

## **APPENDIX D**

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- Intersection Level of Service Worksheets

Barrio Logan CPU  
1: Commercial St & 16th St

Existing Conditions w LRT  
Timing Plan: AM Peak



Movement	EBL2	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR2	SBL	SBT	SBR
Lane Configurations	↕		↕		↕		↕		↕		↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0		4.0		4.0		4.0		4.0	
Lane Util. Factor	1.00		1.00		0.95		0.95		0.95		0.95	
Frbp, ped/bikes	0.99		1.00		0.99		0.99		0.98		0.98	
Flpb, ped/bikes	1.00		1.00		0.99		0.99		1.00		1.00	
Frt	0.98		0.98		0.96		0.96		0.95		0.95	
Flt Protected	1.00		1.00		0.99		0.99		1.00		1.00	
Satd. Flow (prot)	1803		1813		3312		3273		3273		3273	
Flt Permitted	0.99		0.97		0.92		0.94		0.94		0.94	
Satd. Flow (perm)	1791		1767		3093		3104		3104		3104	
Volume (vph)	3	83	19	13	125	22	9	20	9	7	49	29
Peak-hour factor, PHF	0.92	0.82	0.82	0.91	0.91	0.91	0.95	0.95	0.92	0.76	0.76	0.76
Adj. Flow (vph)	3	101	23	14	137	24	9	21	10	9	64	38
RTOR Reduction (vph)	0	11	0	0	0	0	0	4	0	0	15	0
Lane Group Flow (vph)	0	116	0	0	175	0	0	36	0	0	96	0
Confl. Peds. (#/hr)	16		15		15		16		36		12	
Confl. Bikes (#/hr)					1		6					
Heavy Vehicles (%)	0%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Perm		Perm		Perm		Perm		Perm		Perm	
Protected Phases	4		8		8		2		6		6	
Permitted Phases	4		8		2		6		6		6	
Actuated Green, G (s)	10.8		10.8		36.1		36.1		36.1		36.1	
Effective Green, g (s)	10.8		10.8		36.1		36.1		36.1		36.1	
Actuated g/C Ratio	0.18		0.18		0.60		0.60		0.60		0.60	
Clearance Time (s)	4.0		4.0		4.0		4.0		4.0		4.0	
Vehicle Extension (s)	3.0		3.0		3.0		3.0		3.0		3.0	
Lane Grp Cap (vph)	321		317		1855		1861		1861		1861	
v/s Ratio Prot												
v/s Ratio Perm	0.06		c0.10		0.01		c0.03		c0.03		c0.03	
v/c Ratio	0.36		0.55		0.02		0.05		0.05		0.05	
Uniform Delay, d1	21.7		22.5		4.9		5.0		5.0		5.0	
Progression Factor	1.00		1.00		1.00		1.00		1.00		1.00	
Incremental Delay, d2	0.7		2.1		0.0		0.1		0.1		0.1	
Delay (s)	22.4		24.6		4.9		5.0		5.0		5.0	
Level of Service	C		C		A		A		A		A	
Approach Delay (s)	22.4		24.6		4.9		5.0		5.0		5.0	
Approach LOS	C		C		A		A		A		A	

Intersection Summary			
HCM Average Control Delay	19.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.18		
Actuated Cycle Length (s)	60.2	Sum of lost time (s)	12.0
Intersection Capacity Utilization	52.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Barrio Logan CPU  
1: Commercial St & 16th St

Existing Conditions w LRT  
Timing Plan: AM Peak



Movement	SWR
Lane Configurations	↕
Ideal Flow (vphpl)	1900
Total Lost time (s)	4.0
Lane Util. Factor	1.00
Frbp, ped/bikes	1.00
Flpb, ped/bikes	1.00
Frt	0.86
Flt Protected	1.00
Satd. Flow (prot)	1611
Flt Permitted	1.00
Satd. Flow (perm)	1611
Volume (vph)	20
Peak-hour factor, PHF	0.92
Adj. Flow (vph)	22
RTOR Reduction (vph)	0
Lane Group Flow (vph)	22
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Heavy Vehicles (%)	2%
Turn Type	custom
Protected Phases	9
Permitted Phases	
Actuated Green, G (s)	1.3
Effective Green, g (s)	1.3
Actuated g/C Ratio	0.02
Clearance Time (s)	4.0
Vehicle Extension (s)	3.0
Lane Grp Cap (vph)	35
v/s Ratio Prot	c0.01
v/s Ratio Perm	
v/c Ratio	0.63
Uniform Delay, d1	29.2
Progression Factor	1.00
Incremental Delay, d2	30.3
Delay (s)	59.6
Level of Service	E
Approach Delay (s)	
Approach LOS	

Intersection Summary	

Barrio Logan CPU  
2: National Ave & 16th St

Existing Conditions w LRT  
Timing Plan: AM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		↕↕		↕		↕		↕			↕		
Sign Control		Free			Free			Stop			Stop		
Grade		0%			0%			0%			0%		
Volume (veh/h)	4	30	14	3	101	25	11	34	12	24	36	13	
Peak Hour Factor	0.92	0.92	0.92	0.70	0.70	0.70	0.75	0.75	0.75	0.76	0.76	0.76	
Hourly flow rate (vph)	4	33	15	4	144	36	15	45	16	32	47	17	
Pedestrians		7			14			16			19		
Lane Width (ft)		12.0			12.0			12.0			12.0		
Walking Speed (ft/s)		4.0			4.0			4.0			4.0		
Percent Blockage		1			1			1			2		
Right turn flare (veh)													
Median type								None			None		
Median storage (veh)													
Upstream signal (ft)					668								
pX, platoon unblocked													
vC, conflicting volume	199			64			266	272	54	267	262	188	
vC1, stage 1 conf vol													
vC2, stage 2 conf vol													
vCu, unblocked vol	199			64			266	272	54	267	262	188	
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9	
tC, 2 stage (s)													
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3	
p0 queue free %	100			100			97	93	98	95	92	98	
cM capacity (veh/h)	1349			1516			586	611	977	583	619	804	
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>EB 2</b>	<b>WB 1</b>	<b>WB 2</b>	<b>NB 1</b>	<b>SB 1</b>							
Volume Total	21	32	4	180	76	96							
Volume Left	4	0	4	0	15	32							
Volume Right	0	15	0	36	16	17							
cSH	1349	1700	1516	1700	657	632							
Volume to Capacity	0.00	0.02	0.00	0.11	0.12	0.15							
Queue Length 95th (ft)	0	0	0	0	10	13							
Control Delay (s)	1.6	0.0	7.4	0.0	11.2	11.7							
Lane LOS	A		A		B	B							
Approach Delay (s)	0.6		0.2		11.2	11.7							
Approach LOS					B	B							
<b>Intersection Summary</b>													
Average Delay				5.0									
Intersection Capacity Utilization				25.0%	ICU Level of Service			A					
Analysis Period (min)				15									

Barrio Logan CPU  
3: National Ave & Sigsbee St

Existing Conditions w LRT  
Timing Plan: AM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↕		↕	↕		↕			↕	↕
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frbp, ped/bikes	1.00	0.97		1.00	0.99		0.99	0.99		0.99	0.99	
Flpb, ped/bikes	0.98	1.00		0.97	1.00		0.99	1.00		0.99	1.00	
Frt	1.00	0.92		1.00	0.98		0.95	0.98		0.95	0.96	
Flt Protected	0.95	1.00		0.95	1.00		0.98	0.98		0.98	1.00	
Satd. Flow (prot)	1731	1666		1720	1804		1717	1766		1766	1766	
Flt Permitted	0.68	1.00		0.72	1.00		0.90	0.99		0.99	0.99	
Satd. Flow (perm)	1246	1666		1299	1804		1570	1754		1754	1754	
Volume (vph)	2	22		26	11	79	15	38		26	33	4
Peak-hour factor, PHF	0.78	0.78		0.78	0.82	0.82	0.82	0.73		0.73	0.73	0.74
Adj. Flow (vph)	3	28		33	13	96	18	52		36	45	5
RTOR Reduction (vph)	0	26		0	14	0	0	16		0	0	9
Lane Group Flow (vph)	3	35		0	13	100	0	117		0	0	74
Confl. Peds. (#/hr)	21			25	25		21	37		14	14	37
Confl. Bikes (#/hr)							3			3		1
Turn Type	Perm		Perm		Perm		Perm		Perm		Perm	
Protected Phases	4		8		8		2		6		6	
Permitted Phases	4		8		8		2		6		6	
Actuated Green, G (s)	9.8	9.8		9.8	9.8		30.8	30.8		30.8	30.8	
Effective Green, g (s)	9.8	9.8		9.8	9.8		30.8	30.8		30.8	30.8	
Actuated g/C Ratio	0.20	0.20		0.20	0.20		0.63	0.63		0.63	0.63	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	251	336		262	364		995	1112		995	1112	
v/s Ratio Prot	0.02		c0.06		c0.06		c0.06		c0.06		c0.06	
v/s Ratio Perm	0.00		0.01		0.01		c0.07		c0.07		0.04	
v/c Ratio	0.01		0.10		0.05		0.27		0.12		0.07	
Uniform Delay, d1	15.5	15.8		15.6	16.4		3.5	3.5		3.5	3.4	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.0	0.1		0.1	0.4		0.1	0.1		0.1	0.0	
Delay (s)	15.5	16.0		15.7	16.8		3.6	3.6		3.6	3.4	
Level of Service	B		B		B		A		A		A	
Approach Delay (s)	15.9		16.7		16.7		3.6		3.6		3.4	
Approach LOS	B		B		B		A		A		A	
<b>Intersection Summary</b>												
HCM Average Control Delay				9.6	HCM Level of Service			A				
HCM Volume to Capacity ratio				0.15								
Actuated Cycle Length (s)				48.6	Sum of lost time (s)			8.0				
Intersection Capacity Utilization				33.7%	ICU Level of Service			A				
Analysis Period (min)				15								
c Critical Lane Group												

Barrio Logan CPU  
4: Newton Ave & Sigsbee St

Existing Conditions w LRT  
Timing Plan: AM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↕				↕						↕	
Sign Control	Stop				Stop						Stop	
Volume (vph)	5	22	12	3	34	20	14	75	9	13	50	15
Peak Hour Factor	0.61	0.61	0.61	0.84	0.84	0.84	0.79	0.79	0.79	0.81	0.81	0.81
Hourly flow rate (vph)	8	36	20	4	40	24	18	95	11	16	62	19
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>WB 1</b>	<b>NB 1</b>	<b>SB 1</b>								
Volume Total (vph)	64	68	124	96								
Volume Left (vph)	8	4	18	16								
Volume Right (vph)	20	24	11	19								
Hadj (s)	-0.12	-0.17	0.01	-0.05								
Departure Headway (s)	4.3	4.3	4.3	4.3								
Degree Utilization, x	0.08	0.08	0.15	0.11								
Capacity (veh/h)	782	781	801	798								
Control Delay (s)	7.7	7.7	8.1	7.8								
Approach Delay (s)	7.7	7.7	8.1	7.8								
Approach LOS	A	A	A	A								
<b>Intersection Summary</b>												
Delay	7.9											
HCM Level of Service	A											
Intersection Capacity Utilization	25.8%		ICU Level of Service		A							
Analysis Period (min)	15											

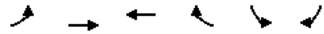
Barrio Logan CPU  
5: Main St & Sigsbee St

Existing Conditions w LRT  
Timing Plan: AM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↕				↕						↕	
Sign Control	Stop				Stop						Stop	
Volume (vph)	1	5	1	6	4	61	1	39	5	31	42	2
Peak Hour Factor	0.58	0.58	0.58	0.84	0.84	0.84	0.80	0.80	0.80	0.85	0.85	0.85
Hourly flow rate (vph)	2	9	2	7	5	73	1	49	6	36	49	2
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>WB 1</b>	<b>NB 1</b>	<b>SB 1</b>								
Volume Total (vph)	12	85	56	88								
Volume Left (vph)	2	7	1	36								
Volume Right (vph)	2	73	6	2								
Hadj (s)	-0.02	-0.46	-0.03	0.10								
Departure Headway (s)	4.3	3.8	4.2	4.3								
Degree Utilization, x	0.01	0.09	0.06	0.10								
Capacity (veh/h)	804	917	834	823								
Control Delay (s)	7.3	7.1	7.4	7.7								
Approach Delay (s)	7.3	7.1	7.4	7.7								
Approach LOS	A	A	A	A								
<b>Intersection Summary</b>												
Delay	7.4											
HCM Level of Service	A											
Intersection Capacity Utilization	22.5%		ICU Level of Service		A							
Analysis Period (min)	15											

Barrio Logan CPU  
6: Harbor Dr & Sigsbee St

Existing Conditions w LRT  
Timing Plan: AM Peak



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↔	↕	↕		↕	
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	22	247	831	20	12	24
Peak Hour Factor	0.77	0.77	0.89	0.89	0.72	0.72
Hourly flow rate (vph)	29	321	934	22	17	33
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					Raised	
Median storage (veh)					0	
Upstream signal (ft)			1319			
pX, platoon unblocked						
vC, conflicting volume	956				1162	478
vC1, stage 1 conf vol					945	
vC2, stage 2 conf vol					218	
vCu, unblocked vol	956				1162	478
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)					5.8	
tF (s)	2.2				3.5	3.3
p0 queue free %	96				92	94
cM capacity (veh/h)	715				207	533

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1
Volume Total	29	160	160	622	334	50
Volume Left	29	0	0	0	0	17
Volume Right	0	0	0	0	22	33
cSH	715	1700	1700	1700	1700	350
Volume to Capacity	0.04	0.09	0.09	0.37	0.20	0.14
Queue Length 95th (ft)	3	0	0	0	0	12
Control Delay (s)	10.2	0.0	0.0	0.0	0.0	17.0
Lane LOS	B					C
Approach Delay (s)	0.8			0.0		17.0
Approach LOS						C

Intersection Summary						
Average Delay			0.8			
Intersection Capacity Utilization		33.6%		ICU Level of Service		A
Analysis Period (min)			15			

Barrio Logan CPU  
7: Logan Ave & Beardsley St

Existing Conditions w LRT  
Timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕		↕	↕			↕		↕	↕	↕
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	0	68	11	45	86	0	16	0	38	137	151	21
Peak Hour Factor	0.93	0.93	0.93	0.94	0.94	0.94	0.78	0.78	0.78	0.76	0.76	0.76
Hourly flow rate (vph)	0	73	12	48	91	0	21	0	49	180	199	28
Direction, Lane #	EB 1	WB 1	WB 2	NB 1	SB 1							
Volume Total (vph)	85	48	91	69	407							
Volume Left (vph)	0	48	0	21	180							
Volume Right (vph)	12	0	0	49	28							
Hadj (s)	-0.05	0.53	0.03	-0.33	0.08							
Departure Headway (s)	5.4	6.3	5.8	4.7	4.7							
Degree Utilization, x	0.13	0.08	0.15	0.09	0.53							
Capacity (veh/h)	605	524	569	701	738							
Control Delay (s)	9.1	8.7	8.6	8.2	12.9							
Approach Delay (s)	9.1	8.7		8.2	12.9							
Approach LOS	A	A		A	B							

Intersection Summary						
Delay			11.1			
HCM Level of Service			B			
Intersection Capacity Utilization		39.3%		ICU Level of Service		A
Analysis Period (min)			15			

Barrio Logan CPU

Existing Conditions w LRT

8: National Ave & Beardsley St

Timing Plan: AM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔		↔		↔		↔		↔		↔	
Sign Control	Stop		Stop		Stop		Stop		Stop		Stop	
Volume (vph)	8	41	8	68	71	18	4	30	13	20	138	23
Peak Hour Factor	0.84	0.84	0.84	0.80	0.80	0.80	0.65	0.65	0.65	0.89	0.89	0.89
Hourly flow rate (vph)	10	49	10	85	89	22	6	46	20	22	155	26
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1						
Volume Total (vph)	10	58	85	111	72	203						
Volume Left (vph)	10	0	85	0	6	22						
Volume Right (vph)	0	10	0	23	20	26						
Hadj (s)	0.53	-0.08	0.53	-0.11	-0.11	-0.02						
Departure Headway (s)	6.0	5.3	5.8	5.2	4.7	4.6						
Degree Utilization, x	0.02	0.09	0.14	0.16	0.09	0.26						
Capacity (veh/h)	565	632	589	663	715	735						
Control Delay (s)	7.8	7.6	8.5	7.9	8.2	9.3						
Approach Delay (s)	7.7		8.2		8.2	9.3						
Approach LOS	A		A		A	A						

Intersection Summary

Delay	8.5											
HCM Level of Service	A											
Intersection Capacity Utilization	33.3%		ICU Level of Service		A							
Analysis Period (min)	15											

Barrio Logan CPU

Existing Conditions w LRT

9: Newton Ave & Beardsley St

Timing Plan: AM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔		↔		↔		↔		↔		↔	
Sign Control	Stop		Stop		Stop		Stop		Stop		Stop	
Volume (vph)	13	31	3	16	39	15	5	23	11	52	137	28
Peak Hour Factor	0.84	0.84	0.84	0.88	0.88	0.88	0.65	0.65	0.65	0.92	0.92	0.92
Hourly flow rate (vph)	15	37	4	18	44	17	8	35	17	57	149	30
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	56	80	60	236								
Volume Left (vph)	15	18	8	57								
Volume Right (vph)	4	17	17	30								
Hadj (s)	0.05	-0.05	-0.11	0.00								
Departure Headway (s)	4.7	4.6	4.4	4.3								
Degree Utilization, x	0.07	0.10	0.07	0.28								
Capacity (veh/h)	704	726	780	804								
Control Delay (s)	8.1	8.1	7.7	9.0								
Approach Delay (s)	8.1	8.1	7.7	9.0								
Approach LOS	A	A	A	A								

Intersection Summary

Delay	8.5											
HCM Level of Service	A											
Intersection Capacity Utilization	37.7%		ICU Level of Service		A							
Analysis Period (min)	15											

Barrio Logan CPU  
10: Main St & Beardsley St

Existing Conditions w LRT  
Timing Plan: AM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↕			↕			↕			↕		
Sign Control	Stop			Stop			Stop			Stop		
Volume (vph)	15	62	4	35	90	20	2	8	16	20	57	52
Peak Hour Factor	0.78	0.78	0.78	0.77	0.77	0.77	0.65	0.65	0.65	0.87	0.87	0.87
Hourly flow rate (vph)	19	79	5	45	117	26	3	12	25	23	66	60
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>WB 1</b>	<b>NB 1</b>	<b>SB 1</b>								
Volume Total (vph)	104	188	40	148								
Volume Left (vph)	19	45	3	23								
Volume Right (vph)	5	26	25	60								
Hadj (s)	0.04	0.00	-0.32	-0.18								
Departure Headway (s)	4.6	4.5	4.4	4.5								
Degree Utilization, x	0.13	0.23	0.05	0.18								
Capacity (veh/h)	743	765	743	752								
Control Delay (s)	8.3	8.8	7.7	8.5								
Approach Delay (s)	8.3	8.8	7.7	8.5								
Approach LOS	A	A	A	A								
<b>Intersection Summary</b>												
Delay	8.5											
HCM Level of Service	A											
Intersection Capacity Utilization	32.2%			ICU Level of Service	A							
Analysis Period (min)	15											

Barrio Logan CPU  
11: Harbor Dr & Beardsley St

Existing Conditions w LRT  
Timing Plan: AM Peak

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↕	↕	↕		↕	↕
Sign Control	Free	Free	Free		Stop	Stop
Grade	0%	0%	0%		0%	0%
Volume (veh/h)	13	209	907	16	30	54
Peak Hour Factor	0.84	0.84	0.88	0.88	0.78	0.78
Hourly flow rate (vph)	15	249	1031	18	38	69
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	Raised					
Median storage (veh)	0					
Upstream signal (ft)	658					
pX, platoon unblocked	0.89				0.89	0.89
vC, conflicting volume	1049				1195	524
vC1, stage 1 conf vol					1040	
vC2, stage 2 conf vol					155	
vCu, unblocked vol	931				1095	341
tC, single (s)	4.3				6.8	6.9
tC, 2 stage (s)					5.8	
tF (s)	2.3				3.5	3.3
p0 queue free %	97				80	88
cM capacity (veh/h)	608				196	582
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>EB 2</b>	<b>EB 3</b>	<b>WB 1</b>	<b>WB 2</b>	<b>SB 1</b>
Volume Total	15	124	124	687	362	108
Volume Left	15	0	0	0	0	38
Volume Right	0	0	0	0	18	69
cSH	608	1700	1700	1700	1700	342
Volume to Capacity	0.03	0.07	0.07	0.40	0.21	0.31
Queue Length 95th (ft)	2	0	0	0	0	33
Control Delay (s)	11.1	0.0	0.0	0.0	0.0	20.3
Lane LOS	B					C
Approach Delay (s)	0.6			0.0		20.3
Approach LOS						C
<b>Intersection Summary</b>						
Average Delay	1.7					
Intersection Capacity Utilization	37.2%			ICU Level of Service	A	
Analysis Period (min)	15					

Barrio Logan CPU  
12: Kearney St & Cesar E. Chavez Pkwy

Existing Conditions w LRT  
Timing Plan: AM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)				4.0	4.0		4.0	4.0				4.0	
Lane Util. Factor				0.95	0.95		1.00	1.00				0.95	
Flt				1.00	0.97		1.00	1.00				0.99	
Flt Protected				0.95	0.98		0.95	1.00				1.00	
Satd. Flow (prot)				1478	1483		1626	1712				3219	
Flt Permitted				0.95	0.98		0.95	1.00				1.00	
Satd. Flow (perm)				1478	1483		1626	1712				3219	
Volume (vph)	0	0	0	516	134	60	109	106	0	0	192	14	
Peak-hour factor, PHF	0.25	0.25	0.25	0.81	0.81	0.81	0.93	0.93	0.93	0.87	0.87	0.87	
Adj. Flow (vph)	0	0	0	637	165	74	117	114	0	0	221	16	
RTOR Reduction (vph)	0	0	0	0	7	0	0	0	0	0	7	0	
Lane Group Flow (vph)	0	0	0	433	436	0	117	114	0	0	230	0	
Heavy Vehicles (%)	16%	16%	16%	16%	16%	16%	11%	11%	11%	11%	11%	11%	
Turn Type				Split			Split						
Protected Phases				8	8		6	6				2	
Permitted Phases													
Actuated Green, G (s)				23.5	23.5		12.6	12.6				12.8	
Effective Green, g (s)				23.5	23.5		12.6	12.6				12.8	
Actuated g/C Ratio				0.39	0.39		0.21	0.21				0.21	
Clearance Time (s)				4.0	4.0		4.0	4.0				4.0	
Vehicle Extension (s)				3.0	3.0		3.0	3.0				3.0	
Lane Grp Cap (vph)				570	572		336	354				677	
v/s Ratio Prot				0.29	c0.29		c0.07	0.07				c0.07	
v/s Ratio Perm													
v/c Ratio				0.76	0.76		0.35	0.32				0.34	
Uniform Delay, d1				16.2	16.3		20.6	20.5				20.5	
Progression Factor				1.00	1.00		1.00	1.00				1.00	
Incremental Delay, d2				5.8	5.9		0.6	0.5				0.3	
Delay (s)				22.0	22.2		21.3	21.1				20.8	
Level of Service				C	C		C	C				C	
Approach Delay (s)		0.0			22.1			21.2				20.8	
Approach LOS		A			C			C				C	
<b>Intersection Summary</b>													
HCM Average Control Delay			21.7		HCM Level of Service								C
HCM Volume to Capacity ratio			0.54										
Actuated Cycle Length (s)			60.9		Sum of lost time (s)							12.0	
Intersection Capacity Utilization		41.4%			ICU Level of Service								A
Analysis Period (min)			15										
c Critical Lane Group													

Barrio Logan CPU  
13: Logan Ave & Cesar E. Chavez Pkwy

Existing Conditions w LRT  
Timing Plan: AM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)				4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95		
Flpb, ped/bikes	1.00	0.99		1.00	1.00	0.97	1.00	1.00	0.97	1.00	0.99		
Flt	0.99	1.00		0.99	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Flt Protected	1.00	0.94		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98		
Satd. Flow (prot)	1747	1735		1757	1863	1544	1530	3059	1328	1530	2996		
Flt Permitted	0.74	1.00		0.44	1.00	1.00	0.95	1.00	1.00	0.95	1.00		
Satd. Flow (perm)	1365	1735		821	1863	1544	1530	3059	1328	1530	2996		
Volume (vph)	54	109	69	14	19	34	11	140	145	70	528	61	
Peak-hour factor, PHF	0.89	0.89	0.89	0.84	0.84	0.84	0.91	0.91	0.91	0.87	0.87	0.87	
Adj. Flow (vph)	61	122	78	17	23	40	12	154	159	80	607	70	
RTOR Reduction (vph)	0	39	0	0	0	33	0	0	69	0	6	0	
Lane Group Flow (vph)	61	161	0	17	23	7	12	154	90	80	671	0	
Confl. Peds. (#/hr)	15		13	13		15			17			39	
Confl. Bikes (#/hr)				4								2	
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	18%	18%	18%	18%	18%	18%	
Turn Type	Perm			Perm		Perm	Prot		Perm	Prot			
Protected Phases			4			8		5	2		1	6	
Permitted Phases	4			8		8			2				
Actuated Green, G (s)	14.2	14.2		14.2	14.2	14.2	1.3	45.5	45.5	8.3	52.5		
Effective Green, g (s)	14.2	14.2		14.2	14.2	14.2	1.3	45.5	45.5	8.3	52.5		
Actuated g/C Ratio	0.18	0.18		0.18	0.18	0.18	0.02	0.57	0.57	0.10	0.66		
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	242	308		146	331	274	25	1740	755	159	1966		
v/s Ratio Prot		c0.09			0.01		c0.01	0.05		c0.05	c0.22		
v/s Ratio Perm	0.04			0.02		0.00			0.07				
v/c Ratio	0.25	0.52		0.12	0.07	0.03	0.48	0.09	0.12	0.50	0.34		
Uniform Delay, d1	28.3	29.8		27.6	27.4	27.2	39.0	7.8	8.0	33.9	6.1		
Progression Factor	1.00	1.00		1.00	1.00	1.00	0.80	0.71	0.70	1.00	1.00		
Incremental Delay, d2	0.6	1.6		0.4	0.1	0.0	13.6	0.1	0.3	2.5	0.5		
Delay (s)	28.9	31.4		28.0	27.5	27.2	45.0	5.7	5.9	36.4	6.6		
Level of Service	C	C		C	C	C	D	A	A	D	A		
Approach Delay (s)		30.8			27.5			7.2			9.7		
Approach LOS		C			C			A			A		
<b>Intersection Summary</b>													
HCM Average Control Delay			14.0		HCM Level of Service								B
HCM Volume to Capacity ratio			0.39										
Actuated Cycle Length (s)			80.0		Sum of lost time (s)							12.0	
Intersection Capacity Utilization		49.0%			ICU Level of Service								A
Analysis Period (min)			15										
c Critical Lane Group													



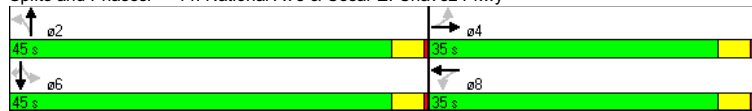
Barrio Logan CPU Existing Conditions w LRT  
 14: National Ave & Cesar E. Chavez Pkwy Timing Plan: AM Peak

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations	↔		↔		↔		↔		↔
Volume (vph)	42	29	90	72	14	291	39	461	117
Turn Type	Perm		Perm		Perm		Perm		Perm
Protected Phases	4		8		2		6		6
Permitted Phases	4		8		2		6		6
Detector Phases	4		8		2		6		6
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	31.0	31.0	34.0	34.0	27.0	27.0	27.0	27.0	27.0
Total Split (s)	35.0	35.0	35.0	35.0	45.0	45.0	45.0	45.0	45.0
Total Split (%)	43.8%	43.8%	43.8%	43.8%	56.3%	56.3%	56.3%	56.3%	56.3%
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)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Lead/Lag									
Lead-Lag Optimize?									
Recall Mode	None	None	None	None	C-Min	C-Min	C-Min	C-Min	C-Min

**Intersection Summary**

Cycle Length: 80
Actuated Cycle Length: 80
Offset: 1 (1%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 65
Control Type: Actuated-Coordinated

Splits and Phases: 14: National Ave & Cesar E. Chavez Pkwy



Barrio Logan CPU Existing Conditions w LRT  
 14: National Ave & Cesar E. Chavez Pkwy Timing Plan: AM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔		↔		↔		↔		↔		↔	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.94	1.00	0.94	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	0.95	1.00	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1770	1756	1770	1743	1612	3211	1530	1610	1369			
Flt Permitted	0.56	1.00	0.72	1.00	0.43	1.00	0.54	1.00	1.00			
Satd. Flow (perm)	1036	1756	1334	1743	733	3211	875	1610	1369			
Volume (vph)	42	29	18	90	72	54	14	291	8	39	461	117
Peak-hour factor, PHF	0.74	0.74	0.74	0.91	0.91	0.91	0.86	0.86	0.86	0.85	0.85	0.85
Adj. Flow (vph)	57	39	24	99	79	59	16	338	9	46	542	138
RTOR Reduction (vph)	0	21	0	0	48	0	0	1	0	0	0	32
Lane Group Flow (vph)	57	42	0	99	90	0	16	346	0	46	542	106
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	12%	12%	12%	18%	18%	18%
Turn Type	Perm		Perm		Perm		Perm		Perm		Perm	
Protected Phases	4		8		8		2		6		6	
Permitted Phases	4		8		8		2		6		6	
Actuated Green, G (s)	10.5	10.5	10.5	10.5	61.5	61.5	61.5	61.5	61.5	61.5	61.5	61.5
Effective Green, g (s)	10.5	10.5	10.5	10.5	61.5	61.5	61.5	61.5	61.5	61.5	61.5	61.5
Actuated g/C Ratio	0.13	0.13	0.13	0.13	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	136	230	175	229	563	2468	673	1238	1052			
v/s Ratio Prot	0.06		0.02		0.11		0.05		0.05		0.08	
v/s Ratio Perm	0.06		c0.07		0.02		0.02		0.05		0.08	
v/c Ratio	0.42	0.18	0.57	0.39	0.03	0.14	0.07	0.44	0.10			
Uniform Delay, d1	31.9	30.9	32.6	31.8	2.2	2.4	2.3	3.2	2.3			
Progression Factor	1.00	1.00	1.00	1.00	0.59	0.63	0.81	1.11	1.69			
Incremental Delay, d2	2.1	0.4	4.1	1.1	0.1	0.1	0.2	1.1	0.2			
Delay (s)	34.0	31.3	36.8	33.0	1.4	1.6	2.0	4.7	4.1			
Level of Service	C		D		A		A		A		A	
Approach Delay (s)	32.6		34.5		1.6		4.4					
Approach LOS	C		C		A		A					

**Intersection Summary**

HCM Average Control Delay	11.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	51.4%	ICU Level of Service	A
Analysis Period (min)	15		

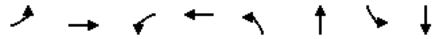
c Critical Lane Group

Barrio Logan CPU

Existing Conditions w LRT

15: Newton Ave & Cesar E. Chavez Pkwy

Timing Plan: AM Peak

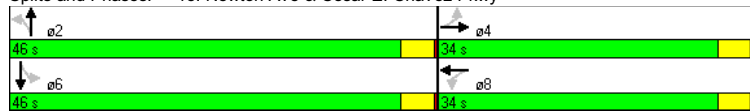


Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	↔	↕	↔	↕	↔	↕	↔	↕
Volume (vph)	28	19	20	28	9	217	27	406
Turn Type	Perm		Perm		Perm		Perm	
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phases	4	4	8	8	2	2	6	6
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	31.0	31.0	31.0	31.0	27.0	27.0	27.0	27.0
Total Split (s)	34.0	34.0	34.0	34.0	46.0	46.0	46.0	46.0
Total Split (%)	42.5%	42.5%	42.5%	42.5%	57.5%	57.5%	57.5%	57.5%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	None	None	None	C-Min	C-Min	C-Min	C-Min

Intersection Summary

Cycle Length: 80
Actuated Cycle Length: 80
Offset: 20 (25%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated

Splits and Phases: 15: Newton Ave & Cesar E. Chavez Pkwy



Barrio Logan CPU

Existing Conditions w LRT

15: Newton Ave & Cesar E. Chavez Pkwy

Timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↕	↔	↔	↕	↕	↔	↕	↔	↔	↕	↕
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	1.00	
Flt	1.00	0.93		1.00	0.93		1.00	0.99		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)	1770	1734		1770	1729		1612	3206		1612	1664	
Flt Permitted	0.71	1.00		0.72	1.00		0.43	1.00		0.58	1.00	
Satd. Flow (perm)	1319	1734		1349	1729		729	3206		979	1664	
Volume (vph)	28	19	16	20	28	26	9	217	8	27	406	58
Peak-hour factor, PHF	0.70	0.70	0.70	0.72	0.72	0.72	0.79	0.79	0.79	0.81	0.81	0.81
Adj. Flow (vph)	40	27	23	28	39	36	11	275	10	33	501	72
RTOR Reduction (vph)	0	21	0	0	33	0	0	1	0	0	3	0
Lane Group Flow (vph)	40	29	0	28	42	0	11	284	0	33	570	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	12%	12%	12%	12%	12%	12%
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	6.5	6.5		6.5	6.5		65.5	65.5		65.5	65.5	
Effective Green, g (s)	6.5	6.5		6.5	6.5		65.5	65.5		65.5	65.5	
Actuated g/C Ratio	0.08	0.08		0.08	0.08		0.82	0.82		0.82	0.82	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	107	141		110	140		597	2625		802	1362	
v/s Ratio Prot		0.02			0.02			0.09			c0.34	
v/s Ratio Perm	c0.03			0.02			0.02			0.03		
v/c Ratio	0.37	0.20		0.25	0.30		0.02	0.11		0.04	0.42	
Uniform Delay, d1	34.8	34.3		34.5	34.6		1.3	1.4		1.4	2.0	
Progression Factor	1.00	1.00		1.00	1.00		0.38	0.47		0.65	1.02	
Incremental Delay, d2	2.2	0.7		1.2	1.2		0.1	0.1		0.1	0.9	
Delay (s)	37.0	35.1		35.7	35.8		0.6	0.8		1.0	2.9	
Level of Service	D	D		D	D		A	A		A	A	
Approach Delay (s)		35.9			35.8			0.8			2.8	
Approach LOS		D			D			A			A	

Intersection Summary

HCM Average Control Delay	8.1	HCM Level of Service	A
HCM Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	39.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Barrio Logan CPU  
16: Main St & Cesar E. Chavez Pkwy

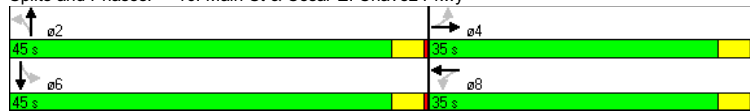
Existing Conditions w LRT  
Timing Plan: AM Peak

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	↔	↕	↔	↕	↔	↕	↔	↕
Volume (vph)	56	43	25	47	7	155	25	361
Turn Type	Perm		Perm		Perm		Perm	
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phases	4	4	8	8	2	2	6	6
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	31.0	31.0	31.0	31.0	27.0	27.0	27.0	27.0
Total Split (s)	35.0	35.0	35.0	35.0	45.0	45.0	45.0	45.0
Total Split (%)	43.8%	43.8%	43.8%	43.8%	56.3%	56.3%	56.3%	56.3%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	None	None	None	C-Min	C-Min	C-Min	C-Min

Intersection Summary

Cycle Length: 80
Actuated Cycle Length: 80
Offset: 2 (3%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated

Splits and Phases: 16: Main St & Cesar E. Chavez Pkwy



Barrio Logan CPU  
16: Main St & Cesar E. Chavez Pkwy

Existing Conditions w LRT  
Timing Plan: AM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↕		↔	↕		↔	↕		↔	↕	↔
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	0.98		1.00	1.00		1.00	0.99	0.99
Flpb, ped/bikes	0.97	1.00		0.99	1.00		0.98	1.00		0.98	1.00	0.99
Frt	1.00	1.00		1.00	0.93		1.00	1.00		1.00	0.97	0.97
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1718	1856		1743	1689		1525	3097		1546	1573	1573
Flt Permitted	0.69	1.00		0.72	1.00		0.43	1.00		0.63	1.00	1.00
Satd. Flow (perm)	1251	1856		1328	1689		689	3097		1031	1573	1573

Volume (vph)	56	43	1	25	47	45	7	155	4	25	361	82
Peak-hour factor, PHF	0.86	0.86	0.86	0.91	0.91	0.91	0.85	0.85	0.85	0.89	0.89	0.89
Adj. Flow (vph)	65	50	1	27	52	49	8	182	5	28	406	92
RTOR Reduction (vph)	0	1	0	0	38	0	0	2	0	0	7	0
Lane Group Flow (vph)	65	50	0	27	63	0	8	185	0	28	491	0
Confl. Peds. (#/hr)	38		18	18		38	26		5	5		26
Confl. Bikes (#/hr)			2			1		1				2
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	16%	16%	16%	16%	16%	16%
Turn Type	Perm			Perm			Perm			Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	17.7	17.7		17.7	17.7		54.3	54.3		54.3	54.3	54.3
Effective Green, g (s)	17.7	17.7		17.7	17.7		54.3	54.3		54.3	54.3	54.3
Actuated g/C Ratio	0.22	0.22		0.22	0.22		0.68	0.68		0.68	0.68	0.68
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	277	411		294	374		468	2102		700	1068	1068
v/s Ratio Prot		0.03			0.04			0.06				c0.31
v/s Ratio Perm	c0.05			0.02			0.01			0.03		
v/c Ratio	0.23	0.12		0.09	0.17		0.02	0.09		0.04	0.46	0.46
Uniform Delay, d1	25.6	24.9		24.8	25.2		4.2	4.4		4.2	6.0	6.0
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		0.55	0.48	0.48
Incremental Delay, d2	0.4	0.1		0.1	0.2		0.1	0.1		0.1	1.3	1.3
Delay (s)	26.0	25.1		24.9	25.4		4.2	4.5		2.4	4.2	4.2
Level of Service	C	C		C	C		A	A		A	A	A
Approach Delay (s)		25.6			25.3			4.5			4.1	4.1
Approach LOS		C			C			A			A	A

Intersection Summary

HCM Average Control Delay	9.6	HCM Level of Service	A
HCM Volume to Capacity ratio	0.40		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	49.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Barrio Logan CPU  
17: Harbor Dr & Cesar E. Chavez Pkwy

Existing Conditions w LRT  
Timing Plan: AM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frbp, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	0.99	1.00	0.98	1.00	0.98	1.00
Flpb, ped/bikes	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	1.00	0.99	1.00	0.98	1.00	0.90	1.00	0.90	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	0.95	1.00	0.95	1.00	0.98	1.00	0.98	1.00
Satd. Flow (prot)	1641	3223	1421	3194	1364	1219				1607	1370	
Flt Permitted	0.95	1.00	0.95	1.00	0.63	1.00				0.89	1.00	
Satd. Flow (perm)	1641	3223	1421	3194	910	1219				1453	1370	
Volume (vph)	107	153	16	55	422	76	4	14	27	50	83	330
Peak-hour factor, PHF	0.84	0.84	0.84	0.81	0.81	0.81	0.80	0.80	0.80	0.92	0.92	0.92
Adj. Flow (vph)	127	182	19	68	521	94	5	18	34	54	90	359
RTOR Reduction (vph)	0	7	0	0	14	0	0	29	0	0	0	203
Lane Group Flow (vph)	127	194	0	68	601	0	5	23	0	0	144	156
Confl. Peds. (#/hr)			11			6	4		1	1		4
Confl. Bikes (#/hr)			5			11		2				
Heavy Vehicles (%)	10%	10%	10%	27%	10%	10%	32%	32%	43%	16%	16%	16%
Turn Type	Prot			Prot			Perm			Perm		Perm
Protected Phases	3 14 2 6			13 18 2 6			12			1 5 16		
Permitted Phases							12			1 5 16		1 5 16
Actuated Green, G (s)	7.7	21.7		6.6	20.6		11.6	11.6		24.4		24.4
Effective Green, g (s)	7.7	21.7		6.6	20.6		11.6	11.6		24.4		24.4
Actuated g/C Ratio	0.10	0.28		0.09	0.27		0.15	0.15		0.32		0.32
Clearance Time (s)	4.0			4.0			4.0	4.0				
Vehicle Extension (s)	3.0			3.0			3.0	3.0				
Lane Grp Cap (vph)	165	912		122	858		138	184		462		436
v/s Ratio Prot	c0.08	0.06		0.05	c0.19			0.02				
v/s Ratio Perm							0.01			0.10		c0.11
v/c Ratio	0.77	0.21		0.56	0.70		0.04	0.13		0.31		0.36
Uniform Delay, d1	33.6	21.0		33.6	25.3		27.8	28.2		19.8		20.1
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00		2.32
Incremental Delay, d2	19.2	0.1		5.4	2.6		0.1	0.3		0.4		0.5
Delay (s)	52.8	21.1		39.1	27.9		27.9	28.5		20.1		47.1
Level of Service	D	C		D	C		C	C		C		D
Approach Delay (s)	33.4			29.0			28.4			39.4		
Approach LOS	C			C			C			D		
<b>Intersection Summary</b>												
HCM Average Control Delay		33.2			HCM Level of Service			C				
HCM Volume to Capacity ratio		0.55										
Actuated Cycle Length (s)		76.7			Sum of lost time (s)		24.0					
Intersection Capacity Utilization		50.7%			ICU Level of Service		A					
Analysis Period (min)		15										

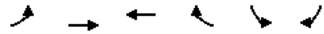
Barrio Logan CPU  
18: Logan Ave & I-5 SB On-ramp

Existing Conditions w LRT  
Timing Plan: AM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	251	93	1	0	60	53	0	0	2	0	0	0
Peak Hour Factor	0.90	0.90	0.90	0.74	0.74	0.74	0.50	0.50	0.50	0.25	0.25	0.25
Hourly flow rate (vph)	279	103	1	0	81	72	0	0	4	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type							None			None		
Median storage veh												
Upstream signal (ft)		667										
pX, platoon unblocked												
vC, conflicting volume	153			104			743	814	104	782	779	117
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	153			104			743	814	104	782	779	117
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	80			100			100	100	100	100	100	100
cM capacity (veh/h)	1428			1487			281	251	951	264	263	935
<b>Direction, Lane #</b>												
Volume Total	279	104	0	153	4							
Volume Left	279	0	0	0	0							
Volume Right	0	1	0	72	4							
cSH	1428	1700	1700	1700	951							
Volume to Capacity	0.20	0.06	0.00	0.09	0.00							
Queue Length 95th (ft)	18	0	0	0	0							
Control Delay (s)	8.1	0.0	0.0	0.0	8.8							
Lane LOS	A				A							
Approach Delay (s)	5.9		0.0		8.8							
Approach LOS					A							
<b>Intersection Summary</b>												
Average Delay		4.3										
Intersection Capacity Utilization		23.9%			ICU Level of Service			A				
Analysis Period (min)		15										

Barrio Logan CPU  
19: National Ave & SR-75 Off-ramp

Existing Conditions w LRT  
Timing Plan: AM Peak



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↘	↘
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	0	67	142	0	16	156
Peak Hour Factor	0.84	0.84	0.87	0.87	0.86	0.86
Hourly flow rate (vph)	0	80	163	0	19	181
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					TWLTL	
Median storage (veh)					1	
Upstream signal (ft)		1100	875			
pX, platoon unblocked						
vC, conflicting volume	163				243	163
vC1, stage 1 conf vol					163	
vC2, stage 2 conf vol					80	
vCu, unblocked vol	163				243	163
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)					5.4	
tF (s)	2.2				3.5	3.3
p0 queue free %	100				98	79
cM capacity (veh/h)	1415				749	881

Direction, Lane #	EB 1	WB 1	SB 1	SB 2
Volume Total	80	163	19	181
Volume Left	0	0	19	0
Volume Right	0	0	0	181
cSH	1700	1700	749	881
Volume to Capacity	0.05	0.10	0.02	0.21
Queue Length 95th (ft)	0	0	2	19
Control Delay (s)	0.0	0.0	9.9	10.1
Lane LOS			A	B
Approach Delay (s)	0.0	0.0	10.1	
Approach LOS			B	

Intersection Summary			
Average Delay		4.6	
Intersection Capacity Utilization		23.8%	ICU Level of Service A
Analysis Period (min)		15	

Barrio Logan CPU  
20: National Ave & Evans St

Existing Conditions w LRT  
Timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↘		↘	↘			↕		↘	↘	↘
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	7	65	9	18	123	16	10	26	10	5	8	16
Peak Hour Factor	0.78	0.78	0.78	0.80	0.80	0.80	0.82	0.82	0.82	0.81	0.81	0.81
Hourly flow rate (vph)	9	83	12	22	154	20	12	32	12	6	10	20
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage (veh)												
Upstream signal (ft)		1314			661							
pX, platoon unblocked												
vC, conflicting volume	174			95			330	326	89	338	322	164
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	174			95			330	326	89	338	322	164
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			98			98	95	99	99	98	98
cM capacity (veh/h)	1403			1499			591	580	969	573	583	881

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	9	95	22	174	56	36
Volume Left	9	0	22	0	12	6
Volume Right	0	12	0	20	12	20
cSH	1403	1700	1499	1700	638	714
Volume to Capacity	0.01	0.06	0.02	0.10	0.09	0.05
Queue Length 95th (ft)	0	0	1	0	7	4
Control Delay (s)	7.6	0.0	7.4	0.0	11.2	10.3
Lane LOS	A		A		B	B
Approach Delay (s)	0.7		0.9		11.2	10.3
Approach LOS					B	B

Intersection Summary			
Average Delay		3.1	
Intersection Capacity Utilization		18.0%	ICU Level of Service A
Analysis Period (min)		15	

Barrio Logan CPU  
21: Newton Ave & Evans St

Existing Conditions w LRT  
Timing Plan: AM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↕				↕		↕				↕	
Sign Control	Free				Free		Stop				Stop	
Grade	0%				0%		0%				0%	
Volume (veh/h)	12	33	9	3	24	8	10	19	6	1	8	17
Peak Hour Factor	0.96	0.96	0.96	0.58	0.58	0.58	0.67	0.67	0.67	0.72	0.72	0.72
Hourly flow rate (vph)	12	34	9	5	41	14	15	28	9	1	11	24
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None						None					
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	55			44			152	130	39	146	127	48
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	55			44			152	130	39	146	127	48
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			100			98	96	99	100	99	98
cM capacity (veh/h)	1550			1565			781	752	1033	785	754	1021
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>WB 1</b>	<b>NB 1</b>	<b>SB 1</b>								
Volume Total	56	60	52	36								
Volume Left	12	5	15	1								
Volume Right	9	14	9	24								
cSH	1550	1565	798	911								
Volume to Capacity	0.01	0.00	0.07	0.04								
Queue Length 95th (ft)	1	0	5	3								
Control Delay (s)	1.7	0.6	9.8	9.1								
Lane LOS	A	A	A	A								
Approach Delay (s)	1.7	0.6	9.8	9.1								
Approach LOS			A	A								
<b>Intersection Summary</b>												
Average Delay				4.8								
Intersection Capacity Utilization				18.5%	ICU Level of Service	A						
Analysis Period (min)				15								

Barrio Logan CPU  
22: Main St & Evans St

Existing Conditions w LRT  
Timing Plan: AM Peak

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↕		↕		↕	
Sign Control	Free		Free		Stop	
Grade	0%		0%		0%	
Volume (veh/h)	11	52	114	7	5	14
Peak Hour Factor	0.74	0.74	0.83	0.83	0.75	0.75
Hourly flow rate (vph)	15	70	137	8	7	19
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage (veh)						
Upstream signal (ft)	1318					
pX, platoon unblocked						
vC, conflicting volume	146			242	142	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	146			242	142	
tC, single (s)	4.1			6.4	6.2	
tC, 2 stage (s)						
tF (s)	2.2			3.5	3.3	
p0 queue free %	99			99	98	
cM capacity (veh/h)	1436			739	906	
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>WB 1</b>	<b>SB 1</b>			
Volume Total	85	146	25			
Volume Left	15	0	7			
Volume Right	0	8	19			
cSH	1436	1700	855			
Volume to Capacity	0.01	0.09	0.03			
Queue Length 95th (ft)	1	0	2			
Control Delay (s)	1.4	0.0	9.3			
Lane LOS	A	A				
Approach Delay (s)	1.4	0.0	9.3			
Approach LOS			A			
<b>Intersection Summary</b>						
Average Delay				1.4		
Intersection Capacity Utilization				22.2%	ICU Level of Service	A
Analysis Period (min)				15		

Barrio Logan CPU  
23: Logan Ave & Sampson St

Existing Conditions w LRT  
Timing Plan: AM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔		↔		↔		↔		↔		↔	
Sign Control	Stop		Stop		Stop		Stop		Stop		Stop	
Volume (vph)	90	125	28	17	62	50	62	112	33	62	82	14
Peak Hour Factor	0.88	0.88	0.88	0.87	0.87	0.87	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	102	142	32	20	71	57	67	122	36	67	89	15
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>EB 2</b>	<b>WB 1</b>	<b>WB 2</b>	<b>NB 1</b>	<b>SB 1</b>						
Volume Total (vph)	102	174	20	129	225	172						
Volume Left (vph)	102	0	20	0	67	67						
Volume Right (vph)	0	32	0	57	36	15						
Hadj (s)	0.53	-0.09	0.53	-0.28	0.00	0.06						
Departure Headway (s)	6.4	5.7	6.6	5.7	5.3	5.5						
Degree Utilization, x	0.18	0.28	0.04	0.21	0.33	0.26						
Capacity (veh/h)	530	591	505	577	634	609						
Control Delay (s)	9.6	9.7	8.6	9.0	10.9	10.4						
Approach Delay (s)	9.7	9.0		10.9		10.4						
Approach LOS	A		A		B		B					
<b>Intersection Summary</b>												
Delay	10.0											
HCM Level of Service	B											
Intersection Capacity Utilization	34.3%		ICU Level of Service		A							
Analysis Period (min)	15											

Barrio Logan CPU  
24: National Ave & Sampson St

Existing Conditions w LRT  
Timing Plan: AM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔		↔		↔		↔		↔		↔	
Sign Control	Stop		Stop		Stop		Stop		Stop		Stop	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
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
Frbp, ped/bikes	1.00	1.00	1.00	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Flpb, ped/bikes	0.98	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.97	1.00	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.96
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00	1.00	0.99	0.99	0.99	0.99	0.99
Satd. Flow (prot)	1742	1801	1764	1790	1790	1790	1780	1780	1780	1780	1750	1750
Flt Permitted	0.68	1.00	0.70	1.00	1.00	1.00	0.98	0.98	0.98	0.98	0.95	0.95
Satd. Flow (perm)	1240	1801	1306	1790	1790	1790	1758	1758	1758	1758	1681	1681
Volume (vph)	13	50	12	48	94	24	7	41	16	19	36	25
Peak-hour factor, PHF	0.75	0.75	0.75	0.94	0.94	0.94	0.84	0.84	0.84	0.80	0.80	0.80
Adj. Flow (vph)	17	67	16	51	100	26	8	49	19	24	45	31
RTOR Reduction (vph)	0	13	0	0	18	0	0	8	0	0	12	0
Lane Group Flow (vph)	17	70	0	51	108	0	0	68	0	0	88	0
Confl. Peds. (#/hr)	17	3		3	17		13	14		14	13	13
Confl. Bikes (#/hr)	1		1		1		1		1			
Turn Type	Perm		Perm		Perm		Perm		Perm			
Protected Phases	4		8		8		2		6			
Permitted Phases	4		8		8		2		6			
Actuated Green, G (s)	9.5	9.5	9.5	9.5	9.5	9.5	26.4	26.4	26.4	26.4	26.4	26.4
Effective Green, g (s)	9.5	9.5	9.5	9.5	9.5	9.5	26.4	26.4	26.4	26.4	26.4	26.4
Actuated g/C Ratio	0.22	0.22	0.22	0.22	0.22	0.22	0.60	0.60	0.60	0.60	0.60	0.60
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	268	390	283	387	387	387	1057	1057	1057	1057	1011	1011
v/s Ratio Prot	0.04		c0.06		c0.06		c0.06		c0.06			
v/s Ratio Perm	0.01	0.04		0.04		0.04		0.04		c0.05		
v/c Ratio	0.06	0.18	0.18	0.28	0.28	0.28	0.06	0.06	0.06	0.06	0.09	0.09
Uniform Delay, d1	13.7	14.0	14.0	14.3	14.3	14.3	3.6	3.6	3.6	3.6	3.7	3.7
Progression 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
Incremental Delay, d2	0.1	0.2	0.3	0.4	0.4	0.4	0.0	0.0	0.0	0.0	0.0	0.0
Delay (s)	13.8	14.3	14.3	14.7	14.7	14.7	3.7	3.7	3.7	3.7	3.7	3.7
Level of Service	B	B	B	B	B	B	A	A	A	A	A	A
Approach Delay (s)	14.2		14.6		14.6		3.7		3.7			
Approach LOS	B		B		B		A		A			
<b>Intersection Summary</b>												
HCM Average Control Delay	10.3		HCM Level of Service		B							
HCM Volume to Capacity ratio	0.14											
Actuated Cycle Length (s)	43.9		Sum of lost time (s)		8.0							
Intersection Capacity Utilization	31.5%		ICU Level of Service		A							
Analysis Period (min)	15											
c Critical Lane Group												

Barrio Logan CPU  
25: Newton Ave & Sampson St

Existing Conditions w LRT  
Timing Plan: AM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↕				↕				↕			
Sign Control	Stop				Stop				Stop			
Volume (vph)	15	20	10	2	17	8	4	35	7	3	66	22
Peak Hour Factor	0.86	0.86	0.86	0.68	0.68	0.68	0.82	0.82	0.82	0.84	0.84	0.84
Hourly flow rate (vph)	17	23	12	3	25	12	5	43	9	4	79	26
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	52	40	56	108								
Volume Left (vph)	17	3	5	4								
Volume Right (vph)	12	12	9	26								
Hadj (s)	-0.03	-0.13	-0.04	-0.10								
Departure Headway (s)	4.3	4.2	4.2	4.1								
Degree Utilization, x	0.06	0.05	0.06	0.12								
Capacity (veh/h)	807	822	831	863								
Control Delay (s)	7.5	7.4	7.5	7.6								
Approach Delay (s)	7.5	7.4	7.5	7.6								
Approach LOS	A	A	A	A								
<b>Intersection Summary</b>												
Delay	7.5											
HCM Level of Service	A											
Intersection Capacity Utilization	21.7%			ICU Level of Service	A							
Analysis Period (min)	15											

Barrio Logan CPU  
26: Main St & Sampson St

Existing Conditions w LRT  
Timing Plan: AM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↕				↕				↕			
Sign Control	Stop				Stop				Stop			
Volume (vph)	5	33	12	53	115	16	14	31	35	10	59	15
Peak Hour Factor	0.89	0.89	0.89	0.85	0.85	0.85	0.80	0.80	0.80	0.88	0.88	0.88
Hourly flow rate (vph)	6	37	13	62	135	19	18	39	44	11	67	17
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	56	216	100	95								
Volume Left (vph)	6	62	18	11								
Volume Right (vph)	13	19	44	17								
Hadj (s)	-0.09	0.04	-0.19	-0.05								
Departure Headway (s)	4.5	4.5	4.5	4.6								
Degree Utilization, x	0.07	0.27	0.12	0.12								
Capacity (veh/h)	748	766	752	725								
Control Delay (s)	7.9	9.1	8.1	8.3								
Approach Delay (s)	7.9	9.1	8.1	8.3								
Approach LOS	A	A	A	A								
<b>Intersection Summary</b>												
Delay	8.6											
HCM Level of Service	A											
Intersection Capacity Utilization	33.8%			ICU Level of Service	A							
Analysis Period (min)	15											



Barrio Logan CPU  
27: Harbor Dr & Sampson St

Existing Conditions w LRT  
Timing Plan: AM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔		↔	↔			↔			↔	↔
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0			4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00			1.00	1.00
Frbp, ped/bikes	1.00	0.99		1.00	1.00			0.99			0.99	0.99
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00			1.00	1.00
Frt	1.00	0.98		1.00	1.00			0.96			0.96	0.96
Flt Protected	0.95	1.00		0.95	1.00			0.99			1.00	1.00
Satd. Flow (prot)	1770	3403		1770	3520			1752			1772	1772
Flt Permitted	0.95	1.00		0.95	1.00			0.96			1.00	1.00
Satd. Flow (perm)	1770	3403		1770	3520			1686			1766	1766
Volume (vph)	10	234	28	75	517	12	14	61	38	3	75	32
Peak-hour factor, PHF	0.87	0.87	0.87	0.88	0.88	0.88	0.94	0.94	0.94	0.95	0.95	0.95
Adj. Flow (vph)	11	269	32	85	588	14	15	65	40	3	79	34
RTOR Reduction (vph)	0	7	0	0	1	0	0	16	0	0	12	0
Lane Group Flow (vph)	11	294	0	85	601	0	0	104	0	0	104	0
Confl. Peds. (#/hr)			15			29	7		4	4		7
Confl. Bikes (#/hr)			2			5		6				14
Heavy Vehicles (%)	2%	4%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Prot			Prot			Perm			Perm		
Protected Phases	3 14 2 6			13 18 2 6				12			16 1 5	
Permitted Phases							12			16 1 5		
Actuated Green, G (s)	1.1	33.9		6.3	39.1			12.2			24.6	
Effective Green, g (s)	1.1	33.9		6.3	39.1			12.2			24.6	
Actuated g/C Ratio	0.01	0.38		0.07	0.44			0.14			0.28	
Clearance Time (s)	4.0			4.0				4.0			4.0	
Vehicle Extension (s)	3.0			3.0				3.0			3.0	
Lane Grp Cap (vph)	22	1299		126	1550			232			489	
v/s Ratio Prot	0.01	0.09		c0.05	c0.17							
v/s Ratio Perm								c0.06			c0.06	
v/c Ratio	0.50	0.23		0.67	0.39			0.45			0.21	
Uniform Delay, d1	43.6	18.6		40.2	16.8			35.2			24.7	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.06	
Incremental Delay, d2	16.8	0.1		13.4	0.2			1.4			0.2	
Delay (s)	60.3	18.7		53.6	16.9			36.6			26.3	
Level of Service	E	B		D	B			D			C	
Approach Delay (s)		20.1			21.5			36.6			26.3	
Approach LOS		C			C			D			C	
<b>Intersection Summary</b>												
HCM Average Control Delay		23.1			HCM Level of Service			C				
HCM Volume to Capacity ratio		0.38										
Actuated Cycle Length (s)		88.8			Sum of lost time (s)			20.0				
Intersection Capacity Utilization		43.8%			ICU Level of Service			A				
Analysis Period (min)		15										

Barrio Logan CPU  
28: National Ave & Sicard St

Existing Conditions w LRT  
Timing Plan: AM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔		↔	↔			↔			↔	↔
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	4	79	7	27	155	3	13	25	12	4	18	11
Peak Hour Factor	0.73	0.73	0.73	0.83	0.83	0.83	0.69	0.69	0.69	0.82	0.82	0.82
Hourly flow rate (vph)	5	108	10	33	187	4	19	36	17	5	22	13
Pedestrians		7			11			3			1	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		1			1			0			0	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)		641										
pX, platoon unblocked												
vC, conflicting volume	191			121			412	383	127	420	386	197
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	191			121			412	383	127	420	386	197
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			98			96	93	98	99	96	98
cM capacity (veh/h)	1381			1463			509	534	912	489	532	839
Direction, Lane #	EB 1	EB 2	WB 1	NB 1	SB 1							
Volume Total	5	118	223	72	40							
Volume Left	5	0	33	19	5							
Volume Right	0	10	4	17	13							
cSH	1381	1700	1463	584	599							
Volume to Capacity	0.00	0.07	0.02	0.12	0.07							
Queue Length 95th (ft)	0	0	2	11	5							
Control Delay (s)	7.6	0.0	1.3	12.0	11.4							
Lane LOS	A		A	B	B							
Approach Delay (s)	0.3		1.3	12.0	11.4							
Approach LOS				B	B							
<b>Intersection Summary</b>												
Average Delay				3.6								
Intersection Capacity Utilization				31.0%		ICU Level of Service		A				
Analysis Period (min)				15								

Barrio Logan CPU  
29: National Ave & 26th St

Existing Conditions w LRT  
Timing Plan: AM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔		↔		↔		↔		↔		↔	
Sign Control	Stop			Stop			Stop			Stop		
Volume (vph)	3	66	10	36	191	48	7	18	15	43	8	1
Peak Hour Factor	0.94	0.94	0.94	0.85	0.85	0.85	0.77	0.77	0.77	0.77	0.77	0.77
Hourly flow rate (vph)	3	70	11	42	225	56	9	23	19	56	10	1
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1						
Volume Total (vph)	3	81	42	281	52	68						
Volume Left (vph)	3	0	42	0	9	56						
Volume Right (vph)	0	11	0	56	19	1						
Hadj (s)	0.53	-0.06	0.53	-0.11	-0.16	0.19						
Departure Headway (s)	5.6	5.0	5.4	4.8	4.8	5.1						
Degree Utilization, x	0.00	0.11	0.06	0.37	0.07	0.10						
Capacity (veh/h)	617	685	642	735	692	650						
Control Delay (s)	7.5	7.5	7.6	9.4	8.1	8.6						
Approach Delay (s)	7.5	9.2	8.1	8.6								
Approach LOS	A	A	A	A								
<b>Intersection Summary</b>												
Delay	8.7											
HCM Level of Service	A											
Intersection Capacity Utilization	30.1%		ICU Level of Service		A							
Analysis Period (min)	15											

Barrio Logan CPU  
30: National Ave & I-5 SB Off-ramp

Existing Conditions w LRT  
Timing Plan: AM Peak

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔		↔		↔	
Sign Control	Free		Free		Stop	
Grade	0%		0%		0%	
Volume (veh/h)	110	4	42	224	28	149
Peak Hour Factor	0.92	0.92	0.88	0.88	0.76	0.76
Hourly flow rate (vph)	120	4	48	255	37	196
Pedestrians	1		8			
Lane Width (ft)	12.0		12.0			
Walking Speed (ft/s)	4.0		4.0			
Percent Blockage	0		1			
Right turn flare (veh)						
Median type			None			
Median storage (veh)			670			
Upstream signal (ft)			670			
pX, platoon unblocked						
vC, conflicting volume			132		353 130	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			132		353 130	
tC, single (s)			4.1		6.8 6.9	
tC, 2 stage (s)						
tF (s)			2.2		3.5 3.3	
p0 queue free %			97		94 78	
cM capacity (veh/h)			1441		593 890	
Direction, Lane #	EB 1	WB 1	WB 2	NB 1	NB 2	
Volume Total	124	133	170	37	196	
Volume Left	0	48	0	37	0	
Volume Right	4	0	0	0	196	
cSH	1700	1441	1700	593	890	
Volume to Capacity	0.07	0.03	0.10	0.06	0.22	
Queue Length 95th (ft)	0	3	0	5	21	
Control Delay (s)	0.0	2.9	0.0	11.5	10.2	
Lane LOS	A		B		B	
Approach Delay (s)	0.0	1.3	10.4			
Approach LOS			B			
<b>Intersection Summary</b>						
Average Delay	4.3					
Intersection Capacity Utilization	23.7%		ICU Level of Service		A	
Analysis Period (min)	15					

Barrio Logan CPU  
31: Main St & 26th St

Existing Conditions w LRT  
Timing Plan: AM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↕↕			↕	↕			↕	↕	↕↕		
Sign Control	Stop			Stop	Stop			Stop	Stop	Stop		
Volume (vph)	10	50	7	59	148	26	11	17	39	16	11	13
Peak Hour Factor	0.88	0.88	0.88	0.87	0.87	0.87	0.60	0.60	0.60	0.67	0.67	0.67
Hourly flow rate (vph)	11	57	8	68	170	30	18	28	65	24	16	19
Direction, Lane #	EB 1	WB 1	WB 2	WB 3	NB 1	NB 2	SB 1					
Volume Total (vph)	76	68	170	30	47	65	60					
Volume Left (vph)	11	68	0	0	18	0	24					
Volume Right (vph)	8	0	0	30	0	65	19					
Hadj (s)	0.00	0.94	0.03	-0.67	0.11	0.05	-0.08					
Departure Headway (s)	4.5	5.8	4.9	3.2	4.8	3.2	4.6					
Degree Utilization, x	0.10	0.11	0.23	0.03	0.06	0.06	0.08					
Capacity (veh/h)	766	605	721	1121	696	1121	727					
Control Delay (s)	8.0	8.3	8.1	5.1	8.2	6.4	8.0					
Approach Delay (s)	8.0	7.8			7.1	8.0						
Approach LOS	A	A			A	A						
<b>Intersection Summary</b>												
Delay	7.7											
HCM Level of Service	A											
Intersection Capacity Utilization	28.3%		ICU Level of Service		A							
Analysis Period (min)	15											

Barrio Logan CPU  
32: Harbor Dr & Schley St

Existing Conditions w LRT  
Timing Plan: AM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR		
Lane Configurations	↕	↕↕		↕	↕↕			↕	↕	↕↕				
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900		
Total Lost time (s)	4.0	4.0												
Lane Util. Factor	1.00	0.95	0.95		1.00									
Flpb, ped/bikes	1.00	1.00	1.00		0.98									
Flpb, ped/bikes	1.00	1.00	1.00		1.00									
Frt	1.00	1.00	1.00		0.90									
Flt Protected	0.95	1.00	1.00		0.99									
Satd. Flow (prot)	1543	3539	3522		1510									
Flt Permitted	0.95	1.00	1.00		0.99									
Satd. Flow (perm)	1543	3539	3522		1510									
Volume (vph)	58	200	0	0	531	17	0	0	0	12	12	70		
Peak-hour factor, PHF	0.92	0.92	0.92	0.91	0.91	0.91	0.25	0.25	0.25	0.78	0.78	0.78		
Adj. Flow (vph)	63	217	0	0	584	19	0	0	0	15	15	90		
RTOR Reduction (vph)	0	0	0	0	2	0	0	0	0	0	69	0		
Lane Group Flow (vph)	63	217	0	0	601	0	0	0	0	0	51	0		
Confl. Peds. (#/hr)	8		8		2							2		
Confl. Bikes (#/hr)	5		11											
Heavy Vehicles (%)	17%	2%	2%	2%	2%	2%	2%	2%	2%	2%	4%	13%		
Turn Type	Prot		Perm											
Protected Phases	13	18	2	6	14		2	6	11				1	5
Permitted Phases	11		1										5	
Actuated Green, G (s)	5.5	45.4	31.9		18.9									
Effective Green, g (s)	5.5	45.4	31.9		18.9									
Actuated g/C Ratio	0.07	0.57	0.40		0.24									
Clearance Time (s)	4.0													
Vehicle Extension (s)	3.0													
Lane Grp Cap (vph)	106	2001	1399		355									
v/s Ratio Prot	c0.04	0.06	c0.17											
v/s Ratio Perm	0.03													
v/c Ratio	0.59	0.11	0.43		0.14									
Uniform Delay, d1	36.3	8.1	17.6		24.3									
Progression Factor	1.00	1.00	1.00		1.49									
Incremental Delay, d2	8.6	0.0	0.2		0.2									
Delay (s)	45.0	8.1	17.8		36.5									
Level of Service	D	A	B		D									
Approach Delay (s)	16.4		17.8		0.0		36.5							
Approach LOS	B		B		A		D							
<b>Intersection Summary</b>														
HCM Average Control Delay	19.6		HCM Level of Service		B									
HCM Volume to Capacity ratio	0.35													
Actuated Cycle Length (s)	80.3		Sum of lost time (s)		24.0									
Intersection Capacity Utilization	40.8%		ICU Level of Service		A									
Analysis Period (min)	15													

c Critical Lane Group

Barrio Logan CPU  
33: National Ave & 28th St

Existing Conditions w LRT  
Timing Plan: AM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Flt	1.00	1.00	0.85	1.00	0.98	1.00	1.00	0.85	0.92	1.00	1.00	1.00
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.99	1.00	1.00	1.00	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1299	1834	1834	1751	1509	1625	1625	1625	1625
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.77	1.00	0.97	0.97	0.97	0.97
Satd. Flow (perm)	1770	3539	1583	1299	1834	1834	1365	1509	1588	1588	1588	1588
Volume (vph)	106	184	18	71	422	49	33	83	25	34	166	307
Peak-hour factor, PHF	0.80	0.80	0.80	0.77	0.77	0.77	0.84	0.84	0.84	0.92	0.92	0.92
Adj. Flow (vph)	132	230	22	92	548	64	39	99	30	37	180	334
RTOR Reduction (vph)	0	0	13	0	3	0	0	0	19	0	38	0
Lane Group Flow (vph)	132	230	9	92	609	0	0	138	11	0	513	0
Heavy Vehicles (%)	2%	2%	2%	39%	2%	2%	7%	7%	7%	7%	7%	7%
Turn Type	Prot	Perm	Prot	Perm	Perm	Perm	Perm	Perm	Perm	Perm	Perm	Perm
Protected Phases	7	4		3	8			2				6
Permitted Phases			4				2		2	6		
Actuated Green, G (s)	9.7	38.7	38.7	10.1	39.1			37.4	37.4			37.4
Effective Green, g (s)	9.7	38.7	38.7	10.1	39.1			37.4	37.4			37.4
Actuated g/C Ratio	0.10	0.39	0.39	0.10	0.40			0.38	0.38			0.38
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0			4.0	4.0			4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0			3.0	3.0			3.0
Lane Grp Cap (vph)	175	1395	624	134	730			520	575			605
v/s Ratio Prot	c0.07	0.06		0.07	c0.33							
v/s Ratio Perm			0.01					0.10	0.01			c0.32
v/c Ratio	0.75	0.16	0.01	0.69	0.83			0.27	0.02			0.85
Uniform Delay, d1	43.1	19.3	18.1	42.5	26.6			20.9	19.0			27.8
Progression Factor	1.00	1.00	1.00	1.00	1.00			1.00	1.00			1.00
Incremental Delay, d2	16.7	0.1	0.0	13.6	8.1			0.3	0.0			10.6
Delay (s)	59.8	19.3	18.1	56.2	34.8			21.2	19.0			38.4
Level of Service	E	B	B	E	C			C	B			D
Approach Delay (s)		33.2			37.6			20.8				38.4
Approach LOS		C			D			C				D
<b>Intersection Summary</b>												
HCM Average Control Delay	35.3			HCM Level of Service				D				
HCM Volume to Capacity ratio	0.79											
Actuated Cycle Length (s)	98.2			Sum of lost time (s)				8.0				
Intersection Capacity Utilization	77.2%			ICU Level of Service				D				
Analysis Period (min)	15											
c Critical Lane Group												

Barrio Logan CPU  
34: Boston Ave & 28th St

Existing Conditions w LRT  
Timing Plan: AM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
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
Flt	1.00	0.97	1.00	0.88	1.00	1.00	0.85	0.85	1.00	0.99	0.99	1.00
Flt Protected	0.95	1.00	0.95	1.00	0.95	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1687	1731	1687	1565	1770	3471	1583	1770	3482	1770	3482	3482
Flt Permitted	0.71	1.00	0.71	1.00	0.95	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1268	1731	1268	1565	1770	3471	1583	1770	3482	1770	3482	3482
Volume (vph)	22	50	10	8	17	64	9	377	90	122	623	31
Peak-hour factor, PHF	0.78	0.78	0.78	0.76	0.76	0.76	0.89	0.89	0.89	0.88	0.88	0.88
Adj. Flow (vph)	28	64	13	11	22	84	10	424	101	139	708	35
RTOR Reduction (vph)	0	12	0	0	76	0	0	0	41	0	3	0
Lane Group Flow (vph)	28	65	0	11	30	0	10	424	60	139	740	0
Heavy Vehicles (%)	7%	7%	7%	7%	7%	7%	2%	4%	2%	2%	3%	2%
Turn Type	Perm	Perm	Perm	Perm	Prot	Perm	Prot	Perm	Prot	Perm	Prot	Perm
Protected Phases		4			8		5	2		1		6
Permitted Phases	4			8			2					
Actuated Green, G (s)	5.6	5.6		5.6	5.6		0.9	34.9	34.9	6.4	40.4	40.4
Effective Green, g (s)	5.6	5.6		5.6	5.6		0.9	34.9	34.9	6.4	40.4	40.4
Actuated g/C Ratio	0.10	0.10		0.10	0.10		0.02	0.59	0.59	0.11	0.69	0.69
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	121	165		121	149		27	2057	938	192	2388	
v/s Ratio Prot		c0.04			0.02		0.01	0.12		c0.08	c0.21	
v/s Ratio Perm	0.02			0.01					0.04			
v/c Ratio	0.23	0.40		0.09	0.20		0.37	0.21	0.06	0.72	0.31	
Uniform Delay, d1	24.7	25.1		24.3	24.6		28.7	5.6	5.1	25.4	3.7	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.0	1.6		0.3	0.7		8.4	0.2	0.1	12.7	0.3	
Delay (s)	25.6	26.6		24.7	25.3		37.1	5.8	5.2	38.1	4.0	
Level of Service	C	C		C	C		D	A	A	D	A	
Approach Delay (s)		26.4			25.2			6.3			9.4	
Approach LOS		C			C			A			A	
<b>Intersection Summary</b>												
HCM Average Control Delay	10.6			HCM Level of Service				B				
HCM Volume to Capacity ratio	0.36											
Actuated Cycle Length (s)	58.9			Sum of lost time (s)				8.0				
Intersection Capacity Utilization	39.4%			ICU Level of Service				A				
Analysis Period (min)	15											
c Critical Lane Group												



Barrio Logan CPU

Existing Conditions w LRT

37: Boston Ave & I-5 SB On-ramp

Timing Plan: AM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR												
Lane Configurations	↕			↕			↕																	
Sign Control	Free			Free			Stop			Stop														
Grade	0%			0%			0%			0%														
Volume (veh/h)	224	40	7	6	57	40	4	20	5	0	0	0												
Peak Hour Factor	0.92	0.92	0.92	0.89	0.89	0.89	0.78	0.78	0.78	0.25	0.25	0.25												
Hourly flow rate (vph)	243	43	8	7	64	45	5	26	6	0	0	0												
Pedestrians																								
Lane Width (ft)																								
Walking Speed (ft/s)																								
Percent Blockage																								
Right turn flare (veh)																								
Median type	None						None																	
Median storage (veh)																								
Upstream signal (ft)	657																							
pX, platoon unblocked																								
vC, conflicting volume	109				51				634	657	47	653	638	87										
vC1, stage 1 conf vol																								
vC2, stage 2 conf vol																								
vCu, unblocked vol	109				51				634	657	47	653	638	87										
tC, single (s)	4.2			4.2			7.1			6.9			6.2			7.1			6.5			6.2		
tC, 2 stage (s)																								
tF (s)	2.3			2.3			3.5			4.4			3.3			3.5			4.0			3.3		
p0 queue free %	83			100			98			91			99			100			100			100		
cM capacity (veh/h)	1451			1524			340			282			1022			306			327			972		
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>WB 1</b>	<b>NB 1</b>																					
Volume Total	295	116	37																					
Volume Left	243	7	5																					
Volume Right	8	45	6																					
cSH	1451	1524	331																					
Volume to Capacity	0.17	0.00	0.11																					
Queue Length 95th (ft)	15	0	9																					
Control Delay (s)	6.8	0.5	17.3																					
Lane LOS	A	A	C																					
Approach Delay (s)	6.8	0.5	17.3																					
Approach LOS	C																							
<b>Intersection Summary</b>																								
Average Delay	6.1																							
Intersection Capacity Utilization	31.6%			ICU Level of Service			A																	
Analysis Period (min)	15																							

Barrio Logan CPU

Existing Conditions w LRT

38: Main St & 32nd St

Timing Plan: AM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↕	↕	↕	↕	↕	↕	↕	↕	↕	↕	↕	↕
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frbp, ped/bikes	1.00	0.99	1.00	0.99	1.00	0.99	1.00	1.00	0.98	1.00	1.00	1.00
Flpb, ped/bikes	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	1.00	0.91	1.00	0.97	1.00	0.97	1.00	1.00	0.85	1.00	0.98	1.00
Flt Protected	0.95	1.00	0.95	1.00	0.95	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1703	3067	1703	3289	1703	3289	1770	1863	1557	1770	1821	1821
Flt Permitted	0.95	1.00	0.95	1.00	0.95	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1703	3067	1703	3289	1703	3289	1770	1863	1557	1770	1821	1821
Volume (vph)	9	103	158	314	317	74	110	50	26	39	83	12
Peak-hour factor, PHF	0.88	0.88	0.88	0.91	0.91	0.91	0.89	0.89	0.89	0.84	0.84	0.84
Adj. Flow (vph)	10	117	180	345	348	81	124	56	29	46	99	14
RTOR Reduction (vph)	0	152	0	0	22	0	0	0	22	0	6	0
Lane Group Flow (vph)	10	145	0	345	407	0	124	56	7	46	107	0
Confl. Peds. (#/hr)			1		6		4		4		16	
Confl. Bikes (#/hr)			2		4		2		2		5	
Heavy Vehicles (%)	6%	6%	6%	6%	6%	6%	2%	2%	2%	2%	2%	2%
Turn Type	Prot			Prot			Prot			Perm		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	2											
Actuated Green, G (s)	0.5	9.5		17.6	26.6		5.8	14.7	14.7	3.0	11.9	
Effective Green, g (s)	0.5	9.5		17.6	26.6		5.8	14.7	14.7	3.0	11.9	
Actuated g/C Ratio	0.01	0.16		0.29	0.44		0.10	0.24	0.24	0.05	0.20	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	14	479		493	1439		169	450	376	87	356	
v/s Ratio Prot	0.01	0.05		c0.20	c0.12		c0.07	c0.03		0.03	c0.06	
v/s Ratio Perm	0.00											
v/c Ratio	0.71	0.30		0.70	0.28		0.73	0.12	0.02	0.53	0.30	
Uniform Delay, d1	30.1	22.7		19.2	11.0		26.7	18.0	17.6	28.2	20.9	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	100.1	0.4		4.3	0.1		15.2	0.1	0.0	5.7	0.5	
Delay (s)	130.2	23.1		23.6	11.1		41.9	18.1	17.6	33.9	21.4	
Level of Service	F	C		C	B		D	B	B	C	C	
Approach Delay (s)	26.6			16.6			32.2			25.0		
Approach LOS	C			B			C			C		
<b>Intersection Summary</b>												
HCM Average Control Delay	21.9			HCM Level of Service			C					
HCM Volume to Capacity ratio	0.50											
Actuated Cycle Length (s)	60.8			Sum of lost time (s)			16.0					
Intersection Capacity Utilization	49.2%			ICU Level of Service			A					
Analysis Period (min)	15											

c Critical Lane Group

Barrio Logan CPU  
39: 32nd St & Wabash St

Existing Conditions w LRT  
Timing Plan: AM Peak

Movement	EBL2	EBL	EBT	EBR	WBL	WBT	WBR	WBR2	NBL	NBT	NBR	NBR2
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00			1.00	1.00	1.00	1.00	1.00	0.88		
Flt	1.00	0.93			1.00	0.85	1.00	1.00	0.85			
Flt Protected	0.95	1.00			0.96	1.00	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1755	1735			1782	1579	1719	1810	2707			
Flt Permitted	0.58	1.00			0.70	1.00	0.95	1.00	1.00	1.00		
Satd. Flow (perm)	1076	1735			1308	1579	1719	1810	2707			
Volume (vph)	36	26	29	24	112	11	244	47	78	164	156	216
Peak-hour factor, PHF	0.92	0.90	0.90	0.90	0.78	0.78	0.78	0.92	0.73	0.73	0.73	0.92
Adj. Flow (vph)	39	29	32	27	144	14	313	51	107	225	214	235
RTOR Reduction (vph)	0	0	20	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	68	39	0	0	158	364	0	107	225	449	0
Heavy Vehicles (%)	2%	4%	2%	2%	2%	2%	2%	4%	5%	5%	5%	5%
Turn Type	Perm	Perm			Perm	Perm		Prot	custom			
Protected Phases			4			4		5	2			
Permitted Phases	4	4			4	4				2	3	
Actuated Green, G (s)	27.8	27.8			27.8	27.8		11.7	18.9	43.1		
Effective Green, g (s)	27.8	27.8			27.8	27.8		11.7	18.9	43.1		
Actuated g/C Ratio	0.27	0.27			0.27	0.27		0.11	0.19	0.42		
Clearance Time (s)	4.0	4.0			4.0	4.0		4.0	4.0			
Vehicle Extension (s)	3.0	3.0			3.0	3.0		3.0	3.0			
Lane Grp Cap (vph)	293	473			356	430		197	335	1144		
v/s Ratio Prot		0.02						0.06	0.12			
v/s Ratio Perm	0.06				0.12	0.23				0.17		
v/c Ratio	0.23	0.08			0.44	0.85		0.54	0.67	0.39		
Uniform Delay, d1	28.8	27.6			30.7	35.1		42.6	38.7	20.4		
Progression Factor	1.00	1.00			1.00	1.00		1.00	1.00	1.00		
Incremental Delay, d2	0.4	0.1			0.9	14.2		3.0	5.2	0.2		
Delay (s)	29.2	27.7			31.6	49.3		45.7	43.9	20.6		
Level of Service	C	C			C	D		D	D	C		
Approach Delay (s)		28.5				44.0			30.7			
Approach LOS		C				D			C			
<b>Intersection Summary</b>												
HCM Average Control Delay		38.5			HCM Level of Service				D			
HCM Volume to Capacity ratio		0.78										
Actuated Cycle Length (s)		102.0			Sum of lost time (s)				16.0			
Intersection Capacity Utilization		60.9%			ICU Level of Service				B			
Analysis Period (min)		15										
c Critical Lane Group												

Barrio Logan CPU  
39: 32nd St & Wabash St

Existing Conditions w LRT  
Timing Plan: AM Peak

Movement	SBL2	SBL	SBT	SBR	SWL2	SWL	SWR	SWR2
Lane Configurations								
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0		
Lane Util. Factor	1.00	0.95			0.97			
Flt	1.00	0.99			0.99			
Flt Protected	0.95	1.00			0.95			
Satd. Flow (prot)	1765	3410			3357			
Flt Permitted	0.95	1.00			0.94			
Satd. Flow (perm)	1765	3410			3292			
Volume (vph)	30	191	161	12	12	424	23	2
Peak-hour factor, PHF	0.92	0.83	0.83	0.83	0.92	0.92	0.92	0.92
Adj. Flow (vph)	33	230	194	14	13	461	25	2
RTOR Reduction (vph)	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	263	208	0	0	501	0	0
Heavy Vehicles (%)	4%	2%	5%	2%	4%	4%	4%	4%
Turn Type	Prot	Prot			Perm			
Protected Phases	1	1	6			3		
Permitted Phases					3			
Actuated Green, G (s)		19.1	26.3			20.2		
Effective Green, g (s)		19.1	26.3			20.2		
Actuated g/C Ratio		0.19	0.26			0.20		
Clearance Time (s)		4.0	4.0			4.0		
Vehicle Extension (s)		3.0	3.0			3.0		
Lane Grp Cap (vph)		331	879			652		
v/s Ratio Prot		0.15	0.06					
v/s Ratio Perm						0.15		
v/c Ratio		0.79	0.24			0.77		
Uniform Delay, d1		39.6	29.9			38.7		
Progression Factor		1.00	1.00			1.00		
Incremental Delay, d2		12.4	0.1			5.4		
Delay (s)		51.9	30.1			44.1		
Level of Service		D	C			D		
Approach Delay (s)			42.3			44.1		
Approach LOS			D			D		
<b>Intersection Summary</b>								

Barrio Logan CPU  
40: Harbor Dr & 32nd St

Existing Conditions w LRT  
Timing Plan: AM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	↔	↔↔	↔	↔	↔↔	↔	↔	↔↔	↔	↔	↔↔	↔	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Frbp, ped/bikes	1.00	1.00	0.99	1.00	1.00	1.00	1.00	1.00	0.96	1.00	1.00	1.00	
Flpb, ped/bikes	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	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1719	3438	1518	1687	3374	1509	1719	3438	1483	1719	3438	1538	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	
Satd. Flow (perm)	1719	3438	1518	1687	3374	1509	1719	3438	1483	1719	3438	1538	
Volume (vph)	94	141	99	207	316	276	20	105	19	89	739	136	
Peak-hour factor, PHF	0.79	0.79	0.79	0.86	0.86	0.86	0.88	0.88	0.88	0.81	0.81	0.81	
Adj. Flow (vph)	119	178	125	241	367	321	23	119	22	110	912	168	
RTOR Reduction (vph)	0	0	115	0	0	275	0	0	19	0	0	104	
Lane Group Flow (vph)	119	178	10	241	367	46	23	119	3	110	912	64	
Confl. Bikes (#/hr)			3						16				
Heavy Vehicles (%)	5%	5%	5%	7%	7%	7%	5%	5%	5%	5%	5%	5%	
Turn Type	Prot	custom		Prot	custom		Prot	Perm	Prot	custom			
Protected Phases	3	14	2	6	15	13	18	2	6	15	16	1	5
Permitted Phases				14			18			12		16	
Actuated Green, G (s)	8.3	8.5	6.6	15.5	15.7	11.5	2.3	12.2	12.2	12.9	26.8	31.1	
Effective Green, g (s)	8.3	8.5	6.6	15.5	15.7	11.5	2.3	12.2	12.2	12.9	26.8	31.1	
Actuated g/C Ratio	0.10	0.10	0.08	0.19	0.19	0.14	0.03	0.15	0.15	0.16	0.33	0.38	
Clearance Time (s)	4.0		4.0	4.0		4.0	4.0	4.0	4.0				
Vehicle Extension (s)	3.0		3.0	3.0		3.0	3.0	3.0	3.0				
Lane Grp Cap (vph)	176	360	124	322	653	214	49	517	223	273	1136	666	
v/s Ratio Prot	0.07	0.05	0.00	c0.14	c0.11		0.01	0.03		c0.06	c0.27	0.02	
v/s Ratio Perm			0.00			0.03			0.00			0.02	
v/c Ratio	0.68	0.49	0.08	0.75	0.56	0.21	0.47	0.23	0.01	0.40	0.80	0.10	
Uniform Delay, d1	35.1	34.3	34.4	31.0	29.6	30.8	38.8	30.3	29.3	30.6	24.7	16.0	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.11	0.85	2.48	
Incremental Delay, d2	9.8	1.1	0.3	9.2	1.1	0.5	6.9	0.2	0.0	0.9	4.0	0.1	
Delay (s)	44.9	35.3	34.7	40.1	30.7	31.3	45.7	30.5	29.4	34.9	25.1	39.7	
Level of Service	D	D	C	D	C	C	D	C	C	C	C	D	
Approach Delay (s)		37.9			33.4			32.5			28.1		
Approach LOS		D			C			C			C		
<b>Intersection Summary</b>													
HCM Average Control Delay	31.7			HCM Level of Service			C						
HCM Volume to Capacity ratio	0.67												
Actuated Cycle Length (s)	81.1			Sum of lost time (s)			20.0						
Intersection Capacity Utilization	48.0%			ICU Level of Service			A						
Analysis Period (min)	15												
c Critical Lane Group													

Barrio Logan CPU  
41: Main St & I-15 Ramps

Existing Conditions w LRT  
Timing Plan: AM Peak

Movement	EBL	EBT	WBT	WBR	SBL	SBR	
Lane Configurations	↔	↔↔	↔↔	↔	↔	↔	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00		
Frbp, ped/bikes	1.00	1.00	1.00	1.00	0.99		
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	1.00	0.85	0.90		
Flt Protected	0.95	1.00	1.00	1.00	0.99		
Satd. Flow (prot)	1770	3539	3539	1583	1643		
Flt Permitted	0.95	1.00	1.00	1.00	0.99		
Satd. Flow (perm)	1770	3539	3539	1583	1643		
Volume (vph)	36	139	390	107	108	268	
Peak-hour factor, PHF	0.86	0.86	0.93	0.93	0.82	0.82	
Adj. Flow (vph)	42	162	419	115	132	327	
RTOR Reduction (vph)	0	0	0	83	141	0	
Lane Group Flow (vph)	42	162	419	32	318	0	
Confl. Peds. (#/hr)					2	2	
Confl. Bikes (#/hr)						2	
Turn Type	Prot			Perm			
Protected Phases	5	2	6		4		
Permitted Phases				6			
Actuated Green, G (s)	1.9	16.4	10.5	10.5	13.4		
Effective Green, g (s)	1.9	16.4	10.5	10.5	13.4		
Actuated g/C Ratio	0.05	0.43	0.28	0.28	0.35		
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		
Lane Grp Cap (vph)	89	1535	983	440	582		
v/s Ratio Prot	c0.02	0.05	c0.12		c0.19		
v/s Ratio Perm				0.02			
v/c Ratio	0.47	0.11	0.43	0.07	0.55		
Uniform Delay, d1	17.5	6.3	11.2	10.1	9.8		
Progression Factor	1.00	1.00	1.00	1.00	1.00		
Incremental Delay, d2	3.9	0.0	0.3	0.1	1.1		
Delay (s)	21.4	6.4	11.5	10.1	10.8		
Level of Service	C	A	B	B	B		
Approach Delay (s)		9.5		11.2		10.8	
Approach LOS		A		B		B	
<b>Intersection Summary</b>							
HCM Average Control Delay	10.8			HCM Level of Service			B
HCM Volume to Capacity ratio	0.49						
Actuated Cycle Length (s)	37.8			Sum of lost time (s)			12.0
Intersection Capacity Utilization	46.8%			ICU Level of Service			A
Analysis Period (min)	15						
c Critical Lane Group							



Barrio Logan CPU  
1: Commercial St & 16th St

Existing Conditions w LRT  
Timing Plan: PM Peak

Movement	EBL2	EBT	EBR	WBT	WBR	NBL	NBT	NBR2	SBL	SBT	SBR	SWR
Lane Configurations	↕↕		↕↕		↕↕		↕↕		↕↕		↕↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0		4.0		4.0		4.0		4.0	
Lane Util. Factor	1.00		1.00		0.95		0.95		1.00		1.00	
Flpb, ped/bikes	1.00		1.00		0.99		0.98		1.00		1.00	
Flpb, ped/bikes	1.00		1.00		0.99		1.00		1.00		1.00	
Frt	0.99		0.98		0.97		0.93		0.86		0.86	
Flt Protected	1.00		1.00		0.98		0.99		1.00		1.00	
Satd. Flow (prot)	1832		1830		3318		3193		1611		1611	
Flt Permitted	0.96		1.00		0.91		0.94		1.00		1.00	
Satd. Flow (perm)	1762		1830		3056		3013		1611		1611	
Volume (vph)	18	131	11	192	24	14	21	12	6	16	19	20
Peak-hour factor, PHF	0.92	0.69	0.69	0.87	0.87	0.78	0.78	0.92	0.73	0.73	0.73	0.92
Adj. Flow (vph)	20	190	16	221	28	18	27	13	8	22	26	22
RTOR Reduction (vph)	0	5	0	0	0	0	6	0	0	12	0	0
Lane Group Flow (vph)	0	221	0	249	0	0	52	0	0	44	0	22
Confl. Peds. (#/hr)	11		9		11	28		7	7		28	
Confl. Bikes (#/hr)			1		2			3				
Turn Type	Perm		Perm		Perm		Perm		custom		custom	
Protected Phases	4		8		2		6		9		9	
Permitted Phases	4		2		6		6		9		9	
Actuated Green, G (s)	12.8		12.8		30.5		30.5		0.8		0.8	
Effective Green, g (s)	12.8		12.8		30.5		30.5		0.8		0.8	
Actuated g/C Ratio	0.23		0.23		0.54		0.54		0.01		0.01	
Clearance Time (s)	4.0		4.0		4.0		4.0		4.0		4.0	
Vehicle Extension (s)	3.0		3.0		3.0		3.0		3.0		3.0	
Lane Grp Cap (vph)	402		418		1661		1638		23		23	
v/s Ratio Prot	0.13		c0.14		c0.02		0.01		c0.01		c0.01	
v/c Ratio	0.55		0.60		0.03		0.03		0.96		0.96	
Uniform Delay, d1	19.1		19.3		5.9		5.9		27.6		27.6	
Progression Factor	1.00		1.00		1.00		1.00		1.00		1.00	
Incremental Delay, d2	1.6		2.3		0.0		0.0		166.5		166.5	
Delay (s)	20.7		21.6		6.0		6.0		194.2		194.2	
Level of Service	C		C		A		A		F		F	
Approach Delay (s)	20.7		21.6		6.0		6.0					
Approach LOS	C		C		A		A					
<b>Intersection Summary</b>												
HCM Average Control Delay	24.6		HCM Level of Service		C		C					
HCM Volume to Capacity ratio	0.21											
Actuated Cycle Length (s)	56.1		Sum of lost time (s)		12.0		12.0					
Intersection Capacity Utilization	58.7%		ICU Level of Service		B		B					
Analysis Period (min)	15											
c Critical Lane Group												

Barrio Logan CPU  
2: National Ave & 16th St

Existing Conditions w LRT  
Timing Plan: PM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↕↕		↕↕		↕↕		↕↕		↕↕		↕↕	
Sign Control	Free		Free		Free		Stop		Stop		Stop	
Grade	0%		0%		0%		0%		0%		0%	
Volume (veh/h)	8	74	8	3	90	25	15	41	7	16	25	7
Peak Hour Factor	0.86	0.86	0.86	0.76	0.76	0.76	0.69	0.69	0.69	0.67	0.67	0.67
Hourly flow rate (vph)	9	86	9	4	118	33	22	59	10	24	37	10
Pedestrians	14		10		37		27		27		27	
Lane Width (ft)	12.0		12.0		12.0		12.0		12.0		12.0	
Walking Speed (ft/s)	4.0		4.0		4.0		4.0		4.0		4.0	
Percent Blockage	1		1		3		2		2		2	
Right turn flare (veh)												
Median type			None		None		None		None		None	
Median storage veh			668		668		668		668		668	
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	178			132			316	333	95	281	321	176
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	178			132			316	333	95	281	321	176
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			100			96	89	99	96	93	99
cM capacity (veh/h)	1364			1406			525	550	907	544	558	809
<b>Direction, Lane #</b>												
EB 1	EB 2	WB 1	WB 2	NB 1	SB 1							
Volume Total	52	52	4	151	91	72						
Volume Left	9	0	4	0	22	24						
Volume Right	0	9	0	33	10	10						
cSH	1364	1700	1406	1700	568	579						
Volume to Capacity	0.01	0.03	0.00	0.09	0.16	0.12						
Queue Length 95th (ft)	1	0	0	0	14	11						
Control Delay (s)	1.4	0.0	7.6	0.0	12.5	12.1						
Lane LOS	A		A		B	B						
Approach Delay (s)	0.7		0.2		12.5	12.1						
Approach LOS					B	B						
<b>Intersection Summary</b>												
Average Delay	5.0											
Intersection Capacity Utilization	25.8%		ICU Level of Service		A		A					
Analysis Period (min)	15											

Barrio Logan CPU  
3: National Ave & Sigsbee St

Existing Conditions w LRT  
Timing Plan: PM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔		↔		↔		↔		↔		↔	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frbp, ped/bikes	1.00	0.99		1.00	0.99		1.00	0.99		1.00	0.99	
Flpb, ped/bikes	0.98	1.00		0.99	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.96		1.00	0.97		0.98	0.97		0.98	0.97	
Flt Protected	0.95	1.00		0.95	1.00		0.98	0.98		1.00	1.00	
Satd. Flow (prot)	1738	1758		1748	1802		1789	1785		1785	1785	
Flt Permitted	0.70	1.00		0.65	1.00		0.93	0.99		0.99	0.99	
Satd. Flow (perm)	1281	1758		1201	1802		1685	1768		1768	1768	
Volume (vph)	5	73	31	7	54	11	34	55	13	3	23	8
Peak-hour factor, PHF	0.63	0.63	0.63	0.75	0.75	0.75	0.85	0.85	0.85	0.77	0.77	0.77
Adj. Flow (vph)	8	116	49	9	72	15	40	65	15	4	30	10
RTOR Reduction (vph)	0	30	0	0	12	0	0	6	0	0	4	0
Lane Group Flow (vph)	8	135	0	9	75	0	0	114	0	0	40	0
Confl. Peds. (#/hr)	21		16	16		21	28		9	9		28
Confl. Bikes (#/hr)			4					3				6
Turn Type	Perm		Perm		Perm		Perm		Perm		Perm	
Protected Phases	4		8		8		2		6		6	
Permitted Phases	4		8		8		2		6		6	
Actuated Green, G (s)	8.2	8.2		8.2	8.2		22.5	22.5		6	22.5	22.5
Effective Green, g (s)	8.2	8.2		8.2	8.2		22.5	22.5		6	22.5	22.5
Actuated g/C Ratio	0.21	0.21		0.21	0.21		0.58	0.58		6	0.58	0.58
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		6	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		6	3.0	3.0
Lane Grp Cap (vph)	271	372		254	382		980	1028		6	1028	1028
v/s Ratio Prot	c0.08		0.04		0.04		0.07		0.07		0.02	
v/s Ratio Perm	0.01		0.01		0.01		c0.07		0.07		0.02	
v/c Ratio	0.03	0.36		0.04	0.20		0.12	0.12		0.07	0.04	0.04
Uniform Delay, d1	12.1	13.0		12.1	12.5		3.6	3.6		6	3.5	3.5
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		6	1.00	1.00
Incremental Delay, d2	0.0	0.6		0.1	0.3		0.1	0.1		6	0.0	0.0
Delay (s)	12.1	13.6		12.2	12.8		3.7	3.7		6	3.5	3.5
Level of Service	B	B		B	B		A	A		6	A	A
Approach Delay (s)	13.6		12.7		12.7		3.7		3.7		3.5	
Approach LOS	B		B		B		A		A		A	

Intersection Summary			
HCM Average Control Delay	9.6	HCM Level of Service	A
HCM Volume to Capacity ratio	0.18		
Actuated Cycle Length (s)	38.7	Sum of lost time (s)	8.0
Intersection Capacity Utilization	32.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Barrio Logan CPU  
4: Newton Ave & Sigsbee St

Existing Conditions w LRT  
Timing Plan: PM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔		↔		↔		↔		↔		↔	
Sign Control	Stop		Stop		Stop		Stop		Stop		Stop	
Volume (vph)	8	22	17	1	23	8	11	58	2	6	25	7
Peak Hour Factor	0.73	0.73	0.73	0.73	0.73	0.73	0.81	0.81	0.81	0.56	0.56	0.56
Hourly flow rate (vph)	11	30	23	1	32	11	14	72	2	11	45	12
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	64	44	88	68								
Volume Left (vph)	11	1	14	11								
Volume Right (vph)	23	11	2	13								
Hadj (s)	-0.15	-0.11	0.05	-0.04								
Departure Headway (s)	4.1	4.2	4.3	4.2								
Degree Utilization, x	0.07	0.05	0.10	0.08								
Capacity (veh/h)	832	819	815	833								
Control Delay (s)	7.5	7.4	7.7	7.5								
Approach Delay (s)	7.5	7.4	7.7	7.5								
Approach LOS	A	A	A	A								
Intersection Summary												
Delay	7.6											
HCM Level of Service	A											
Intersection Capacity Utilization	20.7%			ICU Level of Service			A					
Analysis Period (min)	15											

Barrio Logan CPU  
5: Main St & Sigsbee St

Existing Conditions w LRT  
Timing Plan: PM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↕		↕		↕		↕		↕		↕	
Sign Control	Stop		Stop		Stop		Stop		Stop		Stop	
Volume (vph)	4	1	3	10	0	31	0	39	1	20	27	1
Peak Hour Factor	0.50	0.50	0.50	0.79	0.79	0.79	0.62	0.62	0.62	0.67	0.67	0.67
Hourly flow rate (vph)	8	2	6	13	0	39	0	63	2	30	40	1
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>WB 1</b>	<b>NB 1</b>	<b>SB 1</b>								
Volume Total (vph)	16	52	65	72								
Volume Left (vph)	8	13	0	30								
Volume Right (vph)	6	39	2	1								
Hadj (s)	-0.09	-0.37	0.02	0.10								
Departure Headway (s)	4.2	3.8	4.1	4.2								
Degree Utilization, x	0.02	0.06	0.07	0.08								
Capacity (veh/h)	830	901	845	836								
Control Delay (s)	7.2	7.1	7.5	7.6								
Approach Delay (s)	7.2	7.1	7.5	7.6								
Approach LOS	A	A	A	A								
<b>Intersection Summary</b>												
Delay	7.4											
HCM Level of Service	A											
Intersection Capacity Utilization	21.1%			ICU Level of Service	A							
Analysis Period (min)	15											

Barrio Logan CPU  
6: Harbor Dr & Sigsbee St

Existing Conditions w LRT  
Timing Plan: PM Peak

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↕	↕	↕	↕	↕	↕
Sign Control	Free	Free	Free	Free	Stop	Stop
Grade	0%	0%	0%	0%	0%	0%
Volume (veh/h)	82	1163	314	13	23	18
Peak Hour Factor	0.96	0.96	0.92	0.92	0.76	0.76
Hourly flow rate (vph)	85	1211	341	14	30	24
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	Raised					
Median storage (veh)	0					
Upstream signal (ft)	1319					
pX, platoon unblocked						
vC, conflicting volume	355			1125	178	
vC1, stage 1 conf vol	348					
vC2, stage 2 conf vol	777					
vCu, unblocked vol	355			1125	178	
tC, single (s)	4.1			6.8	6.9	
tC, 2 stage (s)	5.8					
tF (s)	2.2			3.5	3.3	
p0 queue free %	93			86	97	
cM capacity (veh/h)	1200			223	835	
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>EB 2</b>	<b>EB 3</b>	<b>WB 1</b>	<b>WB 2</b>	<b>SB 1</b>
Volume Total	85	606	606	228	128	54
Volume Left	85	0	0	0	0	30
Volume Right	0	0	0	0	14	24
cSH	1200	1700	1700	1700	1700	329
Volume to Capacity	0.07	0.36	0.36	0.13	0.08	0.16
Queue Length 95th (ft)	6	0	0	0	0	14
Control Delay (s)	8.2	0.0	0.0	0.0	0.0	18.1
Lane LOS	A					C
Approach Delay (s)	0.5			0.0		18.1
Approach LOS						C
<b>Intersection Summary</b>						
Average Delay	1.0					
Intersection Capacity Utilization	42.1%			ICU Level of Service	A	
Analysis Period (min)	15					

Barrio Logan CPU  
7: Logan Ave & Beardsley St

Existing Conditions w LRT  
Timing Plan: PM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↕		↕		↕		↕		↕		↕	
Sign Control	Stop		Stop		Stop		Stop		Stop		Stop	
Volume (vph)	0	210	32	24	65	0	27	0	73	154	73	16
Peak Hour Factor	0.75	0.75	0.75	0.85	0.85	0.85	0.86	0.86	0.86	0.81	0.81	0.81
Hourly flow rate (vph)	0	280	43	28	76	0	31	0	85	190	90	20
Direction, Lane #	EB 1	WB 1	WB 2	NB 1	SB 1							
Volume Total (vph)	323	28	76	116	300							
Volume Left (vph)	0	28	0	31	190							
Volume Right (vph)	43	0	0	85	20							
Hadj (s)	-0.05	0.53	0.03	-0.35	0.12							
Departure Headway (s)	5.3	6.7	6.2	5.3	5.4							
Degree Utilization, x	0.48	0.05	0.13	0.17	0.45							
Capacity (veh/h)	640	490	527	605	627							
Control Delay (s)	13.1	8.8	8.9	9.3	12.7							
Approach Delay (s)	13.1	8.9		9.3	12.7							
Approach LOS	B	A		A	B							
<b>Intersection Summary</b>												
Delay			11.9									
HCM Level of Service			B									
Intersection Capacity Utilization			46.3%		ICU Level of Service	A						
Analysis Period (min)			15									

Barrio Logan CPU  
8: National Ave & Beardsley St

Existing Conditions w LRT  
Timing Plan: PM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↕		↕		↕		↕		↕		↕	
Sign Control	Stop		Stop		Stop		Stop		Stop		Stop	
Volume (vph)	19	96	2	33	77	12	9	43	43	29	83	11
Peak Hour Factor	0.75	0.75	0.75	0.78	0.78	0.78	0.68	0.68	0.68	0.77	0.77	0.77
Hourly flow rate (vph)	25	128	3	42	99	15	13	63	63	38	108	14
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1						
Volume Total (vph)	25	131	42	114	140	160						
Volume Left (vph)	25	0	42	0	13	38						
Volume Right (vph)	0	3	0	15	63	14						
Hadj (s)	0.53	0.02	0.53	-0.06	-0.22	0.03						
Departure Headway (s)	6.0	5.5	6.0	5.4	4.7	4.9						
Degree Utilization, x	0.04	0.20	0.07	0.17	0.18	0.22						
Capacity (veh/h)	563	620	565	628	712	682						
Control Delay (s)	8.1	8.6	8.2	8.3	8.8	9.3						
Approach Delay (s)	8.5		8.3		8.8	9.3						
Approach LOS	A		A		A	A						
<b>Intersection Summary</b>												
Delay			8.7									
HCM Level of Service			A									
Intersection Capacity Utilization			30.3%		ICU Level of Service	A						
Analysis Period (min)			15									

Barrio Logan CPU  
9: Newton Ave & Beardsley St

Existing Conditions w LRT  
Timing Plan: PM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↕				↕				↕			
Sign Control	Stop				Stop				Stop			
Volume (vph)	5	28	1	6	47	19	1	66	16	44	81	9
Peak Hour Factor	0.65	0.65	0.65	0.82	0.82	0.82	0.80	0.80	0.80	0.78	0.78	0.78
Hourly flow rate (vph)	8	43	2	7	57	23	1	82	20	56	104	12
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>WB 1</b>	<b>NB 1</b>	<b>SB 1</b>								
Volume Total (vph)	52	88	104	172								
Volume Left (vph)	8	7	1	56								
Volume Right (vph)	2	23	20	12								
Hadj (s)	0.05	-0.11	-0.08	0.06								
Departure Headway (s)	4.7	4.5	4.3	4.4								
Degree Utilization, x	0.07	0.11	0.13	0.21								
Capacity (veh/h)	710	745	789	779								
Control Delay (s)	8.0	8.0	8.0	8.6								
Approach Delay (s)	8.0	8.0	8.0	8.6								
Approach LOS	A	A	A	A								
<b>Intersection Summary</b>												
Delay	8.2											
HCM Level of Service	A											
Intersection Capacity Utilization	28.4%			ICU Level of Service	A							
Analysis Period (min)	15											

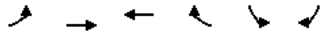
Barrio Logan CPU  
10: Main St & Beardsley St

Existing Conditions w LRT  
Timing Plan: PM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↕				↕				↕			
Sign Control	Stop				Stop				Stop			
Volume (vph)	22	49	4	15	33	9	0	25	31	15	39	17
Peak Hour Factor	0.85	0.85	0.85	0.79	0.79	0.79	0.74	0.74	0.74	0.68	0.68	0.68
Hourly flow rate (vph)	26	58	5	19	42	11	0	34	42	22	57	25
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>WB 1</b>	<b>NB 1</b>	<b>SB 1</b>								
Volume Total (vph)	88	72	76	104								
Volume Left (vph)	26	19	0	22								
Volume Right (vph)	5	11	42	25								
Hadj (s)	0.06	-0.01	-0.30	-0.07								
Departure Headway (s)	4.4	4.4	4.1	4.3								
Degree Utilization, x	0.11	0.09	0.09	0.12								
Capacity (veh/h)	774	772	835	796								
Control Delay (s)	8.0	7.8	7.5	7.9								
Approach Delay (s)	8.0	7.8	7.5	7.9								
Approach LOS	A	A	A	A								
<b>Intersection Summary</b>												
Delay	7.8											
HCM Level of Service	A											
Intersection Capacity Utilization	23.7%			ICU Level of Service	A							
Analysis Period (min)	15											

Barrio Logan CPU  
11: Harbor Dr & Beardsley St

Existing Conditions w LRT  
Timing Plan: PM Peak



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↔	↕↕	↕↕		↕	
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	60	1167	329	16	26	16
Peak Hour Factor	0.96	0.96	0.93	0.93	0.81	0.81
Hourly flow rate (vph)	62	1216	354	17	32	20
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					Raised	
Median storage (veh)					0	
Upstream signal (ft)			658			
pX, platoon unblocked						
vC, conflicting volume	371				1095	185
vC1, stage 1 conf vol					362	
vC2, stage 2 conf vol					733	
vCu, unblocked vol	371				1095	185
tC, single (s)	4.3				6.8	6.9
tC, 2 stage (s)					5.8	
tF (s)	2.3				3.5	3.3
p0 queue free %	94				86	98
cM capacity (veh/h)	1129				235	825
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>EB 2</b>	<b>EB 3</b>	<b>WB 1</b>	<b>WB 2</b>	<b>SB 1</b>
Volume Total	62	608	608	236	135	52
Volume Left	62	0	0	0	0	32
Volume Right	0	0	0	0	17	20
cSH	1129	1700	1700	1700	1700	323
Volume to Capacity	0.06	0.36	0.36	0.14	0.08	0.16
Queue Length 95th (ft)	4	0	0	0	0	14
Control Delay (s)	8.4	0.0	0.0	0.0	0.0	18.3
Lane LOS	A					C
Approach Delay (s)	0.4			0.0		18.3
Approach LOS						C
<b>Intersection Summary</b>						
Average Delay		0.9				
Intersection Capacity Utilization		42.3%		ICU Level of Service	A	
Analysis Period (min)		15				

Barrio Logan CPU  
12: Kearney St & Cesar E. Chavez Pkwy

Existing Conditions w LRT  
Timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↔	↕↕		↔	↕		↔	↕↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor				0.95	0.95		1.00	1.00		0.95	0.95	
Frt				1.00	0.94		1.00	1.00		0.99	0.99	
Flt Protected				0.95	0.98		0.95	1.00		1.00	1.00	
Satd. Flow (prot)				1478	1435		1626	1712		3225	3225	
Flt Permitted				0.95	0.98		0.95	1.00		1.00	1.00	
Satd. Flow (perm)				1478	1435		1626	1712		3225	3225	
Volume (vph)	0	0	0	415	54	113	189	262	0	0	250	15
Peak-hour factor, PHF	0.25	0.25	0.25	0.82	0.82	0.82	0.92	0.92	0.92	0.77	0.77	0.77
Adj. Flow (vph)	0	0	0	506	66	138	205	285	0	0	325	19
RTOR Reduction (vph)	0	0	0	0	26	0	0	0	0	0	6	0
Lane Group Flow (vph)	0	0	0	354	330	0	205	285	0	0	338	0
Heavy Vehicles (%)	16%	16%	16%	16%	16%	16%	11%	11%	11%	11%	11%	11%
Turn Type				Split			Split					
Protected Phases				8	8		6	6			2	
Permitted Phases												
Actuated Green, G (s)				18.7	18.7		14.5	14.5			11.5	
Effective Green, g (s)				18.7	18.7		14.5	14.5			11.5	
Actuated g/C Ratio				0.33	0.33		0.26	0.26			0.20	
Clearance Time (s)				4.0	4.0		4.0	4.0			4.0	
Vehicle Extension (s)				3.0	3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)				487	473		416	438			654	
v/s Ratio Prot				c0.24	0.23		0.13	c0.17			c0.10	
v/s Ratio Perm												
v/c Ratio				0.73	0.70		0.49	0.65			0.52	
Uniform Delay, d1				16.7	16.5		18.0	18.8			20.1	
Progression Factor				1.00	1.00		1.00	1.00			1.00	
Incremental Delay, d2				5.4	4.4		0.9	3.4			0.7	
Delay (s)				22.1	21.0		18.9	22.3			20.8	
Level of Service				C	C		B	C			C	
Approach Delay (s)		0.0			21.5			20.9			20.8	
Approach LOS		A			C			C			C	
<b>Intersection Summary</b>												
HCM Average Control Delay				21.2		HCM Level of Service		C				
HCM Volume to Capacity ratio				0.65								
Actuated Cycle Length (s)				56.7		Sum of lost time (s)		12.0				
Intersection Capacity Utilization				44.2%		ICU Level of Service		A				
Analysis Period (min)				15								
c Critical Lane Group												

Barrio Logan CPU  
13: Logan Ave & Cesar E. Chavez Pkwy

Existing Conditions w LRT  
Timing Plan: PM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↕	↔	↔	↕	↕	↔	↕	↕	↔	↕	↕
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	0.95	1.00	1.00	1.00	0.95	
Frbp, ped/bikes	1.00	1.00		1.00	1.00	0.98	1.00	1.00	0.97	1.00	1.00	
Flpb, ped/bikes	0.99	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.97		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1761	1806		1763	1863	1553	1530	3059	1328	1530	3010	
Flt Permitted	0.74	1.00		0.43	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1376	1806		795	1863	1553	1530	3059	1328	1530	3010	
Volume (vph)	97	205	44	9	19	28	9	254	339	114	394	39
Peak-hour factor, PHF	0.86	0.86	0.86	0.82	0.82	0.82	0.88	0.88	0.88	0.95	0.95	0.95
Adj. Flow (vph)	113	238	51	11	23	34	10	289	385	120	415	41
RTOR Reduction (vph)	0	15	0	0	0	26	0	0	231	0	8	0
Lane Group Flow (vph)	113	274	0	11	23	8	10	289	154	120	448	0
Confl. Peds. (#/hr)	10		13	13		10			27			27
Confl. Bikes (#/hr)			4			2			3			2
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	18%	18%	18%	18%	18%	18%
Turn Type	Perm			Perm		Perm	Prot		Perm	Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8		8			2			
Actuated Green, G (s)	11.2	11.2		11.2	11.2	11.2	0.7	19.0	19.0	5.4	23.7	
Effective Green, g (s)	11.2	11.2		11.2	11.2	11.2	0.7	19.0	19.0	5.4	23.7	
Actuated g/C Ratio	0.24	0.24		0.24	0.24	0.24	0.01	0.40	0.40	0.11	0.50	
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	324	425		187	438	365	23	1221	530	174	1499	
v/s Ratio Prot		c0.15			0.01		0.01	0.09		c0.08	c0.15	
v/s Ratio Perm	0.08			0.01		0.01			0.12			
v/c Ratio	0.35	0.65		0.06	0.05	0.02	0.43	0.24	0.29	0.69	0.30	
Uniform Delay, d1	15.2	16.4		14.1	14.1	14.0	23.3	9.5	9.7	20.3	7.1	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.7	3.4		0.1	0.1	0.0	12.6	0.1	0.3	10.8	0.1	
Delay (s)	15.8	19.8		14.2	14.1	14.0	35.9	9.6	10.0	31.1	7.2	
Level of Service	B	B		B	B	B	D	A	B	C	A	
Approach Delay (s)		18.7			14.1			10.2			12.2	
Approach LOS		B			B			B			B	

Intersection Summary			
HCM Average Control Delay	13.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	47.6	Sum of lost time (s)	8.0
Intersection Capacity Utilization	57.5%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

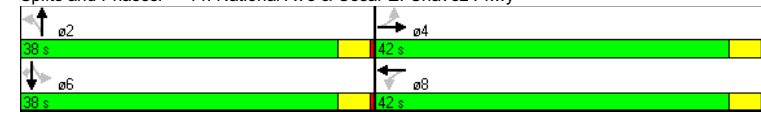
Barrio Logan CPU  
14: National Ave & Cesar E. Chavez Pkwy

Existing Conditions w LRT  
Timing Plan: PM Peak

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations	↔	↕	↔	↕	↔	↕	↔	↕	↕
Volume (vph)	88	75	51	57	16	476	77	330	65
Turn Type	Perm		Perm		Perm		Perm		Perm
Protected Phases		4		8		2		6	6
Permitted Phases	4		8		2		6		6
Detector Phases	4	4	8	8	2	2	6	6	6
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	31.0	31.0	34.0	34.0	27.0	27.0	27.0	27.0	27.0
Total Split (s)	42.0	42.0	42.0	42.0	38.0	38.0	38.0	38.0	38.0
Total Split (%)	52.5%	52.5%	52.5%	52.5%	47.5%	47.5%	47.5%	47.5%	47.5%
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)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Lead/Lag									
Lead-Lag Optimize?									
Recall Mode	None	None	None	None	C-Min	C-Min	C-Min	C-Min	C-Min

Intersection Summary			
Cycle Length:	80		
Actuated Cycle Length:	80		
Offset:	2 (3%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green		
Natural Cycle:	65		
Control Type:	Actuated-Coordinated		

Splits and Phases: 14: National Ave & Cesar E. Chavez Pkwy



Barrio Logan CPU  
14: National Ave & Cesar E. Chavez Pkwy

Existing Conditions w LRT  
Timing Plan: PM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	[Diagrammatic Lane Configurations]											
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	1.00	1.00
Frt	1.00	0.95		1.00	0.91		1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	1771		1770	1704		1612	3194		1530	1610	1369
Flt Permitted	0.51	1.00		0.60	1.00		0.55	1.00		0.44	1.00	1.00
Satd. Flow (perm)	957	1771		1112	1704		927	3194		706	1610	1369
Volume (vph)	88	75	36	51	57	75	16	476	30	77	330	65
Peak-hour factor, PHF	0.91	0.91	0.91	0.92	0.92	0.92	0.89	0.89	0.89	0.93	0.93	0.93
Adj. Flow (vph)	97	82	40	55	62	82	18	535	34	83	355	70
RTOR Reduction (vph)	0	35	0	0	72	0	0	2	0	0	0	15
Lane Group Flow (vph)	97	87	0	55	72	0	18	567	0	83	355	55
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	12%	12%	12%	18%	18%	18%
Turn Type	Perm			Perm			Perm			Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		6
Actuated Green, G (s)	9.4	9.4		9.4	9.4		62.6	62.6		62.6	62.6	62.6
Effective Green, g (s)	9.4	9.4		9.4	9.4		62.6	62.6		62.6	62.6	62.6
Actuated g/C Ratio	0.12	0.12		0.12	0.12		0.78	0.78		0.78	0.78	0.78
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	112	208		131	200		725	2499		552	1260	1071
v/s Ratio Prot		0.05			0.04			0.18			c0.22	
v/s Ratio Perm	c0.10			0.05			0.02			0.12		0.04
v/c Ratio	0.87	0.42		0.42	0.36		0.02	0.23		0.15	0.28	0.05
Uniform Delay, d1	34.7	32.8		32.8	32.5		1.9	2.3		2.1	2.4	2.0
Progression Factor	1.00	1.00		1.00	1.00		0.69	0.68		1.00	1.00	1.00
Incremental Delay, d2	45.8	1.4		2.2	1.1		0.1	0.2		0.6	0.6	0.1
Delay (s)	80.5	34.1		34.9	33.6		1.4	1.8		2.7	3.0	2.1
Level of Service	F	C		C	C		A	A		A	A	A
Approach Delay (s)		54.7			34.0			1.8			2.8	
Approach LOS		D			C			A			A	

Intersection Summary			
HCM Average Control Delay	14.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.36		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	46.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

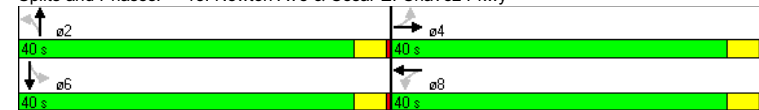
Barrio Logan CPU  
15: Newton Ave & Cesar E. Chavez Pkwy

Existing Conditions w LRT  
Timing Plan: PM Peak

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	[Diagrammatic Lane Configurations]							
Volume (vph)	52	55	13	21	8	459	44	316
Turn Type	Perm		Perm		Perm		Perm	
Protected Phases		4			8		2	6
Permitted Phases	4		8		2		6	6
Detector Phases	4	4	8	8	2	2	6	6
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	31.0	31.0	31.0	31.0	27.0	27.0	27.0	27.0
Total Split (s)	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0
Total Split (%)	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	None	None	None	C-Min	C-Min	C-Min	C-Min

Intersection Summary	
Cycle Length:	80
Actuated Cycle Length:	80
Offset:	18 (23%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle:	60
Control Type:	Actuated-Coordinated

Splits and Phases: 15: Newton Ave & Cesar E. Chavez Pkwy





Barrio Logan CPU

Existing Conditions w LRT

15: Newton Ave & Cesar E. Chavez Pkwy

Timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	[Diagrammatic symbols]											
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	1.00	
Frt	1.00	0.96		1.00	0.90		1.00	0.99		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)	1770	1786		1770	1675		1612	3201		1612	1680	
Flt Permitted	0.70	1.00		0.66	1.00		0.53	1.00		0.44	1.00	
Satd. Flow (perm)	1311	1786		1232	1675		902	3201		754	1680	
Volume (vph)	52	55	21	13	21	42	8	459	23	44	316	22
Peak-hour factor, PHF	0.74	0.74	0.74	0.77	0.77	0.77	0.87	0.87	0.87	0.88	0.88	0.88
Adj. Flow (vph)	70	74	28	17	27	55	9	528	26	50	359	25
RTOR Reduction (vph)	0	25	0	0	50	0	0	2	0	0	1	0
Lane Group Flow (vph)	70	77	0	17	32	0	9	552	0	50	383	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	12%	12%	12%	12%	12%	12%
Turn Type	Perm		Perm		Perm		Perm		Perm		Perm	
Protected Phases	4		8		2		6		6		6	
Permitted Phases	4		8		2		6		6		6	
Actuated Green, G (s)	7.8	7.8		7.8	7.8		64.2	64.2		64.2	64.2	
Effective Green, g (s)	7.8	7.8		7.8	7.8		64.2	64.2		64.2	64.2	
Actuated g/C Ratio	0.10	0.10		0.10	0.10		0.80	0.80		0.80	0.80	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	128	174		120	163		724	2569		605	1348	
v/s Ratio Prot	0.04		0.02		0.17		c0.23		c0.23		c0.23	
v/s Ratio Perm	c0.05		0.01		0.01		0.07		0.07		0.07	
v/c Ratio	0.55	0.44		0.14	0.20		0.01	0.22		0.08	0.28	
Uniform Delay, d1	34.4	34.0		33.0	33.2		1.6	1.9		1.7	2.0	
Progression Factor	1.00	1.00		1.00	1.00		0.32	0.49		0.92	1.08	
Incremental Delay, d2	4.7	1.8		0.5	0.6		0.0	0.2		0.3	0.5	
Delay (s)	39.1	35.8		33.6	33.8		0.5	1.1		1.8	2.7	
Level of Service	D		C		A		A		A		A	
Approach Delay (s)	37.2		33.8		1.1		2.6		2.6		2.6	
Approach LOS	D		C		A		A		A		A	

Intersection Summary

HCM Average Control Delay	9.1	HCM Level of Service	A
HCM Volume to Capacity ratio	0.31		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	40.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Barrio Logan CPU

Existing Conditions w LRT

16: Main St & Cesar E. Chavez Pkwy

Timing Plan: PM Peak

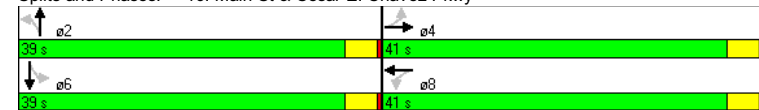


Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	[Diagrammatic symbols]							
Volume (vph)	53	34	18	22	4	455	26	269
Turn Type	Perm		Perm		Perm		Perm	
Protected Phases	4		8		2		6	
Permitted Phases	4		8		2		6	
Detector Phases	4	4	8	8	2	2	6	6
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	31.0	31.0	31.0	31.0	27.0	27.0	27.0	27.0
Total Split (s)	41.0	41.0	41.0	41.0	39.0	39.0	39.0	39.0
Total Split (%)	51.3%	51.3%	51.3%	51.3%	48.8%	48.8%	48.8%	48.8%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	None	None	None	C-Min	C-Min	C-Min	C-Min

Intersection Summary

Cycle Length: 80
Actuated Cycle Length: 80
Offset: 3 (4%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated

Splits and Phases: 16: Main St & Cesar E. Chavez Pkwy





Barrio Logan CPU  
18: Logan Ave & I-5 SB On-ramp

Existing Conditions w LRT  
Timing Plan: PM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	↔		↔		↔		↔		↔		↔		
Sign Control	Free		Free		Stop		Stop		Stop		Stop		
Grade	0%		0%		0%		0%		0%		0%		
Volume (veh/h)	473	267	5	0	73	51	0	0	10	0	0	0	
Peak Hour Factor	0.93	0.93	0.93	0.72	0.72	0.72	0.56	0.56	0.56	0.25	0.25	0.25	
Hourly flow rate (vph)	509	287	5	0	101	71	0	0	18	0	0	0	
Pedestrians													
Lane Width (ft)													
Walking Speed (ft/s)													
Percent Blockage													
Right turn flare (veh)													
Median type	None						None						
Median storage (veh)													
Upstream signal (ft)	667												
pX, platoon unblocked													
vC, conflicting volume	172			292			1408	1479	290	1459	1446	137	
vC1, stage 1 conf vol													
vC2, stage 2 conf vol													
vCu, unblocked vol	172			292			1408	1479	290	1459	1446	137	
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2	
tC, 2 stage (s)													
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3	
p0 queue free %	64			100			100	100	98	100	100	100	
cM capacity (veh/h)	1405			1269			84	80	749	75	84	912	
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1								
Volume Total	509	292	0	172	18								
Volume Left	509	0	0	0	0								
Volume Right	0	5	0	71	18								
cSH	1405	1700	1700	1700	749								
Volume to Capacity	0.36	0.17	0.00	0.10	0.02								
Queue Length 95th (ft)	42	0	0	0	2								
Control Delay (s)	9.0	0.0	0.0	0.0	9.9								
Lane LOS	A			A									
Approach Delay (s)	5.7			0.0	9.9								
Approach LOS						A							
<b>Intersection Summary</b>													
Average Delay			4.8										
Intersection Capacity Utilization			39.8%		ICU Level of Service		A						
Analysis Period (min)			15										

Barrio Logan CPU  
19: National Ave & SR-75 Off-ramp

Existing Conditions w LRT  
Timing Plan: PM Peak

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↔		↔		↔	
Sign Control	Free		Free		Stop	
Grade	0%		0%		0%	
Volume (veh/h)	0	160	134	0	72	133
Peak Hour Factor	0.87	0.87	0.86	0.86	0.83	0.83
Hourly flow rate (vph)	0	184	156	0	87	160
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	TWLTL					
Median storage (veh)	1					
Upstream signal (ft)	1100		875			
pX, platoon unblocked						
vC, conflicting volume	156			340	156	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	156			340	156	
tC, single (s)	4.1			6.4	6.2	
tC, 2 stage (s)						
tF (s)	2.2			5.4	3.5	3.3
p0 queue free %	100			87	82	
cM capacity (veh/h)	1424			692	890	
Direction, Lane #	EB 1	WB 1	SB 1	SB 2		
Volume Total	184	156	87	160		
Volume Left	0	0	87	0		
Volume Right	0	0	0	160		
cSH	1700	1700	692	890		
Volume to Capacity	0.11	0.09	0.13	0.18		
Queue Length 95th (ft)	0	0	11	16		
Control Delay (s)	0.0	0.0	11.0	9.9		
Lane LOS			B	A		
Approach Delay (s)	0.0	0.0	10.3			
Approach LOS			B			
<b>Intersection Summary</b>						
Average Delay			4.3			
Intersection Capacity Utilization			22.0%		ICU Level of Service	
Analysis Period (min)			15		A	

Barrio Logan CPU  
20: National Ave & Evans St

Existing Conditions w LRT  
Timing Plan: PM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔		↔		↔		↔		↔		↔	
Sign Control	Free		Free		Stop		Stop		Stop		Stop	
Grade	0%		0%		0%		0%		0%		0%	
Volume (veh/h)	18	212	14	17	103	15	5	8	29	27	10	37
Peak Hour Factor	0.86	0.86	0.86	0.84	0.84	0.84	0.81	0.81	0.81	0.93	0.93	0.93
Hourly flow rate (vph)	21	247	16	20	123	18	6	10	36	29	11	40
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None						None					
Median storage (veh)												
Upstream signal (ft)	1314				661							
pX, platoon unblocked												
vC, conflicting volume	140			263			505	477	255	501	477	132
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	140			263			505	477	255	501	477	132
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			98			99	98	95	93	98	96
cM capacity (veh/h)	1443			1301			439	472	784	441	473	918
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1						
Volume Total	21	263	20	140	52	80						
Volume Left	21	0	20	0	6	29						
Volume Right	0	16	0	18	36	40						
cSH	1443	1700	1301	1700	643	603						
Volume to Capacity	0.01	0.15	0.02	0.08	0.08	0.13						
Queue Length 95th (ft)	1	0	1	0	7	11						
Control Delay (s)	7.5	0.0	7.8	0.0	11.1	11.9						
Lane LOS	A	A		B		B						
Approach Delay (s)	0.6	1.0		11.1		11.9						
Approach LOS			B		B							
Intersection Summary												
Average Delay			3.2									
Intersection Capacity Utilization			30.7%		ICU Level of Service		A					
Analysis Period (min)			15									

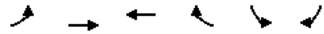
Barrio Logan CPU  
21: Newton Ave & Evans St

Existing Conditions w LRT  
Timing Plan: PM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔		↔		↔		↔		↔		↔	
Sign Control	Free		Free		Stop		Stop		Stop		Stop	
Grade	0%		0%		0%		0%		0%		0%	
Volume (veh/h)	13	46	16	5	27	7	3	15	6	8	8	11
Peak Hour Factor	0.78	0.78	0.78	0.89	0.89	0.89	0.68	0.68	0.68	0.75	0.75	0.75
Hourly flow rate (vph)	17	59	21	6	30	8	4	22	9	11	11	15
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None						None					
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	38			79			168	152	69	168	158	34
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	38			79			168	152	69	168	158	34
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			100			99	97	99	99	99	99
cM capacity (veh/h)	1572			1519			767	729	994	762	723	1039
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	96	44	35	36								
Volume Left	17	6	4	11								
Volume Right	21	8	9	15								
cSH	1572	1519	786	840								
Volume to Capacity	0.01	0.00	0.04	0.04								
Queue Length 95th (ft)	1	0	4	3								
Control Delay (s)	1.3	1.0	9.8	9.5								
Lane LOS	A	A	A	A								
Approach Delay (s)	1.3	1.0	9.8	9.5								
Approach LOS			A									
Intersection Summary												
Average Delay			4.1									
Intersection Capacity Utilization			16.1%		ICU Level of Service		A					
Analysis Period (min)			15									

Barrio Logan CPU  
22: Main St & Evans St

Existing Conditions w LRT  
Timing Plan: PM Peak



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↔	↔		↔	↔
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	5	87	78	9	10	7
Peak Hour Factor	0.80	0.80	0.77	0.77	0.44	0.44
Hourly flow rate (vph)	6	109	101	12	23	16
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage (veh)						
Upstream signal (ft)		1318				
pX, platoon unblocked						
vC, conflicting volume	113				228	107
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	113				228	107
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				97	98
cM capacity (veh/h)	1476				757	947

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	115	113	39
Volume Left	6	0	23
Volume Right	0	12	16
cSH	1476	1700	825
Volume to Capacity	0.00	0.07	0.05
Queue Length 95th (ft)	0	0	4
Control Delay (s)	0.4	0.0	9.6
Lane LOS	A		A
Approach Delay (s)	0.4	0.0	9.6
Approach LOS			A

Intersection Summary			
Average Delay		1.6	
Intersection Capacity Utilization	18.7%	ICU Level of Service	A
Analysis Period (min)		15	

Barrio Logan CPU  
23: Logan Ave & Sampson St

Existing Conditions w LRT  
Timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔		↔	↔			↔		↔	↔	↔
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	101	135	36	29	75	54	63	134	18	66	100	13
Peak Hour Factor	0.91	0.91	0.91	0.92	0.92	0.92	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	111	148	40	32	82	59	69	147	20	73	110	14
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1						
Volume Total (vph)	111	188	32	140	236	197						
Volume Left (vph)	111	0	32	0	69	73						
Volume Right (vph)	0	40	0	59	20	14						
Hadj (s)	0.53	-0.11	0.53	-0.26	0.04	0.06						
Departure Headway (s)	6.6	5.9	6.8	6.0	5.6	5.7						
Degree Utilization, x	0.20	0.31	0.06	0.23	0.37	0.31						
Capacity (veh/h)	513	571	487	553	595	587						
Control Delay (s)	10.1	10.4	9.0	9.6	11.8	11.2						
Approach Delay (s)	10.2		9.5		11.8	11.2						
Approach LOS	B		A		B	B						

Intersection Summary			
Delay		10.7	
HCM Level of Service		B	
Intersection Capacity Utilization	36.9%	ICU Level of Service	A
Analysis Period (min)		15	

Barrio Logan CPU  
24: National Ave & Sampson St

Existing Conditions w LRT  
Timing Plan: PM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↕	↔	↔	↕	↔	↔	↕	↔	↔	↕	↔
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frbp, ped/bikes	1.00	1.00		1.00	0.99		0.99	0.99		0.99	0.99	
Flpb, ped/bikes	0.99	1.00		0.99	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	0.96		0.97	0.97		0.97	0.97	
Flt Protected	0.95	1.00		0.95	1.00		0.99	0.98		0.98	0.98	
Satd. Flow (prot)	1759	1830		1753	1766		1777	1757		1757	1757	
Flt Permitted	0.68	1.00		0.67	1.00		0.98	0.89		0.89	0.89	
Satd. Flow (perm)	1264	1830		1237	1766		1748	1593		1593	1593	
Volume (vph)	25	111	12	21	70	28	13	77	30	36	33	18
Peak-hour factor, PHF	0.90	0.90	0.90	0.85	0.85	0.85	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	28	123	13	25	82	33	14	85	33	40	36	20
RTOR Reduction (vph)	0	8	0	0	26	0	0	13	0	0	8	0
Lane Group Flow (vph)	28	128	0	25	89	0	0	119	0	0	88	0
Confl. Peds. (#/hr)	7		11	11		7	25		21	21		25
Confl. Bikes (#/hr)			3			3			6			2
Turn Type	Perm		Perm		Perm		Perm		Perm		Perm	
Protected Phases		4			8			2				6
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	8.7	8.7		8.7	8.7			24.0				24.0
Effective Green, g (s)	8.7	8.7		8.7	8.7			24.0				24.0
Actuated g/C Ratio	0.21	0.21		0.21	0.21			0.59				0.59
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0				4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0				3.0
Lane Grp Cap (vph)	270	391		264	377			1031				939
v/s Ratio Prot		c0.07			0.05							
v/s Ratio Perm	0.02			0.02				c0.07				0.06
v/c Ratio	0.10	0.33		0.09	0.24			0.12				0.09
Uniform Delay, d1	12.9	13.5		12.8	13.2			3.7				3.6
Progression Factor	1.00	1.00		1.00	1.00			1.00				1.00
Incremental Delay, d2	0.2	0.5		0.2	0.3			0.1				0.0
Delay (s)	13.0	14.0		13.0	13.6			3.7				3.7
Level of Service	B	B		B	B			A				A
Approach Delay (s)		13.9			13.5			3.7				3.7
Approach LOS		B			B			A				A
<b>Intersection Summary</b>												
HCM Average Control Delay		9.4			HCM Level of Service			A				
HCM Volume to Capacity ratio		0.17										
Actuated Cycle Length (s)		40.7			Sum of lost time (s)			8.0				
Intersection Capacity Utilization		39.1%			ICU Level of Service			A				
Analysis Period (min)		15										
c Critical Lane Group												

Barrio Logan CPU  
25: Newton Ave & Sampson St

Existing Conditions w LRT  
Timing Plan: PM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↕	↔	↔	↕	↔	↔	↕	↔	↔	↕	↔
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	23	25	12	0	16	6	6	63	3	5	42	15
Peak Hour Factor	0.88	0.88	0.88	0.79	0.79	0.79	0.86	0.86	0.86	0.86	0.86	0.86
Hourly flow rate (vph)	26	28	14	0	20	8	7	73	3	6	49	17
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	68	28	84	72								
Volume Left (vph)	26	0	7	6								
Volume Right (vph)	14	8	3	17								
Hadj (s)	-0.01	-0.13	0.03	-0.10								
Departure Headway (s)	4.3	4.2	4.2	4.1								
Degree Utilization, x	0.08	0.03	0.10	0.08								
Capacity (veh/h)	811	822	825	851								
Control Delay (s)	7.6	7.3	7.7	7.5								
Approach Delay (s)	7.6	7.3	7.7	7.5								
Approach LOS	A	A	A	A								
<b>Intersection Summary</b>												
Delay				7.6								
HCM Level of Service				A								
Intersection Capacity Utilization		23.7%		ICU Level of Service				A				
Analysis Period (min)		15										

Barrio Logan CPU  
26: Main St & Sampson St

Existing Conditions w LRT  
Timing Plan: PM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↕		↕		↕		↕		↕		↕	
Sign Control	Stop		Stop		Stop		Stop		Stop		Stop	
Volume (vph)	13	82	8	27	44	8	5	46	49	8	27	10
Peak Hour Factor	0.74	0.74	0.74	0.73	0.73	0.73	0.81	0.81	0.81	0.80	0.80	0.80
Hourly flow rate (vph)	18	111	11	37	60	11	6	57	60	10	34	12
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	139	108	123	56								
Volume Left (vph)	18	37	6	10								
Volume Right (vph)	11	11	60	13								
Hadj (s)	0.01	0.04	-0.25	-0.06								
Departure Headway (s)	4.5	4.5	4.3	4.6								
Degree Utilization, x	0.17	0.14	0.15	0.07								
Capacity (veh/h)	773	752	788	732								
Control Delay (s)	8.4	8.2	8.0	7.9								
Approach Delay (s)	8.4	8.2	8.0	7.9								
Approach LOS	A	A	A	A								
<b>Intersection Summary</b>												
Delay	8.2											
HCM Level of Service	A											
Intersection Capacity Utilization	28.0%			ICU Level of Service		A						
Analysis Period (min)	15											

Barrio Logan CPU  
27: Harbor Dr & Sampson St

Existing Conditions w LRT  
Timing Plan: PM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↕	↕	↕	↕	↕	↕	↕	↕	↕	↕	↕	↕
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	0.95	1.00	0.99	1.00	0.99	1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.99	1.00	0.99	1.00	1.00	1.00	1.00
Flpt, ped/bikes	1.00	1.00	1.00	1.00	0.99	1.00	0.97	0.99	1.00	1.00	1.00	1.00
Flt Protected	0.95	1.00	0.95	1.00	0.95	1.00	0.95	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1770	3467	1770	3508	1770	3508	1781	3508	1781	3508	1779	3508
Satd. Flow (perm)	1770	3467	1770	3508	1770	3508	1710	3508	1710	3508	1703	3508
Volume (vph)	56	748	5	19	198	8	23	111	41	14	66	26
Peak-hour factor, PHF	0.87	0.87	0.87	0.81	0.81	0.81	0.71	0.71	0.71	0.85	0.85	0.85
Adj. Flow (vph)	64	860	6	23	244	10	32	156	58	16	78	31
RTOR Reduction (vph)	0	1	0	0	3	0	0	10	0	0	11	0
Lane Group Flow (vph)	64	865	0	23	251	0	0	236	0	0	114	0
Confl. Peds. (#/hr)			15		29		7		4		4	
Confl. Bikes (#/hr)			12		7		7		7		7	
Heavy Vehicles (%)	2%	4%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Prot		Prot		Perm		Perm		Perm		Perm	
Protected Phases	3	14	2	6	13	18	2	6	12	16	1	5
Permitted Phases					12		16		1		5	
Actuated Green, G (s)	5.9	30.7	2.1	26.9	5.9	30.7	13.2	26.9	13.2	16.1	5.0	23.6
Effective Green, g (s)	5.9	30.7	2.1	26.9	5.9	30.7	13.2	26.9	13.2	16.1	5.0	23.6
Actuated g/C Ratio	0.07	0.38	0.03	0.33	0.07	0.38	0.16	0.33	0.16	0.16	0.07	0.29
Clearance Time (s)	4.0		4.0		4.0		4.0		4.0		4.0	
Vehicle Extension (s)	3.0		3.0		3.0		3.0		3.0		3.0	
Lane Grp Cap (vph)	130	1324	46	1174	130	1324	281	1174	281	1174	46	500
v/s Ratio Prot	c0.04	c0.25	0.01	0.07	c0.04	c0.25	c0.14	0.07	c0.14	c0.14	c0.07	0.07
v/s Ratio Perm												
v/c Ratio	0.49	0.65	0.50	0.21	0.49	0.65	0.84	0.21	0.84	0.84	0.23	0.23
Uniform Delay, d1	35.8	20.5	38.6	19.2	35.8	20.5	32.6	19.2	32.6	32.6	21.5	21.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.02	1.02
Incremental Delay, d2	2.9	1.2	8.3	0.1	2.9	1.2	19.3	0.1	19.3	19.3	0.2	0.2
Delay (s)	38.7	21.6	46.9	19.3	38.7	21.6	51.9	19.3	51.9	51.9	22.2	22.2
Level of Service	D	C	D	B	D	C	D	B	D	D	C	C
Approach Delay (s)	22.8		21.6		51.9		51.9		51.9		22.2	
Approach LOS	C		C		D		D		D		C	
<b>Intersection Summary</b>												
HCM Average Control Delay	27.1			HCM Level of Service		C						
HCM Volume to Capacity ratio	0.62											
Actuated Cycle Length (s)	80.4			Sum of lost time (s)		24.0						
Intersection Capacity Utilization	48.8%			ICU Level of Service		A						
Analysis Period (min)	15											

Barrio Logan CPU  
28: National Ave & Sicard St

Existing Conditions w LRT  
Timing Plan: PM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔		↔		↕		↕		↔		↔	
Sign Control	Free		Free		Stop		Stop		Stop		Stop	
Grade	0%		0%		0%		0%		0%		0%	
Volume (veh/h)	10	162	8	8	124	1	3	25	17	4	14	9
Peak Hour Factor	0.90	0.90	0.90	0.81	0.81	0.81	0.66	0.66	0.66	0.68	0.68	0.68
Hourly flow rate (vph)	11	180	9	10	153	1	5	38	26	6	21	13
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None						None					
Median storage (veh)												
Upstream signal (ft)	641											
pX, platoon unblocked												
vC, conflicting volume	154			189			404	381	184	420	385	154
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	154			189			404	381	184	420	385	154
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			99			99	93	97	99	96	99
cM capacity (veh/h)	1426			1385			527	544	858	493	541	892
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>EB 2</b>	<b>WB 1</b>	<b>NB 1</b>	<b>SB 1</b>							
Volume Total	11	189	164	68	40							
Volume Left	11	0	10	5	6							
Volume Right	0	9	1	26	13							
cSH	1426	1700	1385	629	613							
Volume to Capacity	0.01	0.11	0.01	0.11	0.06							
Queue Length 95th (ft)	1	0	1	9	5							
Control Delay (s)	7.5	0.0	0.5	11.4	11.3							
Lane LOS	A	A		B	B							
Approach Delay (s)	0.4	0.5		11.4	11.3							
Approach LOS	B		B									
<b>Intersection Summary</b>												
Average Delay			3.0									
Intersection Capacity Utilization			23.2%		ICU Level of Service		A					
Analysis Period (min)	15											

Barrio Logan CPU  
29: National Ave & 26th St

Existing Conditions w LRT  
Timing Plan: PM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔		↔		↕		↕		↔		↔	
Sign Control	Stop		Stop		Stop		Stop		Stop		Stop	
Volume (vph)	5	155	23	35	117	54	14	19	34	77	21	2
Peak Hour Factor	0.93	0.93	0.93	0.92	0.92	0.92	0.73	0.73	0.73	0.89	0.89	0.89
Hourly flow rate (vph)	5	167	25	38	127	59	19	26	47	87	24	2
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>EB 2</b>	<b>WB 1</b>	<b>WB 2</b>	<b>NB 1</b>	<b>SB 1</b>						
Volume Total (vph)	5	191	38	186	92	112						
Volume Left (vph)	5	0	38	0	19	87						
Volume Right (vph)	0	25	0	59	47	2						
Hadj (s)	0.53	-0.06	0.53	-0.19	-0.23	0.18						
Departure Headway (s)	5.8	5.2	5.8	5.1	4.9	5.2						
Degree Utilization, x	0.01	0.28	0.06	0.26	0.12	0.16						
Capacity (veh/h)	584	659	592	680	672	630						
Control Delay (s)	7.7	9.0	8.0	8.6	8.6	9.3						
Approach Delay (s)	9.0	8.5		8.6		9.3						
Approach LOS	A	A		A		A						
<b>Intersection Summary</b>												
Delay			8.8									
HCM Level of Service	A											
Intersection Capacity Utilization			36.8%		ICU Level of Service		A					
Analysis Period (min)	15											



Barrio Logan CPU  
30: National Ave & I-5 SB Off-ramp

Existing Conditions w LRT  
Timing Plan: PM Peak

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔		↕		↕	
Sign Control	Free		Free		Stop	
Grade	0%		0%		0%	
Volume (veh/h)	275	10	31	194	32	296
Peak Hour Factor	0.95	0.95	0.88	0.88	0.80	0.80
Hourly flow rate (vph)	289	11	35	220	40	370
Pedestrians	36					
Lane Width (ft)	12.0					
Walking Speed (ft/s)	4.0					
Percent Blockage	3					
Right turn flare (veh)						
Median type	None					
Median storage (veh)						
Upstream signal (ft)	670					
pX, platoon unblocked						
vC, conflicting volume			336		511 331	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			336		511 331	
tC, single (s)			4.1		6.8 6.9	
tC, 2 stage (s)						
tF (s)			2.2		3.5 3.3	
p0 queue free %			97		91 43	
cM capacity (veh/h)			1183		463 645	
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>WB 1</b>	<b>WB 2</b>	<b>NB 1</b>	<b>NB 2</b>	
Volume Total	300	109	147	40	370	
Volume Left	0	35	0	40	0	
Volume Right	11	0	0	0	370	
cSH	1700	1183	1700	463	645	
Volume to Capacity	0.18	0.03	0.09	0.09	0.57	
Queue Length 95th (ft)	0	2	0	7	91	
Control Delay (s)	0.0	2.8	0.0	13.5	17.8	
Lane LOS	A		B C			
Approach Delay (s)	0.0	1.2	17.4			
Approach LOS	C					
<b>Intersection Summary</b>						
Average Delay	7.7					
Intersection Capacity Utilization	40.2%		ICU Level of Service		A	
Analysis Period (min)	15					


Barrio Logan CPU  
31: Main St & 26th St

Existing Conditions w LRT  
Timing Plan: PM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↕		↕		↕		↕		↕		↕	
Sign Control	Stop		Stop		Stop		Stop		Stop		Stop	
Volume (vph)	14	167	7	19	45	28	2	38	80	26	6	8
Peak Hour Factor	0.82	0.82	0.82	0.72	0.72	0.72	0.88	0.88	0.88	0.67	0.67	0.67
Hourly flow rate (vph)	17	204	9	26	62	39	2	43	91	39	9	12
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>WB 1</b>	<b>WB 2</b>	<b>WB 3</b>	<b>NB 1</b>	<b>NB 2</b>	<b>SB 1</b>					
Volume Total (vph)	229	26	63	39	45	91	60					
Volume Left (vph)	17	26	0	0	2	0	39					
Volume Right (vph)	9	0	0	39	0	91	12					
Hadj (s)	0.03	1.10	0.03	-0.67	0.04	-0.41	0.04					
Departure Headway (s)	4.4	6.0	5.0	3.2	4.8	3.2	4.7					
Degree Utilization, x	0.28	0.04	0.09	0.03	0.06	0.08	0.08					
Capacity (veh/h)	798	573	696	1121	701	1121	705					
Control Delay (s)	9.1	8.1	7.2	5.1	8.1	6.5	8.2					
Approach Delay (s)	9.1	6.8				7.0	8.2					
Approach LOS	A	A				A	A					
<b>Intersection Summary</b>												
Delay	8.0											
HCM Level of Service	A											
Intersection Capacity Utilization	32.9%			ICU Level of Service			A					
Analysis Period (min)	15											

Barrio Logan CPU  
32: Harbor Dr & Schley St

Existing Conditions w LRT  
Timing Plan: PM Peak




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔		↕↕			↕↕			↕↕		↕↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0					4.0		
Lane Util. Factor	1.00	0.95			0.95					1.00		
Flpb, ped/bikes	1.00	1.00			1.00					0.99		
Flpb, ped/bikes	1.00	1.00			1.00					1.00		
Frt	1.00	1.00			0.97					0.92		
Flt Protected	0.95	1.00			1.00					0.98		
Satd. Flow (prot)	1543	3539			3446					1569		
Flt Permitted	0.95	1.00			1.00					0.98		
Satd. Flow (perm)	1543	3539			3446					1569		
Volume (vph)	75	712	0	0	182	39	0	0	0	16	4	27
Peak-hour factor, PHF	0.95	0.95	0.95	0.81	0.81	0.81	0.25	0.25	0.25	0.69	0.69	0.69
Adj. Flow (vph)	79	749	0	0	225	48	0	0	0	23	6	39
RTOR Reduction (vph)	0	0	0	0	14	0	0	0	0	0	30	0
Lane Group Flow (vph)	79	749	0	0	259	0	0	0	0	0	38	0
Confl. Peds. (#/hr)			8	8					2	2		
Confl. Bikes (#/hr)									4			9
Heavy Vehicles (%)	17%	2%	2%	2%	2%	2%	2%	2%	2%	2%	4%	13%
Turn Type	Prot						Perm					
Protected Phases	13	18 2 6			14 2 6					11 1 5		
Permitted Phases										11 1 5		
Actuated Green, G (s)	8.6	47.6			31.0					18.2		
Effective Green, g (s)	8.6	47.6			31.0					18.2		
Actuated g/C Ratio	0.11	0.58			0.38					0.22		
Clearance Time (s)	4.0			4.0			3.0			3.0		
Vehicle Extension (s)	3.0			3.0			3.0			3.0		
Lane Grp Cap (vph)	162	2059			1306					349		
v/s Ratio Prot	0.05	c0.21			0.08							
v/s Ratio Perm										0.02		
v/c Ratio	0.49	0.36			0.20					0.11		
Uniform Delay, d1	34.5	9.1			17.1					25.3		
Progression Factor	1.00	1.00			1.00					1.14		
Incremental Delay, d2	2.3	0.1			0.1					0.1		
Delay (s)	36.8	9.2			17.1					28.9		
Level of Service	D	A			B					C		
Approach Delay (s)		11.8			17.1			0.0		28.9		
Approach LOS		B			B			A		C		
Intersection Summary												
HCM Average Control Delay	14.1			HCM Level of Service			B					
HCM Volume to Capacity ratio	0.29											
Actuated Cycle Length (s)	81.8			Sum of lost time (s)			16.0					
Intersection Capacity Utilization	36.6%			ICU Level of Service			A					
Analysis Period (min)	15											

c Critical Lane Group

Barrio Logan CPU  
33: National Ave & 28th St

Existing Conditions w LRT  
Timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔		↕↕			↕↕			↕↕		↕↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.96					1.00	0.85	0.96
Flt Protected	0.95	1.00	1.00	0.95	1.00					0.99	1.00	0.99
Satd. Flow (prot)	1770	3539	1583	1597	1784					1762	1509	1696
Flt Permitted	0.95	1.00	1.00	0.95	1.00					0.93	1.00	0.92
Satd. Flow (perm)	1770	3539	1583	1597	1784					1647	1509	1573
Volume (vph)	94	434	85	162	327	128	18	98	46	70	210	102
Peak-hour factor, PHF	0.87	0.87	0.87	0.71	0.71	0.71	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	108	499	98	228	461	180	20	107	50	76	228	111
RTOR Reduction (vph)	0	0	63	0	10	0	0	0	33	0	9	0
Lane Group Flow (vph)	108	499	35	228	631	0	0	127	17	0	406	0
Heavy Vehicles (%)	2%	2%	2%	13%	2%	2%	7%	7%	7%	7%	7%	7%
Turn Type	Prot		Perm		Prot		Perm		Perm		Perm	
Protected Phases	7	4			3	8			2	2		6
Permitted Phases				4					2		2	6
Actuated Green, G (s)	8.5	30.0	30.0	14.7	36.2				28.3	28.3		28.3
Effective Green, g (s)	8.5	30.0	30.0	14.7	36.2				28.3	28.3		28.3
Actuated g/C Ratio	0.10	0.35	0.35	0.17	0.43				0.33	0.33		0.33
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0				4.0	4.0		4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0				3.0	3.0		3.0
Lane Grp Cap (vph)	177	1249	559	276	760				548	502		524
v/s Ratio Prot	0.06	0.14		c0.14	c0.35							
v/s Ratio Perm			0.02						0.08	0.01		c0.26
v/c Ratio	0.61	0.40	0.06	0.83	0.83				0.23	0.03		0.77
Uniform Delay, d1	36.7	20.7	18.2	33.9	21.7				20.5	19.1		25.5
Progression Factor	1.00	1.00	1.00	1.00	1.00				1.00	1.00		1.00
Incremental Delay, d2	6.1	0.2	0.0	17.9	7.7				0.2	0.0		7.0
Delay (s)	42.8	20.9	18.2	51.9	29.4				20.7	19.1		32.5
Level of Service	D	C	B	D	C				C	B		C
Approach Delay (s)		23.9			35.3				20.3			32.5
Approach LOS		C			D				C			C
Intersection Summary												
HCM Average Control Delay	29.8			HCM Level of Service			C					
HCM Volume to Capacity ratio	0.79											
Actuated Cycle Length (s)	85.0			Sum of lost time (s)			8.0					
Intersection Capacity Utilization	68.0%			ICU Level of Service			C					
Analysis Period (min)	15											

c Critical Lane Group

Barrio Logan CPU  
34: Boston Ave & 28th St

Existing Conditions w LRT  
Timing Plan: PM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95	1.00	1.00	0.95	
Frt	1.00	0.98		1.00	0.88		1.00	1.00	0.85	1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1687	1748		1687	1567		1770	3539	1583	1770	3519	
Flt Permitted	0.71	1.00		0.55	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1253	1748		982	1567		1770	3539	1583	1770	3519	
Volume (vph)	42	131	15	7	12	43	7	516	203	245	693	28
Peak-hour factor, PHF	0.84	0.84	0.84	0.69	0.69	0.69	0.89	0.89	0.89	0.93	0.93	0.93
Adj. Flow (vph)	50	156	18	10	17	62	8	580	228	263	745	30
RTOR Reduction (vph)	0	8	0	0	52	0	0	0	117	0	2	0
Lane Group Flow (vph)	50	166	0	10	27	0	8	580	111	263	773	0
Heavy Vehicles (%)	7%	7%	7%	7%	7%	7%	2%	2%	2%	2%	2%	2%
Turn Type	Perm			Perm			Prot		Perm		Prot	
Protected Phases	4		8				5		2		1	6
Permitted Phases	4			8			2					
Actuated Green, G (s)	9.0	9.0		9.0	9.0		0.7	28.6	28.6	9.0	36.9	
Effective Green, g (s)	9.0	9.0		9.0	9.0		0.7	28.6	28.6	9.0	36.9	
Actuated g/C Ratio	0.15	0.15		0.15	0.15		0.01	0.49	0.49	0.15	0.63	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	192	268		151	241		21	1727	773	272	2216	
v/s Ratio Prot	c0.10		0.02				0.00		0.16		c0.15	c0.22
v/s Ratio Perm	0.04			0.01			0.07					
v/c Ratio	0.26	0.62		0.07	0.11		0.38	0.34	0.14	0.97	0.35	
Uniform Delay, d1	21.9	23.2		21.2	21.4		28.7	9.2	8.3	24.7	5.1	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.7	4.4		0.2	0.2		11.2	0.5	0.4	45.0	0.4	
Delay (s)	22.6	27.6		21.4	21.6		39.9	9.7	8.7	69.7	5.6	
Level of Service	C		C				D		A		E	A
Approach Delay (s)	26.5			21.5			9.7				21.8	
Approach LOS	C			C			A				C	
<b>Intersection Summary</b>												
HCM Average Control Delay	17.7			HCM Level of Service				B				
HCM Volume to Capacity ratio	0.50											
Actuated Cycle Length (s)	58.6			Sum of lost time (s)				8.0				
Intersection Capacity Utilization	46.8%			ICU Level of Service				A				
Analysis Period (min)	15											
c Critical Lane Group												

Barrio Logan CPU  
35: Main St & 28th St

Existing Conditions w LRT  
Timing Plan: PM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95	1.00	1.00	0.95		
Frbp, ped/bikes	1.00	1.00		1.00	0.98		1.00	0.98	1.00	1.00	0.97		
Flpb, ped/bikes	0.99	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00		
Frt	1.00	0.99		1.00	0.90		1.00	0.97	1.00	0.97	1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	0.95	1.00	0.95	1.00	
Satd. Flow (prot)	1733	3508		1762	3113		1736	3307	1736	3261	1736	3261	
Flt Permitted	0.42	1.00		0.38	1.00		0.95	1.00	0.95	1.00	0.95	1.00	
Satd. Flow (perm)	758	3508		708	3113		1736	3307	1736	3261	1736	3261	
Volume (vph)	174	360	19	78	121	238	23	607	140	294	487	79	
Peak-hour factor, PHF	0.80	0.80	0.80	0.83	0.83	0.83	0.84	0.84	0.84	0.86	0.86	0.86	
Adj. Flow (vph)	218	450	24	94	146	287	27	723	167	342	566	92	
RTOR Reduction (vph)	0	5	0	0	199	0	0	22	0	0	13	0	
Lane Group Flow (vph)	218	469	0	94	234	0	27	868	0	342	645	0	
Confl. Peds. (#/hr)	27		12		12		27		88		200		
Confl. Bikes (#/hr)	8		3		3		6		6		6		
Heavy Vehicles (%)	3%	2%	2%	2%	2%	2%	2%	4%	4%	4%	4%	11%	
Turn Type	Perm			Perm			Prot		Prot				
Protected Phases	4		8				5		2		1	6	
Permitted Phases	4			8			2						
Actuated Green, G (s)	25.3	25.3		25.3	25.3		2.5	26.9		18.3	42.7		
Effective Green, g (s)	25.3	25.3		25.3	25.3		2.5	26.9		18.3	42.7		
Actuated g/C Ratio	0.31	0.31		0.31	0.31		0.03	0.33		0.22	0.52		
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0		
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0		
Lane Grp Cap (vph)	232	1076		217	955		53	1078		385	1688		
v/s Ratio Prot	0.13			0.08				0.02		c0.26		c0.20	
v/s Ratio Perm	c0.29			0.13									
v/c Ratio	0.94	0.44		0.43	0.25		0.51	0.81		0.89	0.38		
Uniform Delay, d1	27.9	22.9		22.9	21.4		39.4	25.4		31.1	12.0		
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00		
Incremental Delay, d2	42.1	0.3		1.4	0.1		7.5	4.5		21.1	0.1		
Delay (s)	69.9	23.2		24.3	21.6		46.9	29.9		52.3	12.1		
Level of Service	E		C		C		D		C		D		
Approach Delay (s)	37.9			22.1			30.4				25.8		
Approach LOS	D			C			C				C		
<b>Intersection Summary</b>													
HCM Average Control Delay	29.2			HCM Level of Service				C					
HCM Volume to Capacity ratio	0.87												
Actuated Cycle Length (s)	82.5			Sum of lost time (s)				12.0					
Intersection Capacity Utilization	82.0%			ICU Level of Service				E					
Analysis Period (min)	15												
c Critical Lane Group													

Barrio Logan CPU  
36: Harbor Dr & 28th St

Existing Conditions w LRT  
Timing Plan: PM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR				
Lane Configurations	[Diagrammatic Lane Configurations]															
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900				
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95	1.00	1.00	1.00				
Frbp, ped/bikes	1.00	1.00	0.86	1.00	1.00	0.94	1.00	1.00	1.00	1.00	0.99	1.00				
Flpb, ped/bikes	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	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	1.00	1.00	0.85	1.00				
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00				
Satd. Flow (prot)	1703	3406	1309	1719	3438	1445	1826	1649	1657	1531	1531	1531				
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00				
Satd. Flow (perm)	1703	3406	1309	1719	3438	1445	1826	1649	1657	1531	1531	1531				
Volume (vph)	156	543	1	8	202	221	1	133	0	480	12	13				
Peak-hour factor, PHF	0.96	0.96	0.96	0.81	0.81	0.81	0.64	0.64	0.64	0.85	0.85	0.85				
Adj. Flow (vph)	162	566	1	10	249	273	2	208	0	565	14	15				
RTOR Reduction (vph)	0	0	1	0	0	181	0	0	0	0	0	10				
Lane Group Flow (vph)	162	566	0	10	249	92	0	210	0	283	296	5				
Confl. Peds. (#/hr)	69			80			4			2						
Confl. Bikes (#/hr)	2			80			4			2						
Heavy Vehicles (%)	6%	6%	6%	5%	5%	5%	4%	4%	4%	4%	4%	4%				
Turn Type	Prot	custom		Prot	custom		Split	Split		Perm		Perm				
Protected Phases	11	16	2	6	15	12	2	6	13	14	14	1	13	5	13	15
Permitted Phases	16			12			15			13						
Actuated Green, G (s)	14.0	42.2	36.0	1.2	29.4	42.6	21.9	28.8	28.8	28.8	28.8	28.8				
Effective Green, g (s)	14.0	42.2	36.0	1.2	29.4	42.6	21.9	28.8	28.8	28.8	28.8	28.8				
Actuated g/C Ratio	0.11	0.33	0.29	0.01	0.23	0.34	0.17	0.23	0.23	0.23	0.23	0.23				
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0				
Lane Grp Cap (vph)	189	1140	374	16	802	488	317	377	378	350	350	350				
v/s Ratio Prot	c0.10	c0.17	0.01	0.07	0.03	c0.12	0.17	c0.18	0.17	c0.18	0.17	c0.18				
v/s Ratio Perm	0.00			0.03			0.00			0.00						
v/c Ratio	0.86	0.50	0.00	0.62	0.31	0.19	0.66	0.75	0.78	0.01	0.01	0.01				
Uniform Delay, d1	55.1	33.5	32.2	62.2	40.0	29.5	48.6	45.3	45.7	37.7	37.7	37.7				
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.93	0.93	1.20	1.20	1.20				
Incremental Delay, d2	29.7	0.3	0.0	57.6	0.2	0.2	5.1	8.1	10.1	0.0	0.0	0.0				
Delay (s)	84.8	33.8	32.2	119.8	40.2	29.7	53.8	50.4	52.8	45.2	45.2	45.2				
Level of Service	F	C	C	F	D	C	D	D	D	D	D	D				
Approach Delay (s)	45.1			36.3			53.8			51.5						
Approach LOS	D			D			D			D						
<b>Intersection Summary</b>																
HCM Average Control Delay	45.6			HCM Level of Service			D			D						
HCM Volume to Capacity ratio	0.66			0.66			0.66			0.66						
Actuated Cycle Length (s)	126.1			Sum of lost time (s)			28.0			28.0						
Intersection Capacity Utilization	66.3%			ICU Level of Service			C			C						
Analysis Period (min)	15			15			15			15						

Barrio Logan CPU  
37: Boston Ave & I-5 SB On-ramp

Existing Conditions w LRT  
Timing Plan: PM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	[Diagrammatic Lane Configurations]											
Sign Control	Free			Free			Stop			Stop		
Grade	0%			0%			0%			0%		
Volume (veh/h)	495	59	14	5	46	58	6	49	13	0	0	0
Peak Hour Factor	0.83	0.83	0.83	0.61	0.61	0.61	0.66	0.66	0.66	0.25	0.25	0.25
Hourly flow rate (vph)	596	71	17	8	75	95	9	74	20	0	0	0
Pedestrians	[Pedestrian Data]											
Lane Width (ft)	[Lane Width Data]											
Walking Speed (ft/s)	[Walking Speed Data]											
Percent Blockage	[Percent Blockage Data]											
Right turn flare (veh)	[Right turn flare Data]											
Median type	None						None					
Median storage (veh)	[Median storage Data]											
Upstream signal (ft)	657											
pX, platoon unblocked	[pX, platoon unblocked Data]											
vC, conflicting volume	170	88			1412			1459	80	1468	1420	123
vC1, stage 1 conf vol	[vC1, stage 1 conf vol Data]											
vC2, stage 2 conf vol	[vC2, stage 2 conf vol Data]											
vCu, unblocked vol	170	88			1412			1459	80	1468	1420	123
tC, single (s)	4.2	4.2			7.1			6.6	6.2	7.1	6.5	6.2
tC, 2 stage (s)	[tC, 2 stage (s) Data]											
tF (s)	2.3	2.3			3.5			4.1	3.3	3.5	4.0	3.3
p0 queue free %	57	99			88			0	98	0	100	100
cM capacity (veh/h)	1377	1477			76			68	981	0	77	928
<b>Direction, Lane #</b>												
Volume Total	EB 1	WB 1	NB 1	[Volume Total Data]								
Volume Left	596	8	9	[Volume Left Data]								
Volume Right	17	95	20	[Volume Right Data]								
cSH	1377	1477	84	[cSH Data]								
Volume to Capacity	0.43	0.01	1.23	[Volume to Capacity Data]								
Queue Length 95th (ft)	56	0	188	[Queue Length 95th (ft) Data]								
Control Delay (s)	8.9	0.4	260.7	[Control Delay (s) Data]								
Lane LOS	A	A	F	[Lane LOS Data]								
Approach Delay (s)	8.9	0.4	260.7	[Approach Delay (s) Data]								
Approach LOS	F			[Approach LOS Data]								
<b>Intersection Summary</b>												
Average Delay	34.2			[Average Delay Data]								
Intersection Capacity Utilization	48.4%			ICU Level of Service			A			A		
Analysis Period (min)	15			[Analysis Period (min) Data]								

Barrio Logan CPU  
38: Main St & 32nd St

Existing Conditions w LRT  
Timing Plan: PM Peak

Diagram of intersection movements and traffic signal settings for Barrio Logan CPU. The table lists various parameters such as Lane Configurations, Ideal Flow (vphpl), Volume (vph), Satd. Flow (prot), and Intersection Summary. Critical Lane Group 'c' is identified.

Barrio Logan CPU  
39: 32nd St & Wabash St

Existing Conditions w LRT  
Timing Plan: PM Peak

Diagram of intersection movements and traffic signal settings for Barrio Logan CPU. The table lists various parameters such as Lane Configurations, Ideal Flow (vphpl), Volume (vph), Satd. Flow (prot), and Intersection Summary. Critical Lane Group 'c' is identified.

Barrio Logan CPU  
39: 32nd St & Wabash St

Existing Conditions w LRT  
Timing Plan: PM Peak

Movement	SBL2	SBL	SBT	SBR	SWL2	SWL	SWR	SWR2
Lane Configurations								
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0				4.0		
Lane Util. Factor	1.00	0.95				0.97		
Frt	1.00	0.99				0.93		
Flt Protected	0.95	1.00				0.98		
Satd. Flow (prot)	1766	3405				3201		
Flt Permitted	0.95	1.00				0.87		
Satd. Flow (perm)	1766	3405				2861		
Volume (vph)	17	147	237	20	21	97	40	75
Peak-hour factor, PHF	0.92	0.81	0.81	0.81	0.92	0.92	0.92	0.92
Adj. Flow (vph)	18	181	293	25	23	105	43	82
RTOR Reduction (vph)	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	199	318	0	0	253	0	0
Heavy Vehicles (%)	4%	2%	5%	2%	4%	4%	4%	4%
Turn Type	Prot	Prot			Perm			
Protected Phases	1	1	6			3		
Permitted Phases					3			
Actuated Green, G (s)	12.6	23.6				14.6		
Effective Green, g (s)	12.6	23.6				14.6		
Actuated g/C Ratio	0.14	0.26				0.16		
Clearance Time (s)	4.0	4.0				4.0		
Vehicle Extension (s)	3.0	3.0				3.0		
Lane Grp Cap (vph)	246	889				462		
v/s Ratio Prot	c0.11	0.09						
v/s Ratio Perm						c0.09		
v/c Ratio	0.81	0.36				0.55		
Uniform Delay, d1	37.7	27.2				34.9		
Progression Factor	1.00	1.00				1.00		
Incremental Delay, d2	17.5	0.2				1.3		
Delay (s)	55.2	27.5				36.2		
Level of Service	E	C				D		
Approach Delay (s)		38.2				36.2		
Approach LOS		D				D		

Intersection Summary

Barrio Logan CPU  
40: Harbor Dr & 32nd St

Existing Conditions w LRT  
Timing Plan: PM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR						
Lane Configurations																		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900						
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0						
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00						
Frbp, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.99						
Flpb, ped/bikes	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	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85						
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00						
Satd. Flow (prot)	1719	3438	1538	1687	3374	1473	1719	3438	1500	1719	3438	1526						
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00						
Satd. Flow (perm)	1719	3438	1538	1687	3374	1473	1719	3438	1500	1719	3438	1526						
Volume (vph)	239	796	64	26	267	321	48	487	97	219	200	180						
Peak-hour factor, PHF	0.80	0.80	0.80	0.70	0.70	0.70	0.80	0.80	0.80	0.81	0.81	0.81						
Adj. Flow (vph)	299	995	80	37	381	459	60	609	121	270	247	222						
RTOR Reduction (vph)	0	0	29	0	0	400	0	0	95	0	0	109						
Lane Group Flow (vph)	299	995	51	37	381	59	60	609	26	270	247	113						
Confl. Bikes (#/hr)						7			12			10						
Heavy Vehicles (%)	5%	5%	5%	7%	7%	7%	5%	5%	5%	5%	5%	5%						
Turn Type	Prot		custom	Prot		custom	Prot		Perm	Prot		custom						
Protected Phases	3	14	2	6	15	13	18	2	6	15	12	11	15	16	15	3	1	5
Permitted Phases						14						18						16
Actuated Green, G (s)	24.2	39.9	42.1	4.9	20.6	15.6	7.2	25.1	25.1	20.1	42.0	62.2						
Effective Green, g (s)	24.2	39.9	42.1	4.9	20.6	15.6	7.2	25.1	25.1	20.1	42.0	62.2						
Actuated g/C Ratio	0.20	0.33	0.35	0.04	0.17	0.13	0.06	0.21	0.21	0.16	0.34	0.51						
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0									
Vehicle Extension (s)	3.0		3.0	3.0		3.0	3.0	3.0	3.0									
Lane Grp Cap (vph)	341	1124	531	68	570	188	101	707	309	283	1184	828						
v/s Ratio Prot	c0.17	c0.29	0.01	0.02	0.11		0.03	c0.18		c0.16	0.07	0.04						
v/s Ratio Perm			0.03			0.04			0.02			0.04						
v/c Ratio	0.88	0.89	0.10	0.54	0.67	0.31	0.59	0.86	0.08	0.95	0.21	0.14						
Uniform Delay, d1	47.5	38.9	27.1	57.5	47.5	48.3	56.0	46.8	39.2	50.5	28.3	15.8						
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.92	0.92	1.53						
Incremental Delay, d2	21.5	8.6	0.1	8.6	3.0	1.0	9.0	10.5	0.1	40.7	0.1	0.1						
Delay (s)	68.9	47.4	27.1	66.1	50.5	49.3	65.0	57.3	39.3	87.3	26.0	24.2						
Level of Service	E	D	C	E	D	D	E	E	D	F	C	C						
Approach Delay (s)		50.9			50.5			55.1			47.9							
Approach LOS		D			D			E			D							

Intersection Summary

HCM Average Control Delay	51.1	HCM Level of Service	D
HCM Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	122.0	Sum of lost time (s)	28.0
Intersection Capacity Utilization	64.3%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Barrio Logan CPU  
41: Main St & I-15 Ramps

Existing Conditions w LRT  
Timing Plan: PM Peak

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↔	↕↕	↕↕	↕	↕	↕
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frbp, ped/bikes	1.00	1.00	1.00	1.00	0.99	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	0.93	0.93
Flt Protected	0.95	1.00	1.00	1.00	0.98	0.98
Satd. Flow (prot)	1770	3539	3539	1583	1680	1680
Flt Permitted	0.95	1.00	1.00	1.00	0.98	0.98
Satd. Flow (perm)	1770	3539	3539	1583	1680	1680
Volume (vph)	254	579	275	154	120	126
Peak-hour factor, PHF	0.91	0.91	0.89	0.89	0.94	0.94
Adj. Flow (vph)	279	636	309	173	128	134
RTOR Reduction (vph)	0	0	0	135	61	0
Lane Group Flow (vph)	279	636	309	38	201	0
Confl. Peds. (#/hr)				10	4	
Confl. Bikes (#/hr)					1	
Turn Type	Prot			Perm		
Protected Phases	5	2	6		4	
Permitted Phases				6		
Actuated Green, G (s)	11.9	25.8	9.9	9.9	11.3	
Effective Green, g (s)	11.9	25.8	9.9	9.9	11.3	
Actuated g/C Ratio	0.26	0.57	0.22	0.22	0.25	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	467	2025	777	347	421	
v/s Ratio Prot	c0.16	0.18	c0.09		c0.12	
v/s Ratio Perm				0.02		
v/c Ratio	0.60	0.31	0.40	0.11	0.48	
Uniform Delay, d1	14.5	5.0	15.1	14.1	14.4	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	2.1	0.1	0.3	0.1	0.9	
Delay (s)	16.6	5.1	15.4	14.2	15.2	
Level of Service	B	A	B	B	B	
Approach Delay (s)		8.6	15.0		15.2	
Approach LOS		A	B		B	
<b>Intersection Summary</b>						
HCM Average Control Delay		11.5		HCM Level of Service		B
HCM Volume to Capacity ratio		0.50				
Actuated Cycle Length (s)		45.1		Sum of lost time (s)	12.0	
Intersection Capacity Utilization		46.9%		ICU Level of Service		A
Analysis Period (min)		15				
c Critical Lane Group						

Barrio Logan CPU  
1: Commercial St & 16th St

Horizon Year Alt 1 without Improvements  
Timing Plan: AM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↕↕	↕	↕	↕↕	↕	↕↕	↕↕	↕	↕	↕	↕
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0
Lane Util. Factor		1.00	0.95	0.95		0.95		0.95	0.95		0.95	0.95
Frbp, ped/bikes		1.00	1.00	0.99		0.99		1.00	0.98		1.00	0.98
Flpb, ped/bikes		1.00	0.99	1.00		1.00		1.00	1.00		1.00	1.00
Frt		0.99	1.00	0.96		0.96		0.99	0.95		0.99	0.95
Flt Protected		1.00	0.95	1.00		1.00		1.00	0.99		1.00	0.99
Satd. Flow (prot)		1827	1664	1685		1685		3508	3293		3293	3293
Flt Permitted		0.97	0.52	1.00		1.00		0.94	0.88		0.94	0.88
Satd. Flow (perm)		1769	914	1685		1685		3296	2924		3296	2924
Volume (vph)	16	225	26	24	295	114	13	340	16	47	250	136
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	245	28	26	321	124	14	370	17	51	272	148
RTOR Reduction (vph)	0	5	0	0	0	0	0	0	0	0	46	0
Lane Group Flow (vph)	0	285	0	26	445	0	0	401	0	0	425	0
Confl. Peds. (#/hr)			15	15		16	36		12		36	
Confl. Bikes (#/hr)						1						
Heavy Vehicles (%)		2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		19.4		19.4	19.4			27.4			27.4	
Effective Green, g (s)		19.4		19.4	19.4			27.4			27.4	
Actuated g/C Ratio		0.35		0.35	0.35			0.50			0.50	
Clearance Time (s)		4.0		4.0	4.0			4.0			4.0	
Vehicle Extension (s)		3.0		3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)		626		324	597			1648			1462	
v/s Ratio Prot												
v/s Ratio Perm		0.16		0.03	0.26			0.12			c0.15	
v/c Ratio		0.46		0.08	0.75			0.24			0.29	
Uniform Delay, d1		13.6		11.8	15.5			7.8			8.0	
Progression Factor		1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2		0.5		0.1	5.0			0.4			0.5	
Delay (s)		14.2		11.9	20.6			8.1			8.5	
Level of Service		B		B	C			A			A	
Approach Delay (s)		14.2			20.1			8.1			8.5	
Approach LOS		B			C			A			A	
<b>Intersection Summary</b>												
HCM Average Control Delay		12.8			HCM Level of Service					B		
HCM Volume to Capacity ratio		0.48										
Actuated Cycle Length (s)		54.8			Sum of lost time (s)			8.0				
Intersection Capacity Utilization		81.9%			ICU Level of Service			D				
Analysis Period (min)		15										
c Critical Lane Group												

Barrio Logan CPU  
1: Commercial St & 16th St

Horizon Year Alt 1 without Improvements  
Timing Plan: AM Peak

Movement	SWR
Lane Configurations	7
Ideal Flow (vphpl)	1900
Total Lost time (s)	
Lane Util. Factor	
Frbp, ped/bikes	
Flpb, ped/bikes	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Volume (vph)	0
Peak-hour factor, PHF	0.92
Adj. Flow (vph)	0
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Heavy Vehicles (%)	2%
Turn Type	custom
Protected Phases	9
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	
<b>Intersection Summary</b>	

Barrio Logan CPU  
2: National Ave & 16th St

Horizon Year Alt 1 without Improvements  
Timing Plan: AM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↕		↕	↕			↕↕				↕↕
Sign Control		Free			Free			Stop				Stop
Grade		0%			0%			0%				0%
Volume (veh/h)	40	194	40	3	495	34	40	34	12	56	36	91
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
Hourly flow rate (vph)	43	211	43	3	538	37	43	37	13	61	39	99
Pedestrians		7			14			16				19
Lane Width (ft)		12.0			12.0			12.0				12.0
Walking Speed (ft/s)		4.0			4.0			4.0				4.0
Percent Blockage		1			1			1				2
Right turn flare (veh)												
Median type								None				None
Median storage veh					668							
Upstream signal (ft)												
pX, platoon unblocked	0.93						0.93	0.93		0.93	0.93	0.93
vC, conflicting volume	594			270			1006	936	157	820	939	583
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	563			270			1006	931	157	806	935	551
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	95			100			61	84	98	70	83	77
cM capacity (veh/h)	919			1273			112	228	839	201	226	435
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>EB 2</b>	<b>WB 1</b>	<b>WB 2</b>	<b>NB 1</b>	<b>SB 1</b>						
Volume Total	149	149	3	575	93	199						
Volume Left	43	0	3	0	43	61						
Volume Right	0	43	0	37	13	99						
cSH	919	1700	1273	1700	166	283						
Volume to Capacity	0.05	0.09	0.00	0.34	0.56	0.70						
Queue Length 95th (ft)	4	0	0	0	73	122						
Control Delay (s)	3.0	0.0	7.8	0.0	51.7	43.2						
Lane LOS	A		A		F	E						
Approach Delay (s)	1.5		0.0		51.7	43.2						
Approach LOS					F	E						
<b>Intersection Summary</b>												
Average Delay				11.9								
Intersection Capacity Utilization				57.0%			ICU Level of Service			B		
Analysis Period (min)				15								



Barrio Logan CPU  
3: National Ave & Sigsbee St  
Horizon Year Alt 1 without Improvements  
Timing Plan: AM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	[Diagrammatic Lane Configurations]											
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
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
Frbp, ped/bikes	1.00	0.99	1.00	1.00	1.00	1.00	0.99	0.99	0.99	0.99	0.99	0.99
Flpb, ped/bikes	0.99	1.00	0.98	0.98	1.00	1.00	0.99	0.99	0.99	1.00	1.00	1.00
Frt	1.00	0.96	1.00	0.99	1.00	1.00	0.95	0.95	0.93	0.93	0.93	0.93
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00	0.98	0.98	0.99	0.99	0.99	0.99
Satd. Flow (prot)	1753	1769	1741	1831	1831	1831	1702	1702	1695	1695	1695	1695
Flt Permitted	0.41	1.00	0.63	1.00	1.00	1.00	0.84	0.84	0.96	0.96	0.96	0.96
Satd. Flow (perm)	765	1769	1151	1831	1831	1831	1467	1467	1634	1634	1634	1634
Volume (vph)	10	140	51	16	367	36	63	26	58	15	40	58
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)	11	152	55	17	399	39	68	28	63	16	43	63
RTOR Reduction (vph)	0	21	0	0	6	0	0	37	0	0	40	0
Lane Group Flow (vph)	11	186	0	17	432	0	0	122	0	0	82	0
Confl. Peds. (#/hr)	21		25	25			21	37	14	14		37
Confl. Bikes (#/hr)							3		3			1
Turn Type	Perm		Perm		Perm		Perm		Perm		Perm	
Protected Phases		4			8			2				6
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	13.9	13.9	13.9	13.9	13.9	13.9	12.4	12.4	12.4	12.4	12.4	12.4
Effective Green, g (s)	13.9	13.9	13.9	13.9	13.9	13.9	12.4	12.4	12.4	12.4	12.4	12.4
Actuated g/C Ratio	0.41	0.41	0.41	0.41	0.41	0.41	0.36	0.36	0.36	0.36	0.36	0.36
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	310	717	466	742	742	742	530	530	530	530	591	591
v/s Ratio Prot		0.11			c0.24							
v/s Ratio Perm	0.01		0.01				c0.08				0.05	
v/c Ratio	0.04	0.26	0.04	0.58	0.58	0.58	0.23	0.23	0.23	0.23	0.14	0.14
Uniform Delay, d1	6.2	6.8	6.2	7.9	7.9	7.9	7.6	7.6	7.6	7.6	7.4	7.4
Progression 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
Incremental Delay, d2	0.0	0.2	0.0	1.2	1.2	1.2	0.2	0.2	0.2	0.2	0.1	0.1
Delay (s)	6.2	7.0	6.2	9.1	9.1	9.1	7.8	7.8	7.8	7.8	7.5	7.5
Level of Service	A	A	A	A	A	A	A	A	A	A	A	A
Approach Delay (s)		6.9		9.0	9.0	9.0	7.8	7.8	7.8	7.8	7.5	7.5
Approach LOS		A		A	A	A	A	A	A	A	A	A
<b>Intersection Summary</b>												
HCM Average Control Delay		8.1										A
HCM Volume to Capacity ratio		0.42										
Actuated Cycle Length (s)		34.3					8.0	8.0	8.0	8.0	8.0	8.0
Intersection Capacity Utilization		45.3%										A
Analysis Period (min)		15										
c Critical Lane Group												

Barrio Logan CPU  
4: Newton Ave & Sigsbee St  
Horizon Year Alt 1 without Improvements  
Timing Plan: AM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	[Diagrammatic Lane Configurations]											
Sign Control	Stop			Stop			Stop			Stop		
Volume (vph)	6	48	19	15	80	51	24	111	34	33	79	17
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
Hourly flow rate (vph)	7	52	21	16	87	55	26	121	37	36	86	18
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	79	159	184	140								
Volume Left (vph)	7	16	26	36								
Volume Right (vph)	21	55	37	18								
Hadj (s)	-0.11	-0.16	-0.06	0.01								
Departure Headway (s)	4.8	4.6	4.6	4.7								
Degree Utilization, x	0.11	0.20	0.23	0.18								
Capacity (veh/h)	687	721	739	714								
Control Delay (s)	8.3	8.8	9.0	8.8								
Approach Delay (s)	8.3	8.8	9.0	8.8								
Approach LOS	A	A	A	A								
<b>Intersection Summary</b>												
Delay		8.8										
HCM Level of Service		A										
Intersection Capacity Utilization		31.7%					ICU Level of Service					A
Analysis Period (min)		15										

Barrio Logan CPU  
5: Main St & Sigsbee St

Horizon Year Alt 1 without Improvements  
Timing Plan: AM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↕				↕						↕	
Sign Control	Stop			Stop			Stop			Stop		
Volume (vph)	3	8	6	31	8	61	5	97	24	31	96	3
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
Hourly flow rate (vph)	3	9	7	34	9	66	5	105	26	34	104	3
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>WB 1</b>	<b>NB 1</b>	<b>SB 1</b>								
Volume Total (vph)	18	109	137	141								
Volume Left (vph)	3	34	5	34								
Volume Right (vph)	7	66	26	3								
Hadj (s)	-0.14	-0.27	-0.07	0.07								
Departure Headway (s)	4.5	4.3	4.3	4.4								
Degree Utilization, x	0.02	0.13	0.16	0.17								
Capacity (veh/h)	731	782	808	780								
Control Delay (s)	7.6	7.9	8.1	8.3								
Approach Delay (s)	7.6	7.9	8.1	8.3								
Approach LOS	A	A	A	A								
<b>Intersection Summary</b>												
Delay				8.1								
HCM Level of Service				A								
Intersection Capacity Utilization	33.8%			ICU Level of Service	A							
Analysis Period (min)				15								

Barrio Logan CPU  
6: Harbor Dr & Sigsbee St

Horizon Year Alt 1 without Improvements  
Timing Plan: AM Peak

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↕	↕	↕	↕	↕	↕
Sign Control	Free		Free		Stop	
Grade	0%		0%		0%	
Volume (veh/h)	60	480	1670	20	110	110
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	65	522	1815	22	120	120
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type						Raised
Median storage veh						0
Upstream signal (ft)						1319
pX, platoon unblocked	0.71				0.71	0.71
vC, conflicting volume	1837				2217	918
vC1, stage 1 conf vol						1826
vC2, stage 2 conf vol						391
vCu, unblocked vol	1770				2306	476
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						5.8
tF (s)	2.2				3.5	3.3
p0 queue free %	74				0	69
cM capacity (veh/h)	247				53	380
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>EB 2</b>	<b>EB 3</b>	<b>WB 1</b>	<b>WB 2</b>	<b>SB 1</b>
Volume Total	65	261	261	1210	627	239
Volume Left	65	0	0	0	0	120
Volume Right	0	0	0	0	22	120
cSH	247	1700	1700	1700	1700	94
Volume to Capacity	0.26	0.15	0.15	0.71	0.37	2.55
Queue Length 95th (ft)	26	0	0	0	0	555
Control Delay (s)	24.7	0.0	0.0	0.0	0.0	800.0
Lane LOS	C					F
Approach Delay (s)	2.7				0.0	800.0
Approach LOS						F
<b>Intersection Summary</b>						
Average Delay				72.4		
Intersection Capacity Utilization	69.4%			ICU Level of Service	C	
Analysis Period (min)				15		

Barrio Logan CPU  
7: Logan Ave & Beardsley St  
Horizon Year Alt 1 without Improvements  
Timing Plan: AM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↕		↕		↕		↕		↕		↕	
Sign Control	Stop		Stop		Stop		Stop		Stop		Stop	
Volume (vph)	0	170	24	87	202	0	31	0	68	259	236	47
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
Hourly flow rate (vph)	0	185	26	95	220	0	34	0	74	282	257	51
Direction, Lane #	EB 1	WB 1	WB 2	NB 1	SB 1							
Volume Total (vph)	211	95	220	108	589							
Volume Left (vph)	0	95	0	34	282							
Volume Right (vph)	26	0	0	74	51							
Hadj (s)	-0.04	0.53	0.03	-0.32	0.08							
Departure Headway (s)	7.0	7.8	7.3	6.7	5.9							
Degree Utilization, x	0.41	0.20	0.44	0.20	0.97							
Capacity (veh/h)	508	454	489	507	601							
Control Delay (s)	14.7	11.6	14.7	11.3	54.1							
Approach Delay (s)	14.7	13.7		11.3	54.1							
Approach LOS	B	B		B	F							
<b>Intersection Summary</b>												
Delay			33.1									
HCM Level of Service			D									
Intersection Capacity Utilization			61.5%		ICU Level of Service		B					
Analysis Period (min)			15									

Barrio Logan CPU  
8: National Ave & Beardsley St  
Horizon Year Alt 1 without Improvements  
Timing Plan: AM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↕		↕		↕		↕		↕		↕	
Sign Control	Stop		Stop		Stop		Stop		Stop		Stop	
Volume (vph)	8	238	8	241	421	67	4	30	50	216	138	23
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
Hourly flow rate (vph)	9	259	9	262	458	73	4	33	54	235	150	25
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1						
Volume Total (vph)	9	267	262	530	91	410						
Volume Left (vph)	9	0	262	0	4	235						
Volume Right (vph)	0	9	0	73	54	25						
Hadj (s)	0.53	0.01	0.53	-0.06	-0.31	0.11						
Departure Headway (s)	8.2	7.7	7.6	7.0	7.6	6.9						
Degree Utilization, x	0.02	0.57	0.55	1.03	0.19	0.78						
Capacity (veh/h)	419	446	466	517	419	410						
Control Delay (s)	10.2	19.1	18.5	73.5	12.5	30.6						
Approach Delay (s)	18.9		55.3		12.5		30.6					
Approach LOS	C		F		B		D					
<b>Intersection Summary</b>												
Delay			39.9									
HCM Level of Service			E									
Intersection Capacity Utilization			67.4%		ICU Level of Service		C					
Analysis Period (min)			15									

Barrio Logan CPU  
9: Newton Ave & Beardsley St  
Horizon Year Alt 1 without Improvements  
Timing Plan: AM Peak

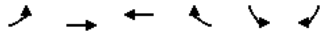
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↕				↕				↕			
Sign Control	Stop				Stop				Stop			
Volume (vph)	18	74	9	29	82	15	13	23	19	56	156	41
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	20	80	10	32	89	16	14	25	21	61	170	45
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	110	137	60	275								
Volume Left (vph)	20	32	14	61								
Volume Right (vph)	10	16	21	45								
Hadj (s)	0.02	0.01	-0.13	-0.02								
Departure Headway (s)	4.9	4.9	4.7	4.6								
Degree Utilization, x	0.15	0.19	0.08	0.35								
Capacity (veh/h)	675	684	699	745								
Control Delay (s)	8.8	9.0	8.2	10.0								
Approach Delay (s)	8.8	9.0	8.2	10.0								
Approach LOS	A	A	A	B								
<b>Intersection Summary</b>												
Delay	9.4											
HCM Level of Service	A											
Intersection Capacity Utilization	38.0%		ICU Level of Service		A							
Analysis Period (min)	15											

Barrio Logan CPU  
10: Main St & Beardsley St  
Horizon Year Alt 1 without Improvements  
Timing Plan: AM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↕				↕				↕			
Sign Control	Stop				Stop				Stop			
Volume (vph)	15	74	4	163	109	76	2	8	52	275	57	52
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
Hourly flow rate (vph)	16	80	4	177	118	83	2	9	57	299	62	57
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	101	378	67	417								
Volume Left (vph)	16	177	2	299								
Volume Right (vph)	4	83	57	57								
Hadj (s)	0.04	0.00	-0.46	0.10								
Departure Headway (s)	6.0	5.5	5.6	5.5								
Degree Utilization, x	0.17	0.58	0.10	0.64								
Capacity (veh/h)	528	623	545	626								
Control Delay (s)	10.2	15.7	9.2	17.6								
Approach Delay (s)	10.2	15.7	9.2	17.6								
Approach LOS	B	C	A	C								
<b>Intersection Summary</b>												
Delay	15.5											
HCM Level of Service	C											
Intersection Capacity Utilization	61.3%		ICU Level of Service		B							
Analysis Period (min)	15											

Barrio Logan CPU  
11: Harbor Dr & Beardsley St

Horizon Year Alt 1 without Improvements  
Timing Plan: AM Peak



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↔	↕↕	↕↕		↕	
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	22	580	1610	30	48	95
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	24	630	1750	33	52	103
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					Raised	
Median storage (veh)					0	
Upstream signal (ft)			658			
pX, platoon unblocked	0.69				0.69	0.69
vC, conflicting volume	1783				2129	891
vC1, stage 1 conf vol					1766	
vC2, stage 2 conf vol					363	
vCu, unblocked vol	1683				2189	383
tC, single (s)	4.3				6.8	6.9
tC, 2 stage (s)					5.8	
tF (s)	2.3				3.5	3.3
p0 queue free %	90				13	76
cM capacity (veh/h)	235				60	422

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1
Volume Total	24	315	315	1167	616	155
Volume Left	24	0	0	0	0	52
Volume Right	0	0	0	0	33	103
cSH	235	1700	1700	1700	1700	139
Volume to Capacity	0.10	0.19	0.19	0.69	0.36	1.12
Queue Length 95th (ft)	8	0	0	0	0	218
Control Delay (s)	22.1	0.0	0.0	0.0	0.0	173.7
Lane LOS	C					F
Approach Delay (s)	0.8			0.0		173.7
Approach LOS						F

Intersection Summary						
Average Delay	10.6					
Intersection Capacity Utilization	60.6%		ICU Level of Service		B	
Analysis Period (min)	15					

Barrio Logan CPU  
12: Kearney St & Cesar E. Chavez Pkwy

Horizon Year Alt 1 without Improvements  
Timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↔	↕↕		↔	↕			↕↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.0	4.0		4.0	4.0			4.0	4.0
Lane Util. Factor				0.95	0.95		1.00	1.00			0.95	0.95
Flt				1.00	0.95		1.00	1.00			0.99	0.99
Flt Protected				0.95	0.99		0.95	1.00			1.00	1.00
Satd. Flow (prot)				1478	1461		1626	1712			3212	3212
Flt Permitted				0.95	0.99		0.95	1.00			1.00	1.00
Satd. Flow (perm)				1478	1461		1626	1712			3212	3212
Volume (vph)	0	0	0	613	259	192	257	262	0	0	350	31
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)	0	0	0	666	282	209	279	285	0	0	380	34
RTOR Reduction (vph)	0	0	0	0	21	0	0	0	0	0	9	0
Lane Group Flow (vph)	0	0	0	568	568	0	279	285	0	0	405	0
Heavy Vehicles (%)	16%	16%	16%	16%	16%	16%	11%	11%	11%	11%	11%	11%
Turn Type				Split			Split					
Protected Phases				8	8		6	6				2
Permitted Phases												
Actuated Green, G (s)				27.7	27.7		16.7	16.7				15.5
Effective Green, g (s)				27.7	27.7		16.7	16.7				15.5
Actuated g/C Ratio				0.39	0.39		0.23	0.23				0.22
Clearance Time (s)				4.0	4.0		4.0	4.0				4.0
Vehicle Extension (s)				3.0	3.0		3.0	3.0				3.0
Lane Grp Cap (vph)				569	563		378	398				692
v/s Ratio Prot				0.38	c0.39		c0.17	0.17				c0.13
v/s Ratio Perm												
v/c Ratio				1.00	1.01		0.74	0.72				0.59
Uniform Delay, d1				22.1	22.1		25.6	25.4				25.3
Progression Factor				1.00	1.00		1.00	1.00				1.00
Incremental Delay, d2				37.0	40.2		7.4	6.0				1.3
Delay (s)				59.1	62.3		32.9	31.5				26.6
Level of Service				E	E		C	C				C
Approach Delay (s)		0.0			60.7			32.2				26.6
Approach LOS		A			E			C				C

Intersection Summary			
HCM Average Control Delay	46.6	HCM Level of Service	D
HCM Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	71.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	64.5%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Barrio Logan CPU  
13: Logan Ave & Cesar E. Chavez Pkwy  
Horizon Year Alt 1 without Improvements  
Timing Plan: AM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	[Diagrammatic Lane Configurations]											
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	0.95	1.00	1.00	1.00	0.95	
Frbp, ped/bikes	1.00	0.99		1.00	1.00	0.97	1.00	1.00	0.97	1.00	1.00	
Flpb, ped/bikes	0.99	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.96		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1758	1766		1762	1863	1544	1530	3059	1328	1530	3008	
Flt Permitted	0.30	1.00		0.19	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	564	1766		346	1863	1544	1530	3059	1328	1530	3008	
Volume (vph)	140	280	120	100	325	76	100	300	280	70	909	82
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)	152	304	130	109	353	83	109	326	304	76	988	89
RTOR Reduction (vph)	0	22	0	0	0	60	0	0	178	0	7	0
Lane Group Flow (vph)	152	412	0	109	353	23	109	326	126	76	1070	0
Confl. Peds. (#/hr)	15		13	13		15			17			39
Confl. Bikes (#/hr)			4									2
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	18%	18%	18%	18%	18%	18%
Turn Type	Perm			Perm		Perm	Prot		Perm		Prot	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8		8		2				
Actuated Green, G (s)	22.5	22.5		22.5	22.5	22.5	8.0	33.2	33.2	12.3	37.5	
Effective Green, g (s)	22.5	22.5		22.5	22.5	22.5	8.0	33.2	33.2	12.3	37.5	
Actuated g/C Ratio	0.28	0.28		0.28	0.28	0.28	0.10	0.42	0.42	0.15	0.47	
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	159	497		97	524	434	153	1269	551	235	1410	
v/s Ratio Prot		0.23			0.19		c0.07	0.11		0.05	c0.36	
v/s Ratio Perm	0.27			c0.31		0.02		0.09				
v/c Ratio	0.96	0.83		1.12	0.67	0.05	0.71	0.26	0.23	0.32	0.76	
Uniform Delay, d1	28.3	26.9		28.8	25.5	21.0	34.9	15.3	15.1	30.1	17.5	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.02	0.66	0.25	1.00	1.00	
Incremental Delay, d2	57.8	10.9		128.6	3.4	0.1	11.3	0.4	0.7	0.8	3.9	
Delay (s)	86.0	37.8		157.4	28.9	21.0	46.8	10.4	4.5	30.9	21.4	
Level of Service	F	D		F	C	C	D	B	A	C	C	
Approach Delay (s)		50.3			53.4			13.4			22.0	
Approach LOS		D			D			B			C	

**Intersection Summary**

HCM Average Control Delay	31.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	75.8%	ICU Level of Service	D
Analysis Period (min)	15		

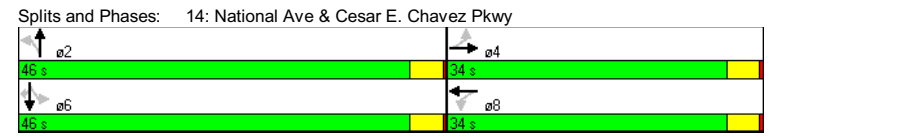
c Critical Lane Group

Barrio Logan CPU  
14: National Ave & Cesar E. Chavez Pkwy  
Horizon Year Alt 1 without Improvements  
Timing Plan: AM Peak

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations	[Diagrammatic Lane Configurations]								
Volume (vph)	190	250	120	350	90	580	70	745	310
Turn Type	Perm		Perm		Perm		Perm		Perm
Protected Phases		4		8		2		6	6
Permitted Phases	4		8		2	2		6	6
Detector Phases	4	4	8	8	2	2	6	6	6
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	31.0	31.0	34.0	34.0	27.0	27.0	27.0	27.0	27.0
Total Split (s)	34.0	34.0	34.0	34.0	46.0	46.0	46.0	46.0	46.0
Total Split (%)	42.5%	42.5%	42.5%	42.5%	57.5%	57.5%	57.5%	57.5%	57.5%
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)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Lead/Lag									
Lead-Lag Optimize?									
Recall Mode	None	None	None	None	C-Min	C-Min	C-Min	C-Min	C-Min

**Intersection Summary**

Cycle Length:	80
Actuated Cycle Length:	80
Offset:	76 (95%), Referenced to phase 2:NBL and 6:SBTL, Start of Green
Natural Cycle:	75
Control Type:	Actuated-Coordinated



Barrio Logan CPU  
14: National Ave & Cesar E. Chavez Pkwy  
Horizon Year Alt 1 without Improvements  
Timing Plan: AM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↕	↔	↔	↕	↔	↔	↕	↔	↔	↕	↔
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	1.00	1.00
Frt	1.00	0.94		1.00	0.96		1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	1746		1770	1792		1612	3185		1530	1610	1369
Flt Permitted	0.23	1.00		0.28	1.00		0.12	1.00		0.34	1.00	1.00
Satd. Flow (perm)	436	1746		519	1792		204	3185		544	1610	1369
Volume (vph)	190	250	180	120	350	120	90	580	50	70	745	310
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)	207	272	196	130	380	130	98	630	54	76	810	337
RTOR Reduction (vph)	0	32	0	0	15	0	0	8	0	0	0	141
Lane Group Flow (vph)	207	436	0	130	495	0	98	676	0	76	810	196
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	12%	12%	12%	18%	18%	18%
Turn Type	Perm			Perm			Perm			Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		6
Actuated Green, G (s)	30.6	30.6		30.6	30.6		41.4	41.4		41.4	41.4	41.4
Effective Green, g (s)	30.6	30.6		30.6	30.6		41.4	41.4		41.4	41.4	41.4
Actuated g/C Ratio	0.38	0.38		0.38	0.38		0.52	0.52		0.52	0.52	0.52
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	167	668		199	685		106	1648		282	833	708
v/s Ratio Prot		0.25			0.28			0.21			c0.50	
v/s Ratio Perm	c0.47			0.25			0.48			0.14		0.14
v/c Ratio	1.24	0.65		0.65	0.72		0.92	0.41		0.27	0.97	0.28
Uniform Delay, d1	24.7	20.3		20.3	21.1		17.9	11.8		10.8	18.7	10.9
Progression Factor	1.00	1.00		1.00	1.00		0.86	0.84		0.26	0.43	0.05
Incremental Delay, d2	148.3	2.3		7.5	3.8		68.3	0.7		1.5	19.2	0.6
Delay (s)	173.0	22.6		27.8	24.8		83.7	10.6		4.4	27.4	1.2
Level of Service	F	C		C	C		F	B		A	C	A
Approach Delay (s)		68.7			25.4			19.8			18.7	
Approach LOS		E			C			B			B	

Intersection Summary			
HCM Average Control Delay	30.4	HCM Level of Service	C
HCM Volume to Capacity ratio	1.09		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	93.8%	ICU Level of Service	F
Analysis Period (min)	15		

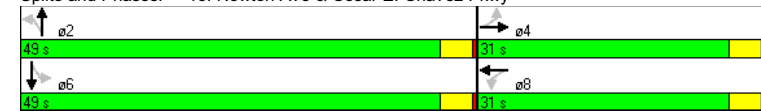
c Critical Lane Group

Barrio Logan CPU  
15: Newton Ave & Cesar E. Chavez Pkwy  
Horizon Year Alt 1 without Improvements  
Timing Plan: AM Peak

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	↔	↕	↔	↕	↔	↕	↔	↕
Volume (vph)	75	40	40	50	40	410	95	810
Turn Type	Perm		Perm		Perm		Perm	
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	6
Detector Phases	4	4	8	8	2	2	6	6
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	31.0	31.0	31.0	31.0	27.0	27.0	27.0	27.0
Total Split (s)	31.0	31.0	31.0	31.0	49.0	49.0	49.0	49.0
Total Split (%)	38.8%	38.8%	38.8%	38.8%	61.3%	61.3%	61.3%	61.3%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	None	None	None	C-Min	C-Min	C-Min	C-Min

Intersection Summary	
Cycle Length:	80
Actuated Cycle Length:	80
Offset:	2 (3%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle:	90
Control Type:	Actuated-Coordinated

Splits and Phases: 15: Newton Ave & Cesar E. Chavez Pkwy



Barrio Logan CPU  
15: Newton Ave & Cesar E. Chavez Pkwy  
Horizon Year Alt 1 without Improvements  
Timing Plan: AM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	[Diagram showing lane configurations for each movement]											
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	1.00	
Frt	1.00	0.91		1.00	0.91		1.00	0.99		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)	1770	1695		1770	1704		1612	3190		1612	1659	
Flt Permitted	0.58	1.00		0.65	1.00		0.21	1.00		0.48	1.00	
Satd. Flow (perm)	1076	1695		1203	1704		349	3190		811	1659	
Volume (vph)	75	40	60	40	50	65	40	410	30	95	810	140
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)	82	43	65	43	54	71	43	446	33	103	880	152
RTOR Reduction (vph)	0	58	0	0	63	0	0	3	0	0	4	0
Lane Group Flow (vph)	82	50	0	43	62	0	43	476	0	103	1028	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	12%	12%	12%	12%	12%	12%
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	8.9	8.9		8.9	8.9		63.1	63.1		63.1	63.1	
Effective Green, g (s)	8.9	8.9		8.9	8.9		63.1	63.1		63.1	63.1	
Actuated g/C Ratio	0.11	0.11		0.11	0.11		0.79	0.79		0.79	0.79	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	120	189		134	190		275	2516		640	1309	
v/s Ratio Prot		0.03			0.04			0.15			c0.62	
v/s Ratio Perm	c0.08			0.04			0.12			0.13		
v/c Ratio	0.68	0.27		0.32	0.33		0.16	0.19		0.16	0.79	
Uniform Delay, d1	34.2	32.6		32.8	32.8		2.0	2.1		2.0	4.7	
Progression Factor	1.00	1.00		1.00	1.00		0.57	0.45		0.58	0.42	
Incremental Delay, d2	14.9	0.8		1.4	1.0		1.0	0.1		0.2	2.2	
Delay (s)	49.1	33.3		34.2	33.8		2.1	1.1		1.4	4.1	
Level of Service	D	C		C	C		A	A		A	A	
Approach Delay (s)		40.1			33.9			1.2			3.9	
Approach LOS		D			C			A			A	

Intersection Summary			
HCM Average Control Delay	9.1	HCM Level of Service	A
HCM Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	75.3%	ICU Level of Service	D
Analysis Period (min)	15		

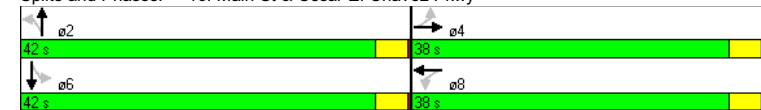
c Critical Lane Group

Barrio Logan CPU  
16: Main St & Cesar E. Chavez Pkwy  
Horizon Year Alt 1 without Improvements  
Timing Plan: AM Peak

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	[Diagram showing lane configurations for each movement]							
Volume (vph)	150	190	70	330	70	340	150	580
Turn Type	Perm		Perm		Perm		Perm	
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phases	4	4	8	8	2	2	6	6
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	31.0	31.0	31.0	31.0	27.0	27.0	27.0	27.0
Total Split (s)	38.0	38.0	38.0	38.0	42.0	42.0	42.0	42.0
Total Split (%)	47.5%	47.5%	47.5%	47.5%	52.5%	52.5%	52.5%	52.5%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	None	None	None	C-Min	C-Min	C-Min	C-Min

Intersection Summary	
Cycle Length:	80
Actuated Cycle Length:	80
Offset:	14 (18%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
Natural Cycle:	70
Control Type:	Actuated-Coordinated

Splits and Phases: 16: Main St & Cesar E. Chavez Pkwy





Barrio Logan CPU Horizon Year Alt 1 without Improvements  
 16: Main St & Cesar E. Chavez Pkwy Timing Plan: AM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR													
Lane Configurations																									
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900													
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0														
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	1.00														
Frbp, ped/bikes	1.00	1.00		1.00	0.98		1.00	0.99		1.00	0.98														
Flpb, ped/bikes	0.99	1.00		0.99	1.00		1.00	1.00		1.00	1.00														
Frt	1.00	0.99		1.00	0.95		1.00	0.97		1.00	0.96														
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00														
Satd. Flow (prot)	1751	1839		1750	1731		1556	2996		1549	1555														
Flt Permitted	0.20	1.00		0.57	1.00		0.10	1.00		0.45	1.00														
Satd. Flow (perm)	374	1839		1044	1731		165	2996		741	1555														
Volume (vph)	150	190	15	70	330	190	70	340	90	150	580	180													
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)	163	207	16	76	359	207	76	370	98	163	630	196													
RTOR Reduction (vph)	0	4	0	0	27	0	0	29	0	0	14	0													
Lane Group Flow (vph)	163	219	0	76	539	0	76	439	0	163	812	0													
Confl. Peds. (#/hr)	38		18	18		38	26		5	5		26													
Confl. Bikes (#/hr)			2			1			1			2													
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	16%	16%	16%	16%	16%	16%													
Turn Type	<table border="0"> <tr> <td>Perm</td><td>Perm</td><td>Perm</td><td>Perm</td><td>Perm</td><td>Perm</td><td>Perm</td><td>Perm</td><td>Perm</td><td>Perm</td><td>Perm</td><td>Perm</td><td>Perm</td> </tr> </table>												Perm	Perm	Perm	Perm	Perm	Perm	Perm	Perm	Perm	Perm	Perm	Perm	Perm
Perm	Perm	Perm	Perm	Perm	Perm	Perm	Perm	Perm	Perm	Perm	Perm	Perm													
Protected Phases	4			8			2			6															
Permitted Phases	4			8			2			6															
Actuated Green, G (s)	32.4	32.4		32.4	32.4		39.6	39.6		39.6	39.6														
Effective Green, g (s)	32.4	32.4		32.4	32.4		39.6	39.6		39.6	39.6														
Actuated g/C Ratio	0.40	0.40		0.40	0.40		0.50	0.50		0.50	0.50														
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0														
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0														
Lane Grp Cap (vph)	151	745		423	701		82	1483		367	770														
v/s Ratio Prot	0.12			0.31			0.15			c0.52															
v/s Ratio Perm	c0.44			0.07			0.46			0.22															
v/c Ratio	1.08	0.29		0.18	0.77		0.93	0.30		0.44	1.06														
Uniform Delay, d1	23.8	16.1		15.3	20.6		18.8	12.0		13.1	20.2														
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		0.66	0.69														
Incremental Delay, d2	96.0	0.2		0.2	5.1		80.6	0.5		2.6	42.5														
Delay (s)	119.8	16.3		15.5	25.7		99.5	12.5		11.3	56.4														
Level of Service	F	B		B	C		F	B		B	E														
Approach Delay (s)	60.0			24.5			24.6			49.0															
Approach LOS	E			C			C			D															
<b>Intersection Summary</b>																									
HCM Average Control Delay	39.3			HCM Level of Service			D																		
HCM Volume to Capacity ratio	1.06																								
Actuated Cycle Length (s)	80.0			Sum of lost time (s)			8.0																		
Intersection Capacity Utilization	97.7%			ICU Level of Service			F																		
Analysis Period (min)	15																								

c Critical Lane Group


Barrio Logan CPU Horizon Year Alt 1 without Improvements  
 17: Harbor Dr & Cesar E. Chavez Pkwy Timing Plan: AM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR													
Lane Configurations																									
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900													
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0														
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00														
Frbp, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.99		1.00	0.98														
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00														
Frt	1.00	0.99		1.00	0.99		1.00	0.90		1.00	0.85														
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00														
Satd. Flow (prot)	1641	3224		1421	3234		1364	1218		1600	1371														
Flt Permitted	0.95	1.00		0.95	1.00		0.57	1.00		0.85	1.00														
Satd. Flow (perm)	1641	3224		1421	3234		825	1218		1397	1371														
Volume (vph)	118	398	40	80	1047	95	10	14	27	72	83	403													
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)	128	433	43	87	1138	103	11	15	29	78	90	438													
RTOR Reduction (vph)	0	7	0	0	6	0	0	23	0	0	0	74													
Lane Group Flow (vph)	128	469	0	87	1235	0	11	21	0	0	168	364													
Confl. Peds. (#/hr)			11		6	4			1	1		4													
Confl. Bikes (#/hr)			5		11				2																
Heavy Vehicles (%)	10%	10%	10%	27%	10%	10%	32%	32%	43%	16%	16%	16%													
Turn Type	<table border="0"> <tr> <td>Prot</td><td>Prot</td><td>Prot</td><td>Perm</td><td>Perm</td><td>Perm</td><td>Perm</td><td>Perm</td><td>Perm</td><td>Perm</td><td>Perm</td><td>Perm</td><td>Perm</td> </tr> </table>												Prot	Prot	Prot	Perm	Perm	Perm	Perm	Perm	Perm	Perm	Perm	Perm	Perm
Prot	Prot	Prot	Perm	Perm	Perm	Perm	Perm	Perm	Perm	Perm	Perm	Perm													
Protected Phases	3	14	2	6	13	18	2	6	12				1	5	16										
Permitted Phases							12			1			5	16											
Actuated Green, G (s)	6.3	33.6		5.3	32.6		21.1	21.1				33.5	33.5												
Effective Green, g (s)	6.3	33.6		5.3	32.6		21.1	21.1				33.5	33.5												
Actuated g/C Ratio	0.07	0.35		0.05	0.34		0.22	0.22				0.35	0.35												
Clearance Time (s)	4.0			4.0			4.0	4.0																	
Vehicle Extension (s)	3.0			3.0			3.0	3.0																	
Lane Grp Cap (vph)	107	1124		78	1094		181	267			485	476													
v/s Ratio Prot	c0.08		0.15		0.06		c0.38																		
v/s Ratio Perm									0.01		0.12		c0.27												
v/c Ratio	1.20	0.42		1.12	1.13		0.06	0.08				0.35	0.76												
Uniform Delay, d1	45.1	23.9		45.6	31.9		29.8	29.9				23.3	27.9												
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00				1.02	1.10												
Incremental Delay, d2	149.1	0.3		136.7	70.0		0.1	0.1				0.4	7.1												
Delay (s)	194.1	24.2		182.2	101.9		29.9	30.1				24.3	37.8												
Level of Service	F	C		F	F		C	C				C	D												
Approach Delay (s)	60.2			107.1			30.0			34.1															
Approach LOS	E			F			C			C															
<b>Intersection Summary</b>																									
HCM Average Control Delay	77.5			HCM Level of Service			E																		
HCM Volume to Capacity ratio	0.97																								
Actuated Cycle Length (s)	96.4			Sum of lost time (s)			24.0																		
Intersection Capacity Utilization	71.6%			ICU Level of Service			C																		
Analysis Period (min)	15																								

c Critical Lane Group

Barrio Logan CPU  
18: Logan Ave & I-5 SB On-ramp


Horizon Year Alt 1 without Improvements  
Timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR		
Lane Configurations														
Sign Control	Free			Free			Stop			Stop				
Grade	0%			0%			0%			0%				
Volume (veh/h)	497	182	2	0	127	84	0	0	4	0	0	0		
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		
Hourly flow rate (vph)	540	198	2	0	138	91	0	0	4	0	0	0		
Pedestrians														
Lane Width (ft)														
Walking Speed (ft/s)														
Percent Blockage														
Right turn flare (veh)														
Median type	None						None							
Median storage (veh)														
Upstream signal (ft)	667													
pX, platoon unblocked														
vC, conflicting volume	229				200				1417	1509	199	1466	1464	184
vC1, stage 1 conf vol														
vC2, stage 2 conf vol														
vCu, unblocked vol	229				200				1417	1509	199	1466	1464	184
tC, single (s)	4.1				4.1				7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)														
tF (s)	2.2				2.2				3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	60				100				100	100	99	100	100	100
cM capacity (veh/h)	1339				1372				79	72	842	72	77	859
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>EB 2</b>	<b>WB 1</b>	<b>WB 2</b>	<b>NB 1</b>									
Volume Total	540	200	0	229	4									
Volume Left	540	0	0	0	0									
Volume Right	0	2	0	91	4									
cSH	1339	1700	1700	1700	842									
Volume to Capacity	0.40	0.12	0.00	0.13	0.01									
Queue Length 95th (ft)	50	0	0	0	0									
Control Delay (s)	9.5	0.0	0.0	0.0	9.3									
Lane LOS	A				A									
Approach Delay (s)	6.9				0.0				9.3					
Approach LOS						A								
<b>Intersection Summary</b>														
Average Delay				5.3										
Intersection Capacity Utilization				46.0%	ICU Level of Service			A						
Analysis Period (min)				15										

Barrio Logan CPU  
19: National Ave & SR-75 Off-ramp

Horizon Year Alt 1 without Improvements  
Timing Plan: AM Peak



Movement	EBL	EBT	WBT	WBR	SBL	SBR	
Lane Configurations							
Sign Control	Free	Free	Free	Free	Stop	Stop	
Grade	0%	0%	0%	0%	0%	0%	
Volume (veh/h)	0	128	276	0	27	280	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	
Hourly flow rate (vph)	0	139	300	0	29	304	
Pedestrians							
Lane Width (ft)							
Walking Speed (ft/s)							
Percent Blockage							
Right turn flare (veh)							
Median type	TWLTL						
Median storage (veh)	1						
Upstream signal (ft)	1100	875					
pX, platoon unblocked							
vC, conflicting volume	300				439	300	
vC1, stage 1 conf vol	300						
vC2, stage 2 conf vol	139						
vCu, unblocked vol	300				439	300	
tC, single (s)	4.1				6.4	6.2	
tC, 2 stage (s)	5.4						
tF (s)	2.2				3.5	3.3	
p0 queue free %	100				95	59	
cM capacity (veh/h)	1261				628	740	
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>WB 1</b>	<b>SB 1</b>	<b>SB 2</b>			
Volume Total	139	300	29	304			
Volume Left	0	0	29	0			
Volume Right	0	0	0	304			
cSH	1700	1700	628	740			
Volume to Capacity	0.08	0.18	0.05	0.41			
Queue Length 95th (ft)	0	0	4	51			
Control Delay (s)	0.0	0.0	11.0	13.2			
Lane LOS			B	B			
Approach Delay (s)	0.0	0.0	13.0				
Approach LOS					B		
<b>Intersection Summary</b>							
Average Delay				5.6			
Intersection Capacity Utilization				38.5%	ICU Level of Service		A
Analysis Period (min)				15			

Barrio Logan CPU  
20: National Ave & Evans St  
Horizon Year Alt 1 without Improvements  
Timing Plan: AM Peak

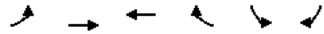
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR		
Lane Configurations	↔		↔		↔		↔		↔		↔			
Sign Control	Free		Free		Free		Stop		Stop		Stop			
Grade	0%		0%		0%		0%		0%		0%			
Volume (veh/h)	17	115	22	37	226	26	28	49	24	9	18	30		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92		
Hourly flow rate (vph)	18	125	24	40	246	28	30	53	26	10	20	33		
Pedestrians														
Lane Width (ft)														
Walking Speed (ft/s)														
Percent Blockage														
Right turn flare (veh)														
Median type	None						None							
Median storage (veh)														
Upstream signal (ft)	1314				661									
pX, platoon unblocked														
vC, conflicting volume	274		149		542		528		137		555		260	
vC1, stage 1 conf vol														
vC2, stage 2 conf vol														
vCu, unblocked vol	274		149		542		528		137		555		260	
tC, single (s)	4.1		4.1		7.1		6.5		6.2		7.1		6.5	
tC, 2 stage (s)														
tF (s)	2.2		2.2		3.5		4.0		3.3		3.5		4.0	
p0 queue free %	99		97		92		88		97		97		96	
cM capacity (veh/h)	1289		1433		404		436		912		377		438	
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1								
Volume Total	18	149	40	274	110	62								
Volume Left	18	0	40	0	30	10								
Volume Right	0	24	0	28	26	33								
cSH	1289	1700	1433	1700	486	551								
Volume to Capacity	0.01	0.09	0.03	0.16	0.23	0.11								
Queue Length 95th (ft)	1	0	2	0	22	9								
Control Delay (s)	7.8	0.0	7.6	0.0	14.6	12.4								
Lane LOS	A		A		B	B								
Approach Delay (s)	0.9		1.0		14.6		12.4							
Approach LOS					B		B							
Intersection Summary														
Average Delay	4.3													
Intersection Capacity Utilization	36.2%				ICU Level of Service				A					
Analysis Period (min)	15													

Barrio Logan CPU  
21: Newton Ave & Evans St  
Horizon Year Alt 1 without Improvements  
Timing Plan: AM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR		
Lane Configurations	↔		↔		↔		↔		↔		↔			
Sign Control	Free		Free		Free		Stop		Stop		Stop			
Grade	0%		0%		0%		0%		0%		0%			
Volume (veh/h)	23	87	22	16	63	30	27	58	31	7	30	37		
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		
Hourly flow rate (vph)	25	95	24	17	68	33	29	63	34	8	33	40		
Pedestrians														
Lane Width (ft)														
Walking Speed (ft/s)														
Percent Blockage														
Right turn flare (veh)														
Median type	None						None							
Median storage (veh)														
Upstream signal (ft)														
pX, platoon unblocked														
vC, conflicting volume	101		118		333		292		107		341		288	
vC1, stage 1 conf vol														
vC2, stage 2 conf vol														
vCu, unblocked vol	101		118		333		292		107		341		288	
tC, single (s)	4.1		4.1		7.1		6.5		6.2		7.1		6.5	
tC, 2 stage (s)														
tF (s)	2.2		2.2		3.5		4.0		3.3		3.5		4.0	
p0 queue free %	98		99		95		90		96		99		95	
cM capacity (veh/h)	1491		1470		558		601		948		532		604	
Direction, Lane #	EB 1	WB 1	NB 1	SB 1										
Volume Total	143	118	126	80										
Volume Left	25	17	29	8										
Volume Right	24	33	34	40										
cSH	1491	1470	653	734										
Volume to Capacity	0.02	0.01	0.19	0.11										
Queue Length 95th (ft)	1	1	18	9										
Control Delay (s)	1.4	1.2	11.8	10.5										
Lane LOS	A	A	B	B										
Approach Delay (s)	1.4	1.2	11.8	10.5										
Approach LOS			B		B									
Intersection Summary														
Average Delay	5.7													
Intersection Capacity Utilization	29.2%				ICU Level of Service				A					
Analysis Period (min)	15													

Barrio Logan CPU  
22: Main St & Evans St

Horizon Year Alt 1 without Improvements  
Timing Plan: AM Peak



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↔	↔		↔	
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	33	153	350	65	56	45
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	36	166	380	71	61	49
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage (veh)						
Upstream signal (ft)		1318				
pX, platoon unblocked						
vC, conflicting volume	451				654	416
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	451				654	416
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	97				85	92
cM capacity (veh/h)	1109				418	637

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	202	451	110
Volume Left	36	0	61
Volume Right	0	71	49
cSH	1109	1700	493
Volume to Capacity	0.03	0.27	0.22
Queue Length 95th (ft)	3	0	21
Control Delay (s)	1.7	0.0	14.4
Lane LOS	A		B
Approach Delay (s)	1.7	0.0	14.4
Approach LOS			B

Intersection Summary			
Average Delay		2.5	
Intersection Capacity Utilization	48.1%	ICU Level of Service	A
Analysis Period (min)		15	

Barrio Logan CPU  
23: Logan Ave & Sampson St

Horizon Year Alt 1 without Improvements  
Timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔		↔	↔			↔		↔	↔	↔
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	110	224	163	91	79	56	219	332	147	62	218	14
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
Hourly flow rate (vph)	120	243	177	99	86	61	238	361	160	67	237	15
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1						
Volume Total (vph)	120	421	99	147	759	320						
Volume Left (vph)	120	0	99	0	238	67						
Volume Right (vph)	0	177	0	61	160	15						
Hadj (s)	0.53	-0.26	0.53	-0.26	-0.03	0.05						
Departure Headway (s)	8.7	7.9	9.5	8.7	7.6	8.1						
Degree Utilization, x	0.29	0.92	0.26	0.35	1.61	0.72						
Capacity (veh/h)	407	445	363	395	474	431						
Control Delay (s)	14.0	52.4	14.6	15.2	304.1	29.3						
Approach Delay (s)	43.9		14.9		304.1	29.3						
Approach LOS	E		B		F	D						

Intersection Summary			
Delay		143.5	
HCM Level of Service		F	
Intersection Capacity Utilization	94.4%	ICU Level of Service	F
Analysis Period (min)		15	

Barrio Logan CPU  
24: National Ave & Sampson St  
Horizon Year Alt 1 without Improvements  
Timing Plan: AM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔		↔		↔		↔		↔		↔	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
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
Frbp, ped/bikes	1.00	0.99	1.00	0.98	1.00	0.99	1.00	0.99	1.00	0.99	1.00	0.99
Flpb, ped/bikes	0.99	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.97	1.00	0.93	1.00	0.98	1.00	0.98	1.00	0.94	1.00	0.94
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	0.99	1.00	0.99
Satd. Flow (prot)	1749	1790	1765	1695	1819	1726	1749	1790	1765	1695	1819	1726
Flt Permitted	0.62	1.00	0.71	1.00	0.98	0.93	0.62	1.00	0.71	1.00	0.98	0.93
Satd. Flow (perm)	1141	1790	1322	1695	1788	1616	1141	1790	1322	1695	1788	1616
Volume (vph)	75	50	15	48	104	100	7	95	16	59	109	118
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)	82	54	16	52	113	109	8	103	17	64	118	128
RTOR Reduction (vph)	0	12	0	0	64	0	0	7	0	0	32	0
Lane Group Flow (vph)	82	58	0	52	158	0	0	121	0	0	278	0
Confl. Peds. (#/hr)	17	3	3	17	13	14	14	14	14	14	13	13
Confl. Bikes (#/hr)				1	1	1	1	1	1	1	1	1
Turn Type	Perm		Perm		Perm		Perm		Perm		Perm	
Protected Phases	4		8		8		2		6		6	
Permitted Phases	4		8		8		2		6		6	
Actuated Green, G (s)	9.6	9.6	9.6	9.6	19.0	19.0	9.6	9.6	19.0	19.0	19.0	19.0
Effective Green, g (s)	9.6	9.6	9.6	9.6	19.0	19.0	9.6	9.6	19.0	19.0	19.0	19.0
Actuated g/C Ratio	0.26	0.26	0.26	0.26	0.52	0.52	0.26	0.26	0.52	0.52	0.52	0.52
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	299	470	347	445	928	839	299	470	347	445	928	839
v/s Ratio Prot	0.07		c0.09		c0.09		0.07		c0.17		c0.17	
v/s Ratio Perm	0.07		0.04		0.07		0.07		c0.17		c0.17	
v/c Ratio	0.27	0.12	0.15	0.35	0.13	0.33	0.27	0.12	0.15	0.35	0.13	0.33
Uniform Delay, d1	10.7	10.3	10.4	11.0	4.5	5.1	10.7	10.3	10.4	11.0	4.5	5.1
Progression 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
Incremental Delay, d2	0.5	0.1	0.2	0.5	0.1	0.2	0.5	0.1	0.2	0.5	0.1	0.2
Delay (s)	11.2	10.4	10.6	11.5	4.6	5.3	11.2	10.4	10.6	11.5	4.6	5.3
Level of Service	B		B		A		A		A		A	
Approach Delay (s)	10.9		11.3		4.6		5.3		4.6		5.3	
Approach LOS	B		B		A		A		A		A	
<b>Intersection Summary</b>												
HCM Average Control Delay	8.1		HCM Level of Service		A		8.1		A		A	
HCM Volume to Capacity ratio	0.34		0.34		0.34		0.34		0.34		0.34	
Actuated Cycle Length (s)	36.6		Sum of lost time (s)		8.0		36.6		8.0		36.6	
Intersection Capacity Utilization	51.8%		ICU Level of Service		A		51.8%		A		A	
Analysis Period (min)	15		15		15		15		15		15	
c Critical Lane Group												

Barrio Logan CPU  
25: Newton Ave & Sampson St  
Horizon Year Alt 1 without Improvements  
Timing Plan: AM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔		↔		↔		↔		↔		↔	
Sign Control	Stop		Stop		Stop		Stop		Stop		Stop	
Volume (vph)	21	95	16	15	81	35	7	40	31	18	99	37
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
Hourly flow rate (vph)	23	103	17	16	88	38	8	43	34	20	108	40
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	143	142	85	167								
Volume Left (vph)	23	16	8	20								
Volume Right (vph)	17	38	34	40								
Hadj (s)	-0.01	-0.10	-0.19	-0.09								
Departure Headway (s)	4.7	4.6	4.6	4.6								
Degree Utilization, x	0.19	0.18	0.11	0.21								
Capacity (veh/h)	717	733	721	729								
Control Delay (s)	8.7	8.6	8.2	8.9								
Approach Delay (s)	8.7	8.6	8.2	8.9								
Approach LOS	A	A	A	A								
<b>Intersection Summary</b>												
Delay	8.7		8.7		8.7		8.7		8.7		8.7	
HCM Level of Service	A		A		A		A		A		A	
Intersection Capacity Utilization	30.3%		ICU Level of Service		A		30.3%		A		A	
Analysis Period (min)	15		15		15		15		15		15	

Barrio Logan CPU  
26: Main St & Sampson St

Horizon Year Alt 1 without Improvements  
Timing Plan: AM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↕				↕						↕	
Sign Control	Stop				Stop						Stop	
Volume (vph)	70	62	51	53	218	16	50	31	35	10	59	172
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
Hourly flow rate (vph)	76	67	55	58	237	17	54	34	38	11	64	187
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>WB 1</b>	<b>NB 1</b>	<b>SB 1</b>								
Volume Total (vph)	199	312	126	262								
Volume Left (vph)	76	58	54	11								
Volume Right (vph)	55	17	38	187								
Hadj (s)	-0.06	0.04	-0.06	-0.39								
Departure Headway (s)	5.4	5.3	5.7	5.1								
Degree Utilization, x	0.30	0.46	0.20	0.37								
Capacity (veh/h)	605	633	551	640								
Control Delay (s)	10.7	12.8	10.1	11.2								
Approach Delay (s)	10.7	12.8	10.1	11.2								
Approach LOS	B	B	B	B								
<b>Intersection Summary</b>												
Delay	11.5											
HCM Level of Service	B											
Intersection Capacity Utilization	53.8%			ICU Level of Service		A						
Analysis Period (min)	15											

Barrio Logan CPU  
27: Harbor Dr & Sampson St

Horizon Year Alt 1 without Improvements  
Timing Plan: AM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↕	↕	↕	↕	↕	↕	↕	↕	↕	↕	↕	↕
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	0.95	1.00	0.99	1.00	0.99	1.00	1.00	1.00	1.00
Flpb, ped/bikes	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	1.00	0.99	1.00	1.00	1.00	0.95	1.00	0.95	1.00	0.95	1.00	0.97
Flt Protected	0.95	1.00	0.95	1.00	0.95	1.00	0.99	0.99	1.00	0.98	0.98	0.98
Satd. Flow (prot)	1770	3447	1770	3511	1770	3511	1751	1751	1771	1771	1771	1771
Flt Permitted	0.95	1.00	0.95	1.00	0.95	1.00	0.94	0.94	0.85	0.85	0.85	0.85
Satd. Flow (perm)	1770	3447	1770	3511	1770	3511	1658	1658	1538	1538	1538	1538
Volume (vph)	10	716	28	75	1284	44	14	61	38	64	75	32
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)	11	778	30	82	1396	48	15	66	41	70	82	35
RTOR Reduction (vph)	0	2	0	0	2	0	0	16	0	0	7	0
Lane Group Flow (vph)	11	806	0	82	1442	0	0	106	0	0	180	0
Confl. Peds. (#/hr)	15		29		7		4		4		7	
Confl. Bikes (#/hr)	2		5		6		14					
Heavy Vehicles (%)	2%	4%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Prot		Prot		Perm		Perm		Perm		Perm	
Protected Phases	3	14	2	6	13	18	2	6	12	16	1	5
Permitted Phases					12				16			
Actuated Green, G (s)	1.1	35.3	5.9	40.1	1.1	35.3	5.9	40.1	11.0	23.6	23.6	23.6
Effective Green, g (s)	1.1	35.3	5.9	40.1	1.1	35.3	5.9	40.1	11.0	23.6	23.6	23.6
Actuated g/C Ratio	0.01	0.40	0.07	0.45	0.01	0.40	0.07	0.45	0.12	0.27	0.27	0.27
Clearance Time (s)	4.0		4.0		4.0		4.0		4.0		4.0	
Vehicle Extension (s)	3.0		3.0		3.0		3.0		3.0		3.0	
Lane Grp Cap (vph)	22	1370	118	1585	22	1370	118	1585	205	409	409	409
v/s Ratio Prot	0.01	0.23	c0.05	c0.41	0.01	0.23	c0.05	c0.41				
v/s Ratio Perm					c0.06				c0.12			
v/c Ratio	0.50	0.59	0.69	0.91	0.50	0.59	0.69	0.91	0.52	0.44	0.44	0.44
Uniform Delay, d1	43.6	21.0	40.6	22.7	43.6	21.0	40.6	22.7	36.4	27.1	27.1	27.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.03	1.03	1.03
Incremental Delay, d2	16.8	0.7	16.3	8.2	16.8	0.7	16.3	8.2	2.2	0.8	0.8	0.8
Delay (s)	60.3	21.7	56.8	30.8	60.3	21.7	56.8	30.8	38.6	28.7	28.7	28.7
Level of Service	E	C	E	C	E	C	E	C	D	C	C	C
Approach Delay (s)	22.2		32.2		38.6		28.7		28.7		28.7	
Approach LOS	C		C		D		C		C		C	
<b>Intersection Summary</b>												
HCM Average Control Delay	29.2			HCM Level of Service		C						
HCM Volume to Capacity ratio	0.71											
Actuated Cycle Length (s)	88.8			Sum of lost time (s)		20.0						
Intersection Capacity Utilization	68.7%			ICU Level of Service		C						
Analysis Period (min)	15											

c Critical Lane Group

Barrio Logan CPU  
28: National Ave & Sicard St  
Horizon Year Alt 1 without Improvements  
Timing Plan: AM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔		↔		↕		↕		↔		↔	
Sign Control	Free		Free		Stop		Stop		Stop		Stop	
Grade	0%		0%		0%		0%		0%		0%	
Volume (veh/h)	21	79	36	27	163	3	48	48	12	4	41	36
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
Hourly flow rate (vph)	23	86	39	29	177	3	52	52	13	4	45	39
Pedestrians	7		11		3		1		1		1	
Lane Width (ft)	12.0		12.0		12.0		12.0		12.0		12.0	
Walking Speed (ft/s)	4.0		4.0		4.0		4.0		4.0		4.0	
Percent Blockage	1		1		0		0		0		0	
Right turn flare (veh)												
Median type					None		None					
Median storage (veh)												
Upstream signal (ft)	641											
pX, platoon unblocked												
vC, conflicting volume	181			128			460	394	119	420	412	187
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	181			128			460	394	119	420	412	187
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			98			88	90	99	99	91	95
cM capacity (veh/h)	1393			1454			438	521	921	475	509	850
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>EB 2</b>	<b>WB 1</b>	<b>NB 1</b>	<b>SB 1</b>							
Volume Total	23	125	210	117	88							
Volume Left	23	0	29	52	4							
Volume Right	0	39	3	13	39							
cSH	1393	1700	1454	503	617							
Volume to Capacity	0.02	0.07	0.02	0.23	0.14							
Queue Length 95th (ft)	1	0	2	22	12							
Control Delay (s)	7.6	0.0	1.2	14.3	11.8							
Lane LOS	A		A	B	B							
Approach Delay (s)	1.2		1.2	14.3	11.8							
Approach LOS			B	B								
<b>Intersection Summary</b>												
Average Delay			5.6									
Intersection Capacity Utilization			36.5%		ICU Level of Service		A					
Analysis Period (min)			15									

Barrio Logan CPU  
29: National Ave & 26th St  
Horizon Year Alt 1 without Improvements  
Timing Plan: AM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔		↔		↕		↕		↔		↔	
Sign Control	Stop		Stop		Stop		Stop		Stop		Stop	
Volume (vph)	28	66	36	36	223	48	27	47	15	51	38	15
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
Hourly flow rate (vph)	30	72	39	39	242	52	29	51	16	55	41	16
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>EB 2</b>	<b>WB 1</b>	<b>WB 2</b>	<b>NB 1</b>	<b>SB 1</b>						
Volume Total (vph)	30	111	39	295	97	113						
Volume Left (vph)	30	0	39	0	29	55						
Volume Right (vph)	0	39	0	52	16	16						
Hadj (s)	0.53	-0.21	0.53	-0.09	-0.01	0.05						
Departure Headway (s)	6.0	5.2	5.8	5.1	5.2	5.2						
Degree Utilization, x	0.05	0.16	0.06	0.42	0.14	0.16						
Capacity (veh/h)	566	652	597	676	628	625						
Control Delay (s)	8.1	8.0	8.0	10.6	9.1	9.3						
Approach Delay (s)	8.0		10.3		9.1	9.3						
Approach LOS	A		B		A	A						
<b>Intersection Summary</b>												
Delay			9.5									
HCM Level of Service			A									
Intersection Capacity Utilization			38.4%		ICU Level of Service		A					
Analysis Period (min)			15									

Barrio Logan CPU

Horizon Year Alt 1 without Improvements

30: National Ave & I-5 SB Off-ramp

Timing Plan: AM Peak

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔		↕		↕	
Sign Control	Free		Free		Stop	
Grade	0%		0%		0%	
Volume (veh/h)	146	18	42	269	72	149
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	159	20	46	292	78	162
Pedestrians	1		8			
Lane Width (ft)	12.0		12.0			
Walking Speed (ft/s)	4.0		4.0			
Percent Blockage	0		1			
Right turn flare (veh)						
Median type			None			
Median storage (veh)						
Upstream signal (ft)			670			
pX, platoon unblocked						
vC, conflicting volume			186	415	176	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			186	415	176	
tC, single (s)			4.1	6.8	6.9	
tC, 2 stage (s)						
tF (s)			2.2	3.5	3.3	
p0 queue free %			97	86	81	
cM capacity (veh/h)			1376	543	831	
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>WB 1</b>	<b>WB 2</b>	<b>NB 1</b>	<b>NB 2</b>	
Volume Total	178	143	195	78	162	
Volume Left	0	46	0	78	0	
Volume Right	20	0	0	0	162	
cSH	1700	1376	1700	543	831	
Volume to Capacity	0.10	0.03	0.11	0.14	0.19	
Queue Length 95th (ft)	0	3	0	13	18	
Control Delay (s)	0.0	2.6	0.0	12.7	10.4	
Lane LOS	A		B		B	
Approach Delay (s)	0.0	1.1	11.2			
Approach LOS			B			
<b>Intersection Summary</b>						
Average Delay			4.0			
Intersection Capacity Utilization			32.6%	ICU Level of Service		A
Analysis Period (min)			15			

Barrio Logan CPU

Horizon Year Alt 1 without Improvements

31: Main St & 26th St

Timing Plan: AM Peak

	↖	→	↘	↙	←	↖	↙	↗	↘	↖	↙	↗	↘
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	↕		↕		↕		↕		↕		↕		
Sign Control	Stop		Stop		Stop		Stop		Stop		Stop		
Volume (vph)	10	50	17	143	161	26	28	33	91	16	22	13	
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	
Hourly flow rate (vph)	11	54	18	155	175	28	30	36	99	17	24	14	
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>WB 1</b>	<b>WB 2</b>	<b>WB 3</b>	<b>NB 1</b>	<b>NB 2</b>	<b>SB 1</b>						
Volume Total (vph)	84	155	175	28	66	99	55						
Volume Left (vph)	11	155	0	0	30	0	17						
Volume Right (vph)	18	0	0	28	0	99	14						
Hadj (s)	-0.07	0.94	0.03	-0.67	0.13	0.05	-0.06						
Departure Headway (s)	4.6	5.8	4.9	3.2	5.1	3.2	4.9						
Degree Utilization, x	0.11	0.25	0.24	0.03	0.09	0.09	0.08						
Capacity (veh/h)	747	599	712	1121	659	1121	678						
Control Delay (s)	8.2	9.6	8.3	5.1	8.6	6.5	8.3						
Approach Delay (s)	8.2	8.6			7.4	8.3							
Approach LOS	A	A			A	A							
<b>Intersection Summary</b>													
Delay			8.2										
HCM Level of Service			A										
Intersection Capacity Utilization			31.5%	ICU Level of Service		A							
Analysis Period (min)			15										



Barrio Logan CPU  
32: Harbor Dr & Schley St

Horizon Year Alt 1 without Improvements  
Timing Plan: AM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↕		↔	↕					↔	↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0						4.0	
Lane Util. Factor	1.00	0.95			0.95						1.00	
Frbp, ped/bikes	1.00	1.00			1.00						0.98	
Flpb, ped/bikes	1.00	1.00			1.00						1.00	
Frt	1.00	1.00			1.00						0.89	
Flt Protected	0.95	1.00			1.00						1.00	
Satd. Flow (prot)	1543	3539			3533						1487	
Flt Permitted	0.95	1.00			1.00						1.00	
Satd. Flow (perm)	1543	3539			3533						1487	
Volume (vph)	124	454	0	0	1422	17	0	0	0	12	25	164
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)	135	493	0	0	1546	18	0	0	0	13	27	178
RTOR Reduction (vph)	0	0	0	0	1	0	0	0	0	0	114	0
Lane Group Flow (vph)	135	493	0	0	1563	0	0	0	0	0	104	0
Confl. Peds. (#/hr)			8	8						2	2	
Confl. Bikes (#/hr)										5		11
Heavy Vehicles (%)	17%	2%	2%	2%	2%	2%	2%	2%	2%	2%	4%	13%
Turn Type	Prot					Perm						
Protected Phases	13	18 2 6			14 2 6						11 1 5	
Permitted Phases											11 1 5	
Actuated Green, G (s)	9.2	50.3			33.1						20.0	
Effective Green, g (s)	9.2	50.3			33.1						20.0	
Actuated g/C Ratio	0.11	0.58			0.38						0.23	
Clearance Time (s)	4.0											
Vehicle Extension (s)	3.0											
Lane Grp Cap (vph)	164	2063			1355						345	
v/s Ratio Prot	c0.09	0.14			c0.44							
v/s Ratio Perm											0.07	
v/c Ratio	0.82	0.24			1.15						0.30	
Uniform Delay, d1	37.8	8.7			26.6						27.4	
Progression Factor	1.00	1.00			1.00						1.13	
Incremental Delay, d2	27.1	0.1			78.0						0.5	
Delay (s)	64.9	8.8			104.6						31.3	
Level of Service	E	A			F						C	
Approach Delay (s)		20.8			104.6		0.0				31.3	
Approach LOS		C			F		A				C	
<b>Intersection Summary</b>												
HCM Average Control Delay		76.2			HCM Level of Service		E					
HCM Volume to Capacity ratio		0.83										
Actuated Cycle Length (s)		86.3			Sum of lost time (s)		24.0					
Intersection Capacity Utilization		75.5%			ICU Level of Service		D					
Analysis Period (min)		15										

Barrio Logan CPU  
33: National Ave & 28th St

Horizon Year Alt 1 without Improvements  
Timing Plan: AM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↕	↕	↔	↕					↔	↕	↕
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0					4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00					1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.98					1.00	0.85	0.93
Flt Protected	0.95	1.00	1.00	0.95	1.00					0.99	1.00	0.99
Satd. Flow (prot)	1770	3539	1583	1299	1817					1754	1509	1643
Flt Permitted	0.95	1.00	1.00	0.95	1.00					0.75	1.00	0.88
Satd. Flow (perm)	1770	3539	1583	1299	1817					1340	1509	1466
Volume (vph)	106	258	18	192	628	123	33	98	86	115	205	307
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)	115	280	20	209	683	134	36	107	93	125	223	334
RTOR Reduction (vph)	0	0	14	0	5	0	0	0	52	0	23	0
Lane Group Flow (vph)	115	280	6	209	812	0	0	143	41	0	659	0
Heavy Vehicles (%)	2%	2%	2%	39%	2%	2%	7%	7%	7%	7%	7%	7%
Turn Type	Prot			Perm			Prot			Perm		
Protected Phases	7	4			3	8				2	2	6
Permitted Phases					4					2	2	6
Actuated Green, G (s)	9.0	44.5	44.5	27.5	63.0					66.0	66.0	66.0
Effective Green, g (s)	9.0	44.5	44.5	27.5	63.0					66.0	66.0	66.0
Actuated g/C Ratio	0.06	0.30	0.30	0.18	0.42					0.44	0.44	0.44
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0					4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0					3.0	3.0	3.0
Lane Grp Cap (vph)	106	1050	470	238	763					590	664	645
v/s Ratio Prot	c0.06	0.08		0.16	c0.45							
v/s Ratio Perm			0.00							0.11	0.03	c0.45
v/c Ratio	1.08	0.27	0.01	0.88	1.06					0.24	0.06	1.02
Uniform Delay, d1	70.5	40.3	37.2	59.6	43.5					26.3	24.2	42.0
Progression Factor	1.00	1.00	1.00	1.00	1.00					1.00	1.00	1.00
Incremental Delay, d2	112.1	0.1	0.0	28.4	51.2					0.2	0.0	41.1
Delay (s)	182.6	40.4	37.3	88.0	94.7					26.5	24.2	83.1
Level of Service	F	D	D	F	F					C	C	F
Approach Delay (s)		79.7			93.3					25.6		83.1
Approach LOS		E			F					C		F
<b>Intersection Summary</b>												
HCM Average Control Delay		81.2			HCM Level of Service		F					
HCM Volume to Capacity ratio		1.05										
Actuated Cycle Length (s)		150.0			Sum of lost time (s)		12.0					
Intersection Capacity Utilization		99.0%			ICU Level of Service		F					
Analysis Period (min)		15										
c Critical Lane Group												



Barrio Logan CPU  
36: Harbor Dr & 28th St

Horizon Year Alt 1 without Improvements  
Timing Plan: AM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR				
Lane Configurations	[Diagram: Lane configurations for Harbor Dr & 28th St]															
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900				
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	0.95	0.95	1.00				
Frbp, ped/bikes	1.00	1.00	0.87	1.00	1.00	0.93	0.99	1.00	1.00	1.00	0.98	0.98				
Flpb, ped/bikes	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	1.00	1.00	0.85	1.00	1.00	0.85	0.97	1.00	1.00	1.00	0.85	0.85				
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	1.00	0.95	0.96	1.00	1.00	1.00				
Satd. Flow (prot)	1703	3406	1323	1719	3438	1436	1763	1649	1659	1524	1524	1524				
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	1.00	0.95	0.96	1.00	1.00	1.00				
Satd. Flow (perm)	1703	3406	1323	1719	3438	1436	1763	1649	1659	1524	1524	1524				
Volume (vph)	110	560	4	17	822	116	0	6	2	375	15	25				
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)	120	609	4	18	893	126	0	7	2	408	16	27				
RTOR Reduction (vph)	0	0	3	0	0	57	0	2	0	0	0	21				
Lane Group Flow (vph)	120	609	1	18	893	69	0	7	0	207	217	6				
Conf. Peds. (#/hr)	69						80			3						
Conf. Bikes (#/hr)	69						80			3						
Heavy Vehicles (%)	6%	6%	6%	5%	5%	5%	4%	4%	4%	4%	4%	4%				
Turn Type	Prot	custom		Prot	custom		Split	Split			Perm					
Protected Phases	11	16	2	6	15	12	2	6	13	14	14	1	13	5	13	15
Permitted Phases	16						12						15			13
Actuated Green, G (s)	8.7	42.1	36.1	2.7	36.1	48.5	14.0	28.2	28.2	28.2	28.2	28.2	28.2	28.2	28.2	28.2
Effective Green, g (s)	8.7	42.1	36.1	2.7	36.1	48.5	14.0	28.2	28.2	28.2	28.2	28.2	28.2	28.2	28.2	28.2
Actuated g/C Ratio	0.07	0.35	0.30	0.02	0.30	0.41	0.12	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	125	1205	401	39	1043	585	207	391	393	361	361	361				
v/s Ratio Prot	c0.07	0.18	0.01	c0.26	0.02	c0.00	0.13	c0.13	c0.13	c0.13	c0.13	c0.13				
v/s Ratio Perm	0.00						0.03			0.00						
v/c Ratio	0.96	0.51	0.00	0.46	0.86	0.12	0.03	0.53	0.55	0.02	0.02	0.02				
Uniform Delay, d1	55.0	30.3	28.9	57.4	39.0	21.9	46.5	39.6	39.9	34.8	34.8	34.8				
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.92	0.93	1.41	1.41	1.41				
Incremental Delay, d2	67.8	0.3	0.0	8.4	7.0	0.1	0.1	1.3	1.7	0.0	0.0	0.0				
Delay (s)	122.8	30.6	28.9	65.8	46.0	22.0	46.6	37.8	38.6	48.9	48.9	48.9				
Level of Service	F	C	C	E	D	C	D	D	D	D	D	D				
Approach Delay (s)	45.7						43.5			46.6						
Approach LOS	D						D			D						
<b>Intersection Summary</b>																
HCM Average Control Delay	43.3						HCM Level of Service			D						
HCM Volume to Capacity ratio	0.64															
Actuated Cycle Length (s)	119.0						Sum of lost time (s)			32.0						
Intersection Capacity Utilization	58.4%						ICU Level of Service			B						
Analysis Period (min)	15															

Barrio Logan CPU  
37: Boston Ave & I-5 SB On-ramp

Horizon Year Alt 1 without Improvements  
Timing Plan: AM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	[Diagram: Lane configurations for Boston Ave & I-5 SB On-ramp]											
Sign Control	Free			Free			Stop			Stop		
Grade	0%			0%			0%			0%		
Volume (veh/h)	234	104	15	18	102	88	5	30	19	0	0	0
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
Hourly flow rate (vph)	254	113	16	20	111	96	5	33	21	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None						None					
Median storage (veh)												
Upstream signal (ft)	657											
pX, platoon unblocked												
vC, conflicting volume	207			129			828			876		
vC1, stage 1 conf vol	207			129			828			876		
vC2, stage 2 conf vol	207			129			828			876		
vCu, unblocked vol	207			129			828			876		
tC, single (s)	4.2			4.2			7.1			6.9		
tC, 2 stage (s)	4.2			4.2			7.1			6.9		
tF (s)	2.3			2.3			3.5			4.4		
p0 queue free %	81			99			98			84		
cM capacity (veh/h)	1335			1426			245			200		
Direction, Lane #	EB 1	WB 1	NB 1									
Volume Total	384	226	59									
Volume Left	254	20	5									
Volume Right	16	96	21									
cSH	1335	1426	283									
Volume to Capacity	0.19	0.01	0.21									
Queue Length 95th (ft)	18	1	19									
Control Delay (s)	6.1	0.8	21.0									
Lane LOS	A	A	C									
Approach Delay (s)	6.1	0.8	21.0									
Approach LOS			C									
<b>Intersection Summary</b>												
Average Delay	5.6											
Intersection Capacity Utilization	44.4%						ICU Level of Service			A		
Analysis Period (min)	15											

Barrio Logan CPU  
38: Main St & 32nd St

Horizon Year Alt 1 without Improvements  
Timing Plan: AM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frbp, ped/bikes	1.00	0.99	1.00	1.00	1.00	1.00	1.00	0.98	1.00	0.99	1.00	0.99
Flpb, ped/bikes	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	1.00	0.91	1.00	0.98	1.00	1.00	1.00	0.85	1.00	0.95	1.00	0.95
Flt Protected	0.95	1.00	0.95	1.00	0.95	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1703	3056	1703	3320	1770	1863	1556	1770	1750			
Flt Permitted	0.95	1.00	0.95	1.00	0.95	1.00	1.00	0.95	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1703	3056	1703	3320	1770	1863	1556	1770	1750			
Volume (vph)	38	130	218	314	494	79	110	50	26	39	83	42
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)	41	141	237	341	537	86	120	54	28	42	90	46
RTOR Reduction (vph)	0	189	0	0	13	0	0	0	21	0	22	0
Lane Group Flow (vph)	41	189	0	341	610	0	120	54	7	42	114	0
Confl. Peds. (#/hr)			1			6			4			16
Confl. Bikes (#/hr)			2			4			2			5
Heavy Vehicles (%)	6%	6%	6%	6%	6%	6%	2%	2%	2%	2%	2%	2%
Turn Type	Prot			Prot			Prot		Perm		Prot	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases									2			
Actuated Green, G (s)	2.6	13.1		17.0	27.5		6.4	16.3	16.3	2.6	12.5	
Effective Green, g (s)	2.6	13.1		17.0	27.5		6.4	16.3	16.3	2.6	12.5	
Actuated g/C Ratio	0.04	0.20		0.26	0.42		0.10	0.25	0.25	0.04	0.19	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	68	616		445	1405		174	467	390	71	337	
v/s Ratio Prot	0.02	0.06		c0.20	c0.18		c0.07	c0.03		0.02	c0.07	
v/s Ratio Perm									0.00			
v/c Ratio	0.60	0.31		0.77	0.43		0.69	0.12	0.02	0.59	0.34	
Uniform Delay, d1	30.7	22.1		22.2	13.3		28.3	18.8	18.3	30.7	22.7	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	14.2	0.3		7.7	0.2		10.8	0.1	0.0	12.5	0.6	
Delay (s)	44.8	22.4		29.9	13.5		39.2	18.9	18.3	43.2	23.3	
Level of Service	D	C		C	B		D	B	B	D	C	
Approach Delay (s)		24.6			19.3			30.9			28.0	
Approach LOS		C			B			C			C	
<b>Intersection Summary</b>												
HCM Average Control Delay		22.7		HCM Level of Service					C			
HCM Volume to Capacity ratio		0.55										
Actuated Cycle Length (s)		65.0		Sum of lost time (s)					16.0			
Intersection Capacity Utilization		60.0%		ICU Level of Service					B			
Analysis Period (min)		15										
c Critical Lane Group												

Barrio Logan CPU  
39: 32nd St & Wabash St

Horizon Year Alt 1 without Improvements  
Timing Plan: AM Peak

Movement	EBL2	EBL	EBT	EBR	WBL	WBT	WBR	WBR2	NBL	NBT	NBR	NBR2
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0			4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00			1.00	1.00			1.00	1.00	0.88	
Frt	1.00	0.95			1.00	0.85			1.00	1.00	0.85	
Flt Protected	0.95	1.00			0.96	1.00			0.95	1.00	1.00	
Satd. Flow (prot)	1760	1773			1787	1574			1719	1810	2707	
Flt Permitted	0.36	1.00			0.42	1.00			0.95	1.00	1.00	
Satd. Flow (perm)	669	1773			787	1574			1719	1810	2707	
Volume (vph)	65	25	170	80	250	45	120	50	70	215	125	290
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)	71	27	185	87	272	49	130	54	76	234	136	315
RTOR Reduction (vph)	0	0	11	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	98	261	0	0	321	184	0	76	234	451	0
Heavy Vehicles (%)	2%	4%	2%	2%	2%	2%	2%	4%	5%	5%	5%	5%
Turn Type	Perm	Perm			Perm		Perm		Prot		custom	
Protected Phases			4			4			5	2		
Permitted Phases	4	4			4		4				2	3
Actuated Green, G (s)	45.2	45.2			45.2	45.2			11.4	23.3	60.5	
Effective Green, g (s)	45.2	45.2			45.2	45.2			11.4	23.3	60.5	
Actuated g/C Ratio	0.33	0.33			0.33	0.33			0.08	0.17	0.44	
Clearance Time (s)	4.0	4.0			4.0	4.0			4.0	4.0		
Vehicle Extension (s)	3.0	3.0			3.0	3.0			3.0	3.0		
Lane Grp Cap (vph)	218	577			256	512			141	303	1178	
v/s Ratio Prot		0.15				0.12			0.04	c0.13		
v/s Ratio Perm		0.15			c0.41	0.12					0.17	
v/c Ratio	0.45	0.45			1.25	0.36			0.54	0.77	0.38	
Uniform Delay, d1	37.1	37.1			46.9	35.8			61.3	55.3	26.6	
Progression Factor	1.00	1.00			1.00	1.00			1.00	1.00	1.00	
Incremental Delay, d2	1.5	0.6			142.2	0.4			3.9	11.6	0.2	
Delay (s)	38.5	37.7			189.1	36.3			65.2	66.9	26.8	
Level of Service	D	D			F	D			E	E	C	
Approach Delay (s)		37.9				133.4				43.0		
Approach LOS		D				F				D		
<b>Intersection Summary</b>												
HCM Average Control Delay		112.7		HCM Level of Service					F			
HCM Volume to Capacity ratio		1.12										
Actuated Cycle Length (s)		139.0		Sum of lost time (s)					16.0			
Intersection Capacity Utilization		95.8%		ICU Level of Service					F			
Analysis Period (min)		15										
c Critical Lane Group												

Barrio Logan CPU  
39: 32nd St & Wabash St

Horizon Year Alt 1 without Improvements  
Timing Plan: AM Peak

Movement	SBL2	SBL	SBT	SBR	SWL2	SWL	SWR	SWR2
Lane Configurations								
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0				4.0		
Lane Util. Factor	1.00	0.95				0.97		
Flt	1.00	0.98				0.99		
Flt Protected	0.95	1.00				0.96		
Satd. Flow (prot)	1765	3384				3347		
Flt Permitted	0.95	1.00				0.87		
Satd. Flow (perm)	1765	3384				3030		
Volume (vph)	30	180	445	65	60	775	65	10
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	33	196	484	71	65	842	71	11
RTOR Reduction (vph)	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	229	555	0	0	989	0	0
Heavy Vehicles (%)	4%	2%	5%	2%	4%	4%	4%	4%
Turn Type	Prot	Prot			Perm			
Protected Phases	1	1	6			3		
Permitted Phases					3			
Actuated Green, G (s)		21.3	33.2			33.2		
Effective Green, g (s)		21.3	33.2			33.2		
Actuated g/C Ratio		0.15	0.24			0.24		
Clearance Time (s)		4.0	4.0			4.0		
Vehicle Extension (s)		3.0	3.0			3.0		
Lane Grp Cap (vph)		270	808			724		
v/s Ratio Prot		c0.13	0.16					
v/s Ratio Perm						c0.33		
v/c Ratio		0.85	0.69			1.37		
Uniform Delay, d1		57.3	48.2			52.9		
Progression Factor		1.00	1.00			1.00		
Incremental Delay, d2		21.2	2.4			173.5		
Delay (s)		78.4	50.6			226.4		
Level of Service		E	D			F		
Approach Delay (s)			58.7			226.4		
Approach LOS			E			F		

Intersection Summary

Barrio Logan CPU  
40: Harbor Dr & 32nd St

Horizon Year Alt 1 without Improvements  
Timing Plan: AM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR				
Lane Configurations																
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900				
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00				
Flrb, ped/bikes	1.00	1.00	0.99	1.00	1.00	1.00	1.00	1.00	0.96	1.00	1.00	1.00				
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Flt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85				
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00				
Satd. Flow (prot)	1719	3438	1519	1687	3374	1509	1719	3438	1481	1719	3438	1538				
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00				
Satd. Flow (perm)	1719	3438	1519	1687	3374	1509	1719	3438	1481	1719	3438	1538				
Volume (vph)	140	657	140	300	735	390	30	160	30	130	1040	190				
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)	152	714	152	326	799	424	33	174	33	141	1130	207				
RTOR Reduction (vph)	0	0	123	0	0	284	0	0	28	0	0	87				
Lane Group Flow (vph)	152	714	29	326	799	140	33	174	5	141	1130	120				
Confl. Bikes (#/hr)			3						16							
Heavy Vehicles (%)	5%	5%	5%	7%	7%	7%	5%	5%	5%	5%	5%	5%				
Turn Type	Prot		custom	Prot		custom	Prot		Perm	Prot		custom				
Protected Phases	3	14	2	6	15	13	18	2	6	15	11	15	16	15	3	15
Permitted Phases					14				18				12			16
Actuated Green, G (s)	10.3	8.6	6.9	16.5	14.8	10.5	2.6	11.5	11.5	12.7	25.6	31.9				
Effective Green, g (s)	10.3	8.6	6.9	16.5	14.8	10.5	2.6	11.5	11.5	12.7	25.6	31.9				
Actuated g/C Ratio	0.13	0.11	0.08	0.20	0.18	0.13	0.03	0.14	0.14	0.16	0.31	0.39				
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0				
Lane Grp Cap (vph)	218	364	129	342	614	195	55	486	209	269	1083	679				
v/s Ratio Prot	0.09	c0.21	0.01	c0.19	c0.24		0.02	0.05		c0.08	c0.33	0.04				
v/s Ratio Perm			0.01			0.09			0.00			0.04				
v/c Ratio	0.70	1.96	0.23	0.95	1.30	0.72	0.60	0.36	0.02	0.52	1.04	0.18				
Uniform Delay, d1	34.0	36.4	34.7	32.0	33.2	34.0	38.8	31.6	30.1	31.5	27.8	16.1				
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.17	0.89	1.01				
Incremental Delay, d2	9.3	442.6	0.9	36.2	147.2	11.9	17.0	0.5	0.0	1.8	39.1	0.1				
Delay (s)	43.3	478.9	35.6	68.3	180.5	45.9	55.9	32.0	30.1	38.7	63.7	16.4				
Level of Service	D	F	D	E	F	D	E	C	C	D	E	B				
Approach Delay (s)			347.7			120.0		35.0			54.7					
Approach LOS			F			F		D			D					

Intersection Summary

HCM Average Control Delay	146.8	HCM Level of Service	F
HCM Volume to Capacity ratio	1.09		
Actuated Cycle Length (s)	81.3	Sum of lost time (s)	24.0
Intersection Capacity Utilization	80.2%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Barrio Logan CPU  
41: Main St & I-15 Ramps

Horizon Year Alt 1 without Improvements  
Timing Plan: AM Peak

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frbp, ped/bikes	1.00	1.00	1.00	1.00	0.99	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	0.90	0.90
Flt Protected	0.95	1.00	1.00	1.00	0.99	0.99
Satd. Flow (prot)	1770	3539	3539	1583	1637	1637
Flt Permitted	0.95	1.00	1.00	1.00	0.99	0.99
Satd. Flow (perm)	1770	3539	3539	1583	1637	1637
Volume (vph)	47	181	497	107	108	309
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	51	197	540	116	117	336
RTOR Reduction (vph)	0	0	0	79	165	0
Lane Group Flow (vph)	51	197	540	37	288	0
Confl. Peds. (#/hr)					2	2
Confl. Bikes (#/hr)						2
Turn Type	Prot	Perm				
Protected Phases	5	2	6	4		
Permitted Phases					6	
Actuated Green, G (s)	1.6	17.6	12.0	12.0	11.7	
Effective Green, g (s)	1.6	17.6	12.0	12.0	11.7	
Actuated g/C Ratio	0.04	0.47	0.32	0.32	0.31	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	76	1670	1139	509	513	
v/s Ratio Prot	c0.03	0.06	c0.15	c0.18		
v/s Ratio Perm					0.02	
v/c Ratio	0.67	0.12	0.47	0.07	0.56	
Uniform Delay, d1	17.6	5.5	10.1	8.8	10.7	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	20.8	0.0	0.3	0.1	1.4	
Delay (s)	38.4	5.5	10.4	8.8	12.1	
Level of Service	D	A	B	A	B	
Approach Delay (s)	12.3		10.2		12.1	
Approach LOS	B		B		B	
<b>Intersection Summary</b>						
HCM Average Control Delay	11.2			HCM Level of Service		B
HCM Volume to Capacity ratio	0.53					
Actuated Cycle Length (s)	37.3			Sum of lost time (s)	12.0	
Intersection Capacity Utilization	52.2%			ICU Level of Service	A	
Analysis Period (min)	15					
c Critical Lane Group						

Barrio Logan CPU  
1: Commercial St & 16th St

Horizon Year Alt 1 without Improvements  
Timing Plan: PM Peak

Movement	EBL	EBT	EBR	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	SWR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Frbp, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.99	0.99	0.99	0.99	0.99
Flpb, ped/bikes	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	1.00	1.00	0.97	0.99	0.99	0.99	0.99	0.98	0.98	0.98	0.98	0.98
Flt Protected	0.99	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Satd. Flow (prot)	1838	1805	1805	3514	3437	3514	3437	3514	3437	3514	3437	3514
Flt Permitted	0.54	1.00	1.00	0.93	0.87	0.93	0.87	0.93	0.87	0.93	0.87	0.93
Satd. Flow (perm)	1008	1805	1805	3267	3008	3267	3008	3267	3008	3267	3008	3267
Volume (vph)	64	348	15	488	122	21	670	26	40	490	77	0
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)	70	378	16	530	133	23	728	28	43	533	84	0
RTOR Reduction (vph)	0	2	0	0	0	0	0	0	0	15	0	0
Lane Group Flow (vph)	0	462	0	663	0	0	779	0	0	645	0	0
Confl. Peds. (#/hr)			9	11	28			7		28		
Confl. Bikes (#/hr)			1	2								
Turn Type	Perm			Perm			Perm			custom		
Protected Phases	4			8			2			6		
Permitted Phases	4				2				6			
Actuated Green, G (s)	27.0			27.0			27.0			27.0		
Effective Green, g (s)	27.0			27.0			27.0			27.0		
Actuated g/C Ratio	0.44			0.44			0.44			0.44		
Clearance Time (s)	4.0			4.0			4.0			4.0		
Vehicle Extension (s)	3.0			3.0			3.0			3.0		
Lane Grp Cap (vph)	439			786			1423			1310		
v/s Ratio Prot	c0.46			0.37			c0.24			0.21		
v/s Ratio Perm	1.05			0.84			0.55			0.49		
v/c Ratio	17.5			15.6			13.0			12.6		
Uniform Delay, d1	1.00			1.00			1.00			1.00		
Progression Factor	57.6			8.2			1.5			1.3		
Incremental Delay, d2	75.1			23.8			14.5			13.9		
Delay (s)	E			C			B			B		
Level of Service	75.1			23.8			14.5			13.9		
Approach Delay (s)	E			C			B			B		
Approach LOS	E			C			B			B		
<b>Intersection Summary</b>												
HCM Average Control Delay	27.7			HCM Level of Service			C					
HCM Volume to Capacity ratio	0.80											
Actuated Cycle Length (s)	62.0			Sum of lost time (s)	8.0							
Intersection Capacity Utilization	113.3%			ICU Level of Service	H							
Analysis Period (min)	15											
c Critical Lane Group												

Barrio Logan CPU  
2: National Ave & 16th St

Horizon Year Alt 1 without Improvements  
Timing Plan: PM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↕↕		↔		↕↕		↕↕		↕↕		↕↕	
Sign Control	Free				Free				Stop			
Grade	0%				0%				0%			
Volume (veh/h)	91	347	31	3	458	25	61	41	7	127	25	70
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
Hourly flow rate (vph)	99	377	34	3	498	27	66	45	8	138	27	76
Pedestrians	14				10				37			
Lane Width (ft)	12.0				12.0				12.0			
Walking Speed (ft/s)	4.0				4.0				4.0			
Percent Blockage	1				1				3			
Right turn flare (veh)									2			
Median type					None				None			
Median storage (veh)												
Upstream signal (ft)	668											
pX, platoon unblocked												
vC, conflicting volume	552		448		1237		1187		252		971	
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	552		448		1237		1187		252		971	
tC, single (s)	4.1		4.1		7.5		6.5		6.9		7.5	
tC, 2 stage (s)												
tF (s)	2.2		2.2		3.5		4.0		3.3		3.5	
p0 queue free %	90		100		19		72		99		83	
cM capacity (veh/h)	991		1075		82		159		718		139	
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>EB 2</b>	<b>WB 1</b>	<b>WB 2</b>	<b>NB 1</b>	<b>SB 1</b>						
Volume Total	288	222	3	525	118	241						
Volume Left	99	0	3	0	66	138						
Volume Right	0	34	0	27	8	76						
cSH	991	1700	1075	1700	107	181						
Volume to Capacity	0.10	0.13	0.00	0.31	1.10	1.33						
Queue Length 95th (ft)	8	0	0	0	185	350						
Control Delay (s)	3.8	0.0	8.4	0.0	193.2	232.1						
Lane LOS	A	A		F		F						
Approach Delay (s)	2.1		0.1		193.2		232.1					
Approach LOS			F		F							
<b>Intersection Summary</b>												
Average Delay	57.2											
Intersection Capacity Utilization	65.2%				ICU Level of Service				C			
Analysis Period (min)	15											

Barrio Logan CPU  
3: National Ave & Sigsbee St

Horizon Year Alt 1 without Improvements  
Timing Plan: PM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↕		↕		↕		↕		↕		↕	
Sign Control	Free				Free				Free			
Grade	4.0				4.0				4.0			
Lane Util. Factor	1.00		1.00		1.00		1.00		1.00		1.00	
Frbp, ped/bikes	1.00		0.99		1.00		1.00		1.00		0.98	
Flpb, ped/bikes	0.99		1.00		0.99		1.00		0.99		1.00	
Frt	1.00		0.98		1.00		0.99		0.99		0.92	
Flt Protected	0.95		1.00		0.95		1.00		0.98		1.00	
Satd. Flow (prot)	1751		1806		1758		1829		1784		1685	
Flt Permitted	0.58		1.00		0.47		1.00		0.82		0.97	
Satd. Flow (perm)	1067		1806		862		1829		1506		1643	
Volume (vph)	34	315	62	9	246	27	75	61	13	6	23	39
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)	37	342	67	10	267	29	82	66	14	7	25	42
RTOR Reduction (vph)	0	11	0	0	7	0	0	5	0	0	28	0
Lane Group Flow (vph)	37		398		0		10		289		0	
Confl. Peds. (#/hr)	21		16		16		21		28		9	
Confl. Bikes (#/hr)	4		4		3		6		3		6	
Turn Type	Perm				Perm				Perm			
Protected Phases	4		8		2		6					
Permitted Phases	4				8				2			
Actuated Green, G (s)	12.3		12.3		12.3		12.3		10.1		10.1	
Effective Green, g (s)	12.3		12.3		12.3		12.3		10.1		10.1	
Actuated g/C Ratio	0.40		0.40		0.40		0.40		0.33		0.33	
Clearance Time (s)	4.0		4.0		4.0		4.0		4.0		4.0	
Vehicle Extension (s)	3.0		3.0		3.0		3.0		3.0		3.0	
Lane Grp Cap (vph)	432		731		349		740		500		546	
v/s Ratio Prot	c0.22		0.16									
v/s Ratio Perm	0.03		0.01						c0.10		0.03	
v/c Ratio	0.09		0.54		0.03		0.39		0.31		0.08	
Uniform Delay, d1	5.6		6.9		5.5		6.4		7.6		7.0	
Progression Factor	1.00		1.00		1.00		1.00		1.00		1.00	
Incremental Delay, d2	0.1		0.8		0.0		0.3		0.4		0.1	
Delay (s)	5.7		7.7		5.5		6.7		7.9		7.0	
Level of Service	A		A		A				A		A	
Approach Delay (s)	7.6		6.7		7.9		7.0					
Approach LOS	A		A		A				A		A	
<b>Intersection Summary</b>												
HCM Average Control Delay	7.3				HCM Level of Service				A			
HCM Volume to Capacity ratio	0.44											
Actuated Cycle Length (s)	30.4											
Sum of lost time (s)	8.0											
Intersection Capacity Utilization	49.9%				ICU Level of Service				A			
Analysis Period (min)	15											
c Critical Lane Group												

Barrio Logan CPU  
4: Newton Ave & Sigsbee St  
Horizon Year Alt 1 without Improvements  
Timing Plan: PM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↕				↕				↕			
Sign Control	Stop				Stop				Stop			
Volume (vph)	9	50	29	9	50	23	20	91	12	16	38	8
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
Hourly flow rate (vph)	10	54	32	10	54	25	22	99	13	17	41	9
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	96	89	134	67								
Volume Left (vph)	10	10	22	17								
Volume Right (vph)	32	25	13	9								
Hadj (s)	-0.14	-0.11	0.01	0.01								
Departure Headway (s)	4.3	4.4	4.4	4.5								
Degree Utilization, x	0.11	0.11	0.16	0.08								
Capacity (veh/h)	790	774	778	754								
Control Delay (s)	7.9	7.9	8.3	7.9								
Approach Delay (s)	7.9	7.9	8.3	7.9								
Approach LOS	A	A	A	A								
<b>Intersection Summary</b>												
Delay	8.0											
HCM Level of Service	A											
Intersection Capacity Utilization	23.3%		ICU Level of Service		A							
Analysis Period (min)	15											

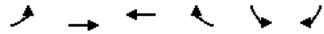
Barrio Logan CPU  
5: Main St & Sigsbee St  
Horizon Year Alt 1 without Improvements  
Timing Plan: PM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↕				↕				↕			
Sign Control	Stop				Stop				Stop			
Volume (vph)	4	2	13	38	0	31	0	98	12	20	60	2
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
Hourly flow rate (vph)	4	2	14	41	0	34	0	107	13	22	65	2
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	21	75	120	89								
Volume Left (vph)	4	41	0	22								
Volume Right (vph)	14	34	13	2								
Hadj (s)	-0.33	-0.13	-0.03	0.07								
Departure Headway (s)	4.1	4.3	4.2	4.3								
Degree Utilization, x	0.02	0.09	0.14	0.11								
Capacity (veh/h)	824	803	833	812								
Control Delay (s)	7.2	7.7	7.8	7.8								
Approach Delay (s)	7.2	7.7	7.8	7.8								
Approach LOS	A	A	A	A								
<b>Intersection Summary</b>												
Delay	7.8											
HCM Level of Service	A											
Intersection Capacity Utilization	27.7%		ICU Level of Service		A							
Analysis Period (min)	15											



Barrio Logan CPU  
6: Harbor Dr & Sigsbee St

Horizon Year Alt 1 without Improvements  
Timing Plan: PM Peak



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↔	↕	↕		↕	
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	160	1945	780	100	100	80
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	174	2114	848	109	109	87
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					Raised	
Median storage (veh)					0	
Upstream signal (ft)			1319			
pX, platoon unblocked	0.94				0.94	0.94
vC, conflicting volume	957				2307	478
vC1, stage 1 conf vol					902	
vC2, stage 2 conf vol					1405	
vCu, unblocked vol	888				2327	378
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)					5.8	
tF (s)	2.2				3.5	3.3
p0 queue free %	76				0	85
cM capacity (veh/h)	712				77	581

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1
Volume Total	174	1057	1057	565	391	196
Volume Left	174	0	0	0	0	109
Volume Right	0	0	0	0	109	87
cSH	712	1700	1700	1700	1700	125
Volume to Capacity	0.24	0.62	0.62	0.33	0.23	1.57
Queue Length 95th (ft)	24	0	0	0	0	352
Control Delay (s)	11.7	0.0	0.0	0.0	0.0	352.4
Lane LOS	B					F
Approach Delay (s)	0.9			0.0		352.4
Approach LOS						F

Intersection Summary						
Average Delay			20.6			
Intersection Capacity Utilization		70.9%		ICU Level of Service		C
Analysis Period (min)			15			

Barrio Logan CPU  
7: Logan Ave & Beardsley St

Horizon Year Alt 1 without Improvements  
Timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕		↕	↕			↕		↕	↕	↕
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	0	515	69	41	154	0	56	0	122	272	110	38
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
Hourly flow rate (vph)	0	560	75	45	167	0	61	0	133	296	120	41
Direction, Lane #	EB 1	WB 1	WB 2	NB 1	SB 1							
Volume Total (vph)	635	45	167	193	457							
Volume Left (vph)	0	45	0	61	296							
Volume Right (vph)	75	0	0	133	41							
Hadj (s)	-0.04	0.53	0.03	-0.31	0.11							
Departure Headway (s)	7.1	8.8	8.3	7.6	7.1							
Degree Utilization, x	1.25	0.11	0.38	0.41	0.91							
Capacity (veh/h)	513	390	413	441	499							
Control Delay (s)	149.8	11.6	15.1	15.8	46.9							
Approach Delay (s)	149.8	14.4		15.8	46.9							
Approach LOS	F	B		C	E							

Intersection Summary						
Delay			81.9			
HCM Level of Service			F			
Intersection Capacity Utilization		77.8%		ICU Level of Service		D
Analysis Period (min)			15			

Barrio Logan CPU  
8: National Ave & Beardsley St  
Horizon Year Alt 1 without Improvements  
Timing Plan: PM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔		↔		↔		↔		↔		↔	
Sign Control	Stop		Stop		Stop		Stop		Stop		Stop	
Volume (vph)	19	625	2	113	347	77	9	43	134	189	83	11
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
Hourly flow rate (vph)	21	679	2	123	377	84	10	47	146	205	90	12
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1						
Volume Total (vph)	21	682	123	461	202	308						
Volume Left (vph)	21	0	123	0	10	205						
Volume Right (vph)	0	2	0	84	146	12						
Hadj (s)	0.53	0.03	0.53	-0.09	-0.39	0.14						
Departure Headway (s)	8.6	8.1	8.4	7.8	8.3	8.2						
Degree Utilization, x	0.05	1.54	0.29	1.00	0.46	0.70						
Capacity (veh/h)	415	446	422	461	410	427						
Control Delay (s)	10.9	273.1	13.6	67.8	18.2	28.2						
Approach Delay (s)	265.4		56.4		18.2	28.2						
Approach LOS	F		F		C	D						
<b>Intersection Summary</b>												
Delay			129.0									
HCM Level of Service			F									
Intersection Capacity Utilization			80.5%				ICU Level of Service		D			
Analysis Period (min)			15									

Barrio Logan CPU  
9: Newton Ave & Beardsley St  
Horizon Year Alt 1 without Improvements  
Timing Plan: PM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔		↔		↔		↔		↔		↔	
Sign Control	Stop		Stop		Stop		Stop		Stop		Stop	
Volume (vph)	7	60	4	13	93	19	5	71	37	46	94	12
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
Hourly flow rate (vph)	8	65	4	14	101	21	5	77	40	50	102	13
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	77	136	123	165								
Volume Left (vph)	8	14	5	50								
Volume Right (vph)	4	21	40	13								
Hadj (s)	0.02	-0.04	-0.15	0.05								
Departure Headway (s)	4.8	4.6	4.5	4.6								
Degree Utilization, x	0.10	0.18	0.15	0.21								
Capacity (veh/h)	694	721	758	735								
Control Delay (s)	8.3	8.6	8.3	8.9								
Approach Delay (s)	8.3	8.6	8.3	8.9								
Approach LOS	A	A	A	A								
<b>Intersection Summary</b>												
Delay			8.6									
HCM Level of Service			A									
Intersection Capacity Utilization			32.3%				ICU Level of Service		A			
Analysis Period (min)			15									

Barrio Logan CPU  
10: Main St & Beardsley St  
Horizon Year Alt 1 without Improvements  
Timing Plan: PM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↕		↕		↕		↕		↕		↕	
Sign Control	Stop		Stop		Stop		Stop		Stop		Stop	
Volume (vph)	22	64	4	78	33	79	0	25	109	144	39	17
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
Hourly flow rate (vph)	24	70	4	85	36	86	0	27	118	157	42	18
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>WB 1</b>	<b>NB 1</b>	<b>SB 1</b>								
Volume Total (vph)	98	207	146	217								
Volume Left (vph)	24	85	0	157								
Volume Right (vph)	4	86	118	18								
Hadj (s)	0.06	-0.13	-0.45	0.13								
Departure Headway (s)	5.1	4.8	4.5	5.0								
Degree Utilization, x	0.14	0.28	0.18	0.30								
Capacity (veh/h)	634	694	731	676								
Control Delay (s)	9.0	9.6	8.5	10.1								
Approach Delay (s)	9.0	9.6	8.5	10.1								
Approach LOS	A	A	A	B								
<b>Intersection Summary</b>												
Delay	9.5											
HCM Level of Service	A											
Intersection Capacity Utilization	47.4%			ICU Level of Service	A							
Analysis Period (min)	15											

Barrio Logan CPU  
11: Harbor Dr & Beardsley St  
Horizon Year Alt 1 without Improvements  
Timing Plan: PM Peak

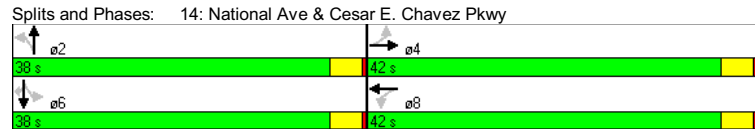
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↕	↕	↕	↕	↕	↕
Sign Control	Free	Free	Free	Free	Stop	Stop
Grade	0%	0%	0%	0%	0%	0%
Volume (veh/h)	95	1950	860	20	40	35
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	103	2120	935	22	43	38
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	Raised					
Median storage (veh)	0					
Upstream signal (ft)	658					
pX, platoon unblocked	0.88				0.88	0.88
vC, conflicting volume	957				2212	478
vC1, stage 1 conf vol	946					
vC2, stage 2 conf vol	1266					
vCu, unblocked vol	820				2240	280
tC, single (s)	4.3				6.8	6.9
tC, 2 stage (s)	5.8					
tF (s)	2.3				3.5	3.3
p0 queue free %	85				53	94
cM capacity (veh/h)	668				93	635
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>EB 2</b>	<b>EB 3</b>	<b>WB 1</b>	<b>WB 2</b>	<b>SB 1</b>
Volume Total	103	1060	1060	623	333	82
Volume Left	103	0	0	0	0	43
Volume Right	0	0	0	0	22	38
cSH	668	1700	1700	1700	1700	155
Volume to Capacity	0.15	0.62	0.62	0.37	0.20	0.53
Queue Length 95th (ft)	14	0	0	0	0	65
Control Delay (s)	11.4	0.0	0.0	0.0	0.0	51.6
Lane LOS	B					F
Approach Delay (s)	0.5				0.0	51.6
Approach LOS	F					
<b>Intersection Summary</b>						
Average Delay	1.7					
Intersection Capacity Utilization	64.9%		ICU Level of Service		C	
Analysis Period (min)	15					



Barrio Logan CPU  
 14: National Ave & Cesar E. Chavez Pkwy  
 Horizon Year Alt 1 without Improvements  
 Timing Plan: PM Peak

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations	↔		↔		↔		↔		↔
Volume (vph)	300	400	110	270	120	1000	120	550	410
Turn Type	Perm		Perm		Perm		Perm		Perm
Protected Phases	4		8		2		6		6
Permitted Phases	4		8		2		6		6
Detector Phases	4		8		2		6		6
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	31.0	31.0	34.0	34.0	27.0	27.0	27.0	27.0	27.0
Total Split (s)	42.0	42.0	42.0	42.0	38.0	38.0	38.0	38.0	38.0
Total Split (%)	52.5%	52.5%	52.5%	52.5%	47.5%	47.5%	47.5%	47.5%	47.5%
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)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Lead/Lag									
Lead-Lag Optimize?									
Recall Mode	None	None	None	None	C-Min	C-Min	C-Min	C-Min	C-Min
Act Effct Green (s)	38.0	38.0	38.0	38.0	34.0	34.0	34.0	34.0	34.0
Actuated g/C Ratio	0.48	0.48	0.48	0.48	0.42	0.42	0.42	0.42	0.42
v/c Ratio	1.48	0.87	1.13	0.71	0.92	0.88	1.60	0.87	0.53
Control Delay	262.8	30.4	155.1	21.3	79.7	25.8	313.5	16.6	1.1
Queue Delay	0.0	0.3	4.1	0.0	0.0	1.3	0.0	1.0	0.6
Total Delay	262.8	30.8	159.2	21.3	79.7	27.2	313.5	17.6	1.7
LOS	F	C	F	C	E	C	F	B	A
Approach Delay	101.1		44.5			32.3		44.3	
Approach LOS	F		D			C		D	

Intersection Summary	
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 2 (3%), Referenced to phase 2:NBT and 6:SBTL, Start of Green	
Natural Cycle: 65	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.60	
Intersection Signal Delay: 54.9	Intersection LOS: D
Intersection Capacity Utilization 98.5%	ICU Level of Service F
Analysis Period (min) 15	



Barrio Logan CPU  
 14: National Ave & Cesar E. Chavez Pkwy  
 Horizon Year Alt 1 without Improvements  
 Timing Plan: PM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔		↔		↔		↔		↔		↔	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00
Flt	1.00	0.94	1.00	0.92	1.00	0.99	1.00	0.99	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	0.95	1.00	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1770	1745	1770	1722	1770	1722	1612	3179	1530	1610	1369	1369
Flt Permitted	0.25	1.00	0.12	1.00	0.12	1.00	0.19	1.00	0.12	1.00	1.00	1.00
Satd. Flow (perm)	463	1745	224	1722	463	1722	331	3179	189	1610	1369	1369
Volume (vph)	300	400	290	110	270	275	120	1000	100	120	550	410
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)	326	435	315	120	293	299	130	1087	109	130	598	446
RTOR Reduction (vph)	0	33	0	0	18	0	0	9	0	0	0	256
Lane Group Flow (vph)	326	717	0	120	574	0	130	1187	0	130	598	190
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	12%	12%	12%	18%	18%	18%
Turn Type	Perm		Perm		Perm		Perm		Perm		Perm	
Protected Phases	4		8		8		2		6		6	
Permitted Phases	4		8		8		2		6		6	
Actuated Green, G (s)	38.0	38.0	38.0	38.0	38.0	38.0	34.0	34.0	34.0	34.0	34.0	34.0
Effective Green, g (s)	38.0	38.0	38.0	38.0	38.0	38.0	34.0	34.0	34.0	34.0	34.0	34.0
Actuated g/C Ratio	0.48	0.48	0.48	0.48	0.48	0.48	0.42	0.42	0.42	0.42	0.42	0.42
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	220	829	106	818	220	829	141	1351	80	684	582	582
v/s Ratio Prot	0.41		0.33		0.37		0.37		0.37		0.37	
v/s Ratio Perm	c0.70		0.54		0.39		c0.69		0.69		0.14	
v/c Ratio	1.48	0.87	1.13	0.70	0.92	0.88	1.62	0.87	0.33	0.87	0.53	0.33
Uniform Delay, d1	21.0	18.7	21.0	16.5	21.7	21.1	23.0	21.0	15.3	21.0	15.3	15.3
Progression Factor	1.00	1.00	1.00	1.00	0.79	0.81	0.40	0.38	0.08	0.38	0.08	0.08
Incremental Delay, d2	239.6	9.4	127.4	2.7	55.0	7.9	302.5	6.4	0.6	6.4	0.6	0.6
Delay (s)	260.6	28.1	148.4	19.3	72.2	25.0	311.6	14.4	1.9	14.4	1.9	1.9
Level of Service	F	C	F	B	E	C	F	B	A	B	A	A
Approach Delay (s)	98.5		41.0		29.7		42.5		42.5		42.5	
Approach LOS	F		D		C		D		D		D	

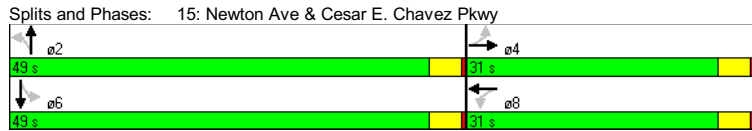
Intersection Summary			
HCM Average Control Delay	52.4	HCM Level of Service	D
HCM Volume to Capacity ratio	1.55		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	98.5%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Barrio Logan CPU  
 15: Newton Ave & Cesar E. Chavez Pkwy  
 Horizon Year Alt 1 without Improvements  
 Timing Plan: PM Peak

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Volume (vph)	135	130	90	70	40	795	165	890
Turn Type	Perm		Perm		Perm		Perm	
Protected Phases	4		8		2		6	
Permitted Phases	4		8		2		6	
Detector Phases	4		8		2		6	
Minimum Initial (s)	4.0		4.0		4.0		4.0	
Minimum Split (s)	31.0		31.0		27.0		27.0	
Total Split (s)	31.0		31.0		49.0		49.0	
Total Split (%)	38.8%		38.8%		61.3%		61.3%	
Yellow Time (s)	3.5		3.5		3.5		3.5	
All-Red Time (s)	0.5		0.5		0.5		0.5	
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	None	None	None	C-Min	C-Min	C-Min	C-Min
Act Effct Green (s)	15.6	15.6	15.6	15.6	56.4	56.4	56.4	56.4
Actuated g/C Ratio	0.20	0.20	0.20	0.20	0.70	0.70	0.70	0.70
v/c Ratio	0.72	0.58	0.49	0.49	0.41	0.41	0.61	0.87
Control Delay	48.7	29.3	35.6	15.9	16.9	4.5	14.1	15.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.1	0.0	1.6
Total Delay	48.7	29.3	35.6	15.9	16.9	4.6	14.1	16.6
LOS	D	C	D	B	B	A	B	B
Approach Delay	37.1		22.3		5.1		16.2	
Approach LOS	D		C		A		B	

Intersection Summary	
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.87	
Intersection Signal Delay: 15.8	Intersection LOS: B
Intersection Capacity Utilization 85.4%	ICU Level of Service E
Analysis Period (min) 15	



Barrio Logan CPU  
 15: Newton Ave & Cesar E. Chavez Pkwy  
 Horizon Year Alt 1 without Improvements  
 Timing Plan: PM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0		4.0		4.0		4.0		4.0	
Lane Util. Factor	1.00		1.00		1.00		1.00		0.95		1.00	
Frt	1.00		0.95		1.00		0.91		1.00		0.99	
Flt Protected	0.95		1.00		0.95		1.00		0.95		1.00	
Satd. Flow (prot)	1770		1765		1770		1686		1612		3189	
Flt Permitted	0.45		1.00		0.43		1.00		0.15		1.00	
Satd. Flow (perm)	847		1765		801		1686		257		3189	
Volume (vph)	135	130	70	90	70	120	40	795	60	165	890	55
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)	147	141	76	98	76	130	43	864	65	179	967	60
RTOR Reduction (vph)	0	30	0	0	93	0	0	5	0	0	2	0
Lane Group Flow (vph)	147	187	0	98	113	0	43	924	0	179	1025	0
Heavy Vehicles (%)	2%		2%		2%		2%		12%		12%	
Turn Type	Perm		Perm		Perm		Perm		Perm		Perm	
Protected Phases	4		8		8		2		6		6	
Permitted Phases	4		8		8		2		6		6	
Actuated Green, G (s)	15.6	15.6	15.6	15.6	15.6	15.6	56.4	56.4	56.4	56.4	56.4	56.4
Effective Green, g (s)	15.6	15.6	15.6	15.6	15.6	15.6	56.4	56.4	56.4	56.4	56.4	56.4
Actuated g/C Ratio	0.20	0.20	0.20	0.20	0.20	0.20	0.70	0.70	0.70	0.70	0.70	0.70
Clearance Time (s)	4.0		4.0		4.0		4.0		4.0		4.0	
Vehicle Extension (s)	3.0		3.0		3.0		3.0		3.0		3.0	
Lane Grp Cap (vph)	165	344	156	329	181	2248	336	1186				
v/s Ratio Prot	0.11		0.07		0.29		0.38		c0.61			
v/s Ratio Perm	c0.17		0.12		0.17		0.38					
v/c Ratio	0.89	0.54	0.63	0.34	0.24	0.41	0.53	0.86				
Uniform Delay, d1	31.4	29.0	29.5	27.8	4.2	4.9	5.6	8.9				
Progression Factor	1.00	1.00	1.00	1.00	0.70	0.71	0.67	0.67				
Incremental Delay, d2	40.3	1.8	7.7	0.6	2.3	0.4	3.7	5.4				
Delay (s)	71.7	30.8	37.2	28.4	5.2	3.9	7.4	11.4				
Level of Service	E	C	D	C	A	A	A	B				
Approach Delay (s)	47.3		31.2		4.0		10.8					
Approach LOS	D		C		A		B					

Intersection Summary			
HCM Average Control Delay	15.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	85.4%	ICU Level of Service	E
Analysis Period (min)	15		

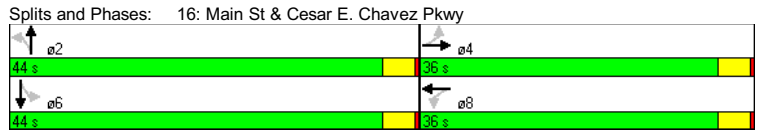
c Critical Lane Group

Barrio Logan CPU  
16: Main St & Cesar E. Chavez Pkwy  
Horizon Year Alt 1 without Improvements  
Timing Plan: PM Peak

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔
Volume (vph)	120	290	70	230	70	640	250	540
Turn Type	Perm		Perm		Perm		Perm	
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phases	4	4	8	8	2	2	6	6
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	31.0	31.0	31.0	31.0	27.0	27.0	27.0	27.0
Total Split (s)	36.0	36.0	36.0	36.0	44.0	44.0	44.0	44.0
Total Split (%)	45.0%	45.0%	45.0%	45.0%	55.0%	55.0%	55.0%	55.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	None	None	None	C-Min	C-Min	C-Min	C-Min
Act Effct Green (s)	27.9	27.9	27.9	27.9	44.1	44.1	44.1	44.1
Actuated g/C Ratio	0.35	0.35	0.35	0.35	0.55	0.55	0.55	0.55
v/c Ratio	0.92	0.53	0.28	0.84	0.84	0.53	1.27	1.01
Control Delay	82.8	22.7	19.7	32.3	86.5	13.0	164.1	42.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	1.2	0.0	19.5
Total Delay	82.8	22.7	19.7	32.3	86.5	14.2	164.1	62.2
LOS	F	C	B	C	F	B	F	E
Approach Delay		39.3		30.7		19.9		86.5
Approach LOS		D		C		B		F

**Intersection Summary**

Cycle Length: 80  
Actuated Cycle Length: 80  
Offset: 2 (3%), Referenced to phase 2:NBT and 6:SBTL, Start of Green  
Natural Cycle: 75  
Control Type: Actuated-Coordinated  
Maximum v/c Ratio: 1.27  
Intersection Signal Delay: 48.6  
Intersection LOS: D  
Intersection Capacity Utilization 98.3%  
ICU Level of Service F  
Analysis Period (min) 15



Barrio Logan CPU  
16: Main St & Cesar E. Chavez Pkwy  
Horizon Year Alt 1 without Improvements  
Timing Plan: PM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	0.98		1.00	0.99		1.00	0.98	1.00
Flpb, ped/bikes	0.99	1.00		0.99	1.00		1.00	1.00		0.99	1.00	1.00
Frt	1.00	0.99		1.00	0.92		1.00	0.97		1.00	0.95	1.00
Fit Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1760	1836		1750	1684		1556	2974		1543	1534	1534
Fit Permitted	0.16	1.00		0.39	1.00		0.11	1.00		0.26	1.00	1.00
Satd. Flow (perm)	288	1836		721	1684		183	2974		416	1534	1534
Volume (vph)	120	290	25	70	230	270	70	640	180	250	540	260
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)	130	315	27	76	250	293	76	696	196	272	587	283
RTOR Reduction (vph)	0	4	0	0	57	0	0	29	0	0	19	0
Lane Group Flow (vph)	130	338	0	76	486	0	76	863	0	272	851	0
Confl. Peds. (#/hr)	19		24	24		19	16		20	20		16
Confl. Bikes (#/hr)				1			2					
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	16%	16%	16%	16%	16%	16%
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	27.9	27.9		27.9	27.9		44.1	44.1		44.1	44.1	
Effective Green, g (s)	27.9	27.9		27.9	27.9		44.1	44.1		44.1	44.1	
Actuated g/C Ratio	0.35	0.35		0.35	0.35		0.55	0.55		0.55	0.55	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	100	640		251	587		101	1639		229	846	
v/s Ratio Prot		0.18			0.29			0.29			0.55	
v/s Ratio Perm	c0.45			0.11			0.41			c0.65		
v/c Ratio	1.30	0.53		0.30	0.83		0.75	0.53		1.19	1.01	
Uniform Delay, d1	26.1	20.8		19.0	23.8		13.8	11.3		18.0	18.0	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		0.78	0.76	
Incremental Delay, d2	190.3	0.8		0.7	9.3		39.9	1.2		106.3	24.4	
Delay (s)	216.4	21.6		19.7	33.2		53.7	12.6		120.3	38.1	
Level of Service	F	C		B	C		D	B		F	D	
Approach Delay (s)		75.2			31.5			15.8			57.6	
Approach LOS		E			C			B			E	

**Intersection Summary**

HCM Average Control Delay 42.5  
HCM Volume to Capacity ratio 1.23  
HCM Level of Service D  
Actuated Cycle Length (s) 80.0  
Sum of lost time (s) 8.0  
Intersection Capacity Utilization 98.3%  
ICU Level of Service F  
Analysis Period (min) 15

c Critical Lane Group

Barrio Logan CPU  
17: Harbor Dr & Cesar E. Chavez Pkwy  
Horizon Year Alt 1 without Improvements  
Timing Plan: PM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	[Diagrammatic Lane Configurations]											
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frbp, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.99		1.00	0.98	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00		1.00	0.99		1.00	0.95		1.00	0.85	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1641	3265		1421	3232		1363	1314		1596	1368	
Flt Permitted	0.95	1.00		0.95	1.00		0.71	1.00		0.83	1.00	
Satd. Flow (perm)	1641	3265		1421	3232		1021	1314		1358	1368	
Volume (vph)	468	1500	40	50	465	43	50	63	35	33	30	324
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)	509	1630	43	54	505	47	54	68	38	36	33	352
RTOR Reduction (vph)	0	1	0	0	5	0	0	15	0	0	0	280
Lane Group Flow (vph)	509	1672	0	54	547	0	54	91	0	0	69	72
Confl. Peds. (#/hr)			11			6	4		1	1		4
Confl. Bikes (#/hr)			9			14		3				
Heavy Vehicles (%)	10%	10%	10%	27%	10%	10%	32%	32%	43%	16%	16%	16%
Turn Type	Prot Perm Prot Perm Perm Perm											
Protected Phases	3	14 2 6		13	18 2 6			12			1 5 16	
Permitted Phases							12			1 5 16		1 5 16
Actuated Green, G (s)	26.8	53.2		6.2	32.6		14.3	14.3			22.5	22.5
Effective Green, g (s)	26.8	53.2		6.2	32.6		14.3	14.3			22.5	22.5
Actuated g/C Ratio	0.24	0.48		0.06	0.30		0.13	0.13			0.20	0.20
Clearance Time (s)	4.0			4.0			4.0	4.0				
Vehicle Extension (s)	3.0			3.0			3.0	3.0				
Lane Grp Cap (vph)	400	1581		80	959		133	171			278	280
v/s Ratio Prot	c0.31	c0.51		0.04	0.17			c0.07				
v/s Ratio Perm							0.05			0.05	c0.05	
v/c Ratio	1.27	1.06		0.68	0.57		0.41	0.53			0.25	0.26
Uniform Delay, d1	41.6	28.4		50.9	32.7		43.9	44.7			36.6	36.7
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00			1.21	3.67
Incremental Delay, d2	140.9	39.6		20.2	0.8		2.0	3.2			0.5	0.5
Delay (s)	182.5	67.9		71.1	33.5		45.9	47.9			44.6	135.2
Level of Service	F	E		E	C		D	D			D	F
Approach Delay (s)		94.6			36.9			47.2			120.3	
Approach LOS		F			D			D			F	
<b>Intersection Summary</b>												
HCM Average Control Delay		85.2										F
HCM Volume to Capacity ratio		0.94										
Actuated Cycle Length (s)		109.9						24.0				
Intersection Capacity Utilization		66.6%										C
Analysis Period (min)		15										

Barrio Logan CPU  
18: Logan Ave & I-5 SB On-ramp  
Horizon Year Alt 1 without Improvements  
Timing Plan: PM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	[Diagrammatic Lane Configurations]											
Sign Control	Free			Free			Stop			Stop		
Grade	0%			0%			0%			0%		
Volume (veh/h)	933	527	8	0	158	73	0	0	16	0	0	0
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
Hourly flow rate (vph)	1014	573	9	0	172	79	0	0	17	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None						None					
Median storage veh												
Upstream signal (ft)	667											
pX, platoon unblocked												
vC, conflicting volume	251			582			2777	2857	577	2830	2821	211
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	251			582			2777	2857	577	2830	2821	211
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	23			100			100	100	97	100	100	100
cM capacity (veh/h)	1314			993			4	4	516	4	4	829
<b>Direction, Lane #</b>												
Volume Total	1014	582	0	251	17							
Volume Left	1014	0	0	0	0							
Volume Right	0	9	0	79	17							
cSH	1314	1700	1700	1700	516							
Volume to Capacity	0.77	0.34	0.00	0.15	0.03							
Queue Length 95th (ft)	207	0	0	0	3							
Control Delay (s)	16.3	0.0	0.0	0.0	12.2							
Lane LOS	C			B			B			B		
Approach Delay (s)	10.3			0.0			12.2					
Approach LOS	C			B			B			B		
<b>Intersection Summary</b>												
Average Delay	9.0											
Intersection Capacity Utilization	71.1%			ICU Level of Service			C					
Analysis Period (min)	15											



Barrio Logan CPU  
19: National Ave & SR-75 Off-ramp  
Horizon Year Alt 1 without Improvements  
Timing Plan: PM Peak

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↘	↘
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	0	308	260	0	126	238
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	335	283	0	137	259
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					TWLTL	
Median storage (veh)					1	
Upstream signal (ft)		1100	875			
pX, platoon unblocked						
vC, conflicting volume	283				617	283
vC1, stage 1 conf vol					283	
vC2, stage 2 conf vol					335	
vCu, unblocked vol	283				617	283
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)					5.4	
tF (s)	2.2				3.5	3.3
p0 queue free %	100				75	66
cM capacity (veh/h)	1280				546	756
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>WB 1</b>	<b>SB 1</b>	<b>SB 2</b>		
Volume Total	335	283	137	259		
Volume Left	0	0	137	0		
Volume Right	0	0	0	259		
cSH	1700	1700	546	756		
Volume to Capacity	0.20	0.17	0.25	0.34		
Queue Length 95th (ft)	0	0	25	38		
Control Delay (s)	0.0	0.0	13.8	12.2		
Lane LOS			B	B		
Approach Delay (s)	0.0	0.0	12.8			
Approach LOS			B			
<b>Intersection Summary</b>						
Average Delay			5.0			
Intersection Capacity Utilization			35.1%		ICU Level of Service	A
Analysis Period (min)			15			

Barrio Logan CPU  
20: National Ave & Evans St  
Horizon Year Alt 1 without Improvements  
Timing Plan: PM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↘		↘	↘			↕		↘	↘	↘
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	37	390	36	32	192	23	13	18	62	45	22	72
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
Hourly flow rate (vph)	40	424	39	35	209	25	14	20	67	49	24	78
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage (veh)												
Upstream signal (ft)		1314			661							
pX, platoon unblocked												
vC, conflicting volume	234			463			892	827	443	872	834	221
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	234			463			892	827	443	872	834	221
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	97			97			93	93	89	78	92	90
cM capacity (veh/h)	1334			1098			212	288	614	218	285	818
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>EB 2</b>	<b>WB 1</b>	<b>WB 2</b>	<b>NB 1</b>	<b>SB 1</b>						
Volume Total	40	463	35	234	101	151						
Volume Left	40	0	35	0	14	49						
Volume Right	0	39	0	25	67	78						
cSH	1334	1700	1098	1700	414	374						
Volume to Capacity	0.03	0.27	0.03	0.14	0.24	0.40						
Queue Length 95th (ft)	2	0	2	0	24	48						
Control Delay (s)	7.8	0.0	8.4	0.0	16.5	21.0						
Lane LOS	A		A		C	C						
Approach Delay (s)	0.6		1.1		16.5	21.0						
Approach LOS					C	C						
<b>Intersection Summary</b>												
Average Delay					5.3							
Intersection Capacity Utilization					50.8%		ICU Level of Service			A		
Analysis Period (min)					15							

Barrio Logan CPU  
21: Newton Ave & Evans St  
Horizon Year Alt 1 without Improvements  
Timing Plan: PM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↕			↕			↕			↕		
Sign Control	Free			Free			Stop			Stop		
Grade	0%			0%			0%			0%		
Volume (veh/h)	24	124	41	27	70	27	7	47	28	30	28	21
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
Hourly flow rate (vph)	26	135	45	29	76	29	8	51	30	33	30	23
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None						None					
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	105			179			397	373	157	415	381	91
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	105			179			397	373	157	415	381	91
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			98			99	90	97	93	94	98
cM capacity (veh/h)	1486			1396			511	536	888	477	531	967
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>WB 1</b>	<b>NB 1</b>	<b>SB 1</b>								
Volume Total	205	135	89	86								
Volume Left	26	29	8	33								
Volume Right	45	29	30	23								
cSH	1486	1396	617	575								
Volume to Capacity	0.02	0.02	0.14	0.15								
Queue Length 95th (ft)	1	2	13	13								
Control Delay (s)	1.1	1.8	11.8	12.4								
Lane LOS	A	A	B	B								
Approach Delay (s)	1.1	1.8	11.8	12.4								
Approach LOS			B	B								
<b>Intersection Summary</b>												
Average Delay				5.0								
Intersection Capacity Utilization				29.9%	ICU Level of Service	A						
Analysis Period (min)				15								

Barrio Logan CPU  
22: Main St & Evans St  
Horizon Year Alt 1 without Improvements  
Timing Plan: PM Peak

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↕		↕		↕	
Sign Control	Free		Free		Stop	
Grade	0%		0%		0%	
Volume (veh/h)	12	270	239	62	75	16
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	13	293	260	67	82	17
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage (veh)						
Upstream signal (ft)	1318					
pX, platoon unblocked						
vC, conflicting volume	327				613	293
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	327				613	293
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	99				82	98
cM capacity (veh/h)	1232				451	746
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>WB 1</b>	<b>SB 1</b>			
Volume Total	307	327	99			
Volume Left	13	0	82			
Volume Right	0	67	17			
cSH	1232	1700	485			
Volume to Capacity	0.01	0.19	0.20			
Queue Length 95th (ft)	1	0	19			
Control Delay (s)	0.4	0.0	14.3			
Lane LOS	A		B			
Approach Delay (s)	0.4	0.0	14.3			
Approach LOS			B			
<b>Intersection Summary</b>						
Average Delay				2.1		
Intersection Capacity Utilization				35.8%	ICU Level of Service	A
Analysis Period (min)				15		

Barrio Logan CPU  
23: Logan Ave & Sampson St  
Horizon Year Alt 1 without Improvements  
Timing Plan: PM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔		↔		↔		↔		↔		↔	
Sign Control	Stop		Stop		Stop		Stop		Stop		Stop	
Volume (vph)	108	255	203	143	87	54	235	400	101	66	256	13
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
Hourly flow rate (vph)	117	277	221	155	95	59	255	435	110	72	278	14
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1						
Volume Total (vph)	117	498	155	153	800	364						
Volume Left (vph)	117	0	155	0	255	72						
Volume Right (vph)	0	221	0	59	110	14						
Hadj (s)	0.53	-0.28	0.53	-0.23	0.02	0.05						
Departure Headway (s)	9.2	8.4	9.9	9.1	8.3	8.6						
Degree Utilization, x	0.30	1.16	0.43	0.39	1.84	0.87						
Capacity (veh/h)	387	433	347	384	440	405						
Control Delay (s)	14.9	121.7	18.9	16.6	408.1	47.1						
Approach Delay (s)	101.3	17.8		408.1		47.1						
Approach LOS	F		C		F E							
<b>Intersection Summary</b>												
Delay	197.1											
HCM Level of Service	F											
Intersection Capacity Utilization	105.2%		ICU Level of Service		G							
Analysis Period (min)	15											

Barrio Logan CPU  
24: National Ave & Sampson St  
Horizon Year Alt 1 without Improvements  
Timing Plan: PM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔		↔		↔		↔		↔		↔	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
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
Frbp, ped/bikes	1.00	1.00	1.00	0.98	1.00	0.99	1.00	1.00	1.00	1.00	1.00	0.99
Flpb, ped/bikes	0.99	1.00	0.99	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.99	1.00	0.91	1.00	0.98	1.00	1.00	1.00	1.00	1.00	0.95
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.98
Satd. Flow (prot)	1760	1829	1753	1667	1817	1723	1817	1723	1817	1723	1817	1723
Flt Permitted	0.64	1.00	0.67	1.00	0.98	0.80	0.98	0.80	0.98	0.80	0.98	0.80
Satd. Flow (perm)	1187	1829	1238	1667	1782	1402	1782	1402	1782	1402	1782	1402
Volume (vph)	162	111	12	21	70	100	13	185	30	123	86	107
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)	176	121	13	23	76	109	14	201	33	134	93	116
RTOR Reduction (vph)	0	6	0	0	78	0	0	7	0	0	24	0
Lane Group Flow (vph)	176	128	0	23	107	0	0	241	0	0	319	0
Confl. Peds. (#/hr)	7	11		11	7	25	21	21	25	21	25	25
Confl. Bikes (#/hr)	3		3		6		6		2		2	
Turn Type	Perm		Perm		Perm		Perm		Perm		Perm	
Protected Phases	4		8		2		2		6		6	
Permitted Phases	4		8		2		2		6		6	
Actuated Green, G (s)	11.9	11.9	11.9	11.9	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0
Effective Green, g (s)	11.9	11.9	11.9	11.9	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0
Actuated g/C Ratio	0.28	0.28	0.28	0.28	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	337	519	352	473	936	736	936	736	936	736	936	736
v/s Ratio Prot	0.07		0.06		0.14		0.14		0.14		0.23	
v/s Ratio Perm	c0.15		0.02		0.14		0.14		0.14		c0.23	
v/c Ratio	0.52	0.25	0.07	0.23	0.26	0.43	0.26	0.26	0.26	0.26	0.26	0.43
Uniform Delay, d1	12.6	11.5	10.9	11.5	5.5	6.1	5.5	5.5	5.5	5.5	5.5	6.1
Progression 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
Incremental Delay, d2	1.5	0.2	0.1	0.2	0.1	0.4	0.1	0.1	0.1	0.1	0.1	0.4
Delay (s)	14.1	11.8	11.0	11.7	5.6	6.5	5.6	5.6	5.6	5.6	5.6	6.5
Level of Service	B		B		A		A		A		A	
Approach Delay (s)	13.1		11.6		5.6		5.6		5.6		6.5	
Approach LOS	B		B		A		A		A		A	
<b>Intersection Summary</b>												
HCM Average Control Delay	9.1		HCM Level of Service		A							
HCM Volume to Capacity ratio	0.46											
Actuated Cycle Length (s)	41.9		Sum of lost time (s)		8.0							
Intersection Capacity Utilization	68.7%		ICU Level of Service		C							
Analysis Period (min)	15											
c Critical Lane Group												

Barrio Logan CPU  
25: Newton Ave & Sampson St  
Horizon Year Alt 1 without Improvements  
Timing Plan: PM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↕				↕				↕		↕	
Sign Control	Stop				Stop				Stop		Stop	
Volume (vph)	34	119	24	0	76	31	13	90	20	19	66	19
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
Hourly flow rate (vph)	37	129	26	0	83	34	14	98	22	21	72	21
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	192	116	134	113								
Volume Left (vph)	37	0	14	21								
Volume Right (vph)	26	34	22	21								
Hadj (s)	-0.01	-0.14	-0.04	-0.04								
Departure Headway (s)	4.6	4.6	4.8	4.8								
Degree Utilization, x	0.25	0.15	0.18	0.15								
Capacity (veh/h)	726	724	706	695								
Control Delay (s)	9.2	8.4	8.8	8.6								
Approach Delay (s)	9.2	8.4	8.8	8.6								
Approach LOS	A	A	A	A								
<b>Intersection Summary</b>												
Delay	8.8											
HCM Level of Service	A											
Intersection Capacity Utilization	32.5%		ICU Level of Service		A							
Analysis Period (min)	15											

Barrio Logan CPU  
26: Main St & Sampson St  
Horizon Year Alt 1 without Improvements  
Timing Plan: PM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↕				↕				↕		↕	
Sign Control	Stop				Stop				Stop		Stop	
Volume (vph)	118	142	33	27	83	8	60	46	49	8	27	85
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
Hourly flow rate (vph)	128	154	36	29	90	9	65	50	53	9	29	92
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	318	128	168	130								
Volume Left (vph)	128	29	65	9								
Volume Right (vph)	36	9	53	92								
Hadj (s)	0.05	0.04	-0.08	-0.38								
Departure Headway (s)	4.9	5.2	5.2	4.9								
Degree Utilization, x	0.43	0.18	0.24	0.18								
Capacity (veh/h)	693	638	627	654								
Control Delay (s)	11.6	9.3	9.8	9.0								
Approach Delay (s)	11.6	9.3	9.8	9.0								
Approach LOS	B	A	A	A								
<b>Intersection Summary</b>												
Delay	10.4											
HCM Level of Service	B											
Intersection Capacity Utilization	45.7%		ICU Level of Service		A							
Analysis Period (min)	15											

Barrio Logan CPU  
27: Harbor Dr & Sampson St

Horizon Year Alt 1 without Improvements  
Timing Plan: PM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↕	↔	↔	↕	↔	↔	↕	↔	↔	↕	↔
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00			1.00	
Frbp, ped/bikes	1.00	1.00		1.00	0.99			0.99			1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	1.00		1.00	0.98			0.97			0.98	
Flt Protected	0.95	1.00		0.95	1.00			0.99			0.98	
Satd. Flow (prot)	1770	3469		1770	3443			1780			1776	
Flt Permitted	0.95	1.00		0.95	1.00			0.95			0.77	
Satd. Flow (perm)	1770	3469		1770	3443			1697			1396	
Volume (vph)	56	1500	5	19	488	62	23	111	41	58	66	26
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)	61	1630	5	21	530	67	25	121	45	63	72	28
RTOR Reduction (vph)	0	0	0	0	7	0	0	8	0	0	5	0
Lane Group Flow (vph)	61	1635	0	21	590	0	0	183	0	0	158	0
Confl. Peds. (#/hr)			15			29	7		4	4		7
Confl. Bikes (#/hr)			12					7				7
Heavy Vehicles (%)	2%	4%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Prot		Prot		Perm			Perm				
Protected Phases	3	14 2 6		13	18 2 6			12			16 1 5	
Permitted Phases							12				16 1 5	
Actuated Green, G (s)	5.1	49.5		1.2	45.6			16.2			29.0	
Effective Green, g (s)	5.1	49.5		1.2	45.6			16.2			29.0	
Actuated g/C Ratio	0.05	0.48		0.01	0.44			0.16			0.28	
Clearance Time (s)	4.0			4.0				4.0				
Vehicle Extension (s)	3.0			3.0				3.0				
Lane Grp Cap (vph)	87	1656		20	1514			265			390	
v/s Ratio Prot	c0.03	c0.47		0.01	0.17							
v/s Ratio Perm								c0.11			c0.11	
v/c Ratio	0.70	0.99		1.05	0.39			0.69			0.41	
Uniform Delay, d1	48.5	26.8		51.2	19.6			41.4			30.3	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.05	
Incremental Delay, d2	22.5	19.0		217.8	0.2			7.6			0.7	
Delay (s)	71.0	45.7		269.0	19.8			49.0			32.5	
Level of Service	E	D		F	B			D			C	
Approach Delay (s)		46.7			28.3			49.0			32.5	
Approach LOS		D			C			D			C	
<b>Intersection Summary</b>												
HCM Average Control Delay		41.7						HCM Level of Service			D	
HCM Volume to Capacity ratio		0.83										
Actuated Cycle Length (s)		103.7						Sum of lost time (s)			24.0	
Intersection Capacity Utilization		73.8%						ICU Level of Service			D	
Analysis Period (min)		15										
c Critical Lane Group												

Barrio Logan CPU  
28: National Ave & Sicard St

Horizon Year Alt 1 without Improvements  
Timing Plan: PM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↕			↕			↕			↕	↔
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	40	169	38	8	125	1	33	46	17	4	18	42
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
Hourly flow rate (vph)	43	184	41	9	136	1	36	50	18	4	20	46
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage (veh)												
Upstream signal (ft)		641										
pX, platoon unblocked												
vC, conflicting volume	137			225			501	446	204	468	466	136
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	137			225			501	446	204	468	466	136
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	97			99			92	90	98	99	96	95
cM capacity (veh/h)	1447			1344			430	489	836	443	476	912
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>EB 2</b>	<b>WB 1</b>	<b>NB 1</b>	<b>SB 1</b>							
Volume Total	43	225	146	104	70							
Volume Left	43	0	9	36	4							
Volume Right	0	41	1	18	46							
cSH	1447	1700	1344	502	689							
Volume to Capacity	0.03	0.13	0.01	0.21	0.10							
Queue Length 95th (ft)	2	0	0	19	8							
Control Delay (s)	7.6	0.0	0.5	14.0	10.8							
Lane LOS	A		A	B	B							
Approach Delay (s)	1.2		0.5	14.0	10.8							
Approach LOS				B	B							
<b>Intersection Summary</b>												
Average Delay		4.5										
Intersection Capacity Utilization		36.2%					ICU Level of Service				A	
Analysis Period (min)		15										

Barrio Logan CPU  
29: National Ave & 26th St  
Horizon Year Alt 1 without Improvements  
Timing Plan: PM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔		↔		↔		↔		↔		↔	
Sign Control	Stop		Stop		Stop		Stop		Stop		Stop	
Volume (vph)	33	156	65	35	124	55	46	60	34	90	68	23
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
Hourly flow rate (vph)	36	170	71	38	135	60	50	65	37	98	74	25
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1						
Volume Total (vph)	36	240	38	195	152	197						
Volume Left (vph)	36	0	38	0	50	98						
Volume Right (vph)	0	71	0	60	37	25						
Hadj (s)	0.53	-0.17	0.53	-0.18	-0.05	0.06						
Departure Headway (s)	6.4	5.7	6.5	5.7	5.6	5.6						
Degree Utilization, x	0.06	0.38	0.07	0.31	0.24	0.30						
Capacity (veh/h)	529	599	521	589	580	592						
Control Delay (s)	8.6	10.9	8.7	10.1	10.3	11.0						
Approach Delay (s)	10.6	9.9	10.3	11.0								
Approach LOS	B	A	B	B								
<b>Intersection Summary</b>												
Delay	10.4											
HCM Level of Service	B											
Intersection Capacity Utilization	41.9%		ICU Level of Service		A							
Analysis Period (min)	15											

Barrio Logan CPU  
30: National Ave & I-5 SB Off-ramp  
Horizon Year Alt 1 without Improvements  
Timing Plan: PM Peak

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔		↔		↔	
Sign Control	Free		Free		Stop	
Grade	0%		0%		0%	
Volume (veh/h)	368	23	31	234	94	296
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	400	25	34	254	102	322
Pedestrians						36
Lane Width (ft)						12.0
Walking Speed (ft/s)						4.0
Percent Blockage						3
Right turn flare (veh)						
Median type						None
Median storage (veh)						
Upstream signal (ft)						670
pX, platoon unblocked						
vC, conflicting volume			461		643	448
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			461		643	448
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			97		73	41
cM capacity (veh/h)			1064		381	541
Direction, Lane #	EB 1	WB 1	WB 2	NB 1	NB 2	
Volume Total	425	118	170	102	322	
Volume Left	0	34	0	102	0	
Volume Right	25	0	0	0	322	
cSH	1700	1064	1700	381	541	
Volume to Capacity	0.25	0.03	0.10	0.27	0.59	
Queue Length 95th (ft)	0	2	0	27	96	
Control Delay (s)	0.0	2.6	0.0	17.9	20.9	
Lane LOS	A		C		C	
Approach Delay (s)	0.0	1.1	20.2			
Approach LOS			C			
<b>Intersection Summary</b>						
Average Delay	7.8					
Intersection Capacity Utilization	45.9%		ICU Level of Service		A	
Analysis Period (min)	15					

Barrio Logan CPU  
31: Main St & 26th St  
Horizon Year Alt 1 without Improvements  
Timing Plan: PM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↕		↕		↕		↕		↕		↕	
Sign Control	Stop			Stop			Stop			Stop		
Volume (vph)	14	180	16	49	50	29	7	61	200	28	12	8
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
Hourly flow rate (vph)	15	196	17	53	54	32	8	66	217	30	13	9
Direction, Lane #	EB 1	WB 1	WB 2	WB 3	NB 1	NB 2	SB 1					
Volume Total (vph)	228	53	54	32	74	217	52					
Volume Left (vph)	15	53	0	0	8	0	30					
Volume Right (vph)	17	0	0	32	0	217	9					
Hadj (s)	0.00	1.10	0.03	-0.67	0.05	-0.41	0.05					
Departure Headway (s)	4.5	6.1	5.0	3.2	4.8	3.2	4.9					
Degree Utilization, x	0.28	0.09	0.08	0.03	0.10	0.19	0.07					
Capacity (veh/h)	783	566	684	1121	693	1121	686					
Control Delay (s)	9.2	8.5	7.3	5.1	8.4	7.0	8.2					
Approach Delay (s)	9.2	7.2			7.3			8.2				
Approach LOS	A	A			A			A				
<b>Intersection Summary</b>												
Delay	8.0											
HCM Level of Service	A											
Intersection Capacity Utilization	38.5%			ICU Level of Service			A					
Analysis Period (min)	15											

Barrio Logan CPU  
32: Harbor Dr & Schley St  
Horizon Year Alt 1 without Improvements  
Timing Plan: PM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↕		↕		↕		↕		↕		↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0							
Lane Util. Factor	1.00	0.95			0.95							
Flpb, ped/bikes	1.00	1.00			1.00							
Flpb, ped/bikes	1.00	1.00			1.00							
Frt	1.00	1.00			0.99							
Flt Protected	0.95	1.00			1.00							
Satd. Flow (prot)	1543	3539			3504							
Flt Permitted	0.95	1.00			1.00							
Satd. Flow (perm)	1543	3539			3504							
Volume (vph)	203	1400	0	0	538	39	0	0	0	16	10	75
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)	221	1522	0	0	585	42	0	0	0	17	11	82
RTOR Reduction (vph)	0	0	0	0	4	0	0	0	0	0	67	0
Lane Group Flow (vph)	221	1522	0	0	623	0	0	0	0	0	43	0
Confl. Peds. (#/hr)			8		8							
Confl. Bikes (#/hr)						4						
Heavy Vehicles (%)	17%	2%	2%	2%	2%	2%	2%	2%	2%	2%	4%	13%
Turn Type	Prot					Perm						
Protected Phases	13	18	2	6			14	2	6			
Permitted Phases						11 1 5						
Actuated Green, G (s)	9.4	49.4						32.0				
Effective Green, g (s)	9.4	49.4						32.0				
Actuated g/C Ratio	0.12	0.61				0.40						
Clearance Time (s)	4.0											
Vehicle Extension (s)	3.0											
Lane Grp Cap (vph)	180	2169						1391		285		
v/s Ratio Prot	c0.14	c0.43				0.18						
v/s Ratio Perm	0.03											
v/c Ratio	1.23	0.70				0.45						
Uniform Delay, d1	35.6	10.6				17.8						
Progression Factor	1.00	1.00				1.00						
Incremental Delay, d2	141.5	1.0				0.2						
Delay (s)	177.1	11.6				18.1		30.3				
Level of Service	F	B				B		C				
Approach Delay (s)	32.6				18.1		0.0		30.3			
Approach LOS	C				B		A		C			
<b>Intersection Summary</b>												
HCM Average Control Delay	28.8			HCM Level of Service			C					
HCM Volume to Capacity ratio	0.65											
Actuated Cycle Length (s)	80.6			Sum of lost time (s)			20.0					
Intersection Capacity Utilization	58.1%			ICU Level of Service			B					
Analysis Period (min)	15											

c Critical Lane Group

Barrio Logan CPU  
33: National Ave & 28th St

Horizon Year Alt 1 without Improvements  
Timing Plan: PM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00			1.00	1.00		1.00	
Flt	1.00	1.00	0.85	1.00	0.95			1.00	0.85		0.97	
Flt Protected	0.95	1.00	1.00	0.95	1.00			0.99	1.00		0.98	
Satd. Flow (prot)	1770	3539	1583	1597	1762			1762	1509		1695	
Flt Permitted	0.95	1.00	1.00	0.95	1.00			0.90	1.00		0.78	
Satd. Flow (perm)	1770	3539	1583	1597	1762			1591	1509		1350	
Volume (vph)	94	612	85	463	427	240	18	98	168	199	210	102
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)	102	665	92	503	464	261	20	107	183	216	228	111
RTOR Reduction (vph)	0	0	69	0	14	0	0	0	108	0	6	0
Lane Group Flow (vph)	102	665	23	503	711	0	0	127	75	0	549	0
Heavy Vehicles (%)	2%	2%	2%	13%	2%	2%	7%	7%	7%	7%	7%	7%
Turn Type	Prot		Perm	Prot			Perm	Perm	Perm	Perm		
Protected Phases	7	4		3	8			2			6	
Permitted Phases			4				2		2	6		
Actuated Green, G (s)	9.0	30.2	30.2	46.0	67.2			61.0	61.0		61.0	
Effective Green, g (s)	9.0	30.2	30.2	46.0	67.2			61.0	61.0		61.0	
Actuated g/C Ratio	0.06	0.20	0.20	0.31	0.45			0.41	0.41		0.41	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0			4.0	4.0		4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0			3.0	3.0		3.0	
Lane Grp Cap (vph)	107	716	320	492	794			650	617		552	
v/s Ratio Prot	0.06	0.19		c0.31	c0.40							
v/s Ratio Perm			0.01					0.08	0.05		c0.41	
v/c Ratio	0.95	0.93	0.07	1.02	0.90			0.20	0.12		0.99	
Uniform Delay, d1	69.9	58.4	48.1	51.6	37.8			28.3	27.4		43.9	
Progression Factor	1.00	1.00	1.00	1.00	1.00			1.00	1.00		1.00	
Incremental Delay, d2	71.6	18.2	0.1	46.4	12.6			0.1	0.1		36.7	
Delay (s)	141.5	76.7	48.2	98.0	50.4			28.5	27.5		80.7	
Level of Service	F	E	D	F	D			C	C		F	
Approach Delay (s)		81.3			69.9			27.9			80.7	
Approach LOS		F			E			C			F	

Intersection Summary			
HCM Average Control Delay	70.8	HCM Level of Service	E
HCM Volume to Capacity ratio	0.97		
Actuated Cycle Length (s)	149.2	Sum of lost time (s)	8.0
Intersection Capacity Utilization	87.5%	ICU Level of Service	E
Analysis Period (min)	15		
c	Critical Lane Group		

Barrio Logan CPU  
34: Boston Ave & 28th St

Horizon Year Alt 1 without Improvements  
Timing Plan: PM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00			1.00	0.95	1.00	1.00	0.95
Flt	1.00	0.93	1.00	0.92	1.00			1.00	0.85	1.00	0.97	
Flt Protected	0.95	1.00	0.95	1.00	0.95			0.95	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1687	1650	1687	1643	1770	3539	1583	1770	1770	3425	1770	3425
Flt Permitted	0.65	1.00	0.36	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1152	1650	634	1643	1770	3539	1583	1770	3425	1770	3425	
Volume (vph)	320	180	160	60	70	70	50	1050	200	330	980	270
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)	348	196	174	65	76	76	54	1141	217	359	1065	293
RTOR Reduction (vph)	0	46	0	0	50	0	0	0	143	0	28	0
Lane Group Flow (vph)	348	324	0	65	102	0	54	1141	74	359	1330	0
Heavy Vehicles (%)	7%	7%	7%	7%	7%	7%	2%	2%	2%	2%	2%	2%
Turn Type		Perm		Perm		Perm	Prot		Perm	Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8					2			
Actuated Green, G (s)	24.8	24.8		24.8	24.8		3.4	25.0	25.0	11.1	32.7	
Effective Green, g (s)	24.8	24.8		24.8	24.8		3.4	25.0	25.0	11.1	32.7	
Actuated g/C Ratio	0.34	0.34		0.34	0.34		0.05	0.34	0.34	0.15	0.45	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	392	561		216	559		83	1214	543	270	1536	
v/s Ratio Prot		0.20			0.06		0.03	0.32		c0.20	c0.39	
v/s Ratio Perm	c0.30			0.10					0.05			
v/c Ratio	0.89	0.58		0.30	0.18		0.65	0.94	0.14	1.33	0.87	
Uniform Delay, d1	22.7	19.8		17.7	16.9		34.2	23.2	16.5	30.9	18.1	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	20.8	1.5		0.8	0.2		16.8	14.9	0.5	171.6	6.8	
Delay (s)	43.5	21.2		18.5	17.1		51.0	38.2	17.0	202.5	24.9	
Level of Service	D	C		B	B		D	D	B	F	C	
Approach Delay (s)		32.0			17.5			35.4			62.0	
Approach LOS		C			B			D			E	

Intersection Summary			
HCM Average Control Delay	45.1	HCM Level of Service	D
HCM Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	72.9	Sum of lost time (s)	8.0
Intersection Capacity Utilization	86.3%	ICU Level of Service	E
Analysis Period (min)	15		
c	Critical Lane Group		





Barrio Logan CPU

Horizon Year Alt 1 without Improvements

37: Boston Ave & I-5 SB On-ramp

Timing Plan: PM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↕		↕		↕		↕		↕		↕	
Sign Control	Free		Free		Free		Stop		Stop		Stop	
Grade	0%		0%		0%		0%		0%		0%	
Volume (veh/h)	559	153	27	20	83	118	9	72	45	0	0	0
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
Hourly flow rate (vph)	608	166	29	22	90	128	10	78	49	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None						None					
Median storage (veh)												
Upstream signal (ft)	657											
pX, platoon unblocked												
vC, conflicting volume	218			196			1594	1658	181	1682	1609	154
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	218			196			1594	1658	181	1682	1609	154
tC, single (s)	4.2		4.2		7.1		6.6	6.2	7.1	6.5		6.2
tC, 2 stage (s)												
tF (s)	2.3		2.3		3.5		4.1	3.3	3.5	4.0		3.3
p0 queue free %	54		98		82		0	94	0	100		100
cM capacity (veh/h)	1322		1348		55		48	862	0	56		892
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>WB 1</b>	<b>NB 1</b>									
Volume Total	803	240	137									
Volume Left	608	22	10									
Volume Right	29	128	49									
cSH	1322	1348	74									
Volume to Capacity	0.46	0.02	1.85									
Queue Length 95th (ft)	62	1	303									
Control Delay (s)	8.8	0.8	523.6									
Lane LOS	A	A	F									
Approach Delay (s)	8.8	0.8	523.6									
Approach LOS	F											
<b>Intersection Summary</b>												
Average Delay	66.9											
Intersection Capacity Utilization	70.4%		ICU Level of Service		C							
Analysis Period (min)	15											

Barrio Logan CPU

Horizon Year Alt 1 without Improvements

38: Main St & 32nd St

Timing Plan: PM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↕	↕	↕	↕	↕	↕	↕	↕	↕	↕	↕	↕
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frbp, ped/bikes	1.00	1.00	1.00	0.99	1.00	1.00	0.98	1.00	0.98	1.00	0.98	1.00
Flpb, ped/bikes	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	1.00	0.97	1.00	0.97	1.00	1.00	0.85	1.00	0.85	1.00	0.92	1.00
Flt Protected	0.95	1.00	0.95	1.00	0.95	1.00	0.95	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1703	3292	1703	3273	1770	1863	1552	1770	1677	1770	1677	1770
Flt Permitted	0.95	1.00	0.95	1.00	0.95	1.00	1.00	0.95	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1703	3292	1703	3273	1770	1863	1552	1770	1677	1770	1677	1770
Volume (vph)	70	653	166	207	353	102	226	112	307	123	61	73
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)	76	710	180	225	384	111	246	122	334	134	66	79
RTOR Reduction (vph)	0	23	0	0	26	0	0	0	249	0	55	0
Lane Group Flow (vph)	76	867	0	225	469	0	246	122	85	134	90	0
Confl. Peds. (#/hr)			1		2		1		1		17	
Confl. Bikes (#/hr)			4		1		7		5		5	
Heavy Vehicles (%)	6%	6%	6%	6%	6%	6%	2%	2%	2%	2%	2%	2%
<b>Turn Type</b>	<b>Prot</b>			<b>Prot</b>			<b>Prot</b>	<b>Perm</b>	<b>Prot</b>			
Protected Phases	7	4	3		8	5		2	1		6	
Permitted Phases	2											
Actuated Green, G (s)	6.6	25.0	12.1		30.5	13.1		18.0	18.0	8.8	13.7	
Effective Green, g (s)	6.6	25.0	12.1		30.5	13.1		18.0	18.0	8.8	13.7	
Actuated g/C Ratio	0.08	0.31	0.15		0.38	0.16		0.23	0.23	0.11	0.17	
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	141	1030	258		1249	290		420	350	195	288	
v/s Ratio Prot	0.04	c0.26	c0.13		0.14	c0.14		c0.07	0.08			
v/s Ratio Perm	0.05											
v/c Ratio	0.54	0.84	0.87		0.38	0.85		0.29	0.24	0.69	0.31	
Uniform Delay, d1	35.2	25.6	33.1		17.8	32.4		25.7	25.4	34.2	29.0	
Progression Factor	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	
Incremental Delay, d2	3.9	6.3	26.0		0.2	20.0		0.4	0.4	9.6	0.6	
Delay (s)	39.1	31.9	59.1		18.0	52.4		26.0	25.7	43.9	29.6	
Level of Service	D	C	E		B	D		C	C	D	C	
Approach Delay (s)	32.5		30.9		35.1		36.5					
Approach LOS	C		C		D		D					
<b>Intersection Summary</b>												
HCM Average Control Delay	33.2		HCM Level of Service		C							
HCM Volume to Capacity ratio	0.70											
Actuated Cycle Length (s)	79.9		Sum of lost time (s)		12.0							
Intersection Capacity Utilization	73.9%		ICU Level of Service		D							
Analysis Period (min)	15											

Barrio Logan CPU  
39: 32nd St & Wabash St  
Horizon Year Alt 1 without Improvements  
Timing Plan: PM Peak

Movement	EBL2	EBL	EBT	EBR	WBL	WBT	WBR	WBR2	NBL	NBT	NBR	NBR2
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00			1.00	1.00	1.00	1.00	0.88			
Flt	1.00	0.91			1.00	0.85	1.00	1.00	0.85			
Flt Protected	0.95	1.00			0.96	1.00	0.95	1.00	1.00			
Satd. Flow (prot)	1752	1690			1796	1568	1719	1810	2707			
Flt Permitted	0.48	1.00			0.47	1.00	0.95	1.00	1.00			
Satd. Flow (perm)	893	1690			872	1568	1719	1810	2707			
Volume (vph)	115	115	80	130	140	50	210	205	140	360	760	240
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)	125	125	87	141	152	54	228	223	152	391	826	261
RTOR Reduction (vph)	0	0	48	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	250	180	0	0	206	451	0	152	391	1087	0
Heavy Vehicles (%)	2%	4%	2%	2%	2%	2%	2%	4%	5%	5%	5%	5%
Turn Type	Perm	Perm			Perm	Perm			Prot	custom		
Protected Phases			4			4			5	2		
Permitted Phases	4	4			4		4				2 3	
Actuated Green, G (s)	32.0	32.0			32.0	32.0			15.3	24.0	51.0	
Effective Green, g (s)	32.0	32.0			32.0	32.0			15.3	24.0	51.0	
Actuated g/C Ratio	0.27	0.27			0.27	0.27			0.13	0.20	0.42	
Clearance Time (s)	4.0	4.0			4.0	4.0			4.0	4.0		
Vehicle Extension (s)	3.0	3.0			3.0	3.0			3.0	3.0		
Lane Grp Cap (vph)	238	451			233	418			219	362	1150	
v/s Ratio Prot		0.11							0.09	c0.22		
v/s Ratio Perm	0.28				0.24	c0.29					c0.40	
v/c Ratio	1.05	0.40			0.88	1.08			0.69	1.08	0.95	
Uniform Delay, d1	44.0	36.1			42.2	44.0			50.1	48.0	33.2	
Progression Factor	1.00	1.00			1.00	1.00			1.00	1.00	1.00	
Incremental Delay, d2	72.2	0.6			30.2	66.8			9.2	70.4	15.1	
Delay (s)	116.2	36.7			72.4	110.8			59.3	118.4	48.3	
Level of Service	F	D			E	F			E	F	D	
Approach Delay (s)		78.3				98.8				66.1		
Approach LOS		E				F				E		
<b>Intersection Summary</b>												
HCM Average Control Delay		85.1			HCM Level of Service					F		
HCM Volume to Capacity ratio		1.09										
Actuated Cycle Length (s)		120.0			Sum of lost time (s)					12.0		
Intersection Capacity Utilization		111.7%			ICU Level of Service					H		
Analysis Period (min)		15										
c Critical Lane Group												

Barrio Logan CPU  
39: 32nd St & Wabash St  
Horizon Year Alt 1 without Improvements  
Timing Plan: PM Peak

Movement	SBL2	SBL	SBT	SBR	SWL2	SWL	SWR	SWR2
Lane Configurations								
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0		
Lane Util. Factor	1.00	0.95			0.97			
Flt	1.00	0.99			0.98			
Flt Protected	0.95	1.00			0.96			
Satd. Flow (prot)	1767	3407			3321			
Flt Permitted	0.95	1.00			0.91			
Satd. Flow (perm)	1767	3407			3151			
Volume (vph)	35	415	380	30	10	340	55	10
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	38	451	413	33	11	370	60	11
RTOR Reduction (vph)	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	489	446	0	0	452	0	0
Heavy Vehicles (%)	4%	2%	5%	2%	4%	4%	4%	4%
Turn Type	Prot	Prot			Perm			
Protected Phases	1	1	6			3		
Permitted Phases					3			
Actuated Green, G (s)	25.0	33.7			23.0			
Effective Green, g (s)	25.0	33.7			23.0			
Actuated g/C Ratio	0.21	0.28			0.19			
Clearance Time (s)	4.0	4.0			4.0			
Vehicle Extension (s)	3.0	3.0			3.0			
Lane Grp Cap (vph)	368	957			604			
v/s Ratio Prot	c0.28	0.13						
v/s Ratio Perm					0.14			
v/c Ratio	1.33	0.47			0.75			
Uniform Delay, d1	47.5	35.7			45.8			
Progression Factor	1.00	1.00			1.00			
Incremental Delay, d2	165.6	0.4			5.1			
Delay (s)	213.1	36.1			50.8			
Level of Service	F	D			D			
Approach Delay (s)		128.7			50.8			
Approach LOS		F			D			
<b>Intersection Summary</b>								

Barrio Logan CPU  
40: Harbor Dr & 32nd St

Horizon Year Alt 1 without Improvements  
Timing Plan: PM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR				
Lane Configurations	↔	↔↔	↔	↔	↔↔	↔	↔	↔↔	↔	↔	↔↔	↔				
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900				
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00				
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.97	1.00	1.00	0.98	1.00	1.00	0.99				
Flpb, ped/bikes	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	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85				
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00				
Satd. Flow (prot)	1719	3438	1538	1687	3374	1467	1719	3438	1500	1719	3438	1526				
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00				
Satd. Flow (perm)	1719	3438	1538	1687	3374	1467	1719	3438	1500	1719	3438	1526				
Volume (vph)	340	1185	100	40	436	460	70	690	140	310	280	260				
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)	370	1288	109	43	474	500	76	750	152	337	304	283				
RTOR Reduction (vph)	0	0	33	0	0	424	0	0	61	0	0	89				
Lane Group Flow (vph)	370	1288	76	43	474	76	76	750	91	337	304	194				
Confl. Bikes (#/hr)						7			12			10				
Heavy Vehicles (%)	5%	5%	5%	7%	7%	7%	5%	5%	5%	5%	5%	5%				
Turn Type	Prot	custom		Prot	custom		Prot	Perm	Prot	custom						
Protected Phases	3	14	2	6	15	13	18	2	6	15	11	1	5	3	1	5
Permitted Phases					14		18			12			16			
Actuated Green, G (s)	25.2	38.3	42.0	4.0	17.1	12.1	8.7	26.1	26.1	22.1	43.5	64.7				
Effective Green, g (s)	25.2	38.3	42.0	4.0	17.1	12.1	8.7	26.1	26.1	22.1	43.5	64.7				
Actuated g/C Ratio	0.21	0.31	0.34	0.03	0.14	0.10	0.07	0.21	0.21	0.18	0.36	0.53				
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0	4.0	4.0								
Vehicle Extension (s)	3.0		3.0	3.0		3.0	3.0	3.0	3.0							
Lane Grp Cap (vph)	354	1075	527	55	471	145	122	733	320	310	1221	856				
v/s Ratio Prot	c0.22	c0.37	0.01	0.03	0.14		0.04	c0.22		c0.20	0.09	0.06				
v/s Ratio Perm			0.04			0.05			0.06			0.07				
v/c Ratio	1.05	1.20	0.14	0.78	1.01	0.52	0.62	1.02	0.29	1.09	0.25	0.23				
Uniform Delay, d1	48.6	42.1	27.8	58.8	52.7	52.4	55.3	48.2	40.4	50.2	27.9	15.5				
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.94	0.94	0.88				
Incremental Delay, d2	60.1	98.3	0.1	50.5	43.1	3.3	9.5	39.2	0.5	76.3	0.1	0.1				
Delay (s)	108.8	140.4	28.0	109.3	95.8	55.8	64.8	87.4	40.9	123.6	26.4	13.7				
Level of Service	F	F	C	F	F	E	E	F	D	F	C	B				
Approach Delay (s)		126.9			76.7			78.5			58.0					
Approach LOS		F			E			E			E					
<b>Intersection Summary</b>																
HCM Average Control Delay	92.3			HCM Level of Service			F									
HCM Volume to Capacity ratio	1.13															
Actuated Cycle Length (s)	122.5			Sum of lost time (s)			32.0									
Intersection Capacity Utilization	85.7%			ICU Level of Service			E									
Analysis Period (min)	15															
c Critical Lane Group																

Barrio Logan CPU  
41: Main St & I-15 Ramps

Horizon Year Alt 1 without Improvements  
Timing Plan: PM Peak

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↔	↔↔	↔↔	↔	↔	↔
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	0.92	
Flt Protected	0.95	1.00	1.00	1.00	0.98	
Satd. Flow (prot)	1770	3539	3539	1583	1670	
Flt Permitted	0.95	1.00	1.00	1.00	0.98	
Satd. Flow (perm)	1770	3539	3539	1583	1670	
Volume (vph)	303	727	361	154	120	153
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	329	790	392	167	130	166
RTOR Reduction (vph)	0	0	0	128	76	0
Lane Group Flow (vph)	329	790	392	39	220	0
Confl. Peds. (#/hr)					10	4
Confl. Bikes (#/hr)						1
Turn Type	Prot			Perm		
Protected Phases	5	2	6		4	
Permitted Phases				6		
Actuated Green, G (s)	13.7	29.0	11.3	11.3	11.9	
Effective Green, g (s)	13.7	29.0	11.3	11.3	11.9	
Actuated g/C Ratio	0.28	0.59	0.23	0.23	0.24	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	496	2099	818	366	406	
v/s Ratio Prot	c0.19	0.22	c0.11		c0.13	
v/s Ratio Perm				0.02		
v/c Ratio	0.66	0.38	0.48	0.11	0.54	
Uniform Delay, d1	15.6	5.2	16.3	14.8	16.1	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	3.3	0.1	0.4	0.1	1.5	
Delay (s)	18.9	5.3	16.7	14.9	17.6	
Level of Service	B	A	B	B	B	
Approach Delay (s)		9.3	16.2		17.6	
Approach LOS		A	B		B	
<b>Intersection Summary</b>						
HCM Average Control Delay	12.5		HCM Level of Service		B	
HCM Volume to Capacity ratio	0.57					
Actuated Cycle Length (s)	48.9		Sum of lost time (s)		12.0	
Intersection Capacity Utilization	53.5%		ICU Level of Service		A	
Analysis Period (min)	15					
c Critical Lane Group						

Barrio Logan CPU  
2: National Ave & 16th St

Horizon Year Alt 1 with Improvements  
Timing Plan: AM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↕	↔	↔	↕	↔	↔	↕	↔	↔	↕	↔
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
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
Frbp, ped/bikes	1.00	0.99	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.98	0.98	1.00
Flpb, ped/bikes	0.99	1.00	0.98	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.97	1.00	0.99	1.00	1.00	0.98	0.98	0.98	0.93	0.93	1.00
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00	0.98	0.98	0.98	0.98	0.98	1.00
Satd. Flow (prot)	1759	1800	1737	1841	1841	1841	1773	1773	1773	1678	1678	1900
Flt Permitted	0.22	1.00	0.57	1.00	1.00	1.00	0.84	0.84	0.84	0.90	0.90	1.00
Satd. Flow (perm)	412	1800	1046	1841	1841	1841	1529	1529	1529	1535	1535	1900
Volume (vph)	40	194	40	3	495	34	40	34	12	56	36	91
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)	43	211	43	3	538	37	43	37	13	61	39	99
RTOR Reduction (vph)	0	14	0	0	5	0	0	7	0	0	41	0
Lane Group Flow (vph)	43	240	0	3	570	0	0	86	0	0	158	0
Confl. Peds. (#/hr)	19		16	16		19	7		14	14		7
Confl. Bikes (#/hr)			4			1			1			
Turn Type	Perm		Perm		Perm		Perm		Perm		Perm	
Protected Phases	4		8		8		2		6		6	
Permitted Phases	4		8		8		2		6		6	
Actuated Green, G (s)	20.5	20.5	20.5	20.5	20.5	20.5	22.5	22.5	22.5	22.5	22.5	22.5
Effective Green, g (s)	20.5	20.5	20.5	20.5	20.5	20.5	22.5	22.5	22.5	22.5	22.5	22.5
Actuated g/C Ratio	0.40	0.40	0.40	0.40	0.40	0.40	0.44	0.44	0.44	0.44	0.44	0.44
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	166	724	420	740	740	740	675	675	675	677	677	677
v/s Ratio Prot	0.13		c0.31		c0.31		c0.06		c0.10		c0.10	
v/s Ratio Perm	0.10		0.00		0.00		0.06		0.06		c0.10	
v/c Ratio	0.26	0.33	0.01	0.77	0.77	0.77	0.13	0.13	0.13	0.23	0.23	0.23
Uniform Delay, d1	10.2	10.5	9.1	13.2	13.2	13.2	8.4	8.4	8.4	8.9	8.9	8.9
Progression 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
Incremental Delay, d2	0.8	0.3	0.0	5.0	5.0	5.0	0.4	0.4	0.4	0.8	0.8	0.8
Delay (s)	11.0	10.8	9.2	18.2	18.2	18.2	8.8	8.8	8.8	9.7	9.7	9.7
Level of Service	B		A		B		A		A		A	
Approach Delay (s)	10.8		18.1		18.1		8.8		8.8		9.7	
Approach LOS	B		B		B		A		A		A	
<b>Intersection Summary</b>												
HCM Average Control Delay	14.1		HCM Level of Service		B		B		B		B	
HCM Volume to Capacity ratio	0.49		0.49		0.49		0.49		0.49		0.49	
Actuated Cycle Length (s)	51.0		Sum of lost time (s)		8.0		8.0		8.0		8.0	
Intersection Capacity Utilization	52.4%		ICU Level of Service		A		A		A		A	
Analysis Period (min)	15		15		15		15		15		15	
c Critical Lane Group												

Barrio Logan CPU  
6: Harbor Dr & Sigsbee St

Horizon Year Alt 1 with Improvements  
Timing Plan: AM Peak

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↔	↕	↕	↕	↕	↕
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frt	1.00	1.00	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	3539	3533	1770	1770	1583
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	3539	3533	1770	1770	1583
Volume (vph)	38	480	1670	20	110	110
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	41	522	1815	22	120	120
RTOR Reduction (vph)	0	0	1	0	0	101
Lane Group Flow (vph)	41	522	1836	0	120	19
Turn Type	Prot			Perm		
Protected Phases	7	4	8	6		
Permitted Phases	6			6		
Actuated Green, G (s)	1.7	41.6	35.9	9.1	9.1	9.1
Effective Green, g (s)	1.7	41.6	35.9	9.1	9.1	9.1
Actuated g/C Ratio	0.03	0.71	0.61	0.16	0.16	0.16
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	51	2508	2161	274	245	245
v/s Ratio Prot	c0.02	0.15	c0.52	c0.07		
v/s Ratio Perm				0.01		
v/c Ratio	0.80	0.21	0.85	0.44	0.08	0.08
Uniform Delay, d1	28.3	2.9	9.2	22.5	21.2	21.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	59.0	0.0	3.3	1.1	0.1	0.1
Delay (s)	87.3	3.0	12.6	23.6	21.3	21.3
Level of Service	F	A	B	C	C	C
Approach Delay (s)	9.1	12.6	22.5	22.5		
Approach LOS	A	B	C	C		
<b>Intersection Summary</b>						
HCM Average Control Delay	12.7		HCM Level of Service		B	
HCM Volume to Capacity ratio	0.77		0.77		0.77	
Actuated Cycle Length (s)	58.7		Sum of lost time (s)		12.0	
Intersection Capacity Utilization	60.3%		ICU Level of Service		B	
Analysis Period (min)	15		15		15	
c Critical Lane Group						

Barrio Logan CPU

Horizon Year Alt 1 with Improvements

7: Logan Ave & Beardsley St

Timing Plan: AM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔		↔		↔		↔		↔		↔	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0		4.0		4.0		4.0		4.0	
Lane Util. Factor	1.00		1.00		1.00		1.00		1.00		1.00	
Flt	0.98		1.00		1.00		0.91		0.99		0.99	
Flt Protected	1.00		0.95		1.00		0.98		0.98		0.98	
Satd. Flow (prot)	1832		1770		1863		1664		1798		1798	
Flt Permitted	1.00		0.95		1.00		0.98		0.98		0.98	
Satd. Flow (perm)	1832		1770		1863		1664		1798		1798	
Volume (vph)	0	170	24	87	202	0	31	0	68	259	236	47
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)	0	185	26	95	220	0	34	0	74	282	257	51
RTOR Reduction (vph)	0	7	0	0	0	0	0	65	0	0	4	0
Lane Group Flow (vph)	0	204	0	95	220	0	0	43	0	0	586	0
Turn Type	Prot			Split			Split					
Protected Phases	4		3		8		2		2		6	
Permitted Phases											6	
Actuated Green, G (s)	9.7		5.7		19.4		7.6		7.6		25.6	
Effective Green, g (s)	9.7		5.7		19.4		7.6		7.6		25.6	
Actuated g/C Ratio	0.15		0.09		0.30		0.12		0.12		0.40	
Clearance Time (s)	4.0		4.0		4.0		4.0		4.0		4.0	
Vehicle Extension (s)	3.0		3.0		3.0		3.0		3.0		3.0	
Lane Grp Cap (vph)	275		156		559		196		196		713	
v/s Ratio Prot	c0.11		c0.05		0.12		c0.03		c0.03		c0.33	
v/s Ratio Perm												
v/c Ratio	0.74		0.61		0.39		0.22		0.22		0.82	
Uniform Delay, d1	26.3		28.4		17.9		25.8		25.8		17.5	
Progression Factor	1.00		1.00		1.00		1.00		1.00		1.00	
Incremental Delay, d2	10.3		6.6		0.5		0.6		0.6		7.6	
Delay (s)	36.6		35.0		18.4		26.4		26.4		25.1	
Level of Service	D		C		B		C		C		C	
Approach Delay (s)	36.6		23.4		23.4		26.4		26.4		25.1	
Approach LOS	D		C		C		C		C		C	
<b>Intersection Summary</b>												
HCM Average Control Delay	26.7		HCM Level of Service				C					
HCM Volume to Capacity ratio	0.69											
Actuated Cycle Length (s)	64.6		Sum of lost time (s)				16.0					
Intersection Capacity Utilization	61.5%		ICU Level of Service				B					
Analysis Period (min)	15											
c Critical Lane Group												

Barrio Logan CPU

Horizon Year Alt 1 with Improvements

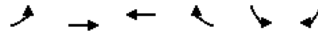
8: National Ave & Beardsley St

Timing Plan: AM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔		↔		↔		↔		↔		↔	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0		4.0		4.0		4.0		4.0	
Lane Util. Factor	1.00		1.00		1.00		1.00		1.00		1.00	
Flt	1.00		1.00		1.00		0.99		0.97		1.00	
Flt Protected	0.98		1.00		0.95		1.00		1.00		0.98	
Satd. Flow (prot)	1740		1848		1687		1808		1655		1753	
Flt Permitted	0.29		1.00		0.58		1.00		0.98		0.77	
Satd. Flow (perm)	535		1848		1022		1808		1633		1392	
Volume (vph)	8	238	8	241	421	67	4	30	50	216	138	23
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)	9	259	9	262	458	73	4	33	54	235	150	25
RTOR Reduction (vph)	0	2	0	0	9	0	0	32	0	0	4	0
Lane Group Flow (vph)	9	266	0	262	522	0	0	59	0	0	406	0
Confl. Peds. (#/hr)	30		46		46		30		48		46	
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases	4		4		8		8		2		2	
Permitted Phases											6	
Actuated Green, G (s)	18.6		18.6		18.6		18.6		18.2		18.2	
Effective Green, g (s)	18.6		18.6		18.6		18.6		18.2		18.2	
Actuated g/C Ratio	0.42		0.42		0.42		0.42		0.41		0.41	
Clearance Time (s)	4.0		4.0		4.0		4.0		4.0		4.0	
Vehicle Extension (s)	3.0		3.0		3.0		3.0		3.0		3.0	
Lane Grp Cap (vph)	222		767		424		751		663		566	
v/s Ratio Prot	0.02		0.14		c0.29		c0.29		c0.29		c0.29	
v/s Ratio Perm	0.04		0.35		0.62		0.70		0.09		0.72	
Uniform Delay, d1	7.8		9.0		10.3		10.8		8.2		11.1	
Progression Factor	1.00		1.00		1.00		1.00		1.00		1.00	
Incremental Delay, d2	0.1		0.3		2.7		2.8		0.1		4.3	
Delay (s)	7.9		9.2		13.0		13.6		8.3		15.5	
Level of Service	A		A		B		B		A		B	
Approach Delay (s)	9.2		9.2		13.4		13.4		8.3		15.5	
Approach LOS	A		A		B		B		A		B	
<b>Intersection Summary</b>												
HCM Average Control Delay	12.9		HCM Level of Service				B					
HCM Volume to Capacity ratio	0.71											
Actuated Cycle Length (s)	44.8		Sum of lost time (s)				8.0					
Intersection Capacity Utilization	67.4%		ICU Level of Service				C					
Analysis Period (min)	15											
c Critical Lane Group												

Barrio Logan CPU  
11: Harbor Dr & Beardsley St


Horizon Year Alt 1 with Improvements  
Timing Plan: AM Peak



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑			↑
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	0	580	1610	30	0	143
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	630	1750	33	0	155
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					Raised	
Median storage (veh)					0	
Upstream signal (ft)		661	658			
pX, platoon unblocked	0.66				0.66	0.66
vC, conflicting volume	1783				2082	891
vC1, stage 1 conf vol					1766	
vC2, stage 2 conf vol					315	
vCu, unblocked vol	1673				2123	330
tC, single (s)	4.3				6.8	6.9
tC, 2 stage (s)					5.8	
tF (s)	2.3				3.5	3.3
p0 queue free %	100				100	65
cM capacity (veh/h)	229				60	442
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>EB 2</b>	<b>WB 1</b>	<b>WB 2</b>	<b>SB 1</b>	
Volume Total	315	315	1167	616	155	
Volume Left	0	0	0	0	0	
Volume Right	0	0	0	33	155	
cSH	1700	1700	1700	1700	442	
Volume to Capacity	0.19	0.19	0.69	0.36	0.35	
Queue Length 95th (ft)	0	0	0	0	39	
Control Delay (s)	0.0	0.0	0.0	0.0	17.5	
Lane LOS					C	
Approach Delay (s)	0.0		0.0		17.5	
Approach LOS					C	
<b>Intersection Summary</b>						
Average Delay			1.1			
Intersection Capacity Utilization			61.0%		ICU Level of Service	B
Analysis Period (min)			15			

Barrio Logan CPU  
13: Logan Ave & Cesar E. Chavez Pkwy

Horizon Year Alt 1 with Improvements  
Timing Plan: AM Peak



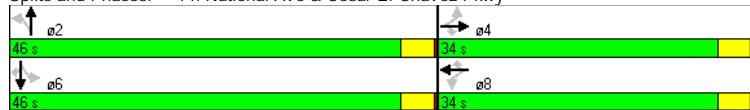
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	
Flpb, ped/bikes	1.00	1.00	0.97	1.00	1.00	0.97	1.00	1.00	0.97	1.00	1.00	
Flpb, ped/bikes	0.99	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1755	1863	1542	1761	1863	1544	1530	3059	1333	1530	3008	
Flt Permitted	0.52	1.00	1.00	0.22	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	961	1863	1542	409	1863	1544	1530	3059	1333	1530	3008	
Volume (vph)	140	280	120	100	325	76	100	300	280	70	909	82
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)	152	304	130	109	353	83	109	326	304	76	988	89
RTOR Reduction (vph)	0	0	100	0	0	55	0	0	160	0	7	0
Lane Group Flow (vph)	152	304	30	109	353	28	109	326	144	76	1070	0
Confl. Peds. (#/hr)	15		13	13		15			17			39
Confl. Bikes (#/hr)				4								2
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	18%	18%	18%	18%	18%	18%
Turn Type	Perm	Perm	Perm	Perm	Perm	Prot	Prot	custom	Prot	Prot	Prot	Prot
Protected Phases			4		8		5	2	3	1	6	
Permitted Phases	4		4	8		8			2			
Actuated Green, G (s)	18.7	18.7	18.7	26.7	26.7	26.7	5.9	33.9	37.9	7.4	35.4	
Effective Green, g (s)	18.7	18.7	18.7	26.7	26.7	26.7	5.9	33.9	37.9	7.4	35.4	
Actuated g/C Ratio	0.23	0.23	0.23	0.33	0.33	0.33	0.07	0.42	0.47	0.09	0.44	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	225	435	360	137	622	515	113	1296	698	142	1331	
v/s Ratio Prot		0.16			0.19		c0.07	0.11	0.01	0.05	c0.36	
v/s Ratio Perm	0.16		0.02	c0.27		0.02			0.10			
v/c Ratio	0.68	0.70	0.08	0.80	0.57	0.05	0.96	0.25	0.21	0.54	0.80	
Uniform Delay, d1	27.9	28.1	24.0	24.2	21.9	18.1	36.9	14.9	12.3	34.7	19.3	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.94	0.81	0.75	1.00	1.00	
Incremental Delay, d2	7.8	4.9	0.1	26.5	1.2	0.0	68.7	0.4	0.1	3.8	5.2	
Delay (s)	35.7	32.9	24.1	50.6	23.1	18.1	103.2	12.5	9.4	38.5	24.5	
Level of Service	D	C	C	D	C	B	F	B	A	D	C	
Approach Delay (s)		31.7			27.8			24.6			25.5	
Approach LOS		C			C			C			C	
<b>Intersection Summary</b>												
HCM Average Control Delay			26.9		HCM Level of Service					C		
HCM Volume to Capacity ratio			0.82									
Actuated Cycle Length (s)			80.0		Sum of lost time (s)			12.0				
Intersection Capacity Utilization			73.9%		ICU Level of Service			D				
Analysis Period (min)			15									

Barrio Logan CPU  
 14: National Ave & Cesar E. Chavez Pkwy  
 Horizon Year Alt 1 with Improvements  
 Timing Plan: AM Peak

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR	
Lane Configurations	↔		↔		↔		↔		↔		↔	
Volume (vph)	190	250	180	120	350	120	90	580	70	745	310	
Turn Type	Perm		Perm		Perm		Perm		Perm		Perm	
Protected Phases	4		8		8		2		6		6	
Permitted Phases	4		8		8		2		6		6	
Detector Phases	4		8		8		2		6		6	
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	31.0	31.0	31.0	34.0	34.0	34.0	27.0	27.0	27.0	27.0	27.0	
Total Split (s)	34.0	34.0	34.0	34.0	34.0	34.0	46.0	46.0	46.0	46.0	46.0	
Total Split (%)	42.5%	42.5%	42.5%	42.5%	42.5%	42.5%	57.5%	57.5%	57.5%	57.5%	57.5%	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None	None	None	None	None	C-Min	C-Min	C-Min	C-Min	C-Min	
Act Effct Green (s)	26.5	26.5	26.5	26.5	26.5	26.5	45.5	45.5	45.5	45.5	45.5	
Actuated g/C Ratio	0.33	0.33	0.33	0.33	0.33	0.33	0.57	0.57	0.57	0.57	0.57	
v/c Ratio	0.91	0.44	0.32	0.43	0.62	0.21	0.80	0.38	0.24	0.88	0.37	
Control Delay	67.3	22.5	7.2	24.4	26.5	4.3	62.4	9.8	3.9	19.6	0.9	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.2	
Total Delay	67.3	22.5	7.2	24.4	26.5	4.3	62.4	9.8	3.9	19.9	1.1	
LOS	E	C	A	C	C	A	E	A	A	B	A	
Approach Delay	31.8			21.6			16.4			13.7		
Approach LOS	C			C			B			B		

Intersection Summary											
Cycle Length: 80											
Actuated Cycle Length: 80											
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green											
Natural Cycle: 90											
Control Type: Actuated-Coordinated											
Maximum v/c Ratio: 0.91											
Intersection Signal Delay: 19.5						Intersection LOS: B					
Intersection Capacity Utilization 86.5%						ICU Level of Service E					
Analysis Period (min) 15											

Splits and Phases: 14: National Ave & Cesar E. Chavez Pkwy



Barrio Logan CPU  
 14: National Ave & Cesar E. Chavez Pkwy  
 Horizon Year Alt 1 with Improvements  
 Timing Plan: AM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔		↔		↔		↔		↔		↔	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	1.00	1.00
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1612	3185	1530	1610	1369	1369
Flt Permitted	0.33	1.00	1.00	0.47	1.00	1.00	0.17	1.00	0.35	1.00	1.00	1.00
Satd. Flow (perm)	610	1863	1583	873	1863	1583	286	3185	566	1610	1369	1369
Volume (vph)	190	250	180	120	350	120	90	580	50	70	745	310
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)	207	272	196	130	380	130	98	630	54	76	810	337
RTOR Reduction (vph)	0	0	96	0	0	87	0	7	0	0	0	126
Lane Group Flow (vph)	207	272	100	130	380	43	98	677	0	76	810	211
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	12%	12%	12%	18%	18%	18%
Turn Type	Perm		Perm		Perm		Perm		Perm		Perm	
Protected Phases	4		8		8		2		6		6	
Permitted Phases	4		8		8		2		6		6	
Actuated Green, G (s)	26.5	26.5	26.5	26.5	26.5	26.5	45.5	45.5	45.5	45.5	45.5	45.5
Effective Green, g (s)	26.5	26.5	26.5	26.5	26.5	26.5	45.5	45.5	45.5	45.5	45.5	45.5
Actuated g/C Ratio	0.33	0.33	0.33	0.33	0.33	0.33	0.57	0.57	0.57	0.57	0.57	0.57
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	202	617	524	289	617	524	163	1811	322	916	779	779
v/s Ratio Prot	0.15		0.20		0.21		0.13		c0.50		0.15	
v/s Ratio Perm	c0.34	0.06	0.15	0.62	0.08	0.34	0.37	0.24	0.88	0.27	0.27	0.27
v/c Ratio	1.02	0.44	0.19	0.45	0.62	0.08	0.60	0.37	0.24	0.88	0.27	0.27
Uniform Delay, d1	26.8	20.9	19.1	21.0	22.5	18.4	11.3	9.4	8.6	15.0	8.8	8.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.93	0.91	0.24	0.46	0.02	0.02
Incremental Delay, d2	69.9	0.5	0.2	1.1	1.8	0.1	15.2	0.6	1.2	8.9	0.6	0.6
Delay (s)	96.7	21.5	19.3	22.1	24.3	18.5	25.7	9.1	3.2	15.7	0.8	0.8
Level of Service	F	C	B	C	C	B	C	A	A	B	A	A
Approach Delay (s)	43.9			22.7			11.2			10.8		
Approach LOS	D			C			B			B		

Intersection Summary			
HCM Average Control Delay	19.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	86.5%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Barrio Logan CPU  
 15: Newton Ave & Cesar E. Chavez Pkwy  
 Horizon Year Alt 1 with Improvements  
 Timing Plan: AM Peak

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Volume (vph)	75	40	40	50	40	410	95	810
Turn Type	Perm		Perm		Perm		Perm	
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phases	4	4	8	8	2	2	6	6
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	31.0	31.0	31.0	31.0	27.0	27.0	27.0	27.0
Total Split (s)	31.0	31.0	31.0	31.0	49.0	49.0	49.0	49.0
Total Split (%)	38.8%	38.8%	38.8%	38.8%	61.3%	61.3%	61.3%	61.3%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	None	None	None	C-Min	C-Min	C-Min	C-Min
Act Effct Green (s)	10.0	10.0	10.0	10.0	64.7	64.7	64.7	64.7
Actuated g/C Ratio	0.12	0.12	0.12	0.12	0.81	0.81	0.81	0.81
v/c Ratio	0.52	0.40	0.27	0.46	0.35	0.19	0.16	0.77
Control Delay	43.7	19.0	34.4	20.6	11.8	1.9	2.5	6.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5
Total Delay	43.7	19.0	34.4	20.6	11.8	1.9	2.5	7.3
LOS	D	B	C	C	B	A	A	A
Approach Delay		29.6		24.1		2.7		6.8
Approach LOS		C		C		A		A

Intersection Summary	
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 6 (8%), Referenced to phase 2:NBT and 6:SBTL, Start of Green	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.77	
Intersection Signal Delay: 9.3	Intersection LOS: A
Intersection Capacity Utilization 75.3%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 15: Newton Ave & Cesar E. Chavez Pkwy



Barrio Logan CPU  
 15: Newton Ave & Cesar E. Chavez Pkwy  
 Horizon Year Alt 1 with Improvements  
 Timing Plan: AM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	1.00	
Frt	1.00	0.91		1.00	0.91		1.00	0.99		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)	1770	1695		1770	1704		1612	3190		1612	1659	
Flt Permitted	0.58	1.00		0.65	1.00		0.21	1.00		0.48	1.00	
Satd. Flow (perm)	1076	1695		1203	1704		349	3190		811	1659	
Volume (vph)	75	40	60	40	50	65	40	410	30	95	810	140
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)	82	43	65	43	54	71	43	446	33	103	880	152
RTOR Reduction (vph)	0	58	0	0	63	0	0	3	0	0	4	0
Lane Group Flow (vph)	82	50	0	43	62	0	43	476	0	103	1028	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	12%	12%	12%	12%	12%	12%
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	8.9	8.9		8.9	8.9		63.1	63.1		63.1	63.1	
Effective Green, g (s)	8.9	8.9		8.9	8.9		63.1	63.1		63.1	63.1	
Actuated g/C Ratio	0.11	0.11		0.11	0.11		0.79	0.79		0.79	0.79	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	120	189		134	190		275	2516		640	1309	
v/s Ratio Prot		0.03			0.04			0.15			c0.62	
v/s Ratio Perm	c0.08			0.04			0.12			0.13		
v/c Ratio	0.68	0.27		0.32	0.33		0.16	0.19		0.16	0.79	
Uniform Delay, d1	34.2	32.6		32.8	32.8		2.0	2.1		2.0	4.7	
Progression Factor	1.00	1.00		1.00	1.00		0.76	0.68		0.70	0.44	
Incremental Delay, d2	14.9	0.8		1.4	1.0		1.1	0.2		0.4	3.2	
Delay (s)	49.1	33.3		34.2	33.8		2.7	1.6		1.8	5.3	
Level of Service	D	C		C	C		A	A		A	A	
Approach Delay (s)		40.1			33.9			1.7			5.0	
Approach LOS		D			C			A			A	

Intersection Summary			
HCM Average Control Delay	9.8	HCM Level of Service	A
HCM Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	75.3%	ICU Level of Service	D
Analysis Period (min)	15		

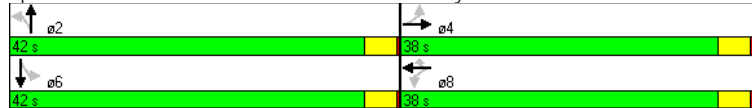
c Critical Lane Group

Barrio Logan CPU  
16: Main St & Cesar E. Chavez Pkwy  
Horizon Year Alt 1 with Improvements  
Timing Plan: AM Peak

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔
Volume (vph)	150	190	70	330	190	70	340	150	580
Turn Type	Perm	Perm	Perm	Perm	Perm	Perm	Perm	Perm	Perm
Protected Phases		4	8	8	8	2	2	6	6
Permitted Phases	4	4	8	8	8	2	2	6	6
Detector Phases	4	4	8	8	8	2	2	6	6
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	31.0	31.0	31.0	31.0	31.0	27.0	27.0	27.0	27.0
Total Split (s)	38.0	38.0	38.0	38.0	38.0	42.0	42.0	42.0	42.0
Total Split (%)	47.5%	47.5%	47.5%	47.5%	47.5%	52.5%	52.5%	52.5%	52.5%
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)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Lead/Lag									
Lead-Lag Optimize?									
Recall Mode	None	None	None	None	None	C-Min	C-Min	C-Min	C-Min
Act Effct Green (s)	23.1	23.1	23.1	23.1	23.1	48.9	48.9	48.9	48.9
Actuated g/C Ratio	0.29	0.29	0.29	0.29	0.29	0.61	0.61	0.61	0.61
v/c Ratio	0.72	0.42	0.25	0.67	0.36	0.72	0.25	0.36	0.86
Control Delay	42.4	23.1	21.0	30.3	4.5	59.0	7.9	8.1	18.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	2.8
Total Delay	42.4	23.1	21.0	30.3	4.5	59.0	8.2	8.1	21.7
LOS	D	C	C	C	A	E	A	A	C
Approach Delay		31.2		20.8			15.3		19.4
Approach LOS		C		C			B		B

Intersection Summary	
Cycle Length:	80
Actuated Cycle Length:	80
Offset:	20 (25%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
Natural Cycle:	80
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.86
Intersection Signal Delay:	20.7
Intersection LOS:	C
Intersection Capacity Utilization:	88.6%
ICU Level of Service:	E
Analysis Period (min):	15

Splits and Phases: 16: Main St & Cesar E. Chavez Pkwy



Barrio Logan CPU  
16: Main St & Cesar E. Chavez Pkwy  
Horizon Year Alt 1 with Improvements  
Timing Plan: AM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	0.95	1.00	0.99	1.00	0.99	1.00	1.00	1.00
Frt	1.00	0.99	1.00	1.00	0.85	1.00	0.97	1.00	0.97	1.00	1.00	0.96
Fit Protected	0.95	1.00	0.95	1.00	1.00	0.95	1.00	0.95	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1740	1839	1750	1863	1511	1545	2996	1549	1555			
Fit Permitted	0.31	1.00	0.51	1.00	1.00	0.19	1.00	0.47	1.00			
Satd. Flow (perm)	560	1839	941	1863	1511	313	2996	773	1555			
Volume (vph)	150	190	15	70	330	190	70	340	90	150	580	180
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)	163	207	16	76	359	207	76	370	98	163	630	196
RTOR Reduction (vph)	0	4	0	0	0	147	0	22	0	0	10	0
Lane Group Flow (vph)	163	219	0	76	359	60	76	446	0	163	816	0
Confl. Peds. (#/hr)	38		18	18		38	26		5	5		26
Confl. Bikes (#/hr)			2			1			1			2
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	16%	16%	16%	16%	16%	16%
Turn Type	Perm	Perm	Perm	Perm	Perm	Perm	Perm	Perm	Perm	Perm	Perm	Perm
Protected Phases		4			8		2		2		6	
Permitted Phases	4			8		8	2			6		
Actuated Green, G (s)	23.1	23.1		23.1	23.1	23.1	48.9	48.9		48.9	48.9	
Effective Green, g (s)	23.1	23.1		23.1	23.1	23.1	48.9	48.9		48.9	48.9	
Actuated g/C Ratio	0.29	0.29		0.29	0.29	0.29	0.61	0.61		0.61	0.61	
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	162	531		272	538	436	191	1831		472	950	
v/s Ratio Prot		0.12			0.19			0.15			c0.52	
v/s Ratio Perm	c0.29			0.08		0.04	0.24			0.21		
v/c Ratio	1.01	0.41		0.28	0.67	0.14	0.40	0.24		0.35	0.86	
Uniform Delay, d1	28.4	23.0		22.0	25.1	21.1	8.0	7.1		7.7	12.7	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		0.59	0.58	
Incremental Delay, d2	72.3	0.5		0.6	3.1	0.1	6.1	0.3		1.4	7.0	
Delay (s)	100.8	23.5		22.6	28.2	21.2	14.1	7.4		5.9	14.4	
Level of Service	F	C		C	C	C	B	A		A	B	
Approach Delay (s)		56.1			25.3		8.3				13.0	
Approach LOS		E			C		A				B	

Intersection Summary	
HCM Average Control Delay	21.6
HCM Volume to Capacity ratio	0.91
Actuated Cycle Length (s)	80.0
Sum of lost time (s)	8.0
Intersection Capacity Utilization	88.6%
ICU Level of Service	E
Analysis Period (min)	15

c Critical Lane Group

Barrio Logan CPU  
23: Logan Ave & Sampson St

Horizon Year Alt 1 with Improvements  
Timing Plan: AM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.94		1.00	0.94		1.00	0.95		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)	1770	1745		1770	1747		1770	1777		1770	1846	
Flt Permitted	0.66	1.00		0.37	1.00		0.60	1.00		0.34	1.00	
Satd. Flow (perm)	1236	1745		691	1747		1123	1777		634	1846	
Volume (vph)	110	224	163	91	79	56	219	332	147	62	218	14
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)	120	243	177	99	86	61	238	361	160	67	237	15
RTOR Reduction (vph)	0	41	0	0	39	0	0	24	0	0	3	0
Lane Group Flow (vph)	120	379	0	99	108	0	238	497	0	67	249	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases	4			8			2			6		
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	14.5	14.5		14.5	14.5		18.6	18.6		18.6	18.6	
Effective Green, g (s)	14.5	14.5		14.5	14.5		18.6	18.6		18.6	18.6	
Actuated g/C Ratio	0.35	0.35		0.35	0.35		0.45	0.45		0.45	0.45	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	436	616		244	616		508	804		287	835	
v/s Ratio Prot	c0.22			0.06			c0.28			0.13		
v/s Ratio Perm	0.10			0.14			0.21			0.11		
v/c Ratio	0.28	0.61		0.41	0.17		0.47	0.62		0.23	0.30	
Uniform Delay, d1	9.5	11.0		10.0	9.2		7.8	8.6		6.9	7.1	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.3	1.8		1.1	0.1		0.7	1.4		0.4	0.2	
Delay (s)	9.9	12.8		11.1	9.3		8.5	10.0		7.3	7.3	
Level of Service	A	B		B	A		A	A		A	A	
Approach Delay (s)	12.2			10.0			9.5			7.3		
Approach LOS	B			B			A			A		

Intersection Summary			
HCM Average Control Delay	10.0	HCM Level of Service	A
HCM Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	41.1	Sum of lost time (s)	8.0
Intersection Capacity Utilization	70.0%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Barrio Logan CPU  
31: Main St & 26th St

Horizon Year Alt 1 with Improvements  
Timing Plan: AM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control	Stop			Stop			Stop			Stop		
Volume (vph)	0	60	17	143	187	0	28	0	124	16	22	13
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
Hourly flow rate (vph)	0	65	18	155	203	0	30	0	135	17	24	14
Direction, Lane #	EB 1	WB 1	WB 2	NB 1	NB 2	SB 1						
Volume Total (vph)	84	155	203	30	135	55						
Volume Left (vph)	0	155	0	30	0	17						
Volume Right (vph)	18	0	0	0	135	14						
Hadj (s)	-0.10	0.94	0.03	0.23	0.05	-0.06						
Departure Headway (s)	4.5	5.7	4.8	5.2	3.2	4.9						
Degree Utilization, x	0.11	0.25	0.27	0.04	0.12	0.08						
Capacity (veh/h)	772	612	730	638	1121	682						
Control Delay (s)	8.0	9.4	8.4	8.5	6.6	8.3						
Approach Delay (s)	8.0	8.9		7.0		8.3						
Approach LOS	A	A		A		A						

Intersection Summary			
Delay	8.2		
HCM Level of Service	A		
Intersection Capacity Utilization	31.5%	ICU Level of Service	A
Analysis Period (min)	15		

Barrio Logan CPU  
32: Harbor Dr & Schley St

Horizon Year Alt 1 with Improvements  
Timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↕	↔	↔	↕	↔	↔	↕	↔	↔	↕	↔
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0							4.0
Lane Util. Factor	1.00	0.95			0.95							1.00
Frbp, ped/bikes	1.00	1.00			1.00							1.00
Flpb, ped/bikes	1.00	1.00			1.00							1.00
Frt	1.00	1.00			1.00							0.86
Flt Protected	0.95	1.00			1.00							1.00
Satd. Flow (prot)	1543	3539			3534							1454
Flt Permitted	0.95	1.00			1.00							1.00
Satd. Flow (perm)	1543	3539			3534							1454
Volume (vph)	74	504	0	0	1542	17	0	0	0	0	0	81
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)	80	548	0	0	1676	18	0	0	0	0	0	88
RTOR Reduction (vph)	0	0	0	0	1	0	0	0	0	0	0	81
Lane Group Flow (vph)	80	548	0	0	1693	0	0	0	0	0	0	7
Confl. Peds. (#/hr)			8	8					2	2		
Confl. Bikes (#/hr)									5			11
Heavy Vehicles (%)	17%	2%	2%	2%	2%	2%	2%	2%	2%	2%	4%	13%
Turn Type	Prot											
Protected Phases	13	18	2	6		14	2	6				13
Permitted Phases												
Actuated Green, G (s)	7.2	59.3			44.1							7.2
Effective Green, g (s)	7.2	59.3			44.1							7.2
Actuated g/C Ratio	0.08	0.66			0.49							0.08
Clearance Time (s)	4.0											4.0
Vehicle Extension (s)	3.0											3.0
Lane Grp Cap (vph)	123	2321			1724							116
v/s Ratio Prot	c0.05	0.15			c0.48							0.00
v/s Ratio Perm												
v/c Ratio	0.65	0.24			0.98							0.06
Uniform Delay, d1	40.4	6.3			22.8							38.5
Progression Factor	1.00	1.00			1.00							1.00
Incremental Delay, d2	11.7	0.1			17.5							0.2
Delay (s)	52.0	6.4			40.2							38.7
Level of Service	D	A			D							D
Approach Delay (s)		12.2			40.2		0.0					38.7
Approach LOS		B			D		A					D

Intersection Summary			
HCM Average Control Delay	32.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	90.4	Sum of lost time (s)	39.1
Intersection Capacity Utilization	54.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Barrio Logan CPU  
33: National Ave & 28th St

Horizon Year Alt 1 with Improvements  
Timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↕	↔	↔	↕	↔	↔	↕	↔	↔	↕	↔
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0					4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00					1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.98					1.00	0.85	1.00
Flt Protected	0.95	1.00	1.00	0.95	1.00					0.99	1.00	0.98
Satd. Flow (prot)	1770	3539	1583	1299	1817					1754	1509	1744
Flt Permitted	0.95	1.00	1.00	0.95	1.00					0.76	1.00	0.78
Satd. Flow (perm)	1770	3539	1583	1299	1817					1351	1509	1392
Volume (vph)	106	258	18	192	628	123	33	98	86	115	205	307
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)	115	280	20	209	683	134	36	107	93	125	223	334
RTOR Reduction (vph)	0	0	12	0	5	0	0	0	64	0	0	223
Lane Group Flow (vph)	115	280	8	209	812	0	0	143	29	0	348	111
Heavy Vehicles (%)	2%	2%	2%	39%	2%	2%	7%	7%	7%	7%	7%	7%
Turn Type	Prot		Perm		Prot		Perm		Perm		Perm	
Protected Phases	7	4		3	8			2			6	6
Permitted Phases												
Actuated Green, G (s)	8.5	43.6	43.6	18.8	53.9			33.8	33.8		33.8	33.8
Effective Green, g (s)	8.5	43.6	43.6	18.8	53.9			33.8	33.8		33.8	33.8
Actuated g/C Ratio	0.08	0.40	0.40	0.17	0.50			0.31	0.31		0.31	0.31
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0			4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0			3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	139	1426	638	226	905			422	471		435	471
v/s Ratio Prot	0.06	0.08		c0.16	c0.45							
v/s Ratio Perm			0.01					0.11	0.02		c0.25	0.07
v/c Ratio	0.83	0.20	0.01	0.92	0.90			0.34	0.06		0.80	0.23
Uniform Delay, d1	49.1	20.9	19.4	44.0	24.6			28.6	26.1		34.1	27.6
Progression Factor	1.00	1.00	1.00	1.00	1.00			1.00	1.00		1.00	1.00
Incremental Delay, d2	31.4	0.1	0.0	39.4	11.5			0.5	0.1		10.1	0.3
Delay (s)	80.6	21.0	19.4	83.4	36.1			29.1	26.1		44.2	27.9
Level of Service	F	C	B	F	D			C	C		D	C
Approach Delay (s)		37.4			45.7			27.9			36.2	
Approach LOS		D			D			C			D	

Intersection Summary			
HCM Average Control Delay	39.7	HCM Level of Service	D
HCM Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	108.2	Sum of lost time (s)	8.0
Intersection Capacity Utilization	83.9%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Barrio Logan CPU Horizon Year Alt 1 with Improvements  
34: Boston Ave & 28th St Timing Plan: AM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.91	
Frt	1.00	0.93		1.00	0.91		1.00	0.99		1.00	0.96	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1687	1659		1687	1608		1770	3447		1770	4848	
Flt Permitted	0.58	1.00		0.37	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1029	1659		659	1608		1770	3447		1770	4848	
Volume (vph)	230	180	140	45	70	120	90	700	40	160	860	310
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)	250	196	152	49	76	130	98	761	43	174	935	337
RTOR Reduction (vph)	0	47	0	0	90	0	0	5	0	0	76	0
Lane Group Flow (vph)	250	301	0	49	116	0	98	799	0	174	1196	0
Heavy Vehicles (%)	7%	7%	7%	7%	7%	7%	2%	4%	2%	2%	3%	2%
Turn Type	Perm			Perm			Prot			Prot		
Protected Phases	4		8		8		5		2		1 6	
Permitted Phases	4		8									
Actuated Green, G (s)	18.8	18.8		18.8	18.8		4.6	24.3		6.1	25.8	
Effective Green, g (s)	18.8	18.8		18.8	18.8		4.6	24.3		6.1	25.8	
Actuated g/C Ratio	0.31	0.31		0.31	0.31		0.08	0.40		0.10	0.42	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	316	510		202	494		133	1369		176	2044	
v/s Ratio Prot			0.18		0.07		0.06		0.23		c0.10 c0.25	
v/s Ratio Perm	c0.24				0.07							
v/c Ratio	0.79	0.59		0.24	0.23		0.74	0.58		0.99	0.58	
Uniform Delay, d1	19.4	17.9		15.9	15.8		27.7	14.5		27.5	13.6	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	12.7	1.8		0.6	0.2		19.0	1.8		63.9	1.2	
Delay (s)	32.1	19.7		16.5	16.1		46.7	16.3		91.4	14.8	
Level of Service	C		B		B		D		B		F	
Approach Delay (s)	24.9			16.2			19.6			24.0		
Approach LOS	C			B			B			C		
<b>Intersection Summary</b>												
HCM Average Control Delay	22.3			HCM Level of Service			C					
HCM Volume to Capacity ratio	0.68											
Actuated Cycle Length (s)	61.2			Sum of lost time (s)			8.0					
Intersection Capacity Utilization	66.6%			ICU Level of Service			C					
Analysis Period (min)	15											
c Critical Lane Group												

Barrio Logan CPU Horizon Year Alt 1 with Improvements  
36: Harbor Dr & 28th St Timing Plan: AM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	0.97	1.00	1.00
Frpb, ped/bikes	1.00	1.00	0.85	1.00	1.00	0.94	0.99	1.00	1.00	1.00	1.00	0.98
Flpb, ped/bikes	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	1.00	1.00	0.85	1.00	1.00	0.85	0.97	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3303	3406	1299	1719	3438	1443	1763	3367	1827	1525	1525	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	1.00	0.95	1.00	1.00	1.00	
Satd. Flow (perm)	3303	3406	1299	1719	3438	1443	1763	3367	1827	1525	1525	
Volume (vph)	50	670	4	17	942	116	0	6	2	375	15	25
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)	54	728	4	18	1024	126	0	7	2	408	16	27
RTOR Reduction (vph)	0	0	2	0	0	47	0	2	0	0	0	20
Lane Group Flow (vph)	54	728	2	18	1024	79	0	7	0	408	16	7
Confl. Peds. (#/hr)				69			80			3		
Confl. Bikes (#/hr)							3			6		
Heavy Vehicles (%)	6%	6%	6%	5%	5%	5%	4%	4%	4%	4%	4%	4%
Turn Type	Prot			custom			Prot			custom		
Protected Phases	11	16	2	6	15	12	2	6	13	14	14	
Permitted Phases				16			12			1 5 13		
Actuated Green, G (s)	3.9	35.8	30.1	2.6	34.5	47.5		13.4		29.7	29.7	29.7
Effective Green, g (s)	3.9	35.8	30.1	2.6	34.5	47.5		13.4		29.7	29.7	29.7
Actuated g/C Ratio	0.03	0.32	0.27	0.02	0.30	0.42		0.12		0.26	0.26	0.26
Clearance Time (s)	4.0		4.0	4.0	4.0	4.0		4.0				
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0		3.0				
Lane Grp Cap (vph)	113	1074	344	39	1045	604		208		881	478	399
v/s Ratio Prot	c0.02			0.21			0.01			c0.30		
v/s Ratio Perm				0.00						0.03		
v/c Ratio	0.48	0.68	0.01	0.46	0.98	0.13		0.03		0.46	0.03	0.02
Uniform Delay, d1	53.8	33.8	30.7	54.8	39.2	20.3		44.3		35.2	31.2	31.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00		0.92	0.94	1.41
Incremental Delay, d2	3.2	1.7	0.0	8.4	22.7	0.1		0.1		0.4	0.0	0.0
Delay (s)	57.0	35.5	30.7	63.2	61.9	20.4		44.4		32.6	29.2	43.9
Level of Service	E			D			C			D		
Approach Delay (s)	37.0			57.4			44.4			33.2		
Approach LOS	D			E			D			C		
<b>Intersection Summary</b>												
HCM Average Control Delay	46.2			HCM Level of Service			D					
HCM Volume to Capacity ratio	0.61											
Actuated Cycle Length (s)	113.5			Sum of lost time (s)			32.0					
Intersection Capacity Utilization	50.1%			ICU Level of Service			A					
Analysis Period (min)	15											
c Critical Lane Group												

Barrio Logan CPU  
37: Boston Ave & I-5 SB On-ramp

Horizon Year Alt 1 with Improvements  
Timing Plan: AM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↕		↕		↕		↕		↕		↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0		4.0		4.0		4.0		4.0	
Lane Util. Factor	1.00		1.00		1.00		1.00		1.00		1.00	
Flt	0.99		0.94		0.99		0.99		0.99		0.99	
Flt Protected	0.98		1.00		1.00		1.00		1.00		1.00	
Satd. Flow (prot)	1723		1667		1667		1382		1382		1382	
Flt Permitted	0.98		1.00		1.00		1.00		1.00		1.00	
Satd. Flow (perm)	1723		1667		1667		1382		1382		1382	
Volume (vph)	84	104	15	18	102	88	5	180	19	0	0	0
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)	91	113	16	20	111	96	5	196	21	0	0	0
RTOR Reduction (vph)	0	4	0	0	30	0	0	3	0	0	0	0
Lane Group Flow (vph)	0	216	0	0	197	0	0	219	0	0	0	0
Heavy Vehicles (%)	7%	7%	7%	7%	7%	7%	2%	40%	2%	2%	2%	2%
Turn Type	Split		Split		Perm		Perm		Perm		Perm	
Protected Phases	4	4	8		8	2		2	2		2	
Permitted Phases	4		8		8		2		2		2	
Actuated Green, G (s)	9.7		9.4		9.4		20.1		20.1		20.1	
Effective Green, g (s)	9.7		9.4		9.4		20.1		20.1		20.1	
Actuated g/C Ratio	0.19		0.18		0.18		0.39		0.39		0.39	
Clearance Time (s)	4.0		4.0		4.0		4.0		4.0		4.0	
Vehicle Extension (s)	3.0		3.0		3.0		3.0		3.0		3.0	
Lane Grp Cap (vph)	326		306		306		543		543		543	
v/s Ratio Prot	c0.13		c0.12		c0.12		0.16		0.16		0.16	
v/s Ratio Perm	0.66		0.64		0.64		0.40		0.40		0.40	
v/c Ratio	19.2		19.3		19.3		11.2		11.2		11.2	
Uniform Delay, d1	1.00		1.00		1.00		1.00		1.00		1.00	
Progression Factor	5.0		4.6		4.6		0.5		0.5		0.5	
Incremental Delay, d2	24.2		23.9		23.9		11.7		11.7		11.7	
Delay (s)	C		C		C		B		B		B	
Level of Service	24.2		23.9		23.9		11.7		0.0		0.0	
Approach Delay (s)	C		C		C		B		A		A	
Approach LOS	C		C		C		B		A		A	
<b>Intersection Summary</b>												
HCM Average Control Delay	20.0		HCM Level of Service		B		B		B		B	
HCM Volume to Capacity ratio	0.52		0.52		0.52		0.52		0.52		0.52	
Actuated Cycle Length (s)	51.2		Sum of lost time (s)		12.0		12.0		12.0		12.0	
Intersection Capacity Utilization	43.7%		ICU Level of Service		A		A		A		A	
Analysis Period (min)	15		15		15		15		15		15	
c	Critical Lane Group											

Barrio Logan CPU  
39: 32nd St & Wabash St

Horizon Year Alt 1 with Improvements  
Timing Plan: AM Peak

Movement	EBL2	EBL	EBT	EBR	WBL	WBT	WBR	WBR2	NBL	NBT	NBR	NBR2
Lane Configurations	↕		↕		↕		↕		↕		↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0		4.0		4.0		4.0		4.0	
Lane Util. Factor	1.00		1.00		1.00		1.00		1.00		0.88	
Flt	1.00		0.95		1.00		0.85		1.00		0.85	
Flt Protected	0.95		1.00		0.96		1.00		0.95		1.00	
Satd. Flow (prot)	1760		1773		1787		1574		1719		2707	
Flt Permitted	0.36		1.00		0.42		1.00		0.95		1.00	
Satd. Flow (perm)	670		1773		788		1574		1719		2707	
Volume (vph)	65	25	170	80	250	45	120	50	70	215	55	290
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)	71	27	185	87	272	49	130	54	76	234	60	315
RTOR Reduction (vph)	0	0	11	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	98	261	0	0	321	184	0	76	234	375	0
Heavy Vehicles (%)	2%	4%	2%	2%	2%	2%	2%	4%	5%	5%	5%	5%
Turn Type	Perm		Perm		Perm		Perm		Prot		custom	
Protected Phases	4		4		4		4		5		2	
Permitted Phases	4		4		4		4		5		2	
Actuated Green, G (s)	45.2		45.2		45.2		45.2		11.4		23.1	
Effective Green, g (s)	45.2		45.2		45.2		45.2		11.4		23.1	
Actuated g/C Ratio	0.33		0.33		0.33		0.33		0.08		0.17	
Clearance Time (s)	4.0		4.0		4.0		4.0		4.0		4.0	
Vehicle Extension (s)	3.0		3.0		3.0		3.0		3.0		3.0	
Lane Grp Cap (vph)	218	577	577		257	513	513		141	301	1176	
v/s Ratio Prot	0.15		0.15		0.15		0.15		0.04		c0.13	
v/s Ratio Perm	0.15		0.15		c0.41		0.12		0.04		c0.13	
v/c Ratio	0.45		0.45		1.25		0.36		0.54		0.78	
Uniform Delay, d1	37.0		37.0		46.8		35.7		61.2		55.4	
Progression Factor	1.00		1.00		1.00		1.00		1.00		1.00	
Incremental Delay, d2	1.5		0.6		140.2		0.4		3.9		11.9	
Delay (s)	38.4		37.6		187.0		36.2		65.1		67.3	
Level of Service	D		D		F		D		E		E	
Approach Delay (s)	D		D		F		D		E		E	
Approach LOS	D		D		F		D		E		E	
<b>Intersection Summary</b>												
HCM Average Control Delay	103.4		HCM Level of Service		F		F		F		F	
HCM Volume to Capacity ratio	1.10		1.10		1.10		1.10		1.10		1.10	
Actuated Cycle Length (s)	138.8		Sum of lost time (s)		16.0		16.0		16.0		16.0	
Intersection Capacity Utilization	94.7%		ICU Level of Service		F		F		F		F	
Analysis Period (min)	15		15		15		15		15		15	
c	Critical Lane Group											

Barrio Logan CPU  
39: 32nd St & Wabash St

Horizon Year Alt 1 with Improvements  
Timing Plan: AM Peak

Movement	SBL2	SBL	SBT	SBR	SWL2	SWL	SWR	SWR2
Lane Configurations								
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0				4.0		
Lane Util. Factor	1.00	0.95				0.97		
Frt	1.00	0.98				0.99		
Flt Protected	0.95	1.00				0.96		
Satd. Flow (prot)	1765	3384				3345		
Flt Permitted	0.95	1.00				0.88		
Satd. Flow (perm)	1765	3384				3064		
Volume (vph)	30	180	445	65	60	735	65	10
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	33	196	484	71	65	799	71	11
RTOR Reduction (vph)	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	229	555	0	0	946	0	0
Heavy Vehicles (%)	4%	2%	5%	2%	4%	4%	4%	4%
Turn Type	Prot	Prot			Perm			
Protected Phases	1	1	6			3		
Permitted Phases					3			
Actuated Green, G (s)		21.3	33.0			33.2		
Effective Green, g (s)		21.3	33.0			33.2		
Actuated g/C Ratio		0.15	0.24			0.24		
Clearance Time (s)		4.0	4.0			4.0		
Vehicle Extension (s)		3.0	3.0			3.0		
Lane Grp Cap (vph)		271	805			733		
v/s Ratio Prot		c0.13	0.16					
v/s Ratio Perm						c0.31		
v/c Ratio		0.85	0.69			1.29		
Uniform Delay, d1		57.1	48.2			52.8		
Progression Factor		1.00	1.00			1.00		
Incremental Delay, d2		20.8	2.5			140.9		
Delay (s)		77.9	50.7			193.7		
Level of Service		E	D			F		
Approach Delay (s)			58.7			193.7		
Approach LOS			E			F		

Intersection Summary

Barrio Logan CPU  
40: Harbor Dr & 32nd St

Horizon Year Alt 1 with Improvements  
Timing Plan: AM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR								
Lane Configurations																				
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900								
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0								
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00								
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	1.00	1.00	1.00	0.96	1.00	1.00	1.00								
Flpb, ped/bikes	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	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85								
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00								
Satd. Flow (prot)	1719	3438	1519	1687	3374	1509	1719	3438	1481	1719	3438	1538								
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00								
Satd. Flow (perm)	1719	3438	1519	1687	3374	1509	1719	3438	1481	1719	3438	1538								
Volume (vph)	70	657	140	300	735	390	30	160	30	130	1040	40								
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)	76	714	152	326	799	424	33	174	33	141	1130	43								
RTOR Reduction (vph)	0	0	123	0	0	277	0	0	28	0	0	23								
Lane Group Flow (vph)	76	714	29	326	799	147	33	174	5	141	1130	20								
Confl. Bikes (#/hr)			3						16											
Heavy Vehicles (%)	5%	5%	5%	7%	7%	7%	5%	5%	5%	5%	5%	5%								
Turn Type	Prot		custom	Prot		custom	Prot		Perm	Prot		custom								
Protected Phases	3	14	2	6	15	13	18	2	6	15	12	11	1	5	16	1	5	3	1	5
Permitted Phases					14					18			12						16	
Actuated Green, G (s)	5.2	8.6	6.9	16.5	19.9	15.6	2.6	11.5	11.5	12.7	25.6	26.8								
Effective Green, g (s)	5.2	8.6	6.9	16.5	19.9	15.6	2.6	11.5	11.5	12.7	25.6	26.8								
Actuated g/C Ratio	0.06	0.11	0.08	0.20	0.24	0.19	0.03	0.14	0.14	0.16	0.31	0.33								
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0								
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0								
Lane Grp Cap (vph)	110	364	129	342	826	290	55	486	209	269	1083	583								
v/s Ratio Prot	0.04	c0.21	0.01	c0.19	0.24		0.02	0.05		c0.08	c0.33	0.01								
v/s Ratio Perm			0.01			0.10			0.00			0.01								
v/c Ratio	0.69	1.96	0.23	0.95	0.97	0.51	0.60	0.36	0.02	0.52	1.04	0.03								
Uniform Delay, d1	37.3	36.4	34.7	32.0	30.4	29.4	38.8	31.6	30.1	31.5	27.8	18.5								
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.22	0.87	1.36								
Incremental Delay, d2	17.1	442.6	0.9	36.2	23.3	1.4	17.0	0.5	0.0	1.8	39.0	0.0								
Delay (s)	54.3	478.9	35.6	68.3	53.7	30.8	55.9	32.0	30.1	40.1	63.3	25.1								
Level of Service	D	F	D	E	D	C	E	C	C	D	E	C								
Approach Delay (s)		373.1			50.5			35.0			59.5									
Approach LOS		F			D			D			E									

Intersection Summary

HCM Average Control Delay	127.7	HCM Level of Service	F
HCM Volume to Capacity ratio	1.07		
Actuated Cycle Length (s)	81.3	Sum of lost time (s)	24.0
Intersection Capacity Utilization	80.2%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Barrio Logan CPU  
42: I-5 SB off-ramp & 28th St

Horizon Year Alt 1 with Improvements  
Timing Plan: AM Peak

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↑		↑↑	↑↑↑	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	0.95	0.91	1.00	1.00
Flt	0.86	1.00	1.00	1.00	1.00	1.00
Flt Protected	1.00	1.00	1.00	1.00	1.00	1.00
Satd. Flow (prot)	1611	3539	5085	5085	5085	5085
Flt Permitted	1.00	1.00	1.00	1.00	1.00	1.00
Satd. Flow (perm)	1611	3539	5085	5085	5085	5085
Volume (vph)	0	915	0	1050	415	0
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	995	0	1141	451	0
RTOR Reduction (vph)	0	36	0	0	0	0
Lane Group Flow (vph)	0	959	0	1141	451	0
Turn Type	custom					
Protected Phases			2 4 6	6		
Permitted Phases	4					
Actuated Green, G (s)	40.2		64.2	16.0		
Effective Green, g (s)	40.2		64.2	16.0		
Actuated g/C Ratio	0.63		1.00	0.25		
Clearance Time (s)	4.0		4.0			
Vehicle Extension (s)	3.0		3.0			
Lane Grp Cap (vph)	1009		3539	1267		
v/s Ratio Prot			c0.32	0.09		
v/s Ratio Perm	c0.60					
v/c Ratio	0.95		0.32	0.36		
Uniform Delay, d1	11.1		0.0	19.9		
Progression Factor	1.00		1.00	1.00		
Incremental Delay, d2	17.6		0.1	0.8		
Delay (s)	28.7		0.1	20.6		
Level of Service	C		A	C		
Approach Delay (s)	28.7		0.1	20.6		
Approach LOS	C		A	C		
<b>Intersection Summary</b>						
HCM Average Control Delay	14.7		HCM Level of Service			B
HCM Volume to Capacity ratio	0.74					
Actuated Cycle Length (s)	64.2		Sum of lost time (s)			4.0
Intersection Capacity Utilization	71.3%		ICU Level of Service			C
Analysis Period (min)	15					
c Critical Lane Group						

Barrio Logan CPU  
2: National Ave & 16th St

Horizon Year Alt 1 with Improvements Alt 1  
Timing Plan: PM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
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
Frbp, ped/bikes	1.00	0.99	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Flpb, ped/bikes	0.99	1.00	0.98	1.00	0.98	1.00	0.99	1.00	0.99	1.00	0.99	1.00
Frt	1.00	0.99	1.00	0.99	1.00	0.99	0.99	1.00	0.99	1.00	0.96	1.00
Flt Protected	0.95	1.00	0.95	1.00	0.95	1.00	0.97	1.00	0.97	1.00	0.97	1.00
Satd. Flow (prot)	1756	1830	1730	1845	1845	1845	1783	1845	1783	1845	1708	1845
Flt Permitted	0.35	1.00	0.47	1.00	0.47	1.00	0.79	1.00	0.79	1.00	0.76	1.00
Satd. Flow (perm)	653	1830	850	1845	1845	1845	1441	1845	1441	1845	1330	1845
Volume (vph)	91	347	31	3	458	25	61	41	7	127	25	70
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)	99	377	34	3	498	27	66	45	8	138	27	76
RTOR Reduction (vph)	0	6	0	0	3	0	0	4	0	0	24	0
Lane Group Flow (vph)	99	405	0	3	522	0	0	115	0	0	217	0
Confl. Peds. (#/hr)	27		37	37		27	14		10	10		14
Confl. Bikes (#/hr)			1			3			3			1
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases	4			8			2			6		
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	15.3	15.3	15.3	15.3	15.3	15.3	10.9	15.3	10.9	15.3	10.9	15.3
Effective Green, g (s)	15.3	15.3	15.3	15.3	15.3	15.3	10.9	15.3	10.9	15.3	10.9	15.3
Actuated g/C Ratio	0.45	0.45	0.45	0.45	0.45	0.45	0.32	0.45	0.32	0.45	0.32	0.45
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	292	819	380	825	825	825	459	825	459	825	424	825
v/s Ratio Prot	0.22		c0.28									
v/s Ratio Perm	0.15	0.00			0.08			c0.16				
v/c Ratio	0.34	0.50	0.01	0.63	0.63	0.63	0.25	0.63	0.25	0.63	0.51	0.63
Uniform Delay, d1	6.2	6.7	5.2	7.3	7.3	7.3	8.6	7.3	8.6	7.3	9.5	7.3
Progression 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
Incremental Delay, d2	0.7	0.5	0.0	1.6	1.6	1.6	0.3	1.6	0.3	1.6	1.0	1.6
Delay (s)	6.9	7.2	5.2	8.9	8.9	8.9	8.9	8.9	8.9	8.9	10.5	8.9
Level of Service	A	A	A	A	A	A	A	A	A	A	B	A
Approach Delay (s)	7.1		8.9			8.9			10.5			
Approach LOS	A		A			A			B			
<b>Intersection Summary</b>												
HCM Average Control Delay	8.5			HCM Level of Service			A					
HCM Volume to Capacity ratio	0.58											
Actuated Cycle Length (s)	34.2			Sum of lost time (s)			8.0					
Intersection Capacity Utilization	56.8%			ICU Level of Service			B					
Analysis Period (min)	15											
c Critical Lane Group												



Barrio Logan CPU  
6: Harbor Dr & Sigsbee St

Horizon Year Alt 1 with Improvements Alt 1  
Timing Plan: PM Peak

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↔	↕↕	↕↕		↕	↕
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95	0.95		1.00	1.00
Flt	1.00	1.00	0.98		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	3539	3479		1770	1583
Flt Permitted	0.28	1.00	1.00		0.95	1.00
Satd. Flow (perm)	524	3539	3479		1770	1583
Volume (vph)	65	1945	780	100	100	80
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	71	2114	848	109	109	87
RTOR Reduction (vph)	0	0	11	0	0	74
Lane Group Flow (vph)	71	2114	946	0	109	13
Turn Type	Perm			Perm		
Protected Phases	4		8	6		
Permitted Phases	4			6		
Actuated Green, G (s)	48.7	48.7	48.7	9.8		9.8
Effective Green, g (s)	48.7	48.7	48.7	9.8		9.8
Actuated g/C Ratio	0.73	0.73	0.73	0.15		0.15
Clearance Time (s)	4.0	4.0	4.0	4.0		4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0		3.0
Lane Grp Cap (vph)	384	2592	2548	261		233
v/s Ratio Prot	c0.60		0.27	c0.06		
v/s Ratio Perm	0.14			0.01		
v/c Ratio	0.18	0.82	0.37	0.42		0.06
Uniform Delay, d1	2.8	5.9	3.3	25.8		24.4
Progression Factor	1.00	1.00	1.00	1.00		1.00
Incremental Delay, d2	0.2	2.1	0.1	1.1		0.1
Delay (s)	3.0	8.0	3.4	26.8		24.5
Level of Service	A		A	C		C
Approach Delay (s)	7.8		3.4	25.8		
Approach LOS	A		A	C		
<b>Intersection Summary</b>						
HCM Average Control Delay	7.6		HCM Level of Service		A	
HCM Volume to Capacity ratio	0.75					
Actuated Cycle Length (s)	66.5		Sum of lost time (s)		8.0	
Intersection Capacity Utilization	66.0%		ICU Level of Service		C	
Analysis Period (min)	15					
c Critical Lane Group						

Barrio Logan CPU  
7: Logan Ave & Beardsley St

Horizon Year Alt 1 with Improvements Alt 1  
Timing Plan: PM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕		↕	↕			↕↕				↕
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0			4.0		4.0		4.0
Lane Util. Factor		1.00		1.00	1.00			1.00		1.00		1.00
Flt		0.98		1.00	1.00			0.91		0.99		0.99
Flt Protected		1.00		0.95	1.00			0.98		0.97		0.97
Satd. Flow (prot)		1833		1770	1863			1664		1782		1782
Flt Permitted		1.00		0.95	1.00			0.98		0.97		0.97
Satd. Flow (perm)		1833		1770	1863			1664		1782		1782
Volume (vph)	0	515	69	41	154	0	56	0	122	272	110	38
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)	0	560	75	45	167	0	61	0	133	296	120	41
RTOR Reduction (vph)	0	5	0	0	0	0	0	93	0	0	4	0
Lane Group Flow (vph)	0	630	0	45	167	0	101	0	0	453	0	0
Turn Type	Prot			Split			Split					
Protected Phases	4		3	8	2		2	6		6		
Permitted Phases	4			3			6			6		
Actuated Green, G (s)	30.9		3.8	38.7	9.9		20.3					
Effective Green, g (s)	30.9		3.8	38.7	9.9		20.3					
Actuated g/C Ratio	0.38		0.05	0.48	0.12		0.25					
Clearance Time (s)	4.0		4.0	4.0	4.0		4.0					
Vehicle Extension (s)	3.0		3.0	3.0	3.0		3.0					
Lane Grp Cap (vph)	700		83	891	204		447					
v/s Ratio Prot	c0.34		c0.03	0.09	c0.06		c0.25					
v/s Ratio Perm	0.90			0.54	0.19	0.49		1.01				
Uniform Delay, d1	23.5		37.7	12.1	33.2		30.3					
Progression Factor	1.00		1.00	1.00	1.00		1.00					
Incremental Delay, d2	14.7		7.1	0.1	1.9		46.1					
Delay (s)	38.2		44.8	12.2	35.1		76.4					
Level of Service	D		D	B	D		E					
Approach Delay (s)	38.2		19.1		35.1		76.4					
Approach LOS	D		B		D		E					
<b>Intersection Summary</b>												
HCM Average Control Delay	46.8		HCM Level of Service		D							
HCM Volume to Capacity ratio	0.85											
Actuated Cycle Length (s)	80.9		Sum of lost time (s)		16.0							
Intersection Capacity Utilization	77.8%		ICU Level of Service		D							
Analysis Period (min)	15											
c Critical Lane Group												

## Barrio Logan CPU

## Horizon Year Alt 1 with Improvements Alt 1

8: National Ave &amp; Beardsley St

Timing Plan: PM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
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
Frbp, ped/bikes	1.00	1.00	1.00	0.99	0.99	0.98	0.98	0.98	1.00	1.00	1.00	1.00
Flpb, ped/bikes	0.99	1.00	0.99	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.97	0.97	0.90	0.90	0.90	1.00	1.00	0.99	0.99
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.97	0.97
Satd. Flow (prot)	1751	1862	1759	1797	1797	1649	1649	1649	1781	1781	1781	1781
Flt Permitted	0.40	1.00	0.21	1.00	1.00	0.98	0.98	0.98	1.00	1.00	0.70	0.70
Satd. Flow (perm)	731	1862	380	1797	1797	1622	1622	1622	1296	1296	1296	1296
Volume (vph)	19	625	2	113	347	77	9	43	134	189	83	11
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)	21	679	2	123	377	84	10	47	146	205	90	12
RTOR Reduction (vph)	0	0	0	0	13	0	0	94	0	0	2	0
Lane Group Flow (vph)	21	681	0	123	448	0	0	109	0	0	305	0
Confl. Peds. (#/hr)	15		16	16		15	38		11	11		38
Turn Type	Perm		Perm		Perm		Perm		Perm		Perm	
Protected Phases		4		8		8		2		6		6
Permitted Phases	4		8		2		6					
Actuated Green, G (s)	22.8	22.8	22.8	22.8	22.8	17.1	17.1	17.1	17.1	17.1	17.1	17.1
Effective Green, g (s)	22.8	22.8	22.8	22.8	22.8	17.1	17.1	17.1	17.1	17.1	17.1	17.1
Actuated g/C Ratio	0.48	0.48	0.48	0.48	0.48	0.36	0.36	0.36	0.36	0.36	0.36	0.36
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	348	886	181	855	855	579	579	579	463	463	463	463
v/s Ratio Prot		c0.37		0.25								
v/s Ratio Perm	0.03		0.32		0.07		c0.24					
v/c Ratio	0.06	0.77	0.68	0.52	0.19	0.66						
Uniform Delay, d1	6.8	10.4	9.7	8.8	10.6	12.9						
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00						
Incremental Delay, d2	0.1	4.1	9.7	0.6	0.2	3.4						
Delay (s)	6.8	14.4	19.4	9.3	10.8	16.3						
Level of Service	A	B	B	A	B	B						
Approach Delay (s)		14.2		11.5	10.8	16.3						
Approach LOS		B		B	B	B						

## Intersection Summary

HCM Average Control Delay	13.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	47.9	Sum of lost time (s)	8.0
Intersection Capacity Utilization	80.3%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

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Synchro 6 Report  
3/4/2011

Kimley-Horn and Associates, Inc.

## Barrio Logan CPU

## Horizon Year Alt 1 with Improvements Alt 1

11: Harbor Dr &amp; Beardsley St

Timing Plan: PM Peak

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control	Free	Free	Stop			
Grade	0%	0%	0%	0%		
Volume (veh/h)	0	1950	860	20	0	75
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	2120	935	22	0	82
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					Raised	
Median storage (veh)					0	
Upstream signal (ft)		661	658			
pX, platoon unblocked	0.89			0.39	0.89	
vC, conflicting volume	957			2005	478	
vC1, stage 1 conf vol				946		
vC2, stage 2 conf vol				1060		
vCu, unblocked vol	829			1168	293	
tC, single (s)	4.3			6.8	6.9	
tC, 2 stage (s)				5.8		
tF (s)	2.3			3.5	3.3	
p0 queue free %	100			100	87	
cM capacity (veh/h)	667			142	627	
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1	
Volume Total	1060	1060	623	333	82	
Volume Left	0	0	0	0	0	
Volume Right	0	0	0	22	82	
cSH	1700	1700	1700	1700	627	
Volume to Capacity	0.62	0.62	0.37	0.20	0.13	
Queue Length 95th (ft)	0	0	0	0	11	
Control Delay (s)	0.0	0.0	0.0	0.0	11.6	
Lane LOS					B	
Approach Delay (s)	0.0		0.0		11.6	
Approach LOS					B	
Intersection Summary						
Average Delay		0.3				
Intersection Capacity Utilization		57.2%		ICU Level of Service	B	
Analysis Period (min)		15				

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Synchro 6 Report  
3/4/2011

Kimley-Horn and Associates, Inc.

Barrio Logan CPU  
13: Logan Ave & Cesar E. Chavez Pkwy  
Horizon Year Alt 1 with Improvements Alt 1  
Timing Plan: PM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	[Diagram showing lane configurations for each movement]											
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
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	
Frbp, ped/bikes	1.00	1.00	0.97	1.00	1.00	0.98	1.00	1.00	0.97	1.00	1.00	
Flpb, ped/bikes	0.99	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1759	1863	1544	1764	1863	1549	1530	3059	1323	1530	3018	
Flt Permitted	0.57	1.00	1.00	0.14	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1065	1863	1544	259	1863	1549	1530	3059	1323	1530	3018	
Volume (vph)	130	420	230	120	280	90	140	506	670	114	694	52
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)	141	457	250	130	304	98	152	550	728	124	754	57
RTOR Reduction (vph)	0	0	173	0	0	56	0	0	158	0	7	0
Lane Group Flow (vph)	141	457	77	130	304	42	152	550	571	124	804	0
Confl. Peds. (#/hr)	10		13			10			27			27
Confl. Bikes (#/hr)			4			2			3			2
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	18%	18%	18%	18%	18%	18%
Turn Type	Perm	Perm	Perm	Perm	Perm	Prot	custom	Prot				
Protected Phases		4			8		5	2	3	1	6	
Permitted Phases	4		4	8		8			2			
Actuated Green, G (s)	24.5	24.5	24.5	34.4	34.4	34.4	11.9	24.1	30.0	9.5	21.7	
Effective Green, g (s)	24.5	24.5	24.5	34.4	34.4	34.4	11.9	24.1	30.0	9.5	21.7	
Actuated g/C Ratio	0.31	0.31	0.31	0.43	0.43	0.43	0.15	0.30	0.38	0.12	0.27	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	326	571	473	111	801	666	228	922	496	182	819	
v/s Ratio Prot		0.25			0.16		c0.10	0.18	c0.08	0.08	0.27	
v/s Ratio Perm	0.13		0.05	c0.50		0.03			0.35			
v/c Ratio	0.43	0.80	0.16	1.17	0.38	0.06	0.67	0.60	1.15	0.68	0.98	
Uniform Delay, d1	22.2	25.5	20.3	22.8	15.5	13.4	32.2	23.8	25.0	33.8	29.0	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.83	0.96	0.89	1.00	1.00	
Incremental Delay, d2	0.9	7.9	0.2	138.7	0.3	0.0	4.9	1.9	82.9	10.0	27.4	
Delay (s)	23.1	33.4	20.4	161.5	15.8	13.4	31.8	24.8	105.0	43.8	56.4	
Level of Service	C	C	C	F	B	B	C	C	F	D	E	
Approach Delay (s)		27.9			51.0			66.4			54.7	
Approach LOS		C			D			E			D	

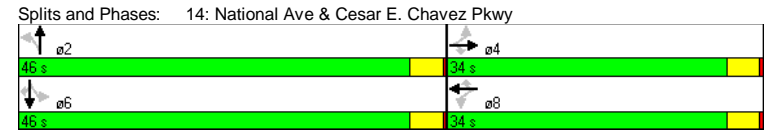
Intersection Summary			
HCM Average Control Delay	52.6	HCM Level of Service	D
HCM Volume to Capacity ratio	1.04		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	83.4%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Barrio Logan CPU  
14: National Ave & Cesar E. Chavez Pkwy  
Horizon Year Alt 1 with Improvements Alt 1  
Timing Plan: PM Peak

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR	
Lane Configurations	[Diagram showing lane configurations for each movement]											
Volume (vph)	300	400	290	110	270	275	120	1000	120	550	410	
Turn Type	Perm		Perm	Perm		Perm	Perm		Perm		Perm	
Protected Phases		4			8			2		6		
Permitted Phases	4		4	8		8		2		6	6	
Detector Phases	4	4	4	8	8	8	2	2	6	6	6	
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	31.0	31.0	31.0	34.0	34.0	34.0	27.0	27.0	27.0	27.0	27.0	
Total Split (s)	34.0	34.0	34.0	34.0	34.0	34.0	46.0	46.0	46.0	46.0	46.0	
Total Split (%)	42.5%	42.5%	42.5%	42.5%	42.5%	42.5%	57.5%	57.5%	57.5%	57.5%	57.5%	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None	None	None	None	None	C-Min	C-Min	C-Min	C-Min	C-Min	
Act Effct Green (s)	30.0	30.0	30.0	30.0	30.0	30.0	42.0	42.0	42.0	42.0	42.0	
Actuated g/C Ratio	0.38	0.38	0.38	0.38	0.38	0.38	0.52	0.52	0.52	0.52	0.52	
v/c Ratio	0.99	0.62	0.42	0.56	0.42	0.47	0.52	0.71	1.07	0.71	0.49	
Control Delay	76.7	25.2	6.6	31.8	20.9	17.2	16.5	13.4	106.2	10.1	2.3	
Queue Delay	3.1	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	4.8	0.9	
Total Delay	79.8	25.2	6.6	31.8	20.9	17.2	16.5	13.7	106.2	14.9	3.2	
LOS	E	C	A	C	C	B	B	B	F	B	A	
Approach Delay		36.3			21.2			14.0		20.6		
Approach LOS		D			C			B		C		

Intersection Summary	
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 79 (99%), Referenced to phase 2:NBT and 6:SBTL, Start of Green	
Natural Cycle: 80	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.07	
Intersection Signal Delay: 22.6	Intersection LOS: C
Intersection Capacity Utilization 81.6%	ICU Level of Service D
Analysis Period (min) 15	



Barrio Logan CPU  
14: National Ave & Cesar E. Chavez Pkwy  
Horizon Year Alt 1 with Improvements Alt 1  
Timing Plan: PM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔		↔		↔		↔		↔		↔	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99	1.00	1.00	0.85	1.00
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1612	3179	1530	1610	1369	1369
Flt Permitted	0.47	1.00	1.00	0.31	1.00	1.00	0.28	1.00	0.14	1.00	1.00	1.00
Satd. Flow (perm)	875	1863	1583	572	1863	1583	480	3179	231	1610	1369	1369
Volume (vph)	300	400	290	110	270	275	120	1000	100	120	550	410
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)	326	435	315	120	293	299	130	1087	109	130	598	446
RTOR Reduction (vph)	0	0	154	0	0	43	0	10	0	0	0	189
Lane Group Flow (vph)	326	435	161	120	293	256	130	1187	0	130	598	257
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	12%	12%	12%	18%	18%	18%
Turn Type	Perm	Perm	Perm	Perm	Perm	Perm	Perm	Perm	Perm	Perm	Perm	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2			6		6
Actuated Green, G (s)	30.0	30.0	30.0	30.0	30.0	30.0	42.0	42.0	42.0	42.0	42.0	42.0
Effective Green, g (s)	30.0	30.0	30.0	30.0	30.0	30.0	42.0	42.0	42.0	42.0	42.0	42.0
Actuated g/C Ratio	0.38	0.38	0.38	0.38	0.38	0.38	0.52	0.52	0.52	0.52	0.52	0.52
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	328	699	594	215	699	594	252	1669	121	845	719	719
v/s Ratio Prot		0.23			0.16			0.37			0.37	
v/s Ratio Perm	c0.37		0.10	0.21		0.16	0.27		c0.56		0.19	
v/c Ratio	0.99	0.62	0.27	0.56	0.42	0.43	0.52	0.71	1.07	0.71	0.36	
Uniform Delay, d1	24.9	20.4	17.4	19.8	18.5	18.6	12.4	14.4	19.0	14.4	11.1	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.68	0.75	0.57	0.47	0.59	
Incremental Delay, d2	47.8	1.7	0.2	3.1	0.4	0.5	6.9	2.4	85.0	3.1	0.8	
Delay (s)	72.7	22.1	17.6	22.9	18.9	19.1	15.3	13.2	95.8	9.7	7.5	
Level of Service	E	C	B	C	B	B	B	B	F	A	A	
Approach Delay (s)	36.1			19.7				13.4		18.4		
Approach LOS	D			B				B		B		

**Intersection Summary**

HCM Average Control Delay	21.5	HCM Level of Service	C
HCM Volume to Capacity ratio	1.04		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	81.6%	ICU Level of Service	D
Analysis Period (min)	15		

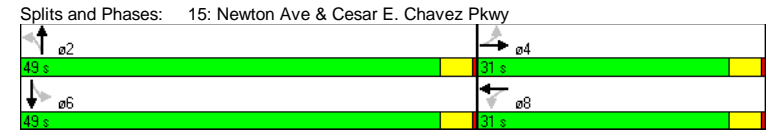
c Critical Lane Group

Barrio Logan CPU  
15: Newton Ave & Cesar E. Chavez Pkwy  
Horizon Year Alt 1 with Improvements Alt 1  
Timing Plan: PM Peak

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	↔		↔		↔		↔	
Volume (vph)	135	130	90	70	40	795	165	890
Turn Type	Perm		Perm		Perm		Perm	
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phases	4	4	8	8	2	2	6	6
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	31.0	31.0	31.0	31.0	27.0	27.0	27.0	27.0
Total Split (s)	31.0	31.0	31.0	31.0	49.0	49.0	49.0	49.0
Total Split (%)	38.8%	38.8%	38.8%	38.8%	61.3%	61.3%	61.3%	61.3%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	None	None	None	C-Min	C-Min	C-Min	C-Min
Act Effct Green (s)	15.6	15.6	15.6	15.6	56.4	56.4	56.4	56.4
Actuated g/C Ratio	0.20	0.20	0.20	0.20	0.70	0.70	0.70	0.70
v/c Ratio	0.72	0.58	0.49	0.49	0.41	0.41	0.61	0.87
Control Delay	48.7	29.3	35.6	15.9	20.4	5.6	16.7	17.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.1
Total Delay	48.7	29.3	35.6	15.9	20.4	5.7	16.7	17.1
LOS	D	C	D	B	C	A	B	B
Approach Delay	37.1		22.3			6.4		17.0
Approach LOS	D		C			A		B

**Intersection Summary**

Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 4 (5%), Referenced to phase 2:NBT and 6:SBT, Start of Green	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.87	
Intersection Signal Delay: 16.5	Intersection LOS: B
Intersection Capacity Utilization 85.4%	ICU Level of Service E
Analysis Period (min) 15	



Barrio Logan CPU Horizon Year Alt 1 with Improvements Alt 1  
 15: Newton Ave & Cesar E. Chavez Pkwy Timing Plan: PM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	[Diagram showing lane configurations for each movement]											
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	1.00	
Frt	1.00	0.95		1.00	0.91		1.00	0.99		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)	1770	1765		1770	1686		1612	3189		1612	1682	
Flt Permitted	0.45	1.00		0.43	1.00		0.15	1.00		0.28	1.00	
Satd. Flow (perm)	847	1765		801	1686		257	3189		477	1682	
Volume (vph)	135	130	70	90	70	120	40	795	60	165	890	55
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)	147	141	76	98	76	130	43	864	65	179	967	60
RTOR Reduction (vph)	0	30	0	0	93	0	0	5	0	0	2	0
Lane Group Flow (vph)	147	187	0	98	113	0	43	924	0	179	1025	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	12%	12%	12%	12%	12%	12%
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases	4		8		8		2		6		6	
Permitted Phases	4		8		8		2		6		6	
Actuated Green, G (s)	15.6	15.6		15.6	15.6		56.4	56.4		56.4	56.4	
Effective Green, g (s)	15.6	15.6		15.6	15.6		56.4	56.4		56.4	56.4	
Actuated g/C Ratio	0.20	0.20		0.20	0.20		0.70	0.70		0.70	0.70	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	165	344		156	329		181	2248		336	1186	
v/s Ratio Prot	0.11		0.07		0.29		c0.61					
v/s Ratio Perm	c0.17		0.12		0.17		0.38					
v/c Ratio	0.89	0.54		0.63	0.34		0.24	0.41		0.53	0.86	
Uniform Delay, d1	31.4	29.0		29.5	27.8		4.2	4.9		5.6	8.9	
Progression Factor	1.00	1.00		1.00	1.00		0.91	0.89		0.71	0.66	
Incremental Delay, d2	40.3	1.8		7.7	0.6		2.7	0.5		5.2	7.5	
Delay (s)	71.7	30.8		37.2	28.4		6.5	4.9		9.1	13.4	
Level of Service	E		C		D		A		A		B	
Approach Delay (s)	47.3			31.2			4.9			12.7		
Approach LOS	D			C			A			B		

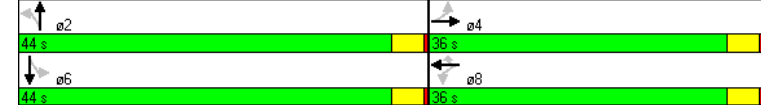
Intersection Summary			
HCM Average Control Delay	16.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	85.4%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Barrio Logan CPU Horizon Year Alt 1 with Improvements Alt 1  
 16: Main St & Cesar E. Chavez Pkwy Timing Plan: PM Peak

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	
Lane Configurations	[Diagram showing lane configurations for each movement]									
Volume (vph)	120	290	70	230	270	70	640	250	540	
Turn Type	Perm		Perm		Perm		Perm		Perm	
Protected Phases	4		8		8		2		6	
Permitted Phases	4		8		8		2		6	
Detector Phases	4	4	8	8	8	2	2	6	6	
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	31.0	31.0	31.0	31.0	31.0	27.0	27.0	27.0	27.0	
Total Split (s)	36.0	36.0	36.0	36.0	36.0	44.0	44.0	44.0	44.0	
Total Split (%)	45.0%	45.0%	45.0%	45.0%	45.0%	55.0%	55.0%	55.0%	55.0%	
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)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Lead/Lag	Lead-Lag Optimize?									
Recall Mode	None	None	None	None	None	C-Min	C-Min	C-Min	C-Min	
Act Effct Green (s)	20.1	20.1	20.1	20.1	20.1	51.9	51.9	51.9	51.9	
Actuated g/C Ratio	0.25	0.25	0.25	0.25	0.25	0.65	0.65	0.65	0.65	
v/c Ratio	0.53	0.74	0.38	0.54	0.58	0.72	0.46	1.08	0.86	
Control Delay	32.3	35.9	28.4	29.0	15.6	55.9	8.4	85.0	16.9	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	1.2	0.0	4.3	
Total Delay	32.3	35.9	28.4	29.0	15.6	55.9	9.6	85.0	21.3	
LOS	C	D	C	C	B	E	A	F	C	
Approach Delay	34.9			22.6			13.3			36.4
Approach LOS	C			C			B			D

Splits and Phases: 16: Main St & Cesar E. Chavez Pkwy



Barrio Logan CPU

Horizon Year Alt 1 with Improvements Alt 1

16: Main St & Cesar E. Chavez Pkwy

Timing Plan: PM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00
Frbp, ped/bikes	1.00	1.00	1.00	1.00	0.97	1.00	0.99	1.00	0.98	1.00	0.98	1.00
Flpb, ped/bikes	0.99	1.00	0.99	1.00	1.00	1.00	1.00	1.00	0.99	1.00	1.00	1.00
Frt	1.00	0.99	1.00	1.00	0.85	1.00	0.97	1.00	0.95	1.00	0.95	1.00
Flt Protected	0.95	1.00	0.95	1.00	1.00	0.95	1.00	0.95	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1751	1836	1751	1863	1535	1549	2974	1542	1534			
Flt Permitted	0.43	1.00	0.28	1.00	1.00	0.19	1.00	0.28	1.00			
Satd. Flow (perm)	800	1836	512	1863	1535	317	2974	459	1534			
Volume (vph)	120	290	25	70	230	270	70	640	180	250	540	260
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)	130	315	27	76	250	293	76	696	196	272	587	283
RTOR Reduction (vph)	0	4	0	0	0	118	0	23	0	0	15	0
Lane Group Flow (vph)	130	338	0	76	250	175	76	869	0	272	855	0
Confl. Peds. (#/hr)	19		24	24		19	16		20	20		16
Confl. Bikes (#/hr)			1			2						
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	16%	16%	16%	16%	16%	16%
Turn Type	Perm			Perm		Perm	Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8		8		2		6		
Actuated Green, G (s)	20.1	20.1	20.1	20.1	20.1	20.1	51.9	51.9	51.9	51.9	51.9	51.9
Effective Green, g (s)	20.1	20.1	20.1	20.1	20.1	20.1	51.9	51.9	51.9	51.9	51.9	51.9
Actuated g/C Ratio	0.25	0.25	0.25	0.25	0.25	0.25	0.65	0.65	0.65	0.65	0.65	0.65
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	201	461		129	468	386	206	1929		298	995	
v/s Ratio Prot		c0.18			0.13			0.29			0.56	
v/s Ratio Perm	0.16			0.15		0.11	0.24			c0.59		
v/c Ratio	0.65	0.73		0.59	0.53	0.45	0.37	0.45		0.91	0.86	
Uniform Delay, d1	26.8	27.5		26.3	25.9	25.3	6.5	7.0		12.1	11.2	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		0.65	0.66	
Incremental Delay, d2	7.0	5.9		6.7	1.2	0.8	5.0	0.8		22.3	5.6	
Delay (s)	33.8	33.4		33.0	27.1	26.1	11.5	7.7		30.1	12.9	
Level of Service	C	C		C	C	C	B	A		C	B	
Approach Delay (s)		33.5			27.4			8.0			17.0	
Approach LOS		C			C			A			B	
<b>Intersection Summary</b>												
HCM Average Control Delay	18.7		HCM Level of Service				B					
HCM Volume to Capacity ratio	0.86											
Actuated Cycle Length (s)	80.0			Sum of lost time (s)				8.0				
Intersection Capacity Utilization	85.9%		ICU Level of Service				E					
Analysis Period (min)	15											

c Critical Lane Group

Barrio Logan CPU

Horizon Year Alt 1 with Improvements Alt 1

17: Harbor Dr & Cesar E. Chavez Pkwy

Timing Plan: PM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR		
Lane Configurations														
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900		
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		
Lane Util. Factor	0.97	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
Frbp, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.98	1.00	0.99	1.00	0.99		
Flpb, ped/bikes	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	1.00	1.00	1.00	0.99	1.00	1.00	0.85	1.00	0.85	1.00	0.85	1.00		
Flt Protected	0.95	1.00	0.95	1.00	0.95	1.00	0.95	1.00	0.95	1.00	0.97	1.00		
Satd. Flow (prot)	3183	3265	1421	3232	1363	1439	1109	1596	1382					
Flt Permitted	0.95	1.00	0.95	1.00	0.71	1.00	1.00	0.84	1.00					
Satd. Flow (perm)	3183	3265	1421	3232	1021	1439	1109	1381	1382					
Volume (vph)	468	1500	40	50	465	43	50	63	35	33	30	324		
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)	509	1630	43	54	505	47	54	68	38	36	33	352		
RTOR Reduction (vph)	0	1	0	0	5	0	0	0	33	0	0	111		
Lane Group Flow (vph)	509	1672	0	54	547	0	54	68	5	0	69	241		
Confl. Peds. (#/hr)			11			6	4		1	1		4		
Confl. Bikes (#/hr)			9			14			3					
Heavy Vehicles (%)	10%	10%	10%	27%	10%	10%	32%	32%	43%	16%	16%	16%		
Turn Type	Prot			Prot			Perm		Perm	Perm		pm+ov		
Protected Phases	3	14	2	6	13	18	2	6	12		15	16	3	
Permitted Phases							12		12	15	16		15	16
Actuated Green, G (s)	23.9	53.3		6.2	35.6		13.3	13.3	13.3		21.5	45.4		
Effective Green, g (s)	23.9	53.3		6.2	35.6		13.3	13.3	13.3		21.5	45.4		
Actuated g/C Ratio	0.22	0.49		0.06	0.33		0.12	0.12	0.12		0.20	0.42		
Clearance Time (s)	4.0			4.0			4.0	4.0	4.0		4.0		4.0	
Vehicle Extension (s)	3.0			3.0			3.0	3.0	3.0		3.0		3.0	
Lane Grp Cap (vph)	698	1597		81	1056		125	176	135		272	626		
v/s Ratio Prot	c0.16	c0.51		0.04	0.17		0.05					c0.08		
v/s Ratio Perm							c0.05		0.00		0.05	0.09		
v/c Ratio	0.73	1.05		0.67	0.52		0.43	0.39	0.03		0.25	0.39		
Uniform Delay, d1	39.5	27.8		50.4	29.7		44.3	44.1	42.2		37.0	22.1		
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.21	0.80		
Incremental Delay, d2	3.8	35.9		18.8	0.4		2.4	1.4	0.1		0.5	0.4		
Delay (s)	43.4	63.8		69.2	30.2		46.7	45.5	42.3		45.0	18.0		
Level of Service	D	E		E	C		D	D	D		D	B		
Approach Delay (s)		59.0			33.7			45.2				22.5		
Approach LOS		E			C			D				C		
<b>Intersection Summary</b>														
HCM Average Control Delay	49.2		HCM Level of Service				D							
HCM Volume to Capacity ratio	0.88													
Actuated Cycle Length (s)	109.0			Sum of lost time (s)				28.0						
Intersection Capacity Utilization	66.6%		ICU Level of Service				C							
Analysis Period (min)	15													

c Critical Lane Group

Barrio Logan CPU  
23: Logan Ave & Sampson St

Horizon Year Alt 1 with Improvements Alt 1  
Timing Plan: PM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.93		1.00	0.94		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)	1770	1739		1770	1756		1770	1806		1770	1849	
Flt Permitted	0.64	1.00		0.20	1.00		0.55	1.00		0.34	1.00	
Satd. Flow (perm)	1197	1739		367	1756		1019	1806		642	1849	
Volume (vph)	108	255	203	143	87	54	235	400	101	66	256	13
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)	117	277	221	155	95	59	255	435	110	72	278	14
RTOR Reduction (vph)	0	39	0	0	30	0	0	8	0	0	2	0
Lane Group Flow (vph)	117	459	0	155	124	0	255	537	0	72	290	0
Turn Type	Perm		Perm		Perm		Perm		Perm		Perm	
Protected Phases	4		8		8		2		6		6	
Permitted Phases	4		8		8		2		6		6	
Actuated Green, G (s)	25.4	25.4	25.4	25.4	41.7	41.7	41.7	41.7	41.7	41.7	41.7	41.7
Effective Green, g (s)	25.4	25.4	25.4	25.4	41.7	41.7	41.7	41.7	41.7	41.7	41.7	41.7
Actuated g/C Ratio	0.34	0.34	0.34	0.34	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	405	588	124	594	566	1003	356	1027				
v/s Ratio Prot	0.26		0.07		c0.30		0.16					
v/s Ratio Perm	0.10		c0.42		0.25		0.11					
v/c Ratio	0.29	0.78	1.25	0.21	0.45	0.53	0.20	0.28				
Uniform Delay, d1	18.2	22.3	24.8	17.7	9.9	10.6	8.4	8.8				
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Incremental Delay, d2	0.4	6.7	162.7	0.2	2.6	2.0	1.3	0.7				
Delay (s)	18.6	29.0	187.5	17.9	12.5	12.6	9.6	9.5				
Level of Service	B	C	F	B	B	B	A	A				
Approach Delay (s)	27.0		103.0		12.6		9.5					
Approach LOS	C		F		B		A					
<b>Intersection Summary</b>												
HCM Average Control Delay	29.7		HCM Level of Service		C							
HCM Volume to Capacity ratio	0.81											
Actuated Cycle Length (s)	75.1		Sum of lost time (s)		8.0							
Intersection Capacity Utilization	77.9%		ICU Level of Service		D							
Analysis Period (min)	15											
c Critical Lane Group												

Barrio Logan CPU  
31: Main St & 26th St

Horizon Year Alt 1 with Improvements Alt 1  
Timing Plan: PM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control	Stop		Stop		Stop		Stop		Stop		Stop	
Volume (vph)	0	194	16	49	79	0	7	0	261	28	12	8
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
Hourly flow rate (vph)	0	211	17	53	86	0	8	0	284	30	13	9
<b>Direction, Lane #</b>												
Volume Total (vph)	EB 1	WB 1	WB 2	NB 1	NB 2	SB 1						
Volume Left (vph)	228	53	86	8	284	52						
Volume Right (vph)	0	53	0	8	0	30						
Hadj (s)	17	0	0	0	284	9						
Departure Headway (s)	-0.01	1.10	0.03	0.23	-0.41	0.05						
Degree Utilization, x	4.3	5.9	4.8	5.1	3.2	4.8						
Capacity (veh/h)	0.27	0.09	0.12	0.01	0.25	0.07						
Control Delay (s)	821	591	722	656	1112	695						
Approach Delay (s)	8.9	8.3	7.3	8.1	7.3	8.2						
Approach LOS	8.9	7.7		7.3		8.2						
	A	A		A		A						
<b>Intersection Summary</b>												
Delay	8.0											
HCM Level of Service	A											
Intersection Capacity Utilization	42.2%		ICU Level of Service		A							
Analysis Period (min)	15											

Barrio Logan CPU  
32: Harbor Dr & Schley St

Horizon Year Alt 1 with Improvements Alt 1  
Timing Plan: PM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR		
Lane Configurations	↔	↔↔	↔	↔	↔↔	↔	↔	↔	↔	↔	↔	↔		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900		
Total Lost time (s)	4.0	4.0			4.0							4.0		
Lane Util. Factor	1.00	0.95			0.95							1.00		
Frbp, ped/bikes	1.00	1.00			1.00							1.00		
Flpb, ped/bikes	1.00	1.00			1.00							1.00		
Frt	1.00	1.00			0.99							0.86		
Flt Protected	0.95	1.00			1.00							1.00		
Satd. Flow (prot)	1543	3539			3506							1454		
Flt Permitted	0.95	1.00			1.00							1.00		
Satd. Flow (perm)	1543	3539			3506							1454		
Volume (vph)	83	1520	0	0	588	39	0	0	0	0	0	51		
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)	90	1652	0	0	639	42	0	0	0	0	0	55		
RTOR Reduction (vph)	0	0	0	0	4	0	0	0	0	0	0	50		
Lane Group Flow (vph)	90	1652	0	0	677	0	0	0	0	0	0	5		
Confl. Peds. (#/hr)			8	8					2	2				
Confl. Bikes (#/hr)									4			9		
Heavy Vehicles (%)	17%	2%	2%	2%	2%	2%	2%	2%	2%	2%	4%	13%		
Turn Type	Prot													
Protected Phases	13	18	2	6	14	2	6						13	
Permitted Phases														
Actuated Green, G (s)	9.8	67.5						49.7						9.8
Effective Green, g (s)	9.8	67.5						49.7						9.8
Actuated g/C Ratio	0.09	0.65						0.48						0.09
Clearance Time (s)	4.0													
Vehicle Extension (s)	3.0													
Lane Grp Cap (vph)	147	2315						1688						138
v/s Ratio Prot	0.06	c0.47						0.19						0.00
v/s Ratio Perm														
v/c Ratio	0.61	0.71						0.40						0.04
Uniform Delay, d1	44.9	11.6						17.2						42.4
Progression Factor	1.00	1.00						1.00						1.00
Incremental Delay, d2	7.3	1.1						0.2						0.1
Delay (s)	52.2	12.6						17.3						42.5
Level of Service	D	B						B						D
Approach Delay (s)	14.7							17.3	0.0					42.5
Approach LOS	B							B	A					D
<b>Intersection Summary</b>														
HCM Average Control Delay	16.0		HCM Level of Service					B						
HCM Volume to Capacity ratio	0.71													
Actuated Cycle Length (s)	103.2		Sum of lost time (s)					35.7						
Intersection Capacity Utilization	45.4%		ICU Level of Service					A						
Analysis Period (min)	15													
c Critical Lane Group														

Barrio Logan CPU  
33: National Ave & 28th St

Horizon Year Alt 1 with Improvements Alt 1  
Timing Plan: PM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0				4.0	4.0		4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00				1.00	1.00		1.00
Frt	1.00	1.00	0.85	1.00	0.95				1.00	0.85		1.00
Flt Protected	0.95	1.00	1.00	0.95	1.00				0.99	1.00		0.98
Satd. Flow (prot)	1770	3539	1583	1597	1762				1762	1509		1734
Flt Permitted	0.95	1.00	1.00	0.95	1.00				0.82	1.00		0.75
Satd. Flow (perm)	1770	3539	1583	1597	1762				1461	1509		1338
Volume (vph)	94	612	85	463	427	240	18	98	168	199	210	102
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)	102	665	92	503	464	261	20	107	183	216	228	111
RTOR Reduction (vph)	0	0	70	0	19	0	0	0	122	0	0	74
Lane Group Flow (vph)	102	665	22	503	706	0	0	127	61	0	444	37
Heavy Vehicles (%)	2%	2%	2%	13%	2%	2%	7%	7%	7%	7%	7%	7%
Turn Type	Prot		Perm		Prot		Perm		Perm		Perm	
Protected Phases	7	4			3	8			2	2		
Permitted Phases			4				2		2		6	
Actuated Green, G (s)	8.6	25.3	25.3	32.1	48.8				35.1	35.1	35.1	35.1
Effective Green, g (s)	8.6	25.3	25.3	32.1	48.8				35.1	35.1	35.1	35.1
Actuated g/C Ratio	0.08	0.24	0.24	0.31	0.47				0.34	0.34	0.34	0.34
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0							
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0							
Lane Grp Cap (vph)	146	857	383	491	823			491	507			
v/s Ratio Prot	0.06	0.19			c0.31	c0.40						
v/s Ratio Perm			0.01					0.09	0.04			
v/c Ratio	0.70	0.78	0.06	1.02	0.86				0.26	0.12	0.99	0.07
Uniform Delay, d1	46.7	37.0	30.4	36.2	24.8				25.2	24.0	34.5	23.6
Progression Factor	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00	1.00
Incremental Delay, d2	13.6	4.4	0.1	47.0	8.8				0.3	0.1	39.1	0.1
Delay (s)	60.3	41.4	30.5	83.2	33.6				25.5	24.1	73.6	23.7
Level of Service	E	D	C	F	C				C	C	E	C
Approach Delay (s)	42.5				53.9			24.7		63.6		
Approach LOS	D				D			C		E		
<b>Intersection Summary</b>												
HCM Average Control Delay	49.3		HCM Level of Service					D				
HCM Volume to Capacity ratio	0.95											
Actuated Cycle Length (s)	104.5		Sum of lost time (s)					8.0				
Intersection Capacity Utilization	81.3%		ICU Level of Service					D				
Analysis Period (min)	15											
c Critical Lane Group												



Barrio Logan CPU  
34: Boston Ave & 28th St

Horizon Year Alt 1 with Improvements Alt 1  
Timing Plan: PM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.91	
Frt	1.00	0.91		1.00	0.92		1.00	0.99		1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1687	1612		1687	1643		1770	3493		1770	4931	
Flt Permitted	0.62	1.00		0.43	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1095	1612		771	1643		1770	3493		1770	4931	
Volume (vph)	320	100	160	60	70	70	50	1050	100	250	1060	270
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)	348	109	174	65	76	76	54	1141	109	272	1152	293
RTOR Reduction (vph)	0	58	0	0	37	0	0	7	0	0	42	0
Lane Group Flow (vph)	348	225	0	65	115	0	54	1243	0	272	1403	0
Heavy Vehicles (%)	7%	7%	7%	7%	7%	7%	2%	2%	2%	2%	2%	2%
Turn Type	Perm			Perm			Prot			Prot		
Protected Phases	4		8		8		5		2		1	
Permitted Phases	4			8								
Actuated Green, G (s)	32.7	32.7		32.7	32.7		6.1	38.8		16.0	48.7	
Effective Green, g (s)	32.7	32.7		32.7	32.7		6.1	38.8		16.0	48.7	
Actuated g/C Ratio	0.33	0.33		0.33	0.33		0.06	0.39		0.16	0.49	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	360	530		253	540		109	1362		285	2413	
v/s Ratio Prot	0.14		0.07		0.03		c0.36		c0.15		0.28	
v/s Ratio Perm	c0.32			0.08								
v/c Ratio	0.97	0.42		0.26	0.21		0.50	0.91		0.95	0.58	
Uniform Delay, d1	32.9	26.1		24.5	24.1		45.2	28.7		41.4	18.1	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	38.2	0.5		0.5	0.2		3.5	10.8		40.7	1.0	
Delay (s)	71.1	26.6		25.0	24.3		48.7	39.5		82.1	19.2	
Level of Service	E	C		C	C		D	D		F	B	
Approach Delay (s)	51.1			24.5			39.9			29.1		
Approach LOS	D			C			D			C		
<b>Intersection Summary</b>												
HCM Average Control Delay	36.1			HCM Level of Service			D					
HCM Volume to Capacity ratio	0.94											
Actuated Cycle Length (s)	99.5			Sum of lost time (s)			12.0					
Intersection Capacity Utilization	85.1%			ICU Level of Service			E					
Analysis Period (min)	15											
c Critical Lane Group												

Barrio Logan CPU  
36: Harbor Dr & 28th St

Horizon Year Alt 1 with Improvements Alt 1  
Timing Plan: PM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	0.97	1.00	1.00
Frpb, ped/bikes	1.00	1.00	0.88	1.00	1.00	0.92	1.00	1.00	1.00	1.00	1.00	0.99
Flpb, ped/bikes	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	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3303	3406	1341	1719	3438	1419	1821	3367	1827	1531		
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	1.00	0.95	1.00	1.00	1.00	1.00
Satd. Flow (perm)	3303	3406	1341	1719	3438	1419	1821	3367	1827	1531		
Volume (vph)	140	1390	2	14	524	278	10	134	0	505	12	13
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)	152	1511	2	15	570	302	11	146	0	549	13	14
RTOR Reduction (vph)	0	0	1	0	0	175	0	0	0	0	0	11
Lane Group Flow (vph)	152	1511	1	15	570	127	0	157	0	549	13	3
Conf. Peds. (#/hr)	69			80			4			2		
Conf. Bikes (#/hr)	2			4			2					
Heavy Vehicles (%)	6%	6%	6%	5%	5%	5%	4%	4%	4%	4%	4%	4%
Turn Type	Prot		custom		Prot		custom		Split		Perm	
Protected Phases	11	16	2	6	15	12	2	6	13	14	14	1
Permitted Phases	16			12			15			13		
Actuated Green, G (s)	11.2	53.7	47.2	1.3	43.8	57.5	21.3	28.8	28.8	28.8		
Effective Green, g (s)	11.2	53.7	47.2	1.3	43.8	57.5	21.3	28.8	28.8	28.8		
Actuated g/C Ratio	0.08	0.39	0.34	0.01	0.32	0.42	0.16	0.21	0.21	0.21		
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		
Lane Grp Cap (vph)	270	1334	462	16	1098	595	283	707	384	322		
v/s Ratio Prot	c0.05	c0.44		0.01	0.17	0.03	c0.09	c0.16	0.01			
v/s Ratio Perm	0.00			0.06			0.00			0.00		
v/c Ratio	0.56	1.13	0.00	0.94	0.52	0.21	0.55	0.78	0.03	0.01		
Uniform Delay, d1	60.6	41.7	29.5	67.9	38.1	25.4	53.5	51.1	43.1	42.9		
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.94	0.95	1.33		
Incremental Delay, d2	2.7	69.6	0.0	191.7	0.4	0.2	2.4	5.3	0.0	0.0		
Delay (s)	63.3	111.3	29.5	259.6	38.5	25.6	55.9	53.5	41.0	57.0		
Level of Service	E	F	C	F	D	C	E	D	D	E		
Approach Delay (s)	106.8			37.8			55.9			53.3		
Approach LOS	F			D			E			D		
<b>Intersection Summary</b>												
HCM Average Control Delay	76.4			HCM Level of Service			E					
HCM Volume to Capacity ratio	0.92											
Actuated Cycle Length (s)	137.1			Sum of lost time (s)			32.0					
Intersection Capacity Utilization	77.1%			ICU Level of Service			D					
Analysis Period (min)	15											
c Critical Lane Group												

Barrio Logan CPU

Horizon Year Alt 1 with Improvements Alt 1

37: Boston Ave & I-5 SB On-ramp

Timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	⇕		⇕		⇕		⇕		⇕		⇕		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	4.0		4.0		4.0		4.0		4.0		4.0		
Lane Util. Factor	1.00		1.00		1.00		1.00		1.00		1.00		
Flt	0.99		0.93		0.98		0.98		0.98		0.98		
Flt Protected	0.97		1.00		1.00		1.00		1.00		1.00		
Satd. Flow (prot)	1709		1640		1650		1650		1650		1650		
Flt Permitted	0.97		1.00		1.00		1.00		1.00		1.00		
Satd. Flow (perm)	1709		1640		1650		1650		1650		1650		
Volume (vph)	299	153	27	20	83	118	9	332	45	0	0	0	
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)	325	166	29	22	90	128	10	361	49	0	0	0	
RTOR Reduction (vph)	0	3	0	0	55	0	0	6	0	0	0	0	
Lane Group Flow (vph)	0	517	0	0	185	0	0	414	0	0	0	0	
Heavy Vehicles (%)	7%	7%	7%	7%	7%	7%	2%	15%	2%	2%	2%	2%	
Turn Type	Split		Split		Perm		Perm		Perm		Perm		
Protected Phases	4	4	8		8	2		2		2		2	
Permitted Phases	2				2				2				
Actuated Green, G (s)	23.8		9.7		20.4		20.4		20.4		20.4		
Effective Green, g (s)	23.8		9.7		20.4		20.4		20.4		20.4		
Actuated g/C Ratio	0.36		0.15		0.31		0.31		0.31		0.31		
Clearance Time (s)	4.0		4.0		4.0		4.0		4.0		4.0		
Vehicle Extension (s)	3.0		3.0		3.0		3.0		3.0		3.0		
Lane Grp Cap (vph)	617		241		511		511		511		511		
v/s Ratio Prot	c0.30		c0.11		0.25		0.25		0.25		0.25		
v/s Ratio Perm	0.84		0.77		0.81		0.81		0.81		0.81		
v/c Ratio	19.3		27.0		21.0		21.0		21.0		21.0		
Uniform Delay, d1	1.00		1.00		1.00		1.00		1.00		1.00		
Progression Factor	9.7		13.7		9.5		9.5		9.5		9.5		
Incremental Delay, d2	29.0		40.8		30.4		30.4		30.4		30.4		
Delay (s)	C		D		C		C		C		C		
Level of Service	29.0		40.8		30.4		30.4		0.0		0.0		
Approach Delay (s)	C		D		C		C		A		A		
Approach LOS	C		D		C		C		A		A		

Intersection Summary

HCM Average Control Delay	31.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	65.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	69.6%	ICU Level of Service	C
Analysis Period (min)	15		

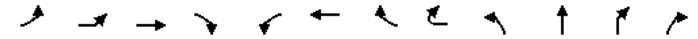
c Critical Lane Group

Barrio Logan CPU

Horizon Year Alt 1 with Improvements Alt 1

39: 32nd St & Wabash St

Timing Plan: PM Peak



Movement	EBL2	EBL	EBT	EBR	WBL	WBT	WBR	WBR2	NBL	NBT	NBR	NBR2
Lane Configurations	⇕		⇕		⇕		⇕		⇕		⇕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0		4.0		4.0		4.0		4.0	
Lane Util. Factor	1.00		1.00		1.00		1.00		1.00		0.88	
Flt	1.00		0.91		1.00		0.85		1.00		0.85	
Flt Protected	0.95		1.00		0.96		1.00		0.95		1.00	
Satd. Flow (prot)	1752		1690		1796		1568		1719		2707	
Flt Permitted	0.50		1.00		0.48		1.00		0.95		1.00	
Satd. Flow (perm)	916		1690		899		1568		1719		2707	
Volume (vph)	115	115	80	130	140	50	210	205	140	360	560	240
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)	125	125	87	141	152	54	228	223	152	391	609	261
RTOR Reduction (vph)	0	0	48	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	250	180	0	0	206	451	0	152	391	870	0
Heavy Vehicles (%)	2%	4%	2%	2%	2%	2%	2%	4%	5%	5%	5%	5%
Turn Type	Perm		Perm		Perm		Perm		Prot		custom	
Protected Phases	4		4		4		4		5		2	
Permitted Phases	4		4		4		4		2		3	
Actuated Green, G (s)	32.1		32.1		32.1		32.1		14.8		24.1	
Effective Green, g (s)	32.1		32.1		32.1		32.1		14.8		24.1	
Actuated g/C Ratio	0.28		0.28		0.28		0.28		0.13		0.21	
Clearance Time (s)	4.0		4.0		4.0		4.0		4.0		4.0	
Vehicle Extension (s)	3.0		3.0		3.0		3.0		3.0		3.0	
Lane Grp Cap (vph)	255	471	0.11		251	437	221	379	1083			
v/s Ratio Prot	0.27		0.23		c0.29		0.09		c0.22		c0.32	
v/s Ratio Perm	0.98	0.38	0.82	1.03	0.69	1.03	0.80					
v/c Ratio	41.2	33.6	38.9	41.6	48.0	45.6	30.5					
Uniform Delay, d1	1.00	1.00	1.00	1.00	1.00	1.00	1.00					
Progression Factor	50.7	0.5	18.9	51.5	8.6	54.6	4.4					
Incremental Delay, d2	91.9	34.1	57.8	93.1	56.6	100.2	34.9					
Delay (s)	F		C		E		F		E		C	
Level of Service	64.3		82.0		55.3		55.3		E		E	
Approach Delay (s)	E		F		E		E		E		E	
Approach LOS	E		F		E		E		E		E	

Intersection Summary

HCM Average Control Delay	75.4	HCM Level of Service	E
HCM Volume to Capacity ratio	1.03		
Actuated Cycle Length (s)	115.2	Sum of lost time (s)	12.0
Intersection Capacity Utilization	104.7%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Barrio Logan CPU  
39: 32nd St & Wabash St

Horizon Year Alt 1 with Improvements Alt 1  
Timing Plan: PM Peak

Movement	SBL2	SBL	SBT	SBR	SWL2	SWL	SWR	SWR2
Lane Configurations								
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0				4.0		
Lane Util. Factor	1.00	0.95				0.97		
Frt	1.00	0.99				0.95		
Flt Protected	0.95	1.00				0.97		
Satd. Flow (prot)	1767	3407				3269		
Flt Permitted	0.95	1.00				0.89		
Satd. Flow (perm)	1767	3407				3022		
Volume (vph)	35	415	380	30	10	140	55	10
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	38	451	413	33	11	152	60	11
RTOR Reduction (vph)	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	489	446	0	0	234	0	0
Heavy Vehicles (%)	4%	2%	5%	2%	4%	4%	4%	4%
Turn Type	Prot	Prot			Perm			
Protected Phases	1	1	6			3		
Permitted Phases					3			
Actuated Green, G (s)		25.0	34.3			18.0		
Effective Green, g (s)		25.0	34.3			18.0		
Actuated g/C Ratio		0.22	0.30			0.16		
Clearance Time (s)		4.0	4.0			4.0		
Vehicle Extension (s)		3.0	3.0			3.0		
Lane Grp Cap (vph)		383	1014			472		
v/s Ratio Prot		c0.28	0.13					
v/s Ratio Perm						0.08		
v/c Ratio		1.28	0.44			0.50		
Uniform Delay, d1		45.1	32.7			44.4		
Progression Factor		1.00	1.00			1.00		
Incremental Delay, d2		143.4	0.3			0.8		
Delay (s)		188.5	33.0			45.3		
Level of Service		F	C			D		
Approach Delay (s)			114.3			45.3		
Approach LOS			F			D		

Intersection Summary

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Synchro 6 Report  
3/4/2011

Kimley-Horn and Associates, Inc.

Barrio Logan CPU  
40: Harbor Dr & 32nd St

Horizon Year Alt 1 with Improvements Alt 1  
Timing Plan: PM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frbp, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.98	1.00	1.00	0.97	1.00	1.00	0.99
Flpb, ped/bikes	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	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1719	3438	1538	1687	3374	1478	1719	3438	1498	1719	3438	1523
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1719	3438	1538	1687	3374	1478	1719	3438	1498	1719	3438	1523
Volume (vph)	140	1185	100	40	436	460	70	690	140	310	280	200
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)	152	1288	109	43	474	500	76	750	152	337	304	217
RTOR Reduction (vph)	0	0	33	0	0	386	0	0	67	0	0	104
Lane Group Flow (vph)	152	1288	76	43	474	114	76	750	85	337	304	113
Confl. Bikes (#/hr)						7			12			10
Heavy Vehicles (%)	5%	5%	5%	7%	7%	7%	5%	5%	5%	5%	5%	5%
Turn Type	Prot		custom	Prot		custom	Prot		Perm	Prot		custom
Protected Phases	3	14	2	6	15	13	18	2	6	15	12	11
Permitted Phases					14					18		12
Actuated Green, G (s)	15.2	38.3	42.0	4.0	27.1	22.1	8.7	23.1	23.1	25.1	43.5	54.7
Effective Green, g (s)	15.2	38.3	42.0	4.0	27.1	22.1	8.7	23.1	23.1	25.1	43.5	54.7
Actuated g/C Ratio	0.12	0.31	0.34	0.03	0.22	0.18	0.07	0.19	0.19	0.20	0.36	0.45
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0			
Vehicle Extension (s)	3.0		3.0	3.0		3.0	3.0	3.0	3.0			
Lane Grp Cap (vph)	213	1075	527	55	746	267	122	648	282	352	1221	730
v/s Ratio Prot	c0.09	c0.37	0.01	0.03	0.14		0.04	c0.22		c0.20	0.09	0.03
v/s Ratio Perm			0.04			0.08			0.06			0.04
v/c Ratio	0.71	1.20	0.14	0.78	0.64	0.43	0.62	1.16	0.30	0.96	0.25	0.15
Uniform Delay, d1	51.6	42.1	27.8	58.8	43.2	44.6	55.3	49.7	42.7	48.2	27.9	20.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.94	0.94	1.11
Incremental Delay, d2	10.8	98.3	0.1	50.5	1.8	1.1	9.5	87.4	0.6	36.4	0.1	0.1
Delay (s)	62.3	140.4	28.0	109.3	45.0	45.7	64.8	137.1	43.3	81.4	26.3	22.4
Level of Service	E	F	C	F	D	D	E	F	D	F	C	C
Approach Delay (s)		124.9			48.1			116.9				47.0
Approach LOS		F			D			F				D

Intersection Summary

HCM Average Control Delay	90.2	HCM Level of Service	F
HCM Volume to Capacity ratio	1.11		
Actuated Cycle Length (s)	122.5	Sum of lost time (s)	32.0
Intersection Capacity Utilization	85.7%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

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Synchro 6 Report  
3/4/2011

Kimley-Horn and Associates, Inc.

Barrio Logan CPU  
42: I-5 SB off-ramp & 28th St

Horizon Year Alt 1 with Improvements Alt 1  
Timing Plan: PM Peak

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↑		↑↑	↑↑↑	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0	
Lane Util. Factor		1.00		0.95	0.91	
Flt		0.86		1.00	1.00	
Flt Protected		1.00		1.00	1.00	
Satd. Flow (prot)		1611		3539	5085	
Flt Permitted		1.00		1.00	1.00	
Satd. Flow (perm)		1611		3539	5085	
Volume (vph)	0	822	0	1440	758	0
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	893	0	1565	824	0
RTOR Reduction (vph)	0	6	0	0	0	0
Lane Group Flow (vph)	0	887	0	1565	824	0
Turn Type	custom					
Protected Phases			2 4 6		6	
Permitted Phases	4					
Actuated Green, G (s)	35.7		59.7		16.0	
Effective Green, g (s)	35.7		59.7		16.0	
Actuated g/C Ratio	0.60		1.00		0.27	
Clearance Time (s)	4.0		4.0			
Vehicle Extension (s)	3.0		3.0			
Lane Grp Cap (vph)	963		3539		1363	
v/s Ratio Prot			0.44		c0.16	
v/s Ratio Perm	c0.55					
v/c Ratio	0.92		0.44		0.60	
Uniform Delay, d1	10.7		0.0		19.1	
Progression Factor	1.00		1.00		1.00	
Incremental Delay, d2	13.7		0.1		0.8	
Delay (s)	24.4		0.1		19.9	
Level of Service	C		A		B	
Approach Delay (s)	24.4		0.1		19.9	
Approach LOS	C		A		B	
<b>Intersection Summary</b>						
HCM Average Control Delay	11.7		HCM Level of Service		B	
HCM Volume to Capacity ratio	0.82					
Actuated Cycle Length (s)	59.7		Sum of lost time (s)		8.0	
Intersection Capacity Utilization	72.2%		ICU Level of Service		C	
Analysis Period (min)	15					
c Critical Lane Group						

Barrio Logan CPU  
1: Commercial St & 16th St

Horizon Year Alt 2 without Improvements  
Timing Plan: AM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔		↔	↔			↔			↔	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0			4.0			4.0	
Lane Util. Factor		1.00		0.95	0.95			0.95			0.95	
Flpb, ped/bikes		1.00		1.00	0.99			1.00			0.98	
Flpb, ped/bikes		1.00		0.99	1.00			1.00			1.00	
Flt		0.98		1.00	0.96			0.99			0.95	
Flt Protected		1.00		0.95	1.00			1.00			1.00	
Satd. Flow (prot)		1821		1664	1686			3505			3301	
Flt Permitted		0.96		0.51	1.00			0.94			0.89	
Satd. Flow (perm)		1760		900	1686			3284			2949	
Volume (vph)	17	226	31	23	299	112	15	360	18	43	270	138
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)	18	246	34	25	325	122	16	391	20	47	293	150
RTOR Reduction (vph)	0	5	0	0	0	0	0	0	0	0	43	0
Lane Group Flow (vph)	0	293	0	25	447	0	0	427	0	0	447	0
Confl. Peds. (#/hr)			15		15		16		36		12	
Confl. Bikes (#/hr)							1					
Heavy Vehicles (%)	2%		2%		2%		2%		2%		2%	
Turn Type	Perm		Perm		Perm		Perm		Perm		Perm	
Protected Phases			4		8				2		6	
Permitted Phases	4		8		2		6					
Actuated Green, G (s)	19.5		19.5		19.5		27.4		27.4		27.4	
Effective Green, g (s)	19.5		19.5		19.5		27.4		27.4		27.4	
Actuated g/C Ratio	0.36		0.36		0.36		0.50		0.50		0.50	
Clearance Time (s)	4.0		4.0		4.0		4.0		4.0		4.0	
Vehicle Extension (s)	3.0		3.0		3.0		3.0		3.0		3.0	
Lane Grp Cap (vph)	625		320		599		1639		1472			
v/s Ratio Prot							c0.15					
v/s Ratio Perm	0.17		0.03		0.27		0.13		c0.15			
v/c Ratio	0.47		0.08		0.75		0.26		0.30			
Uniform Delay, d1	13.7		11.7		15.5		7.9		8.1			
Progression Factor	1.00		1.00		1.00		1.00		1.00			
Incremental Delay, d2	0.6		0.1		5.0		0.4		0.5			
Delay (s)	14.2		11.8		20.6		8.3		8.6			
Level of Service	B		B		C		A		A			
Approach Delay (s)	14.2		20.1		8.3		8.6					
Approach LOS	B		C		A		A					
<b>Intersection Summary</b>												
HCM Average Control Delay	12.8		HCM Level of Service		B							
HCM Volume to Capacity ratio	0.49											
Actuated Cycle Length (s)	54.9		Sum of lost time (s)		8.0							
Intersection Capacity Utilization	82.6%		ICU Level of Service		E							
Analysis Period (min)	15											
c Critical Lane Group												

Barrio Logan CPU  
1: Commercial St & 16th St

Horizon Year Alt 2 without Improvements  
Timing Plan: AM Peak

Movement	SWR
Lane Configurations	7
Ideal Flow (vphpl)	1900
Total Lost time (s)	
Lane Util. Factor	
Frbp, ped/bikes	
Flpb, ped/bikes	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Volume (vph)	0
Peak-hour factor, PHF	0.92
Adj. Flow (vph)	0
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Heavy Vehicles (%)	2%
Turn Type	custom
Protected Phases	9
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	
<b>Intersection Summary</b>	

Barrio Logan CPU  
2: National Ave & 16th St

Horizon Year Alt 2 without Improvements  
Timing Plan: AM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↕		↕	↕			↕↕				↕↕
Sign Control		Free			Free			Stop				Stop
Grade		0%			0%			0%				0%
Volume (veh/h)	40	194	40	3	495	34	40	34	12	65	36	91
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
Hourly flow rate (vph)	43	211	43	3	538	37	43	37	13	71	39	99
Pedestrians		7			14			16				19
Lane Width (ft)		12.0			12.0			12.0				12.0
Walking Speed (ft/s)		4.0			4.0			4.0				4.0
Percent Blockage		1			1			1				2
Right turn flare (veh)												
Median type								None				None
Median storage (veh)					668							
Upstream signal (ft)												
pX, platoon unblocked	0.92						0.92	0.92		0.92	0.92	0.92
vC, conflicting volume	594			270			1006	936	157	820	939	583
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	558			270			1006	930	157	804	934	545
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	95			100			61	84	98	64	83	77
cM capacity (veh/h)	912			1273			111	225	839	198	224	433
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>EB 2</b>	<b>WB 1</b>	<b>WB 2</b>	<b>NB 1</b>	<b>SB 1</b>						
Volume Total	149	149	3	575	93	209						
Volume Left	43	0	3	0	43	71						
Volume Right	0	43	0	37	13	99						
cSH	912	1700	1273	1700	163	275						
Volume to Capacity	0.05	0.09	0.00	0.34	0.57	0.76						
Queue Length 95th (ft)	4	0	0	0	75	141						
Control Delay (s)	3.0	0.0	7.8	0.0	53.1	50.0						
Lane LOS	A		A		F	E						
Approach Delay (s)	1.5		0.0		53.1	50.0						
Approach LOS					F	E						
<b>Intersection Summary</b>												
Average Delay				13.5								
Intersection Capacity Utilization				57.7%			ICU Level of Service			B		
Analysis Period (min)				15								

Barrio Logan CPU  
3: National Ave & Sigsbee St

Horizon Year Alt 2 without Improvements  
Timing Plan: AM Peak

	←		→		↙		↘		↖		↗	
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
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
Frbp, ped/bikes	1.00	0.99	1.00	1.00	1.00	1.00	0.99	0.99	0.98	1.00	0.98	1.00
Flpb, ped/bikes	0.99	1.00	0.98	1.00	1.00	1.00	0.99	0.99	0.99	1.00	0.98	1.00
Frt	1.00	0.96	1.00	0.99	1.00	1.00	0.95	0.95	0.93	1.00	0.93	1.00
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00	0.98	0.98	0.99	1.00	0.99	1.00
Satd. Flow (prot)	1754	1774	1741	1832	1832	1832	1703	1703	1693	1832	1693	1832
Flt Permitted	0.40	1.00	0.63	1.00	1.00	1.00	0.84	0.84	0.96	1.00	0.96	1.00
Satd. Flow (perm)	747	1774	1146	1832	1832	1832	1457	1457	1629	1832	1629	1832
Volume (vph)	11	146	49	19	377	36	65	26	58	16	40	60
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)	12	159	53	21	410	39	71	28	63	17	43	65
RTOR Reduction (vph)	0	19	0	0	5	0	0	36	0	0	42	0
Lane Group Flow (vph)	12	193	0	21	444	0	0	126	0	0	83	0
Confl. Peds. (#/hr)	21		25	25		21	37		14	14		37
Confl. Bikes (#/hr)						3			3			1
Turn Type	Perm		Perm		Perm		Perm		Perm		Perm	
Protected Phases		4		8		8		2		6		6
Permitted Phases	4		8		8		2		6		6	
Actuated Green, G (s)	14.2	14.2	14.2	14.2	14.2	14.2	12.4	12.4	12.4	12.4	12.4	12.4
Effective Green, g (s)	14.2	14.2	14.2	14.2	14.2	14.2	12.4	12.4	12.4	12.4	12.4	12.4
Actuated g/C Ratio	0.41	0.41	0.41	0.41	0.41	0.41	0.36	0.36	0.36	0.36	0.36	0.36
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	307	728	470	752	752	752	522	522	584	584	584	584
v/s Ratio Prot		0.11		c0.24		c0.24		c0.09		c0.09		0.05
v/s Ratio Perm	0.02		0.02		0.02		c0.09		c0.09		0.05	
v/c Ratio	0.04	0.27	0.04	0.59	0.59	0.59	0.24	0.24	0.14	0.14	0.14	0.14
Uniform Delay, d1	6.1	6.7	6.1	7.9	7.9	7.9	7.8	7.8	7.5	7.5	7.5	7.5
Progression Factor	1.00	1.00	34.6	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	0.2	0.0	1.2	1.2	1.2	0.2	0.2	0.1	0.1	0.1	0.1
Delay (s)	6.2	6.9	6.2	9.2	9.2	9.2	8.0	8.0	7.6	7.6	7.6	7.6
Level of Service	A	A	A	A	A	A	A	A	A	A	A	A
Approach Delay (s)		6.9		9.0	9.0	9.0	8.0	8.0	7.6	7.6	7.6	7.6
Approach LOS		A		A	A	A	A	A	A	A	A	A

Intersection Summary		
HCM Average Control Delay	8.2	HCM Level of Service A
HCM Volume to Capacity ratio	0.43	
Actuated Cycle Length (s)	34.6	Sum of lost time (s) 8.0
Intersection Capacity Utilization	45.9%	ICU Level of Service A
Analysis Period (min)	15	
c Critical Lane Group		

Barrio Logan CPU  
4: Newton Ave & Sigsbee St

Horizon Year Alt 2 without Improvements  
Timing Plan: AM Peak

	←		→		↙		↘		↖		↗	
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	6	48	19	15	80	51	24	111	34	33	79	17
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
Hourly flow rate (vph)	7	52	21	16	87	55	26	121	37	36	86	18
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	79	159	184	140								
Volume Left (vph)	7	16	26	36								
Volume Right (vph)	21	55	37	18								
Hadj (s)	-0.11	-0.16	-0.06	0.01								
Departure Headway (s)	4.8	4.6	4.6	4.7								
Degree Utilization, x	0.11	0.20	0.23	0.18								
Capacity (veh/h)	687	721	739	714								
Control Delay (s)	8.3	8.8	9.0	8.8								
Approach Delay (s)	8.3	8.8	9.0	8.8								
Approach LOS	A	A	A	A								

Intersection Summary		
Delay	8.8	
HCM Level of Service	A	
Intersection Capacity Utilization	31.7%	ICU Level of Service A
Analysis Period (min)	15	

Barrio Logan CPU  
5: Main St & Sigsbee St  
Horizon Year Alt 2 without Improvements  
Timing Plan: AM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↕				↕						↕	
Sign Control	Stop			Stop			Stop			Stop		
Volume (vph)	3	8	6	31	8	61	5	97	24	31	96	3
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
Hourly flow rate (vph)	3	9	7	34	9	66	5	105	26	34	104	3
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>WB 1</b>	<b>NB 1</b>	<b>SB 1</b>								
Volume Total (vph)	18	109	137	141								
Volume Left (vph)	3	34	5	34								
Volume Right (vph)	7	66	26	3								
Hadj (s)	-0.14	-0.27	-0.07	0.07								
Departure Headway (s)	4.5	4.3	4.3	4.4								
Degree Utilization, x	0.02	0.13	0.16	0.17								
Capacity (veh/h)	731	782	808	780								
Control Delay (s)	7.6	7.9	8.1	8.3								
Approach Delay (s)	7.6	7.9	8.1	8.3								
Approach LOS	A	A	A	A								
<b>Intersection Summary</b>												
Delay				8.1								
HCM Level of Service				A								
Intersection Capacity Utilization	33.8%			ICU Level of Service	A							
Analysis Period (min)				15								

Barrio Logan CPU  
6: Harbor Dr & Sigsbee St  
Horizon Year Alt 2 without Improvements  
Timing Plan: AM Peak

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↕	↕	↕	↕	↕	↕
Sign Control	Free		Free		Stop	
Grade	0%		0%		0%	
Volume (veh/h)	60	460	1650	20	100	100
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	65	500	1793	22	109	109
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	Raised					
Median storage (veh)	0					
Upstream signal (ft)	1319					
pX, platoon unblocked	0.75			0.75	0.75	
vC, conflicting volume	1815			2185	908	
vC1, stage 1 conf vol					1804	
vC2, stage 2 conf vol					380	
vCu, unblocked vol	1753			2247	538	
tC, single (s)	4.1			6.8	6.9	
tC, 2 stage (s)					5.8	
tF (s)	2.2			3.5	3.3	
p0 queue free %	75			0	70	
cM capacity (veh/h)	264			58	364	
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>EB 2</b>	<b>EB 3</b>	<b>WB 1</b>	<b>WB 2</b>	<b>SB 1</b>
Volume Total	65	250	250	1196	620	217
Volume Left	65	0	0	0	0	109
Volume Right	0	0	0	0	22	109
cSH	264	1700	1700	1700	1700	99
Volume to Capacity	0.25	0.15	0.15	0.70	0.36	2.19
Queue Length 95th (ft)	24	0	0	0	0	476
Control Delay (s)	23.0	0.0	0.0	0.0	0.0	635.7
Lane LOS	C					F
Approach Delay (s)	2.7			0.0		635.7
Approach LOS						F
<b>Intersection Summary</b>						
Average Delay			53.8			
Intersection Capacity Utilization	68.2%		ICU Level of Service	C		
Analysis Period (min)			15			

Barrio Logan CPU  
7: Logan Ave & Beardsley St

Horizon Year Alt 2 without Improvements  
Timing Plan: AM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↕		↕		↕		↕		↕		↕	
Sign Control	Stop		Stop		Stop		Stop		Stop		Stop	
Volume (vph)	0	175	24	88	209	0	30	0	69	264	233	47
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
Hourly flow rate (vph)	0	190	26	96	227	0	33	0	75	287	253	51
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>WB 1</b>	<b>WB 2</b>	<b>NB 1</b>	<b>SB 1</b>							
Volume Total (vph)	216	96	227	108	591							
Volume Left (vph)	0	96	0	33	287							
Volume Right (vph)	26	0	0	75	51							
Hadj (s)	-0.04	0.53	0.03	-0.32	0.08							
Departure Headway (s)	7.0	7.8	7.3	6.8	6.0							
Degree Utilization, x	0.42	0.21	0.46	0.20	0.99							
Capacity (veh/h)	506	453	488	501	596							
Control Delay (s)	15.0	11.7	15.2	11.5	57.4							
Approach Delay (s)	15.0	14.2	11.5		57.4							
Approach LOS	C	B	B		F							
<b>Intersection Summary</b>												
Delay	34.8											
HCM Level of Service	D											
Intersection Capacity Utilization	61.9%		ICU Level of Service		B							
Analysis Period (min)	15											

Barrio Logan CPU  
8: National Ave & Beardsley St

Horizon Year Alt 2 without Improvements  
Timing Plan: AM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↕		↕		↕		↕		↕		↕	
Sign Control	Stop		Stop		Stop		Stop		Stop		Stop	
Volume (vph)	8	243	8	239	432	66	4	30	50	213	138	23
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
Hourly flow rate (vph)	9	264	9	260	470	72	4	33	54	232	150	25
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>EB 2</b>	<b>WB 1</b>	<b>WB 2</b>	<b>NB 1</b>	<b>SB 1</b>						
Volume Total (vph)	9	273	260	541	91	407						
Volume Left (vph)	9	0	260	0	4	232						
Volume Right (vph)	0	9	0	72	54	25						
Hadj (s)	0.53	0.01	0.53	-0.06	-0.31	0.11						
Departure Headway (s)	8.2	7.7	7.6	7.0	7.6	6.9						
Degree Utilization, x	0.02	0.58	0.55	1.05	0.19	0.78						
Capacity (veh/h)	419	448	466	519	418	407						
Control Delay (s)	10.2	19.5	18.3	80.0	12.5	30.3						
Approach Delay (s)	19.2	60.0		12.5	30.3							
Approach LOS	C	F		B	D							
<b>Intersection Summary</b>												
Delay	42.4											
HCM Level of Service	E											
Intersection Capacity Utilization	67.8%		ICU Level of Service		C							
Analysis Period (min)	15											



Barrio Logan CPU  
9: Newton Ave & Beardsley St  
Horizon Year Alt 2 without Improvements  
Timing Plan: AM Peak

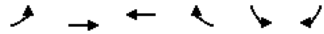
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↕				↕				↕			
Sign Control	Stop				Stop				Stop			
Volume (vph)	18	74	9	29	82	15	13	23	19	56	156	41
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	20	80	10	32	89	16	14	25	21	61	170	45
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	110	137	60	275								
Volume Left (vph)	20	32	14	61								
Volume Right (vph)	10	16	21	45								
Hadj (s)	0.02	0.01	-0.13	-0.02								
Departure Headway (s)	4.9	4.9	4.7	4.6								
Degree Utilization, x	0.15	0.19	0.08	0.35								
Capacity (veh/h)	675	684	699	745								
Control Delay (s)	8.8	9.0	8.2	10.0								
Approach Delay (s)	8.8	9.0	8.2	10.0								
Approach LOS	A	A	A	B								
<b>Intersection Summary</b>												
Delay	9.4											
HCM Level of Service	A											
Intersection Capacity Utilization	38.0%			ICU Level of Service	A							
Analysis Period (min)	15											

Barrio Logan CPU  
10: Main St & Beardsley St  
Horizon Year Alt 2 without Improvements  
Timing Plan: AM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↕				↕				↕			
Sign Control	Stop				Stop				Stop			
Volume (vph)	15	74	4	163	109	76	2	8	52	275	57	52
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
Hourly flow rate (vph)	16	80	4	177	118	83	2	9	57	299	62	57
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	101	378	67	417								
Volume Left (vph)	16	177	2	299								
Volume Right (vph)	4	83	57	57								
Hadj (s)	0.04	0.00	-0.46	0.10								
Departure Headway (s)	6.0	5.5	5.6	5.5								
Degree Utilization, x	0.17	0.58	0.10	0.64								
Capacity (veh/h)	528	623	545	626								
Control Delay (s)	10.2	15.7	9.2	17.6								
Approach Delay (s)	10.2	15.7	9.2	17.6								
Approach LOS	B	C	A	C								
<b>Intersection Summary</b>												
Delay	15.5											
HCM Level of Service	C											
Intersection Capacity Utilization	61.3%			ICU Level of Service	B							
Analysis Period (min)	15											

Barrio Logan CPU  
11: Harbor Dr & Beardsley St

Horizon Year Alt 2 without Improvements  
Timing Plan: AM Peak



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↔	↕↕	↕↕		↕	
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	22	560	1580	30	48	90
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	24	609	1717	33	52	98
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					Raised	
Median storage (veh)					0	
Upstream signal (ft)			658			
pX, platoon unblocked	0.73				0.73	0.73
vC, conflicting volume	1750				2086	875
vC1, stage 1 conf vol					1734	
vC2, stage 2 conf vol					352	
vCu, unblocked vol	1655				2118	449
tC, single (s)	4.3				6.8	6.9
tC, 2 stage (s)					5.8	
tF (s)	2.3				3.5	3.3
p0 queue free %	91				20	76
cM capacity (veh/h)	255				65	404

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1
Volume Total	24	304	304	1145	605	150
Volume Left	24	0	0	0	0	52
Volume Right	0	0	0	0	33	98
cSH	255	1700	1700	1700	1700	144
Volume to Capacity	0.09	0.18	0.18	0.67	0.36	1.04
Queue Length 95th (ft)	8	0	0	0	0	197
Control Delay (s)	20.6	0.0	0.0	0.0	0.0	147.1
Lane LOS	C					F
Approach Delay (s)	0.8			0.0		147.1
Approach LOS						F

Intersection Summary						
Average Delay		8.9				
Intersection Capacity Utilization		59.5%		ICU Level of Service	B	
Analysis Period (min)		15				

Barrio Logan CPU  
12: Kearney St & Cesar E. Chavez Pkwy

Horizon Year Alt 2 without Improvements  
Timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↔	↕↕		↔	↕			↕↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor				0.95	0.95		1.00	1.00		0.95	0.95	
Flt				1.00	0.94		1.00	1.00		0.99	0.99	
Flt Protected				0.95	0.99		0.95	1.00		1.00	1.00	
Satd. Flow (prot)				1478	1460		1626	1712		3209	3209	
Flt Permitted				0.95	0.99		0.95	1.00		1.00	1.00	
Satd. Flow (perm)				1478	1460		1626	1712		3209	3209	
Volume (vph)	0	0	0	615	278	205	257	259	0	0	353	34
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)	0	0	0	668	302	223	279	282	0	0	384	37
RTOR Reduction (vph)	0	0	0	0	22	0	0	0	0	0	9	0
Lane Group Flow (vph)	0	0	0	585	586	0	279	282	0	0	412	0
Heavy Vehicles (%)	16%	16%	16%	16%	16%	16%	11%	11%	11%	11%	11%	11%
Turn Type				Split			Split					
Protected Phases				8	8		6	6				2
Permitted Phases												
Actuated Green, G (s)				27.7	27.7		16.7	16.7				15.6
Effective Green, g (s)				27.7	27.7		16.7	16.7				15.6
Actuated g/C Ratio				0.38	0.38		0.23	0.23				0.22
Clearance Time (s)				4.0	4.0		4.0	4.0				4.0
Vehicle Extension (s)				3.0	3.0		3.0	3.0				3.0
Lane Grp Cap (vph)				569	562		377	397				695
v/s Ratio Prot				0.40	c0.40		c0.17	0.16				c0.13
v/s Ratio Perm												
v/c Ratio				1.03	1.04		0.74	0.71				0.59
Uniform Delay, d1				22.2	22.2		25.6	25.4				25.3
Progression Factor				1.00	1.00		1.00	1.00				1.00
Incremental Delay, d2				45.1	49.5		7.6	5.9				1.4
Delay (s)				67.3	71.6		33.2	31.3				26.7
Level of Service				E	E		C	C				C
Approach Delay (s)		0.0			69.5			32.3				26.7
Approach LOS		A			E			C				C

Intersection Summary			
HCM Average Control Delay	51.6	HCM Level of Service	D
HCM Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	72.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	65.7%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Barrio Logan CPU  
13: Logan Ave & Cesar E. Chavez Pkwy  
Horizon Year Alt 2 without Improvements  
Timing Plan: AM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00	0.95
Frbp, ped/bikes	1.00	0.99		1.00	1.00	0.97	1.00	1.00	0.97	1.00	1.00	1.00
Flpb, ped/bikes	0.99	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.96		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1759	1770		1762	1863	1544	1530	3059	1328	1530	3004	
Flt Permitted	0.28	1.00		0.18	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	526	1770		333	1863	1544	1530	3059	1328	1530	3004	
Volume (vph)	140	300	120	100	350	76	100	300	300	70	818	80
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)	152	326	130	109	380	83	109	326	326	76	889	87
RTOR Reduction (vph)	0	20	0	0	0	59	0	0	197	0	8	0
Lane Group Flow (vph)	152	436	0	109	380	24	109	326	129	76	968	0
Confl. Peds. (#/hr)	15		13	13		15			17			39
Confl. Bikes (#/hr)			4									2
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	18%	18%	18%	18%	18%	18%
Turn Type	Perm			Perm		Perm	Prot		Perm	Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8		8		2				
Actuated Green, G (s)	23.6	23.6		23.6	23.6	23.6	6.5	31.7	31.7	12.7	37.9	
Effective Green, g (s)	23.6	23.6		23.6	23.6	23.6	6.5	31.7	31.7	12.7	37.9	
Actuated g/C Ratio	0.30	0.30		0.30	0.30	0.30	0.08	0.40	0.40	0.16	0.47	
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	155	522		98	550	455	124	1212	526	243	1423	
v/s Ratio Prot		0.25			0.20		c0.07	0.11		0.05	c0.32	
v/s Ratio Perm	0.29			c0.33		0.02		0.10				
v/c Ratio	0.98	0.83		1.11	0.69	0.05	0.88	0.27	0.25	0.31	0.68	
Uniform Delay, d1	28.0	26.4		28.2	25.0	20.2	36.4	16.3	16.2	29.8	16.3	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	0.67	0.28	1.00	1.00	
Incremental Delay, d2	66.2	11.0		124.4	3.7	0.0	38.1	0.4	0.9	0.7	2.6	
Delay (s)	94.2	37.4		152.6	28.7	20.3	74.5	11.4	5.4	30.5	19.0	
Level of Service	F	D		F	C	C	E	B	A	C	B	
Approach Delay (s)		51.6			51.1			17.9			19.8	
Approach LOS		D			D			B			B	

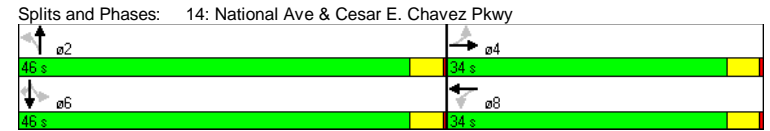
Intersection Summary			
HCM Average Control Delay	31.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	73.9%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Barrio Logan CPU  
14: National Ave & Cesar E. Chavez Pkwy  
Horizon Year Alt 2 without Improvements  
Timing Plan: AM Peak

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔
Volume (vph)	190	250	120	350	100	570	60	765	310
Turn Type	Perm		Perm		Perm		Perm		Perm
Protected Phases		4		8		2		6	6
Permitted Phases	4		8		2		6		6
Detector Phases	4	4	8	8	2	2	6	6	6
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	31.0	31.0	34.0	34.0	27.0	27.0	27.0	27.0	27.0
Total Split (s)	34.0	34.0	34.0	34.0	46.0	46.0	46.0	46.0	46.0
Total Split (%)	42.5%	42.5%	42.5%	42.5%	57.5%	57.5%	57.5%	57.5%	57.5%
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)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Lead/Lag									
Lead-Lag Optimize?									
Recall Mode	None	None	None	None	C-Min	C-Min	C-Min	C-Min	C-Min
Act Effct Green (s)	30.0	30.0	30.0	30.0	42.0	42.0	42.0	42.0	42.0
Actuated g/C Ratio	0.38	0.38	0.38	0.38	0.52	0.52	0.52	0.52	0.52
v/c Ratio	1.25	0.70	0.72	0.73	1.09	0.40	0.22	0.98	0.39
Control Delay	182.0	25.0	47.0	27.8	141.0	9.9	4.8	36.6	1.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3
Total Delay	182.0	25.0	47.0	27.8	141.0	9.9	4.8	36.6	1.5
LOS	F	C	D	C	F	A	A	D	A
Approach Delay		72.4		31.8		28.1		25.3	
Approach LOS		E		C		C		C	

Intersection Summary	
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 76 (95%), Referenced to phase 2:NBT and 6:SBTL, Start of Green	
Natural Cycle: 75	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.25	
Intersection Signal Delay: 36.9	Intersection LOS: D
Intersection Capacity Utilization 94.8%	ICU Level of Service F
Analysis Period (min) 15	



Barrio Logan CPU  
14: National Ave & Cesar E. Chavez Pkwy  
Horizon Year Alt 2 without Improvements  
Timing Plan: AM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↕	↔	↔	↕	↔	↔	↕	↔	↔	↕	↔
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	1.00	1.00
Frt	1.00	0.94		1.00	0.96		1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	1742		1770	1796		1612	3184		1530	1610	1369
Flt Permitted	0.24	1.00		0.26	1.00		0.11	1.00		0.35	1.00	1.00
Satd. Flow (perm)	440	1742		482	1796		190	3184		556	1610	1369
Volume (vph)	190	250	190	120	350	110	100	570	50	60	765	310
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)	207	272	207	130	380	120	109	620	54	65	832	337
RTOR Reduction (vph)	0	34	0	0	14	0	0	8	0	0	0	139
Lane Group Flow (vph)	207	445	0	130	486	0	109	666	0	65	832	198
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	12%	12%	12%	18%	18%	18%
Turn Type	Perm			Perm			Perm			Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		6
Actuated Green, G (s)	30.0	30.0		30.0	30.0		42.0	42.0		42.0	42.0	42.0
Effective Green, g (s)	30.0	30.0		30.0	30.0		42.0	42.0		42.0	42.0	42.0
Actuated g/C Ratio	0.38	0.38		0.38	0.38		0.52	0.52		0.52	0.52	0.52
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	165	653		181	674		100	1672		292	845	719
v/s Ratio Prot		0.26			0.27			0.21			0.52	
v/s Ratio Perm	c0.47			0.27			c0.57			0.12		0.14
v/c Ratio	1.25	0.68		0.72	0.72		1.09	0.40		0.22	0.98	0.28
Uniform Delay, d1	25.0	21.0		21.4	21.4		19.0	11.4		10.2	18.7	10.5
Progression Factor	1.00	1.00		1.00	1.00		0.84	0.81		0.32	0.50	0.11
Incremental Delay, d2	154.4	2.9		12.8	3.8		115.8	0.7		1.4	23.8	0.7
Delay (s)	179.4	23.9		34.1	25.2		131.7	10.0		4.6	33.1	1.9
Level of Service	F	C		C	C		F	A		A	C	A
Approach Delay (s)		70.8			27.1			26.9			23.1	
Approach LOS		E			C			C			C	

Intersection Summary			
HCM Average Control Delay	34.6	HCM Level of Service	C
HCM Volume to Capacity ratio	1.16		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	94.8%	ICU Level of Service	F
Analysis Period (min)	15		

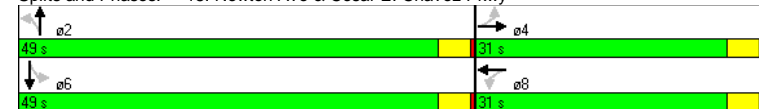
c Critical Lane Group

Barrio Logan CPU  
15: Newton Ave & Cesar E. Chavez Pkwy  
Horizon Year Alt 2 without Improvements  
Timing Plan: AM Peak

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	↔	↕	↔	↕	↔	↕	↔	↕
Volume (vph)	80	40	40	50	40	420	100	825
Turn Type	Perm		Perm		Perm		Perm	
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	6
Detector Phases	4	4	8	8	2	2	6	6
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	31.0	31.0	31.0	31.0	27.0	27.0	27.0	27.0
Total Split (s)	31.0	31.0	31.0	31.0	49.0	49.0	49.0	49.0
Total Split (%)	38.8%	38.8%	38.8%	38.8%	61.3%	61.3%	61.3%	61.3%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	None	None	None	C-Min	C-Min	C-Min	C-Min
Act Effct Green (s)	10.3	10.3	10.3	10.3	64.4	64.4	64.4	64.4
Actuated g/C Ratio	0.13	0.13	0.13	0.13	0.80	0.80	0.80	0.80
v/c Ratio	0.54	0.39	0.26	0.46	0.35	0.19	0.18	0.79
Control Delay	44.1	18.5	33.8	19.7	9.9	1.3	2.1	6.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.9
Total Delay	44.1	18.5	33.8	19.7	9.9	1.3	2.1	8.3
LOS	D	B	C	B	A	A	A	A
Approach Delay		29.9		23.2		2.0		7.7
Approach LOS		C		C		A		A

Intersection Summary			
Cycle Length: 80			
Actuated Cycle Length: 80			
Offset: 1 (1%), Referenced to phase 2:NBT and 6:SBTL, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.79			
Intersection Signal Delay: 9.6		Intersection LOS: A	
Intersection Capacity Utilization 77.0%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 15: Newton Ave & Cesar E. Chavez Pkwy



Barrio Logan CPU  
15: Newton Ave & Cesar E. Chavez Pkwy  
Horizon Year Alt 2 without Improvements  
Timing Plan: AM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔		↔		↔		↔		↔		↔	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	1.00	
Frt	1.00	0.91		1.00	0.91		1.00	0.99		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)	1770	1695		1770	1699		1612	3191		1612	1657	
Flt Permitted	0.56	1.00		0.65	1.00		0.19	1.00		0.47	1.00	
Satd. Flow (perm)	1049	1695		1208	1699		324	3191		803	1657	
Volume (vph)	80	40	60	40	50	70	40	420	30	100	825	150
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)	87	43	65	43	54	76	43	457	33	109	897	163
RTOR Reduction (vph)	0	58	0	0	67	0	0	3	0	0	4	0
Lane Group Flow (vph)	87	50	0	43	63	0	43	487	0	109	1056	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	12%	12%	12%	12%	12%	12%
Turn Type	Perm		Perm		Perm		Perm		Perm		Perm	
Protected Phases	4		8		8		2		6		6	
Permitted Phases	4		8		2		6		6		6	
Actuated Green, G (s)	9.2	9.2		9.2	9.2		62.8	62.8		62.8	62.8	
Effective Green, g (s)	9.2	9.2		9.2	9.2		62.8	62.8		62.8	62.8	
Actuated g/C Ratio	0.12	0.12		0.12	0.12		0.78	0.78		0.78	0.78	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	121	195		139	195		254	2505		630	1301	
v/s Ratio Prot		0.03			0.04			0.15			c0.64	
v/s Ratio Perm	c0.08		0.04		0.13		0.14		0.17		0.81	
v/c Ratio	0.72	0.26		0.31	0.32		0.17	0.19		0.17	0.81	
Uniform Delay, d1	34.2	32.3		32.5	32.5		2.1	2.2		2.1	5.1	
Progression Factor	1.00	1.00		1.00	1.00		0.57	0.45		0.57	0.41	
Incremental Delay, d2	18.4	0.7		1.3	1.0		1.2	0.1		0.2	2.4	
Delay (s)	52.6	33.0		33.8	33.5		2.4	1.1		1.5	4.5	
Level of Service	D	C		C	C		A	A		A	A	
Approach Delay (s)	41.7		33.6		1.2		4.2		A		A	
Approach LOS	D		C		A		A		A		A	

Intersection Summary			
HCM Average Control Delay	9.4	HCM Level of Service	A
HCM Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	77.0%	ICU Level of Service	D
Analysis Period (min)	15		

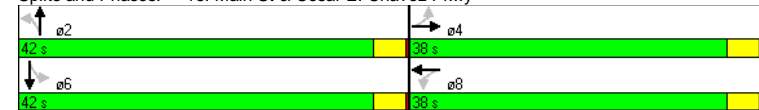
c Critical Lane Group

Barrio Logan CPU  
16: Main St & Cesar E. Chavez Pkwy  
Horizon Year Alt 2 without Improvements  
Timing Plan: AM Peak

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	↔		↔		↔		↔	
Volume (vph)	150	190	70	350	85	340	150	580
Turn Type	Perm		Perm		Perm		Perm	
Protected Phases	4		8		2		6	
Permitted Phases	4		8		2		6	
Detector Phases	4	4	8	8	2	2	6	6
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	31.0	31.0	31.0	31.0	27.0	27.0	27.0	27.0
Total Split (s)	38.0	38.0	38.0	38.0	42.0	42.0	42.0	42.0
Total Split (%)	47.5%	47.5%	47.5%	47.5%	52.5%	52.5%	52.5%	52.5%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Lead/Lag	Lead-Lag Optimize?							
Recall Mode	None	None	None	None	C-Min	C-Min	C-Min	C-Min
Act Effct Green (s)	34.0	34.0	34.0	34.0	38.0	38.0	38.0	38.0
Actuated g/C Ratio	0.42	0.42	0.42	0.42	0.48	0.48	0.48	0.48
v/c Ratio	1.01	0.28	0.17	0.77	1.12	0.32	0.47	1.12
Control Delay	103.1	15.9	15.6	26.5	165.3	12.0	13.2	84.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.5	0.0	29.2
Total Delay	103.1	15.9	15.6	26.5	165.3	12.6	13.2	114.0
LOS	F	B	B	C	F	B	B	F
Approach Delay	52.7		25.2		37.7		97.7	
Approach LOS	D		C		D		F	

Intersection Summary			
Cycle Length: 80			
Actuated Cycle Length: 80			
Offset: 13 (16%), Referenced to phase 2:NBT and 6:SBTL, Start of Green			
Natural Cycle: 65			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.12			
Intersection Signal Delay: 59.8		Intersection LOS: E	
Intersection Capacity Utilization 100.5%		ICU Level of Service G	
Analysis Period (min) 15			

Splits and Phases: 16: Main St & Cesar E. Chavez Pkwy



Barrio Logan CPU  
16: Main St & Cesar E. Chavez Pkwy

Horizon Year Alt 2 without Improvements  
Timing Plan: AM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔		↔	↔		↔	↔	↔	↔	↔	↔
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	1.00	
Frbp, ped/bikes	1.00	1.00		1.00	0.98		1.00	0.99		1.00	0.98	
Flpb, ped/bikes	0.99	1.00		0.99	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	0.95		1.00	0.97		1.00	0.96	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1752	1839		1750	1736		1556	2996		1549	1550	
Flt Permitted	0.21	1.00		0.57	1.00		0.11	1.00		0.45	1.00	
Satd. Flow (perm)	378	1839		1056	1736		172	2996		733	1550	
Volume (vph)	150	190	15	70	350	190	85	340	90	150	580	195
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)	163	207	16	76	380	207	92	370	98	163	630	212
RTOR Reduction (vph)	0	3	0	0	25	0	0	30	0	0	15	0
Lane Group Flow (vph)	163	220	0	76	562	0	92	438	0	163	827	0
Confl. Peds. (#/hr)	38		18	18		38	26		5	5		26
Confl. Bikes (#/hr)			2			1			1			2
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	16%	16%	16%	16%	16%	16%
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	34.0	34.0		34.0	34.0		38.0	38.0		38.0	38.0	
Effective Green, g (s)	34.0	34.0		34.0	34.0		38.0	38.0		38.0	38.0	
Actuated g/C Ratio	0.42	0.42		0.42	0.42		0.48	0.48		0.48	0.48	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	161	782		449	738		82	1423		348	736	
v/s Ratio Prot		0.12			0.32			0.15			0.53	
v/s Ratio Perm	c0.43			0.07			c0.53			0.22		
v/c Ratio	1.01	0.28		0.17	0.76		1.12	0.31		0.47	1.12	
Uniform Delay, d1	23.0	15.0		14.3	19.6		21.0	12.9		14.2	21.0	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		0.68	0.71	
Incremental Delay, d2	74.2	0.2		0.2	4.7		136.2	0.6		2.9	67.4	
Delay (s)	97.2	15.2		14.4	24.2		157.2	13.5		12.5	82.3	
Level of Service	F	B		B	C		F	B		B	F	
Approach Delay (s)		49.8			23.1			37.1			71.0	
Approach LOS		D			C			D			E	
<b>Intersection Summary</b>												
HCM Average Control Delay	48.5		HCM Level of Service			D						
HCM Volume to Capacity ratio	1.07											
Actuated Cycle Length (s)	80.0		Sum of lost time (s)			8.0						
Intersection Capacity Utilization	100.5%		ICU Level of Service			G						
Analysis Period (min)	15											
c Critical Lane Group												

Barrio Logan CPU  
17: Harbor Dr & Cesar E. Chavez Pkwy

Horizon Year Alt 2 without Improvements  
Timing Plan: AM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔		↔	↔		↔	↔	↔	↔	↔	↔
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frbp, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.99		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	0.99		1.00	0.90		1.00	0.85	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1641	3224		1421	3232		1363	1218		1599	1372	
Flt Permitted	0.95	1.00		0.95	1.00		0.60	1.00		0.85	1.00	
Satd. Flow (perm)	1641	3224		1421	3232		857	1218		1386	1372	
Volume (vph)	109	404	40	80	1056	99	10	14	27	77	83	510
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)	118	439	43	87	1148	108	11	15	29	84	90	554
RTOR Reduction (vph)	0	7	0	0	6	0	0	20	0	0	0	65
Lane Group Flow (vph)	118	475	0	87	1250	0	11	24	0	0	174	489
Confl. Peds. (#/hr)				11			6	4		1	1	4
Confl. Bikes (#/hr)				5			11			2		
Heavy Vehicles (%)	10%	10%	10%	27%	10%	10%	32%	32%	43%	16%	16%	16%
Turn Type	Prot			Prot			Perm			Perm		Perm
Protected Phases	3 14 2 6			13 18 2 6				12			1 5 16	
Permitted Phases							12				1 5 16	
Actuated Green, G (s)	6.1	33.1		5.1	32.1		34.3	34.3			46.3	46.3
Effective Green, g (s)	6.1	33.1		5.1	32.1		34.3	34.3			46.3	46.3
Actuated g/C Ratio	0.06	0.31		0.05	0.30		0.32	0.32			0.43	0.43
Clearance Time (s)	4.0			4.0			4.0	4.0			4.0	4.0
Vehicle Extension (s)	3.0			3.0			3.0	3.0			3.0	3.0
Lane Grp Cap (vph)	92	984		67	956		271	385			591	585
v/s Ratio Prot	c0.07	0.15		0.06	c0.39			0.02				
v/s Ratio Perm							0.01				0.13	c0.36
v/c Ratio	1.28	0.48		1.30	1.31		0.04	0.06			0.29	0.84
Uniform Delay, d1	51.2	30.7		51.7	38.2		25.7	25.9			20.4	27.7
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00			1.01	1.05
Incremental Delay, d2	187.4	0.4		209.3	145.8		0.1	0.1			0.3	10.0
Delay (s)	238.6	31.1		261.0	184.0		25.8	26.0			21.0	39.3
Level of Service	F	C		F	F		C	C			C	D
Approach Delay (s)		71.9			189.0			25.9			34.9	
Approach LOS		E			F			C			C	
<b>Intersection Summary</b>												
HCM Average Control Delay	118.8		HCM Level of Service			F						
HCM Volume to Capacity ratio	1.05											
Actuated Cycle Length (s)	108.5		Sum of lost time (s)			24.0						
Intersection Capacity Utilization	78.6%		ICU Level of Service			D						
Analysis Period (min)	15											
c Critical Lane Group												

Barrio Logan CPU

Horizon Year Alt 2 without Improvements

18: Logan Ave & I-5 SB On-ramp

Timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR		
Lane Configurations														
Sign Control	Free			Free			Stop			Stop				
Grade	0%			0%			0%			0%				
Volume (veh/h)	475	182	2	0	125	80	0	0	4	0	0	0		
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		
Hourly flow rate (vph)	516	198	2	0	136	87	0	0	4	0	0	0		
Pedestrians														
Lane Width (ft)														
Walking Speed (ft/s)														
Percent Blockage														
Right turn flare (veh)														
Median type	None						None							
Median storage (veh)														
Upstream signal (ft)	667													
pX, platoon unblocked														
vC, conflicting volume	223				200				1367	1454	199	1414	1412	179
vC1, stage 1 conf vol														
vC2, stage 2 conf vol														
vCu, unblocked vol	223				200				1367	1454	199	1414	1412	179
tC, single (s)	4.1				4.1				7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)														
tF (s)	2.2				2.2				3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	62				100				100	100	99	100	100	100
cM capacity (veh/h)	1346				1372				87	80	842	80	85	863

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	516	200	0	223	4
Volume Left	516	0	0	0	0
Volume Right	0	2	0	87	4
cSH	1346	1700	1700	1700	842
Volume to Capacity	0.38	0.12	0.00	0.13	0.01
Queue Length 95th (ft)	46	0	0	0	0
Control Delay (s)	9.3	0.0	0.0	0.0	9.3
Lane LOS	A				A
Approach Delay (s)	6.7			0.0	9.3
Approach LOS	A				

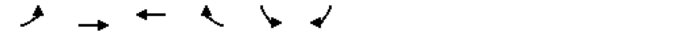
Intersection Summary				
Average Delay	5.1			
Intersection Capacity Utilization	44.4%	ICU Level of Service		A
Analysis Period (min)	15			

Barrio Logan CPU

Horizon Year Alt 2 without Improvements

19: National Ave & SR-75 Off-ramp

Timing Plan: AM Peak



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control	Free	Free	Free		Stop	Stop
Grade	0%	0%	0%		0%	0%
Volume (veh/h)	0	126	269	0	29	281
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	137	292	0	32	305
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	TWLTL					
Median storage (veh)	1					
Upstream signal (ft)	1100	875				
pX, platoon unblocked						
vC, conflicting volume	292				429	292
vC1, stage 1 conf vol	292					
vC2, stage 2 conf vol	137					
vCu, unblocked vol	292				429	292
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)	5.4					
tF (s)	2.2				3.5	3.3
p0 queue free %	100				95	59
cM capacity (veh/h)	1269				634	747

Direction, Lane #	EB 1	WB 1	SB 1	SB 2
Volume Total	137	292	32	305
Volume Left	0	0	32	0
Volume Right	0	0	0	305
cSH	1700	1700	634	747
Volume to Capacity	0.08	0.17	0.05	0.41
Queue Length 95th (ft)	0	0	4	50
Control Delay (s)	0.0	0.0	11.0	13.1
Lane LOS			B	B
Approach Delay (s)	0.0	0.0	12.9	
Approach LOS	B			

Intersection Summary				
Average Delay	5.7			
Intersection Capacity Utilization	38.2%	ICU Level of Service		A
Analysis Period (min)	15			

Barrio Logan CPU  
20: National Ave & Evans St  
Horizon Year Alt 2 without Improvements  
Timing Plan: AM Peak

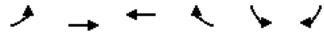
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR		
Lane Configurations	↔		↔		↔		↔		↔		↔			
Sign Control	Free		Free		Stop		Stop		Stop		Stop			
Grade	0%		0%		0%		0%		0%		0%			
Volume (veh/h)	16	114	22	38	225	28	27	48	25	9	18	28		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92		
Hourly flow rate (vph)	17	124	24	41	245	30	29	52	27	10	20	30		
Pedestrians														
Lane Width (ft)														
Walking Speed (ft/s)														
Percent Blockage														
Right turn flare (veh)														
Median type	None						None							
Median storage (veh)														
Upstream signal (ft)	1314				661									
pX, platoon unblocked														
vC, conflicting volume	275		148		538		528		136		554		260	
vC1, stage 1 conf vol														
vC2, stage 2 conf vol														
vCu, unblocked vol	275		148		538		528		136		554		260	
tC, single (s)	4.1		4.1		7.1		6.5		6.2		7.1		6.5	
tC, 2 stage (s)														
tF (s)	2.2		2.2		3.5		4.0		3.3		3.5		4.0	
p0 queue free %	99		97		93		88		97		97		96	
cM capacity (veh/h)	1288		1434		408		436		913		378		438	
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1								
Volume Total	17	148	41	275	109	60								
Volume Left	17	0	41	0	29	10								
Volume Right	0	24	0	30	27	30								
cSH	1288	1700	1434	1700	491	545								
Volume to Capacity	0.01	0.09	0.03	0.16	0.22	0.11								
Queue Length 95th (ft)	1	0	2	0	21	9								
Control Delay (s)	7.8	0.0	7.6	0.0	14.4	12.4								
Lane LOS	A		A		B	B								
Approach Delay (s)	0.8		1.0		14.4		12.4							
Approach LOS					B		B							
Intersection Summary														
Average Delay			4.2											
Intersection Capacity Utilization			36.0%		ICU Level of Service		A							
Analysis Period (min)			15											

Barrio Logan CPU  
21: Newton Ave & Evans St  
Horizon Year Alt 2 without Improvements  
Timing Plan: AM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR		
Lane Configurations	↔		↔		↔		↔		↔		↔			
Sign Control	Free		Free		Stop		Stop		Stop		Stop			
Grade	0%		0%		0%		0%		0%		0%			
Volume (veh/h)	23	87	22	16	63	30	27	58	31	7	30	37		
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		
Hourly flow rate (vph)	25	95	24	17	68	33	29	63	34	8	33	40		
Pedestrians														
Lane Width (ft)														
Walking Speed (ft/s)														
Percent Blockage														
Right turn flare (veh)														
Median type	None						None							
Median storage (veh)														
Upstream signal (ft)														
pX, platoon unblocked														
vC, conflicting volume	101		118		333		292		107		341		288	
vC1, stage 1 conf vol														
vC2, stage 2 conf vol														
vCu, unblocked vol	101		118		333		292		107		341		288	
tC, single (s)	4.1		4.1		7.1		6.5		6.2		7.1		6.5	
tC, 2 stage (s)														
tF (s)	2.2		2.2		3.5		4.0		3.3		3.5		4.0	
p0 queue free %	98		99		95		90		96		99		95	
cM capacity (veh/h)	1491		1470		558		601		948		532		604	
Direction, Lane #	EB 1	WB 1	NB 1	SB 1										
Volume Total	143	118	126	80										
Volume Left	25	17	29	8										
Volume Right	24	33	34	40										
cSH	1491	1470	653	734										
Volume to Capacity	0.02	0.01	0.19	0.11										
Queue Length 95th (ft)	1	1	18	9										
Control Delay (s)	1.4	1.2	11.8	10.5										
Lane LOS	A	A	B	B										
Approach Delay (s)	1.4	1.2	11.8	10.5										
Approach LOS			B		B									
Intersection Summary														
Average Delay			5.7											
Intersection Capacity Utilization			29.2%		ICU Level of Service		A							
Analysis Period (min)			15											



Barrio Logan CPU  
22: Main St & Evans St  
Horizon Year Alt 2 without Improvements  
Timing Plan: AM Peak



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↔	↔		↔	↔
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	24	191	427	75	66	34
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	26	208	464	82	72	37
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage (veh)						
Upstream signal (ft)		1318				
pX, platoon unblocked						
vC, conflicting volume	546				765	505
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	546				765	505
tC, single (s)		4.1			6.4	6.2
tC, 2 stage (s)						
tF (s)		2.2			3.5	3.3
p0 queue free %		97			80	93
cM capacity (veh/h)	1024				362	567

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	234	546	109
Volume Left	26	0	72
Volume Right	0	82	37
cSH	1024	1700	413
Volume to Capacity	0.03	0.32	0.26
Queue Length 95th (ft)	2	0	26
Control Delay (s)	1.2	0.0	16.8
Lane LOS	A		C
Approach Delay (s)	1.2	0.0	16.8
Approach LOS			C

Intersection Summary			
Average Delay		2.4	
Intersection Capacity Utilization	42.6%		ICU Level of Service A
Analysis Period (min)		15	

Barrio Logan CPU  
23: Logan Ave & Sampson St  
Horizon Year Alt 2 without Improvements  
Timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔		↔	↔			↔		↔	↔	↔
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	101	220	161	106	77	60	212	366	174	62	237	14
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
Hourly flow rate (vph)	110	239	175	115	84	65	230	398	189	67	258	15
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1						
Volume Total (vph)	110	414	115	149	817	340						
Volume Left (vph)	110	0	115	0	230	67						
Volume Right (vph)	0	175	0	65	189	15						
Hadj (s)	0.53	-0.26	0.53	-0.27	-0.05	0.05						
Departure Headway (s)	8.9	8.1	9.6	8.8	7.8	8.2						
Degree Utilization, x	0.27	0.93	0.31	0.36	1.77	0.77						
Capacity (veh/h)	399	437	350	391	465	429						
Control Delay (s)	13.9	53.8	15.6	15.5	376.0	34.1						
Approach Delay (s)	45.4		15.5		376.0	34.1						
Approach LOS	E		C		F	D						

Intersection Summary			
Delay		178.3	
HCM Level of Service		F	
Intersection Capacity Utilization	99.0%		ICU Level of Service F
Analysis Period (min)		15	

Barrio Logan CPU  
24: National Ave & Sampson St  
Horizon Year Alt 2 without Improvements  
Timing Plan: AM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔		↔		↔		↔		↔		↔	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
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
Frbp, ped/bikes	1.00	0.99	1.00	1.00	0.98	1.00	1.00	1.00	0.99	1.00	0.99	1.00
Flpb, ped/bikes	0.99	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.97	1.00	0.92	1.00	0.98	1.00	0.98	1.00	0.95	0.95	1.00
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	0.99	1.00	0.99	1.00
Satd. Flow (prot)	1749	1790	1765	1688	1688	1823	1823	1823	1731	1731	1731	1731
Flt Permitted	0.62	1.00	0.71	1.00	1.00	0.98	0.98	0.98	0.93	0.93	0.93	0.93
Satd. Flow (perm)	1138	1790	1322	1688	1688	1793	1793	1793	1618	1618	1618	1618
Volume (vph)	78	50	15	48	101	106	7	107	16	62	124	121
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)	85	54	16	52	110	115	8	116	17	67	135	132
RTOR Reduction (vph)	0	12	0	0	70	0	0	6	0	0	30	0
Lane Group Flow (vph)	85	58	0	52	155	0	0	135	0	0	304	0
Confl. Peds. (#/hr)	17		3	3		17	13		14	14		13
Confl. Bikes (#/hr)						1		1				
Turn Type	Perm		Perm		Perm		Perm		Perm		Perm	
Protected Phases	4		8		8		2		6		6	
Permitted Phases	4		8		8		2		6		6	
Actuated Green, G (s)	9.5	9.5	9.5	9.5	9.5	19.2	19.2	19.2	19.2	19.2	19.2	19.2
Effective Green, g (s)	9.5	9.5	9.5	9.5	9.5	19.2	19.2	19.2	19.2	19.2	19.2	19.2
Actuated g/C Ratio	0.26	0.26	0.26	0.26	0.26	0.52	0.52	0.52	0.52	0.52	0.52	0.52
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	295	463	342	437	437	938	938	938	846	846	846	846
v/s Ratio Prot	0.07		0.03		c0.09		0.08		c0.19		c0.19	
v/s Ratio Perm	0.07		0.04		0.04		0.08		c0.19		c0.19	
v/c Ratio	0.29	0.13	0.15	0.36	0.36	0.14	0.14	0.14	0.36	0.36	0.36	0.36
Uniform Delay, d1	10.9	10.4	10.5	11.1	11.1	4.5	4.5	4.5	5.1	5.1	5.1	5.1
Progression Factor	1.00	1.00	36.7	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.5	0.1	0.2	0.5	0.5	0.1	0.1	0.1	0.3	0.3	0.3	0.3
Delay (s)	11.4	10.5	10.7	11.6	11.6	4.6	4.6	4.6	5.4	5.4	5.4	5.4
Level of Service	B	B	B	B	B	A	A	A	A	A	A	A
Approach Delay (s)	11.0		11.4		4.6		4.6		5.4		5.4	
Approach LOS	B		B		A		A		A		A	
<b>Intersection Summary</b>												
HCM Average Control Delay	8.1		HCM Level of Service		A		A		A		A	
HCM Volume to Capacity ratio	0.36		0.36		0.36		0.36		0.36		0.36	
Actuated Cycle Length (s)	36.7		Sum of lost time (s)		8.0		8.0		8.0		8.0	
Intersection Capacity Utilization	62.0%		ICU Level of Service		B		B		B		B	
Analysis Period (min)	15		15		15		15		15		15	
c Critical Lane Group												

Barrio Logan CPU  
25: Newton Ave & Sampson St  
Horizon Year Alt 2 without Improvements  
Timing Plan: AM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔		↔		↔		↔		↔		↔	
Sign Control	Stop		Stop		Stop		Stop		Stop		Stop	
Volume (vph)	23	92	17	15	79	37	7	48	32	20	113	39
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
Hourly flow rate (vph)	25	100	18	16	86	40	8	52	35	22	123	42
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	143	142	95	187								
Volume Left (vph)	25	16	8	22								
Volume Right (vph)	18	40	35	42								
Hadj (s)	-0.01	-0.11	-0.17	-0.08								
Departure Headway (s)	4.8	4.7	4.7	4.6								
Degree Utilization, x	0.19	0.18	0.12	0.24								
Capacity (veh/h)	703	718	713	725								
Control Delay (s)	8.9	8.7	8.3	9.1								
Approach Delay (s)	8.9	8.7	8.3	9.1								
Approach LOS	A	A	A	A								
<b>Intersection Summary</b>												
Delay	8.8		8.8		8.8		8.8		8.8		8.8	
HCM Level of Service	A		A		A		A		A		A	
Intersection Capacity Utilization	32.3%		ICU Level of Service		A		A		A		A	
Analysis Period (min)	15		15		15		15		15		15	

Barrio Logan CPU  
26: Main St & Sampson St

Horizon Year Alt 2 without Improvements  
Timing Plan: AM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↕				↕						↕	
Sign Control	Stop				Stop						Stop	
Volume (vph)	81	76	51	53	282	16	52	31	35	10	59	205
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
Hourly flow rate (vph)	88	83	55	58	307	17	57	34	38	11	64	223
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>WB 1</b>	<b>NB 1</b>	<b>SB 1</b>								
Volume Total (vph)	226	382	128	298								
Volume Left (vph)	88	58	57	11								
Volume Right (vph)	55	17	38	223								
Hadj (s)	-0.04	0.04	-0.06	-0.41								
Departure Headway (s)	5.8	5.6	6.2	5.5								
Degree Utilization, x	0.36	0.59	0.22	0.45								
Capacity (veh/h)	561	608	492	596								
Control Delay (s)	12.1	16.5	10.9	13.0								
Approach Delay (s)	12.1	16.5	10.9	13.0								
Approach LOS	B	C	B	B								
<b>Intersection Summary</b>												
Delay				13.8								
HCM Level of Service				B								
Intersection Capacity Utilization	61.2%			ICU Level of Service	B							
Analysis Period (min)				15								

Barrio Logan CPU  
27: Harbor Dr & Sampson St

Horizon Year Alt 2 without Improvements  
Timing Plan: AM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↕	↕	↕	↕	↕	↕	↕	↕	↕	↕	↕	↕
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	0.95	1.00	0.95	1.00	0.95	1.00	0.95	1.00	0.95
Flpb, ped/bikes	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	1.00	0.99	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Flt Protected	0.95	1.00	0.95	1.00	0.95	1.00	0.95	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1770	3448	1770	3513	1770	3513	1770	3513	1770	3513	1770	3513
Flt Permitted	0.95	1.00	0.95	1.00	0.95	1.00	0.95	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	1770	3448	1770	3513	1770	3513	1770	3513	1770	3513	1770	3513
Volume (vph)	10	750	28	75	1312	41	14	61	38	61	75	32
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)	11	815	30	82	1426	45	15	66	41	66	82	35
RTOR Reduction (vph)	0	2	0	0	2	0	0	16	0	0	7	0
Lane Group Flow (vph)	11	843	0	82	1469	0	0	106	0	0	176	0
Confl. Peds. (#/hr)			15			29	7			4	4	7
Confl. Bikes (#/hr)			2			5			6			14
Heavy Vehicles (%)	2%	4%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Prot		Prot		Perm		Perm		Perm		Perm	
Protected Phases	3	14	2	6	13	18	2	6	12	16	1	5
Permitted Phases					12				16 1 5			
Actuated Green, G (s)	1.1	38.8			7.4	45.1			10.9			21.3
Effective Green, g (s)	1.1	38.8			7.4	45.1			10.9			21.3
Actuated g/C Ratio	0.01	0.42			0.08	0.49			0.12			0.23
Clearance Time (s)	4.0				4.0				4.0			
Vehicle Extension (s)	3.0				3.0				3.0			
Lane Grp Cap (vph)	21	1462			143	1732			196			353
v/s Ratio Prot	0.01	0.24			c0.05	c0.42						
v/s Ratio Perm									0.06			c0.12
v/c Ratio	0.52	0.58			0.57	0.85			0.54			0.50
Uniform Delay, d1	44.9	20.1			40.5	20.2			37.9			30.5
Progression Factor	1.00	1.00			1.00	1.00			1.00			1.03
Incremental Delay, d2	21.6	0.6			5.5	4.1			3.0			1.1
Delay (s)	66.5	20.6			46.0	24.3			41.0			32.4
Level of Service	E	C			D	C			D			C
Approach Delay (s)	21.2				25.4				41.0		32.4	
Approach LOS	C				C				D		C	
<b>Intersection Summary</b>												
HCM Average Control Delay				25.3	HCM Level of Service			C				
HCM Volume to Capacity ratio				0.75								
Actuated Cycle Length (s)				91.5	Sum of lost time (s)			24.0				
Intersection Capacity Utilization	69.3%			ICU Level of Service	C							
Analysis Period (min)				15								

c Critical Lane Group

Barrio Logan CPU  
28: National Ave & Sicard St  
Horizon Year Alt 2 without Improvements  
Timing Plan: AM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔		↔		↔		↔		↔		↔	
Sign Control	Free		Free		Stop		Stop		Stop		Stop	
Grade	0%		0%		0%		0%		0%		0%	
Volume (veh/h)	20	79	38	27	164	3	48	49	12	4	39	37
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
Hourly flow rate (vph)	22	86	41	29	178	3	52	53	13	4	42	40
Pedestrians	7		11		3		1		1		1	
Lane Width (ft)	12.0		12.0		12.0		12.0		12.0		12.0	
Walking Speed (ft/s)	4.0		4.0		4.0		4.0		4.0		4.0	
Percent Blockage	1		1		0		0		0		0	
Right turn flare (veh)												
Median type					None		None		None		None	
Median storage (veh)												
Upstream signal (ft)	641											
pX, platoon unblocked												
vC, conflicting volume	183			130			460	394	121	420	413	188
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	183			130			460	394	121	420	413	188
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			98			88	90	99	99	92	95
cM capacity (veh/h)	1391			1452			439	521	920	475	509	848
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>EB 2</b>	<b>WB 1</b>	<b>NB 1</b>	<b>SB 1</b>							
Volume Total	22	127	211	118	87							
Volume Left	22	0	29	52	4							
Volume Right	0	41	3	13	40							
cSH	1391	1700	1452	504	622							
Volume to Capacity	0.02	0.07	0.02	0.24	0.14							
Queue Length 95th (ft)	1	0	2	23	12							
Control Delay (s)	7.6	0.0	1.2	14.3	11.7							
Lane LOS	A		A	B	B							
Approach Delay (s)	1.1		1.2	14.3	11.7							
Approach LOS			B	B								
<b>Intersection Summary</b>												
Average Delay			5.5									
Intersection Capacity Utilization			36.6%		ICU Level of Service		A					
Analysis Period (min)			15									

Barrio Logan CPU  
29: National Ave & 26th St  
Horizon Year Alt 2 without Improvements  
Timing Plan: AM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔		↔		↔		↔		↔		↔	
Sign Control	Stop		Stop		Stop		Stop		Stop		Stop	
Volume (vph)	26	66	43	36	222	48	31	55	15	50	45	16
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
Hourly flow rate (vph)	28	72	47	39	241	52	34	60	16	54	49	17
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>EB 2</b>	<b>WB 1</b>	<b>WB 2</b>	<b>NB 1</b>	<b>SB 1</b>						
Volume Total (vph)	28	118	39	293	110	121						
Volume Left (vph)	28	0	39	0	34	54						
Volume Right (vph)	0	47	0	52	16	17						
Hadj (s)	0.53	-0.24	0.53	-0.09	0.01	0.04						
Departure Headway (s)	6.0	5.3	5.8	5.2	5.3	5.3						
Degree Utilization, x	0.05	0.17	0.06	0.43	0.16	0.18						
Capacity (veh/h)	557	644	588	665	622	620						
Control Delay (s)	8.1	8.2	8.0	10.8	9.3	9.4						
Approach Delay (s)	8.2		10.5		9.3	9.4						
Approach LOS	A		B		A	A						
<b>Intersection Summary</b>												
Delay			9.6									
HCM Level of Service			A									
Intersection Capacity Utilization			38.5%		ICU Level of Service		A					
Analysis Period (min)			15									

Barrio Logan CPU

Horizon Year Alt 2 without Improvements

30: National Ave & I-5 SB Off-ramp

Timing Plan: AM Peak

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔		↕		↕	
Sign Control	Free		Free		Stop	
Grade	0%		0%		0%	
Volume (veh/h)	151	7	42	279	28	149
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	164	8	46	303	30	162
Pedestrians	1		8		8	
Lane Width (ft)	12.0		12.0		12.0	
Walking Speed (ft/s)	4.0		4.0		4.0	
Percent Blockage	0		1		1	
Right turn flare (veh)						
Median type			None			
Median storage (veh)			670			
Upstream signal (ft)			670			
pX, platoon unblocked						
vC, conflicting volume			180	420	176	
vC1, stage 1 conf vol			180	420	176	
vC2, stage 2 conf vol			180	420	176	
vCu, unblocked vol			180	420	176	
tC, single (s)			4.1	6.8	6.9	
tC, 2 stage (s)			2.2	3.5	3.3	
tF (s)			97	94	81	
p0 queue free %			97	94	81	
cM capacity (veh/h)			1384	539	831	

Direction, Lane #	EB 1	WB 1	WB 2	NB 1	NB 2
Volume Total	172	147	202	30	162
Volume Left	0	46	0	30	0
Volume Right	8	0	0	0	162
cSH	1700	1384	1700	539	831
Volume to Capacity	0.10	0.03	0.12	0.06	0.19
Queue Length 95th (ft)	0	3	0	4	18
Control Delay (s)	0.0	2.6	0.0	12.1	10.4
Lane LOS	A		B		B
Approach Delay (s)	0.0	1.1	10.6		
Approach LOS			B		

Intersection Summary				
Average Delay			3.4	
Intersection Capacity Utilization	31.8%		ICU Level of Service A	
Analysis Period (min)	15			

Barrio Logan CPU

Horizon Year Alt 2 without Improvements

31: Main St & 26th St


Timing Plan: AM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔		↕		↕		↕		↕		↕	
Sign Control	Stop		Stop		Stop		Stop		Stop		Stop	
Volume (vph)	11	59	19	146	188	26	33	32	92	16	19	13
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
Hourly flow rate (vph)	12	64	21	159	204	28	36	35	100	17	21	14
Direction, Lane #	EB 1	WB 1	WB 2	WB 3	NB 1	NB 2	SB 1					
Volume Total (vph)	97	159	204	28	71	100	52					
Volume Left (vph)	12	159	0	0	36	0	17					
Volume Right (vph)	21	0	0	28	0	100	14					
Hadj (s)	-0.07	0.94	0.03	-0.67	0.14	0.05	-0.06					
Departure Headway (s)	4.7	5.9	4.9	3.2	5.2	3.2	5.0					
Degree Utilization, x	0.13	0.26	0.28	0.03	0.10	0.09	0.07					
Capacity (veh/h)	740	598	709	1121	645	1121	662					
Control Delay (s)	8.3	9.7	8.7	5.1	8.8	6.5	8.4					
Approach Delay (s)	8.3	8.8			7.5	8.4						
Approach LOS	A	A			A	A						

Intersection Summary				
Delay			8.4	
HCM Level of Service			A	
Intersection Capacity Utilization	31.5%		ICU Level of Service A	
Analysis Period (min)	15			

Barrio Logan CPU  
32: Harbor Dr & Schley St


Horizon Year Alt 2 without Improvements  
Timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	4.0	4.0			4.0						4.0		
Lane Util. Factor	1.00	0.95			0.95						1.00		
Flt ped/bikes	1.00	1.00			1.00						0.98		
Flpb, ped/bikes	1.00	1.00			1.00						1.00		
Frt	1.00	1.00			1.00						0.89		
Flt Protected	0.95	1.00			1.00						1.00		
Satd. Flow (prot)	1543	3539			3533						1486		
Flt Permitted	0.95	1.00			1.00						1.00		
Satd. Flow (perm)	1543	3539			3533						1486		
Volume (vph)	126	465	0	0	1473	17	0	0	0	12	25	169	
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)	137	505	0	0	1601	18	0	0	0	13	27	184	
RTOR Reduction (vph)	0	0	0	0	1	0	0	0	0	0	113	0	
Lane Group Flow (vph)	137	505	0	0	1618	0	0	0	0	0	111	0	
Confl. Peds. (#/hr)			8	8					2	2			
Confl. Bikes (#/hr)									5			11	
Heavy Vehicles (%)	17%	2%	2%	2%	2%	2%	2%	2%	2%	2%	4%	13%	
Turn Type	Prot						Perm						
Protected Phases	13	18	2	6		14	2	6			11	1	5
Permitted Phases											11	1	5
Actuated Green, G (s)	9.2	50.3			33.1						20.2		
Effective Green, g (s)	9.2	50.3			33.1						20.2		
Actuated g/C Ratio	0.11	0.58			0.38						0.23		
Clearance Time (s)	4.0												
Vehicle Extension (s)	3.0												
Lane Grp Cap (vph)	164	2058			1352						347		
v/s Ratio Prot	c0.09	0.14			c0.46								
v/s Ratio Perm											0.07		
v/c Ratio	0.84	0.25			1.20						0.32		
Uniform Delay, d1	37.9	8.8			26.7						27.5		
Progression Factor	1.00	1.00			1.00						1.10		
Incremental Delay, d2	29.1	0.1			96.1						0.5		
Delay (s)	67.0	8.9			122.8						30.8		
Level of Service	E	A			F						C		
Approach Delay (s)	21.3				122.8			0.0			30.8		
Approach LOS	C				F			A			C		
<b>Intersection Summary</b>													
HCM Average Control Delay	88.3				HCM Level of Service				F				
HCM Volume to Capacity ratio	0.86												
Actuated Cycle Length (s)	86.5				Sum of lost time (s)				24.0				
Intersection Capacity Utilization	77.3%				ICU Level of Service				D				
Analysis Period (min)	15												
c Critical Lane Group													

Barrio Logan CPU  
33: National Ave & 28th St


Horizon Year Alt 2 without Improvements  
Timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0					4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00					1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.97					1.00	0.85	0.94
Flt Protected	0.95	1.00	1.00	0.95	1.00					0.99	1.00	0.99
Satd. Flow (prot)	1770	3539	1583	1299	1814					1754	1509	1645
Flt Permitted	0.95	1.00	1.00	0.95	1.00					0.75	1.00	0.88
Satd. Flow (perm)	1770	3539	1583	1299	1814					1341	1509	1455
Volume (vph)	106	245	18	186	599	126	33	102	82	118	213	307
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)	115	266	20	202	651	137	36	111	89	128	232	334
RTOR Reduction (vph)	0	0	14	0	5	0	0	0	50	0	22	0
Lane Group Flow (vph)	115	266	6	202	783	0	0	147	39	0	672	0
Heavy Vehicles (%)	2%	2%	2%	39%	2%	2%	7%	7%	7%	7%	7%	7%
Turn Type	Prot		Perm		Prot		Perm		Perm		Perm	
Protected Phases	7	4		3	8			2		2		6
Permitted Phases				4				2		2		6
Actuated Green, G (s)	9.0	45.1	45.1	26.9	63.0			66.0	66.0		66.0	
Effective Green, g (s)	9.0	45.1	45.1	26.9	63.0			66.0	66.0		66.0	
Actuated g/C Ratio	0.06	0.30	0.30	0.18	0.42			0.44	0.44		0.44	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0			4.0	4.0		4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0			3.0	3.0		3.0	
Lane Grp Cap (vph)	106	1064	476	233	762			590	664		640	
v/s Ratio Prot	c0.06	0.08		0.16	c0.43							
v/s Ratio Perm			0.00					0.11	0.03		c0.46	
v/c Ratio	1.08	0.25	0.01	0.87	1.03			0.25	0.06		1.05	
Uniform Delay, d1	70.5	39.7	36.8	59.8	43.5			26.4	24.1		42.0	
Progression Factor	1.00	1.00	1.00	1.00	1.00			1.00	1.00		1.00	
Incremental Delay, d2	112.1	0.1	0.0	26.9	39.7			0.2	0.0		49.2	
Delay (s)	182.6	39.8	36.8	86.8	83.2			26.6	24.2		91.2	
Level of Service	F	D	D	F	F			C	C		F	
Approach Delay (s)		80.6			84.0			25.7			91.2	
Approach LOS		F			F			C			F	
<b>Intersection Summary</b>												
HCM Average Control Delay	79.6				HCM Level of Service				E			
HCM Volume to Capacity ratio	1.04											
Actuated Cycle Length (s)	150.0				Sum of lost time (s)				12.0			
Intersection Capacity Utilization	98.2%				ICU Level of Service				F			
Analysis Period (min)	15											
c Critical Lane Group												

Barrio Logan CPU  
34: Boston Ave & 28th St

Horizon Year Alt 2 without Improvements  
Timing Plan: AM Peak




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95	1.00	1.00	0.95		
Frt	1.00	0.95		1.00	0.91		1.00	1.00	0.85	1.00	0.96		
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00		
Satd. Flow (prot)	1687	1687		1687	1611		1770	3471	1583	1770	3380		
Flt Permitted	0.54	1.00		0.20	1.00		0.95	1.00	1.00	0.95	1.00		
Satd. Flow (perm)	954	1687		355	1611		1770	3471	1583	1770	3380		
Volume (vph)	250	300	150	50	80	130	90	720	90	170	880	300	
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)	272	326	163	54	87	141	98	783	98	185	957	326	
RTOR Reduction (vph)	0	25	0	0	79	0	0	0	62	0	39	0	
Lane Group Flow (vph)	272	464	0	54	149	0	98	783	36	185	1244	0	
Heavy Vehicles (%)	7%	7%	7%	7%	7%	7%	2%	4%	2%	2%	3%	2%	
Turn Type	Perm			Perm			Prot		Perm	Prot			
Protected Phases		4			8		5	2		1	6		
Permitted Phases	4			8					2				
Actuated Green, G (s)	24.5	24.5		24.5	24.5		5.0	26.9	26.9	10.4	32.3		
Effective Green, g (s)	24.5	24.5		24.5	24.5		5.0	26.9	26.9	10.4	32.3		
Actuated g/C Ratio	0.33	0.33		0.33	0.33		0.07	0.36	0.36	0.14	0.44		
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0		
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0		
Lane Grp Cap (vph)	317	560		118	535		120	1265	577	249	1479		
v/s Ratio Prot		0.28			0.09		0.06	0.23		c0.10	c0.37		
v/s Ratio Perm	c0.29			0.15					0.02				
v/c Ratio	0.86	0.83		0.46	0.28		0.82	0.62	0.06	0.74	0.84		
Uniform Delay, d1	23.0	22.7		19.4	18.1		33.9	19.2	15.2	30.4	18.5		
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00		
Incremental Delay, d2	19.9	9.8		2.8	0.3		33.2	2.3	0.2	11.3	5.9		
Delay (s)	42.9	32.6		22.2	18.4		67.1	21.5	15.5	41.8	24.4		
Level of Service	D	C		C	B		E	C	B	D	C		
Approach Delay (s)		36.3			19.1			25.5			26.6		
Approach LOS		D			B			C			C		
<b>Intersection Summary</b>													
HCM Average Control Delay		27.8		HCM Level of Service						C			
HCM Volume to Capacity ratio		0.81											
Actuated Cycle Length (s)		73.8		Sum of lost time (s)					8.0				
Intersection Capacity Utilization		80.5%		ICU Level of Service					D				
Analysis Period (min)		15											

c Critical Lane Group

Barrio Logan CPU  
35: Main St & 28th St

Horizon Year Alt 2 without Improvements  
Timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95	1.00	0.95	1.00	0.95
Frbp, ped/bikes	1.00	1.00		1.00	0.99		1.00	0.97	1.00	0.97	1.00	0.99
Flpb, ped/bikes	1.00	1.00		0.99	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.98		1.00	0.96		1.00	0.96	1.00	0.96	1.00	0.96
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1538	3209		1758	3371		1736	3261	1736	3091	1736	3091
Flt Permitted	0.29	1.00		0.50	1.00		0.95	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	462	3209		925	3371		1736	3261	1736	3091	1736	3091
Volume (vph)	190	300	50	90	500	190	40	220	70	190	750	260
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)	207	326	54	98	543	207	43	239	76	207	815	283
RTOR Reduction (vph)	0	13	0	0	38	0	0	31	0	0	35	0
Lane Group Flow (vph)	207	367	0	98	712	0	43	284	0	207	1063	0
Confl. Peds. (#/hr)	10			12	12		10			72		27
Confl. Bikes (#/hr)				2	12		4			6		1
Heavy Vehicles (%)	17%	11%	2%	2%	2%	2%	4%	4%	4%	4%	4%	31%
Turn Type	Perm			Perm			Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)	46.0	46.0		46.0	46.0		3.1	26.6		12.1	35.6	
Effective Green, g (s)	46.0	46.0		46.0	46.0		3.1	26.6		12.1	35.6	
Actuated g/C Ratio	0.48	0.48		0.48	0.48		0.03	0.28		0.13	0.37	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	220	1527		440	1604		56	897		217	1138	
v/s Ratio Prot		0.11			0.21		0.02	0.09		c0.12	c0.34	
v/s Ratio Perm	c0.45			0.11								
v/c Ratio	0.94	0.24		0.22	0.44		0.77	0.32		0.95	0.93	
Uniform Delay, d1	24.1	15.0		14.9	16.8		46.4	27.8		42.0	29.4	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	44.2	0.1		0.3	0.2		46.0	0.2		47.8	13.6	
Delay (s)	68.3	15.1		15.1	17.0		92.5	28.0		89.8	43.0	
Level of Service	E	B		B	B		F	C		F	D	
Approach Delay (s)		33.8			16.8			35.8			50.4	
Approach LOS		C			B			D			D	
<b>Intersection Summary</b>												
HCM Average Control Delay		36.4		HCM Level of Service						D		
HCM Volume to Capacity ratio		0.92										
Actuated Cycle Length (s)		96.7		Sum of lost time (s)					8.0			
Intersection Capacity Utilization		78.7%		ICU Level of Service					D			
Analysis Period (min)		15										

c Critical Lane Group

Barrio Logan CPU  
36: Harbor Dr & 28th St

Horizon Year Alt 2 without Improvements  
Timing Plan: AM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔↔	↔	↔	↔↔	↔	↔	↔	↔	↔	↔	↔
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95	1.00		
Flpb, ped/bikes	1.00	1.00	0.87	1.00	1.00	0.93	0.99	1.00	1.00	0.98		
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Flt	1.00	1.00	0.85	1.00	1.00	0.85	0.97	1.00	1.00	0.85		
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	1.00	0.95	0.96	1.00		
Satd. Flow (prot)	1703	3406	1325	1719	3438	1435	1763	1649	1659	1524		
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	1.00	0.95	0.96	1.00		
Satd. Flow (perm)	1703	3406	1325	1719	3438	1435	1763	1649	1659	1524		
Volume (vph)	120	580	4	18	843	115	0	6	2	339	15	22
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)	130	630	4	20	916	125	0	7	2	368	16	24
RTOR Reduction (vph)	0	0	2	0	0	55	0	2	0	0	0	18
Lane Group Flow (vph)	130	630	2	20	916	70	0	7	0	187	197	6
Conf. Peds. (#/hr)			69			80						
Conf. Bikes (#/hr)						3			6			7
Heavy Vehicles (%)	6%	6%	6%	5%	5%	5%	4%	4%	4%	4%	4%	4%
Turn Type	Prot	custom	custom	Prot	custom	custom	Split	Split	Split	Perm		
Protected Phases	11	16	2	6	15	12	2	6	13	14	14	1
Permitted Phases				16			12					1
Actuated Green, G (s)	8.6	42.6	36.6	2.7	36.7	49.0				14.1	28.1	28.1
Effective Green, g (s)	8.6	42.6	36.6	2.7	36.7	49.0				14.1	28.1	28.1
Actuated g/C Ratio	0.07	0.36	0.31	0.02	0.31	0.41				0.12	0.24	0.24
Clearance Time (s)	4.0		4.0	4.0		4.0				4.0		
Vehicle Extension (s)	3.0		3.0	3.0		3.0				3.0		
Lane Grp Cap (vph)	123	1214	406	39	1056	588				208	388	390
v/s Ratio Prot	c0.08	0.18		0.01	c0.27	0.02				c0.00	0.11	c0.12
v/s Ratio Perm			0.00			0.03						0.00
v/c Ratio	1.06	0.52	0.00	0.51	0.87	0.12				0.03	0.48	0.51
Uniform Delay, d1	55.4	30.4	28.8	57.7	39.1	21.9				46.7	39.4	39.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00				1.00	0.91	0.91
Incremental Delay, d2	97.2	0.4	0.0	10.9	7.7	0.1				0.1	0.9	1.0
Delay (s)	152.7	30.7	28.8	68.7	46.8	22.0				46.7	36.8	37.2
Level of Service	F	C	C	E	D	C				D	D	D
Approach Delay (s)		51.5			44.3					46.7		37.9
Approach LOS		D			D					D		D
<b>Intersection Summary</b>												
HCM Average Control Delay		45.6			HCM Level of Service					D		
HCM Volume to Capacity ratio		0.64										
Actuated Cycle Length (s)		119.5			Sum of lost time (s)					32.0		
Intersection Capacity Utilization		58.0%			ICU Level of Service					B		
Analysis Period (min)		15										

Barrio Logan CPU  
37: Boston Ave & I-5 SB On-ramp

Horizon Year Alt 2 without Improvements  
Timing Plan: AM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔				
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	282	104	14	20	107	96	6	36	19	0	0	0
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
Hourly flow rate (vph)	307	113	15	22	116	104	7	39	21	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type							None			None		
Median storage veh												
Upstream signal (ft)		657										
pX, platoon unblocked												
vC, conflicting volume	221			128			946	998	121	986	953	168
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	221			128			946	998	121	986	953	168
tC, single (s)	4.2			4.2			7.1	6.9	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.3			2.3			3.5	4.4	3.3	3.5	4.0	3.3
p0 queue free %	77			98			97	75	98	100	100	100
cM capacity (veh/h)	1319			1427			196	159	931	147	196	876
<b>Direction, Lane #</b>												
Volume Total	435	242	66									
Volume Left	307	22	7									
Volume Right	15	104	21									
cSH	1319	1427	220									
Volume to Capacity	0.23	0.02	0.30									
Queue Length 95th (ft)	23	1	30									
Control Delay (s)	6.7	0.8	28.3									
Lane LOS	A	A	D									
Approach Delay (s)	6.7	0.8	28.3									
Approach LOS			D									
<b>Intersection Summary</b>												
Average Delay		6.7										
Intersection Capacity Utilization		47.9%			ICU Level of Service					A		
Analysis Period (min)		15										



Barrio Logan CPU  
38: Main St & 32nd St

Horizon Year Alt 2 without Improvements  
Timing Plan: AM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00	1.00	1.00	1.00	
Frbp, ped/bikes	1.00	0.99		1.00	0.99		1.00	1.00	0.98	1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.92		1.00	0.98		1.00	1.00	0.85	1.00	0.95	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1703	3090		1703	3310		1770	1863	1556	1770	1751	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1703	3090		1703	3310		1770	1863	1556	1770	1751	
Volume (vph)	36	153	200	314	548	100	110	50	26	44	83	41
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)	39	166	217	341	596	109	120	54	28	48	90	45
RTOR Reduction (vph)	0	172	0	0	15	0	0	0	22	0	22	0
Lane Group Flow (vph)	39	211	0	341	690	0	120	54	6	48	113	0
Confl. Peds. (#/hr)			1			6			4			16
Confl. Bikes (#/hr)			2			4			2			5
Heavy Vehicles (%)	6%	6%	6%	6%	6%	6%	2%	2%	2%	2%	2%	2%
Turn Type	Prot			Prot			Prot		Perm		Prot	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases									2			
Actuated Green, G (s)	2.7	13.4		17.0	27.7		6.4	14.0	14.0	4.1	11.7	
Effective Green, g (s)	2.7	13.4		17.0	27.7		6.4	14.0	14.0	4.1	11.7	
Actuated g/C Ratio	0.04	0.21		0.26	0.43		0.10	0.22	0.22	0.06	0.18	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	71	642		449	1422		176	404	338	113	318	
v/s Ratio Prot	0.02	0.07		c0.20	c0.21		c0.07	0.03		0.03	c0.06	
v/s Ratio Perm									0.00			
v/c Ratio	0.55	0.33		0.76	0.49		0.68	0.13	0.02	0.42	0.36	
Uniform Delay, d1	30.3	21.7		21.9	13.3		28.1	20.4	19.8	29.1	23.1	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	8.4	0.3		7.2	0.3		10.4	0.2	0.0	2.6	0.7	
Delay (s)	38.7	22.0		29.1	13.5		38.4	20.5	19.9	31.6	23.8	
Level of Service	D	C		C	B		D	C	B	C	C	
Approach Delay (s)		23.6			18.6			31.1			25.8	
Approach LOS		C			B			C			C	
<b>Intersection Summary</b>												
HCM Average Control Delay		21.8										C
HCM Volume to Capacity ratio		0.55										
Actuated Cycle Length (s)		64.5			Sum of lost time (s)				12.0			
Intersection Capacity Utilization		60.0%										B
Analysis Period (min)		15										
c Critical Lane Group												

Barrio Logan CPU  
39: 32nd St & Wabash St

Horizon Year Alt 2 without Improvements  
Timing Plan: AM Peak

Movement	EBL2	EBL	EBT	EBR	WBL	WBT	WBR	WBR2	NBL	NBT	NBR	NBR2
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0			4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00			1.00	1.00			1.00	1.00	0.88	
Frt	1.00	0.95			1.00	0.85			1.00	1.00	0.85	
Flt Protected	0.95	1.00			0.96	1.00			0.95	1.00	1.00	
Satd. Flow (prot)	1760	1773			1787	1574			1719	1810	2707	
Flt Permitted	0.35	1.00			0.41	1.00			0.95	1.00	1.00	
Satd. Flow (perm)	643	1773			770	1574			1719	1810	2707	
Volume (vph)	65	25	170	80	250	45	120	50	70	215	125	290
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)	71	27	185	87	272	49	130	54	76	234	136	315
RTOR Reduction (vph)	0	0	13	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	98	259	0	0	321	184	0	76	234	451	0
Heavy Vehicles (%)	2%	4%	2%	2%	2%	2%	2%	4%	5%	5%	5%	5%
Turn Type	Perm	Perm			Perm		Perm		Prot		custom	
Protected Phases			4			4			5	2		
Permitted Phases	4	4			4		4				2	3
Actuated Green, G (s)	34.4	34.4			34.4	34.4			10.3	20.2	48.4	
Effective Green, g (s)	34.4	34.4			34.4	34.4			10.3	20.2	48.4	
Actuated g/C Ratio	0.30	0.30			0.30	0.30			0.09	0.18	0.42	
Clearance Time (s)	4.0	4.0			4.0	4.0			4.0	4.0		
Vehicle Extension (s)	3.0	3.0			3.0	3.0			3.0	3.0		
Lane Grp Cap (vph)	194	534			232	474			155	320	1147	
v/s Ratio Prot			0.15			c0.42	0.12		0.04	c0.13		
v/s Ratio Perm											0.17	
v/c Ratio	0.51	0.49			1.38	0.39			0.49	0.73	0.39	
Uniform Delay, d1	32.9	32.7			39.9	31.6			49.5	44.4	22.7	
Progression Factor	1.00	1.00			1.00	1.00			1.00	1.00	1.00	
Incremental Delay, d2	2.1	0.7			197.1	0.5			2.4	8.3	0.2	
Delay (s)	34.9	33.4			237.0	32.1			51.9	52.8	23.0	
Level of Service	C	C			F	C			D	D	C	
Approach Delay (s)		33.8				162.4				35.0		
Approach LOS		C				F				D		
<b>Intersection Summary</b>												
HCM Average Control Delay		130.6									F	
HCM Volume to Capacity ratio		1.16										
Actuated Cycle Length (s)		114.2			Sum of lost time (s)				16.0			
Intersection Capacity Utilization		95.8%										F
Analysis Period (min)		15										
c Critical Lane Group												

Barrio Logan CPU  
39: 32nd St & Wabash St

Horizon Year Alt 2 without Improvements  
Timing Plan: AM Peak

Movement	SBL2	SBL	SBT	SBR	SWL2	SWL	SWR	SWR2
Lane Configurations		↔	↕	↔	↔	↕	↔	↕
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0			
Lane Util. Factor	1.00	0.95			0.97			
Flt	1.00	0.98			0.99			
Flt Protected	0.95	1.00			0.96			
Satd. Flow (prot)	1765	3384			3347			
Flt Permitted	0.95	1.00			0.87			
Satd. Flow (perm)	1765	3384			3043			
Volume (vph)	30	180	445	65	60	775	65	10
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	33	196	484	71	65	842	71	11
RTOR Reduction (vph)	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	229	555	0	0	989	0	0
Heavy Vehicles (%)	4%	2%	5%	2%	4%	4%	4%	4%
Turn Type	Prot	Prot			Perm			
Protected Phases	1	1	6			3		
Permitted Phases					3			
Actuated Green, G (s)		19.4	29.3			24.2		
Effective Green, g (s)		19.4	29.3			24.2		
Actuated g/C Ratio		0.17	0.26			0.21		
Clearance Time (s)		4.0	4.0			4.0		
Vehicle Extension (s)		3.0	3.0			3.0		
Lane Grp Cap (vph)		300	868			645		
v/s Ratio Prot		c0.13	0.16					
v/s Ratio Perm						c0.33		
v/c Ratio		0.76	0.64			1.53		
Uniform Delay, d1		45.2	37.8			45.0		
Progression Factor		1.00	1.00			1.00		
Incremental Delay, d2		10.9	1.6			247.8		
Delay (s)		56.2	39.3			292.8		
Level of Service		E	D			F		
Approach Delay (s)			44.2			292.8		
Approach LOS			D			F		

Intersection Summary

Barrio Logan CPU  
40: Harbor Dr & 32nd St

Horizon Year Alt 2 without Improvements  
Timing Plan: AM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR								
Lane Configurations	↔	↕	↔	↔	↕	↔	↔	↕	↔	↔	↕	↔								
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900								
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0								
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00								
Flrb, ped/bikes	1.00	1.00	0.99	1.00	1.00	1.00	1.00	1.00	0.96	1.00	1.00	1.00								
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
Flt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85								
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00								
Satd. Flow (prot)	1719	3438	1517	1687	3374	1509	1719	3438	1482	1719	3438	1538								
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00								
Satd. Flow (perm)	1719	3438	1517	1687	3374	1509	1719	3438	1482	1719	3438	1538								
Volume (vph)	140	641	140	300	756	390	30	160	30	130	1040	190								
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)	152	697	152	326	822	424	33	174	33	141	1130	207								
RTOR Reduction (vph)	0	0	122	0	0	277	0	0	28	0	0	54								
Lane Group Flow (vph)	152	697	30	326	822	147	33	174	5	141	1130	153								
Confl. Bikes (#/hr)			3						16											
Heavy Vehicles (%)	5%	5%	5%	7%	7%	7%	5%	5%	5%	5%	5%	5%								
Turn Type	Prot		custom	Prot		custom	Prot		Perm	Prot		custom								
Protected Phases	3	14	2	6	15	13	18	2	6	15	12	11	1	5	16	1	5	3	1	5
Permitted Phases					14					18			12						16	
Actuated Green, G (s)	10.3	8.7	6.5	16.4	14.8	10.4	2.2	12.0	12.0	12.8	26.6	32.9								
Effective Green, g (s)	10.3	8.7	6.5	16.4	14.8	10.4	2.2	12.0	12.0	12.8	26.6	32.9								
Actuated g/C Ratio	0.13	0.11	0.08	0.20	0.18	0.13	0.03	0.15	0.15	0.16	0.32	0.40								
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0								
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0								
Lane Grp Cap (vph)	216	365	120	338	610	192	46	504	217	269	1117	693								
v/s Ratio Prot	0.09	c0.20	0.01	c0.19	c0.24	0.02	0.05			c0.08	c0.33	0.05								
v/s Ratio Perm			0.01			0.10				0.00		0.05								
v/c Ratio	0.70	1.91	0.25	0.96	1.35	0.77	0.72	0.35	0.02	0.52	1.01	0.22								
Uniform Delay, d1	34.3	36.6	35.4	32.5	33.6	34.6	39.5	31.4	29.9	31.8	27.6	16.1								
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.17	0.89	0.93								
Incremental Delay, d2	9.9	419.4	1.1	39.2	167.1	16.6	41.5	0.4	0.0	1.8	29.6	0.2								
Delay (s)	44.3	456.0	36.5	71.7	200.7	51.2	81.0	31.8	30.0	39.0	54.2	15.2								
Level of Service	D	F	D	E	F	D	F	C	C	D	D	B								
Approach Delay (s)		329.8			133.6			38.3			47.3									
Approach LOS		F			F			D			D									

Intersection Summary

HCM Average Control Delay	144.3	HCM Level of Service	F
HCM Volume to Capacity ratio	1.08		
Actuated Cycle Length (s)	81.9	Sum of lost time (s)	24.0
Intersection Capacity Utilization	79.8%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Barrio Logan CPU  
41: Main St & I-15 Ramps

Horizon Year Alt 2 without Improvements  
Timing Plan: AM Peak

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↔	↕↕	↕↕	↕	↕	↕
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frbp, ped/bikes	1.00	1.00	1.00	1.00	0.99	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	0.90	0.90
Flt Protected	0.95	1.00	1.00	1.00	0.99	0.99
Satd. Flow (prot)	1770	3539	3539	1583	1643	1643
Flt Permitted	0.95	1.00	1.00	1.00	0.99	0.99
Satd. Flow (perm)	1770	3539	3539	1583	1643	1643
Volume (vph)	37	187	516	107	108	268
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	40	203	561	116	117	291
RTOR Reduction (vph)	0	0	0	78	144	0
Lane Group Flow (vph)	40	203	561	38	264	0
Confl. Peds. (#/hr)					2	2
Confl. Bikes (#/hr)						2
Turn Type	Prot			Perm		
Protected Phases	5	2	6		4	
Permitted Phases				6		
Actuated Green, G (s)	1.6	18.0	12.4	12.4	11.5	
Effective Green, g (s)	1.6	18.0	12.4	12.4	11.5	
Actuated g/C Ratio	0.04	0.48	0.33	0.33	0.31	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	76	1699	1170	523	504	
v/s Ratio Prot	c0.02	0.06	c0.16		c0.16	
v/s Ratio Perm				0.02		
v/c Ratio	0.53	0.12	0.48	0.07	0.52	
Uniform Delay, d1	17.6	5.4	10.0	8.6	10.7	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	6.4	0.0	0.3	0.1	1.0	
Delay (s)	24.0	5.4	10.3	8.7	11.7	
Level of Service	C	A	B	A	B	
Approach Delay (s)		8.5	10.0		11.7	
Approach LOS		A	B		B	
<b>Intersection Summary</b>						
HCM Average Control Delay		10.3		HCM Level of Service		B
HCM Volume to Capacity ratio		0.50				
Actuated Cycle Length (s)		37.5		Sum of lost time (s)	12.0	
Intersection Capacity Utilization		50.2%		ICU Level of Service		A
Analysis Period (min)		15				
c Critical Lane Group						

Barrio Logan CPU  
1: Commercial St & 16th St

Horizon Year Alt 2 without Improvements  
Timing Plan: PM Peak

Movement	EBL	EBT	EBR	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	SWR
Lane Configurations		↕↕		↕↕			↕↕		↕↕	↕↕	↕↕	↕
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0			4.0		4.0	4.0	4.0	4.0
Lane Util. Factor		1.00		1.00			0.95		0.95	0.95	0.95	0.95
Frbp, ped/bikes		1.00		1.00			1.00		1.00	0.99	0.99	0.99
Flpb, ped/bikes		1.00		1.00			1.00		1.00	1.00	1.00	1.00
Frt		0.99		0.97			0.99		0.99	0.98	0.98	0.98
Flt Protected		0.99		1.00			1.00		1.00	1.00	1.00	1.00
Satd. Flow (prot)		1836		1806			3513		3437	3437	3437	3437
Flt Permitted		0.53		1.00			0.92		0.92	0.88	0.88	0.88
Satd. Flow (perm)		973		1806			3244		3033	3033	3033	3033
Volume (vph)		68	350	17	493	119	25	700	28	36	510	81
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
Adj. Flow (vph)		74	380	18	536	129	27	761	30	39	554	88
RTOR Reduction (vph)		0	2	0	0	0	0	0	0	0	15	0
Lane Group Flow (vph)		0	470	0	665	0	0	818	0	0	666	0
Confl. Peds. (#/hr)				9			11	28			7	28
Confl. Bikes (#/hr)				1			2					
Turn Type		Perm		Perm		Perm		Perm		Perm		custom
Protected Phases		4		8		2		6		6		9
Permitted Phases		4				2		6				
Actuated Green, G (s)		27.0		27.0		27.0		27.0		27.0		27.0
Effective Green, g (s)		27.0		27.0		27.0		27.0		27.0		27.0
Actuated g/C Ratio		0.44		0.44		0.44		0.44		0.44		0.44
Clearance Time (s)		4.0		4.0		4.0		4.0		4.0		4.0
Vehicle Extension (s)		3.0		3.0		3.0		3.0		3.0		3.0
Lane Grp Cap (vph)		424		786		1413		1321		1321		1321
v/s Ratio Prot				0.37								
v/s Ratio Perm		c0.48				c0.25		0.22		0.22		0.22
v/c Ratio		1.11		0.85		0.58		0.50		0.50		0.50
Uniform Delay, d1		17.5		15.6		13.2		12.7		12.7		12.7
Progression Factor		1.00		1.00		1.00		1.00		1.00		1.00
Incremental Delay, d2		76.8		8.4		1.7		1.4		1.4		1.4
Delay (s)		94.3		24.0		14.9		14.0		14.0		14.0
Level of Service		F		C		B		B		B		B
Approach Delay (s)		94.3		24.0		14.9		14.0		14.0		14.0
Approach LOS		F		C		B		B		B		B
<b>Intersection Summary</b>												
HCM Average Control Delay		31.2				HCM Level of Service		C				
HCM Volume to Capacity ratio		0.84										
Actuated Cycle Length (s)		62.0				Sum of lost time (s)		8.0				
Intersection Capacity Utilization		111.1%				ICU Level of Service		H				
Analysis Period (min)		15										
c Critical Lane Group												

Barrio Logan CPU  
2: National Ave & 16th St

Horizon Year Alt 2 without Improvements  
Timing Plan: PM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↕		↕		↕		↕↕			↕↕	
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	91	347	31	3	458	25	61	41	7	125	25	70
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
Hourly flow rate (vph)	99	377	34	3	498	27	66	45	8	136	27	76
Pedestrians		14			10			37			27	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		1			1			3			2	
Right turn flare (veh)												
Median type								None			None	
Median storage (veh)												
Upstream signal (ft)					668							
pX, platoon unblocked												
vC, conflicting volume	552			448			1237	1187	252	971	1191	552
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	552			448			1237	1187	252	971	1191	552
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	90			100			19	72	99	2	83	83
cM capacity (veh/h)	991			1075			82	159	718	139	158	461
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>EB 2</b>	<b>WB 1</b>	<b>WB 2</b>	<b>NB 1</b>	<b>SB 1</b>						
Volume Total	288	222	3	525	118	239						
Volume Left	99	0	3	0	66	136						
Volume Right	0	34	0	27	8	76						
cSH	991	1700	1075	1700	107	182						
Volume to Capacity	0.10	0.13	0.00	0.31	1.10	1.32						
Queue Length 95th (ft)	8	0	0	0	185	343						
Control Delay (s)	3.8	0.0	8.4	0.0	193.2	225.9						
Lane LOS	A		A		F	F						
Approach Delay (s)	2.1		0.1		193.2	225.9						
Approach LOS					F	F						
<b>Intersection Summary</b>												
Average Delay			55.9									
Intersection Capacity Utilization			65.0%		ICU Level of Service		C					
Analysis Period (min)			15									

Barrio Logan CPU  
3: National Ave & Sigsbee St

Horizon Year Alt 2 without Improvements  
Timing Plan: PM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↕	↕		↕	↕			↕↕			↕↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00		1.00	1.00	
Frbp, ped/bikes	1.00	0.99		1.00	1.00			1.00		1.00	0.98	
Flpb, ped/bikes	0.99	1.00		0.99	1.00			0.99		0.99	1.00	
Frt	1.00	0.98		1.00	0.99			0.99		0.99	0.92	
Flt Protected	0.95	1.00		0.95	1.00			0.97		0.97	1.00	
Satd. Flow (prot)	1751	1808		1758	1829			1782		1782	1684	
Flt Permitted	0.57	1.00		0.46	1.00			0.81		0.81	0.97	
Satd. Flow (perm)	1058	1808		847	1829			1489		1489	1641	
Volume (vph)	35	325	62	9	254	28	78	58	13	6	23	40
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)	38	353	67	10	276	30	85	63	14	7	25	43
RTOR Reduction (vph)	0	11	0	0	6	0	0	5	0	0	29	0
Lane Group Flow (vph)	38	409	0	10	300	0	0	157	0	0	46	0
Confl. Peds. (#/hr)	21		16	16		21	28		9	9		28
Confl. Bikes (#/hr)			4					3				6
Turn Type	Perm			Perm		Perm		Perm		Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	12.6	12.6		12.6	12.6			9.9			9.9	
Effective Green, g (s)	12.6	12.6		12.6	12.6			9.9			9.9	
Actuated g/C Ratio	0.41	0.41		0.41	0.41			0.32			0.32	
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)	437	747		350	756			483			533	
v/s Ratio Prot		c0.23			0.16							
v/s Ratio Perm	0.04			0.01				c0.11			0.03	
v/c Ratio	0.09	0.55		0.03	0.40			0.32			0.09	
Uniform Delay, d1	5.4	6.8		5.3	6.3			7.8			7.2	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	0.1	0.8		0.0	0.3			0.4			0.1	
Delay (s)	5.5	7.6		5.3	6.6			8.2			7.2	
Level of Service	A	A		A	A			A			A	
Approach Delay (s)		7.4			6.6			8.2			7.2	
Approach LOS		A			A			A			A	
<b>Intersection Summary</b>												
HCM Average Control Delay			7.3		HCM Level of Service		A					
HCM Volume to Capacity ratio			0.45									
Actuated Cycle Length (s)			30.5		Sum of lost time (s)		8.0					
Intersection Capacity Utilization			50.5%		ICU Level of Service		A					
Analysis Period (min)			15									
c Critical Lane Group												

Barrio Logan CPU  
4: Newton Ave & Sigsbee St

Horizon Year Alt 2 without Improvements  
Timing Plan: PM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↕				↕		↕				↕	
Sign Control	Stop				Stop		Stop				Stop	
Volume (vph)	9	50	29	9	50	23	20	91	12	16	38	8
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
Hourly flow rate (vph)	10	54	32	10	54	25	22	99	13	17	41	9
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	96	89	134	67								
Volume Left (vph)	10	10	22	17								
Volume Right (vph)	32	25	13	9								
Hadj (s)	-0.14	-0.11	0.01	0.01								
Departure Headway (s)	4.3	4.4	4.4	4.5								
Degree Utilization, x	0.11	0.11	0.16	0.08								
Capacity (veh/h)	790	774	778	754								
Control Delay (s)	7.9	7.9	8.3	7.9								
Approach Delay (s)	7.9	7.9	8.3	7.9								
Approach LOS	A	A	A	A								
<b>Intersection Summary</b>												
Delay	8.0											
HCM Level of Service	A											
Intersection Capacity Utilization	23.3%		ICU Level of Service		A							
Analysis Period (min)	15											

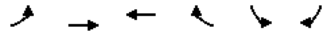
Barrio Logan CPU  
5: Main St & Sigsbee St

Horizon Year Alt 2 without Improvements  
Timing Plan: PM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↕				↕		↕				↕	
Sign Control	Stop				Stop		Stop				Stop	
Volume (vph)	4	2	13	38	0	31	0	98	12	20	60	2
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
Hourly flow rate (vph)	4	2	14	41	0	34	0	107	13	22	65	2
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	21	75	120	89								
Volume Left (vph)	4	41	0	22								
Volume Right (vph)	14	34	13	2								
Hadj (s)	-0.33	-0.13	-0.03	0.07								
Departure Headway (s)	4.1	4.3	4.2	4.3								
Degree Utilization, x	0.02	0.09	0.14	0.11								
Capacity (veh/h)	824	803	833	812								
Control Delay (s)	7.2	7.7	7.8	7.8								
Approach Delay (s)	7.2	7.7	7.8	7.8								
Approach LOS	A	A	A	A								
<b>Intersection Summary</b>												
Delay	7.8											
HCM Level of Service	A											
Intersection Capacity Utilization	27.7%		ICU Level of Service		A							
Analysis Period (min)	15											

Barrio Logan CPU  
6: Harbor Dr & Sigsbee St

Horizon Year Alt 2 without Improvements  
Timing Plan: PM Peak



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↔	↕	↕		↕	↕
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	160	1945	750	100	90	70
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	174	2114	815	109	98	76
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					Raised	
Median storage (veh)					0	
Upstream signal (ft)			1319			
pX, platoon unblocked	0.93				0.93	0.93
vC, conflicting volume	924				2274	462
vC1, stage 1 conf vol					870	
vC2, stage 2 conf vol					1405	
vCu, unblocked vol	843				2295	346
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)					5.8	
tF (s)	2.2				3.5	3.3
p0 queue free %	76				0	87
cM capacity (veh/h)	734				78	605

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1
Volume Total	174	1057	1057	543	380	174
Volume Left	174	0	0	0	0	98
Volume Right	0	0	0	0	109	76
cSH	734	1700	1700	1700	1700	127
Volume to Capacity	0.24	0.62	0.62	0.32	0.22	1.37
Queue Length 95th (ft)	23	0	0	0	0	289
Control Delay (s)	11.4	0.0	0.0	0.0	0.0	275.0
Lane LOS	B					F
Approach Delay (s)	0.9			0.0		275.0
Approach LOS						F

Intersection Summary						
Average Delay		14.7				
Intersection Capacity Utilization		69.7%		ICU Level of Service		C
Analysis Period (min)		15				

Barrio Logan CPU  
7: Logan Ave & Beardsley St

Horizon Year Alt 2 without Improvements  
Timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕		↕	↕			↕		↕	↕	↕
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	0	532	70	40	160	0	56	0	123	272	109	39
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
Hourly flow rate (vph)	0	578	76	43	174	0	61	0	134	296	118	42
Direction, Lane #	EB 1	WB 1	WB 2	NB 1	SB 1							
Volume Total (vph)	654	43	174	195	457							
Volume Left (vph)	0	43	0	61	296							
Volume Right (vph)	76	0	0	134	42							
Hadj (s)	-0.04	0.53	0.03	-0.32	0.11							
Departure Headway (s)	7.1	8.8	8.3	7.7	7.2							
Degree Utilization, x	1.29	0.11	0.40	0.41	0.91							
Capacity (veh/h)	511	389	413	439	497							
Control Delay (s)	168.2	11.6	15.5	15.9	47.7							
Approach Delay (s)	168.2	14.7		15.9	47.7							
Approach LOS	F	B		C	E							

Intersection Summary						
Delay				90.7		
HCM Level of Service				F		
Intersection Capacity Utilization		77.1%		ICU Level of Service		D
Analysis Period (min)		15				

Barrio Logan CPU  
8: National Ave & Beardsley St  
Horizon Year Alt 2 without Improvements  
Timing Plan: PM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔		↔		↔		↔		↔		↔	
Sign Control	Stop		Stop		Stop		Stop		Stop		Stop	
Volume (vph)	19	635	2	113	358	77	9	43	132	188	83	11
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
Hourly flow rate (vph)	21	690	2	123	389	84	10	47	143	204	90	12
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1						
Volume Total (vph)	21	692	123	473	200	307						
Volume Left (vph)	21	0	123	0	10	204						
Volume Right (vph)	0	2	0	84	143	12						
Hadj (s)	0.53	0.03	0.53	-0.09	-0.39	0.14						
Departure Headway (s)	8.5	8.0	8.4	7.8	8.3	8.2						
Degree Utilization, x	0.05	1.54	0.29	1.02	0.46	0.70						
Capacity (veh/h)	416	454	423	473	409	428						
Control Delay (s)	10.7	272.7	13.6	75.4	18.3	28.5						
Approach Delay (s)	265.1		62.6		18.3	28.5						
Approach LOS	F		F		C	D						
<b>Intersection Summary</b>												
Delay			131.5									
HCM Level of Service			F									
Intersection Capacity Utilization			80.9%				ICU Level of Service		D			
Analysis Period (min)			15									

Barrio Logan CPU  
9: Newton Ave & Beardsley St  
Horizon Year Alt 2 without Improvements  
Timing Plan: PM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔		↔		↔		↔		↔		↔	
Sign Control	Stop		Stop		Stop		Stop		Stop		Stop	
Volume (vph)	7	60	4	13	93	19	5	71	37	46	94	12
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
Hourly flow rate (vph)	8	65	4	14	101	21	5	77	40	50	102	13
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	77	136	123	165								
Volume Left (vph)	8	14	5	50								
Volume Right (vph)	4	21	40	13								
Hadj (s)	0.02	-0.04	-0.15	0.05								
Departure Headway (s)	4.8	4.6	4.5	4.6								
Degree Utilization, x	0.10	0.18	0.15	0.21								
Capacity (veh/h)	694	721	758	735								
Control Delay (s)	8.3	8.6	8.3	8.9								
Approach Delay (s)	8.3	8.6	8.3	8.9								
Approach LOS	A	A	A	A								
<b>Intersection Summary</b>												
Delay			8.6									
HCM Level of Service			A									
Intersection Capacity Utilization			32.3%				ICU Level of Service		A			
Analysis Period (min)			15									

Barrio Logan CPU  
10: Main St & Beardsley St

Horizon Year Alt 2 without Improvements  
Timing Plan: PM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↕		↕		↕		↕		↕		↕	
Sign Control	Stop		Stop		Stop		Stop		Stop		Stop	
Volume (vph)	22	64	4	78	33	79	0	25	109	144	39	17
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
Hourly flow rate (vph)	24	70	4	85	36	86	0	27	118	157	42	18
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>WB 1</b>	<b>NB 1</b>	<b>SB 1</b>								
Volume Total (vph)	98	207	146	217								
Volume Left (vph)	24	85	0	157								
Volume Right (vph)	4	86	118	18								
Hadj (s)	0.06	-0.13	-0.45	0.13								
Departure Headway (s)	5.1	4.8	4.5	5.0								
Degree Utilization, x	0.14	0.28	0.18	0.30								
Capacity (veh/h)	634	694	731	676								
Control Delay (s)	9.0	9.6	8.5	10.1								
Approach Delay (s)	9.0	9.6	8.5	10.1								
Approach LOS	A	A	A	B								
<b>Intersection Summary</b>												
Delay	9.5											
HCM Level of Service	A											
Intersection Capacity Utilization	47.4%			ICU Level of Service	A							
Analysis Period (min)	15											

Barrio Logan CPU  
11: Harbor Dr & Beardsley St

Horizon Year Alt 2 without Improvements  
Timing Plan: PM Peak

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↕	↕	↕	↕	↕	↕
Sign Control	Free	Free	Free	Free	Stop	Stop
Grade	0%	0%	0%	0%	0%	0%
Volume (veh/h)	95	1950	820	20	40	30
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	103	2120	891	22	43	33
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	Raised					
Median storage (veh)	0					
Upstream signal (ft)	658					
pX, platoon unblocked	0.88				0.88	0.88
vC, conflicting volume	913				2168	457
vC1, stage 1 conf vol					902	
vC2, stage 2 conf vol					1266	
vCu, unblocked vol	765				2191	246
tC, single (s)	4.3				6.8	6.9
tC, 2 stage (s)					5.8	
tF (s)	2.3				3.5	3.3
p0 queue free %	85				55	95
cM capacity (veh/h)	698				96	664
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>EB 2</b>	<b>EB 3</b>	<b>WB 1</b>	<b>WB 2</b>	<b>SB 1</b>
Volume Total	103	1060	1060	594	319	76
Volume Left	103	0	0	0	0	43
Volume Right	0	0	0	0	22	33
cSH	698	1700	1700	1700	1700	151
Volume to Capacity	0.15	0.62	0.62	0.35	0.19	0.50
Queue Length 95th (ft)	13	0	0	0	0	60
Control Delay (s)	11.0	0.0	0.0	0.0	0.0	50.6
Lane LOS	B					F
Approach Delay (s)	0.5			0.0		50.6
Approach LOS						F
<b>Intersection Summary</b>						
Average Delay	1.6					
Intersection Capacity Utilization	64.6%			ICU Level of Service	C	
Analysis Period (min)	15					



Barrio Logan CPU  
12: Kearney St & Cesar E. Chavez Pkwy  
Horizon Year Alt 2 without Improvements  
Timing Plan: PM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.0	4.0		4.0	4.0				4.0
Lane Util. Factor				0.95	0.95		1.00	1.00				0.95
Flt				1.00	0.94		1.00	1.00				0.98
Flt Protected				0.95	0.99		0.95	1.00				1.00
Satd. Flow (prot)				1478	1450		1626	1712				3195
Flt Permitted				0.95	0.99		0.95	1.00				1.00
Satd. Flow (perm)				1478	1450		1626	1712				3195
Volume (vph)	0	0	0	517	173	167	383	343	0	0	332	44
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)	0	0	0	562	188	182	416	373	0	0	361	48
RTOR Reduction (vph)	0	0	0	0	25	0	0	0	0	0	14	0
Lane Group Flow (vph)	0	0	0	459	448	0	416	373	0	0	395	0
Heavy Vehicles (%)	16%	16%	16%	16%	16%	16%	11%	11%	11%	11%	11%	11%
Turn Type				Split			Split					
Protected Phases				8	8		6	6				2
Permitted Phases												
Actuated Green, G (s)				26.5	26.5		22.0	22.0				14.3
Effective Green, g (s)				26.5	26.5		22.0	22.0				14.3
Actuated g/C Ratio				0.35	0.35		0.29	0.29				0.19
Clearance Time (s)				4.0	4.0		4.0	4.0				4.0
Vehicle Extension (s)				3.0	3.0		3.0	3.0				3.0
Lane Grp Cap (vph)				524	514		478	504				611
v/s Ratio Prot				c0.31	0.31		c0.26	0.22				c0.12
v/s Ratio Perm												
v/c Ratio				0.88	0.87		0.87	0.74				0.65
Uniform Delay, d1				22.6	22.6		25.0	23.8				27.9
Progression Factor				1.00	1.00		1.00	1.00				1.00
Incremental Delay, d2				15.1	14.9		15.8	5.8				2.4
Delay (s)				37.7	37.5		40.8	29.6				30.3
Level of Service				D	D		D	C				C
Approach Delay (s)		0.0			37.6			35.5				30.3
Approach LOS		A			D			D				C
<b>Intersection Summary</b>												
HCM Average Control Delay			35.4			HCM Level of Service						D
HCM Volume to Capacity ratio			0.82									
Actuated Cycle Length (s)			74.8			Sum of lost time (s)			12.0			
Intersection Capacity Utilization			65.8%			ICU Level of Service						C
Analysis Period (min)			15									
c Critical Lane Group												

Barrio Logan CPU  
13: Logan Ave & Cesar E. Chavez Pkwy  
Horizon Year Alt 2 without Improvements  
Timing Plan: PM Peak

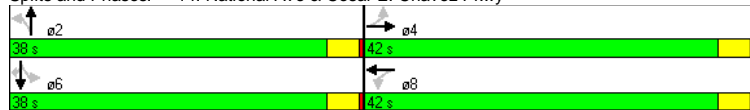
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.0	4.0		4.0	4.0				4.0
Lane Util. Factor				1.00	1.00		1.00	0.95	1.00	1.00	1.00	0.95
Frpb, ped/bikes				1.00	0.99		1.00	1.00	0.98	1.00	1.00	1.00
Flpb, ped/bikes				1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Flt				1.00	0.95		1.00	1.00	0.85	1.00	1.00	0.99
Flt Protected				0.95	1.00		0.95	1.00	1.00	0.95	1.00	0.95
Satd. Flow (prot)				1762	1754		1766	1863	1549	1530	3059	1312
Flt Permitted				0.37	1.00		0.13	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)				684	1754		248	1863	1549	1530	3059	1312
Volume (vph)	130	450	230	100	350	90	140	506	700	114	684	51
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)	141	489	250	109	380	98	152	550	761	124	743	55
RTOR Reduction (vph)	0	23	0	0	0	61	0	0	97	0	7	0
Lane Group Flow (vph)	141	716	0	109	380	37	152	550	664	124	791	0
Confl. Peds. (#/hr)				10	13		10			27		27
Confl. Bikes (#/hr)				4	13		2			3		2
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	18%	18%	18%	18%	18%	18%
Turn Type	Perm			Perm		Perm	Prot		Perm	Prot		
Protected Phases			4			8		5	2		1	6
Permitted Phases	4			8		8				2		
Actuated Green, G (s)	30.0	30.0		30.0	30.0	30.0	13.5	33.0	33.0	5.0	24.5	
Effective Green, g (s)	30.0	30.0		30.0	30.0	30.0	13.5	33.0	33.0	5.0	24.5	
Actuated g/C Ratio	0.38	0.38		0.38	0.38	0.38	0.17	0.41	0.41	0.06	0.31	
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	257	658		93	699	581	258	1262	541	96	925	
v/s Ratio Prot		0.41			0.20		0.10	0.18		c0.08	0.26	
v/s Ratio Perm	0.21			c0.44		0.02			c0.51			
v/c Ratio	0.55	1.09		1.17	0.54	0.06	0.59	0.44	1.23	1.29	0.86	
Uniform Delay, d1	19.7	25.0		25.0	19.6	16.0	30.7	16.8	23.5	37.5	26.1	
Progression Factor	1.00	1.00		1.00	1.00	1.00	0.79	0.78	0.64	1.00	1.00	
Incremental Delay, d2	2.4	61.4		146.9	0.9	0.0	1.0	0.3	107.4	188.9	10.0	
Delay (s)	22.1	86.4		171.9	20.5	16.1	25.4	13.4	122.4	226.4	36.1	
Level of Service	C	F		F	C	B	C	B	F	F	D	
Approach Delay (s)		76.1			47.9			71.3			61.7	
Approach LOS		E			D			E			E	
<b>Intersection Summary</b>												
HCM Average Control Delay			66.5			HCM Level of Service						E
HCM Volume to Capacity ratio			1.21									
Actuated Cycle Length (s)			80.0			Sum of lost time (s)			12.0			
Intersection Capacity Utilization			100.3%			ICU Level of Service						G
Analysis Period (min)			15									
c Critical Lane Group												

Barrio Logan CPU  
 14: National Ave & Cesar E. Chavez Pkwy  
 Horizon Year Alt 2 without Improvements  
 Timing Plan: PM Peak

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations	↔		↔		↔		↔		↔
Volume (vph)	300	400	110	270	120	1000	120	550	410
Turn Type	Perm		Perm		Perm		Perm		Perm
Protected Phases	4		8		2		6		6
Permitted Phases	4		8		2		6		6
Detector Phases	4		8		2		6		6
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	31.0	31.0	34.0	34.0	27.0	27.0	27.0	27.0	27.0
Total Split (s)	42.0	42.0	42.0	42.0	38.0	38.0	38.0	38.0	38.0
Total Split (%)	52.5%	52.5%	52.5%	52.5%	47.5%	47.5%	47.5%	47.5%	47.5%
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)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Lead/Lag									
Lead-Lag Optimize?									
Recall Mode	None	None	None	None	C-Min	C-Min	C-Min	C-Min	C-Min
Act Effect Green (s)	38.0	38.0	38.0	38.0	34.0	34.0	34.0	34.0	34.0
Actuated g/C Ratio	0.48	0.48	0.48	0.48	0.42	0.42	0.42	0.42	0.42
v/c Ratio	1.48	0.87	1.13	0.71	0.92	0.88	1.60	0.87	0.53
Control Delay	262.8	30.4	155.1	21.3	79.6	25.6	316.2	17.2	1.3
Queue Delay	0.0	0.6	8.3	0.0	0.0	1.4	0.0	0.8	0.6
Total Delay	262.8	31.1	163.5	21.3	79.6	27.0	316.2	18.1	2.0
LOS	F	C	F	C	E	C	F	B	A
Approach Delay	101.3		45.2		32.1		45.0		
Approach LOS	F		D		C		D		

Intersection Summary	
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 2 (3%), Referenced to phase 2:NBT and 6:SBTL, Start of Green	
Natural Cycle: 65	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.60	
Intersection Signal Delay: 55.2	Intersection LOS: E
Intersection Capacity Utilization 98.5%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 14: National Ave & Cesar E. Chavez Pkwy



Barrio Logan CPU  
 14: National Ave & Cesar E. Chavez Pkwy  
 Horizon Year Alt 2 without Improvements  
 Timing Plan: PM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔		↔		↔		↔		↔		↔	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00
Flt	1.00	0.94	1.00	0.92	1.00	0.99	1.00	0.99	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	0.95	1.00	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1770	1745	1770	1722	1770	1722	1612	3179	1530	1610	1369	1369
Flt Permitted	0.25	1.00	0.12	1.00	0.12	1.00	0.19	1.00	0.12	1.00	1.00	1.00
Satd. Flow (perm)	463	1745	224	1722	463	1745	331	3179	189	1610	1369	1369
Volume (vph)	300	400	290	110	270	275	120	1000	100	120	550	410
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)	326	435	315	120	293	299	130	1087	109	130	598	446
RTOR Reduction (vph)	0	33	0	0	18	0	0	9	0	0	0	256
Lane Group Flow (vph)	326	717	0	120	574	0	130	1187	0	130	598	190
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	12%	12%	12%	18%	18%	18%
Turn Type	Perm		Perm		Perm		Perm		Perm		Perm	
Protected Phases	4		8		8		2		6		6	
Permitted Phases	4		8		8		2		6		6	
Actuated Green, G (s)	38.0	38.0	38.0	38.0	38.0	38.0	34.0	34.0	34.0	34.0	34.0	34.0
Effective Green, g (s)	38.0	38.0	38.0	38.0	38.0	38.0	34.0	34.0	34.0	34.0	34.0	34.0
Actuated g/C Ratio	0.48	0.48	0.48	0.48	0.48	0.48	0.42	0.42	0.42	0.42	0.42	0.42
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	220	829	106	818	220	829	141	1351	80	684	582	582
v/s Ratio Prot	0.41		0.33		0.37		0.37		0.37		0.37	
v/s Ratio Perm	c0.70		0.54		0.39		c0.69		0.14		0.14	
v/c Ratio	1.48	0.87	1.13	0.70	0.92	0.88	1.62	0.87	0.33	0.33	0.33	0.33
Uniform Delay, d1	21.0	18.7	21.0	16.5	21.7	21.1	23.0	21.0	15.3	15.3	15.3	15.3
Progression Factor	1.00	1.00	1.00	1.00	0.79	0.80	0.40	0.37	0.13	0.13	0.13	0.13
Incremental Delay, d2	239.6	9.4	127.4	2.7	55.1	7.9	305.2	7.2	0.7	0.7	0.7	0.7
Delay (s)	260.6	28.1	148.4	19.3	72.3	24.7	314.4	15.0	2.6	2.6	2.6	2.6
Level of Service	F	C	F	B	E	C	F	B	A	A	A	A
Approach Delay (s)	98.5		41.0		29.4		43.4		43.4		43.4	
Approach LOS	F		D		C		D		D		D	

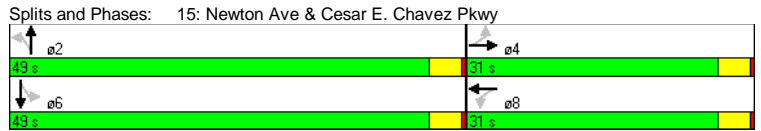
Intersection Summary			
HCM Average Control Delay	52.5	HCM Level of Service	D
HCM Volume to Capacity ratio	1.55		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	98.5%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Barrio Logan CPU  
 15: Newton Ave & Cesar E. Chavez Pkwy  
 Horizon Year Alt 2 without Improvements  
 Timing Plan: PM Peak

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔
Volume (vph)	120	130	90	70	40	790	170	910
Turn Type	Perm		Perm		Perm		Perm	
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phases	4	4	8	8	2	2	6	6
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	31.0	31.0	31.0	31.0	27.0	27.0	27.0	27.0
Total Split (s)	31.0	31.0	31.0	31.0	49.0	49.0	49.0	49.0
Total Split (%)	38.8%	38.8%	38.8%	38.8%	61.3%	61.3%	61.3%	61.3%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	None	None	None	C-Min	C-Min	C-Min	C-Min
Act Effct Green (s)	14.7	14.7	14.7	14.7	57.3	57.3	57.3	57.3
Actuated g/C Ratio	0.18	0.18	0.18	0.18	0.72	0.72	0.72	0.72
v/c Ratio	0.69	0.61	0.52	0.53	0.40	0.40	0.61	0.87
Control Delay	48.3	31.2	37.9	16.6	15.8	4.1	14.1	15.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.1	0.0	1.4
Total Delay	48.3	31.2	37.9	16.6	15.8	4.2	14.1	16.8
LOS	D	C	D	B	B	A	B	B
Approach Delay		37.6		23.2		4.7		16.4
Approach LOS		D		C		A		B

Intersection Summary	
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.87	
Intersection Signal Delay: 15.8	Intersection LOS: B
Intersection Capacity Utilization 86.5%	ICU Level of Service E
Analysis Period (min) 15	



Barrio Logan CPU  
 15: Newton Ave & Cesar E. Chavez Pkwy  
 Horizon Year Alt 2 without Improvements  
 Timing Plan: PM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	1.00	1.00
Flt	1.00	0.95	1.00	0.90	1.00	0.99	1.00	0.99	1.00	0.99	1.00	0.99
Flt Protected	0.95	1.00	0.95	1.00	0.95	1.00	0.95	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1770	1765	1770	1681	1681	1681	1612	3189	1612	3189	1612	1681
Flt Permitted	0.41	1.00	0.41	1.00	0.41	1.00	0.15	1.00	0.29	1.00	0.29	1.00
Satd. Flow (perm)	769	1765	769	1681	1681	1681	248	3189	484	1681	484	1681
Volume (vph)	120	130	70	90	70	130	40	790	60	170	910	60
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)	130	141	76	98	76	141	43	859	65	185	989	65
RTOR Reduction (vph)	0	30	0	0	103	0	0	5	0	0	2	0
Lane Group Flow (vph)	130	187	0	98	114	0	43	919	0	185	1052	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	12%	12%	12%	12%	12%	12%
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	14.7	14.7		14.7	14.7		57.3	57.3		57.3	57.3	
Effective Green, g (s)	14.7	14.7		14.7	14.7		57.3	57.3		57.3	57.3	
Actuated g/C Ratio	0.18	0.18		0.18	0.18		0.72	0.72		0.72	0.72	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	141	324		141	309		178	2284		347	1204	
v/s Ratio Prot		0.11			0.07			0.29			c0.63	
v/s Ratio Perm	c0.17			0.13			0.17			0.38		
v/c Ratio	0.92	0.58		0.70	0.37		0.24	0.40		0.53	0.87	
Uniform Delay, d1	32.1	29.8		30.6	28.6		3.9	4.5		5.2	8.6	
Progression Factor	1.00	1.00		1.00	1.00		0.71	0.70		0.67	0.67	
Incremental Delay, d2	52.6	2.5		13.8	0.7		2.3	0.4		3.7	6.0	
Delay (s)	84.7	32.3		44.4	29.3		5.1	3.6		7.2	11.7	
Level of Service	F	C		D	C		A	A		A	B	
Approach Delay (s)		51.9			34.0			3.6			11.0	
Approach LOS		D			C			A			B	

Intersection Summary			
HCM Average Control Delay	16.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	86.5%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

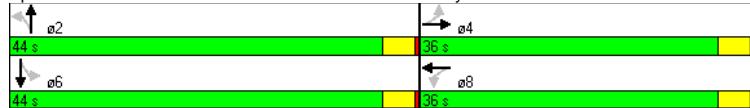
Barrio Logan CPU  
 16: Main St & Cesar E. Chavez Pkwy  
 Horizon Year Alt 2 without Improvements  
 Timing Plan: PM Peak

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Volume (vph)	120	290	70	250	85	640	250	540
Turn Type	Perm		Perm		Perm		Perm	
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phases	4	4	8	8	2	2	6	6
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	31.0	31.0	31.0	31.0	27.0	27.0	27.0	27.0
Total Split (s)	36.0	36.0	36.0	36.0	44.0	44.0	44.0	44.0
Total Split (%)	45.0%	45.0%	45.0%	45.0%	55.0%	55.0%	55.0%	55.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	None	None	None	C-Min	C-Min	C-Min	C-Min
Act Effect Green (s)	29.8	29.8	29.8	29.8	42.2	42.2	42.2	42.2
Actuated g/C Ratio	0.37	0.37	0.37	0.37	0.53	0.53	0.53	0.53
v/c Ratio	0.95	0.50	0.26	0.83	1.07	0.56	1.33	1.08
Control Delay	93.0	21.2	18.9	30.9	145.4	13.9	188.1	65.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	1.8	0.0	26.8
Total Delay	93.0	21.2	18.9	30.9	145.4	15.8	188.1	91.9
LOS	F	C	B	C	F	B	F	F
Approach Delay		41.0		29.5		27.9		114.4
Approach LOS		D		C		C		F

**Intersection Summary**

Cycle Length: 80  
 Actuated Cycle Length: 80  
 Offset: 1 (1%), Referenced to phase 2:NBT and 6:SBTL, Start of Green  
 Natural Cycle: 70  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 1.33  
 Intersection Signal Delay: 61.0  
 Intersection LOS: E  
 Intersection Capacity Utilization 101.4%  
 ICU Level of Service G  
 Analysis Period (min) 15

Splits and Phases: 16: Main St & Cesar E. Chavez Pkwy



Barrio Logan CPU  
 16: Main St & Cesar E. Chavez Pkwy  
 Horizon Year Alt 2 without Improvements  
 Timing Plan: PM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	0.99	1.00	1.00	1.00	1.00	0.99	1.00	0.99	1.00
Flt	1.00	0.99	1.00	0.92	1.00	0.92	1.00	0.97	1.00	0.95	1.00	0.95
Fit Protected	0.95	1.00	0.95	1.00	0.95	1.00	0.95	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1761	1836	1750	1691	1556	2974	1544	1529				
Fit Permitted	0.16	1.00	0.41	1.00	0.09	1.00	0.25	1.00				
Satd. Flow (perm)	305	1836	756	1691	155	2974	404	1529				
Volume (vph)	120	290	25	70	250	270	85	640	180	250	540	280
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)	130	315	27	76	272	293	92	696	196	272	587	304
RTOR Reduction (vph)	0	4	0	0	51	0	0	31	0	0	22	0
Lane Group Flow (vph)	130	338	0	76	514	0	92	861	0	272	869	0
Confl. Peds. (#/hr)	19		24	24		19	16		20	20		16
Confl. Bikes (#/hr)			1			2						
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	16%	16%	16%	16%	16%	16%
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	29.8	29.8		29.8	29.8		42.2	42.2		42.2	42.2	
Effective Green, g (s)	29.8	29.8		29.8	29.8		42.2	42.2		42.2	42.2	
Actuated g/C Ratio	0.37	0.37		0.37	0.37		0.53	0.53		0.53	0.53	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	114	684		282	630		82	1569		213	807	
v/s Ratio Prot		0.18			0.30			0.29			0.57	
v/s Ratio Perm	c0.43			0.10			0.59			c0.67		
v/c Ratio	1.14	0.49		0.27	0.82		1.12	0.55		1.28	1.08	
Uniform Delay, d1	25.1	19.3		17.5	22.6		18.9	12.6		18.9	18.9	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		0.79	0.77	
Incremental Delay, d2	127.0	0.6		0.5	8.0		136.2	1.4		142.8	46.8	
Delay (s)	152.1	19.9		18.0	30.7		155.1	14.0		157.7	61.4	
Level of Service	F	B		B	C		F	B		F	E	
Approach Delay (s)		56.3			29.2		27.2				83.9	
Approach LOS		E			C		C				F	

**Intersection Summary**

HCM Average Control Delay 52.0  
 HCM Level of Service D  
 HCM Volume to Capacity ratio 1.22  
 Actuated Cycle Length (s) 80.0  
 Sum of lost time (s) 8.0  
 Intersection Capacity Utilization 101.4%  
 ICU Level of Service G  
 Analysis Period (min) 15

c Critical Lane Group

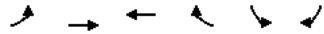
Barrio Logan CPU  
17: Harbor Dr & Cesar E. Chavez Pkwy  
Horizon Year Alt 2 without Improvements  
Timing Plan: PM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frbp, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.99	1.00	1.00	0.98	1.00
Flpb, ped/bikes	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	1.00	1.00	1.00	0.99	1.00	0.95	1.00	0.95	1.00	1.00	0.85	1.00
Flt Protected	0.95	1.00	0.95	1.00	0.95	1.00	0.95	1.00	0.97	1.00	0.97	1.00
Satd. Flow (prot)	1641	3265	1421	3232	1363	1314				1596	1368	
Flt Permitted	0.95	1.00	0.95	1.00	0.71	1.00				0.83	1.00	
Satd. Flow (perm)	1641	3265	1421	3232	1021	1314				1360	1368	
Volume (vph)	590	1500	40	30	467	43	50	63	35	33	30	314
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)	641	1630	43	33	508	47	54	68	38	36	33	341
RTOR Reduction (vph)	0	1	0	0	5	0	0	15	0	0	0	270
Lane Group Flow (vph)	641	1672	0	33	550	0	54	91	0	0	69	71
Confl. Peds. (#/hr)			11			6	4		1	1		4
Confl. Bikes (#/hr)			9			14		3				
Heavy Vehicles (%)	10%	10%	10%	27%	10%	10%	32%	32%	43%	16%	16%	16%
Turn Type	Prot			Prot			Perm			Perm		Perm
Protected Phases	3 14 2 6			13 18 2 6				12			1 5 16	
Permitted Phases							12			1 5 16		1 5 16
Actuated Green, G (s)	27.3	53.8		3.2	29.7		14.0	14.0			22.4	22.4
Effective Green, g (s)	27.3	53.8		3.2	29.7		14.0	14.0			22.4	22.4
Actuated g/C Ratio	0.25	0.50		0.03	0.28		0.13	0.13			0.21	0.21
Clearance Time (s)	4.0			4.0			4.0	4.0				
Vehicle Extension (s)	3.0			3.0			3.0	3.0				
Lane Grp Cap (vph)	417	1636		42	894		133	171			284	285
v/s Ratio Prot	c0.39	c0.51		0.02	0.17			c0.07				
v/s Ratio Perm							0.05				0.05	c0.05
v/c Ratio	1.54	1.02		0.79	0.62		0.41	0.53			0.24	0.25
Uniform Delay, d1	40.0	26.8		51.8	33.9		42.9	43.6			35.4	35.5
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00			1.22	3.70
Incremental Delay, d2	253.5	28.0		62.3	1.3		2.0	3.2			0.4	0.5
Delay (s)	293.6	54.8		114.0	35.1		44.9	46.8			43.5	131.8
Level of Service	F	D		F	D		D	D			D	F
Approach Delay (s)		120.9			39.6			46.2			117.0	
Approach LOS		F			D			D			F	
<b>Intersection Summary</b>												
HCM Average Control Delay		103.2										F
HCM Volume to Capacity ratio		1.01										
Actuated Cycle Length (s)		107.4						24.0				
Intersection Capacity Utilization		69.0%										C
Analysis Period (min)		15										

Barrio Logan CPU  
18: Logan Ave & I-5 SB On-ramp  
Horizon Year Alt 2 without Improvements  
Timing Plan: PM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	891	523	8	0	156	69	0	0	16	0	0	0
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
Hourly flow rate (vph)	968	568	9	0	170	75	0	0	17	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type							None				None	
Median storage veh												
Upstream signal (ft)		667										
pX, platoon unblocked												
vC, conflicting volume	245			577			2679	2754	573	2730	2721	207
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	245			577			2679	2754	573	2730	2721	207
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	27			100			100	100	97	100	100	100
cM capacity (veh/h)	1322			996			6	5	519	5	6	833
<b>Direction, Lane #</b>												
Volume Total	968	577	0	245	17							
Volume Left	968	0	0	0	0							
Volume Right	0	9	0	75	17							
cSH	1322	1700	1700	1700	519							
Volume to Capacity	0.73	0.34	0.00	0.14	0.03							
Queue Length 95th (ft)	177	0	0	0	3							
Control Delay (s)	14.8	0.0	0.0	0.0	12.2							
Lane LOS	B				B							
Approach Delay (s)	9.3		0.0		12.2							
Approach LOS					B							
<b>Intersection Summary</b>												
Average Delay		8.0										
Intersection Capacity Utilization		68.4%					ICU Level of Service					C
Analysis Period (min)		15										

Barrio Logan CPU  
19: National Ave & SR-75 Off-ramp  
Horizon Year Alt 2 without Improvements  
Timing Plan: PM Peak



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↘	↗
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	0	302	253	0	129	239
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	328	275	0	140	260
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					TWLTL	
Median storage (veh)					1	
Upstream signal (ft)		1100	875			
pX, platoon unblocked						
vC, conflicting volume	275				603	275
vC1, stage 1 conf vol					275	
vC2, stage 2 conf vol					328	
vCu, unblocked vol	275				603	275
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)					5.4	
tF (s)	2.2				3.5	3.3
p0 queue free %	100				75	66
cM capacity (veh/h)	1288				553	764

Direction, Lane #	EB 1	WB 1	SB 1	SB 2
Volume Total	328	275	140	260
Volume Left	0	0	140	0
Volume Right	0	0	0	260
cSH	1700	1700	553	764
Volume to Capacity	0.19	0.16	0.25	0.34
Queue Length 95th (ft)	0	0	25	38
Control Delay (s)	0.0	0.0	13.7	12.1
Lane LOS			B	B
Approach Delay (s)	0.0	0.0	12.7	
Approach LOS			B	

Intersection Summary			
Average Delay		5.1	
Intersection Capacity Utilization		34.8%	ICU Level of Service A
Analysis Period (min)		15	

Barrio Logan CPU  
20: National Ave & Evans St  
Horizon Year Alt 2 without Improvements  
Timing Plan: PM Peak




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↗		↘	↗					↘	↗	↘
Sign Control		Free			Free					Stop		Stop
Grade		0%			0%					0%		0%
Volume (veh/h)	35	389	34	34	191	24	12	18	62	45	23	70
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
Hourly flow rate (vph)	38	423	37	37	208	26	13	20	67	49	25	76
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type										None		None
Median storage (veh)												
Upstream signal (ft)		1314			661							
pX, platoon unblocked												
vC, conflicting volume	234			460			888	825	441	871	830	221
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	234			460			888	825	441	871	830	221
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	97			97			94	93	89	78	91	91
cM capacity (veh/h)	1334			1101			214	289	616	219	287	819

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	38	460	37	234	100	150
Volume Left	38	0	37	0	13	49
Volume Right	0	37	0	26	67	76
cSH	1334	1700	1101	1700	420	372
Volume to Capacity	0.03	0.27	0.03	0.14	0.24	0.40
Queue Length 95th (ft)	2	0	3	0	23	48
Control Delay (s)	7.8	0.0	8.4	0.0	16.2	21.1
Lane LOS	A		A		C	C
Approach Delay (s)	0.6		1.1		16.2	21.1
Approach LOS					C	C

Intersection Summary			
Average Delay		5.3	
Intersection Capacity Utilization		50.4%	ICU Level of Service A
Analysis Period (min)		15	

Barrio Logan CPU  
21: Newton Ave & Evans St


Horizon Year Alt 2 without Improvements  
Timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↕			↕			↕			↕		
Sign Control	Free			Free			Stop			Stop		
Grade	0%			0%			0%			0%		
Volume (veh/h)	24	124	41	27	70	27	7	47	28	30	28	21
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
Hourly flow rate (vph)	26	135	45	29	76	29	8	51	30	33	30	23
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None						None					
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	105			179			397	373	157	415	381	91
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	105			179			397	373	157	415	381	91
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			98			99	90	97	93	94	98
cM capacity (veh/h)	1486			1396			511	536	888	477	531	967
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>WB 1</b>	<b>NB 1</b>	<b>SB 1</b>								
Volume Total	205	135	89	86								
Volume Left	26	29	8	33								
Volume Right	45	29	30	23								
cSH	1486	1396	617	575								
Volume to Capacity	0.02	0.02	0.14	0.15								
Queue Length 95th (ft)	1	2	13	13								
Control Delay (s)	1.1	1.8	11.8	12.4								
Lane LOS	A	A	B	B								
Approach Delay (s)	1.1	1.8	11.8	12.4								
Approach LOS			B	B								
<b>Intersection Summary</b>												
Average Delay				5.0								
Intersection Capacity Utilization			29.9%	ICU Level of Service			A					
Analysis Period (min)					15							

Barrio Logan CPU  
22: Main St & Evans St

Horizon Year Alt 2 without Improvements  
Timing Plan: PM Peak



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↕		↕		↕	
Sign Control	Free		Free		Stop	
Grade	0%		0%		0%	
Volume (veh/h)	6	337	284	68	85	9
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	7	366	309	74	92	10
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage (veh)						
Upstream signal (ft)	1318					
pX, platoon unblocked						
vC, conflicting volume	383			725	346	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	383			725	346	
tC, single (s)	4.1			6.4	6.2	
tC, 2 stage (s)						
tF (s)	2.2			3.5	3.3	
p0 queue free %	99			76	99	
cM capacity (veh/h)	1176			390	697	
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>WB 1</b>	<b>SB 1</b>			
Volume Total	373	383	102			
Volume Left	7	0	92			
Volume Right	0	74	10			
cSH	1176	1700	407			
Volume to Capacity	0.01	0.23	0.25			
Queue Length 95th (ft)	0	0	25			
Control Delay (s)	0.2	0.0	16.8			
Lane LOS	A			C		
Approach Delay (s)	0.2	0.0	16.8			
Approach LOS			C			
<b>Intersection Summary</b>						
Average Delay				2.1		
Intersection Capacity Utilization			34.5%	ICU Level of Service		
Analysis Period (min)					15	

Barrio Logan CPU  
23: Logan Ave & Sampson St  
Horizon Year Alt 2 without Improvements  
Timing Plan: PM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔		↔		↔		↔		↔		↔	
Sign Control	Stop		Stop		Stop		Stop		Stop		Stop	
Volume (vph)	101	251	200	167	81	54	230	443	124	66	275	13
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
Hourly flow rate (vph)	110	273	217	182	88	59	250	482	135	72	299	14
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1						
Volume Total (vph)	110	490	182	147	866	385						
Volume Left (vph)	110	0	182	0	250	72						
Volume Right (vph)	0	217	0	59	135	14						
Hadj (s)	0.53	-0.28	0.53	-0.25	0.00	0.05						
Departure Headway (s)	9.4	8.6	10.0	9.2	8.5	8.7						
Degree Utilization, x	0.29	1.17	0.51	0.38	2.05	0.93						
Capacity (veh/h)	379	424	345	380	430	407						
Control Delay (s)	14.9	125.3	21.6	16.5	498.3	58.1						
Approach Delay (s)	105.1	19.3		498.3		58.1						
Approach LOS	F		C		F		F					
<b>Intersection Summary</b>												
Delay	240.2											
HCM Level of Service	F											
Intersection Capacity Utilization	110.5%		ICU Level of Service		H							
Analysis Period (min)	15											

Barrio Logan CPU  
24: National Ave & Sampson St  
Horizon Year Alt 2 without Improvements  
Timing Plan: PM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔		↔		↔		↔		↔		↔	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
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
Flpb, ped/bikes	1.00	1.00	1.00	0.98	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Flpb, ped/bikes	0.99	1.00	0.99	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.99	1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Satd. Flow (prot)	1760	1829	1753	1663	1760	1829	1753	1663	1760	1829	1753	1663
Flt Permitted	0.64	1.00	0.67	1.00	0.64	1.00	0.67	1.00	0.64	1.00	0.67	1.00
Satd. Flow (perm)	1182	1829	1238	1663	1182	1829	1238	1663	1182	1829	1238	1663
Volume (vph)	166	111	12	21	70	105	13	208	30	132	98	109
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)	180	121	13	23	76	114	14	226	33	143	107	118
RTOR Reduction (vph)	0	7	0	0	83	0	0	7	0	0	22	0
Lane Group Flow (vph)	180	127	0	23	107	0	0	266	0	0	346	0
Confl. Peds. (#/hr)	7	11		11	7		25	21		21	25	
Confl. Bikes (#/hr)	3		3		6		6		2		2	
Turn Type	Perm		Perm		Perm		Perm		Perm		Perm	
Protected Phases	4		8		2		6		6		6	
Permitted Phases	4		8		2		6		6		6	
Actuated Green, G (s)	11.6	11.6	11.6	11.6	22.4	22.4	22.4	22.4	22.4	22.4	22.4	22.4
Effective Green, g (s)	11.6	11.6	11.6	11.6	22.4	22.4	22.4	22.4	22.4	22.4	22.4	22.4
Actuated g/C Ratio	0.28	0.28	0.28	0.28	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	326	505	342	459	954	739	954	739	954	739	954	739
v/s Ratio Prot	0.07		0.06		0.06		0.06		0.06		0.06	
v/s Ratio Perm	c0.15		0.02		0.15		c0.25		c0.25		c0.25	
v/c Ratio	0.55	0.25	0.07	0.23	0.28	0.47	0.28	0.47	0.28	0.47	0.28	0.47
Uniform Delay, d1	13.0	11.8	11.2	11.8	5.4	6.1	5.4	6.1	5.4	6.1	5.4	6.1
Progression 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
Incremental Delay, d2	2.0	0.3	0.1	0.3	0.2	0.5	0.2	0.5	0.2	0.5	0.2	0.5
Delay (s)	15.0	12.1	11.3	12.0	5.5	6.6	5.5	6.6	5.5	6.6	5.5	6.6
Level of Service	B		B		A		A		A		A	
Approach Delay (s)	13.8		11.9		5.5		6.6		5.5		6.6	
Approach LOS	B		B		A		A		A		A	
<b>Intersection Summary</b>												
HCM Average Control Delay	9.2		HCM Level of Service		A							
HCM Volume to Capacity ratio	0.50											
Actuated Cycle Length (s)	42.0		Sum of lost time (s)		8.0							
Intersection Capacity Utilization	70.7%		ICU Level of Service		C							
Analysis Period (min)	15											
c Critical Lane Group												



Barrio Logan CPU  
25: Newton Ave & Sampson St  
Horizon Year Alt 2 without Improvements  
Timing Plan: PM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↕				↕				↕			
Sign Control	Stop				Stop				Stop			
Volume (vph)	35	117	24	0	73	33	13	103	20	21	76	21
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
Hourly flow rate (vph)	38	127	26	0	79	36	14	112	22	23	83	23
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>WB 1</b>	<b>NB 1</b>	<b>SB 1</b>								
Volume Total (vph)	191	115	148	128								
Volume Left (vph)	38	0	14	23								
Volume Right (vph)	26	36	22	23								
Hadj (s)	-0.01	-0.15	-0.04	-0.04								
Departure Headway (s)	4.7	4.7	4.8	4.8								
Degree Utilization, x	0.25	0.15	0.20	0.17								
Capacity (veh/h)	712	710	702	692								
Control Delay (s)	9.3	8.5	9.0	8.8								
Approach Delay (s)	9.3	8.5	9.0	8.8								
Approach LOS	A	A	A	A								
<b>Intersection Summary</b>												
Delay	8.9											
HCM Level of Service	A											
Intersection Capacity Utilization	33.8%		ICU Level of Service		A							
Analysis Period (min)	15											

Barrio Logan CPU  
26: Main St & Sampson St  
Horizon Year Alt 2 without Improvements  
Timing Plan: PM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↕				↕				↕			
Sign Control	Stop				Stop				Stop			
Volume (vph)	134	174	32	27	113	8	63	46	49	8	27	105
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
Hourly flow rate (vph)	146	189	35	29	123	9	68	50	53	9	29	114
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>WB 1</b>	<b>NB 1</b>	<b>SB 1</b>								
Volume Total (vph)	370	161	172	152								
Volume Left (vph)	146	29	68	9								
Volume Right (vph)	35	9	53	114								
Hadj (s)	0.06	0.04	-0.07	-0.40								
Departure Headway (s)	5.1	5.4	5.5	5.2								
Degree Utilization, x	0.52	0.24	0.26	0.22								
Capacity (veh/h)	671	610	585	611								
Control Delay (s)	13.6	10.1	10.4	9.7								
Approach Delay (s)	13.6	10.1	10.4	9.7								
Approach LOS	B	B	B	A								
<b>Intersection Summary</b>												
Delay	11.6											
HCM Level of Service	B											
Intersection Capacity Utilization	63.8%		ICU Level of Service		B							
Analysis Period (min)	15											

Barrio Logan CPU

Horizon Year Alt 2 without Improvements

27: Harbor Dr & Sampson St

Timing Plan: PM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↕↔		↔	↕↔			↕			↕	↕
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00			1.00	
Frbp, ped/bikes	1.00	1.00		1.00	0.99			0.99			1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	1.00		1.00	0.98			0.97			0.98	
Flt Protected	0.95	1.00		0.95	1.00			0.99			0.98	
Satd. Flow (prot)	1770	3469		1770	3444			1780			1776	
Flt Permitted	0.95	1.00		0.95	1.00			0.95			0.78	
Satd. Flow (perm)	1770	3469		1770	3444			1698			1411	
Volume (vph)	56	1500	5	19	493	62	23	111	41	56	66	26
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)	61	1630	5	21	536	67	25	121	45	61	72	28
RTOR Reduction (vph)	0	0	0	0	7	0	0	8	0	0	5	0
Lane Group Flow (vph)	61	1635	0	21	596	0	0	183	0	0	156	0
Confl. Peds. (#/hr)			15			29	7		4	4		7
Confl. Bikes (#/hr)			12					7				7
Heavy Vehicles (%)	2%	4%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Prot		Prot		Perm			Perm				
Protected Phases	3	14 2 6		13	18 2 6			12			16 1 5	
Permitted Phases							12				16 1 5	
Actuated Green, G (s)	5.1	49.5		1.2	45.6			16.2			29.0	
Effective Green, g (s)	5.1	49.5		1.2	45.6			16.2			29.0	
Actuated g/C Ratio	0.05	0.48		0.01	0.44			0.16			0.28	
Clearance Time (s)	4.0			4.0				4.0				
Vehicle Extension (s)	3.0			3.0				3.0				
Lane Grp Cap (vph)	87	1656		20	1514			265			395	
v/s Ratio Prot	c0.03	c0.47		0.01	0.17							
v/s Ratio Perm								c0.11			c0.11	
v/c Ratio	0.70	0.99		1.05	0.39			0.69			0.39	
Uniform Delay, d1	48.5	26.8		51.2	19.7			41.4			30.2	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.05	
Incremental Delay, d2	22.5	19.0		217.8	0.2			7.6			0.7	
Delay (s)	71.0	45.7		269.0	19.9			49.0			32.4	
Level of Service	E	D		F	B			D			C	
Approach Delay (s)		46.7			28.2			49.0			32.4	
Approach LOS		D			C			D			C	
<b>Intersection Summary</b>												
HCM Average Control Delay		41.7			HCM Level of Service			D				
HCM Volume to Capacity ratio		0.83										
Actuated Cycle Length (s)		103.7			Sum of lost time (s)			24.0				
Intersection Capacity Utilization		73.3%			ICU Level of Service			D				
Analysis Period (min)		15										

Barrio Logan CPU

Horizon Year Alt 2 without Improvements

28: National Ave & Sicard St

Timing Plan: PM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↕			↕			↕			↕	↕
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	41	170	39	8	125	1	34	45	17	4	17	42
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
Hourly flow rate (vph)	45	185	42	9	136	1	37	49	18	4	18	46
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh												
Upstream signal (ft)		641										
pX, platoon unblocked												
vC, conflicting volume	137			227			504	449	206	471	470	136
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	137			227			504	449	206	471	470	136
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	97			99			91	90	98	99	96	95
cM capacity (veh/h)	1447			1341			429	486	835	442	473	912
Direction, Lane #	EB 1	EB 2	WB 1	NB 1	SB 1							
Volume Total	45	227	146	104	68							
Volume Left	45	0	9	37	4							
Volume Right	0	42	1	18	46							
cSH	1447	1700	1341	499	692							
Volume to Capacity	0.03	0.13	0.01	0.21	0.10							
Queue Length 95th (ft)	2	0	0	20	8							
Control Delay (s)	7.6	0.0	0.5	14.1	10.8							
Lane LOS	A		A	B	B							
Approach Delay (s)	1.2		0.5	14.1	10.8							
Approach LOS				B	B							
<b>Intersection Summary</b>												
Average Delay		4.4										
Intersection Capacity Utilization		36.6%			ICU Level of Service			A				
Analysis Period (min)		15										

Barrio Logan CPU  
29: National Ave & 26th St

Horizon Year Alt 2 without Improvements  
Timing Plan: PM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔		↔		↔		↔		↔		↔	
Sign Control	Stop		Stop		Stop		Stop		Stop		Stop	
Volume (vph)	35	155	74	35	123	54	54	68	34	91	80	20
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
Hourly flow rate (vph)	38	168	80	38	134	59	59	74	37	99	87	22
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>EB 2</b>	<b>WB 1</b>	<b>WB 2</b>	<b>NB 1</b>	<b>SB 1</b>						
Volume Total (vph)	38	249	38	192	170	208						
Volume Left (vph)	38	0	38	0	59	99						
Volume Right (vph)	0	80	0	59	37	22						
Hadj (s)	0.53	-0.19	0.53	-0.18	-0.03	0.07						
Departure Headway (s)	6.5	5.8	6.6	5.9	5.7	5.7						
Degree Utilization, x	0.07	0.40	0.07	0.31	0.27	0.33						
Capacity (veh/h)	518	589	508	573	572	583						
Control Delay (s)	8.8	11.3	8.9	10.3	10.7	11.4						
Approach Delay (s)	11.0	10.1		10.7		11.4						
Approach LOS	B		B		B							
<b>Intersection Summary</b>												
Delay	10.8											
HCM Level of Service	B											
Intersection Capacity Utilization	42.2%		ICU Level of Service		A							
Analysis Period (min)	15											

Barrio Logan CPU  
30: National Ave & I-5 SB Off-ramp

Horizon Year Alt 2 without Improvements  
Timing Plan: PM Peak

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔		↔		↔	
Sign Control	Free		Free		Stop	
Grade	0%		0%		0%	
Volume (veh/h)	373	14	31	239	37	296
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	405	15	34	260	40	322
Pedestrians						36
Lane Width (ft)						12.0
Walking Speed (ft/s)						4.0
Percent Blockage						3
Right turn flare (veh)						
Median type						None
Median storage (veh)						
Upstream signal (ft)						670
pX, platoon unblocked						
vC, conflicting volume			457		646	449
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			457		646	449
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			97		89	40
cM capacity (veh/h)			1067		380	541
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>WB 1</b>	<b>WB 2</b>	<b>NB 1</b>	<b>NB 2</b>	
Volume Total	421	120	173	40	322	
Volume Left	0	34	0	40	0	
Volume Right	15	0	0	0	322	
cSH	1700	1067	1700	380	541	
Volume to Capacity	0.25	0.03	0.10	0.11	0.60	
Queue Length 95th (ft)	0	2	0	9	97	
Control Delay (s)	0.0	2.6	0.0	15.6	21.0	
Lane LOS	A		C		C	
Approach Delay (s)	0.0	1.1	20.4			
Approach LOS			C			
<b>Intersection Summary</b>						
Average Delay	7.1					
Intersection Capacity Utilization	45.6%		ICU Level of Service		A	
Analysis Period (min)	15					

Barrio Logan CPU  
31: Main St & 26th St

Horizon Year Alt 2 without Improvements  
Timing Plan: PM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↕↕			↕	↕			↕	↕	↕↕		
Sign Control	Stop				Stop			Stop		Stop		
Volume (vph)	14	212	17	50	59	28	9	58	204	26	11	8
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
Hourly flow rate (vph)	15	230	18	54	64	30	10	63	222	28	12	9
Direction, Lane #	EB 1	WB 1	WB 2	WB 3	NB 1	NB 2	SB 1					
Volume Total (vph)	264	54	64	30	73	222	49					
Volume Left (vph)	15	54	0	0	10	0	28					
Volume Right (vph)	18	0	0	30	0	222	9					
Hadj (s)	0.00	1.09	0.03	-0.67	0.06	-0.41	0.04					
Departure Headway (s)	4.5	6.1	5.1	3.2	4.9	3.2	5.0					
Degree Utilization, x	0.33	0.09	0.09	0.03	0.10	0.20	0.07					
Capacity (veh/h)	782	564	681	1121	673	1121	667					
Control Delay (s)	9.7	8.6	7.4	5.1	8.5	7.0	8.3					
Approach Delay (s)	9.7	7.3			7.4			8.3				
Approach LOS	A	A			A			A				
<b>Intersection Summary</b>												
Delay	8.2											
HCM Level of Service	A											
Intersection Capacity Utilization	40.2%			ICU Level of Service			A					
Analysis Period (min)	15											

Barrio Logan CPU  
32: Harbor Dr & Schley St

Horizon Year Alt 2 without Improvements  
Timing Plan: PM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	↕	↕↕		↕	↕↕			↕	↕	↕↕			
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	4.0	4.0										4.0	
Lane Util. Factor	1.00	0.95				0.95						1.00	
Flpb, ped/bikes	1.00	1.00				1.00						0.98	
Flpb, ped/bikes	1.00	1.00				1.00						1.00	
Frt	1.00	1.00				0.99						0.90	
Flt Protected	0.95	1.00				1.00						0.99	
Satd. Flow (prot)	1543	3539				3505						1506	
Flt Permitted	0.95	1.00				1.00						0.99	
Satd. Flow (perm)	1543	3539				3505						1506	
Volume (vph)	208	1400	0	0	558	39	0	0	0	16	10	80	
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)	226	1522	0	0	607	42	0	0	0	17	11	87	
RTOR Reduction (vph)	0	0	0	0	4	0	0	0	0	0	71	0	
Lane Group Flow (vph)	226	1522	0	0	645	0	0	0	0	0	44	0	
Confl. Peds. (#/hr)			8	8								2	2
Confl. Bikes (#/hr)										4			
Heavy Vehicles (%)	17%	2%	2%	2%	2%	2%	2%	2%	2%	2%	4%	13%	
Turn Type	Prot					Perm							
Protected Phases	13	18	2	6				14	2	6			
Permitted Phases						11 1 5							
Actuated Green, G (s)	9.4	49.6						32.2			15.3		
Effective Green, g (s)	9.4	49.6						32.2			15.3		
Actuated g/C Ratio	0.12	0.61					0.40			0.19			
Clearance Time (s)	4.0												
Vehicle Extension (s)	3.0												
Lane Grp Cap (vph)	179	2170						1395			285		
v/s Ratio Prot	c0.15	c0.43					0.18						
v/s Ratio Perm	0.03												
v/c Ratio	1.26	0.70					0.46			0.16			
Uniform Delay, d1	35.8	10.6					18.0			27.4			
Progression Factor	1.00	1.00					1.00			1.09			
Incremental Delay, d2	155.0	1.0					0.2			0.3			
Delay (s)	190.8	11.7					18.2			30.1			
Level of Service	F	B					B			C			
Approach Delay (s)	34.8					18.2			0.0		30.1		
Approach LOS	C					B			A		C		
<b>Intersection Summary</b>													
HCM Average Control Delay	30.3			HCM Level of Service			C						
HCM Volume to Capacity ratio	0.65												
Actuated Cycle Length (s)	80.9			Sum of lost time (s)			20.0						
Intersection Capacity Utilization	58.4%			ICU Level of Service			B						
Analysis Period (min)	15												
c Critical Lane Group													

Barrio Logan CPU  
33: National Ave & 28th St

Horizon Year Alt 2 without Improvements  
Timing Plan: PM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Flt	1.00	1.00	0.85	1.00	0.94		1.00	0.85		1.00	0.97	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.99	1.00		0.98		
Satd. Flow (prot)	1770	3539	1583	1597	1759		1762	1509		1695		
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.90	1.00		0.78		
Satd. Flow (perm)	1770	3539	1583	1597	1759		1592	1509		1353		
Volume (vph)	94	588	85	448	406	241	18	98	163	195	210	102
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)	102	639	92	487	441	262	20	107	177	212	228	111
RTOR Reduction (vph)	0	0	73	0	14	0	0	0	104	0	6	0
Lane Group Flow (vph)	102	639	19	487	689	0	0	127	73	0	545	0
Heavy Vehicles (%)	2%	2%	2%	13%	2%	2%	7%	7%	7%	7%	7%	7%
Turn Type	Prot		Perm	Prot			Perm	Perm	Perm	Perm		
Protected Phases	7	4		3	8			2				6
Permitted Phases			4				2		2	6		
Actuated Green, G (s)	9.0	29.8	29.8	46.0	66.8		61.0	61.0		61.0		
Effective Green, g (s)	9.0	29.8	29.8	46.0	66.8		61.0	61.0		61.0		
Actuated g/C Ratio	0.06	0.20	0.20	0.31	0.45		0.41	0.41		0.41		
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0		
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0		
Lane Grp Cap (vph)	107	709	317	494	790		653	619		555		
v/s Ratio Prot	0.06	0.18		c0.30	c0.39							
v/s Ratio Perm			0.01				0.08	0.05		c0.40		
v/c Ratio	0.95	0.90	0.06	0.99	0.87		0.19	0.12		0.98		
Uniform Delay, d1	69.7	58.1	48.2	51.1	37.1		28.1	27.2		43.4		
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00		
Incremental Delay, d2	71.6	14.6	0.1	36.5	10.4		0.1	0.1		33.5		
Delay (s)	141.3	72.7	48.2	87.6	47.5		28.3	27.3		76.8		
Level of Service	F	E	D	F	D		C	C		E		
Approach Delay (s)		78.4			63.9		27.7			76.8		
Approach LOS		E			E		C			E		
<b>Intersection Summary</b>												
HCM Average Control Delay	66.8			HCM Level of Service				E				
HCM Volume to Capacity ratio	0.95											
Actuated Cycle Length (s)	148.8			Sum of lost time (s)				8.0				
Intersection Capacity Utilization	86.0%			ICU Level of Service				E				
Analysis Period (min)	15											
c Critical Lane Group												

Barrio Logan CPU  
34: Boston Ave & 28th St

Horizon Year Alt 2 without Improvements  
Timing Plan: PM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
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	1.00
Flt	1.00	0.96	1.00	0.92	1.00	1.00	1.00	0.85	1.00	0.85	1.00	0.94
Flt Protected	0.95	1.00	0.95	1.00	0.95	1.00	0.95	1.00	1.00	0.95	1.00	0.94
Satd. Flow (prot)	1687	1708	1687	1634	1770	3539	1583	1770	3321	1770	3321	1770
Flt Permitted	0.62	1.00	0.12	1.00	0.95	1.00	1.00	0.95	1.00	0.95	1.00	0.94
Satd. Flow (perm)	1099	1708	215	1634	1770	3539	1583	1770	3321	1770	3321	1770
Volume (vph)	350	500	170	70	70	80	50	1100	200	350	500	350
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)	380	543	185	76	76	87	54	1196	217	380	543	380
RTOR Reduction (vph)	0	14	0	0	46	0	0	0	88	0	136	0
Lane Group Flow (vph)	380	714	0	76	117	0	54	1196	129	380	787	0
Heavy Vehicles (%)	7%	7%	7%	7%	7%	7%	2%	2%	2%	2%	2%	2%
Turn Type	Perm			Perm			Prot	Perm	Prot			
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8					2			
Actuated Green, G (s)	33.0	33.0		33.0	33.0		5.6	29.8	29.8	16.0	40.2	
Effective Green, g (s)	33.0	33.0		33.0	33.0		5.6	29.8	29.8	16.0	40.2	
Actuated g/C Ratio	0.36	0.36		0.36	0.36		0.06	0.33	0.33	0.18	0.44	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	399	621		78	594		109	1161	520	312	1470	
v/s Ratio Prot		c0.42			0.07		0.03	c0.34		c0.21	0.24	
v/s Ratio Perm	0.35			0.35					0.08			
v/c Ratio	0.95	1.15		0.97	0.20		0.50	1.03	0.25	1.22	0.54	
Uniform Delay, d1	28.1	28.9		28.5	19.8		41.2	30.5	22.3	37.4	18.5	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	32.8	85.0		92.5	0.2		3.5	34.4	1.1	123.6	1.4	
Delay (s)	60.9	113.9		121.0	20.0		44.7	64.9	23.4	161.0	19.9	
Level of Service	E	F		F	B		D	E	C	F	B	
Approach Delay (s)		95.8			52.1		58.1			61.1		
Approach LOS		F			D		E			E		
<b>Intersection Summary</b>												
HCM Average Control Delay	68.8			HCM Level of Service				E				
HCM Volume to Capacity ratio	1.12											
Actuated Cycle Length (s)	90.8			Sum of lost time (s)				12.0				
Intersection Capacity Utilization	103.7%			ICU Level of Service				G				
Analysis Period (min)	15											
c Critical Lane Group												

Barrio Logan CPU  
35: Main St & 28th St

Horizon Year Alt 2 without Improvements  
Timing Plan: PM Peak


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	
Frbp, ped/bikes	1.00	1.00		1.00	0.98		1.00	0.97		1.00	0.87	
Flpb, ped/bikes	0.99	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	0.93		1.00	0.96		1.00	0.92	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1738	3501		1764	3220		1736	3233		1736	2701	
Flt Permitted	0.33	1.00		0.30	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	599	3501		554	3220		1736	3233		1736	2701	
Volume (vph)	270	600	40	150	300	290	60	500	180	290	510	550
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)	293	652	43	163	326	315	65	543	196	315	554	598
RTOR Reduction (vph)	0	5	0	0	178	0	0	41	0	0	209	0
Lane Group Flow (vph)	293	690	0	163	463	0	65	698	0	315	943	0
Confl. Peds. (#/hr)	27		12	12		27			88			200
Confl. Bikes (#/hr)			8			3						6
Heavy Vehicles (%)	3%	2%	2%	2%	2%	2%	4%	4%	4%	4%	4%	11%
Turn Type	Perm			Perm			Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)	39.0	39.0		39.0	39.0		6.7	22.8		16.0	32.1	
Effective Green, g (s)	39.0	39.0		39.0	39.0		6.7	22.8		16.0	32.1	
Actuated g/C Ratio	0.43	0.43		0.43	0.43		0.07	0.25		0.18	0.36	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	260	1520		241	1398		130	821		309	966	
v/s Ratio Prot		0.20			0.14		0.04	0.22		c0.18	c0.35	
v/s Ratio Perm	c0.49			0.29								
v/c Ratio	1.13	0.45		0.68	0.33		0.50	0.85		1.02	0.98	
Uniform Delay, d1	25.4	17.9		20.3	16.8		39.9	31.9		36.9	28.5	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	94.3	0.2		7.3	0.1		3.0	8.4		56.2	23.0	
Delay (s)	119.7	18.1		27.7	16.9		42.9	40.3		93.1	51.4	
Level of Service	F	B		C	B		D	D		F	D	
Approach Delay (s)		48.2			19.1			40.5			60.4	
Approach LOS		D			B			D			E	
<b>Intersection Summary</b>												
HCM Average Control Delay	45.3			HCM Level of Service			D					
HCM Volume to Capacity ratio	1.04											
Actuated Cycle Length (s)	89.8			Sum of lost time (s)			8.0					
Intersection Capacity Utilization	90.4%			ICU Level of Service			E					
Analysis Period (min)	15											

Barrio Logan CPU  
36: Harbor Dr & 28th St

Horizon Year Alt 2 without Improvements  
Timing Plan: PM Peak


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR							
Lane Configurations																			
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900							
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0							
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00							
Frbp, ped/bikes	1.00	1.00	0.86	1.00	1.00	0.94	1.00	1.00	0.99	1.00	1.00	0.99							
Flpb, ped/bikes	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	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85							
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	0.95	1.00	0.95	1.00							
Satd. Flow (prot)	1703	3406	1318	1719	3438	1438	1821	1821	1649	1657	1531	1531							
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	0.95	1.00	0.95	1.00							
Satd. Flow (perm)	1703	3406	1318	1719	3438	1438	1821	1821	1649	1657	1531	1531							
Volume (vph)	300	1120	2	18	491	255	10	133	0	480	12	13							
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)	326	1217	2	20	534	277	11	145	0	522	13	14							
RTOR Reduction (vph)	0	0	1	0	0	178	0	0	0	0	0	10							
Lane Group Flow (vph)	326	1217	1	20	534	99	0	156	0	261	274	4							
Confl. Peds. (#/hr)			69			80						2							
Confl. Bikes (#/hr)			2						4			4							
Heavy Vehicles (%)	6%	6%	6%	5%	5%	5%	4%	4%	4%	4%	4%	4%							
Turn Type	Prot		custom		Prot	custom	Split			Split		Perm							
Protected Phases	11	16	2	6	15	12	2	6	13	14	14	1	13	5	13	1	5		
Permitted Phases					16				12								1	5	13
Actuated Green, G (s)	13.7	44.3	38.1	1.9	32.5	45.3			20.9			28.2	28.2	28.2					
Effective Green, g (s)	13.7	44.3	38.1	1.9	32.5	45.3			20.9			28.2	28.2	28.2					
Actuated g/C Ratio	0.11	0.35	0.30	0.01	0.26	0.36			0.16			0.22	0.22	0.22					
Clearance Time (s)	4.0			4.0	4.0				4.0			4.0							
Vehicle Extension (s)	3.0			3.0	3.0				3.0			3.0							
Lane Grp Cap (vph)	183	1185	394	26	878	512			299			365	367	339					
v/s Ratio Prot	c0.19	c0.36			0.01	0.16	0.03		c0.09			0.16	c0.17						
v/s Ratio Perm			0.00			0.04								0.00					
v/c Ratio	1.78	1.03	0.00	0.77	0.61	0.19			0.52			0.72	0.75	0.01					
Uniform Delay, d1	56.8	41.5	31.3	62.5	41.8	28.4			48.6			45.8	46.2	38.7					
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00			1.00			0.93	0.93	1.29					
Incremental Delay, d2	372.8	33.3	0.0	80.9	1.2	0.2			1.6			6.5	8.0	0.0					
Delay (s)	429.6	74.8	31.3	143.4	43.0	28.5			50.3			49.0	51.0	50.0					
Level of Service	F	E	C	F	D	C			D			D	D	D					
Approach Delay (s)		149.6			40.6				50.3				50.0						
Approach LOS		F			D				D				D						
<b>Intersection Summary</b>																			
HCM Average Control Delay	97.4			HCM Level of Service			F												
HCM Volume to Capacity ratio	0.93																		
Actuated Cycle Length (s)	127.3			Sum of lost time (s)			28.0												
Intersection Capacity Utilization	75.3%			ICU Level of Service			D												
Analysis Period (min)	15																		

Barrio Logan CPU  
37: Boston Ave & I-5 SB On-ramp  
Horizon Year Alt 2 without Improvements  
Timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	↕↕			↕↕			↕↕						
Sign Control	Free			Free			Stop			Stop			
Grade	0%			0%			0%			0%			
Volume (veh/h)	658	151	29	20	86	132	10	88	45	0	0	0	
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	
Hourly flow rate (vph)	715	164	32	22	93	143	11	96	49	0	0	0	
Pedestrians													
Lane Width (ft)													
Walking Speed (ft/s)													
Percent Blockage													
Right turn flare (veh)													
Median type	None						None						
Median storage (veh)													
Upstream signal (ft)	657												
pX, platoon unblocked				0.74				0.74		0.74		0.74	
vC, conflicting volume	237		196			1819		1891		180		1916	
vC1, stage 1 conf vol													
vC2, stage 2 conf vol													
vCu, unblocked vol	237		0			2105		2202		0		2236	
tC, single (s)	4.2		4.2			7.1		6.6		6.2		7.1	
tC, 2 stage (s)													
tF (s)	2.3		2.3			3.5		4.1		3.3		3.5	
p0 queue free %	45		98			30		0		94		0	
cM capacity (veh/h)	1301		1179			16		13		804		0	
Direction, Lane #	EB 1	WB 1	NB 1										
Volume Total	911	259	155										
Volume Left	715	22	11										
Volume Right	32	143	49										
cSH	1301	1179	20										
Volume to Capacity	0.55	0.02	7.89										
Queue Length 95th (ft)	87	1	Err										
Control Delay (s)	10.2	0.8	Err										
Lane LOS	B	A	F										
Approach Delay (s)	10.2	0.8	Err										
Approach LOS			F										
<b>Intersection Summary</b>													
Average Delay			1180.1										
Intersection Capacity Utilization			77.8%		ICU Level of Service		D						
Analysis Period (min)	15												

Barrio Logan CPU  
38: Main St & 32nd St  
Horizon Year Alt 2 without Improvements  
Timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↕	↕↕	↕	↕	↕↕	↕	↕	↕	↕	↕	↕	↕
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00	1.00	1.00	1.00	1.00
Frbp, ped/bikes	1.00	1.00		1.00	0.99		1.00	1.00	0.98	1.00	0.98	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.98		1.00	0.96		1.00	1.00	0.85	1.00	0.92	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1703	3316		1703	3261		1770	1863	1549	1770	1682	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1703	3316		1703	3261		1770	1863	1549	1770	1682	
Volume (vph)	63	733	139	207	407	132	193	112	307	148	61	68
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)	68	797	151	225	442	143	210	122	334	161	66	74
RTOR Reduction (vph)	0	16	0	0	29	0	0	0	242	0	52	0
Lane Group Flow (vph)	68	932	0	225	556	0	210	122	92	161	88	0
Confl. Peds. (#/hr)			1		2				1		17	
Confl. Bikes (#/hr)			4		1				7		5	
Heavy Vehicles (%)	6%	6%	6%	6%	6%	6%	2%	2%	2%	2%	2%	2%
Turn Type	Prot		Prot		Prot		Prot		Perm		Prot	
Protected Phases	7	4	3		8		5		2	1		6
Permitted Phases	2											
Actuated Green, G (s)	4.9	26.1	12.1		33.3		12.3		14.2	14.2	10.9	12.8
Effective Green, g (s)	4.9	26.1	12.1		33.3		12.3		14.2	14.2	10.9	12.8
Actuated g/C Ratio	0.06	0.33	0.15		0.42		0.16		0.18	0.18	0.14	0.16
Clearance Time (s)	4.0	4.0	4.0		4.0		4.0		4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0		3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	105	1091	260		1369		275		334	277	243	271
v/s Ratio Prot	0.04	c0.28	c0.13		0.17		c0.12		c0.07	0.09		
v/s Ratio Perm	0.06											
v/c Ratio	0.65	0.85	0.87		0.41		0.76		0.37	0.33	0.66	0.32
Uniform Delay, d1	36.4	24.8	32.8		16.1		32.1		28.6	28.4	32.5	29.4
Progression Factor	1.00	1.00	1.00		1.00		1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	12.9	6.7	24.6		0.2		11.9		0.7	0.7	6.6	0.7
Delay (s)	49.3	31.5	57.4		16.3		44.0		29.3	29.1	39.1	30.1
Level of Service	D	C	E		B		D		C	C	D	C
Approach Delay (s)	32.7		27.7		33.8						34.9	
Approach LOS	C		C		C						C	
<b>Intersection Summary</b>												
HCM Average Control Delay			31.8		HCM Level of Service				C			
HCM Volume to Capacity ratio	0.70											
Actuated Cycle Length (s)	79.3				Sum of lost time (s)				12.0			
Intersection Capacity Utilization	73.2%				ICU Level of Service				D			
Analysis Period (min)	15											

c Critical Lane Group

Barrio Logan CPU  
39: 32nd St & Wabash St  
Horizon Year Alt 2 without Improvements  
Timing Plan: PM Peak

Movement	EBL2	EBL	EBT	EBR	WBL	WBT	WBR	WBR2	NBL	NBT	NBR	NBR2
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0				4.0	4.0		4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00				1.00	1.00		1.00	1.00	0.88	
Flt	1.00	0.91				1.00	0.85		1.00	1.00	0.85	
Flt Protected	0.95	1.00				0.96	1.00		0.95	1.00	1.00	
Satd. Flow (prot)	1752	1690				1796	1568		1719	1810	2707	
Flt Permitted	0.48	1.00				0.47	1.00		0.95	1.00	1.00	
Satd. Flow (perm)	893	1690				872	1568		1719	1810	2707	
Volume (vph)	115	115	80	130	140	50	210	205	140	360	760	240
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)	125	125	87	141	152	54	228	223	152	391	826	261
RTOR Reduction (vph)	0	0	48	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	250	180	0	0	206	451	0	152	391	1087	0
Heavy Vehicles (%)	2%	4%	2%	2%	2%	2%	2%	4%	5%	5%	5%	5%
Turn Type	Perm	Perm			Perm		Perm		Prot		custom	
Protected Phases			4			4			5	2		
Permitted Phases	4	4			4		4				2 3	
Actuated Green, G (s)	32.0	32.0				32.0	32.0		15.3	24.0	51.0	
Effective Green, g (s)	32.0	32.0				32.0	32.0		15.3	24.0	51.0	
Actuated g/C Ratio	0.27	0.27				0.27	0.27		0.13	0.20	0.42	
Clearance Time (s)	4.0	4.0				4.0	4.0		4.0	4.0		
Vehicle Extension (s)	3.0	3.0				3.0	3.0		3.0	3.0		
Lane Grp Cap (vph)	238	451				233	418		219	362	1150	
v/s Ratio Prot		0.11							0.09	0.22		
v/s Ratio Perm	0.28					0.24	0.29				0.40	
v/c Ratio	1.05	0.40				0.88	1.08		0.69	1.08	0.95	
Uniform Delay, d1	44.0	36.1				42.2	44.0		50.1	48.0	33.2	
Progression Factor	1.00	1.00				1.00	1.00		1.00	1.00	1.00	
Incremental Delay, d2	72.2	0.6				30.2	66.8		9.2	70.4	15.1	
Delay (s)	116.2	36.7				72.4	110.8		59.3	118.4	48.3	
Level of Service	F	D				E	F		E	F	D	
Approach Delay (s)		78.3					98.8			66.1		
Approach LOS		E					F			E		
<b>Intersection Summary</b>												
HCM Average Control Delay		85.1				HCM Level of Service				F		
HCM Volume to Capacity ratio		1.09										
Actuated Cycle Length (s)		120.0				Sum of lost time (s)				12.0		
Intersection Capacity Utilization		111.7%				ICU Level of Service				H		
Analysis Period (min)		15										
c Critical Lane Group												

Barrio Logan CPU  
39: 32nd St & Wabash St  
Horizon Year Alt 2 without Improvements  
Timing Plan: PM Peak

Movement	SBL2	SBL	SBT	SBR	SWL2	SWL	SWR	SWR2
Lane Configurations								
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0			4.0		
Lane Util. Factor		1.00	0.95			0.97		
Flt		1.00	0.99			0.98		
Flt Protected		0.95	1.00			0.96		
Satd. Flow (prot)		1767	3407			3321		
Flt Permitted		0.95	1.00			0.91		
Satd. Flow (perm)		1767	3407			3151		
Volume (vph)	35	415	380	30	10	340	55	10
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	38	451	413	33	11	370	60	11
RTOR Reduction (vph)	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	489	446	0	0	452	0	0
Heavy Vehicles (%)	4%	2%	5%	2%	4%	4%	4%	4%
Turn Type	Prot	Prot			Perm			
Protected Phases	1	1	6			3		
Permitted Phases					3			
Actuated Green, G (s)		25.0	33.7			23.0		
Effective Green, g (s)		25.0	33.7			23.0		
Actuated g/C Ratio		0.21	0.28			0.19		
Clearance Time (s)		4.0	4.0			4.0		
Vehicle Extension (s)		3.0	3.0			3.0		
Lane Grp Cap (vph)		368	957			604		
v/s Ratio Prot		0.28	0.13					
v/s Ratio Perm						0.14		
v/c Ratio		1.33	0.47			0.75		
Uniform Delay, d1		47.5	35.7			45.8		
Progression Factor		1.00	1.00			1.00		
Incremental Delay, d2		165.6	0.4			5.1		
Delay (s)		213.1	36.1			50.8		
Level of Service		F	D			D		
Approach Delay (s)			128.7			50.8		
Approach LOS			F			D		
<b>Intersection Summary</b>								



Barrio Logan CPU  
40: Harbor Dr & 32nd St

Horizon Year Alt 2 without Improvements  
Timing Plan: PM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frbp, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.97	1.00	1.00	0.98	1.00	1.00	0.99
Flpb, ped/bikes	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	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1719	3438	1538	1687	3374	1467	1719	3438	1500	1719	3438	1526
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1719	3438	1538	1687	3374	1467	1719	3438	1500	1719	3438	1526
Volume (vph)	340	1160	100	40	434	460	70	690	140	310	280	260
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)	370	1261	109	43	472	500	76	750	152	337	304	283
RTOR Reduction (vph)	0	0	34	0	0	426	0	0	61	0	0	89
Lane Group Flow (vph)	370	1261	75	43	472	74	76	750	91	337	304	194
Confl. Bikes (#/hr)						7			12			10
Heavy Vehicles (%)	5%	5%	5%	7%	7%	7%	5%	5%	5%	5%	5%	5%
Turn Type	Prot	custom		Prot	custom		Prot	Perm	Prot	custom		
Protected Phases	3	14	2 6	15	13	18	2 6	15	12	11	1 5	16 1 5
Permitted Phases				14				18		12		16
Actuated Green, G (s)	25.2	38.3	42.0	4.0	17.1	12.1	8.7	26.1	26.1	22.1	43.5	64.7
Effective Green, g (s)	25.2	38.3	42.0	4.0	17.1	12.1	8.7	26.1	26.1	22.1	43.5	64.7
Actuated g/C Ratio	0.21	0.31	0.34	0.03	0.14	0.10	0.07	0.21	0.21	0.18	0.36	0.53
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	354	1075	527	55	471	145	122	733	320	310	1221	856
v/s Ratio Prot	c0.22	c0.37	0.01	0.03	0.14		0.04	c0.22		c0.20	0.09	0.06
v/s Ratio Perm			0.04			0.05			0.06			0.07
v/c Ratio	1.05	1.17	0.14	0.78	1.00	0.51	0.62	1.02	0.28	1.09	0.25	0.23
Uniform Delay, d1	48.6	42.1	27.8	58.8	52.7	52.4	55.3	48.2	40.4	50.2	27.9	15.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.94	0.94	0.88
Incremental Delay, d2	60.1	87.9	0.1	50.5	42.0	2.8	9.5	39.2	0.5	76.3	0.1	0.1
Delay (s)	108.8	130.0	27.9	109.3	94.7	55.2	64.8	87.4	40.9	123.6	26.4	13.8
Level of Service	F	F	C	F	F	E	E	F	D	F	C	B
Approach Delay (s)		119.1			75.8			78.4			58.0	
Approach LOS		F			E			E			E	
<b>Intersection Summary</b>												
HCM Average Control Delay	89.0			HCM Level of Service				F				
HCM Volume to Capacity ratio	1.12											
Actuated Cycle Length (s)	122.5				Sum of lost time (s)				32.0			
Intersection Capacity Utilization	85.0%			ICU Level of Service				E				
Analysis Period (min)	15											
c Critical Lane Group												

Barrio Logan CPU  
41: Main St & I-15 Ramps

Horizon Year Alt 2 without Improvements  
Timing Plan: PM Peak

Movement	EBL	EBT	WBT	WBR	SBL	SBR	
Lane Configurations		↔	↔	↔	↔	↔	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00		
Frbp, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.99	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	1.00	0.85	0.93		
Flt Protected	0.95	1.00	1.00	1.00	0.98		
Satd. Flow (prot)	1770	3539	3539	1583	1678		
Flt Permitted	0.95	1.00	1.00	1.00	0.98		
Satd. Flow (perm)	1770	3539	3539	1583	1678		
Volume (vph)	255	743	373	154	120	129	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	
Adj. Flow (vph)	277	808	405	167	130	140	
RTOR Reduction (vph)	0	0	0	126	63	0	
Lane Group Flow (vph)	277	808	405	41	207	0	
Confl. Peds. (#/hr)					10	4	
Confl. Bikes (#/hr)						1	
Turn Type	Prot			Perm			
Protected Phases	5	2	6		4		
Permitted Phases				6			
Actuated Green, G (s)	11.9	27.4	11.5	11.5	11.5		
Effective Green, g (s)	11.9	27.4	11.5	11.5	11.5		
Actuated g/C Ratio	0.25	0.58	0.25	0.25	0.25		
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		
Lane Grp Cap (vph)	449	2068	868	388	411		
v/s Ratio Prot	c0.16	c0.23	0.11		c0.12		
v/s Ratio Perm				0.03			
v/c Ratio	0.62	0.39	0.47	0.11	0.50		
Uniform Delay, d1	15.5	5.3	15.1	13.7	15.2		
Progression Factor	1.00	1.00	1.00	1.00	1.00		
Incremental Delay, d2	2.5	0.1	0.4	0.1	1.0		
Delay (s)	18.0	5.4	15.5	13.8	16.2		
Level of Service	B	A	B	B	B		
Approach Delay (s)		8.6	15.0		16.2		
Approach LOS		A	B		B		
<b>Intersection Summary</b>							
HCM Average Control Delay	11.6		HCM Level of Service			B	
HCM Volume to Capacity ratio	0.48						
Actuated Cycle Length (s)	46.9			Sum of lost time (s)			8.0
Intersection Capacity Utilization	49.9%		ICU Level of Service			A	
Analysis Period (min)	15						
c Critical Lane Group							

Barrio Logan CPU  
2: National Ave & 16th St

Horizon Year Alt 2 with Improvements  
Timing Plan: AM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔		↔		↔		↔		↔		↔	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0		4.0		4.0		4.0		4.0	
Lane Util. Factor	1.00		1.00		1.00		1.00		1.00		1.00	
Frbp, ped/bikes	0.99		1.00		1.00		0.99		0.99		0.99	
Flpb, ped/bikes	1.00		1.00		1.00		1.00		1.00		1.00	
Frt	0.98		0.99		0.98		0.94		0.98		0.94	
Flt Protected	0.99		1.00		0.98		0.98		0.98		0.98	
Satd. Flow (prot)	1800		1843		1775		1685		1754		1775	
Flt Permitted	0.90		1.00		0.83		0.88		0.40		1.00	
Satd. Flow (perm)	1640		1840		1515		1515		746		1775	
Volume (vph)	40	194	40	3	495	34	40	34	12	65	36	91
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)	43	211	43	3	538	37	43	37	13	71	39	99
RTOR Reduction (vph)	0	15	0	0	6	0	0	8	0	0	60	0
Lane Group Flow (vph)	0	282	0	0	572	0	0	85	0	0	149	0
Confl. Peds. (#/hr)	19		16	16		19	7		14	14		7
Confl. Bikes (#/hr)			4			1			1			
Turn Type	Perm		Perm		Perm		Perm		Perm		Perm	
Protected Phases	4		8		8		2		8		6	
Permitted Phases	4		8		8		2		8		6	
Actuated Green, G (s)	16.5		16.5		16.5		16.2		16.2		16.2	
Effective Green, g (s)	16.5		16.5		16.5		16.2		16.2		16.2	
Actuated g/C Ratio	0.41		0.41		0.41		0.40		0.40		0.40	
Clearance Time (s)	4.0		4.0		4.0		4.0		4.0		4.0	
Vehicle Extension (s)	3.0		3.0		3.0		3.0		3.0		3.0	
Lane Grp Cap (vph)	665		746		603		603		303		720	
v/s Ratio Prot	0.17		c0.31		0.06		c0.10		0.02		0.05	
v/c Ratio	0.42		0.77		0.14		0.25		0.04		0.26	
Uniform Delay, d1	8.7		10.4		7.8		8.2		6.1		6.7	
Progression Factor	1.00		1.00		1.00		1.00		1.00		1.00	
Incremental Delay, d2	0.4		4.7		0.5		1.0		0.1		0.2	
Delay (s)	9.1		15.2		8.3		9.2		6.2		6.9	
Level of Service	A		B		A		A		A		A	
Approach Delay (s)	9.1		15.2		8.3		9.2		6.9		9.1	
Approach LOS	A		B		A		A		A		A	
<b>Intersection Summary</b>												
HCM Average Control Delay	12.0		HCM Level of Service		B		8.0		8.0		8.0	
HCM Volume to Capacity ratio	0.51		Sum of lost time (s)		8.0		45.9%		ICU Level of Service		A	
Actuated Cycle Length (s)	40.7		ICU Level of Service		B		15		Analysis Period (min)		15	
Intersection Capacity Utilization	62.9%		Analysis Period (min)		15		c Critical Lane Group					

Barrio Logan CPU  
3: National Ave & Sigsbee St

Horizon Year Alt 2 with Improvements  
Timing Plan: AM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔		↔		↔		↔		↔		↔	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0		4.0		4.0		4.0		4.0	
Lane Util. Factor	1.00		1.00		1.00		1.00		1.00		1.00	
Frbp, ped/bikes	1.00		0.99		1.00		1.00		0.99		0.98	
Flpb, ped/bikes	0.99		1.00		0.98		1.00		0.99		1.00	
Frt	1.00		0.96		1.00		0.99		0.95		0.93	
Flt Protected	0.95		1.00		0.95		1.00		0.98		0.99	
Satd. Flow (prot)	1754		1775		1742		1832		1696		1676	
Flt Permitted	0.40		1.00		0.63		1.00		0.84		0.96	
Satd. Flow (perm)	746		1775		1146		1832		1451		1612	
Volume (vph)	11	146	49	19	377	36	65	26	58	16	40	60
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)	12	159	53	21	410	39	71	28	63	17	43	65
RTOR Reduction (vph)	0	23	0	0	7	0	0	40	0	0	42	0
Lane Group Flow (vph)	12	189	0	21	442	0	0	122	0	0	83	0
Confl. Peds. (#/hr)	21		25	25		21	37		14	14		37
Confl. Bikes (#/hr)						3			3			1
Turn Type	Perm		Perm		Perm		Perm		Perm		Perm	
Protected Phases	4		8		8		2		8		6	
Permitted Phases	4		8		8		2		8		6	
Actuated Green, G (s)	13.8		13.8		13.8		13.8		12.2		12.2	
Effective Green, g (s)	13.8		13.8		13.8		13.8		12.2		12.2	
Actuated g/C Ratio	0.41		0.41		0.41		0.41		0.36		0.36	
Clearance Time (s)	4.0		4.0		4.0		4.0		4.0		4.0	
Vehicle Extension (s)	3.0		3.0		3.0		3.0		3.0		3.0	
Lane Grp Cap (vph)	303		720		465		744		521		578	
v/s Ratio Prot	0.02		0.11		c0.24		c0.08		0.05		0.05	
v/c Ratio	0.04		0.26		0.05		0.59		0.23		0.14	
Uniform Delay, d1	6.1		6.7		6.1		7.9		7.6		7.4	
Progression Factor	1.00		1.00		1.00		1.00		1.00		1.00	
Incremental Delay, d2	0.1		0.2		0.0		1.3		0.2		0.1	
Delay (s)	6.2		6.9		6.2		9.2		7.9		7.5	
Level of Service	A		A		A		A		A		A	
Approach Delay (s)	6.9		9.1		7.9		7.5		7.5		7.5	
Approach LOS	A		A		A		A		A		A	
<b>Intersection Summary</b>												
HCM Average Control Delay	8.2		HCM Level of Service		A		8.0		8.0		8.0	
HCM Volume to Capacity ratio	0.43		Sum of lost time (s)		8.0		45.9%		ICU Level of Service		A	
Actuated Cycle Length (s)	34.0		ICU Level of Service		A		15		Analysis Period (min)		15	
Intersection Capacity Utilization	45.9%		Analysis Period (min)		15		c Critical Lane Group					

Barrio Logan CPU  
7: Logan Ave & Beardsley St

Horizon Year Alt 2 with Improvements  
Timing Plan: AM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕		↕	↕			↕			↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0		4.0		4.0			4.0	
Lane Util. Factor		1.00		1.00		1.00		1.00			1.00	
Flt		0.98		1.00		1.00		0.91			0.99	
Flt Protected		1.00		0.95		1.00		0.98			0.98	
Satd. Flow (prot)		1832		1770		1863		1663			1797	
Flt Permitted		1.00		0.95		1.00		0.98			0.98	
Satd. Flow (perm)		1832		1770		1863		1663			1797	
Volume (vph)	0	175	24	88	209	0	30	0	69	264	233	47
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)	0	190	26	96	227	0	33	0	75	287	253	51
RTOR Reduction (vph)	0	7	0	0	0	0	0	67	0	0	4	0
Lane Group Flow (vph)	0	209	0	96	227	0	41	0	0	587	0	0
Turn Type				Prot			Split			Split		
Protected Phases		4		3		8	2	2		6		6
Permitted Phases												
Actuated Green, G (s)		12.0		5.9		21.9		7.4			24.6	
Effective Green, g (s)		12.0		5.9		21.9		7.4			24.6	
Actuated g/C Ratio		0.18		0.09		0.33		0.11			0.37	
Clearance Time (s)		4.0		4.0		4.0		4.0			4.0	
Vehicle Extension (s)		3.0		3.0		3.0		3.0			3.0	
Lane Grp Cap (vph)		334		158		619		187			671	
v/s Ratio Prot		c0.11		c0.05		0.12		c0.02			c0.33	
v/s Ratio Perm												
v/c Ratio		0.63		0.61		0.37		0.22			0.88	
Uniform Delay, d1		24.9		28.9		16.7		26.6			19.2	
Progression Factor		1.00		1.00		1.00		1.00			1.00	
Incremental Delay, d2		3.7		6.5		0.4		0.6			12.2	
Delay (s)		28.5		35.4		17.1		27.2			31.5	
Level of Service		C		D		B		C			C	
Approach Delay (s)		28.5				22.5		27.2			31.5	
Approach LOS		C				C		C			C	
<b>Intersection Summary</b>												
HCM Average Control Delay		28.2		HCM Level of Service				C				
HCM Volume to Capacity ratio		0.69										
Actuated Cycle Length (s)		65.9		Sum of lost time (s)				16.0				
Intersection Capacity Utilization		61.9%		ICU Level of Service				B				
Analysis Period (min)		15										
c Critical Lane Group												

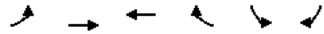
Barrio Logan CPU  
8: National Ave & Beardsley St

Horizon Year Alt 2 with Improvements  
Timing Plan: AM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↕	↕		↕	↕			↕			↕	↕
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0		4.0		4.0			4.0	
Lane Util. Factor		1.00		1.00		1.00		1.00			1.00	
Flrb, ped/bikes		1.00		1.00		0.99		0.97			1.00	
Flpb, ped/bikes		0.98		1.00		0.95		1.00			0.98	
Flt		1.00		1.00		0.98		0.92			0.99	
Flt Protected		0.95		1.00		0.95		1.00			0.97	
Satd. Flow (prot)		1741		1848		1688		1810			1655	
Flt Permitted		0.29		1.00		0.57		1.00			0.98	
Satd. Flow (perm)		524		1848		1014		1810			1632	
Volume (vph)	8	243		8	239	432		66	4	30	50	213
Peak-hour factor, PHF	0.92	0.92		0.92	0.92	0.92		0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	9	264		9	260	470		72	4	33	54	232
RTOR Reduction (vph)	0	2		0	0	8		0	0	32	0	4
Lane Group Flow (vph)	9	271		0	260	534		0	0	59	0	403
Confl. Peds. (#/hr)	30			46	46			30	48		46	48
Turn Type		Perm			Perm			Perm			Perm	
Protected Phases												
Permitted Phases		4			8			2			6	
Actuated Green, G (s)		19.0			19.0			18.1			18.1	
Effective Green, g (s)		19.0			19.0			18.1			18.1	
Actuated g/C Ratio		0.42			0.42			0.40			0.40	
Clearance Time (s)		4.0			4.0			4.0			4.0	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		221			779			427			763	
v/s Ratio Prot					0.15			c0.29				
v/s Ratio Perm		0.02			0.26			0.04			c0.29	
v/c Ratio		0.04			0.35			0.61			0.70	
Uniform Delay, d1		7.7			8.9			10.2			10.7	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		0.1			0.3			2.5			2.8	
Delay (s)		7.8			9.1			12.6			13.5	
Level of Service		A			A			B			A	
Approach Delay (s)					9.1			13.2			8.4	
Approach LOS					A			B			A	
<b>Intersection Summary</b>												
HCM Average Control Delay		12.9		HCM Level of Service				B				
HCM Volume to Capacity ratio		0.71										
Actuated Cycle Length (s)		45.1		Sum of lost time (s)				8.0				
Intersection Capacity Utilization		67.8%		ICU Level of Service				C				
Analysis Period (min)		15										
c Critical Lane Group												

Barrio Logan CPU  
11: Harbor Dr & Beardsley St

Horizon Year Alt 2 with Improvements  
Timing Plan: AM Peak



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↓			↑
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	0	560	1580	30	0	138
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	609	1717	33	0	150
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					Raised	
Median storage (veh)					0	
Upstream signal (ft)		661	658			
pX, platoon unblocked	0.67				0.67	0.67
vC, conflicting volume	1750				2038	875
vC1, stage 1 conf vol					1734	
vC2, stage 2 conf vol					304	
vCu, unblocked vol	1627				2057	322
tC, single (s)	4.3				6.8	6.9
tC, 2 stage (s)					5.8	
tF (s)	2.3				3.5	3.3
p0 queue free %	100				100	67
cM capacity (veh/h)	242				64	452

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1
Volume Total	304	304	1145	605	150
Volume Left	0	0	0	0	0
Volume Right	0	0	0	33	150
cSH	1700	1700	1700	1700	452
Volume to Capacity	0.18	0.18	0.67	0.36	0.33
Queue Length 95th (ft)	0	0	0	0	36
Control Delay (s)	0.0	0.0	0.0	0.0	16.9
Lane LOS					C
Approach Delay (s)	0.0		0.0		16.9
Approach LOS					C

Intersection Summary					
Average Delay		1.0			
Intersection Capacity Utilization		59.8%	ICU Level of Service	B	
Analysis Period (min)		15			

Barrio Logan CPU  
13: Logan Ave & Cesar E. Chavez Pkwy

Horizon Year Alt 2 with Improvements  
Timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
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	
Flpb, ped/bikes	1.00	1.00	0.97	1.00	1.00	0.97	1.00	1.00	0.97	1.00	1.00	
Flpb, ped/bikes	0.99	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1756	1863	1543	1761	1863	1544	1530	3059	1333	1530	3004	
Flt Permitted	0.48	1.00	1.00	0.21	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	887	1863	1543	384	1863	1544	1530	3059	1333	1530	3004	
Volume (vph)	140	300	120	100	350	76	100	300	300	70	818	80
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)	152	326	130	109	380	83	109	326	326	76	889	87
RTOR Reduction (vph)	0	0	98	0	0	54	0	0	166	0	7	0
Lane Group Flow (vph)	152	326	32	109	380	29	109	326	160	76	969	0
Conf. Peds. (#/hr)	15		13	13		15			17			39
Conf. Bikes (#/hr)				4								2
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	18%	18%	18%	18%	18%	18%

Turn Type	Perm	Perm	Perm	Perm	Prot	Prot	custom	Prot	Prot	Prot	
Protected Phases		4			8		5	2	3	1	6
Permitted Phases	4		4	8		8			2		
Actuated Green, G (s)	19.5	19.5	19.5	27.5	27.5	27.5	5.8	33.1	37.1	7.4	34.7
Effective Green, g (s)	19.5	19.5	19.5	27.5	27.5	27.5	5.8	33.1	37.1	7.4	34.7
Actuated g/C Ratio	0.24	0.24	0.24	0.34	0.34	0.34	0.07	0.41	0.46	0.09	0.43
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	216	454	376	132	640	531	111	1266	685	142	1303
v/s Ratio Prot		0.18			0.20		c0.07	0.11	0.01	0.05	c0.32
v/s Ratio Perm	0.17		0.02	c0.28		0.02			0.11		
v/c Ratio	0.70	0.72	0.08	0.83	0.59	0.05	0.98	0.26	0.23	0.54	0.74
Uniform Delay, d1	27.6	27.7	23.4	24.1	21.6	17.6	37.0	15.4	12.9	34.7	18.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.94	0.84	0.88	1.00	1.00
Incremental Delay, d2	9.9	5.4	0.1	32.5	1.5	0.0	75.0	0.4	0.2	3.8	3.9
Delay (s)	37.6	33.1	23.5	56.6	23.1	17.6	109.7	13.4	11.5	38.5	22.8
Level of Service	D	C	C	E	C	B	F	B	B	D	C
Approach Delay (s)		32.2			28.7			26.4			23.9
Approach LOS		C			C			C			C

Intersection Summary			
HCM Average Control Delay	27.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	72.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Barrio Logan CPU  
14: National Ave & Cesar E. Chavez Pkwy  
Horizon Year Alt 2 with Improvements  
Timing Plan: AM Peak

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Volume (vph)	190	250	190	120	350	110	100	570	60	765	310
Turn Type	Perm		Perm	Perm		Perm	Perm		Perm		Perm
Protected Phases	4		4	8	8		2	2	6	6	
Permitted Phases	4	4	4	8	8	8	2	2	6	6	6
Detector Phases	4	4	4	8	8	8	2	2	6	6	6
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	31.0	31.0	31.0	34.0	34.0	34.0	27.0	27.0	27.0	27.0	27.0
Total Split (s)	34.0	34.0	34.0	34.0	34.0	34.0	46.0	46.0	46.0	46.0	46.0
Total Split (%)	42.5%	42.5%	42.5%	42.5%	42.5%	42.5%	57.5%	57.5%	57.5%	57.5%	57.5%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Lead/Lag											
Lead-Lag Optimize?											
Recall Mode	None	None	None	None	None	None	C-Min	C-Min	C-Min	C-Min	C-Min
Act Effct Green (s)	26.5	26.5	26.5	26.5	26.5	26.5	45.5	45.5	45.5	45.5	45.5
Actuated g/C Ratio	0.33	0.33	0.33	0.33	0.33	0.33	0.57	0.57	0.57	0.57	0.57
v/c Ratio	0.91	0.44	0.34	0.43	0.62	0.20	1.01	0.37	0.21	0.91	0.37
Control Delay	67.3	22.5	8.5	24.4	26.5	4.4	114.5	8.9	4.9	23.6	1.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2
Total Delay	67.3	22.5	8.5	24.4	26.5	4.4	114.5	8.9	4.9	23.6	1.2
LOS	E	C	A	C	C	A	F	A	A	C	A
Approach Delay	31.8				21.9		23.6		16.5		
Approach LOS	C				C		C		B		

Intersection Summary	
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.01	
Intersection Signal Delay: 22.3	Intersection LOS: C
Intersection Capacity Utilization 88.1%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 14: National Ave & Cesar E. Chavez Pkwy



Barrio Logan CPU  
14: National Ave & Cesar E. Chavez Pkwy  
Horizon Year Alt 2 with Improvements  
Timing Plan: AM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	1.00	1.00
Flt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1612	3184	1530	1610	1369	1369
Flt Permitted	0.33	1.00	1.00	0.47	1.00	1.00	0.15	1.00	0.36	1.00	1.00	1.00
Satd. Flow (perm)	610	1863	1583	873	1863	1583	261	3184	574	1610	1369	1369
Volume (vph)	190	250	190	120	350	110	100	570	50	60	765	310
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)	207	272	207	130	380	120	109	620	54	65	832	337
RTOR Reduction (vph)	0	0	90	0	0	80	0	7	0	0	0	126
Lane Group Flow (vph)	207	272	117	130	380	40	109	667	0	65	832	211
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	12%	12%	12%	18%	18%	18%
Turn Type	Perm		Perm	Perm		Perm	Perm		Perm		Perm	Perm
Protected Phases	4		4	8	8		2	2	6		6	
Permitted Phases	4	4	4	8	8	8	2	2	6	6	6	
Actuated Green, G (s)	26.5	26.5	26.5	26.5	26.5	26.5	45.5	45.5	45.5	45.5	45.5	
Effective Green, g (s)	26.5	26.5	26.5	26.5	26.5	26.5	45.5	45.5	45.5	45.5	45.5	
Actuated g/C Ratio	0.33	0.33	0.33	0.33	0.33	0.33	0.57	0.57	0.57	0.57	0.57	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	202	617	524	289	617	524	148	1811	326	916	779	
v/s Ratio Prot	0.15				0.20		0.21		c0.52			
v/s Ratio Perm	c0.34		0.07	0.15		0.03	0.42		0.11		0.15	
v/c Ratio	1.02	0.44	0.22	0.45	0.62	0.08	0.74	0.37	0.20	0.91	0.27	
Uniform Delay, d1	26.8	20.9	19.3	21.0	22.5	18.4	12.8	9.4	8.4	15.4	8.8	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.86	0.82	0.34	0.47	0.04	
Incremental Delay, d2	69.9	0.5	0.2	1.1	1.8	0.1	27.3	0.6	1.1	12.1	0.7	
Delay (s)	96.7	21.5	19.5	22.1	24.3	18.4	38.3	8.3	4.0	19.4	1.0	
Level of Service	F	C	B	C	C	B	D	A	A	B	A	
Approach Delay (s)	43.6				22.7		12.5		13.5			
Approach LOS	D				C		B		B			

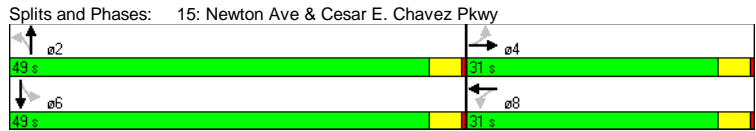
Intersection Summary			
HCM Average Control Delay	21.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.95		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	88.1%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Barrio Logan CPU  
15: Newton Ave & Cesar E. Chavez Pkwy  
Horizon Year Alt 2 with Improvements  
Timing Plan: AM Peak

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Volume (vph)	80	40	40	50	40	420	100	825
Turn Type	Perm		Perm		Perm		Perm	
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phases	4	4	8	8	2	2	6	6
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	31.0	31.0	31.0	31.0	27.0	27.0	27.0	27.0
Total Split (s)	31.0	31.0	31.0	31.0	49.0	49.0	49.0	49.0
Total Split (%)	38.8%	38.8%	38.8%	38.8%	61.3%	61.3%	61.3%	61.3%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	None	None	None	C-Min	C-Min	C-Min	C-Min
Act Effct Green (s)	10.3	10.3	10.3	10.3	64.4	64.4	64.4	64.4
Actuated g/C Ratio	0.13	0.13	0.13	0.13	0.80	0.80	0.80	0.80
v/c Ratio	0.54	0.39	0.26	0.46	0.35	0.19	0.18	0.79
Control Delay	44.1	18.5	33.8	19.7	12.0	1.9	2.7	7.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6
Total Delay	44.1	18.5	33.8	19.7	12.0	1.9	2.7	8.3
LOS	D	B	C	B	B	A	A	A
Approach Delay		29.9		23.2		2.8		7.8
Approach LOS		C		C		A		A

Intersection Summary	
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 6 (8%), Referenced to phase 2:NBT and 6:SBTL, Start of Green	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.79	
Intersection Signal Delay: 9.9	Intersection LOS: A
Intersection Capacity Utilization 77.0%	ICU Level of Service D
Analysis Period (min) 15	



Barrio Logan CPU  
15: Newton Ave & Cesar E. Chavez Pkwy  
Horizon Year Alt 2 with Improvements  
Timing Plan: AM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00
Flt	1.00	0.91	1.00	0.91	1.00	0.99	1.00	0.99	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	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1770	1695	1770	1699	1612	3191	1612	3191	1612	1657	1612	1657
Flt Permitted	0.56	1.00	0.65	1.00	0.19	1.00	0.47	1.00	0.47	1.00	0.47	1.00
Satd. Flow (perm)	1049	1695	1208	1699	324	3191	803	1657	803	1657	803	1657
Volume (vph)	80	40	60	40	50	70	40	420	30	100	825	150
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)	87	43	65	43	54	76	43	457	33	109	897	163
RTOR Reduction (vph)	0	58	0	0	67	0	0	3	0	0	4	0
Lane Group Flow (vph)	87	50	0	43	63	0	43	487	0	109	1056	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	12%	12%	12%	12%	12%	12%
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	9.2	9.2		9.2	9.2		62.8	62.8		62.8	62.8	
Effective Green, g (s)	9.2	9.2		9.2	9.2		62.8	62.8		62.8	62.8	
Actuated g/C Ratio	0.12	0.12		0.12	0.12		0.78	0.78		0.78	0.78	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	121	195		139	195		254	2505		630	1301	
v/s Ratio Prot		0.03			0.04			0.15			c0.64	
v/s Ratio Perm	c0.08			0.04			0.13			0.14		
v/c Ratio	0.72	0.26		0.31	0.32		0.17	0.19		0.17	0.81	
Uniform Delay, d1	34.2	32.3		32.5	32.5		2.1	2.2		2.1	5.1	
Progression Factor	1.00	1.00		1.00	1.00		0.77	0.68		0.71	0.45	
Incremental Delay, d2	18.4	0.7		1.3	1.0		1.3	0.2		0.4	3.6	
Delay (s)	52.6	33.0		33.8	33.5		3.0	1.7		1.9	5.9	
Level of Service	D	C		C	C		A	A		A	A	
Approach Delay (s)		41.7			33.6			1.8			5.6	
Approach LOS		D			C			A			A	

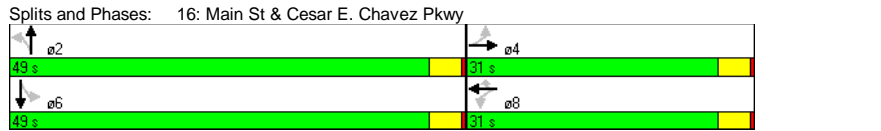
Intersection Summary			
HCM Average Control Delay	10.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	77.0%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Barrio Logan CPU  
 16: Main St & Cesar E. Chavez Pkwy  
 Horizon Year Alt 2 with Improvements  
 Timing Plan: AM Peak

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations	↔	↕	↔	↕	↔	↔	↕	↔	↕
Volume (vph)	150	190	70	350	190	85	340	150	580
Turn Type	Perm		Perm		Perm	Perm		Perm	
Protected Phases		4		8		8	2		6
Permitted Phases	4		8		8	2		6	
Detector Phases	4	4	8	8	8	2	2	6	6
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	31.0	31.0	31.0	31.0	31.0	27.0	27.0	27.0	27.0
Total Split (s)	31.0	31.0	31.0	31.0	31.0	49.0	49.0	49.0	49.0
Total Split (%)	38.8%	38.8%	38.8%	38.8%	38.8%	61.3%	61.3%	61.3%	61.3%
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)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Lead/Lag									
Lead-Lag Optimize?									
Recall Mode	None	None	None	None	None	C-Min	C-Min	C-Min	C-Min
Act Effect Green (s)	23.7	23.7	23.7	23.7	23.7	48.3	48.3	48.3	48.3
Actuated g/C Ratio	0.30	0.30	0.30	0.30	0.30	0.60	0.60	0.60	0.60
v/c Ratio	0.90	0.41	0.26	0.69	0.35	0.65	0.25	0.35	0.89
Control Delay	73.3	23.4	22.3	31.3	4.8	40.1	7.3	6.7	19.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	5.7
Total Delay	73.3	23.4	22.3	31.3	4.8	40.1	7.7	6.7	24.9
LOS	E	C	C	C	A	D	A	A	C
Approach Delay		44.5		22.0			13.0		21.9
Approach LOS		D		C			B		C

Intersection Summary	
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 14 (18%), Referenced to phase 2:NBT and 6:SBTL, Start of Green	
Natural Cycle: 80	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.90	
Intersection Signal Delay: 23.4	Intersection LOS: C
Intersection Capacity Utilization 90.7%	ICU Level of Service E
Analysis Period (min) 15	



Barrio Logan CPU  
 16: Main St & Cesar E. Chavez Pkwy  
 Horizon Year Alt 2 with Improvements  
 Timing Plan: AM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↕	↔	↔	↕	↕	↔	↕	↔	↔	↕	↕
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	0.95		1.00	1.00		1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00	0.95	1.00	0.99		1.00	0.98	1.00
Flpb, ped/bikes	0.98	1.00		0.99	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.99		1.00	1.00	0.85	1.00	0.97		1.00	0.96	1.00
Fit Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1742	1839		1750	1863	1511	1556	2996		1549	1550	
Fit Permitted	0.29	1.00		0.52	1.00	1.00	0.18	1.00		0.47	1.00	
Satd. Flow (perm)	524	1839		950	1863	1511	290	2996		772	1550	
Volume (vph)	150	190	15	70	350	190	85	340	90	150	580	195
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)	163	207	16	76	380	207	92	370	98	163	630	212
RTOR Reduction (vph)	0	4	0	0	0	146	0	27	0	0	14	0
Lane Group Flow (vph)	163	219	0	76	380	61	92	441	0	163	828	0
Confl. Peds. (#/hr)	38		18	18		38	26		5	5		26
Confl. Bikes (#/hr)			2			1			1			2
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	16%	16%	16%	16%	16%	16%
Turn Type	Perm			Perm		Perm	Perm			Perm		
Protected Phases		4			8		2				6	
Permitted Phases	4			8		8	2			6		
Actuated Green, G (s)	23.7	23.7		23.7	23.7	23.7	48.3	48.3		48.3	48.3	
Effective Green, g (s)	23.7	23.7		23.7	23.7	23.7	48.3	48.3		48.3	48.3	
Actuated g/C Ratio	0.30	0.30		0.30	0.30	0.30	0.60	0.60		0.60	0.60	
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	155	545		281	552	448	175	1809		466	936	
v/s Ratio Prot		0.12			0.20			0.15			c0.53	
v/s Ratio Perm	c0.31			0.08		0.04	0.32			0.21		
v/c Ratio	1.05	0.40		0.27	0.69	0.14	0.53	0.24		0.35	0.88	
Uniform Delay, d1	28.2	22.5		21.5	24.9	20.6	9.2	7.4		8.0	13.5	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		0.54	0.57	
Incremental Delay, d2	86.6	0.5		0.5	3.6	0.1	10.8	0.3		1.3	8.3	
Delay (s)	114.8	23.0		22.1	28.5	20.8	20.1	7.7		5.6	15.9	
Level of Service	F	C		C	C	C	C	A		A	B	
Approach Delay (s)		61.8			25.3		9.7				14.2	
Approach LOS		E			C		A				B	

Intersection Summary	
HCM Average Control Delay	23.1 HCM Level of Service C
HCM Volume to Capacity ratio	0.94
Actuated Cycle Length (s)	80.0 Sum of lost time (s) 8.0
Intersection Capacity Utilization	90.7% ICU Level of Service E
Analysis Period (min)	15

c Critical Lane Group

Barrio Logan CPU  
17: Harbor Dr & Cesar E. Chavez Pkwy  
Horizon Year Alt 2 with Improvements  
Timing Plan: AM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	[Diagram showing lane configurations with arrows]											
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	0.97	0.95		1.00	0.95	1.00	1.00	1.00	1.00		1.00	1.00
Frbp, ped/bikes	1.00	1.00		1.00	1.00	0.98	1.00	1.00	0.98		1.00	0.99
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00
Frt	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00		0.98	1.00
Satd. Flow (prot)	3183	3225		1421	3282	1433	1364	1439	1112		1599	1375
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.51	1.00	1.00		0.85	1.00
Satd. Flow (perm)	3183	3225		1421	3282	1433	725	1439	1112		1399	1375
Volume (vph)	109	404		40	80	1056	99	10	14		27	77
Peak-hour factor, PHF	0.92	0.92		0.92	0.92	0.92	0.92	0.92	0.92		0.92	0.92
Adj. Flow (vph)	118	439		43	87	1148	108	11	15		29	84
RTOR Reduction (vph)	0	6		0	0	57	0	0	25		0	0
Lane Group Flow (vph)	118	476		0	87	1148	51	11	15		4	174
Confl. Peds. (#/hr)				11			6	4			1	1
Confl. Bikes (#/hr)				5			11				2	
Heavy Vehicles (%)	10%	10%		10%	27%	10%	10%	32%	32%		43%	16%
Turn Type	Prot Perm pm+ov											
Protected Phases	3	14 2 6		13	18 2 6			12			1 5 16	3
Permitted Phases					18 2 6		12		12	1 5 16		1 5 16
Actuated Green, G (s)	6.3	35.4		6.3	35.4	35.4	13.8	13.8	13.8		26.2	32.5
Effective Green, g (s)	6.3	35.4		6.3	35.4	35.4	13.8	13.8	13.8		26.2	32.5
Actuated g/C Ratio	0.07	0.39		0.07	0.39	0.39	0.15	0.15	0.15		0.29	0.35
Clearance Time (s)	4.0			4.0			4.0	4.0	4.0		4.0	
Vehicle Extension (s)	3.0			3.0			3.0	3.0	3.0		3.0	
Lane Grp Cap (vph)	218	1242		97	1264	552	109	216	167		399	486
v/s Ratio Prot	0.04	0.15		0.06	c0.35			0.01				c0.08
v/s Ratio Perm					0.04	0.02		0.00			0.12	0.31
v/c Ratio	0.54	0.38		0.90	0.91	0.09	0.10	0.07	0.03		0.44	1.10
Uniform Delay, d1	41.4	20.4		42.5	26.7	18.0	33.7	33.5	33.3		26.8	29.7
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00		0.97	1.06
Incremental Delay, d2	2.7	0.2		58.7	9.6	0.1	0.4	0.1	0.1		0.8	70.7
Delay (s)	44.1	20.6		101.2	36.3	18.1	34.1	33.7	33.4		26.9	102.1
Level of Service	D	C		F	D	B	C	C	C		C	F
Approach Delay (s)		25.2			39.1			33.6			84.1	
Approach LOS		C			D			C			F	
<b>Intersection Summary</b>												
HCM Average Control Delay	47.9			HCM Level of Service			D					
HCM Volume to Capacity ratio	1.00											
Actuated Cycle Length (s)	91.9			Sum of lost time (s)			24.0					
Intersection Capacity Utilization	75.4%			ICU Level of Service			D					
Analysis Period (min)	15											
c Critical Lane Group												

Barrio Logan CPU  
23: Logan Ave & Sampson St  
Horizon Year Alt 2 with Improvements  
Timing Plan: AM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	[Diagram showing lane configurations with arrows]											
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00
Frt	1.00	0.94		1.00	0.93		1.00	0.95	1.00		0.99	0.99
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	0.95		0.95	1.00
Satd. Flow (prot)	1770	1745		1770	1741		1770	1773	1770		1770	1847
Flt Permitted	0.66	1.00		0.36	1.00		0.59	1.00	0.29		0.29	1.00
Satd. Flow (perm)	1234	1745		667	1741		1100	1773	547		1847	
Volume (vph)	101	220		161	106		77	60	212		366	174
Peak-hour factor, PHF	0.92	0.92		0.92	0.92		0.92	0.92	0.92		0.92	0.92
Adj. Flow (vph)	110	239		175	115		84	65	230		398	189
RTOR Reduction (vph)	0	40		0	0		43	0	0		26	0
Lane Group Flow (vph)	110	374		0	115		106	0	230		561	0
Turn Type	Perm Perm Perm Perm											
Protected Phases	4			8			2			6		
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	14.6	14.6		14.6	14.6		20.6	20.6	20.6		20.6	20.6
Effective Green, g (s)	14.6	14.6		14.6	14.6		20.6	20.6	20.6		20.6	20.6
Actuated g/C Ratio	0.34	0.34		0.34	0.34		0.48	0.48	0.48		0.48	0.48
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	417	590		225	588		525	845	261		881	
v/s Ratio Prot	c0.21			0.06			c0.32			0.15		
v/s Ratio Perm	0.09			0.17			0.21			0.12		
v/c Ratio	0.26	0.63		0.51	0.18		0.44	0.66	0.26		0.31	
Uniform Delay, d1	10.4	12.0		11.4	10.1		7.5	8.7	6.7		6.9	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00	
Incremental Delay, d2	0.3	2.2		2.0	0.1		0.6	2.0	0.5		0.2	
Delay (s)	10.7	14.3		13.4	10.2		8.1	10.6	7.3		7.1	
Level of Service	B	B		B	B		A	B	A		A	
Approach Delay (s)	13.5			11.6			9.9			7.1		
Approach LOS	B			B			A			A		
<b>Intersection Summary</b>												
HCM Average Control Delay	10.6			HCM Level of Service			B					
HCM Volume to Capacity ratio	0.65											
Actuated Cycle Length (s)	43.2			Sum of lost time (s)			8.0					
Intersection Capacity Utilization	73.9%			ICU Level of Service			D					
Analysis Period (min)	15											
c Critical Lane Group												



Barrio Logan CPU  
31: Main St & 26th St

Horizon Year Alt 2 with Improvements  
Timing Plan: AM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↕		↕		↕		↕		↕		↕	
Sign Control	Stop		Stop		Stop		Stop		Stop		Stop	
Volume (vph)	0	70	19	146	214	0	33	0	124	16	19	13
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
Hourly flow rate (vph)	0	76	21	159	233	0	36	0	135	17	21	14
Direction, Lane #	EB 1	WB 1	WB 2	NB 1	NB 2	SB 1						
Volume Total (vph)	97	159	233	36	135	52						
Volume Left (vph)	0	159	0	36	0	17						
Volume Right (vph)	21	0	0	0	135	14						
Hadj (s)	-0.09	0.94	0.03	0.23	0.05	-0.06						
Departure Headway (s)	4.6	5.8	4.9	5.3	3.2	5.0						
Degree Utilization, x	0.12	0.25	0.31	0.05	0.12	0.07						
Capacity (veh/h)	764	610	727	626	1121	666						
Control Delay (s)	8.2	9.5	8.8	8.6	6.6	8.4						
Approach Delay (s)	8.2	9.1		7.1		8.4						
Approach LOS	A	A		A		A						
<b>Intersection Summary</b>												
Delay			8.4									
HCM Level of Service			A									
Intersection Capacity Utilization			31.5%		ICU Level of Service		A					
Analysis Period (min)			15									

Barrio Logan CPU  
32: Harbor Dr & Schley St

Horizon Year Alt 2 with Improvements  
Timing Plan: AM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↕		↕		↕		↕		↕		↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0		4.0		4.0		4.0		4.0	
Lane Util. Factor	1.00	0.95		0.95								1.00
Flpb, ped/bikes	1.00	1.00		1.00								1.00
Flpb, ped/bikes	1.00	1.00		1.00								1.00
Frt	1.00	1.00		1.00								0.86
Flt Protected	0.95	1.00		1.00								1.00
Satd. Flow (prot)	1543	3539		3534								1454
Flt Permitted	0.95	1.00		1.00								1.00
Satd. Flow (perm)	1543	3539		3534								1454
Volume (vph)	86	505	0	0	1573	17	0	0	0	0	0	86
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)	93	549	0	0	1710	18	0	0	0	0	0	93
RTOR Reduction (vph)	0	0	0	0	1	0	0	0	0	0	0	84
Lane Group Flow (vph)	93	549	0	0	1727	0	0	0	0	0	0	9
Confl. Peds. (#/hr)			8		8						2	
Confl. Bikes (#/hr)											5	
Heavy Vehicles (%)	17%	2%	2%	2%	2%	2%	2%	2%	2%	2%	4%	13%
Turn Type	Prot										Over	
Protected Phases	13	18	2	6			14	2	6			13
Permitted Phases												
Actuated Green, G (s)	8.7	58.0			41.3							8.7
Effective Green, g (s)	8.7	58.0			41.3							8.7
Actuated g/C Ratio	0.10	0.65			0.46							0.10
Clearance Time (s)	4.0										4.0	
Vehicle Extension (s)	3.0										3.0	
Lane Grp Cap (vph)	151	2304			1638							142
v/s Ratio Prot	c0.06	0.16			c0.49							0.01
v/s Ratio Perm												
v/c Ratio	0.62	0.24			1.05							0.06
Uniform Delay, d1	38.6	6.4			23.9							36.5
Progression Factor	1.00	1.00			1.00							1.00
Incremental Delay, d2	7.3	0.1			38.2							0.2
Delay (s)	45.9	6.5			62.1							36.7
Level of Service	D	A			E							D
Approach Delay (s)	12.2				62.1		0.0				36.7	
Approach LOS	B				E		A				D	
<b>Intersection Summary</b>												
HCM Average Control Delay			48.1		HCM Level of Service		D					
HCM Volume to Capacity ratio			0.98									
Actuated Cycle Length (s)			89.1		Sum of lost time (s)		39.1					
Intersection Capacity Utilization			56.0%		ICU Level of Service		B					
Analysis Period (min)			15									

c Critical Lane Group

Barrio Logan CPU  
33: National Ave & 28th St

Horizon Year Alt 2 with Improvements  
Timing Plan: AM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.97		1.00	0.85		1.00	0.85	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.99	1.00		0.98	1.00	
Satd. Flow (prot)	1770	3539	1583	1299	1814		1754	1509		1745	1509	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.77	1.00		0.79	1.00	
Satd. Flow (perm)	1770	3539	1583	1299	1814		1369	1509		1396	1509	
Volume (vph)	106	245	18	186	599	126	33	102	82	118	213	307
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)	115	266	20	202	651	137	36	111	89	128	232	334
RTOR Reduction (vph)	0	0	12	0	5	0	0	0	60	0	0	225
Lane Group Flow (vph)	115	266	8	202	783	0	0	147	29	0	360	109
Heavy Vehicles (%)	2%	2%	2%	39%	2%	2%	7%	7%	7%	7%	7%	7%
Turn Type	Prot		Perm	Prot			Perm		Perm	Perm		Perm
Protected Phases	7	4		3	8			2			6	
Permitted Phases			4				2		2	6		6
Actuated Green, G (s)	8.5	42.1	42.1	18.3	51.9		34.9	34.9		34.9	34.9	
Effective Green, g (s)	8.5	42.1	42.1	18.3	51.9		34.9	34.9		34.9	34.9	
Actuated g/C Ratio	0.08	0.39	0.39	0.17	0.48		0.33	0.33		0.33	0.33	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	140	1389	621	222	877		445	491		454	491	
v/s Ratio Prot	0.06	0.08		c0.16	c0.43							
v/s Ratio Perm			0.00				0.11	0.02		c0.26	0.07	
v/c Ratio	0.82	0.19	0.01	0.91	0.89		0.33	0.06		0.79	0.22	
Uniform Delay, d1	48.7	21.4	19.9	43.7	25.2		27.4	24.9		32.9	26.3	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	30.5	0.1	0.0	36.3	11.4		0.4	0.1		9.2	0.2	
Delay (s)	79.2	21.5	19.9	80.0	36.5		27.8	25.0		42.1	26.5	
Level of Service	E	C	B	E	D		C	C		D	C	
Approach Delay (s)		38.0			45.4		26.7			34.6		
Approach LOS		D			D		C			C		
<b>Intersection Summary</b>												
HCM Average Control Delay		39.0		HCM Level of Service				D				
HCM Volume to Capacity ratio		0.85										
Actuated Cycle Length (s)		107.3		Sum of lost time (s)				8.0				
Intersection Capacity Utilization		83.3%		ICU Level of Service				E				
Analysis Period (min)		15										
c Critical Lane Group												

Barrio Logan CPU  
34: Boston Ave & 28th St

Horizon Year Alt 2 with Improvements  
Timing Plan: AM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔↔	↔↔
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95		1.00	0.91	
Frt	1.00	1.00	0.85	1.00	0.91		1.00	0.99		1.00	0.96	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1687	1776	1509	1687	1611		1770	3447		1770	4856	
Flt Permitted	0.54	1.00	1.00	0.56	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	965	1776	1509	993	1611		1770	3447		1770	4856	
Volume (vph)	250	200	150	50	80	130	90	720	40	170	880	300
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)	272	217	163	54	87	141	98	783	43	185	957	326
RTOR Reduction (vph)	0	0	110	0	90	0	0	5	0	0	71	0
Lane Group Flow (vph)	272	217	53	54	138	0	98	821	0	185	1212	0
Heavy Vehicles (%)	7%	7%	7%	7%	7%	7%	2%	4%	2%	2%	3%	2%
Turn Type	Perm		Perm	Perm			Prot			Prot		
Protected Phases		4			8		5	2			1	6
Permitted Phases	4		4	8								
Actuated Green, G (s)	21.7	21.7	21.7	21.7	21.7		4.6	24.3		9.0	28.7	
Effective Green, g (s)	21.7	21.7	21.7	21.7	21.7		4.6	24.3		9.0	28.7	
Actuated g/C Ratio	0.32	0.32	0.32	0.32	0.32		0.07	0.36		0.13	0.43	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	313	575	489	322	522		122	1250		238	2080	
v/s Ratio Prot		0.12			0.09		0.06	c0.24		c0.10	0.25	
v/s Ratio Perm	c0.28		0.03	0.05								
v/c Ratio	0.87	0.38	0.11	0.17	0.26		0.80	0.66		0.78	0.58	
Uniform Delay, d1	21.3	17.4	15.9	16.2	16.7		30.8	17.9		28.0	14.6	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	21.7	0.4	0.1	0.2	0.3		30.5	2.7		14.7	1.2	
Delay (s)	43.0	17.9	16.0	16.4	17.0		61.2	20.6		42.7	15.8	
Level of Service	D	B	B	B	B		E	C		D	B	
Approach Delay (s)		27.9			16.9			24.9			19.2	
Approach LOS		C			B			C			B	
<b>Intersection Summary</b>												
HCM Average Control Delay		22.3		HCM Level of Service				C				
HCM Volume to Capacity ratio		0.76										
Actuated Cycle Length (s)		67.0		Sum of lost time (s)				12.0				
Intersection Capacity Utilization		70.0%		ICU Level of Service				C				
Analysis Period (min)		15										
c Critical Lane Group												

Barrio Logan CPU  
36: Harbor Dr & 28th St  
Horizon Year Alt 2 with Improvements  
Timing Plan: AM Peak

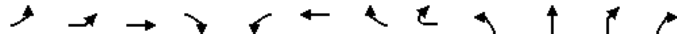
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR						
Lane Configurations																		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900						
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0						
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	1.00	1.00	0.97	1.00	1.00								
Flpb, ped/bikes	1.00	1.00	0.86	1.00	1.00	0.94	0.99	1.00	1.00	0.98								
Flpb, ped/bikes	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	1.00	1.00	0.85	1.00	1.00	0.85	0.97	1.00	1.00	0.85								
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	1.00	0.95	1.00	1.00								
Satd. Flow (prot)	3303	3406	1306	1719	3438	1439	1763	3367	1827	1525								
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	1.00	0.95	1.00	1.00								
Satd. Flow (perm)	3303	3406	1306	1719	3438	1439	1763	3367	1827	1525								
Volume (vph)	70	670	4	18	943	115	0	6	2	339	15	22						
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)	76	728	4	20	1025	125	0	7	2	368	16	24						
RTOR Reduction (vph)	0	0	2	0	0	48	0	2	0	0	0	18						
Lane Group Flow (vph)	76	728	2	20	1025	77	0	7	0	368	16	6						
Confl. Peds. (#/hr)			69		80				6		7							
Confl. Bikes (#/hr)			69		80				6		7							
Heavy Vehicles (%)	6%	6%	6%	5%	5%	5%	4%	4%	4%	4%	4%	4%						
Turn Type	Prot	custom		Prot	custom		Split	Split		Perm								
Protected Phases	11	16	2	6	15	12	2	6	13	14	14	1	13	5	13	1	5	
Permitted Phases			16		12				1		5		13		1		5	
Actuated Green, G (s)	4.0	37.5	31.7	2.7	36.2	49.0	13.8	29.0	29.0	29.0								
Effective Green, g (s)	4.0	37.5	31.7	2.7	36.2	49.0	13.8	29.0	29.0	29.0								
Actuated g/C Ratio	0.03	0.33	0.28	0.02	0.31	0.43	0.12	0.25	0.25	0.25								
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0								
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0								
Lane Grp Cap (vph)	115	1111	360	40	1082	613	212	849	461	385								
v/s Ratio Prot	c0.02	0.21		0.01	c0.30	0.02	c0.00	c0.11	0.01									
v/s Ratio Perm			0.00		0.03				0.00									
v/c Ratio	0.66	0.66	0.01	0.50	0.95	0.13	0.03	0.43	0.03	0.02								
Uniform Delay, d1	54.8	33.2	30.2	55.5	38.5	20.0	44.7	36.1	32.4	32.3								
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.90	0.91	1.44								
Incremental Delay, d2	13.4	1.4	0.0	9.5	16.1	0.1	0.1	0.4	0.0	0.0								
Delay (s)	68.2	34.6	30.2	65.0	54.6	20.1	44.8	33.0	29.7	46.5								
Level of Service	E	C	C	E	D	C	D	C	C	D								
Approach Delay (s)			37.7		51.1		44.8		33.6									
Approach LOS			D		D		D		C									
<b>Intersection Summary</b>																		
HCM Average Control Delay			43.6		HCM Level of Service		D											
HCM Volume to Capacity ratio			0.60															
Actuated Cycle Length (s)			115.0		Sum of lost time (s)		32.0											
Intersection Capacity Utilization			53.0%		ICU Level of Service		A											
Analysis Period (min)			15															
c Critical Lane Group																		

Barrio Logan CPU  
37: Boston Ave & I-5 SB On-ramp  
Horizon Year Alt 2 with Improvements  
Timing Plan: AM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR			
Lane Configurations															
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900			
Total Lost time (s)	4.0														
Lane Util. Factor			1.00		1.00				1.00						
Frt			0.99		0.94				0.99						
Flt Protected			0.97		1.00				1.00						
Satd. Flow (prot)			1717		1665				1384						
Flt Permitted			0.97		1.00				1.00						
Satd. Flow (perm)			1717		1665				1384						
Volume (vph)	132	104	14	20	107	96	6	186	19	0	0	0			
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)	143	113	15	22	116	104	7	202	21	0	0	0			
RTOR Reduction (vph)	0	3	0	0	33	0	0	3	0	0	0	0			
Lane Group Flow (vph)	0	268	0	0	209	0	0	227	0	0	0	0			
Heavy Vehicles (%)	7%	7%	7%	7%	7%	7%	2%	40%	2%	2%	2%	2%			
Turn Type	Split				Split				Perm						
Protected Phases	4	4			8	8			2						
Permitted Phases									2						
Actuated Green, G (s)					9.7				19.8						
Effective Green, g (s)					9.7				19.8						
Actuated g/C Ratio					0.19				0.38						
Clearance Time (s)					4.0				4.0						
Vehicle Extension (s)					3.0				3.0						
Lane Grp Cap (vph)					355				309						
v/s Ratio Prot					c0.16				c0.13						
v/s Ratio Perm									0.16						
v/c Ratio					0.75				0.68						
Uniform Delay, d1					19.5				19.8						
Progression Factor					1.00				1.00						
Incremental Delay, d2					8.8				5.8						
Delay (s)					28.3				25.6						
Level of Service					C				C						
Approach Delay (s)					28.3				25.6						
Approach LOS					C				C						
<b>Intersection Summary</b>															
HCM Average Control Delay			22.6		HCM Level of Service		C								
HCM Volume to Capacity ratio			0.58												
Actuated Cycle Length (s)			52.3		Sum of lost time (s)		12.0								
Intersection Capacity Utilization			47.5%		ICU Level of Service		A								
Analysis Period (min)			15												
c Critical Lane Group															

Barrio Logan CPU  
39: 32nd St & Wabash St

Horizon Year Alt 2 with Improvements  
Timing Plan: AM Peak



Movement	EBL2	EBL	EBT	EBR	WBL	WBT	WBR	WBR2	NBL	NBT	NBR	NBR2
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00			1.00	1.00	1.00	1.00	0.88			
Flt	1.00	0.95			1.00	0.85	1.00	1.00	0.85			
Flt Protected	0.95	1.00			0.96	1.00	0.95	1.00	1.00			
Satd. Flow (prot)	1760	1773			1787	1574	1719	1810	2707			
Flt Permitted	0.35	1.00			0.41	1.00	0.95	1.00	1.00			
Satd. Flow (perm)	644	1773			771	1574	1719	1810	2707			
Volume (vph)	65	25	170	80	250	45	120	50	70	215	55	290
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)	71	27	185	87	272	49	130	54	76	234	60	315
RTOR Reduction (vph)	0	0	13	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	98	259	0	0	321	184	0	76	234	375	0
Heavy Vehicles (%)	2%	4%	2%	2%	2%	2%	2%	4%	5%	5%	5%	5%
Turn Type	Perm	Perm			Perm	Perm			Prot	custom		
Protected Phases			4			4			5	2		
Permitted Phases	4	4			4	4					2 3	
Actuated Green, G (s)	34.4	34.4			34.4	34.4			10.3	20.0	48.3	
Effective Green, g (s)	34.4	34.4			34.4	34.4			10.3	20.0	48.3	
Actuated g/C Ratio	0.30	0.30			0.30	0.30			0.09	0.18	0.42	
Clearance Time (s)	4.0	4.0			4.0	4.0			4.0	4.0		
Vehicle Extension (s)	3.0	3.0			3.0	3.0			3.0	3.0		
Lane Grp Cap (vph)	194	535			233	475			155	318	1147	
v/s Ratio Prot		0.15							0.04	0.13		
v/s Ratio Perm	0.15				0.42	0.12					0.14	
v/c Ratio	0.51	0.48			1.38	0.39			0.49	0.74	0.33	
Uniform Delay, d1	32.8	32.6			39.8	31.5			49.4	44.5	22.0	
Progression Factor	1.00	1.00			1.00	1.00			1.00	1.00	1.00	
Incremental Delay, d2	2.1	0.7			194.6	0.5			2.4	8.6	0.2	
Delay (s)	34.9	33.2			234.4	32.0			51.8	53.1	22.1	
Level of Service	C	C			F	C			D	D	C	
Approach Delay (s)		33.7				160.6				36.0		
Approach LOS		C				F				D		

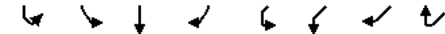
Intersection Summary

HCM Average Control Delay	119.4	HCM Level of Service	F
HCM Volume to Capacity ratio	1.14		
Actuated Cycle Length (s)	114.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	94.7%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Barrio Logan CPU  
39: 32nd St & Wabash St

Horizon Year Alt 2 with Improvements  
Timing Plan: AM Peak



Movement	SBL2	SBL	SBT	SBR	SWL2	SWL	SWR	SWR2
Lane Configurations								
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0			
Lane Util. Factor	1.00	0.95			0.97			
Flt	1.00	0.98			0.99			
Flt Protected	0.95	1.00			0.96			
Satd. Flow (prot)	1765	3384			3345			
Flt Permitted	0.95	1.00			0.88			
Satd. Flow (perm)	1765	3384			3075			
Volume (vph)	30	180	445	65	60	735	65	10
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	33	196	484	71	65	799	71	11
RTOR Reduction (vph)	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	229	555	0	0	946	0	0
Heavy Vehicles (%)	4%	2%	5%	2%	4%	4%	4%	4%
Turn Type	Prot	Prot			Perm			
Protected Phases	1	1	6			3		
Permitted Phases					3			
Actuated Green, G (s)	19.3	29.0			24.3			
Effective Green, g (s)	19.3	29.0			24.3			
Actuated g/C Ratio	0.17	0.25			0.21			
Clearance Time (s)	4.0	4.0			4.0			
Vehicle Extension (s)	3.0	3.0			3.0			
Lane Grp Cap (vph)	299	861			655			
v/s Ratio Prot		0.13	0.16					
v/s Ratio Perm					0.31			
v/c Ratio	0.77	0.64			1.44			
Uniform Delay, d1	45.2	37.9			44.8			
Progression Factor	1.00	1.00			1.00			
Incremental Delay, d2	11.1	1.7			208.5			
Delay (s)	56.3	39.6			253.3			
Level of Service	E	D			F			
Approach Delay (s)		44.5			253.3			
Approach LOS		D			F			

Intersection Summary

HCM Average Control Delay	119.4	HCM Level of Service	F
HCM Volume to Capacity ratio	1.14		
Actuated Cycle Length (s)	114.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	94.7%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Barrio Logan CPU  
40: Harbor Dr & 32nd St

Horizon Year Alt 2 with Improvements  
Timing Plan: AM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔↔	↔	↔	↔↔	↔	↔	↔↔	↔	↔	↔↔	↔
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Flpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	1.00	1.00	1.00	0.96	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Flt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1719	3438	1517	1687	3374	1509	1719	3438	1482	1719	3438	1538
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1719	3438	1517	1687	3374	1509	1719	3438	1482	1719	3438	1538
Volume (vph)	90	641	140	300	756	390	30	160	30	130	1040	60
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)	98	697	152	326	822	424	33	174	33	141	1130	65
RTOR Reduction (vph)	0	0	122	0	0	270	0	0	28	0	0	36
Lane Group Flow (vph)	98	697	30	326	822	154	33	174	5	141	1130	29
Confl. Bikes (#/hr)			3					16				
Heavy Vehicles (%)	5%	5%	5%	7%	7%	7%	5%	5%	5%	5%	5%	5%
Turn Type	Prot	custom		Prot	custom		Prot	Perm	Prot	custom		
Protected Phases	3	14	2	6	15	13	18	2	6	11	1	5
Permitted Phases							14					16
Actuated Green, G (s)	5.1	8.7	6.5	16.4	20.0	15.6	2.2	12.0	12.0	12.7	26.5	27.6
Effective Green, g (s)	5.1	8.7	6.5	16.4	20.0	15.6	2.2	12.0	12.0	12.7	26.5	27.6
Actuated g/C Ratio	0.06	0.11	0.08	0.20	0.24	0.19	0.03	0.15	0.15	0.16	0.32	0.34
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	107	366	121	338	825	288	46	504	217	267	1114	594
v/s Ratio Prot	0.06	c0.20	0.01	c0.19	0.24	0.02	0.05	0.05	c0.08	c0.33	0.01	0.01
v/s Ratio Perm			0.01			0.10			0.00			0.01
v/c Ratio	0.92	1.90	0.25	0.96	1.00	0.53	0.72	0.35	0.02	0.53	1.01	0.05
Uniform Delay, d1	38.1	36.6	35.4	32.4	30.9	29.8	39.5	31.4	29.9	31.8	27.6	18.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.21	0.88	1.58
Incremental Delay, d2	60.4	417.1	1.1	39.2	30.2	1.9	41.5	0.4	0.0	1.8	30.2	0.0
Delay (s)	98.5	453.6	36.5	71.6	61.1	31.7	81.0	31.8	29.9	40.3	54.5	28.9
Level of Service	F	F	D	E	E	C	F	C	C	D	D	C
Approach Delay (s)		349.9			55.3			38.3			51.8	
Approach LOS		F			E			D			D	
<b>Intersection Summary</b>												
HCM Average Control Delay		121.3										F
HCM Volume to Capacity ratio		1.06										
Actuated Cycle Length (s)		81.8			Sum of lost time (s)		24.0					
Intersection Capacity Utilization		79.8%			ICU Level of Service		D					
Analysis Period (min)		15										
c	Critical Lane Group											

Barrio Logan CPU  
42: I-5 SB off-ramp & 28th St

Horizon Year Alt 2 with Improvements  
Timing Plan: AM Peak

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	0.95	0.91		
Flt	0.86	1.00	1.00	1.00		
Flt Protected	1.00	1.00	1.00	1.00		
Satd. Flow (prot)	1611	3539	5085			
Flt Permitted	1.00	1.00	1.00			
Satd. Flow (perm)	1611	3539	5085			
Volume (vph)	0	933	0	1100	417	0
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1014	0	1196	453	0
RTOR Reduction (vph)	0	27	0	0	0	0
Lane Group Flow (vph)	0	987	0	1196	453	0
Turn Type	custom					
Protected Phases			2	4	6	6
Permitted Phases		4				
Actuated Green, G (s)		44.5		68.5	16.0	
Effective Green, g (s)		44.5		68.5	16.0	
Actuated g/C Ratio		0.65		1.00	0.23	
Clearance Time (s)		4.0		4.0		
Vehicle Extension (s)		3.0		3.0		
Lane Grp Cap (vph)		1047		3539	1188	
v/s Ratio Prot				c0.34	0.09	
v/s Ratio Perm		c0.61				
v/c Ratio		0.94		0.34	0.38	
Uniform Delay, d1		10.8		0.0	22.1	
Progression Factor		1.00		1.00	1.00	
Incremental Delay, d2		15.8		0.1	0.9	
Delay (s)		26.6		0.1	23.0	
Level of Service		C		A	C	
Approach Delay (s)	26.6			0.1	23.0	
Approach LOS	C			A	C	
<b>Intersection Summary</b>						
HCM Average Control Delay		14.1				HCM Level of Service B
HCM Volume to Capacity ratio		0.76				
Actuated Cycle Length (s)		68.5		Sum of lost time (s)	4.0	
Intersection Capacity Utilization		72.5%		ICU Level of Service	C	
Analysis Period (min)		15				

Barrio Logan CPU  
2: National Ave & 16th St

Horizon Year Alt 2 with Improvements  
Timing Plan: PM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↕			↕			↕			↕		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0			4.0			4.0			4.0		
Lane Util. Factor	1.00			1.00			1.00			1.00		
Frbp, ped/bikes	1.00			1.00			1.00			0.99		
Flpb, ped/bikes	1.00			1.00			0.99			1.00		
Frt	0.99			0.99			0.99			0.96		
Flt Protected	0.99			1.00			0.97			0.97		
Satd. Flow (prot)	1817			1846			1782			1706		
Flt Permitted	0.85			1.00			0.80			0.76		
Satd. Flow (perm)	1566			1842			1461			1330		
Volume (vph)	91	347	31	3	458	25	61	41	7	125	25	70
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)	99	377	34	3	498	27	66	45	8	136	27	76
RTOR Reduction (vph)	0	4	0	0	3	0	0	4	0	0	25	0
Lane Group Flow (vph)	0	506	0	0	525	0	0	115	0	0	214	0
Confl. Peds. (#/hr)	27		37		37		27		14		14	
Confl. Bikes (#/hr)			1				3				1	
Turn Type	Perm		Perm		Perm		Perm		Perm		Perm	
Protected Phases	4		8		8		2		6		6	
Permitted Phases	4		8		8		2		6		6	
Actuated Green, G (s)	18.1		18.1		18.1		11.6		11.6		11.6	
Effective Green, g (s)	18.1		18.1		18.1		11.6		11.6		11.6	
Actuated g/C Ratio	0.48		0.48		0.48		0.31		0.31		0.31	
Clearance Time (s)	4.0		4.0		4.0		4.0		4.0		4.0	
Vehicle Extension (s)	3.0		3.0		3.0		3.0		3.0		3.0	
Lane Grp Cap (vph)	752		884		884		450		409		409	
v/s Ratio Prot												
v/s Ratio Perm	c0.32		0.28		0.28		0.08		c0.16		c0.16	
v/c Ratio	0.67		0.59		0.59		0.26		0.52		0.52	
Uniform Delay, d1	7.5		7.1		7.1		9.8		10.8		10.8	
Progression Factor	1.00		1.00		1.00		1.00		1.00		1.00	
Incremental Delay, d2	2.4		1.1		1.1		0.3		1.2		1.2	
Delay (s)	9.9		8.2		8.2		10.1		12.0		12.0	
Level of Service	A		A		A		B		B		B	
Approach Delay (s)	9.9		8.2		8.2		10.1		12.0		12.0	
Approach LOS	A		A		A		B		B		B	
<b>Intersection Summary</b>												
HCM Average Control Delay	9.6		9.6		9.6		10.1		12.0		12.0	
HCM Level of Service	A		A		A		B		B		B	
HCM Volume to Capacity ratio	0.61		0.61		0.61		0.26		0.52		0.52	
Actuated Cycle Length (s)	37.7		37.7		37.7		8.0		8.0		8.0	
Intersection Capacity Utilization	77.1%		77.1%		77.1%		D		D		D	
ICU Level of Service	D		D		D		D		D		D	
Analysis Period (min)	15		15		15		15		15		15	
c Critical Lane Group												

Barrio Logan CPU  
6: Harbor Dr & Sigsbee St

Horizon Year Alt 2 with Improvements  
Timing Plan: PM Peak

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↕	↕	↕	↕	↕	↕
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0		4.0	
Lane Util. Factor	1.00	0.95	0.95		1.00	1.00
Frt	1.00	1.00	0.98		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	3539	3477		1770	1583
Flt Permitted	0.29	1.00	1.00		0.95	1.00
Satd. Flow (perm)	547	3539	3477		1770	1583
Volume (vph)	65	1945	750	100	90	70
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	71	2114	815	109	98	76
RTOR Reduction (vph)	0	0	11	0	0	65
Lane Group Flow (vph)	71	2114	913	0	98	11
Turn Type	Perm			Perm		
Protected Phases	4		8		6	
Permitted Phases	4		8		6	
Actuated Green, G (s)	48.4		48.4		9.4	
Effective Green, g (s)	48.4		48.4		9.4	
Actuated g/C Ratio	0.74		0.74		0.14	
Clearance Time (s)	4.0		4.0		4.0	
Vehicle Extension (s)	3.0		3.0		3.0	
Lane Grp Cap (vph)	402		2603		2558	
v/s Ratio Prot	c0.60		0.26		c0.06	
v/s Ratio Perm	0.13				0.01	
v/c Ratio	0.18		0.81		0.36	
Uniform Delay, d1	2.6		5.7		3.1	
Progression Factor	1.00		1.00		1.00	
Incremental Delay, d2	0.2		2.0		0.1	
Delay (s)	2.9		7.7		3.2	
Level of Service	A		A		C	
Approach Delay (s)	7.6		3.2		25.6	
Approach LOS	A		A		C	
<b>Intersection Summary</b>						
HCM Average Control Delay	7.3		7.3		7.3	
HCM Level of Service	A		A		A	
HCM Volume to Capacity ratio	0.74		0.74		0.74	
Actuated Cycle Length (s)	65.8		65.8		65.8	
Intersection Capacity Utilization	65.4%		65.4%		65.4%	
ICU Level of Service	C		C		C	
Analysis Period (min)	15		15		15	
c Critical Lane Group						

Barrio Logan CPU

Horizon Year Alt 2 with Improvements

7: Logan Ave & Beardsley St

Timing Plan: PM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↖	↗	↖	↗	↖	↖	↗	↗	↖	↗	↖
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
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
Flt	0.98	1.00	1.00	1.00	1.00	1.00	0.91	0.91	0.99	0.99	0.99	0.99
Flt Protected	1.00	0.95	1.00	1.00	1.00	1.00	0.98	0.98	0.97	0.97	0.97	0.97
Satd. Flow (prot)	1834	1770	1863	1863	1863	1863	1664	1664	1782	1782	1782	1782
Flt Permitted	1.00	0.95	1.00	1.00	1.00	1.00	0.98	0.98	0.97	0.97	0.97	0.97
Satd. Flow (perm)	1834	1770	1863	1863	1863	1863	1664	1664	1782	1782	1782	1782
Volume (vph)	0	532	70	40	160	0	56	0	123	272	109	39
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)	0	578	76	43	174	0	61	0	134	296	118	42
RTOR Reduction (vph)	0	5	0	0	0	0	0	94	0	0	4	0
Lane Group Flow (vph)	0	649	0	43	174	0	101	0	0	452	0	0
Turn Type				Prot			Split			Split		
Protected Phases		4		3	8		2	2		6	6	
Permitted Phases												
Actuated Green, G (s)		30.7		3.7	38.4			9.9			18.5	
Effective Green, g (s)		30.7		3.7	38.4			9.9			18.5	
Actuated g/C Ratio		0.39		0.05	0.49			0.13			0.23	
Clearance Time (s)		4.0		4.0	4.0			4.0			4.0	
Vehicle Extension (s)		3.0		3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)		715		83	908			209			418	
v/s Ratio Prot		c0.35		c0.02	0.09			c0.06			c0.25	
v/s Ratio Perm												
v/c Ratio		0.91		0.52	0.19			0.49			1.08	
Uniform Delay, d1		22.7		36.7	11.4			32.1			30.2	
Progression Factor		1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2		15.2		5.4	0.1			1.8			6.7	
Delay (s)		38.0		42.0	11.5			33.9			97.9	
Level of Service		D		D	B			C			F	
Approach Delay (s)		38.0			17.6			33.9			97.9	
Approach LOS		D			B			C			F	
<b>Intersection Summary</b>												
HCM Average Control Delay		52.5		HCM Level of Service				D				
HCM Volume to Capacity ratio		0.87										
Actuated Cycle Length (s)		78.8		Sum of lost time (s)				16.0				
Intersection Capacity Utilization		77.1%		ICU Level of Service				D				
Analysis Period (min)		15										
c Critical Lane Group												

Barrio Logan CPU

Horizon Year Alt 2 with Improvements

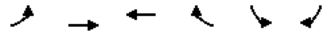
8: National Ave & Beardsley St

Timing Plan: PM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↖	↗	↖	↗	↖	↖	↗	↗	↖	↗	↖
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
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
Flrb, ped/bikes	1.00	1.00	1.00	1.00	0.99	0.99	0.98	0.98	1.00	1.00	1.00	1.00
Flpb, ped/bikes	0.99	1.00	0.99	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Flt	1.00	1.00	1.00	0.97	0.97	0.97	0.90	0.90	0.99	0.99	0.99	0.99
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	0.97	0.97	0.97	0.97
Satd. Flow (prot)	1751	1862	1759	1799	1799	1799	1650	1650	1781	1781	1781	1781
Flt Permitted	0.39	1.00	0.20	1.00	1.00	1.00	0.98	0.98	0.71	0.71	0.71	0.71
Satd. Flow (perm)	715	1862	370	1799	1799	1799	1623	1623	1300	1300	1300	1300
Volume (vph)	19	635	2	113	358	77	9	43	132	188	83	11
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)	21	690	2	123	389	84	10	47	143	204	90	12
RTOR Reduction (vph)	0	0	0	0	12	0	0	92	0	0	2	0
Lane Group Flow (vph)	21	692	0	123	461	0	0	108	0	0	304	0
Confl. Peds. (#/hr)	15		16	16		15	38		11	11		38
Turn Type		Perm		Perm		Perm		Perm		Perm		Perm
Protected Phases			4		8		8		2	2		6
Permitted Phases		4		8		2		6		6		6
Actuated Green, G (s)		23.1	23.1		23.1	23.1		17.0		17.0		17.0
Effective Green, g (s)		23.1	23.1		23.1	23.1		17.0		17.0		17.0
Actuated g/C Ratio		0.48	0.48		0.48	0.48		0.35		0.35		0.35
Clearance Time (s)		4.0	4.0		4.0	4.0		4.0		4.0		4.0
Vehicle Extension (s)		3.0	3.0		3.0	3.0		3.0		3.0		3.0
Lane Grp Cap (vph)		343	894		178	864		574		459		459
v/s Ratio Prot		c0.37			0.26							
v/s Ratio Perm		0.03		0.33				0.07		c0.23		
v/c Ratio		0.06	0.77	0.69	0.53	0.69	0.53	0.19		0.66		
Uniform Delay, d1		6.7	10.3	9.7	8.7	9.7	8.7	10.8		13.1		
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00		
Incremental Delay, d2		0.1	4.2	11.0	0.6	11.0	0.6	0.2		3.6		
Delay (s)		6.8	14.6	20.7	9.4	20.7	9.4	10.9		16.7		
Level of Service		A	B		C	A		B		B		
Approach Delay (s)		14.3		11.7				10.9		16.7		
Approach LOS		B		B				B		B		
<b>Intersection Summary</b>												
HCM Average Control Delay		13.5		HCM Level of Service				B				
HCM Volume to Capacity ratio		0.73										
Actuated Cycle Length (s)		48.1		Sum of lost time (s)				8.0				
Intersection Capacity Utilization		80.6%		ICU Level of Service				D				
Analysis Period (min)		15										
c Critical Lane Group												

Barrio Logan CPU  
11: Harbor Dr & Beardsley St

Horizon Year Alt 2 with Improvements  
Timing Plan: PM Peak



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑			↑
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	0	1950	820	20	0	70
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	2120	891	22	0	76
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					Raised	
Median storage (veh)					0	
Upstream signal (ft)		661	658			
pX, platoon unblocked	0.89				0.38	0.89
vC, conflicting volume	913				1962	457
vC1, stage 1 conf vol					902	
vC2, stage 2 conf vol					1060	
vCu, unblocked vol	781				1049	269
tC, single (s)	4.3				6.8	6.9
tC, 2 stage (s)					5.8	
tF (s)	2.3				3.5	3.3
p0 queue free %	100				100	88
cM capacity (veh/h)	697				149	650

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1
Volume Total	1060	1060	594	319	76
Volume Left	0	0	0	0	0
Volume Right	0	0	0	22	76
cSH	1700	1700	1700	1700	650
Volume to Capacity	0.62	0.62	0.35	0.19	0.12
Queue Length 95th (ft)	0	0	0	0	10
Control Delay (s)	0.0	0.0	0.0	0.0	11.3
Lane LOS					B
Approach Delay (s)	0.0		0.0		11.3
Approach LOS					B

Intersection Summary					
Average Delay			0.3		
Intersection Capacity Utilization		57.2%		ICU Level of Service	B
Analysis Period (min)		15			

Barrio Logan CPU  
13: Logan Ave & Cesar E. Chavez Pkwy

Horizon Year Alt 2 with Improvements  
Timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↑	↑	↑	↑	↑	↑	↑	↑↑	↑	↑	↑↑	↑
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
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	1.00
Flpb, ped/bikes	1.00	1.00	0.97	1.00	1.00	0.98	1.00	1.00	0.96	1.00	1.00	1.00
Flpb, ped/bikes	0.99	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99	1.00
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1758	1863	1539	1770	1863	1545	1530	3059	1315	1530	3018	1900
Flt Permitted	0.54	1.00	1.00	0.09	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	992	1863	1539	171	1863	1545	1530	3059	1315	1530	3018	1900
Volume (vph)	130	450	230	100	350	90	140	506	700	114	684	51
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)	141	489	250	109	380	98	152	550	761	124	743	55
RTOR Reduction (vph)	0	0	158	0	0	56	0	0	96	0	5	0
Lane Group Flow (vph)	141	489	92	109	380	42	152	550	665	124	793	0
Confl. Peds. (#/hr)	10		13	13		10			27			27
Confl. Bikes (#/hr)			4			2			3			2
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	18%	18%	18%	18%	18%	18%
Turn Type	Perm	Perm	Perm	Perm	Perm	Prot	Prot	custom	Prot	Prot	Prot	Prot
Protected Phases		4			8		5	2	3	1	6	
Permitted Phases	4		4	8		8			2			
Actuated Green, G (s)	30.5	30.5	30.5	43.6	43.6	43.6	14.0	36.1	45.2	11.0	33.1	
Effective Green, g (s)	30.5	30.5	30.5	43.6	43.6	43.6	14.0	36.1	45.2	11.0	33.1	
Actuated g/C Ratio	0.30	0.30	0.30	0.42	0.42	0.42	0.14	0.35	0.44	0.11	0.32	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	295	553	457	73	791	656	209	1075	630	164	973	
v/s Ratio Prot		0.26			0.20		c0.10	0.18	c0.09	0.08	0.26	
v/s Ratio Perm	0.14		0.06	c0.64		0.03			0.41			
v/c Ratio	0.48	0.88	0.20	1.49	0.48	0.06	0.73	0.51	1.06	0.76	0.81	
Uniform Delay, d1	29.6	34.4	27.0	29.6	21.4	17.5	42.5	26.3	28.8	44.5	32.0	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.2	15.5	0.2	280.9	0.5	0.0	11.9	0.4	51.3	17.9	5.3	
Delay (s)	30.8	49.9	27.2	310.4	21.8	17.5	54.4	26.7	80.0	62.4	37.3	
Level of Service	C	D	C	F	C	B	D	C	F	E	D	
Approach Delay (s)		40.4			74.7			57.3			40.7	
Approach LOS		D			E			E			D	

Intersection Summary			
HCM Average Control Delay	52.1	HCM Level of Service	D
HCM Volume to Capacity ratio	1.26		
Actuated Cycle Length (s)	102.7	Sum of lost time (s)	12.0
Intersection Capacity Utilization	86.3%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

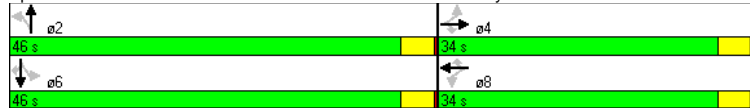


Barrio Logan CPU  
14: National Ave & Cesar E. Chavez Pkwy  
Horizon Year Alt 2 with Improvements  
Timing Plan: PM Peak

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Volume (vph)	300	400	290	110	270	275	120	1000	120	550	410
Turn Type	Perm		Perm	Perm		Perm	Perm		Perm		Perm
Protected Phases		4			8			2		6	
Permitted Phases	4		4	8		8	2		6		6
Detector Phases	4	4	4	8	8	8	2	2	6	6	6
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	31.0	31.0	31.0	34.0	34.0	34.0	27.0	27.0	27.0	27.0	27.0
Total Split (s)	34.0	34.0	34.0	34.0	34.0	34.0	46.0	46.0	46.0	46.0	46.0
Total Split (%)	42.5%	42.5%	42.5%	42.5%	42.5%	42.5%	57.5%	57.5%	57.5%	57.5%	57.5%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Lead/Lag											
Lead-Lag Optimize?											
Recall Mode	None	None	None	None	None	None	C-Min	C-Min	C-Min	C-Min	C-Min
Act Effct Green (s)	30.0	30.0	30.0	30.0	30.0	30.0	42.0	42.0	42.0	42.0	42.0
Actuated g/C Ratio	0.38	0.38	0.38	0.38	0.38	0.38	0.52	0.52	0.52	0.52	0.52
v/c Ratio	0.99	0.62	0.42	0.56	0.42	0.47	0.52	0.71	1.07	0.71	0.49
Control Delay	76.7	25.2	6.6	31.8	20.9	17.2	17.7	14.0	129.6	20.1	3.9
Queue Delay	16.8	0.0	0.0	0.0	0.0	0.1	0.0	0.4	0.0	7.5	0.4
Total Delay	93.5	25.2	6.6	31.8	20.9	17.3	17.7	14.4	129.6	27.6	4.3
LOS	F	C	A	C	C	B	B	B	F	C	A
Approach Delay		40.4			21.2			14.7		30.0	
Approach LOS		D			C			B		C	

Intersection Summary											
Cycle Length: 80											
Actuated Cycle Length: 80											
Offset: 77 (96%), Referenced to phase 2:NBT and 6:SBTL, Start of Green											
Natural Cycle: 80											
Control Type: Actuated-Coordinated											
Maximum v/c Ratio: 1.07											
Intersection Signal Delay: 26.4						Intersection LOS: C					
Intersection Capacity Utilization 81.6%						ICU Level of Service D					
Analysis Period (min) 15											

Splits and Phases: 14: National Ave & Cesar E. Chavez Pkwy



Barrio Logan CPU  
14: National Ave & Cesar E. Chavez Pkwy  
Horizon Year Alt 2 with Improvements  
Timing Plan: PM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	1.00	1.00
Flt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	0.95	1.00	1.00	0.95
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1612	3179	1530	1610	1369	1369
Flt Permitted	0.47	1.00	1.00	0.31	1.00	1.00	0.28	1.00	0.14	1.00	1.00	1.00
Satd. Flow (perm)	875	1863	1583	572	1863	1583	480	3179	231	1610	1369	1369
Volume (vph)	300	400	290	110	270	275	120	1000	100	120	550	410
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)	326	435	315	120	293	299	130	1087	109	130	598	446
RTOR Reduction (vph)	0	0	154	0	0	43	0	10	0	0	0	189
Lane Group Flow (vph)	326	435	161	120	293	256	130	1187	0	130	598	257
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	12%	12%	12%	18%	18%	18%
Turn Type	Perm		Perm	Perm		Perm	Perm		Perm		Perm	Perm
Protected Phases		4			8			2		6		6
Permitted Phases	4		4	8		8	2		6		6	6
Actuated Green, G (s)	30.0	30.0	30.0	30.0	30.0	30.0	42.0	42.0	42.0	42.0	42.0	42.0
Effective Green, g (s)	30.0	30.0	30.0	30.0	30.0	30.0	42.0	42.0	42.0	42.0	42.0	42.0
Actuated g/C Ratio	0.38	0.38	0.38	0.38	0.38	0.38	0.52	0.52	0.52	0.52	0.52	0.52
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	328	699	594	215	699	594	252	1669	121	845	719	719
v/s Ratio Prot		0.23			0.16			0.37			0.37	
v/s Ratio Perm	c0.37		0.10	0.21		0.16	0.27		c0.56		0.19	
v/c Ratio	0.99	0.62	0.27	0.56	0.42	0.43	0.52	0.71	1.07	0.71	0.36	
Uniform Delay, d1	24.9	20.4	17.4	19.8	18.5	18.6	12.4	14.4	19.0	14.4	11.1	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.76	0.79	1.00	1.00	1.00	
Incremental Delay, d2	47.8	1.7	0.2	3.1	0.4	0.5	6.9	2.4	103.2	5.0	1.4	
Delay (s)	72.7	22.1	17.6	22.9	18.9	19.1	16.4	13.9	122.2	19.3	12.5	
Level of Service	E	C	B	C	B	B	B	B	F	B	B	
Approach Delay (s)		36.1			19.7			14.1		28.1		
Approach LOS		D			B			B		C		

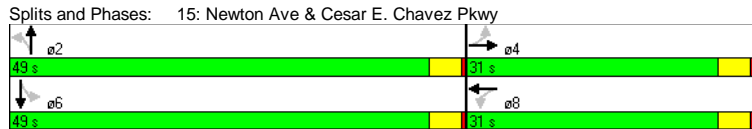
Intersection Summary			
HCM Average Control Delay	24.4	HCM Level of Service	C
HCM Volume to Capacity ratio	1.04		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	81.6%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Barrio Logan CPU  
 15: Newton Ave & Cesar E. Chavez Pkwy  
 Horizon Year Alt 2 with Improvements  
 Timing Plan: PM Peak

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔
Volume (vph)	120	130	90	70	40	790	170	910
Turn Type	Perm		Perm		Perm		Perm	
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phases	4	4	8	8	2	2	6	6
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	31.0	31.0	31.0	31.0	27.0	27.0	27.0	27.0
Total Split (s)	31.0	31.0	31.0	31.0	49.0	49.0	49.0	49.0
Total Split (%)	38.8%	38.8%	38.8%	38.8%	61.3%	61.3%	61.3%	61.3%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	None	None	None	C-Min	C-Min	C-Min	C-Min
Act Effct Green (s)	14.7	14.7	14.7	14.7	57.3	57.3	57.3	57.3
Actuated g/C Ratio	0.18	0.18	0.18	0.18	0.72	0.72	0.72	0.72
v/c Ratio	0.69	0.61	0.52	0.53	0.40	0.40	0.61	0.87
Control Delay	48.3	31.2	37.9	16.6	17.7	4.3	16.7	17.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0
Total Delay	48.3	31.2	37.9	16.6	17.7	4.4	16.7	17.9
LOS	D	C	D	B	B	A	B	B
Approach Delay		37.6		23.2		5.0		17.7
Approach LOS		D		C		A		B

Intersection Summary	
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 2 (3%), Referenced to phase 2:NBT and 6:SBTL, Start of Green	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.87	
Intersection Signal Delay: 16.5	Intersection LOS: B
Intersection Capacity Utilization 86.5%	ICU Level of Service E
Analysis Period (min) 15	



Barrio Logan CPU  
 15: Newton Ave & Cesar E. Chavez Pkwy  
 Horizon Year Alt 2 with Improvements  
 Timing Plan: PM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	1.00	1.00
Flt	1.00	0.95	1.00	0.90	1.00	0.99	1.00	0.99	1.00	0.99	1.00	0.99
Flt Protected	0.95	1.00	0.95	1.00	0.95	1.00	0.95	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1770	1765	1770	1681	1681	1612	3189	1612	3189	1612	1681	1681
Flt Permitted	0.41	1.00	0.41	1.00	0.41	1.00	0.15	1.00	0.29	1.00	0.29	1.00
Satd. Flow (perm)	769	1765	769	1681	1681	248	3189	484	1681	484	1681	1681
Volume (vph)	120	130	70	90	70	130	40	790	60	170	910	60
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)	130	141	76	98	76	141	43	859	65	185	989	65
RTOR Reduction (vph)	0	30	0	0	103	0	0	5	0	0	2	0
Lane Group Flow (vph)	130	187	0	98	114	0	43	919	0	185	1052	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	12%	12%	12%	12%	12%	12%
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	14.7	14.7		14.7	14.7		57.3	57.3		57.3	57.3	
Effective Green, g (s)	14.7	14.7		14.7	14.7		57.3	57.3		57.3	57.3	
Actuated g/C Ratio	0.18	0.18		0.18	0.18		0.72	0.72		0.72	0.72	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	141	324		141	309		178	2284		347	1204	
v/s Ratio Prot		0.11			0.07			0.29			c0.63	
v/s Ratio Perm	c0.17			0.13			0.17			0.38		
v/c Ratio	0.92	0.58		0.70	0.37		0.24	0.40		0.53	0.87	
Uniform Delay, d1	32.1	29.8		30.6	28.6		3.9	4.5		5.2	8.6	
Progression Factor	1.00	1.00		1.00	1.00		0.67	0.71		0.73	0.73	
Incremental Delay, d2	52.6	2.5		13.8	0.7		3.0	0.5		5.1	8.0	
Delay (s)	84.7	32.3		44.4	29.3		5.7	3.7		8.9	14.2	
Level of Service	F	C		D	C		A	A		A	B	
Approach Delay (s)		51.9			34.0			3.8			13.4	
Approach LOS		D			C			A			B	

Intersection Summary	
HCM Average Control Delay	17.1
HCM Volume to Capacity ratio	0.88
Actuated Cycle Length (s)	80.0
Intersection Capacity Utilization	86.5%
Analysis Period (min)	15
HCM Level of Service	B
Sum of lost time (s)	8.0
ICU Level of Service	E

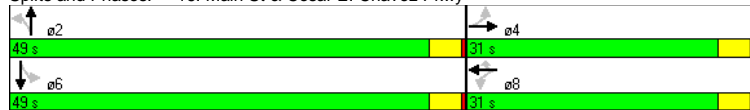
c Critical Lane Group

Barrio Logan CPU  
 16: Main St & Cesar E. Chavez Pkwy  
 Horizon Year Alt 2 with Improvements  
 Timing Plan: PM Peak

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔
Volume (vph)	120	290	70	250	85	640	250	540
Turn Type	Perm		Perm		Perm		Perm	
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phases	4	4	8	8	2	2	6	6
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	31.0	31.0	31.0	31.0	27.0	27.0	27.0	27.0
Total Split (s)	31.0	31.0	31.0	31.0	49.0	49.0	49.0	49.0
Total Split (%)	38.8%	38.8%	38.8%	38.8%	61.3%	61.3%	61.3%	61.3%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	None	None	None	C-Min	C-Min	C-Min	C-Min
Act Effect Green (s)	20.3	20.3	20.3	20.3	51.7	51.7	51.7	51.7
Actuated g/C Ratio	0.25	0.25	0.25	0.25	0.65	0.65	0.65	0.65
v/c Ratio	0.59	0.73	0.43	0.58	0.79	0.46	1.00	0.88
Control Delay	35.9	35.4	30.5	30.0	64.3	8.4	57.9	18.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	1.2	0.0	6.4
Total Delay	35.9	35.4	30.5	30.0	64.3	9.6	57.9	24.6
LOS	D	D	C	C	E	A	E	C
Approach Delay		35.5		30.1		14.7		32.4
Approach LOS		D		C		B		C

Intersection Summary	
Cycle Length:	80
Actuated Cycle Length:	80
Offset:	3 (4%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
Natural Cycle:	90
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	1.00
Intersection Signal Delay:	26.8
Intersection LOS:	C
Intersection Capacity Utilization:	88.3%
ICU Level of Service:	E
Analysis Period (min):	15

Splits and Phases: 16: Main St & Cesar E. Chavez Pkwy



Barrio Logan CPU  
 16: Main St & Cesar E. Chavez Pkwy  
 Horizon Year Alt 2 with Improvements  
 Timing Plan: PM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.99	1.00	0.99	1.00	0.98
Flpb, ped/bikes	0.99	1.00	0.99	1.00	1.00	1.00	1.00	1.00	1.00	0.99	1.00	1.00
Frt	1.00	0.99	1.00	1.00	1.00	1.00	1.00	0.97	1.00	0.97	1.00	0.95
Fit Protected	0.95	1.00	0.95	1.00	1.00	0.95	1.00	0.95	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1752	1836	1750	1863	1556	2974	1542	1529				
Fit Permitted	0.40	1.00	0.28	1.00	0.18	1.00	0.28	1.00				
Satd. Flow (perm)	735	1836	519	1863	296	2974	458	1529				
Volume (vph)	120	290	25	70	250	270	85	640	180	250	540	280
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)	130	315	27	76	272	293	92	696	196	272	587	304
RTOR Reduction (vph)	0	4	0	0	0	0	0	26	0	0	19	0
Lane Group Flow (vph)	130	338	0	76	272	0	92	866	0	272	872	0
Confl. Peds. (#/hr)	19		24	24		19	16		20	20		16
Confl. Bikes (#/hr)			1			2						
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	16%	16%	16%	16%	16%	16%
Turn Type	Perm			Perm		Perm	Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8		8		2			6	
Actuated Green, G (s)	20.3	20.3		20.3	20.3		51.7	51.7		51.7	51.7	
Effective Green, g (s)	20.3	20.3		20.3	20.3		51.7	51.7		51.7	51.7	
Actuated g/C Ratio	0.25	0.25		0.25	0.25		0.65	0.65		0.65	0.65	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	187	466		132	473		191	1922		296	988	
v/s Ratio Prot		c0.18			0.15			0.29			0.57	
v/s Ratio Perm	0.18			0.15			0.31			c0.59		
v/c Ratio	0.70	0.72		0.58	0.58		0.48	0.45		0.92	0.88	
Uniform Delay, d1	27.0	27.3		26.1	26.1		7.3	7.1		12.3	11.7	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		0.68	0.65	
Incremental Delay, d2	10.7	5.5		6.0	1.7		8.5	0.8		22.7	6.5	
Delay (s)	37.7	32.8		32.0	27.8		15.7	7.8		31.1	14.1	
Level of Service	D	C		C	C		B	A		C	B	
Approach Delay (s)		34.2			28.7			8.6			18.1	
Approach LOS		C			C			A			B	

Intersection Summary	
HCM Average Control Delay	18.7
HCM Volume to Capacity ratio	0.86
Actuated Cycle Length (s)	80.0
Sum of lost time (s)	8.0
Intersection Capacity Utilization	88.3%
ICU Level of Service	E
Analysis Period (min)	15

c Critical Lane Group

Barrio Logan CPU  
17: Harbor Dr & Cesar E. Chavez Pkwy  
Horizon Year Alt 2 with Improvements  
Timing Plan: PM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	↔↔	↕↕	↔↔	↔↔	↕↕	↔↔	↔↔	↕↕	↔↔	↔↔	↕↕	↔↔	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	0.97	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frbp, ped/bikes	1.00	1.00	1.00	1.00	0.97	1.00	1.00	0.98	1.00	0.99	1.00	0.99	
Flpb, ped/bikes	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	1.00	1.00	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.85	1.00	0.85	
Flt Protected	0.95	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	0.97	1.00	1.00	
Satd. Flow (prot)	3183	3265	1421	3282	1426	1363	1439	1109		1596	1383		
Flt Permitted	0.95	1.00	0.95	1.00	1.00	0.71	1.00	1.00		0.84	1.00		
Satd. Flow (perm)	3183	3265	1421	3282	1426	1021	1439	1109		1381	1383		
Volume (vph)	590	1500	40	30	467	43	50	63	35	33	30	314	
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)	641	1630	43	33	508	47	54	68	38	36	33	341	
RTOR Reduction (vph)	0	1	0	0	0	32	0	0	33	0	0	106	
Lane Group Flow (vph)	641	1672	0	33	508	15	54	68	5	0	69	235	
Confl. Peds. (#/hr)			11			6	4		1	1		4	
Confl. Bikes (#/hr)			9			14			3				
Heavy Vehicles (%)	10%	10%	10%	27%	10%	10%	32%	32%	43%	16%	16%	16%	
Turn Type	Prot			Prot		Perm	Perm		Perm	Perm		pm+ov	
Protected Phases	3	14 2 6		13	18 2 6			12		15 16		3	
Permitted Phases					18 2 6		12		12 15 16			15 16	
Actuated Green, G (s)	26.0	58.3		3.2	35.5	35.5	13.7	13.7	13.7	22.1		48.1	
Effective Green, g (s)	26.0	58.3		3.2	35.5	35.5	13.7	13.7	13.7	22.1		48.1	
Actuated g/C Ratio	0.23	0.52		0.03	0.32	0.32	0.12	0.12	0.12	0.20		0.43	
Clearance Time (s)	4.0			4.0			4.0	4.0	4.0			4.0	
Vehicle Extension (s)	3.0			3.0			3.0	3.0	3.0			3.0	
Lane Grp Cap (vph)	742	1706		41	1044	454	125	177	136		273	646	
v/s Ratio Prot	c0.20	c0.51		0.02	0.15			0.05				c0.08	
v/s Ratio Perm					0.01	c0.05		0.00		0.05		0.08	
v/c Ratio	0.86	0.98		0.80	0.49	0.03	0.43	0.38	0.03	0.25		0.36	
Uniform Delay, d1	41.1	26.1		53.9	30.7	26.2	45.3	45.1	43.1	37.8		21.4	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.26		0.73	
Incremental Delay, d2	10.2	17.2		69.0	0.4	0.0	2.4	1.4	0.1	0.5		0.3	
Delay (s)	51.3	43.3		122.9	31.1	26.3	47.7	46.5	43.2	48.0		15.9	
Level of Service	D	D		F	C	C	D	D	D	D		B	
Approach Delay (s)		45.5			35.8			46.1		21.3			
Approach LOS		D			D			D		C			
<b>Intersection Summary</b>													
HCM Average Control Delay		41.1		HCM Level of Service					D				
HCM Volume to Capacity ratio		0.85											
Actuated Cycle Length (s)		111.6		Sum of lost time (s)					28.0				
Intersection Capacity Utilization		66.6%		ICU Level of Service					C				
Analysis Period (min)		15											
c Critical Lane Group													

Barrio Logan CPU  
23: Logan Ave & Sampson St  
Horizon Year Alt 2 with Improvements  
Timing Plan: PM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	↔↔	↕↕	↔↔	↔↔	↕↕	↔↔	↔↔	↕↕	↔↔	↔↔	↕↕	↔↔	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
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	1.00	0.93	1.00	0.94	1.00	0.97	1.00	0.99	1.00	0.99	1.00	0.99	
Flt Protected	0.95	1.00	0.95	1.00	0.95	1.00	0.95	1.00	0.95	1.00	0.95	1.00	
Satd. Flow (prot)	1770	1739	1770	1751	1770	1802	1770	1802	1770	1850	1770	1850	
Flt Permitted	0.66	1.00	0.25	1.00	0.52	1.00	0.27	1.00					
Satd. Flow (perm)	1236	1739	461	1751	978	1802	504	1850					
Volume (vph)	101	251	200	167	81	54	230	443	124	66	275	13	
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)	110	273	217	182	88	59	250	482	135	72	299	14	
RTOR Reduction (vph)	0	45	0	0	38	0	0	12	0	0	2	0	
Lane Group Flow (vph)	110	445	0	182	109	0	250	605	0	72	311	0	
Turn Type	Perm			Perm			Perm			Perm			
Protected Phases		4			8			2			6		
Permitted Phases	4			8			2			6			
Actuated Green, G (s)	23.7	23.7		23.7	23.7		33.7	33.7		33.7	33.7		
Effective Green, g (s)	23.7	23.7		23.7	23.7		33.7	33.7		33.7	33.7		
Actuated g/C Ratio	0.36	0.36		0.36	0.36		0.52	0.52		0.52	0.52		
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0		
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0		
Lane Grp Cap (vph)	448	630		167	635		504	929		260	953		
v/s Ratio Prot		0.26			0.06			c0.34			0.17		
v/s Ratio Perm	0.09			c0.39			0.26			0.14			
v/c Ratio	0.25	0.71		1.09	0.17		0.50	0.65		0.28	0.33		
Uniform Delay, d1	14.6	17.9		20.9	14.2		10.3	11.6		9.0	9.2		
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00		
Incremental Delay, d2	0.3	3.6		95.7	0.1		3.5	3.5		2.6	0.9		
Delay (s)	14.9	21.5		116.5	14.3		13.8	15.1		11.6	10.1		
Level of Service	B	C		F	B		B	B		B	B		
Approach Delay (s)		20.3			70.9			14.7			10.4		
Approach LOS		C			E			B			B		
<b>Intersection Summary</b>													
HCM Average Control Delay		24.0		HCM Level of Service					C				
HCM Volume to Capacity ratio		0.83											
Actuated Cycle Length (s)		65.4		Sum of lost time (s)					8.0				
Intersection Capacity Utilization		82.5%		ICU Level of Service					E				
Analysis Period (min)		15											
c Critical Lane Group													

Barrio Logan CPU  
31: Main St & 26th St

Horizon Year Alt 2 with Improvements  
Timing Plan: PM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↕		↕		↕		↕		↕		↕	
Sign Control	Stop		Stop		Stop		Stop		Stop		Stop	
Volume (vph)	0	226	17	50	87	0	9	0	262	26	11	8
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
Hourly flow rate (vph)	0	246	18	54	95	0	10	0	285	28	12	9
Direction, Lane #	EB 1	WB 1	WB 2	NB 1	NB 2	SB 1						
Volume Total (vph)	264	54	95	10	285	49						
Volume Left (vph)	0	54	0	10	0	28						
Volume Right (vph)	18	0	0	0	285	9						
Hadj (s)	-0.01	1.09	0.03	0.23	-0.41	0.04						
Departure Headway (s)	4.3	5.9	4.9	5.2	3.2	4.9						
Degree Utilization, x	0.32	0.09	0.13	0.01	0.25	0.07						
Capacity (veh/h)	819	589	718	638	1112	677						
Control Delay (s)	9.3	8.3	7.4	8.2	7.3	8.3						
Approach Delay (s)	9.3	7.7		7.3		8.3						
Approach LOS	A	A		A		A						
<b>Intersection Summary</b>												
Delay			8.2									
HCM Level of Service			A									
Intersection Capacity Utilization			43.8%		ICU Level of Service		A					
Analysis Period (min)			15									

Barrio Logan CPU  
32: Harbor Dr & Schley St

Horizon Year Alt 2 with Improvements  
Timing Plan: PM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↕		↕		↕		↕		↕		↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0		4.0		4.0		4.0		4.0	
Lane Util. Factor	1.00	0.95	0.95		1.00		1.00		1.00		1.00	
Flpb, ped/bikes	1.00	1.00	1.00		1.00		1.00		1.00		1.00	
Flpb, ped/bikes	1.00	1.00	1.00		1.00		1.00		1.00		1.00	
Frt	1.00	1.00	0.99		0.86		0.86		0.86		0.86	
Flt Protected	0.95	1.00	1.00		1.00		1.00		1.00		1.00	
Satd. Flow (prot)	1543	3539	3507		1454		1454		1454		1454	
Flt Permitted	0.95	1.00	1.00		1.00		1.00		1.00		1.00	
Satd. Flow (perm)	1543	3539	3507		1454		1454		1454		1454	
Volume (vph)	108	1500	0	0	598	39	0	0	0	0	0	56
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)	117	1630	0	0	650	42	0	0	0	0	0	61
RTOR Reduction (vph)	0	0	0	0	4	0	0	0	0	0	0	54
Lane Group Flow (vph)	117	1630	0	0	688	0	0	0	0	0	0	7
Confl. Peds. (#/hr)			8		8		2		2		9	
Confl. Bikes (#/hr)			4		4		4		4		9	
Heavy Vehicles (%)	17%	2%	2%	2%	2%	2%	2%	2%	2%	2%	4%	13%
Turn Type	Prot										Over	
Protected Phases	13	18	2	6	14	2	6					13
Permitted Phases												
Actuated Green, G (s)	10.9	64.9	46.0		10.9		10.9		10.9		10.9	
Effective Green, g (s)	10.9	64.9	46.0		10.9		10.9		10.9		10.9	
Actuated g/C Ratio	0.11	0.65	0.46		0.11		0.11		0.11		0.11	
Clearance Time (s)	4.0											
Vehicle Extension (s)	3.0											
Lane Grp Cap (vph)	168	2297	1613		158		158		158		158	
v/s Ratio Prot	0.08	c0.46	0.20		0.00		0.00		0.00		0.00	
v/s Ratio Perm												
v/c Ratio	0.70	0.71	0.43		0.04		0.04		0.04		0.04	
Uniform Delay, d1	43.0	11.4	18.1		39.9		39.9		39.9		39.9	
Progression Factor	1.00	1.00	1.00		1.00		1.00		1.00		1.00	
Incremental Delay, d2	11.9	1.0	0.2		0.1		0.1		0.1		0.1	
Delay (s)	54.8	12.4	18.3		40.0		40.0		40.0		40.0	
Level of Service	D	B	B		D		D		D		D	
Approach Delay (s)	15.3		18.3		0.0		40.0		40.0		40.0	
Approach LOS	B		B		A		D		D		D	
<b>Intersection Summary</b>												
HCM Average Control Delay	16.7		HCM Level of Service		B		B		B		B	
HCM Volume to Capacity ratio	0.71		0.71		0.71		0.71		0.71		0.71	
Actuated Cycle Length (s)	100.0		Sum of lost time (s)		35.1		35.1		35.1		35.1	
Intersection Capacity Utilization	44.8%		ICU Level of Service		A		A		A		A	
Analysis Period (min)	15		15		15		15		15		15	

c Critical Lane Group

Barrio Logan CPU  
33: National Ave & 28th St

Horizon Year Alt 2 with Improvements  
Timing Plan: PM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Flt	1.00	1.00	0.85	1.00	0.94	1.00	0.85	1.00	0.85	1.00	0.85	1.00
Flt Protected	0.95	1.00	1.00	0.95	1.00	0.99	1.00	0.98	1.00	0.98	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1597	1759	1762	1509	1734	1509	1734	1509	1734
Flt Permitted	0.95	1.00	1.00	0.95	1.00	0.84	1.00	0.76	1.00	0.76	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1597	1759	1489	1509	1343	1509	1343	1509	1509
Volume (vph)	94	588	85	448	406	241	18	98	163	195	210	102
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)	102	639	92	487	441	262	20	107	177	212	228	111
RTOR Reduction (vph)	0	0	70	0	20	0	0	0	117	0	0	73
Lane Group Flow (vph)	102	639	22	487	683	0	0	127	60	0	440	38
Heavy Vehicles (%)	2%	2%	2%	13%	2%	2%	7%	7%	7%	7%	7%	7%
Turn Type	Prot	Perm	Perm	Prot	Perm	Perm	Perm	Perm	Perm	Perm	Perm	Perm
Protected Phases	7	4		3	8			2			6	
Permitted Phases			4				2		2	6		6
Actuated Green, G (s)	8.6	24.4	24.4	32.1	47.9		35.1	35.1		35.1	35.1	
Effective Green, g (s)	8.6	24.4	24.4	32.1	47.9		35.1	35.1		35.1	35.1	
Actuated g/C Ratio	0.08	0.24	0.24	0.31	0.46		0.34	0.34		0.34	0.34	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	147	834	373	495	813		504	511		455	511	
v/s Ratio Prot	0.06	0.18		c0.30	c0.39							
v/s Ratio Perm			0.01				0.09	0.04		c0.33	0.02	
v/c Ratio	0.69	0.77	0.06	0.98	0.84		0.25	0.12		0.97	0.07	
Uniform Delay, d1	46.2	36.9	30.7	35.5	24.5		24.8	23.6		33.7	23.2	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	13.3	4.2	0.1	36.0	7.6		0.3	0.1		33.4	0.1	
Delay (s)	59.5	41.2	30.8	71.5	32.1		25.0	23.7		67.1	23.3	
Level of Service	E	D	C	E	C		C	C		E	C	
Approach Delay (s)		42.3			48.2		24.2			58.3		
Approach LOS		D			D		C			E		
<b>Intersection Summary</b>												
HCM Average Control Delay		45.9			HCM Level of Service		D					
HCM Volume to Capacity ratio		0.92										
Actuated Cycle Length (s)		103.6			Sum of lost time (s)		8.0					
Intersection Capacity Utilization		79.8%			ICU Level of Service		D					
Analysis Period (min)		15										
c	Critical Lane Group											

Barrio Logan CPU  
34: Boston Ave & 28th St

Horizon Year Alt 2 with Improvements  
Timing Plan: PM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	0.91	1.00	0.91
Flt	1.00	1.00	0.85	1.00	0.92	1.00	0.99	0.99	1.00	0.94	1.00	0.94
Flt Protected	0.95	1.00	1.00	0.95	1.00	0.95	1.00	0.95	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1687	1776	1509	1687	1634	1770	3495	1770	3495	1770	4798	4798
Flt Permitted	0.61	1.00	1.00	0.24	1.00	0.95	1.00	0.95	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1088	1776	1509	419	1634	1770	3495	1770	3495	1770	4798	4798
Volume (vph)	350	420	170	70	70	80	50	1100	100	270	580	350
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)	380	457	185	76	76	87	54	1196	109	293	630	380
RTOR Reduction (vph)	0	0	122	0	46	0	0	8	0	0	116	0
Lane Group Flow (vph)	380	457	63	76	117	0	54	1297	0	293	894	0
Heavy Vehicles (%)	7%	7%	7%	7%	7%	7%	2%	2%	2%	2%	2%	2%
Turn Type	Perm	Perm	Perm	Perm	Perm	Prot	Prot	Prot	Prot	Prot	Prot	Prot
Protected Phases		4			8		5	2			1	6
Permitted Phases	4		4	8								
Actuated Green, G (s)	31.0	31.0	31.0	31.0	31.0		5.6	33.8		14.0	42.2	
Effective Green, g (s)	31.0	31.0	31.0	31.0	31.0		5.6	33.8		14.0	42.2	
Actuated g/C Ratio	0.34	0.34	0.34	0.34	0.34		0.06	0.37		0.15	0.46	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	371	606	515	143	558		109	1301		273	2230	
v/s Ratio Prot		0.26			0.07		0.03	c0.37		c0.17	0.19	
v/s Ratio Perm	c0.35		0.04	0.18								
v/c Ratio	1.02	0.75	0.12	0.53	0.21		0.50	1.00		1.07	0.40	
Uniform Delay, d1	29.9	26.5	20.6	24.1	21.2		41.2	28.5		38.4	16.0	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	53.1	5.3	0.1	3.8	0.2		3.5	24.3		75.3	0.5	
Delay (s)	83.0	31.8	20.7	27.8	21.4		44.7	52.8		113.7	16.5	
Level of Service	F	C	C	C	C		D	D		F	B	
Approach Delay (s)		48.8			23.4		52.4			38.4		
Approach LOS		D			C		D			D		
<b>Intersection Summary</b>												
HCM Average Control Delay		45.1			HCM Level of Service		D					
HCM Volume to Capacity ratio		1.02										
Actuated Cycle Length (s)		90.8			Sum of lost time (s)		12.0					
Intersection Capacity Utilization		89.9%			ICU Level of Service		E					
Analysis Period (min)		15										
c	Critical Lane Group											

Barrio Logan CPU  
36: Harbor Dr & 28th St

Horizon Year Alt 2 with Improvements  
Timing Plan: PM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR					
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔					
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900					
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0					
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	1.00	1.00	0.97	1.00	1.00	1.00	1.00					
Flpb, ped/bikes	1.00	1.00	0.87	1.00	1.00	0.92	1.00	1.00	1.00	1.00	0.99	1.00					
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00					
Flt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	1.00	1.00	0.85	1.00					
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	1.00	0.95	1.00	1.00	1.00	1.00					
Satd. Flow (prot)	3303	3406	1329	1719	3438	1422	1821	3367	1827	1531							
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	1.00	0.95	1.00	1.00							
Satd. Flow (perm)	3303	3406	1329	1719	3438	1422	1821	3367	1827	1531							
Volume (vph)	170	1350	2	18	531	255	10	133	0	480	12	13					
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)	185	1467	2	20	577	277	11	145	0	522	13	14					
RTOR Reduction (vph)	0	0	1	0	0	165	0	0	0	0	0	11					
Lane Group Flow (vph)	185	1467	1	20	577	112	0	156	0	522	13	3					
Confl. Peds. (#/hr)			69								80						
Confl. Bikes (#/hr)			2						4			2					
Heavy Vehicles (%)	6%	6%	6%	5%	5%	5%	4%	4%	4%	4%	4%	4%					
Turn Type	Prot	custom		Prot	custom		Split	Split		Perm							
Protected Phases	11	16	2	6	15	12	2	6	13	14	14	1	13	5	13	1	5
Permitted Phases	16			12			1			15			13				
Actuated Green, G (s)	11.8	49.6	43.1	3.8	41.6	54.7	21.1	28.4	28.4	28.4	28.4	28.4					
Effective Green, g (s)	11.8	49.6	43.1	3.8	41.6	54.7	21.1	28.4	28.4	28.4	28.4	28.4					
Actuated g/C Ratio	0.09	0.37	0.32	0.03	0.31	0.41	0.16	0.21	0.21	0.21	0.21	0.21					
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0					
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0					
Lane Grp Cap (vph)	289	1252	425	48	1060	577	285	709	385	322							
v/s Ratio Prot	c0.06	c0.43		0.01	0.17	0.03	c0.09	c0.16	0.01								
v/s Ratio Perm			0.00			0.05						0.00					
v/c Ratio	0.64	1.17	0.00	0.42	0.54	0.19	0.55	0.74	0.03	0.01							
Uniform Delay, d1	59.5	42.7	31.3	64.5	38.8	25.9	52.5	49.8	42.3	42.1							
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.94	0.95	1.37							
Incremental Delay, d2	4.8	86.1	0.0	5.8	0.6	0.2	2.1	4.0	0.0	0.0							
Delay (s)	64.3	128.7	31.3	70.2	39.3	26.0	54.6	50.6	40.1	57.8							
Level of Service	E	F	C	E	D	C	D	D	D	E							
Approach Delay (s)		121.4			35.8		54.6		50.6								
Approach LOS		F			D		D		D								
<b>Intersection Summary</b>																	
HCM Average Control Delay	83.0			HCM Level of Service			F										
HCM Volume to Capacity ratio	0.91																
Actuated Cycle Length (s)	134.9			Sum of lost time (s)			32.0										
Intersection Capacity Utilization	75.2%			ICU Level of Service			D										
Analysis Period (min)	15																
c Critical Lane Group																	

Barrio Logan CPU  
37: Boston Ave & I-5 SB On-ramp

Horizon Year Alt 2 with Improvements  
Timing Plan: PM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
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
Flt	0.99	0.97	0.93	0.98	0.97	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Flt Protected	0.97	0.97	0.93	0.98	0.97	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Satd. Flow (prot)	1705	1705	1636	1636	1636	1636	1636	1636	1636	1636	1636	1636
Flt Permitted	0.97	0.97	0.93	0.98	0.97	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Satd. Flow (perm)	1705	1705	1636	1636	1636	1636	1636	1636	1636	1636	1636	1636
Volume (vph)	398	151	29	20	86	132	10	348	45	0	0	0
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)	433	164	32	22	93	143	11	378	49	0	0	0
RTOR Reduction (vph)	0	2	0	0	50	0	0	5	0	0	0	0
Lane Group Flow (vph)	0	627	0	0	208	0	0	433	0	0	0	0
Heavy Vehicles (%)	7%	7%	7%	7%	7%	7%	2%	15%	2%	2%	2%	2%
Turn Type	Split	Split		Perm		Perm		Perm		Perm		
Protected Phases	4	4		8	8						2	
Permitted Phases				2								
Actuated Green, G (s)	32.5			13.6			23.8					
Effective Green, g (s)	32.5			13.6			23.8					
Actuated g/C Ratio	0.40			0.17			0.29					
Clearance Time (s)	4.0			4.0			4.0					
Vehicle Extension (s)	3.0			3.0			3.0					
Lane Grp Cap (vph)	677			272			480					
v/s Ratio Prot	c0.37			c0.13								
v/s Ratio Perm				0.26								
v/c Ratio	0.93			0.76			0.90					
Uniform Delay, d1	23.5			32.6			27.9					
Progression Factor	1.00			1.00			1.00					
Incremental Delay, d2	18.5			12.0			20.0					
Delay (s)	42.1			44.7			47.9					
Level of Service	D			D			D					
Approach Delay (s)	42.1			44.7			47.9			0.0		
Approach LOS	D			D			D			A		
<b>Intersection Summary</b>												
HCM Average Control Delay	44.5			HCM Level of Service			D					
HCM Volume to Capacity ratio	0.89											
Actuated Cycle Length (s)	81.9			Sum of lost time (s)			12.0					
Intersection Capacity Utilization	77.1%			ICU Level of Service			D					
Analysis Period (min)	15											
c Critical Lane Group												

Barrio Logan CPU  
39: 32nd St & Wabash St

Horizon Year Alt 2 with Improvements  
Timing Plan: PM Peak

Movement	EBL2	EBL	EBT	EBR	WBL	WBT	WBR	WBR2	NBL	NBT	NBR	NBR2	
Lane Configurations													
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	4.0	4.0			4.0	4.0			4.0	4.0		4.0	
Lane Util. Factor	1.00	1.00			1.00	1.00			1.00	1.00	0.88		
Frt	1.00	0.91			1.00	0.85			1.00	1.00	0.85		
Flt Protected	0.95	1.00			0.96	1.00			0.95	1.00	1.00		
Satd. Flow (prot)	1752	1690			1796	1568			1719	1810	2707		
Flt Permitted	0.50	1.00			0.48	1.00			0.95	1.00	1.00		
Satd. Flow (perm)	916	1690			899	1568			1719	1810	2707		
Volume (vph)	115	115	80	130	140	50	210	140	360	560	240		
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)	125	125	87	141	152	54	228	223	391	609	261		
RTOR Reduction (vph)	0	0	48	0	0	0	0	0	0	0	0	0	
Lane Group Flow (vph)	0	250	180	0	0	206	451	0	152	391	870	0	
Heavy Vehicles (%)	2%	4%	2%	2%	2%	2%	2%	4%	5%	5%	5%	5%	
Turn Type	Perm	Perm			Perm	Perm			Prot	custom			
Protected Phases			4			4			5	2			
Permitted Phases	4	4			4	4					2 3		
Actuated Green, G (s)	32.1	32.1			32.1	32.1			14.8	24.1	46.1		
Effective Green, g (s)	32.1	32.1			32.1	32.1			14.8	24.1	46.1		
Actuated g/C Ratio	0.28	0.28			0.28	0.28			0.13	0.21	0.40		
Clearance Time (s)	4.0	4.0			4.0	4.0			4.0	4.0			
Vehicle Extension (s)	3.0	3.0			3.0	3.0			3.0	3.0			
Lane Grp Cap (vph)	255	471			251	437			221	379	1083		
v/s Ratio Prot		0.11							0.09	0.22			
v/s Ratio Perm	0.27				0.23	0.29					0.32		
v/c Ratio	0.98	0.38			0.82	1.03			0.69	1.03	0.80		
Uniform Delay, d1	41.2	33.6			38.9	41.6			48.0	45.6	30.5		
Progression Factor	1.00	1.00			1.00	1.00			1.00	1.00	1.00		
Incremental Delay, d2	50.7	0.5			18.9	51.5			8.6	54.6	4.4		
Delay (s)	91.9	34.1			57.8	93.1			56.6	100.2	34.9		
Level of Service	F	C			E	F			E	F	C		
Approach Delay (s)		64.3				82.0				55.3			
Approach LOS		E				F				E			
<b>Intersection Summary</b>													
HCM Average Control Delay		75.4			HCM Level of Service					E			
HCM Volume to Capacity ratio		1.03											
Actuated Cycle Length (s)		115.2			Sum of lost time (s)					12.0			
Intersection Capacity Utilization		104.7%			ICU Level of Service					G			
Analysis Period (min)		15											
c Critical Lane Group													

Barrio Logan CPU  
39: 32nd St & Wabash St

Horizon Year Alt 2 with Improvements  
Timing Plan: PM Peak

Movement	SBL2	SBL	SBT	SBR	SWL2	SWL	SWR	SWR2
Lane Configurations								
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0		4.0
Lane Util. Factor	1.00	0.95			1.00	0.97		0.97
Frt	1.00	0.99			1.00	0.99		0.95
Flt Protected	0.95	1.00			0.95	1.00		0.97
Satd. Flow (prot)	1767	3407			1767	3407		3269
Flt Permitted	0.95	1.00			0.95	1.00		0.89
Satd. Flow (perm)	1767	3407			1767	3407		3022
Volume (vph)	35	415	380	30	10	140	55	10
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	38	451	413	33	11	152	60	11
RTOR Reduction (vph)	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	489	446	0	0	234	0	0
Heavy Vehicles (%)	4%	2%	5%	2%	4%	4%	4%	4%
Turn Type	Prot	Prot			Perm			
Protected Phases	1	1	6				3	
Permitted Phases					3			
Actuated Green, G (s)	25.0	34.3					18.0	
Effective Green, g (s)	25.0	34.3					18.0	
Actuated g/C Ratio	0.22	0.30					0.16	
Clearance Time (s)	4.0	4.0					4.0	
Vehicle Extension (s)	3.0	3.0					3.0	
Lane Grp Cap (vph)	383	1014					472	
v/s Ratio Prot	c0.28	0.13						
v/s Ratio Perm							0.08	
v/c Ratio	1.28	0.44					0.50	
Uniform Delay, d1	45.1	32.7					44.4	
Progression Factor	1.00	1.00					1.00	
Incremental Delay, d2	143.4	0.3					0.8	
Delay (s)	188.5	33.0					45.3	
Level of Service	F	C					D	
Approach Delay (s)		114.3					45.3	
Approach LOS		F					D	
<b>Intersection Summary</b>								



Barrio Logan CPU  
40: Harbor Dr & 32nd St

Horizon Year Alt 2 with Improvements  
Timing Plan: PM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR								
Lane Configurations																				
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900								
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0								
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00								
Frbp, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.99								
Flpb, ped/bikes	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	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85								
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00								
Satd. Flow (prot)	1719	3438	1538	1687	3374	1477	1719	3438	1500	1719	3438	1524								
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00								
Satd. Flow (perm)	1719	3438	1538	1687	3374	1477	1719	3438	1500	1719	3438	1524								
Volume (vph)	160	1160	100	40	434	460	70	690	140	310	280	210								
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)	174	1261	109	43	472	500	76	750	152	337	304	228								
RTOR Reduction (vph)	0	0	34	0	0	393	0	0	61	0	0	102								
Lane Group Flow (vph)	174	1261	75	43	472	107	76	750	91	337	304	126								
Confl. Bikes (#/hr)	7																			
Heavy Vehicles (%)	5%	5%	5%	7%	7%	7%	5%	5%	5%	5%	5%	5%								
Turn Type	Prot			custom			Prot			custom										
Protected Phases	3	14	2	6	15	13	18	2	6	15	12	11	1	5	16	1	5	3	1	5
Permitted Phases				14						18						16				
Actuated Green, G (s)	16.7	38.3	42.0	4.0	25.6	20.6	8.7	26.1	26.1	22.1	43.5	56.2								
Effective Green, g (s)	16.7	38.3	42.0	4.0	25.6	20.6	8.7	26.1	26.1	22.1	43.5	56.2								
Actuated g/C Ratio	0.14	0.31	0.34	0.03	0.21	0.17	0.07	0.21	0.21	0.18	0.36	0.46								
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0								
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0								
Lane Grp Cap (vph)	234	1075	527	55	705	248	122	733	320	310	1221	749								
v/s Ratio Prot	c0.10	c0.37	0.01	0.03	0.14	0.04	c0.22		c0.20	0.09	0.03									
v/s Ratio Perm				0.04	0.07			0.06												
v/c Ratio	0.74	1.17	0.14	0.78	0.67	0.43	0.62	1.02	0.28	1.09	0.25	0.17								
Uniform Delay, d1	50.8	42.1	27.8	58.8	44.6	45.7	55.3	48.2	40.4	50.2	27.9	19.4								
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.94	0.94	1.06								
Incremental Delay, d2	12.0	87.9	0.1	50.5	2.4	1.2	9.5	39.2	0.5	76.3	0.1	0.1								
Delay (s)	62.9	130.0	27.9	109.3	47.0	46.9	64.8	87.4	40.9	123.4	26.3	20.7								
Level of Service	E	F	C	F	D	D	E	F	D	F	C	C								
Approach Delay (s)	115.2			49.6			78.4			62.5										
Approach LOS	F			D			E			E										
<b>Intersection Summary</b>																				
HCM Average Control Delay	81.5			HCM Level of Service			F													
HCM Volume to Capacity ratio	1.10																			
Actuated Cycle Length (s)	122.5			Sum of lost time (s)			32.0													
Intersection Capacity Utilization	85.0%			ICU Level of Service			E													
Analysis Period (min)	15																			
c Critical Lane Group																				

Barrio Logan CPU  
42: I-5 SB off-ramp & 28th St

Horizon Year Alt 2 with Improvements  
Timing Plan: PM Peak

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	0.91	1.00	1.00	1.00
Frt	0.86	1.00	1.00	1.00	1.00	1.00
Flt Protected	1.00	1.00	1.00	1.00	1.00	1.00
Satd. Flow (prot)	1611	3539	5085	1.00	1.00	1.00
Flt Permitted	1.00	1.00	1.00	1.00	1.00	1.00
Satd. Flow (perm)	1611	3539	5085	1.00	1.00	1.00
Volume (vph)	0	457	0	1530	743	0
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	497	0	1663	808	0
RTOR Reduction (vph)	0	45	0	0	0	0
Lane Group Flow (vph)	0	452	0	1663	808	0
Turn Type	custom					
Protected Phases			2		6	
Permitted Phases	4					
Actuated Green, G (s)	15.6		40.0		16.4	
Effective Green, g (s)	15.6		40.0		16.4	
Actuated g/C Ratio	0.39		1.00		0.41	
Clearance Time (s)	4.0		4.0		4.0	
Vehicle Extension (s)	3.0		3.0		3.0	
Lane Grp Cap (vph)	628		3539		2085	
v/s Ratio Prot			c0.47		0.16	
v/s Ratio Perm	c0.28					
v/c Ratio	0.72		0.47		0.39	
Uniform Delay, d1	10.3		0.0		8.3	
Progression Factor	1.00		1.00		1.00	
Incremental Delay, d2	3.9		0.1		0.5	
Delay (s)	14.3		0.1		8.8	
Level of Service	B		A		A	
Approach Delay (s)	14.3		0.1		8.8	
Approach LOS	B		A		A	
<b>Intersection Summary</b>						
HCM Average Control Delay	4.9		HCM Level of Service		A	
HCM Volume to Capacity ratio	0.58					
Actuated Cycle Length (s)	40.0		Sum of lost time (s)		4.0	
Intersection Capacity Utilization	49.3%		ICU Level of Service		A	
Analysis Period (min)	15					