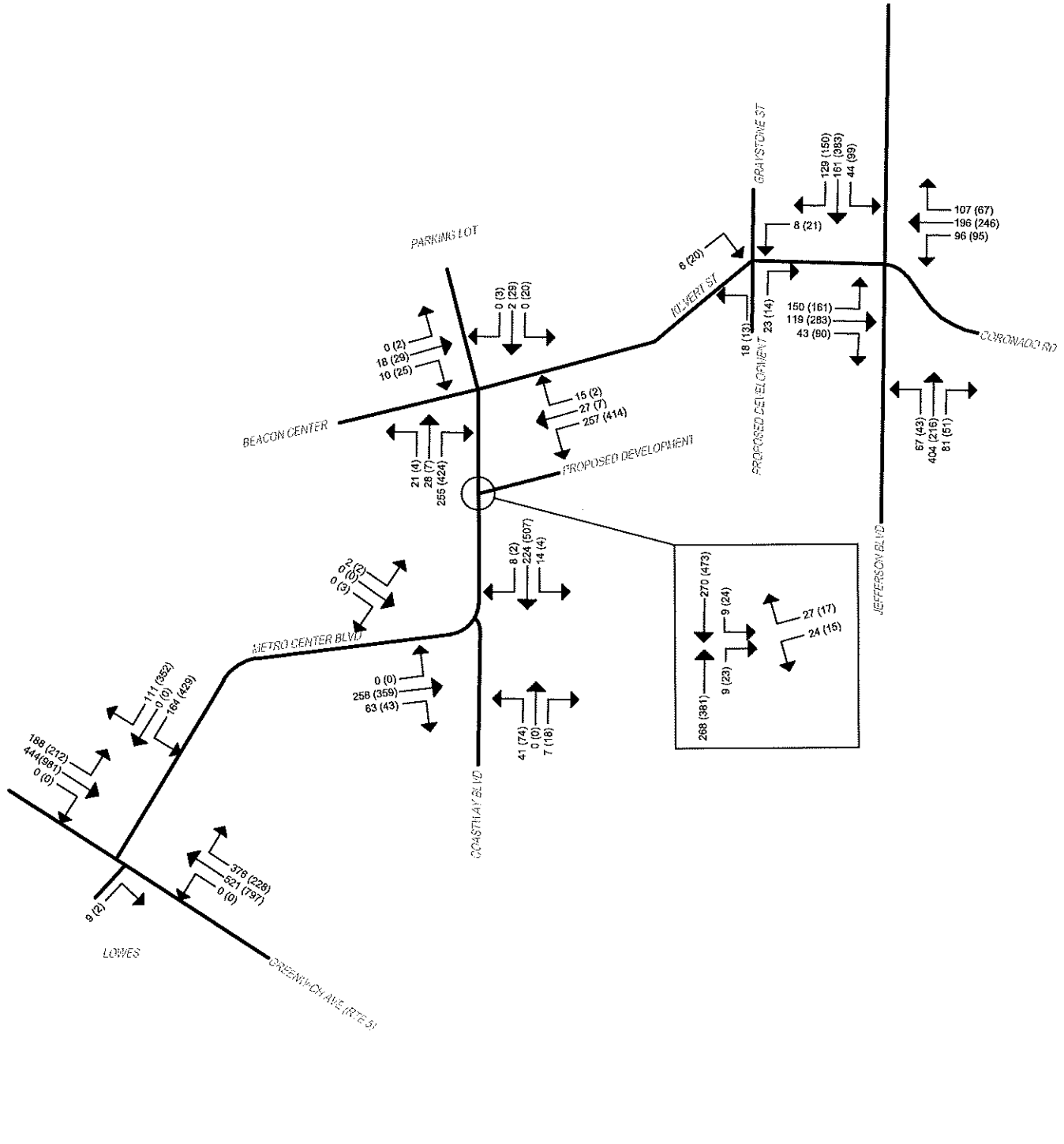
On a: Weekday Peak Hour of Generator

Average Rate:	$.35 * 200$	70
Fitted Curve Equation:	$T = .32 * 200 + 5.84$	70
Trips Entering	$26\% * 70$	18
Trips Exiting	$74\% * 70$	52
		<u>70</u>

On a: Weekday, PM

On a: Weekday Peak Hour of Generator

Average Rate:	$.39 * 200$	78
Fitted Curve Equation:	$T = .32 * 200 + 15.57$	80
Trips Entering	$60\% * 80$	48
Trips Exiting	$40\% * 80$	32
		<u>80</u>



AM Volumes (PM Volumes)

PROJECT NO. 21154.00

DATE: JANUARY 2022



FIGURE 3
 FUTURE BUILD (2026) TRAFFIC VOLUMES
 7:00-9:00 AM and 4:00-6:00 PM
 ROADWAY PEAK HOURS
 WARWICK, RHODE ISLAND

Lanes, Volumes, Timings
4: Greenwich Ave & Metro Center Blvd

01/04/2022



Lane Group	SEL	SET	NWT	NWR	SWL	SWR
Protected Phases		1	2		3	3
Permitted Phases	1 2			2 3	3	1 3
Detector Phase	1 2	1	2	2 3	3	3
Switch Phase						
Minimum Initial (s)		6.0	6.0		6.0	6.0
Minimum Split (s)		23.5	22.5		23.5	23.5
Total Split (s)		34.0	22.5		23.5	23.5
Total Split (%)		42.5%	28.1%		29.4%	29.4%
Maximum Green (s)		29.5	18.0		19.0	19.0
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		Lead	Lag			
Lead-Lag Optimize?		Yes	Yes			
Vehicle Extension (s)		2.7	2.7		2.7	2.7
Recall Mode		None	C-Min		None	None
Walk Time (s)		4.0			4.0	4.0
Flash Dont Walk (s)		15.0			15.0	15.0
Pedestrian Calls (#/hr)		0			0	0
Act Effct Green (s)		30.9	26.4	40.1	9.2	44.6
Actuated g/C Ratio		0.39	0.33	0.50	0.12	0.56
v/c Ratio		2.02df	0.49	0.40	0.41	0.12
Control Delay		32.1	25.0	2.9	35.7	4.9
Queue Delay		0.0	0.0	0.0	0.0	0.0
Total Delay		32.1	25.0	2.9	35.7	4.9
LOS		C	C	A	D	A
Approach Delay		32.1	15.9		22.7	
Approach LOS		C	B		C	
Queue Length 50th (ft)		145	118	0	37	16
Queue Length 95th (ft)		194	192	46	61	27
Internal Link Dist (ft)		1230	69		385	
Turn Bay Length (ft)				180	310	
Base Capacity (vph)		797	1169	1139	767	888
Starvation Cap Reductn		0	0	0	0	0
Spillback Cap Reductn		0	0	0	0	0
Storage Cap Reductn		0	0	0	0	0
Reduced v/c Ratio		0.80	0.49	0.35	0.20	0.13

Intersection Summary

Area Type:	Other
Cycle Length:	80
Actuated Cycle Length:	80
Offset:	33 (41%), Referenced to phase 2:NWSE, Start of Green
Natural Cycle:	80
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.83
Intersection Signal Delay:	22.4
Intersection Capacity Utilization:	47.4%
Intersection LOS:	C
ICU Level of Service:	A

Lanes, Volumes, Timings
4: Greenwich Ave & Metro Center Blvd

01/04/2022



Lane Group	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations		↕↕	↕↕	↗	↕↕	↗
Traffic Volume (vph)	177	433	508	358	136	99
Future Volume (vph)	177	433	508	358	136	99
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0			180	310	0
Storage Lanes	0			1	2	1
Taper Length (ft)	25				25	
Lane Util. Factor	0.95	0.95	0.95	1.00	0.97	1.00
Frnt				0.850		0.850
Fit Protected		0.986			0.950	
Satd. Flow (prot)	0	3456	3539	1583	3230	1568
Fit Permitted		0.565			0.950	
Satd. Flow (perm)	0	1980	3539	1583	3230	1568
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				402		35
Link Speed (mph)		30	30		30	
Link Distance (ft)		1310	149		465	
Travel Time (s)		29.8	3.4		10.6	
Peak Hour Factor	0.96	0.96	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	3%	3%	2%	2%	3%	3%
Parking (#/hr)					0	
Adj. Flow (vph)	184	451	571	402	153	111
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	635	571	402	153	111
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	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	1.00	1.00	1.00	1.00	1.07	1.00
Turning Speed (mph)	15			9	15	9
Number of Detectors	1	2	2	1	1	1
Detector Template	Left	Thru	Thru	Right	Left	Right
Leading Detector (ft)	20	100	100	20	20	20
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	6	20	20	20
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex
Detector 1 Channel						
Detector 1 Extend (s)	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
Detector 1 Delay (s)	0.0	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		CI+Ex	CI+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			
Turn Type	custom	NA	NA	custom	Prot	custom




Lanes, Volumes, Timings
4: Greenwich Ave & Metro Center Blvd

01/04/2022

Analysis Period (min) 15

dl Defacto Left Lane. Recode with 1 though lane as a left lane.

Splits and Phases: 4: Greenwich Ave & Metro Center Blvd

 Ø1	 Ø2 (R)	 Ø3
34 s	22,5 s	23,5 s

HCM 2010 TWSC
 11: Coastway Blvd & Metro Center Blvd

01/04/2022

Intersection						
Int Delay, s/veh	1.4					
Movement	NBL	NBR	NET	NER	SWL	SWT
Lane Configurations	W		↑			↑
Traffic Vol, veh/h	40	7	237	61	14	178
Future Vol, veh/h	40	7	237	61	14	178
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	81	81	88	88	84	84
Heavy Vehicles, %	2	2	2	2	3	3
Mvmt Flow	49	9	269	69	17	212

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	550	304	0	0	338
Stage 1	304	-	-	-	-
Stage 2	246	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.13
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.227
Pot Cap-1 Maneuver	496	736	-	-	1216
Stage 1	748	-	-	-	-
Stage 2	795	-	-	-	-
Platoon blocked, %					
Mov Cap-1 Maneuver	488	736	-	-	1216
Mov Cap-2 Maneuver	488	-	-	-	-
Stage 1	748	-	-	-	-
Stage 2	782	-	-	-	-

Approach	NB	NE	SW
HCM Control Delay, s	12.9	0	0.6
HCM LOS	B		

Minor Lane/Major Mvmt	NET	NER	NBLn1	SWL	SWT
Capacity (veh/h)	-	-	514	1216	-
HCM Lane V/C Ratio	-	-	0.113	0.014	-
HCM Control Delay (s)	-	-	12.9	8	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.4	0	-

Intersection	
Intersection Delay, s/veh	10.5
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	17	9	224	24	14	20	27	220	0	2	0
Future Vol, veh/h	0	17	9	224	24	14	20	27	220	0	2	0
Peak Hour Factor	0.72	0.72	0.72	0.81	0.81	0.81	0.92	0.92	0.92	0.25	0.25	0.25
Heavy Vehicles, %	4	4	4	3	3	3	3	3	3	0	0	0
Mvmt Flow	0	24	13	277	30	17	22	29	239	0	8	0
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NE	SW
Opposing Approach	WB	EB	SW	NE
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SW	NE	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NE	SW	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	8.1	11.5	9.8	8.3
HCM LOS	A	B	A	A

Lane	NELn1	EBLn1	WBLn1	SWLn1
Vol Left, %	7%	0%	85%	0%
Vol Thru, %	10%	65%	9%	100%
Vol Right, %	82%	35%	5%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	267	26	262	2
LT Vol	20	0	224	0
Through Vol	27	17	24	2
RT Vol	220	9	14	0
Lane Flow Rate	290	36	323	8
Geometry Grp	1	1	1	1
Degree of Util (X)	0.353	0.048	0.431	0.011
Departure Headway (Hd)	4.374	4.835	4.802	5.142
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	821	736	747	693
Service Time	2.404	2.898	2.85	3.199
HCM Lane V/C Ratio	0.353	0.049	0.432	0.012
HCM Control Delay	9.8	8.1	11.5	8.3
HCM Lane LOS	A	A	B	A
HCM 95th-tile Q	1.6	0.2	2.2	0

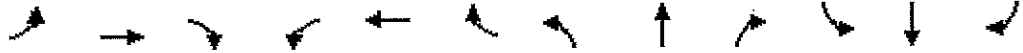
Lanes, Volumes, Timings
 17: Jefferson Blvd & Kilvert St/Coronado Rd

01/04/2022

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	123	97	35	94	183	104	62	394	79	43	157	120
Future Volume (vph)	123	97	35	94	183	104	62	394	79	43	157	120
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	210		0	100		100	100		100	115		0
Storage Lanes	1		0	1		1	1		1	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	1.00	1.00	0.95	0.95
Frnt		0.960				0.850			0.850		0.935	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1687	1705	0	1752	1845	1568	1719	3438	1538	1687	3155	0
Flt Permitted	0.545			0.643			0.559			0.252		
Satd. Flow (perm)	968	1705	0	1186	1845	1568	1012	3438	1538	447	3155	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		19				111					138	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		420			778			511			443	
Travel Time (s)		9.5			17.7			11.6			10.1	
Peak Hour Factor	0.85	0.85	0.85	0.94	0.94	0.94	0.94	0.94	0.94	0.87	0.87	0.87
Heavy Vehicles (%)	7%	7%	7%	3%	3%	3%	5%	5%	5%	7%	7%	7%
Adj. Flow (vph)	145	114	41	100	195	111	66	419	84	49	180	138
Shared Lane Traffic (%)												
Lane Group Flow (vph)	145	155	0	100	195	111	66	419	84	49	318	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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2	1	1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100	20	20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0	0	0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0	0	0	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6	20	20	6	
Detector 1 Type	CI+Ex	CI+Ex		CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+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	0.0	
Detector 1 Queue (s)	0.0	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	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		CI+Ex			CI+Ex			CI+Ex			CI+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA	custom	pm+pt	NA	custom	custom	NA	
Protected Phases	7	4		3	8	1	5	2			6	

Lanes, Volumes, Timings
 17: Jefferson Blvd & Kilvert St/Coronado Rd

01/04/2022



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	4			8		8	2		1 2 3 4	1		
Detector Phase	7	4		3	8	1	5	2	1 2 3 4	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)	10.0	26.0		10.0	31.0	26.0	25.5	26.5		26.0	27.5	
Total Split (s)	10.0	31.0		10.0	31.0	26.0	25.5	28.0		26.0	28.5	
Total Split (%)	10.5%	32.6%		10.5%	32.6%	27.4%	26.8%	29.5%		27.4%	30.0%	
Maximum Green (s)	5.0	26.0		5.0	26.0	21.0	21.0	23.5		21.0	24.0	
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	3.5	3.5		4.0	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		0.0	0.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0	5.0	4.5	4.5		5.0	4.5	
Lead/Lag	Lead	Lag		Lead	Lag	Lead	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	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	3.0	
Recall Mode	None	None		None	None	None	None	Min		None	Min	
Walk Time (s)		7.0			7.0	7.0	7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		14.0			19.0	14.0	14.0	15.0		14.0	16.0	
Pedestrian Calls (#/hr)		0			0	0	0	0		0	0	
Act Effct Green (s)	16.8	13.1		16.8	13.1	34.4	22.0	14.7	66.7	15.9	29.7	
Actuated g/C Ratio	0.25	0.20		0.25	0.20	0.52	0.33	0.22	1.00	0.24	0.45	
v/c Ratio	0.48	0.44		0.29	0.54	0.13	0.16	0.55	0.05	0.46	0.21	
Control Delay	26.2	28.4		21.3	33.3	2.6	11.5	28.2	0.1	40.7	9.0	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	26.2	28.4		21.3	33.3	2.6	11.5	28.2	0.1	40.7	9.0	
LOS	C	C		C	C	A	B	C	A	D	A	
Approach Delay		27.3			22.0			22.1			13.2	
Approach LOS		C			C			C			B	
Queue Length 50th (ft)	46	53		31	79	0	13	86	0	18	26	
Queue Length 95th (ft)	95	110		73	157	23	34	147	0	58	56	
Internal Link Dist (ft)		340			698			431			363	
Turn Bay Length (ft)	210			100		100	100		100	115		
Base Capacity (vph)	301	728		343	776	1009	754	1307	1502	151	1510	
Starvation Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.48	0.21		0.29	0.25	0.11	0.09	0.32	0.06	0.32	0.21	

Intersection Summary









Area Type: Other
 Cycle Length: 95
 Actuated Cycle Length: 66.7
 Natural Cycle: 95
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.55
 Intersection Signal Delay: 21.0
 Intersection Capacity Utilization 47.8%
 Analysis Period (min) 15
 Intersection LOS: C
 ICU Level of Service A

Lanes, Volumes, Timings

17: Jefferson Blvd & Kilvert St/Coronado Rd

01/04/2022

Splits and Phases: 17: Jefferson Blvd & Kilvert St/Coronado Rd

 Ø1	 Ø2	 Ø3	 Ø4
26 s	26 s	10 s	31 s
 Ø5	 Ø6	 Ø7	 Ø8
25.5 s	26.5 s	10 s	31 s

Lanes, Volumes, Timings
 4: Greenwich Ave & Metro Center Blvd

01/04/2022



Lane Group	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations		↕↕	↕↕	↗	↖↖	↗
Traffic Volume (vph)	185	444	521	370	150	110
Future Volume (vph)	185	444	521	370	150	110
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0			180	310	0
Storage Lanes	0			1	2	1
Taper Length (ft)	25				25	
Lane Util. Factor	0.95	0.95	0.95	1.00	0.97	1.00
Frt				0.850		0.850
Flt Protected		0.986			0.950	
Satd. Flow (prot)	0	3456	3539	1583	3230	1568
Flt Permitted		0.565			0.950	
Satd. Flow (perm)	0	1980	3539	1583	3230	1568
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				416		32
Link Speed (mph)		30	30		30	
Link Distance (ft)		1310	149		465	
Travel Time (s)		29.8	3.4		10.6	
Peak Hour Factor	0.96	0.96	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	3%	3%	2%	2%	3%	3%
Parking (#/hr)					0	
Adj. Flow (vph)	193	463	585	416	169	124
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	656	585	416	169	124
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	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	1.00	1.00	1.00	1.00	1.07	1.00
Turning Speed (mph)	15			9	15	9
Number of Detectors	1	2	2	1	1	1
Detector Template	Left	Thru	Thru	Right	Left	Right
Leading Detector (ft)	20	100	100	20	20	20
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	6	20	20	20
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex
Detector 1 Channel						
Detector 1 Extend (s)	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
Detector 1 Delay (s)	0.0	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		CI+Ex	CI+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			
Turn Type	custom	NA	NA	custom	Prot	custom

Lanes, Volumes, Timings
 4: Greenwich Ave & Metro Center Blvd

01/04/2022



Lane Group	SEL	SET	NWT	NWR	SWL	SWR
Protected Phases		1	2		3	3
Permitted Phases	1 2			2 3	3	1 3
Detector Phase	1 2	1	2	2 3	3	3
Switch Phase						
Minimum Initial (s)		6.0	6.0		6.0	6.0
Minimum Split (s)		23.5	22.5		23.5	23.5
Total Split (s)		34.0	22.5		23.5	23.5
Total Split (%)		42.5%	28.1%		29.4%	29.4%
Maximum Green (s)		29.5	18.0		19.0	19.0
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		Lead	Lag			
Lead-Lag Optimize?		Yes	Yes			
Vehicle Extension (s)		2.7	2.7		2.7	2.7
Recall Mode		None	C-Min		None	None
Walk Time (s)		4.0			4.0	4.0
Flash Dont Walk (s)		15.0			15.0	15.0
Pedestrian Calls (#/hr)		0			0	0
Act Effct Green (s)		31.5	25.2	39.5	9.8	45.8
Actuated g/C Ratio		0.39	0.32	0.49	0.12	0.57
v/c Ratio		2.10df	0.53	0.42	0.43	0.14
Control Delay		32.6	26.4	3.0	35.2	4.9
Queue Delay		0.0	0.0	0.0	0.0	0.0
Total Delay		32.6	26.4	3.0	35.2	4.9
LOS		C	C	A	D	A
Approach Delay		32.6	16.6		22.4	
Approach LOS		C	B		C	
Queue Length 50th (ft)		149	125	0	41	19
Queue Length 95th (ft)		212	197	45	65	31
Internal Link Dist (ft)		1230	69		385	
Turn Bay Length (ft)				180	310	
Base Capacity (vph)		804	1114	1126	767	911
Starvation Cap Reductn		0	0	0	0	0
Spillback Cap Reductn		0	0	0	0	0
Storage Cap Reductn		0	0	0	0	0
Reduced v/c Ratio		0.82	0.53	0.37	0.22	0.14

Intersection Summary

Area Type: Other
 Cycle Length: 80
 Actuated Cycle Length: 80
 Offset: 33 (41%), Referenced to phase 2:NWSE, Start of Green
 Natural Cycle: 80
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.84
 Intersection Signal Delay: 22.9
 Intersection Capacity Utilization 48.3%
 Intersection LOS: C
 ICU Level of Service A

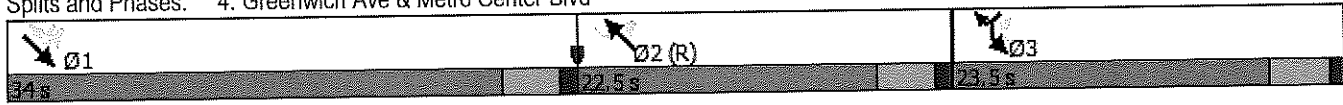
Lanes, Volumes, Timings
4: Greenwich Ave & Metro Center Blvd

01/04/2022

Analysis Period (min) 15

dl Defacto Left Lane. Recode with 1 though lane as a left lane.

Splits and Phases: 4: Greenwich Ave & Metro Center Blvd



Intersection

Int Delay, s/veh 1.4

Movement NBL NBR NET NER SWL SWT

Movement	NBL	NBR	NET	NER	SWL	SWT
Lane Configurations	W		W			W
Traffic Vol, veh/h	41	7	249	63	15	200
Future Vol, veh/h	41	7	249	63	15	200
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	81	81	88	88	84	84
Heavy Vehicles, %	2	2	2	2	3	3
Mvmt Flow	51	9	283	72	18	238

Major/Minor Minor1 Major1 Major2

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	593	319	0	0	355
Stage 1	319	-	-	-	-
Stage 2	274	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.13
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.227
Pot Cap-1 Maneuver	468	722	-	-	1198
Stage 1	737	-	-	-	-
Stage 2	772	-	-	-	-
Platoon blocked, %					
Mov Cap-1 Maneuver	460	722	-	-	1198
Mov Cap-2 Maneuver	460	-	-	-	-
Stage 1	737	-	-	-	-
Stage 2	759	-	-	-	-

Approach NB NE SW

HCM Control Delay, s	13.4	0	0.6
HCM LOS	B		

Minor Lane/Major Mvmt NET NERNBLn1 SWL SWT

Capacity (veh/h)	-	-	486	1198	-
HCM Lane V/C Ratio	-	-	0.122	0.015	-
HCM Control Delay (s)	-	-	13.4	8.1	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.4	0	-

Intersection	
Intersection Delay, s/veh	11.1
Intersection LOS	B
























Movement	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	18	10	248	25	15	21	28	232	0	2	0
Future Vol, veh/h	0	18	10	248	25	15	21	28	232	0	2	0
Peak Hour Factor	0.72	0.72	0.72	0.81	0.81	0.81	0.92	0.92	0.92	0.25	0.25	0.25
Heavy Vehicles, %	4	4	4	3	3	3	3	3	3	0	0	0
Mvmt Flow	0	25	14	306	31	19	23	30	252	0	8	0
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NE	SW
Opposing Approach	WB	EB	SW	NE
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SW	NE	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NE	SW	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	8.3	12.3	10.2	8.4
HCM LOS	A	B	B	A

Lane	NELn1	EBLn1	WBLn1	SWLn1
Vol Left, %	7%	0%	86%	0%
Vol Thru, %	10%	64%	9%	100%
Vol Right, %	83%	36%	5%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	281	28	288	2
LT Vol	21	0	248	0
Through Vol	28	18	25	2
RT Vol	232	10	15	0
Lane Flow Rate	305	39	356	8
Geometry Grp	1	1	1	1
Degree of Util (X)	0.379	0.053	0.479	0.012
Departure Headway (Hd)	4.464	4.922	4.854	5.266
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	803	721	740	675
Service Time	2.505	2.998	2.91	3.338
HCM Lane V/C Ratio	0.38	0.054	0.481	0.012
HCM Control Delay	10.2	8.3	12.3	8.4
HCM Lane LOS	B	A	B	A
HCM 95th-tile Q	1.8	0.2	2.6	0

Lanes, Volumes, Timings
 17: Jefferson Blvd & Kilvert St/Coronado Rd

01/04/2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	137	109	39	96	192	107	65	404	81	44	161	126
Future Volume (vph)	137	109	39	96	192	107	65	404	81	44	161	126
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	210		0	100		100	100		100	115		0
Storage Lanes	1		0	1		1	1		1	1		0
Taper Length (ft)	25			25		25	25		25	25		0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	0.95
Frt		0.960				0.850			0.850		0.934	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1687	1705	0	1752	1845	1568	1719	3438	1538	1687	3151	0
Flt Permitted	0.486			0.647			0.553			0.244		
Satd. Flow (perm)	863	1705	0	1193	1845	1568	1001	3438	1538	433	3151	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		19				114					145	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		420			778			511			443	
Travel Time (s)		9.5			17.7			11.6			10.1	
Peak Hour Factor	0.85	0.85	0.85	0.94	0.94	0.94	0.94	0.94	0.94	0.87	0.87	0.87
Heavy Vehicles (%)	7%	7%	7%	3%	3%	3%	5%	5%	5%	7%	7%	7%
Adj. Flow (vph)	161	128	46	102	204	114	69	430	86	51	185	145
Shared Lane Traffic (%)												
Lane Group Flow (vph)	161	174	0	102	204	114	69	430	86	51	330	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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2	1	1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100	20	20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0	0	0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0	0	0	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6	20	20	6	
Detector 1 Type	CI+Ex	CI+Ex		CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+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	0.0	
Detector 1 Queue (s)	0.0	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	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		CI+Ex			CI+Ex			CI+Ex			CI+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA	custom	pm+pt	NA	custom	custom	NA	
Protected Phases	7	4		3	8	1	5	2			6	

Lanes, Volumes, Timings
 17: Jefferson Blvd & Kilvert St/Coronado Rd

01/04/2022



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	4			8		8	2		1 2 3 4	1		
Detector Phase	7	4		3	8	1	5	2	1 2 3 4	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)	10.0	26.0		10.0	31.0	26.0	25.5	26.5		26.0	27.5	
Total Split (s)	10.0	31.0		10.0	31.0	26.0	25.5	28.0		26.0	28.5	
Total Split (%)	10.5%	32.6%		10.5%	32.6%	27.4%	26.8%	29.5%		27.4%	30.0%	
Maximum Green (s)	5.0	26.0		5.0	26.0	21.0	21.0	23.5		21.0	24.0	
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	3.5	3.5		4.0	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		0.0	0.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0	5.0	4.5	4.5		5.0	4.5	
Lead/Lag	Lead	Lag		Lead	Lag	Lead	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	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	3.0	
Recall Mode	None	None		None	None	None	None	Min		None	Min	
Walk Time (s)		7.0			7.0	7.0	7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		14.0			19.0	14.0	14.0	15.0		14.0	16.0	
Pedestrian Calls (#/hr)		0			0	0	0	0		0	0	
Act Effct Green (s)	20.0	16.2		18.6	13.4	35.0	22.0	14.8	70.1	16.4	27.4	
Actuated g/C Ratio	0.29	0.23		0.27	0.19	0.50	0.31	0.21	1.00	0.23	0.39	
v/c Ratio	0.53	0.43		0.29	0.58	0.14	0.18	0.59	0.06	0.50	0.25	
Control Delay	27.7	27.7		21.5	34.7	2.6	11.8	29.6	0.1	45.2	9.4	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	27.7	27.7		21.5	34.7	2.6	11.8	29.6	0.1	45.2	9.4	
LOS	C	C		C	C	A	B	C	A	D	A	
Approach Delay		27.7			22.8			23.2			14.2	
Approach LOS		C			C			C			B	
Queue Length 50th (ft)	54	63		33	85	0	14	92	0	19	27	
Queue Length 95th (ft)	105	124		75	165	23	36	153	0	#67	58	
Internal Link Dist (ft)		340			698			431			363	
Turn Bay Length (ft)	210			100		100	100		100	115		
Base Capacity (vph)	306	669		357	711	951	710	1198	1495	135	1377	
Starvation Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.53	0.26		0.29	0.29	0.12	0.10	0.36	0.06	0.38	0.24	





Intersection Summary

Area Type: Other
 Cycle Length: 95
 Actuated Cycle Length: 70.1
 Natural Cycle: 95
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.59
 Intersection Signal Delay: 22.0
 Intersection LOS: C
 Intersection Capacity Utilization 49.3%
 ICU Level of Service A
 Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 17: Jefferson Blvd & Kilvert St/Coronado Rd

 Ø1	 Ø2	 Ø3	 Ø4
26 s	28 s	10 s	31 s
 Ø5	 Ø6	 Ø7	 Ø8
25.5 s	28.5 s	10 s	31 s

Lanes, Volumes, Timings
 4: Greenwich Ave & Metro Center Blvd

02/09/2022



Lane Group	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations		↔↑	↑↑	↑	↔↑	↑
Traffic Volume (vph)	188	444	521	376	164	111
Future Volume (vph)	188	444	521	376	164	111
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0			180	310	0
Storage Lanes	0			1	2	1
Taper Length (ft)	25				25	
Lane Util. Factor	0.95	0.95	0.95	1.00	0.97	1.00
Frnt				0.850		0.850
Flt Protected		0.985			0.950	
Satd. Flow (prot)	0	3452	3539	1583	3230	1568
Flt Permitted		0.566			0.950	
Satd. Flow (perm)	0	1984	3539	1583	3230	1568
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				422		32
Link Speed (mph)		30	30		30	
Link Distance (ft)		1310	149		465	
Travel Time (s)		29.8	3.4		10.6	
Peak Hour Factor	0.96	0.96	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	3%	3%	2%	2%	3%	3%
Parking (#/hr)					0	
Adj. Flow (vph)	196	463	585	422	184	125
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	659	585	422	184	125
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	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	1.00	1.00	1.00	1.00	1.07	1.00
Turning Speed (mph)	15			9	15	9
Number of Detectors	1	2	2	1	1	1
Detector Template	Left	Thru	Thru	Right	Left	Right
Leading Detector (ft)	20	100	100	20	20	20
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	6	20	20	20
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex
Detector 1 Channel						
Detector 1 Extend (s)	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
Detector 1 Delay (s)	0.0	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		CI+Ex	CI+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			
Turn Type	custom	NA	NA	custom	Prot	custom

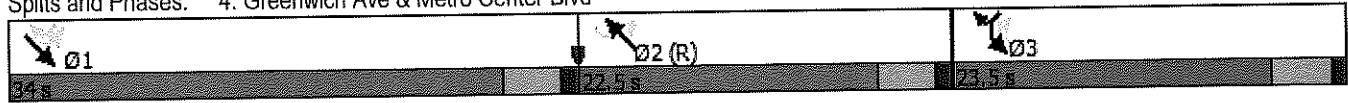
Lanes, Volumes, Timings
4: Greenwich Ave & Metro Center Blvd

02/09/2022

Analysis Period (min) 15

dl Defacto Left Lane. Recode with 1 though lane as a left lane.

Splits and Phases: 4: Greenwich Ave & Metro Center Blvd



HCM 2010 TWSC
 11: Coastway Blvd & Metro Center Blvd

02/09/2022

Intersection

Int Delay, s/veh 1.4

Movement	NBL	NBR	NET	NER	SWL	SWT
Lane Configurations	↔		↔			↔
Traffic Vol, veh/h	41	7	258	63	14	224
Future Vol, veh/h	41	7	258	63	14	224
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	81	81	88	88	84	84
Heavy Vehicles, %	2	2	2	2	3	3
Mvmt Flow	51	9	293	72	17	267

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	630	329	0	0	365
Stage 1	329	-	-	-	-
Stage 2	301	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.13
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.227
Pot Cap-1 Maneuver	446	712	-	-	1188
Stage 1	729	-	-	-	-
Stage 2	751	-	-	-	-
Platoon blocked, %					
Mov Cap-1 Maneuver	438	712	-	-	1188
Mov Cap-2 Maneuver	438	-	-	-	-
Stage 1	729	-	-	-	-
Stage 2	738	-	-	-	-

Approach	NB	NE	SW
HCM Control Delay, s	13.9	0	0.5
HCM LOS	B		

Minor Lane/Major Mvmt	NET	NER	NBLn1	SWL	SWT
Capacity (veh/h)	-	-	464	1188	-
HCM Lane V/C Ratio	-	-	0.128	0.014	-
HCM Control Delay (s)	-	-	13.9	8.1	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.4	0	-

Intersection						
Int Delay, s/veh	1.1					
Movement	WBL	WBR	NET	NER	SWL	SWT
Lane Configurations	↔		↔		↔	
Traffic Vol, veh/h	24	27	268	9	9	270
Future Vol, veh/h	24	27	268	9	9	270
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	26	29	291	10	10	293

Major/Minor	Minor1	Major1	Major2	Minor2	Major3	Minor3
Conflicting Flow All	609	296	0	0	301	0
Stage 1	296	-	-	-	-	-
Stage 2	313	-	-	-	-	-
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	458	743	-	-	1260	-
Stage 1	755	-	-	-	-	-
Stage 2	741	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	454	743	-	-	1260	-
Mov Cap-2 Maneuver	454	-	-	-	-	-
Stage 1	755	-	-	-	-	-
Stage 2	734	-	-	-	-	-

Approach	WB	NE	SW
HCM Control Delay, s	12	0	0.3
HCM LOS	B		

Minor Lane/Major Mvmt	NET	NER	WBLn1	SWL	SWT
Capacity (veh/h)	-	-	572	1260	-
HCM Lane V/C Ratio	-	-	0.097	0.008	-
HCM Control Delay (s)	-	-	12	7.9	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.3	0	-

Intersection	
Intersection Delay, s/veh	11.7
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	18	10	257	27	15	21	28	259	0	2	0
Future Vol, veh/h	0	18	10	257	27	15	21	28	259	0	2	0
Peak Hour Factor	0.72	0.72	0.72	0.81	0.81	0.81	0.92	0.92	0.92	0.25	0.25	0.25
Heavy Vehicles, %	4	4	4	3	3	3	3	3	3	0	0	0
Mvmt Flow	0	25	14	317	33	19	23	30	282	0	8	0
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NE	SW
Opposing Approach	WB	EB	SW	NE
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SW	NE	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NE	SW	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	8.4	13	10.8	8.5
HCM LOS	A	B	B	A

Lane	NELn1	EBLn1	WBLn1	SWLn1
Vol Left, %	7%	0%	86%	0%
Vol Thru, %	9%	64%	9%	100%
Vol Right, %	84%	36%	5%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	308	28	299	2
LT Vol	21	0	257	0
Through Vol	28	18	27	2
RT Vol	259	10	15	0
Lane Flow Rate	335	39	369	8
Geometry Grp	1	1	1	1
Degree of Util (X)	0.418	0.054	0.505	0.012
Departure Headway (Hd)	4.498	5.02	4.924	5.353
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	797	705	727	662
Service Time	2.546	3.109	2.989	3.438
HCM Lane V/C Ratio	0.42	0.055	0.508	0.012
HCM Control Delay	10.8	8.4	13	8.5
HCM Lane LOS	B	A	B	A
HCM 95th-tile Q	2.1	0.2	2.9	0

Lanes, Volumes, Timings
 17: Jefferson Blvd & Kilvert St/Coronado Rd

02/09/2022



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	150	119	43	96	196	107	67	404	81	44	161	129
Future Volume (vph)	150	119	43	96	196	107	67	404	81	44	161	129
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	210		0	100		100	100		100	115		0
Storage Lanes	1		0	1		1	1		1	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	1.00	1.00	0.95	0.95
Frnt		0.960				0.850			0.850		0.933	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1687	1705	0	1752	1845	1568	1719	3438	1538	1687	3148	0
Flt Permitted	0.477			0.628			0.551			0.244		
Satd. Flow (perm)	847	1705	0	1158	1845	1568	997	3438	1538	433	3148	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		19				114					148	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		420			778			511			443	
Travel Time (s)		9.5			17.7			11.6			10.1	
Peak Hour Factor	0.85	0.85	0.85	0.94	0.94	0.94	0.94	0.94	0.94	0.87	0.87	0.87
Heavy Vehicles (%)	7%	7%	7%	3%	3%	3%	5%	5%	5%	7%	7%	7%
Adj. Flow (vph)	176	140	51	102	209	114	71	430	86	51	185	148
Shared Lane Traffic (%)												
Lane Group Flow (vph)	176	191	0	102	209	114	71	430	86	51	333	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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2	1	1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100	20	20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0	0	0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0	0	0	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6	20	20	6	
Detector 1 Type	Cl+Ex	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	0.0	
Detector 1 Queue (s)	0.0	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	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	pm+pt	NA		pm+pt	NA	custom	pm+pt	NA	custom	custom	NA	
Protected Phases	7	4		3	8	1	5	2			6	

Lanes, Volumes, Timings

17: Jefferson Blvd & Kilvert St/Coronado Rd

02/09/2022



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	4			8		8	2		1 2 3 4	1		
Detector Phase	7	4		3	8	1	5	2	1 2 3 4	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)	10.0	26.0		10.0	31.0	26.0	25.5	26.5		26.0	27.5	
Total Split (s)	10.0	31.0		10.0	31.0	26.0	25.5	28.0		26.0	28.5	
Total Split (%)	10.5%	32.6%		10.5%	32.6%	27.4%	26.8%	29.5%		27.4%	30.0%	
Maximum Green (s)	5.0	26.0		5.0	26.0	21.0	21.0	23.5		21.0	24.0	
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	3.5	3.5		4.0	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		0.0	0.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0	5.0	4.5	4.5		5.0	4.5	
Lead/Lag	Lead	Lag		Lead	Lag	Lead	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	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	3.0	
Recall Mode	None	None		None	None	None	None	Min		None	Min	
Walk Time (s)		7.0			7.0	7.0	7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		14.0			19.0	14.0	14.0	15.0		14.0	16.0	
Pedestrian Calls (#/hr)		0			0	0	0	0		0	0	
Act Effct Green (s)	20.1	16.3		18.8	13.6	35.2	22.1	14.9	70.3	16.4	27.4	
Actuated g/C Ratio	0.29	0.23		0.27	0.19	0.50	0.31	0.21	1.00	0.23	0.39	
v/c Ratio	0.58	0.46		0.29	0.59	0.14	0.18	0.59	0.06	0.50	0.25	
Control Delay	29.8	28.6		21.5	34.9	2.6	12.0	29.7	0.1	45.6	9.4	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	29.8	28.6		21.5	34.9	2.6	12.0	29.7	0.1	45.6	9.4	
LOS	C	C		C	C	A	B	C	A	D	A	
Approach Delay		29.1			23.0			23.2			14.2	
Approach LOS		C			C			C			B	
Queue Length 50th (ft)	59	71		33	88	0	14	93	0	19	27	
Queue Length 95th (ft)	114	136		75	168	23	37	154	0	#68	59	
Internal Link Dist (ft)		340			698			431			363	
Turn Bay Length (ft)	210			100		100	100		100	115		
Base Capacity (vph)	304	667		352	709	953	707	1194	1493	134	1373	
Starvation Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.58	0.29		0.29	0.29	0.12	0.10	0.36	0.06	0.38	0.24	

Intersection Summary









Area Type:	Other
Cycle Length:	95
Actuated Cycle Length:	70.3
Natural Cycle:	95
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.59
Intersection Signal Delay:	22.5
Intersection Capacity Utilization:	50.2%
Analysis Period (min):	15
# 95th percentile volume exceeds capacity, queue may be longer.	
Intersection LOS:	C
ICU Level of Service:	A

Lanes, Volumes, Timings
 17: Jefferson Blvd & Kilvert St/Coronado Rd

02/09/2022

Queue shown is maximum after two cycles.

Splits and Phases: 17: Jefferson Blvd & Kilvert St/Coronado Rd

 Ø1	 Ø2	 Ø3	 Ø4
26 s	28 s	10 s	31 s
 Ø5	 Ø6	 Ø7	 Ø8
25.5 s	28.5 s	10 s	31 s

Lanes, Volumes, Timings
4: Greenwich Ave & Metro Center Blvd

01/04/2022



Lane Group	SEL	SET	NWT	NWR	SWL	SWR
Protected Phases		1	2		3	3
Permitted Phases	1 2			2 3	3	1 3
Detector Phase	1 2	1	2	2 3	3	3
Switch Phase						
Minimum Initial (s)		6.0	6.0		6.0	6.0
Minimum Split (s)		23.5	22.5		23.5	23.5
Total Split (s)		34.0	22.5		23.5	23.5
Total Split (%)		42.5%	28.1%		29.4%	29.4%
Maximum Green (s)		29.5	18.0		19.0	19.0
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		Lead	Lag			
Lead-Lag Optimize?		Yes	Yes			
Vehicle Extension (s)		2.7	2.7		2.7	2.7
Recall Mode		None	C-Min		None	None
Walk Time (s)		4.0			4.0	4.0
Flash Dont Walk (s)		15.0			15.0	15.0
Pedestrian Calls (#/hr)		0			0	0
Act Effct Green (s)		32.2	18.0	38.8	16.3	53.0
Actuated g/C Ratio		0.40	0.22	0.48	0.20	0.66
v/c Ratio		2.11d	1.10	0.25	0.69	0.36
Control Delay		297.1	93.2	2.3	34.9	7.1
Queue Delay		0.0	0.0	0.0	0.0	0.0
Total Delay		297.1	93.2	2.3	34.9	7.1
LOS		F	F	A	C	A
Approach Delay		297.1	74.5		22.2	
Approach LOS		F	E		C	
Queue Length 50th (ft)		~457	~264	0	107	72
Queue Length 95th (ft)		#595	#372	30	148	115
Internal Link Dist (ft)		1230	69		385	
Turn Bay Length (ft)				180	310	
Base Capacity (vph)		746	796	929	767	1028
Starvation Cap Reductn		0	0	0	0	0
Spillback Cap Reductn		0	0	0	0	0
Storage Cap Reductn		0	0	0	0	0
Reduced v/c Ratio		1.60	1.10	0.24	0.59	0.37

Intersection Summary

Area Type:	Other
Cycle Length:	80
Actuated Cycle Length:	80
Offset:	42 (53%), Referenced to phase 2:NWSE, Start of Green
Natural Cycle:	80
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	1.60
Intersection Signal Delay:	145.5
Intersection Capacity Utilization:	76.1%
Intersection LOS:	F
ICU Level of Service:	D

Lanes, Volumes, Timings
 4: Greenwich Ave & Metro Center Blvd

01/04/2022



Lane Group	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations		↔↔	↕↕	↗	↖↖	↗
Traffic Volume (vph)	186	956	777	200	403	337
Future Volume (vph)	186	956	777	200	403	337
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0			180	310	0
Storage Lanes	0			1	2	1
Taper Length (ft)	25				25	
Lane Util. Factor	0.95	0.95	0.95	1.00	0.97	1.00
Frnt				0.850		0.850
Flt Protected		0.992			0.950	
Satd. Flow (prot)	0	3477	3539	1583	3230	1568
Flt Permitted		0.530			0.950	
Satd. Flow (perm)	0	1858	3539	1583	3230	1568
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				225		5
Link Speed (mph)		30	30		30	
Link Distance (ft)		1310	149		465	
Travel Time (s)		29.8	3.4		10.6	
Peak Hour Factor	0.96	0.96	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	3%	3%	2%	2%	3%	3%
Parking (#/hr)					0	
Adj. Flow (vph)	194	996	873	225	453	379
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1190	873	225	453	379
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	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	1.00	1.00	1.00	1.00	1.07	1.00
Turning Speed (mph)	15			9	15	9
Number of Detectors	1	2	2	1	1	1
Detector Template	Left	Thru	Thru	Right	Left	Right
Leading Detector (ft)	20	100	100	20	20	20
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	6	20	20	20
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex
Detector 1 Channel						
Detector 1 Extend (s)	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
Detector 1 Delay (s)	0.0	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		CI+Ex	CI+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			
Turn Type	custom	NA	NA	custom	Prot	custom

Lanes, Volumes, Timings

4: Greenwich Ave & Metro Center Blvd

01/04/2022

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

dl Defacto Left Lane. Recode with 1 though lane as a left lane.

Splits and Phases: 4: Greenwich Ave & Metro Center Blvd

 Ø1	 Ø2 (R)	 Ø3
34 s	22.5 s	23.5 s

HCM 6th TWSC
 11: Coastway Blvd & Metro Center Blvd

01/04/2022

Intersection

Int Delay, s/veh 2.3

Movement	NBL	NBR	NET	NER	SWL	SWT
Lane Configurations	↔		↔			↔
Traffic Vol, veh/h	72	18	308	42	4	467
Future Vol, veh/h	72	18	308	42	4	467
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	81	81	88	88	84	84
Heavy Vehicles, %	2	2	2	2	3	3
Mvmt Flow	89	22	350	48	5	556

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	940	374	0	0	398
Stage 1	374	-	-	-	-
Stage 2	566	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.13
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.227
Pot Cap-1 Maneuver	293	672	-	-	1155
Stage 1	696	-	-	-	-
Stage 2	568	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	291	672	-	-	1155
Mov Cap-2 Maneuver	291	-	-	-	-
Stage 1	696	-	-	-	-
Stage 2	565	-	-	-	-

Approach	NB	NE	SW
HCM Control Delay, s	21.5	0	0.1
HCM LOS	C		

Minor Lane/Major Mvmt	NET	NER	NBLn1	SWL	SWT
Capacity (veh/h)	-	-	328	1155	-
HCM Lane V/C Ratio	-	-	0.339	0.004	-
HCM Control Delay (s)	-	-	21.5	8.1	0
HCM Lane LOS	-	-	C	A	A
HCM 95th %tile Q(veh)	-	-	1.5	0	-

Intersection	
Intersection Delay, s/veh	21.4
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	2	28	24	368	7	2	4	7	378	19	28	3
Future Vol, veh/h	2	28	24	368	7	2	4	7	378	19	28	3
Peak Hour Factor	0.72	0.72	0.72	0.81	0.81	0.81	0.92	0.92	0.92	0.25	0.25	0.25
Heavy Vehicles, %	4	4	4	3	3	3	3	3	3	0	0	0
Mvmt Flow	3	39	33	454	9	2	4	8	411	76	112	12
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NE	SW
Opposing Approach	WB	EB	SW	NE
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SW	NE	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NE	SW	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	10.8	29.3	18.5	13.3
HCM LOS	B	D	C	B

Lane	NELn1	EBLn1	WBLn1	SWLn1
Vol Left, %	1%	4%	98%	38%
Vol Thru, %	2%	52%	2%	56%
Vol Right, %	97%	44%	1%	6%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	389	54	377	50
LT Vol	4	2	368	19
Through Vol	7	28	7	28
RT Vol	378	24	2	3
Lane Flow Rate	423	75	465	200
Geometry Grp	1	1	1	1
Degree of Util (X)	0.653	0.139	0.799	0.362
Departure Headway (Hd)	5.559	6.658	6.183	6.522
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	647	536	591	550
Service Time	3.609	4.73	4.183	4.584
HCM Lane V/C Ratio	0.654	0.14	0.787	0.364
HCM Control Delay	18.5	10.8	29.3	13.3
HCM Lane LOS	C	B	D	B
HCM 95th-tile Q	4.8	0.5	7.8	1.6

Lanes, Volumes, Timings
17: Jefferson Blvd & Kilvert St/Coronado Rd

01/04/2022



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	4			8		8	2		1 2 3 4	1		
Detector Phase	7	4		3	8	1	5	2	1 2 3 4	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)	10.0	26.0		10.0	31.0	26.0	25.5	26.5		26.0	27.5	
Total Split (s)	10.0	31.0		10.0	31.0	26.0	25.5	28.0		26.0	28.5	
Total Split (%)	10.5%	32.6%		10.5%	32.6%	27.4%	26.8%	29.5%		27.4%	30.0%	
Maximum Green (s)	5.0	26.0		5.0	26.0	21.0	21.0	23.5		21.0	24.0	
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	3.5	3.5		4.0	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		0.0	0.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0	5.0	4.5	4.5		5.0	4.5	
Lead/Lag	Lead	Lag		Lead	Lag	Lead	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	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	3.0	
Recall Mode	None	None		None	None	None	None	Min		None	Min	
Walk Time (s)		7.0			7.0	7.0	7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		14.0			19.0	14.0	14.0	15.0		14.0	16.0	
Pedestrian Calls (#/hr)		0			0	0	0	0		0	0	
Act Effct Green (s)	27.0	23.2		25.7	20.7	47.0	17.0	10.4	77.2	21.3	30.3	
Actuated g/C Ratio	0.35	0.30		0.33	0.27	0.61	0.22	0.13	1.00	0.28	0.39	
v/c Ratio	0.49	0.77		0.39	0.47	0.07	0.15	0.48	0.03	1.21	0.45	
Control Delay	22.1	35.7		19.7	26.7	1.8	16.2	35.7	0.0	194.4	19.6	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	22.1	35.7		19.7	26.7	1.8	16.2	35.7	0.0	194.4	19.6	
LOS	C	D		B	C	A	B	D	A	F	B	
Approach Delay		31.6			20.7			27.3			47.6	
Approach LOS		C			C			C			D	
Queue Length 50th (ft)	54	175		29	91	0	11	55	0	~72	114	
Queue Length 95th (ft)	95	269		62	161	13	28	92	0	#173	165	
Internal Link Dist (ft)		340			698			431			363	
Turn Bay Length (ft)	210			100		100	100		100	115		
Base Capacity (vph)	355	595		253	629	984	579	1060	1501	92	1301	
Starvation Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.49	0.68		0.39	0.37	0.07	0.07	0.21	0.04	1.21	0.45	

Intersection Summary

Area Type: Other

Cycle Length: 95

Actuated Cycle Length: 77.2

Natural Cycle: 95

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 1.21

Intersection Signal Delay: 34.3

Intersection LOS: C

Intersection Capacity Utilization 58.4%

ICU Level of Service B

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

Lanes, Volumes, Timings

17: Jefferson Blvd & Kilvert St/Coronado Rd

01/04/2022











Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	148	259	83	93	216	65	37	211	50	97	374	132
Future Volume (vph)	148	259	83	93	216	65	37	211	50	97	374	132
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	210		0	100		100	100		100	115		0
Storage Lanes	1		0	1		1	1		1	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	1.00	1.00	0.95	0.95
Frnt		0.964				0.850			0.850		0.961	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1687	1712	0	1752	1845	1568	1719	3438	1538	1687	3242	0
Flt Permitted	0.486			0.281			0.433			0.188		
Satd. Flow (perm)	863	1712	0	518	1845	1568	784	3438	1538	334	3242	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		17				75					50	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		420			778			511			443	
Travel Time (s)		9.5			17.7			11.6			10.1	
Peak Hour Factor	0.85	0.85	0.85	0.94	0.94	0.94	0.94	0.94	0.94	0.87	0.87	0.87
Heavy Vehicles (%)	7%	7%	7%	3%	3%	3%	5%	5%	5%	7%	7%	7%
Adj. Flow (vph)	174	305	98	99	230	69	39	224	53	111	430	152
Shared Lane Traffic (%)												
Lane Group Flow (vph)	174	403	0	99	230	69	39	224	53	111	582	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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2	1	1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100	20	20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0	0	0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0	0	0	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6	20	20	6	
Detector 1 Type	CI+Ex	CI+Ex		CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+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	0.0	
Detector 1 Queue (s)	0.0	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	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		CI+Ex			CI+Ex			CI+Ex			CI+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA	custom	pm+pt	NA	custom	custom	NA	
Protected Phases	7	4		3	8	1	5	2			6	

Lanes, Volumes, Timings
 17: Jefferson Blvd & Kilvert St/Coronado Rd

01/04/2022

Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 17: Jefferson Blvd & Kilvert St/Coronado Rd

 Ø1	 Ø2	 Ø3	 Ø4
26 s	28 s	10 s	31 s
 Ø5	 Ø6	 Ø7	 Ø8
25.5 s	28.5 s	10 s	31 s

Lanes, Volumes, Timings
 4: Greenwich Ave & Metro Center Blvd

01/04/2022



Lane Group	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations		↔↔	↕↕	↗	↖↖	↗
Traffic Volume (vph)	201	980	797	216	420	352
Future Volume (vph)	201	980	797	216	420	352
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0			180	310	0
Storage Lanes	0			1	2	1
Taper Length (ft)	25				25	
Lane Util. Factor	0.95	0.95	0.95	1.00	0.97	1.00
Frnt				0.850		0.850
Flt Protected		0.992			0.950	
Satd. Flow (prot)	0	3477	3539	1583	3230	1568
Flt Permitted		0.532			0.950	
Satd. Flow (perm)	0	1865	3539	1583	3230	1568
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				243		4
Link Speed (mph)		30	30		30	
Link Distance (ft)		1310	149		465	
Travel Time (s)		29.8	3.4		10.6	
Peak Hour Factor	0.96	0.96	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	3%	3%	2%	2%	3%	3%
Parking (#/hr)					0	
Adj. Flow (vph)	209	1021	896	243	472	396
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1230	896	243	472	396
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	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	1.00	1.00	1.00	1.00	1.07	1.00
Turning Speed (mph)	15			9	15	9
Number of Detectors	1	2	2	1	1	1
Detector Template	Left	Thru	Thru	Right	Left	Right
Leading Detector (ft)	20	100	100	20	20	20
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	6	20	20	20
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex
Detector 1 Channel						
Detector 1 Extend (s)	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
Detector 1 Delay (s)	0.0	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		CI+Ex	CI+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			
Turn Type	custom	NA	NA	custom	Prot	custom

Lanes, Volumes, Timings
4: Greenwich Ave & Metro Center Blvd

01/04/2022



Lane Group	SEL	SET	NWT	NWR	SWL	SWR
Protected Phases		1	2		3	3
Permitted Phases	1 2			2 3	3	1 3
Detector Phase	1 2	1	2	2 3	3	3
Switch Phase						
Minimum Initial (s)		6.0	6.0		6.0	6.0
Minimum Split (s)		23.5	22.5		23.5	23.5
Total Split (s)		34.0	22.5		23.5	23.5
Total Split (%)		42.5%	28.1%		29.4%	29.4%
Maximum Green (s)		29.5	18.0		19.0	19.0
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		Lead	Lag			
Lead-Lag Optimize?		Yes	Yes			
Vehicle Extension (s)		2.7	2.7		2.7	2.7
Recall Mode		None	C-Min		None	None
Walk Time (s)		4.0			4.0	4.0
Flash Dont Walk (s)		15.0			15.0	15.0
Pedestrian Calls (#/hr)		0			0	0
Act Effct Green (s)		31.7	18.0	39.3	16.8	53.0
Actuated g/C Ratio		0.40	0.22	0.49	0.21	0.66
v/c Ratio		2.30dl	1.13	0.27	0.70	0.38
Control Delay		327.8	103.5	2.3	34.9	7.3
Queue Delay		0.0	0.0	0.0	0.0	0.0
Total Delay		327.8	103.5	2.3	34.9	7.3
LOS		F	F	A	C	A
Approach Delay		327.8	81.9		22.3	
Approach LOS		F	F		C	
Queue Length 50th (ft)		~487	~276	0	110	76
Queue Length 95th (ft)		#617	#385	31	155	122
Internal Link Dist (ft)		1230	69		385	
Turn Bay Length (ft)				180	310	
Base Capacity (vph)		739	796	938	767	1021
Starvation Cap Reductn		0	0	0	0	0
Spillback Cap Reductn		0	0	0	0	0
Storage Cap Reductn		0	0	0	0	0
Reduced v/c Ratio		1.66	1.13	0.26	0.62	0.39

Intersection Summary

Area Type:	Other
Cycle Length:	80
Actuated Cycle Length:	80
Offset:	42 (53%), Referenced to phase 2:NWSE, Start of Green
Natural Cycle:	150
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	1.66
Intersection Signal Delay:	159.4
Intersection Capacity Utilization	78.2%
Intersection LOS:	F
ICU Level of Service	D

Lanes, Volumes, Timings
4: Greenwich Ave & Metro Center Blvd

01/04/2022

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

dl Defacto Left Lane. Recode with 1 though lane as a left lane.

Splits and Phases: 4: Greenwich Ave & Metro Center Blvd

 Ø1	 Ø2 (R)	 Ø3
24.5 s	22.5 s	23.5 s

Intersection

Int Delay, s/veh 2.5

Movement	NBL	NBR	NET	NER	SWL	SWT
Lane Configurations	↔	↔	↔	↔	↔	↔
Traffic Vol, veh/h	74	18	336	43	4	492
Future Vol, veh/h	74	18	336	43	4	492
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	81	81	88	88	84	84
Heavy Vehicles, %	2	2	2	2	3	3
Mvmt Flow	91	22	382	49	5	586

Major/Minor	Minor1	Major1	Major2	Major3	Major4
Conflicting Flow All	1003	407	0	0	431
Stage 1	407	-	-	-	-
Stage 2	596	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.13
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.227
Pot Cap-1 Maneuver	268	644	-	-	1123
Stage 1	672	-	-	-	-
Stage 2	550	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	266	644	-	-	1123
Mov Cap-2 Maneuver	266	-	-	-	-
Stage 1	672	-	-	-	-
Stage 2	546	-	-	-	-

Approach	NB	NE	SW
HCM Control Delay, s	24	0	0.1
HCM LOS	C		

Minor Lane/Major Mvmt	NET	NER	NBLn1	SWL	SWT
Capacity (veh/h)	-	-	301	1123	-
HCM Lane V/C Ratio	-	-	0.377	0.004	-
HCM Control Delay (s)	-	-	24	8.2	0
HCM Lane LOS	-	-	C	A	A
HCM 95th %tile Q(veh)	-	-	1.7	0	-

Intersection	
Intersection Delay, s/veh	26.5
Intersection LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	2	29	25	390	7	2	4	7	407	20	29	3
Future Vol, veh/h	2	29	25	390	7	2	4	7	407	20	29	3
Peak Hour Factor	0.72	0.72	0.72	0.81	0.81	0.81	0.92	0.92	0.92	0.25	0.25	0.25
Heavy Vehicles, %	4	4	4	3	3	3	3	3	3	0	0	0
Mvmt Flow	3	40	35	481	9	2	4	8	442	80	116	12
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NE	SW
Opposing Approach	WB	EB	SW	NE
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SW	NE	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NE	SW	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	11.3	37.7	22.7	14.2
HCM LOS	B	E	C	B

Lane	NELn1	EBLn1	WBLn1	SWLn1
Vol Left, %	1%	4%	98%	38%
Vol Thru, %	2%	52%	2%	56%
Vol Right, %	97%	45%	1%	6%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	418	56	399	52
LT Vol	4	2	390	20
Through Vol	7	29	7	29
RT Vol	407	25	2	3
Lane Flow Rate	454	78	493	208
Geometry Grp	1	1	1	1
Degree of Util (X)	0.727	0.151	0.867	0.393
Departure Headway (Hd)	5.758	6.992	6.334	6.799
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	627	509	571	528
Service Time	3.813	5.082	4.387	4.868
HCM Lane V/C Ratio	0.724	0.153	0.863	0.394
HCM Control Delay	22.7	11.3	37.7	14.2
HCM Lane LOS	C	B	E	B
HCM 95th-tile Q	6.2	0.5	9.6	1.9

Lanes, Volumes, Timings

17: Jefferson Blvd & Kilvert St/Coronado Rd

01/04/2022



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	156	274	87	95	233	67	40	216	51	100	383	142
Future Volume (vph)	156	274	87	95	233	67	40	216	51	100	383	142
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	210		0	100		100	100		100	115		0
Storage Lanes	1		0	1		1	1		1	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	1.00	1.00	0.95	0.95
Frt		0.964				0.850			0.850		0.959	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1687	1712	0	1752	1845	1568	1719	3438	1538	1687	3236	0
Flt Permitted	0.463			0.258			0.424			0.188		
Satd. Flow (perm)	822	1712	0	476	1845	1568	767	3438	1538	334	3236	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		17				75					54	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		420			778			511			443	
Travel Time (s)		9.5			17.7			11.6			10.1	
Peak Hour Factor	0.85	0.85	0.85	0.94	0.94	0.94	0.94	0.94	0.94	0.87	0.87	0.87
Heavy Vehicles (%)	7%	7%	7%	3%	3%	3%	5%	5%	5%	7%	7%	7%
Adj. Flow (vph)	184	322	102	101	248	71	43	230	54	115	440	163
Shared Lane Traffic (%)												
Lane Group Flow (vph)	184	424	0	101	248	71	43	230	54	115	603	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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2	1	1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100	20	20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0	0	0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0	0	0	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6	20	20	6	
Detector 1 Type	CI+Ex	CI+Ex		CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+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	0.0	
Detector 1 Queue (s)	0.0	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	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		CI+Ex			CI+Ex			CI+Ex			CI+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA	custom	pm+pt	NA	custom	custom	NA	
Protected Phases	7	4		3	8	1	5	2			6	

Lanes, Volumes, Timings
 17: Jefferson Blvd & Kilvert St/Coronado Rd

01/04/2022



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	4			8		8	2		1 2 3 4	1		
Detector Phase	7	4		3	8	1	5	2	1 2 3 4	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)	10.0	26.0		10.0	31.0	26.0	25.5	26.5		26.0	27.5	
Total Split (s)	10.0	31.0		10.0	31.0	26.0	25.5	28.0		26.0	28.5	
Total Split (%)	10.5%	32.6%		10.5%	32.6%	27.4%	26.8%	29.5%		27.4%	30.0%	
Maximum Green (s)	5.0	26.0		5.0	26.0	21.0	21.0	23.5		21.0	24.0	
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	3.5	3.5		4.0	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		0.0	0.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0	5.0	4.5	4.5		5.0	4.5	
Lead/Lag	Lead	Lag		Lead	Lag	Lead	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	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	3.0	
Recall Mode	None	None		None	None	None	None	Min		None	Min	
Walk Time (s)		7.0			7.0	7.0	7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		14.0			19.0	14.0	14.0	15.0		14.0	16.0	
Pedestrian Calls (#/hr)		0			0	0	0	0		0	0	
Act Effct Green (s)	27.9	24.1		26.6	21.6	47.9	17.3	10.6	78.3	21.3	30.4	
Actuated g/C Ratio	0.36	0.31		0.34	0.28	0.61	0.22	0.14	1.00	0.27	0.39	
v/c Ratio	0.53	0.79		0.41	0.49	0.07	0.17	0.49	0.04	1.26	0.47	
Control Delay	23.3	37.1		20.5	27.1	1.8	16.5	36.1	0.0	216.0	20.2	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	23.3	37.1		20.5	27.1	1.8	16.5	36.1	0.0	216.0	20.2	
LOS	C	D		C	C	A	B	D	A	F	C	
Approach Delay		32.9			21.2			27.6			51.5	
Approach LOS		C			C			C			D	
Queue Length 50th (ft)	58	188		30	100	0	12	58	0	~79	123	
Queue Length 95th (ft)	101	#310		63	174	14	30	94	0	#180	172	
Internal Link Dist (ft)		340			698			431			363	
Turn Bay Length (ft)	210			100		100	100		100	115		
Base Capacity (vph)	348	587		244	620	988	571	1045	1505	91	1288	
Starvation Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.53	0.72		0.41	0.40	0.07	0.08	0.22	0.04	1.26	0.47	

Intersection Summary

Area Type: Other
 Cycle Length: 95
 Actuated Cycle Length: 78.3
 Natural Cycle: 95
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 1.26
 Intersection Signal Delay: 36.2
 Intersection Capacity Utilization 60.1%
 Analysis Period (min) 15
 Intersection LOS: D
 ICU Level of Service B









~ Volume exceeds capacity, queue is theoretically infinite.

Lanes, Volumes, Timings
 17: Jefferson Blvd & Kilvert St/Coronado Rd

01/04/2022

Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 17: Jefferson Blvd & Kilvert St/Coronado Rd

 Ø1	 Ø2	 Ø3	 Ø4
26 s	28 s	10 s	31 s
 Ø5	 Ø6	 Ø7	 Ø8
25.5 s	28.5 s	10 s	31 s

Lanes, Volumes, Timings
4: Greenwich Ave & Metro Center Blvd

02/09/2022



Lane Group	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations		↑↑	↑↑	↑	↑↑	↑
Traffic Volume (vph)	212	981	797	228	429	352
Future Volume (vph)	212	981	797	228	429	352
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0			180	310	0
Storage Lanes	0			1	2	1
Taper Length (ft)	25				25	
Lane Util. Factor	0.95	0.95	0.95	1.00	0.97	1.00
Fr				0.850		0.850
Fit Protected		0.991			0.950	
Satd. Flow (prot)	0	3473	3539	1583	3230	1568
Fit Permitted		0.534			0.950	
Satd. Flow (perm)	0	1872	3539	1583	3230	1568
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				256		4
Link Speed (mph)		30	30		30	
Link Distance (ft)		1310	149		465	
Travel Time (s)		29.8	3.4		10.6	
Peak Hour Factor	0.96	0.96	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	3%	3%	2%	2%	3%	3%
Parking (#/hr)					0	
Adj. Flow (vph)	221	1022	896	256	482	396
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1243	896	256	482	396
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	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	1.00	1.00	1.00	1.00	1.07	1.00
Turning Speed (mph)	15			9	15	9
Number of Detectors	1	2	2	1	1	1
Detector Template	Left	Thru	Thru	Right	Left	Right
Leading Detector (ft)	20	100	100	20	20	20
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	6	20	20	20
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex
Detector 1 Channel						
Detector 1 Extend (s)	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
Detector 1 Delay (s)	0.0	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		CI+Ex	CI+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			
Turn Type	custom	NA	NA	custom	Prot	custom

Lanes, Volumes, Timings
4: Greenwich Ave & Metro Center Blvd

02/09/2022



Lane Group	SEL	SET	NWT	NWR	SWL	SWR
Protected Phases		1	2		3	3
Permitted Phases	12			23	3	13
Detector Phase	12	1	2	23	3	3
Switch Phase						
Minimum Initial (s)		6.0	6.0		6.0	6.0
Minimum Split (s)		23.5	22.5		23.5	23.5
Total Split (s)		34.0	22.5		23.5	23.5
Total Split (%)		42.5%	28.1%		29.4%	29.4%
Maximum Green (s)		29.5	18.0		19.0	19.0
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		Lead	Lag			
Lead-Lag Optimize?		Yes	Yes			
Vehicle Extension (s)		2.7	2.7		2.7	2.7
Recall Mode		None	C-Min		None	None
Walk Time (s)		4.0			4.0	4.0
Flash Dont Walk (s)		15.0			15.0	15.0
Pedestrian Calls (#/hr)		0			0	0
Act Effct Green (s)		31.6	18.0	39.4	16.9	53.0
Actuated g/C Ratio		0.40	0.22	0.49	0.21	0.66
v/c Ratio		2.40dl	1.13	0.28	0.71	0.38
Control Delay		335.2	103.5	2.3	35.2	7.3
Queue Delay		0.0	0.0	0.0	0.0	0.0
Total Delay		335.2	103.5	2.3	35.2	7.3
LOS		F	F	A	D	A
Approach Delay		335.2	81.0		22.6	
Approach LOS		F	F		C	
Queue Length 50th (ft)		~495	~276	0	112	76
Queue Length 95th (ft)		#624	#385	32	158	122
Internal Link Dist (ft)		1230	69		385	
Turn Bay Length (ft)				180	310	
Base Capacity (vph)		740	796	944	767	1019
Starvation Cap Reductn		0	0	0	0	0
Spillback Cap Reductn		0	0	0	0	0
Storage Cap Reductn		0	0	0	0	0
Reduced v/c Ratio		1.68	1.13	0.27	0.63	0.39

Intersection Summary

Area Type:	Other
Cycle Length:	80
Actuated Cycle Length:	80
Offset:	42 (53%), Referenced to phase 2: NWSE, Start of Green
Natural Cycle:	150
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	1.68
Intersection Signal Delay:	161.9
Intersection Capacity Utilization:	78.8%
Intersection LOS:	F
ICU Level of Service:	D

Lanes, Volumes, Timings




4: Greenwich Ave & Metro Center Blvd

02/09/2022

Analysis Period (min) 15

- ~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
- dl Defacto Left Lane. Recode with 1 though lane as a left lane.

Splits and Phases: 4: Greenwich Ave & Metro Center Blvd

 Ø1	 Ø2 (R)	 Ø3
34 s	22.5 s	23.5 s

HCM 2010 TWSC
11: Coastway Blvd & Metro Center Blvd

02/09/2022

Intersection						
Int Delay, s/veh	2.5					
Movement	NBL	NBR	NET	NER	SWL	SWT
Lane Configurations						
Traffic Vol, veh/h	74	18	359	43	4	507
Future Vol, veh/h	74	18	359	43	4	507
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	81	81	88	88	84	84
Heavy Vehicles, %	2	2	2	2	3	3
Mvmt Flow	91	22	408	49	5	604

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	1047	433	0	0	457
Stage 1	433	-	-	-	-
Stage 2	614	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.13
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.227
Pot Cap-1 Maneuver	253	623	-	-	1099
Stage 1	654	-	-	-	-
Stage 2	540	-	-	-	-
Platoon blocked, %					
Mov Cap-1 Maneuver	251	623	-	-	1099
Mov Cap-2 Maneuver	251	-	-	-	-
Stage 1	654	-	-	-	-
Stage 2	536	-	-	-	-

Approach	NB	NE	SW
HCM Control Delay, s	25.9	0	0.1
HCM LOS	D		

Minor Lane/Major Mvmt	NET	NER	NBLn1	SWL	SWT
Capacity (veh/h)	-	-	284	1099	-
HCM Lane V/C Ratio	-	-	0.4	0.004	-
HCM Control Delay (s)	-	-	25.9	8.3	0
HCM Lane LOS	-	-	D	A	A
HCM 95th %tile Q(veh)	-	-	1.8	0	-

Intersection

Int Delay, s/veh 0.7

Movement	NWL	NWR	NET	NER	SWL	SWT
Lane Configurations	W		T			T
Traffic Vol, veh/h	15	17	381	23	24	473
Future Vol, veh/h	15	17	381	23	24	473
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	16	18	414	25	26	514

Major/Minor

	Minor1	Major1	Major2		
Conflicting Flow All	993	427	0	0	439
Stage 1	427	-	-	-	-
Stage 2	566	-	-	-	-
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	272	628	-	-	1121
Stage 1	658	-	-	-	-
Stage 2	568	-	-	-	-
Platoon blocked, %					
Mov Cap-1 Maneuver	263	628	-	-	1121
Mov Cap-2 Maneuver	263	-	-	-	-
Stage 1	658	-	-	-	-
Stage 2	550	-	-	-	-

Approach

	NW	NE	SW
HCM Control Delay, s	15.4	0	0.4
HCM LOS	C		

Minor Lane/Major Mvmt

	NET	NERNWLn1	SWL	SWT
Capacity (veh/h)	-	-	380	1121
HCM Lane V/C Ratio	-	-	0.092	0.023
HCM Control Delay (s)	-	-	15.4	8.3
HCM Lane LOS	-	-	C	A
HCM 95th %tile Q(veh)	-	-	0.3	0.1

Intersection

Intersection Delay, s/veh	33
Intersection LOS	D
























Movement	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations		↔			↔			↔			↔	
Traffic Vol, veh/h	2	29	25	414	7	2	4	7	424	20	29	3
Future Vol, veh/h	2	29	25	414	7	2	4	7	424	20	29	3
Peak Hour Factor	0.72	0.72	0.72	0.81	0.81	0.81	0.92	0.92	0.92	0.25	0.25	0.25
Heavy Vehicles, %	4	4	4	3	3	3	3	3	3	0	0	0
Mvmt Flow	3	40	35	511	9	2	4	8	461	80	116	12
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NE	SW
Opposing Approach	WB	EB	SW	NE
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SW	NE	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NE	SW	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	11.7	49.2	26.7	14.9
HCM LOS	B	E	D	B

Lane	NELn1	EBLn1	WBLn1	SWLn1
Vol Left, %	1%	4%	98%	38%
Vol Thru, %	2%	52%	2%	56%
Vol Right, %	97%	45%	0%	6%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	435	56	423	52
LT Vol	4	2	414	20
Through Vol	7	29	7	29
RT Vol	424	25	2	3
Lane Flow Rate	473	78	522	208
Geometry Grp	1	1	1	1
Degree of Util (X)	0.777	0.159	0.935	0.406
Departure Headway (Hd)	5.916	7.346	6.446	7.023
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	610	492	559	510
Service Time	3.986	5.346	4.513	5.114
HCM Lane V/C Ratio	0.775	0.159	0.934	0.408
HCM Control Delay	26.7	11.7	49.2	14.9
HCM Lane LOS	D	B	E	B
HCM 95th-tile Q	7.3	0.6	11.9	1.9

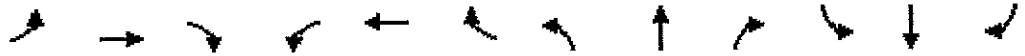
Lanes, Volumes, Timings
 17: Jefferson Blvd & Kilvert St/Coronado Rd

02/09/2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	161	283	90	95	246	67	43	216	51	99	383	150
Future Volume (vph)	161	283	90	95	246	67	43	216	51	99	383	150
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	210		0	100		100	100		100	115		0
Storage Lanes	1		0	1		1	1		1	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	1.00	1.00	0.95	0.95
Frt		0.964				0.850			0.850		0.958	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1687	1712	0	1752	1845	1568	1719	3438	1538	1687	3232	0
Flt Permitted	0.445			0.242			0.420			0.188		
Satd. Flow (perm)	790	1712	0	446	1845	1568	760	3438	1538	334	3232	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		17				75					58	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		420			778			511			443	
Travel Time (s)		9.5			17.7			11.6			10.1	
Peak Hour Factor	0.85	0.85	0.85	0.94	0.94	0.94	0.94	0.94	0.94	0.87	0.87	0.87
Heavy Vehicles (%)	7%	7%	7%	3%	3%	3%	5%	5%	5%	7%	7%	7%
Adj. Flow (vph)	189	333	106	101	262	71	46	230	54	114	440	172
Shared Lane Traffic (%)												
Lane Group Flow (vph)	189	439	0	101	262	71	46	230	54	114	612	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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2	1	1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100	20	20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0	0	0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0	0	0	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6	20	20	6	
Detector 1 Type	Cl+Ex	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	0.0	
Detector 1 Queue (s)	0.0	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	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	pm+pt	NA		pm+pt	NA	custom	pm+pt	NA	custom	custom	NA	
Protected Phases	7	4		3	8	1	5	2			6	

Lanes, Volumes, Timings
 17: Jefferson Blvd & Kilvert St/Coronado Rd

02/09/2022



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	4			8		8	2		1 2 3 4	1		
Detector Phase	7	4		3	8	1	5	2	1 2 3 4	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)	10.0	26.0		10.0	31.0	26.0	25.5	26.5		26.0	27.5	
Total Split (s)	10.0	31.0		10.0	31.0	26.0	25.5	28.0		26.0	28.5	
Total Split (%)	10.5%	32.6%		10.5%	32.6%	27.4%	26.8%	29.5%		27.4%	30.0%	
Maximum Green (s)	5.0	26.0		5.0	26.0	21.0	21.0	23.5		21.0	24.0	
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	3.5	3.5		4.0	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		0.0	0.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0	5.0	4.5	4.5		5.0	4.5	
Lead/Lag	Lead	Lag		Lead	Lag	Lead	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	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	3.0	
Recall Mode	None	None		None	None	None	None	Min		None	Min	
Walk Time (s)		7.0			7.0	7.0	7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		14.0			19.0	14.0	14.0	15.0		14.0	16.0	
Pedestrian Calls (#/hr)		0			0	0	0	0		0	0	
Act Effct Green (s)	28.3	24.5		27.1	22.0	48.3	17.4	10.6	78.7	21.3	30.2	
Actuated g/C Ratio	0.36	0.31		0.34	0.28	0.61	0.22	0.13	1.00	0.27	0.38	
v/c Ratio	0.55	0.81		0.43	0.51	0.07	0.18	0.50	0.04	1.27	0.48	
Control Delay	24.2	38.3		20.8	27.5	1.8	16.7	36.3	0.0	215.5	20.4	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	24.2	38.3		20.8	27.5	1.8	16.7	36.3	0.0	215.5	20.4	
LOS	C	D		C	C	A	B	D	A	F	C	
Approach Delay		34.1			21.7			27.7			51.0	
Approach LOS		C			C			C			D	
Queue Length 50th (ft)	60	198		30	107	0	13	58	0	~78	125	
Queue Length 95th (ft)	104	#330		63	184	14	31	94	0	#177	174	
Internal Link Dist (ft)		340			698			431			363	
Turn Bay Length (ft)	210			100		100	100		100	115		
Base Capacity (vph)	342	583		237	617	991	567	1039	1498	90	1277	
Starvation Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.55	0.75		0.43	0.42	0.07	0.08	0.22	0.04	1.27	0.48	

Intersection Summary

Area Type: Other
 Cycle Length: 95
 Actuated Cycle Length: 78.7
 Natural Cycle: 95
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 1.27
 Intersection Signal Delay: 36.4
 Intersection Capacity Utilization 61.0%
 Analysis Period (min) 15
 Intersection LOS: D
 ICU Level of Service B









~ Volume exceeds capacity, queue is theoretically infinite.

Lanes, Volumes, Timings
 17: Jefferson Blvd & Kilvert St/Coronado Rd

02/09/2022

- Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
- Queue shown is maximum after two cycles.

Splits and Phases: 17: Jefferson Blvd & Kilvert St/Coronado Rd

 Ø1	 Ø2	 Ø3	 Ø4
26 s	28 s	10 s	31 s
 Ø5	 Ø6	 Ø7	 Ø8
25.5 s	28.5 s	10 s	31 s