

Appendix A
Existing Count Sheets, Opening Year, and Horizon
Year Forecasting Worksheets

See next page for notes on this appendix.

Appendix Note:

For the content in this appendix, refer to the table below for corresponding intersection numbers presented in the report.

Intersection Number in Appendix	Intersection Name	Intersection Number in Report
1	Highway 395 / Joshua St	1
2	Interstate 15 SB off-ramp / Joshua St	2
3	Interstate 15 NB on-ramp / Joshua St	3
4	Mariposa Rd / Joshua St	4
5	Interstate 15 SB ramps / Foothill Blvd	13
6	Interstate 15 NB ramps / Foothill Blvd	14
7	Interstate 15 SB ramps / Fourth St	15
8	Interstate 15 NB ramps / Fourth St	16
9	Milliken Ave / State Route 210 WB Ramps	5
10	Milliken Ave / State Route 210 EB Ramps	6
11	Milliken Ave / Foothill Blvd	7
12	Milliken Ave / Fourth St	10
13	Milliken Ave / Azusa Ct	8
14	Milliken Ave / 7th St	9
15	Milliken Ave / Interstate 10 WB Ramps	11
16	Milliken Ave / Interstate 10 EB Ramps	12

Appendix A.1 - Original Opening and Horizon Year Forecasting Worksheets

Appendix A.1.1 - Intersection Forecasting Worksheets Weekday AM



SUBJECT	BY	DATE	JOB NO.	SHEET	OF
TURN MOVEMENTS	TNM	9-Sep-20	BRTLDSXP-0003	1	OF 2

E/W STREET : JOSHUA ST
N/S STREET : HIGHWAY 395
CONDITION : AM PEAK HOUR

INTERSECTION : 1

CONDITION DIAGRAMS

EXISTING GEOMETRICS

PROPOSED GEOMETRICS

TURN MOVEMENTS

Condition	Existing Condition Traffic	Opening Year 2024 No Build Traffic	Opening Year 2024 Project Trips	Opening Year 2024 Build Traffic	Future Year 2045 No Build Traffic	Future Year 2045 Project Trips	Future Year 2045 Build Traffic
	1.1	2.1		3.1	4.1		5.1

JOSHUA ST

EB Left	11	13	0	13	70	0	70
EB Thru	12	15	0	15	13	0	13
EB Right	1	1	0	1	1	0	1
WB Left	143	143	0	143	39	0	39
WB Thru	12	15	0	15	135	0	135
WB Right	66	77	9	86	121	74	195

HIGHWAY 395

NB Left	2	3	0	3	13	0	13
NB Thru	418	418	0	418	437	0	437
NB Right	36	45	0	45	7	0	7
SB Left	81	101	25	126	163	73	236
SB Thru	799	927	0	927	1,454	0	1,454
SB Right	7	9	0	9	528	0	528
TOTALS	1,588	1,767	34	1,801	2,981	147	3,128



SUBJECT	BY	DATE	JOB NO.	SHEET	OF
TURN MOVEMENTS	TNM	9-Sep-20	BRTLDSXP-0003	1	OF 2

E/W STREET : JOSHUA ST
N/S STREET : I-15 SB RAMP
CONDITION : AM PEAK HOUR

INTERSECTION : 2

CONDITION DIAGRAMS

EXISTING GEOMETRICS

PROPOSED GEOMETRICS

TURN MOVEMENTS

Condition	Existing Condition Traffic	Opening	Opening	Opening	Future	Future	Future
		Year 2024 No Build Traffic	Year 2024 Project Trips	Year 2024 Build Traffic	Year 2045 No Build Traffic	Year 2045 Project Trips	Year 2045 Build Traffic
	1.1	2.1		3.1	4.1		5.1

JOSHUA ST

EB Left	0	0	0	0	0	0	0
EB Thru	87	108	0	108	162	0	162
EB Right	0	0	0	0	0	0	0
WB Left	0	0	0	0	0	0	0
WB Thru	81	98	9	107	134	22	156
WB Right	0	0	0	0	0	0	0

I-15 SB RAMP

NB Left	0	0	0	0	0	0	0
NB Thru	0	0	0	0	0	0	0
NB Right	0	0	0	0	0	0	0
SB Left	5	6	25	31	6	73	79
SB Thru	0	0	0	0	0	0	0
SB Right	87	108	0	108	87	0	87
TOTALS	260	320	34	354	389	95	484



SUBJECT	BY	DATE	JOB NO.	SHEET	OF
TURN MOVEMENTS	TNM	9-Sep-20	BRTLDSXP-0003	1	OF 2

E/W STREET : JOSHUA ST
N/S STREET : I-15 NB RAMP
CONDITION : AM PEAK HOUR

INTERSECTION : 3

CONDITION DIAGRAMS

EXISTING GEOMETRICS

PROPOSED GEOMETRICS

TURN MOVEMENTS

Condition	Existing Condition Traffic	Opening Year 2024 No Build Traffic	Opening Year 2024 Project Trips	Opening Year 2024 Build Traffic	Future Year 2045 No Build Traffic	Future Year 2045 Project Trips	Future Year 2045 Build Traffic
	1.1	2.1		3.1	4.1		5.1

JOSHUA ST

EB Left	34	41	9	50	36	22	58
EB Thru	57	69	8	77	132	19	151
EB Right	0	0	0	0	0	0	0
WB Left	0	0	0	0	0	0	0
WB Thru	84	121	22	143	134	19	153
WB Right	22	32	0	32	21	0	21

I-15 NB RAMP

NB Left	0	0	0	0	0	0	0
NB Thru	0	0	0	0	0	0	0
NB Right	0	0	0	0	0	0	0
SB Left	0	0	0	0	0	0	0
SB Thru	0	0	0	0	0	0	0
SB Right	0	0	0	0	0	0	0
TOTALS	197	263	39	302	323	60	383



SUBJECT	BY	DATE	JOB NO.	SHEET OF
TURN VOLUME SUMMARY	TNM	9/9/2020	BRTLDSXP-0003	2 OF 2

E/W STREET : JOSHUA ST N/S STREET : I-15 NB RAMP
CONDITION : AM PEAK HOUR PHF : 0.79

NORTH LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0

SOUTH LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0

EAST LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
4	6	0	0	2	0	0	2	0	1	6	0
0	19	0	1	0	0	2	0	0	0	2	0
5	18	0	0	1	0	0	2	0	3	4	0
6	16	0	0	1	0	0	0	0	0	5	0

WEST LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
0	10	2	0	1	1	0	0	0	0	1	4
0	11	3	0	0	1	0	1	0	0	2	3
0	18	6	0	0	1	0	0	0	0	0	4
0	12	6	0	0	0	0	0	0	0	1	3

Truck Volumes	Auto Volumes	Totals	Truck Percentage
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JOSHUA ST				
EBL	17	17	34	50%
EBTH	6	51	57	11%
EBR	0	0	0	0%
WBL	0	0	0	0%
WBTH	25	59	84	30%
WBR	7	15	22	32%

I-15 NB RAMP				
NBL	0	0	0	0%
NBTH	0	0	0	0%
NBR	0	0	0	0%
SBL	0	0	0	0%
SBTH	0	0	0	0%
SBR	0	0	0	0%



SUBJECT	BY	DATE	JOB NO.	SHEET	OF
TURN MOVEMENTS	TNM	9-Sep-20	BRTLDSXP-0003	1	OF 2

E/W STREET : JOSHUA ST
N/S STREET : MARIPOSA
CONDITION : AM PEAK HOUR

INTERSECTION : 4

CONDITION DIAGRAMS

EXISTING GEOMETRICS

PROPOSED GEOMETRICS

TURN MOVEMENTS

Condition	Existing Condition Traffic	Opening Year 2024 No Build Traffic	Opening Year 2024 Project Trips	Opening Year 2024 Build Traffic	Future Year 2045 No Build Traffic	Future Year 2045 Project Trips	Future Year 2045 Build Traffic
	1.1	2.1		3.1	4.1		5.1

JOSHUA ST

EB Left	22	28	5	33	4	13	17
EB Thru	0	0	0	0	0	0	0
EB Right	31	36	3	39	129	7	136
WB Left	0	0	0	0	0	0	0
WB Thru	0	0	0	0	0	0	0
WB Right	0	0	0	0	0	0	0

MARIPOSA

NB Left	66	96	8	104	119	21	140
NB Thru	18	18	0	18	63	0	63
NB Right	0	0	0	0	0	0	0
SB Left	0	0	0	0	0	0	0
SB Thru	25	29	0	29	310	0	310
SB Right	39	57	15	72	12	11	23
TOTALS	201	264	31	295	637	52	689



SUBJECT	BY	DATE	JOB NO.	SHEET OF
TURN VOLUME SUMMARY	TNM	9/9/2020	BRTLDSXP-0003	2 OF 2

E/W STREET : JOSHUA ST N/S STREET : MARIPOSA
CONDITION : AM PEAK HOUR PHF : 0.82

NORTH LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
9	5	0	1	0	0	1	0	0	0	1	0
6	5	0	1	0	0	0	0	0	3	0	0
8	4	0	0	0	0	0	0	0	1	2	0
8	8	0	0	0	0	0	0	0	1	0	0

SOUTH LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
0	4	10	0	0	0	0	1	1	0	0	2
0	4	17	0	0	0	0	0	2	0	1	4
0	2	14	0	0	1	0	1	0	0	0	4
0	4	6	0	0	0	0	0	0	0	1	5

EAST LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0

WEST LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
8	0	3	0	0	0	0	0	1	0	0	2
12	0	6	0	0	0	0	0	0	0	0	0
5	0	7	0	0	0	0	0	0	1	0	0
5	0	2	0	0	1	0	0	0	0	0	0

Truck Volumes	Auto Volumes	Totals	Truck Percentage
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JOSHUA ST				
EBL	4	18	22	19%
EBTH	0	0	0	0%
EBR	1	30	31	4%
WBL	0	0	0	0%
WBTH	0	0	0	0%
WBR	0	0	0	0%

MARIPOSA				
NBL	19	47	66	29%
NBTH	4	14	18	23%
NBR	0	0	0	0%
SBL	0	0	0	0%
SBTH	3	22	25	12%
SBR	8	31	39	21%



SUBJECT	BY	DATE	JOB NO.	SHEET	OF
TURN MOVEMENTS	TNM	9-Sep-20	BRTLDSXP-0003	1	OF 2

E/W STREET : FOOTHILL BLVD

INTERSECTION : 5

N/S STREET : INTERSTATE 15 SB RAMPS

CONDITION : AM PEAK HOUR

CONDITION DIAGRAMS

EXISTING GEOMETRICS

PROPOSED GEOMETRICS

TURN MOVEMENTS

Condition	Existing Condition Traffic	Opening	Opening	Opening	Future	Future	Future
		Year 2024 No Build Traffic	Year 2024 Project Trips	Year 2024 Build Traffic	Year 2045 No Build Traffic	Year 2045 Project Trips	Year 2045 Build Traffic
	1.1	2.1		3.1	4.1		5.1

FOOTHILL BLVD

EB Left	0	0	0	0	0	0	0
EB Thru	422	507	7	514	1,161	17	1178
EB Right	692	692	0	692	692	0	692
WB Left	0	0	0	0	0	0	0
WB Thru	1071	1286	3	1289	1,285	6	1291
WB Right	532	532	0	532	532	0	532

INTERSTATE 15 SB RAMPS

NB Left	0	0	0	0	0	0	0
NB Thru	0	0	0	0	0	0	0
NB Right	0	0	0	0	0	0	0
SB Left	138	232	0	232	497	0	497
SB Thru	0	0	0	0	0	0	0
SB Right	487	819	13	832	424	82	506
TOTALS	3342	4068	23	4091	4591	105	4696



SUBJECT	BY	DATE	JOB NO.	SHEET	OF
TURN VOLUME SUMMARY	TNM	9/9/2020	BRTLDSXP-0003	2	OF 2

E/W STREET : FOOTHILL BLVD N/S STREET : INTERSTATE 15 SB RAMPS
CONDITION : AM PEAK HOUR PHF : 0.89

NORTH LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
118	0	31	1	0	0	2	0	2	5	0	0
126	0	25	3	0	0	1	0	2	5	0	2
109	0	36	0	0	3	1	0	0	4	0	0
104	0	32	0	0	1	3	0	1	5	0	3

SOUTH LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0

EAST LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
129	230	0	2	0	0	1	1	0	2	3	0
128	303	0	1	1	0	0	0	0	4	4	0
174	282	0	0	1	0	1	1	0	2	2	0
84	238	0	0	2	0	1	1	0	3	2	0

WEST LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
166	80	0	1	1	0	0	0	0	2	6	0
202	102	0	1	2	0	1	1	0	3	2	0
196	115	0	0	0	0	0	2	0	1	5	0
116	96	0	0	4	0	2	1	0	1	5	0

Truck Volumes	Auto Volumes	Totals	Truck Percentage
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FOOTHILL BLVD				
	Truck Volumes	Auto Volumes	Totals	Truck Percentage
EBL	0	0	0	0%
EBTH	29	393	422	7%
EBR	12	680	692	2%
WBL	0	0	0	0%
WBTH	18	1053	1071	2%
WBR	17	515	532	4%

INTERSTATE 15 SB RAM				
	Truck Volumes	Auto Volumes	Totals	Truck Percentage
NBL	0	0	0	0%
NBTH	0	0	0	0%
NBR	0	0	0	0%
SBL	14	124	138	11%
SBTH	0	0	0	0%
SBR	30	457	487	7%



SUBJECT	BY	DATE	JOB NO.	SHEET	OF
TURN MOVEMENTS	TNM	9-Sep-20	BRTLDSXP-0003	1	OF 2

E/W STREET : FOOTHILL BLVD

INTERSECTION : 6

N/S STREET : INTERSTATE 15 NB RAMPS

CONDITION : AM PEAK HOUR

CONDITION DIAGRAMS

EXISTING GEOMETRICS

PROPOSED GEOMETRICS

TURN MOVEMENTS

Condition	Existing Condition Traffic	Opening	Opening	Opening	Future	Future	Future
		Year 2024 No Build Traffic	Year 2024 Project Trips	Year 2024 Build Traffic	Year 2045 No Build Traffic	Year 2045 Project Trips	Year 2045 Build Traffic
	1.1	2.1		3.1	4.1		5.1

FOOTHILL BLVD

EB Left	0	0	0	0	0	0	0
EB Thru	785	911	1	912	1,532	3	1535
EB Right	125	125	6	131	125	14	139
WB Left	0	0	0	0	0	0	0
WB Thru	392	455	3	458	1,475	6	1481
WB Right	175	231	0	231	200	0	200

INTERSTATE 15 NB RAMPS

NB Left	750	750	0	750	343	0	343
NB Thru	0	0	0	0	0	0	0
NB Right	378	378	0	378	182	0	182
SB Left	0	0	0	0	0	0	0
SB Thru	0	0	0	0	0	0	0
SB Right	0	0	0	0	0	0	0
TOTALS	2605	2850	10	2860	3857	23	3880



SUBJECT	BY	DATE	JOB NO.	SHEET	OF
TURN MOVEMENTS	TNM	9-Sep-20	BRTLDSXP-0003	1	OF 2

E/W STREET : FOURTH STREET

INTERSECTION : 7

N/S STREET : INTERSTATE 15 SB RAMPS

CONDITION : AM PEAK HOUR

CONDITION DIAGRAMS

EXISTING GEOMETRICS

PROPOSED GEOMETRICS

TURN MOVEMENTS

Condition	Existing Condition Traffic	Opening Year 2024 No Build Traffic	Opening Year 2024 Project Trips	Opening Year 2024 Build Traffic	Future Year 2045 No Build Traffic	Future Year 2045 Project Trips	Future Year 2045 Build Traffic
	1.1	2.1		3.1	4.1		5.1

FOURTH STREET

EB Left	188	219	3	222	318	7	325
EB Thru	203	236	1	237	375	2	377
EB Right	36	71	0	71	56	0	56
WB Left	83	163	0	163	88	0	88
WB Thru	825	957	8	965	1,021	18	1039
WB Right	151	176	0	176	173	0	173

INTERSTATE 15 SB RAMPS

NB Left	67	78	0	78	111	0	111
NB Thru	63	63	0	63	97	0	97
NB Right	37	43	0	43	63	0	63
SB Left	122	142	0	142	151	0	151
SB Thru	147	177	0	177	153	0	153
SB Right	301	350	0	350	367	0	367
TOTALS	2223	2675	12	2687	2973	27	3000



SUBJECT	BY	DATE	JOB NO.	SHEET	OF
TURN VOLUME SUMMARY	TNM	9/9/2020	BRTLDSXP-0003	2	OF 2

E/W STREET : FOURTH STREET N/S STREET : INTERSTATE 15 SB RAMPS
CONDITION : AM PEAK HOUR PHF : 0.95

NORTH LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
75	42	30	0	0	0	0	1	2	2	1	9
79	46	16	2	0	4	0	0	2	0	0	7
76	27	18	1	1	1	0	0	1	0	0	5
63	29	23	0	0	0	0	0	0	3	0	4

SOUTH LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
8	9	23	0	3	0	0	1	0	1	0	0
8	17	19	1	0	0	0	0	0	0	0	0
9	13	13	0	1	1	0	0	1	0	0	0
8	16	10	2	2	0	0	0	0	0	1	0

EAST LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
23	193	20	2	8	0	3	5	0	10	10	0
15	201	25	4	4	1	3	3	0	8	7	0
29	157	13	3	6	2	3	3	1	9	13	0
25	195	21	3	6	0	3	4	0	8	10	0

WEST LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
3	33	39	0	3	5	0	1	1	0	11	3
9	54	32	0	1	3	0	4	2	0	3	2
13	35	42	1	1	3	0	2	1	0	3	5
10	47	43	0	2	4	0	1	1	0	2	2

Truck Volumes	Auto Volumes	Totals	Truck Percentage
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FOURTH STREET

EBL	32	156	188	18%
EBTH	34	169	203	17%
EBR	1	35	36	3%
WBL	4	79	83	5%
WBTH	79	746	825	10%
WBR	59	92	151	40%

INTERSTATE 15 SB RAM

NBL	2	65	67	3%
NBTH	8	55	63	13%
NBR	4	33	37	11%
SBL	35	87	122	29%
SBTH	3	144	147	3%
SBR	8	293	301	3%



SUBJECT	BY	DATE	JOB NO.	SHEET	OF
TURN MOVEMENTS	TNM	9-Sep-20	BRTLDSXP-0003	1	OF 2

E/W STREET : FOURTH STREET

INTERSECTION : 8

N/S STREET : INTERSTATE 15 NB RAMPS

CONDITION : AM PEAK HOUR

CONDITION DIAGRAMS

EXISTING GEOMETRICS

PROPOSED GEOMETRICS

TURN MOVEMENTS

Condition	Existing Condition Traffic	Opening	Opening	Opening	Future	Future	Future
		Year 2024 No Build Traffic	Year 2024 Project Trips	Year 2024 Build Traffic	Year 2045 No Build Traffic	Year 2045 Project Trips	Year 2045 Build Traffic
	1.1	2.1		3.1	4.1		5.1

FOURTH STREET

EB Left	117	146	0	146	132	0	132
EB Thru	214	249	1	250	419	2	421
EB Right	28	28	0	28	38	0	38
WB Left	15	15	0	15	20	0	20
WB Thru	233	280	2	282	411	3	414
WB Right	50	62	0	62	54	0	54

INTERSTATE 15 NB RAMPS

NB Left	45	53	0	53	130	0	130
NB Thru	23	23	0	23	41	0	41
NB Right	29	34	0	34	89	0	89
SB Left	277	322	0	322	272	0	272
SB Thru	55	55	0	55	37	0	37
SB Right	802	931	6	937	740	37	777
TOTALS	1888	2198	9	2207	2383	42	2425



SUBJECT	BY	DATE	JOB NO.	SHEET	OF
TURN VOLUME SUMMARY	TNM	9/9/2020	BRTLDSXP-0003	2	OF 2

E/W STREET : FOURTH STREET N/S STREET : INTERSTATE 15 NB RAMPS
CONDITION : AM PEAK HOUR PHF : 0.94

NORTH LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
193	5	54	1	2	7	2	0	3	12	4	22
187	15	63	1	0	5	3	0	3	5	4	15
148	14	35	3	0	2	3	0	1	16	1	20
218	1	29	1	3	6	1	0	0	8	6	12

SOUTH LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
8	0	1	0	0	10	0	1	1	0	1	0
5	6	3	0	1	3	0	0	1	1	1	8
4	12	5	0	0	1	1	0	1	1	0	4
8	0	3	1	0	3	0	0	0	0	1	1

EAST LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
11	35	1	0	8	0	0	5	0	2	7	4
14	40	0	0	5	0	0	2	0	1	11	1
0	45	1	1	7	0	0	3	1	10	8	3
3	39	4	2	5	0	0	6	0	6	7	0

WEST LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
0	46	26	0	3	0	0	3	0	4	11	4
9	40	33	1	1	0	0	6	0	2	5	1
3	32	26	0	3	1	1	1	1	1	6	1
6	49	23	1	1	1	0	1	0	0	6	0

Truck Volumes	Auto Volumes	Totals	Truck Percentage
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FOURTH STREET

EBL	9	108	117	8%
EBTH	47	167	214	22%
EBR	10	18	28	36%
WBL	9	6	15	60%
WBTH	74	159	233	32%
WBR	22	28	50	44%

INTERSTATE 15 NB RAM

NBL	33	12	45	74%
NBTH	5	18	23	22%
NBR	4	25	29	14%
SBL	96	181	277	35%
SBTH	20	35	55	37%
SBR	56	746	802	7%



SUBJECT	BY	DATE	JOB NO.	SHEET	OF
TURN MOVEMENTS	TNM	9-Sep-20	BRTLDSXP-0003	1	OF 2

E/W STREET : I-210 WB RAMPS

INTERSECTION : 9

N/S STREET : MILLIKEN AVE

CONDITION : AM PEAK HOUR

CONDITION DIAGRAMS

EXISTING GEOMETRICS

PROPOSED GEOMETRICS

TURN MOVEMENTS

Condition	Existing Condition Traffic	Opening Year 2024 No Build Traffic	Opening Year 2024 Project Trips	Opening Year 2024 Build	Future Year 2045 No Build	Future Year 2045 Project	Future Year 2045 Build
	1.1	2.1		3.1	4.1		5.1

I-210 WB RAMPS

EB Left	0	0	0	0	0	0	0
EB Thru	0	0	0	0	0	0	0
EB Right	0	0	0	0	0	0	0
WB Left	110	132	3	135	116	6	122
WB Thru	4	4	0	4	5	0	5
WB Right	56	56	0	56	94	0	94

MILLIKEN AVE

NB Left	245	245	4	249	208	10	218
NB Thru	204	204	0	204	241	0	241
NB Right	0	0	0	0	0	0	0
SB Left	0	0	0	0	0	0	0
SB Thru	383	460	0	460	751	0	751
SB Right	81	98	0	98	182	0	182
TOTALS	1083	1199	7	1206	1597	16	1613



SUBJECT	BY	DATE	JOB NO.	SHEET OF
TURN VOLUME SUMMARY	TNM	9/9/2020	BRTLDSXP-0003	2 OF 2

E/W STREET : I-210 WB RAMPS N/S STREET : MILLIKEN AVE
CONDITION : AM PEAK HOUR PHF : 0.97

NORTH LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
20	68	0	2	0	0	0	0	0	1	2	0
17	101	0	1	1	0	2	0	0	0	0	0
13	112	0	0	0	0	0	1	0	1	1	0
23	96	0	1	1	0	0	0	0	0	0	0

SOUTH LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
0	62	63	0	1	1	0	1	0	0	1	1
0	48	63	0	1	2	0	0	3	0	0	1
0	44	54	0	0	0	0	0	1	0	1	0
0	44	55	0	1	0	0	0	0	0	0	1

EAST LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
11	0	28	1	0	2	1	0	0	0	0	1
11	0	24	0	0	2	0	0	1	1	0	0
11	4	22	1	0	0	2	0	1	0	0	2
17	0	22	0	0	1	0	0	2	0	0	2

WEST LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0

Truck Volumes	Auto Volumes	Totals	Truck Percentage
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I-210 WB RAMPS

EBL	0	0	0	0%
EBTH	0	0	0	0%
EBR	0	0	0	0%
WBL	14	96	110	13%
WBTH	0	4	4	1%
WBR	6	50	56	11%

MILLIKEN AVE

NBL	10	235	245	5%
NBTH	6	198	204	3%
NBR	0	0	0	0%
SBL	0	0	0	0%
SBTH	6	377	383	2%
SBR	8	73	81	10%



SUBJECT	BY	DATE	JOB NO.	SHEET	OF
TURN MOVEMENTS	TNM	9-Sep-20	BRTLDSXP-0003	1	OF 2

E/W STREET : FOOTHILL BLVD

INTERSECTION : 11

N/S STREET : MILLIKEN AVE

CONDITION : AM PEAK HOUR

CONDITION DIAGRAMS

EXISTING GEOMETRICS

PROPOSED GEOMETRICS

TURN MOVEMENTS

Condition	Existing Condition Traffic	Opening Year 2024 No Build Traffic	Opening Year 2024 Project Trips	Opening Year 2024 Build	Future Year 2045 No Build	Future Year 2045 Project	Future Year 2045 Build
	1.1	2.1		3.1	4.1		5.1

FOOTHILL BLVD

EB Left	34	40	0	40	54	0	54
EB Thru	311	361	0	361	560	0	560
EB Right	49	59	4	63	75	9	84
WB Left	99	119	16	135	173	39	212
WB Thru	573	665	0	665	785	0	785
WB Right	69	81	0	81	123	0	123

MILLIKEN AVE

NB Left	63	76	2	78	59	4	63
NB Thru	131	158	5	163	158	13	171
NB Right	59	71	7	78	82	17	99
SB Left	105	122	0	122	184	0	184
SB Thru	314	365	12	377	465	30	495
SB Right	115	138	0	138	134	0	134
TOTALS	1922	2255	46	2301	2852	112	2964



SUBJECT	BY	DATE	JOB NO.	SHEET OF
TURN VOLUME SUMMARY	TNM	9/9/2020	BRTLDSXP-0003	2 OF 2

E/W STREET : FOOTHILL BLVD N/S STREET : MILLIKEN AVE
CONDITION : AM PEAK HOUR PHF : 0.96

NORTH LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
25	91	16	1	0	0	1	0	0	1	3	0
25	76	36	0	1	0	1	2	0	0	0	0
29	59	31	1	1	0	0	1	0	0	0	0
30	76	22	1	2	0	0	1	0	0	1	0

SOUTH LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
14	25	7	0	0	1	0	1	0	0	1	2
8	34	15	0	1	0	0	1	0	2	0	1
14	39	18	0	0	0	0	0	0	0	0	0
19	28	18	1	0	0	1	0	1	0	1	0

EAST LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
17	122	30	0	2	1	0	1	0	0	0	0
19	147	17	0	2	1	0	5	1	0	3	2
16	144	26	0	0	0	0	1	0	0	1	1
15	145	20	1	0	0	1	0	0	0	0	0

WEST LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
9	50	7	0	3	0	0	5	0	0	0	0
18	76	4	0	2	0	0	0	0	0	1	0
9	85	9	0	0	0	0	0	0	0	1	0
13	84	13	0	2	0	0	0	1	0	2	0

Truck Volumes	Auto Volumes	Totals	Truck Percentage
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FOOTHILL BLVD				
EBL	1	33	34	3%
EBTH	16	295	311	6%
EBR	0	49	49	1%
WBL	6	93	99	7%
WBTH	15	558	573	3%
WBR	2	67	69	3%

MILLIKEN AVE				
NBL	5	58	63	8%
NBTH	5	126	131	4%
NBR	4	55	59	7%
SBL	0	105	105	1%
SBTH	12	302	314	4%
SBR	6	109	115	6%



SUBJECT	BY	DATE	JOB NO.	SHEET	OF
TURN MOVEMENTS	TNM	9-Sep-20	BRTLDSXP-0003	1	OF 2

E/W STREET : 4TH ST

INTERSECTION : 12

N/S STREET : MILLIKEN AVE

CONDITION : AM PEAK HOUR

CONDITION DIAGRAMS

EXISTING GEOMETRICS

PROPOSED GEOMETRICS

TURN MOVEMENTS

Condition	Existing Condition Traffic	Opening Year 2024 No Build Traffic	Opening Year 2024 Project Trips	Opening Year 2024 Build	Future Year 2045 No Build	Future Year 2045 Project	Future Year 2045 Build
	1.1	2.1		3.1	4.1		5.1

4TH ST

EB Left	77	77	3	80	212	3	215
EB Thru	247	287	0	287	298	0	298
EB Right	100	116	0	116	213	0	213
WB Left	195	227	0	227	300	0	300
WB Thru	318	382	0	382	358	0	358
WB Right	80	80	8	88	159	24	183

MILLIKEN AVE

NB Left	60	77	0	77	19	0	19
NB Thru	456	566	74	640	243	186	429
NB Right	82	82	0	82	20	0	20
SB Left	80	80	3	83	92	8	100
SB Thru	423	491	31	522	856	78	934
SB Right	57	73	1	74	85	8	93
TOTALS	2175	2538	120	2658	2855	307	3162



SUBJECT	BY	DATE	JOB NO.	SHEET	OF
TURN MOVEMENTS	TNM	9-Sep-20	BRTLDSXP-0003	1	OF 2

E/W STREET : AZUSA CT

INTERSECTION : 13

N/S STREET : MILLIKEN AVE

CONDITION : AM PEAK HOUR

CONDITION DIAGRAMS

EXISTING GEOMETRICS

PROPOSED GEOMETRICS

TURN MOVEMENTS

Condition	Existing Condition Traffic	Opening Year 2024 No Build Traffic	Opening Year 2024 Project Trips	Opening Year 2024 Build	Future Year 2045 No Build	Future Year 2045 Project	Future Year 2045 Build
	1.1	2.1		3.1	4.1		5.1

AZUSA CT

EB Left	0	0	0	0	0	0	0
EB Thru	0	0	0	0	0	0	0
EB Right	2	3	18	21	3	44	47
WB Left	0	0	0	0	0	0	0
WB Thru	0	0	0	0	0	0	0
WB Right	0	0	0	0	0	0	0

MILLIKEN AVE

NB Left	0	0	0	0	0	0	0
NB Thru	491	590	0	590	616	0	616
NB Right	0	0	0	0	0	0	0
SB Left	0	0	0	0	0	0	0
SB Thru	565	678	0	678	766	0	766
SB Right	34	41	24	65	34	148	182
TOTALS	1092	1312	42	1354	1419	192	1611



SUBJECT	BY	DATE	JOB NO.	SHEET	OF
TURN MOVEMENTS	TNM	9-Sep-20	BRTLDSXP-0003	1	OF 2

E/W STREET : 7TH ST

INTERSECTION : 14

N/S STREET : MILLIKEN AVE

CONDITION : AM PEAK HOUR

CONDITION DIAGRAMS

EXISTING GEOMETRICS

PROPOSED GEOMETRICS

TURN MOVEMENTS

Condition	Existing Condition Traffic	Opening Year 2024 No Build Traffic	Opening Year 2024 Project Trips	Opening Year 2024 Build	Future Year 2045 No Build	Future Year 2045 Project	Future Year 2045 Build
	1.1	2.1		3.1	4.1		5.1

7TH ST

EB Left	12	15	15	30	238	38	276
EB Thru	2	3	0	3	3	0	3
EB Right	24	29	18	47	21	44	65
WB Left	8	10	0	10	2	0	2
WB Thru	2	2	0	2	4	0	4
WB Right	5	6	0	6	16	0	16

MILLIKEN AVE

NB Left	57	73	83	156	27	210	237
NB Thru	475	475	0	475	365	0	365
NB Right	11	11	0	11	1	0	1
SB Left	19	23	0	23	30	0	30
SB Thru	545	654	42	696	656	105	761
SB Right	5	7	12	19	84	74	158
TOTALS	1165	1308	170	1478	1447	471	1918



SUBJECT	BY	DATE	JOB NO.	SHEET	OF
TURN MOVEMENTS	TNM	9-Sep-20	BRTLDSXP-0003	1	OF 2

E/W STREET : I-10 WB RAMPS

INTERSECTION : 15

N/S STREET : MILLIKEN AVE

CONDITION : AM PEAK HOUR

CONDITION DIAGRAMS

EXISTING GEOMETRICS

PROPOSED GEOMETRICS

TURN MOVEMENTS

Condition	Existing Condition Traffic	Opening Year 2024 No Build Traffic	Opening Year 2024 Project Trips	Opening Year 2024 Build	Future Year 2045 No Build	Future Year 2045 Project	Future Year 2045 Build
	1.1	2.1		3.1	4.1		5.1

I-10 WB RAMPS

EB Left	37	37	24	61	46	60	106
EB Thru	34	34	0	34	39	0	39
EB Right	20	24	0	24	37	0	37
WB Left	183	213	0	213	450	0	450
WB Thru	39	47	0	47	39	0	39
WB Right	143	172	0	172	238	0	238

MILLIKEN AVE

NB Left	94	94	0	94	65	0	65
NB Thru	361	361	38	399	420	96	516
NB Right	85	160	0	160	92	0	92
SB Left	42	79	0	79	92	0	92
SB Thru	237	275	16	291	823	40	863
SB Right	143	166	15	181	199	119	318
TOTALS	1418	1662	93	1755	2540	315	2855



SUBJECT	BY	DATE	JOB NO.	SHEET OF
TURN VOLUME SUMMARY	TNM	9/9/2020	BRTLDSXP-0003	2 OF 2

E/W STREET : I-10 WB RAMPS N/S STREET : MILLIKEN AVE
CONDITION : AM PEAK HOUR PHF : 0.88

NORTH LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
29	51	10	3	0	0	1	2	0	5	8	0
17	46	8	0	0	0	0	0	0	5	8	0
49	74	11	1	0	0	1	2	0	0	3	0
24	39	13	1	0	0	0	0	0	7	4	0

SOUTH LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
3	71	2	2	6	1	1	6	0	7	5	8
2	70	4	1	1	1	0	1	0	7	2	10
14	86	13	2	4	1	0	1	2	9	9	25
33	91	11	3	1	0	0	0	0	1	7	16

EAST LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
26	7	13	1	0	0	3	0	0	7	0	1
21	12	78	0	0	0	1	0	1	12	0	5
35	13	20	0	0	0	2	0	0	8	0	0
18	7	65	0	0	0	0	0	0	9	0	0

WEST LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
8	6	11	0	3	0	0	0	0	0	0	0
5	10	6	0	1	0	0	0	1	0	0	1
3	4	8	0	1	0	0	0	0	0	2	0
3	6	7	0	0	3	0	0	0	1	1	0

Truck Volumes	Auto Volumes	Totals	Truck Percentage
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I-10 WB RAMPS				
	Truck Volumes	Auto Volumes	Totals	Truck Percentage
EBL	5	32	37	14%
EBTH	8	26	34	24%
EBR	1	19	20	5%
WBL	7	176	183	4%
WBTH	0	39	39	1%
WBR	43	100	143	31%

MILLIKEN AVE				
	Truck Volumes	Auto Volumes	Totals	Truck Percentage
NBL	64	30	94	69%
NBTH	43	318	361	12%
NBR	33	52	85	39%
SBL	0	42	42	1%
SBTH	27	210	237	12%
SBR	24	119	143	17%



SUBJECT	BY	DATE	JOB NO.	SHEET	OF
TURN MOVEMENTS	TNM	9-Sep-20	BRTLDSXP-0003	1	OF 2

E/W STREET : I-10 EB RAMPS
N/S STREET : MILLIKEN AVE
CONDITION : AM PEAK HOUR

INTERSECTION : 16

CONDITION DIAGRAMS

EXISTING GEOMETRICS

PROPOSED GEOMETRICS

TURN MOVEMENTS

Condition	Existing Condition Traffic	Opening Year 2024 No Build Traffic	Opening Year 2024 Project Trips	Opening Year 2024 Build	Future Year 2045 No Build	Future Year 2045 Project	Future Year 2045 Build
	1.1	2.1		3.1	4.1		5.1

I-10 EB RAMPS

EB Left	272	338	36	374	341	90	431
EB Thru	0	0	0	0	0	0	0
EB Right	195	227	0	227	293	0	293
WB Left	0	0	0	0	0	0	0
WB Thru	0	0	0	0	0	0	0
WB Right	0	0	0	0	0	0	0

MILLIKEN AVE

NB Left	178	178	0	178	93	0	93
NB Thru	303	303	3	306	235	6	241
NB Right	0	0	0	0	0	0	0
SB Left	0	0	0	0	0	0	0
SB Thru	356	413	1	414	1109	3	1112
SB Right	114	133	15	148	200	119	319
TOTALS	1418	1592	55	1647	2271	218	2489



SUBJECT	BY	DATE	JOB NO.	SHEET OF
TURN VOLUME SUMMARY	TNM	9/9/2020	BRTLDSXP-0003	2 OF 2

E/W STREET : I-10 EB RAMPS N/S STREET : MILLIKEN AVE
CONDITION : AM PEAK HOUR PHF : 0.85

NORTH LEG											
AUTOS			2 AXLE			3 AXLE			4(+)-AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
16	49	0	1	0	0	0	0	0	9	20	0
13	92	0	1	0	0	0	0	0	21	22	0
10	24	0	0	0	0	0	0	0	21	11	0
7	123	0	0	0	0	0	0	0	15	15	0

SOUTH LEG											
AUTOS			2 AXLE			3 AXLE			4(+)-AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
0	109	5	0	3	0	0	0	0	0	22	27
0	82	1	0	0	0	0	1	0	0	14	20
0	26	89	0	0	0	0	0	0	0	10	15
0	24	6	0	0	0	0	0	0	0	12	15

EAST LEG											
AUTOS			2 AXLE			3 AXLE			4(+)-AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0

WEST LEG											
AUTOS			2 AXLE			3 AXLE			4(+)-AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
37	0	103	0	0	0	0	0	0	5	0	7
33	0	106	0	0	0	0	0	0	5	0	7
81	0	16	0	0	0	0	0	0	3	0	5
26	0	20	0	0	0	0	0	0	5	0	8

Truck Volumes	Auto Volumes	Totals	Truck Percentage
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I-10 EB RAMPS				
EBL	27	245	272	10%
EBTH	0	0	0	0%
EBR	18	177	195	10%
WBL	0	0	0	0%
WBTH	0	0	0	0%
WBR	0	0	0	0%

MILLIKEN AVE				
NBL	77	101	178	44%
NBTH	62	241	303	21%
NBR	0	0	0	0%
SBL	0	0	0	0%
SBTH	68	288	356	20%
SBR	68	46	114	60%

Step 1:

WEEKDAY AM

Location				2016 Peak Period	2040 Peak Period
1	I-15 Ramps/Highway 395 at Joshua St	APPROACH	NB	1,594	869
			SB	2,513	5,436
			EB	250	358
			WB	1,322	1,410
	DEPARTURE	NB	2,838	4,204	
		SB	2,263	1,410	
		EB	260	1,852	
		WB	318	407	
2	I-15 SB Off-ramp at Joshua St	APPROACH	NB	0	0
			SB	203	201
			EB	318	407
			WB	1,145	1,252
	DEPARTURE	NB	0	0	
		SB	0	0	
		EB	1,322	1,410	
		WB	343	450	
3	I-15 NB On-ramp at Joshua Street	APPROACH	NB	0	0
			SB	0	0
			EB	343	450
			WB	1,292	1,317
	DEPARTURE	NB	0	0	
		SB	281	147	
		EB	1,145	1,252	
		WB	209	367	
4	Mariposa Rd at Joshua St	APPROACH	NB	644	580
			SB	735	1,595
			EB	209	367
			WB	0	0
	DEPARTURE	NB	187	1,071	
		SB	108	156	
		EB	1,292	1,317	
		WB	0	0	
5	I-15 SB Ramps at Foothill Blvd (Rt 66)	APPROACH	NB	0	0
			SB	2,348	2,363
			EB	4,900	5,081
			WB	5,457	5,908
	DEPARTURE	NB	2,222	1,858	
		SB	0	0	
		EB	7,640	8,012	
		WB	2,843	3,462	
6	I-15 NB Ramps at Foothill Blvd (Rt 66)	APPROACH	NB	4,813	4,788
			SB	0	0
			EB	2,203	2,758
			WB	4,071	4,672
	DEPARTURE	NB	0	0	
		SB	343	377	
		EB	7,588	7,356	
		WB	3,499	4,863	
7	I-15 SB Ramps/Ontario Mills Dr at Fourth Street	APPROACH	NB	52	50
			SB	1,987	2,264
			EB	2,121	2,969
			WB	4,028	4,531
	DEPARTURE	NB	134	145	
		SB	795	1,234	
		EB	5,605	6,216	
		WB	1,655	2,220	
8	I-15 NB Ramps at Fourth Street	APPROACH	NB	0	0
			SB	2,538	2,533
			EB	1,655	2,220
			WB	2,144	2,662
	DEPARTURE	NB	0	0	
		SB	453	496	
		EB	4,028	4,531	
		WB	1,856	2,388	

Step 1:

WEEKDAY AM

Location			2016 Peak Period	2040 Peak Period	
9	I-210 WB Ramps at Milliken Ave	APPROACH	NB	1,612	1,163
			SB	1,402	1,916
			EB	0	0
			WB	881	639
	DEPARTURE	NB	1,335	1,740	
		SB	1,755	1,286	
		EB	804	692	
		WB	0	0	
10	I-210 EB Ramps at Milliken Ave	APPROACH	NB	1,891	1,448
			SB	1,335	1,740
			EB	1,132	1,113
			WB	0	0
	DEPARTURE	NB	2,111	2,392	
		SB	1,612	1,163	
		EB	0	0	
		WB	635	746	
11	Milliken Ave at Foothill Blvd (Rt 66)	APPROACH	NB	1,317	1,782
			SB	3,998	4,483
			EB	1,939	2,559
			WB	3,934	4,610
	DEPARTURE	NB	4,223	4,848	
		SB	1,390	1,617	
		EB	3,498	4,013	
		WB	2,077	2,956	
12	Milliken Ave at Fourth Street	APPROACH	NB	4,223	4,313
			SB	3,255	4,392
			EB	1,617	2,360
			WB	3,932	4,457
	DEPARTURE	NB	2,702	4,331	
		SB	4,032	3,069	
		EB	4,048	4,085	
		WB	5,721	4,037	
13	Milliken Ave at Azusa Ct	APPROACH	NB	2,637	2,897
			SB	3,690	3,913
			EB	5	5
			WB	0	0
	DEPARTURE	NB	3,690	3,913	
		SB	2,637	2,897	
		EB	5	5	
		WB	0	0	
14	Milliken Ave at 7th St	APPROACH	NB	2,453	2,405
			SB	3,690	3,913
			EB	154	478
			WB	39	39
	DEPARTURE	NB	3,017	3,243	
		SB	2,637	2,897	
		EB	505	578	
		WB	131	117	
15	I-10 WB Ramps at Milliken Ave	APPROACH	NB	5,292	4,759
			SB	2,055	2,910
			EB	0	0
			WB	1,356	1,690
	DEPARTURE	NB	4,069	5,650	
		SB	4,409	4,299	
		EB	0	0	
		WB	2,206	2,217	
16	I-10 EB Ramps at Milliken Ave	APPROACH	NB	3,482	3,328
			SB	4,069	5,650
			EB	3,426	3,564
			WB	0	0
	DEPARTURE	NB	4,897	7,034	
		SB	5,292	4,759	
		EB	790	749	
		WB	0	0	

Intersection Volume Development

WEEKDAY AM

Step 2:

Peak period to peak hour: 0.38

Location			2016 Peak Hour	2040 Peak Hour	
1	I-15 Ramps/Highway 395 at Joshua St	APPROACH	NB	606	254
			SB	955	2,066
			EB	95	136
			WB	503	536
	DEPARTURE	NB	1,078	1,598	
		SB	860	536	
		EB	99	704	
		WB	121	155	
2	I-15 SB Off-ramp at Joshua St	APPROACH	NB	0	0
			SB	77	76
			EB	121	155
			WB	435	476
	DEPARTURE	NB	0	0	
		SB	0	0	
		EB	503	536	
		WB	130	171	
3	I-15 NB On-ramp at Joshua Street	APPROACH	NB	0	0
			SB	0	0
			EB	130	171
			WB	491	500
	DEPARTURE	NB	0	0	
		SB	107	56	
		EB	435	476	
		WB	79	140	
4	Mariposa Rd at Joshua St	APPROACH	NB	245	221
			SB	279	606
			EB	79	140
			WB	0	0
	DEPARTURE	NB	71	407	
		SB	41	59	
		EB	491	500	
		WB	0	0	
5	I-15 SB Ramps at Foothill Blvd (Rt 66)	APPROACH	NB	0	0
			SB	892	898
			EB	1,862	1,923
			WB	2,074	2,245
	DEPARTURE	NB	845	706	
		SB	0	0	
		EB	2,903	3,045	
		WB	1,080	1,316	
6	I-15 NB Ramps at Foothill Blvd (Rt 66)	APPROACH	NB	1,829	1,819
			SB	0	0
			EB	837	1,048
			WB	1,547	1,775
	DEPARTURE	NB	0	0	
		SB	130	143	
		EB	2,884	2,795	
		WB	1,330	1,848	
7	I-15 SB Ramps/Ontario Mills Dr at Fourth Street	APPROACH	NB	20	19
			SB	755	860
			EB	806	1,128
			WB	1,531	1,722
	DEPARTURE	NB	51	55	
		SB	302	469	
		EB	2,130	2,362	
		WB	629	844	
8	I-15 NB Ramps at Fourth Street	APPROACH	NB	0	0
			SB	965	962
			EB	629	844
			WB	815	1,012
	DEPARTURE	NB	0	0	
		SB	172	189	
		EB	1,531	1,722	
		WB	705	907	

Intersection Volume Development

WEEKDAY AM

Step 2:

Peak period to peak hour: 0.38

Location			2016 Peak Hour	2040 Peak Hour	
9	I-210 WB Ramps at Milliken Ave	APPROACH	NB	613	442
			SB	533	728
			EB	0	0
			WB	335	243
	DEPARTURE	NB	507	861	
		SB	667	489	
		EB	306	263	
WB		0	0		
10	I-210 EB Ramps at Milliken Ave	APPROACH	NB	719	550
			SB	507	861
			EB	430	423
			WB	0	0
	DEPARTURE	NB	802	909	
		SB	613	442	
		EB	0	0	
WB		241	284		
11	Milliken Ave at Foothill Blvd (Rt 66)	APPROACH	NB	500	677
			SB	1,519	1,703
			EB	737	972
			WB	1,495	1,752
	DEPARTURE	NB	1,605	1,842	
		SB	528	614	
		EB	1,329	1,525	
WB		789	1,123		
12	Milliken Ave at Fourth Street	APPROACH	NB	1,805	1,639
			SB	1,237	1,669
			EB	614	897
			WB	1,494	1,694
	DEPARTURE	NB	1,027	1,646	
		SB	1,532	1,166	
		EB	1,538	1,552	
WB		2,174	1,534		
13	Milliken Ave at Azusa Ct	APPROACH	NB	1,002	1,101
			SB	1,402	1,487
			EB	2	2
			WB	0	0
	DEPARTURE	NB	1,402	1,487	
		SB	1,002	1,101	
		EB	2	2	
WB		0	0		
14	Milliken Ave at 7th St	APPROACH	NB	932	914
			SB	1,402	1,487
			EB	59	181
			WB	15	15
	DEPARTURE	NB	1,146	1,232	
		SB	1,002	1,101	
		EB	192	220	
WB		50	44		
15	I-10 WB Ramps at Milliken Ave	APPROACH	NB	2,011	1,808
			SB	781	1,106
			EB	0	0
			WB	515	642
	DEPARTURE	NB	1,546	2,147	
		SB	1,675	1,634	
		EB	0	0	
WB		838	843		
16	I-10 EB Ramps at Milliken Ave	APPROACH	NB	1,323	1,265
			SB	1,546	2,147
			EB	1,302	1,354
			WB	0	0
	DEPARTURE	NB	1,861	2,873	
		SB	2,011	1,808	
		EB	300	285	
WB		0	0		

Step 3:

WEEKDAY AM

Location			a	b	c		
			Difference 2040-2016	Annual Growth	Growth 2020 to 2045	Existing 2020	2045 adjusted
1 I-15 Ramps/Highway 395 at Joshua St	APPROACH	NB	-351	0	0	456	456
		SB	1,111	47	1175	887	2,062
		EB	41	2	50	24	74
		WB	33	2	50	221	271
	DEPARTURE	NB	519	22	550	943	1,493
		SB	-324	0	0	495	495
		EB	605	26	650	21	671
		WB	34	2	50	129	179
2 I-15 SB Off-ramp at Joshua St	APPROACH	NB	0	0	0	0	0
		SB	-1	0	0	92	92
		EB	34	2	50	87	137
		WB	41	2	50	81	131
	DEPARTURE	NB	0	0	0	0	0
		SB	0	0	0	0	0
		EB	33	2	50	168	218
		WB	41	2	50	92	142
3 I-15 NB On-ramp at Joshua Street	APPROACH	NB	0	0	0	0	0
		SB	0	0	0	0	0
		EB	41	2	50	91	141
		WB	9	1	25	108	131
	DEPARTURE	NB	0	0	0	0	0
		SB	-51	0	0	56	56
		EB	41	2	50	84	134
		WB	60	3	75	57	132
4 Mariposa Rd at Joshua St	APPROACH	NB	-24	0	0	84	84
		SB	327	14	350	64	414
		EB	60	3	75	53	128
		WB	0	0	0	0	0
	DEPARTURE	NB	336	14	350	56	406
		SB	18	1	25	40	65
		EB	9	1	25	105	130
		WB	0	0	0	0	0
5 I-15 SB Ramps at Foothill Blvd (Rt 66)	APPROACH	NB	0	0	0	0	0
		SB	6	1	25	625	650
		EB	61	3	75	1,114	1,189
		WB	171	8	200	1,603	1,803
	DEPARTURE	NB	-138	0	0	692	692
		SB	0	0	0	532	532
		EB	142	6	150	1,558	1,708
		WB	235	10	250	560	810
6 I-15 NB Ramps at Foothill Blvd (Rt 66)	APPROACH	NB	-9	0	0	1,128	1,128
		SB	0	0	0	0	0
		EB	211	9	225	910	1,135
		WB	229	10	250	567	817
	DEPARTURE	NB	0	0	0	125	125
		SB	13	1	25	175	200
		EB	-88	0	0	1,142	1,142
		WB	518	22	550	1,163	1,713
7 I-15 SB Ramps/Ontario Mills Dr at Fourth Street	APPROACH	NB	-1	0	0	167	167
		SB	105	5	125	570	695
		EB	322	14	350	427	777
		WB	191	8	200	1,059	1,259
	DEPARTURE	NB	4	1	25	266	291
		SB	167	7	175	402	577
		EB	232	10	250	1,193	1,443
		WB	215	9	225	362	587
8 I-15 NB Ramps at Fourth Street	APPROACH	NB	0	0	0	97	97
		SB	-2	0	0	1,134	1,134
		EB	215	9	225	359	584
		WB	197	9	225	298	523
	DEPARTURE	NB	0	0	0	90	90
		SB	17	1	25	190	215
		EB	191	8	200	1,080	1,280
		WB	202	9	225	520	745

Step 3:

WEEKDAY AM

Location			a	b	c		
			Difference 2040-2016	Annual Growth	Growth 2020 to 2045	Existing 2020	2045 adjusted
9 I-210 WB Ramps at Milliken Ave	APPROACH	NB	-171	0	0	449	449
		SB	195	9	225	464	689
		EB	0	0	0	0	0
		WB	-92	0	0	170	170
	DEPARTURE	NB	154	7	175	493	668
		SB	-178	0	0	260	260
		EB	-43	0	0	330	330
		WB	0	0	0	0	0
10 I-210 EB Ramps at Milliken Ave	APPROACH	NB	-168	0	0	619	619
		SB	154	7	175	500	675
		EB	-7	0	0	203	203
		WB	0	0	0	0	0
	DEPARTURE	NB	107	5	125	542	667
		SB	-171	0	0	448	448
		EB	0	0	0	0	0
		WB	42	2	50	332	382
11 Milliken Ave at Foothill Blvd (Rt 66)	APPROACH	NB	177	8	200	253	453
		SB	184	8	200	534	734
		EB	236	10	250	394	644
		WB	257	11	275	741	1,018
	DEPARTURE	NB	237	10	250	462	712
		SB	86	4	100	234	334
		EB	196	9	225	751	976
		WB	334	14	350	475	825
12 Milliken Ave at Fourth Street	APPROACH	NB	34	2	50	598	648
		SB	432	19	475	560	1,035
		EB	282	12	300	424	724
		WB	199	9	225	593	818
	DEPARTURE	NB	619	26	650	718	1,368
		SB	-366	0	0	613	613
		EB	14	1	25	435	460
		WB	-640	0	0	409	409
13 Milliken Ave at Azusa Ct	APPROACH	NB	99	5	125	491	616
		SB	85	4	100	599	699
		EB	0	0	0	2	2
		WB	0	0	0	0	0
	DEPARTURE	NB	85	4	100	567	667
		SB	99	5	125	491	616
		EB	0	0	0	34	34
		WB	0	0	0	0	0
14 Milliken Ave at 7th St	APPROACH	NB	-18	0	0	543	543
		SB	85	4	100	569	669
		EB	123	6	150	38	188
		WB	0	0	0	15	15
	DEPARTURE	NB	86	4	100	577	677
		SB	99	5	125	492	617
		EB	28	2	50	64	114
		WB	-5	0	0	32	32
15 I-10 WB Ramps at Milliken Ave	APPROACH	NB	-203	0	0	540	540
		SB	325	14	350	422	772
		EB	0	0	0	91	91
		WB	127	6	150	365	515
	DEPARTURE	NB	601	26	650	440	1,090
		SB	-42	0	0	541	541
		EB	0	0	0	276	276
		WB	4	1	25	161	186
16 I-10 EB Ramps at Milliken Ave	APPROACH	NB	-59	0	0	481	481
		SB	601	26	650	470	1,120
		EB	52	3	75	467	542
		WB	0	0	0	0	0
	DEPARTURE	NB	812	34	850	551	1,401
		SB	-203	0	0	575	575
		EB	-15	0	0	292	292
		WB	0	0	0	0	0

Appendix A.1.2 - Intersection Forecasting Worksheets Weekday PM



SUBJECT	BY	DATE	JOB NO.	SHEET	OF
TURN MOVEMENTS	TNM	9-Sep-20	BRTLDSXP-0003	1	OF 2

E/W STREET : JOSHUA ST
N/S STREET : HIGHWAY 395
CONDITION : PM PEAK HOUR

INTERSECTION : 1

TURN MOVEMENTS

Condition	Existing Condition Traffic	Opening Year 2024 No Build Traffic	Opening Year 2024 Project Trips	Opening Year 2024 Build Traffic	Future Year 2045 No Build Traffic	Future Year 2045 Project Trips	Future Year 2045 Build Traffic
	1.2	2.2		3.2	4.2		5.2

JOSHUA ST

EB Left	24	28	0	28	526	0	526
EB Thru	71	83	0	83	154	0	154
EB Right	13	13	0	13	49	0	49
WB Left	32	32	0	32	33	0	33
WB Thru	15	18	0	18	74	0	74
WB Right	82	96	26	122	484	76	560

HIGHWAY 395

NB Left	16	20	0	20	19	0	19
NB Thru	961	1,115	0	1,115	1,309	0	1,309
NB Right	66	66	0	66	9	0	9
SB Left	54	54	8	62	29	19	48
SB Thru	573	573	0	573	537	0	537
SB Right	18	22	0	22	82	0	82
TOTALS	1,925	2,120	34	2,154	3,305	95	3,400

SUBJECT	BY	DATE	JOB NO.	SHEET	OF
TURN VOLUME SUMMARY	TNM	9-Sep-20	BRTLDSXP-0003	2	OF 2

E/W STREET : JOSHUA ST N/S STREET : HIGHWAY 395
CONDITION : PM PEAK HOUR PHF : 0.90

NORTH LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
4	139	9	0	0	0	0	0	0	0	27	5
8	112	17	0	1	0	0	1	0	0	9	1
1	127	9	1	2	0	0	1	0	0	18	3
4	121	7	0	3	0	0	0	0	0	12	3

SOUTH LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
15	202	5	0	0	0	0	0	0	1	19	0
20	223	5	0	1	0	0	0	0	4	8	0
11	254	4	1	0	0	0	1	0	3	12	0
6	232	2	0	0	0	0	0	0	5	9	0

EAST LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
15	5	8	0	0	0	0	0	0	3	0	0
13	1	2	0	0	0	0	0	1	3	0	1
23	5	14	0	0	0	1	0	0	5	0	1
15	4	4	0	0	0	0	0	0	4	0	1

WEST LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
5	15	7	0	0	0	0	0	0	0	0	0
2	19	6	0	0	0	0	0	0	0	0	0
4	24	7	0	0	0	0	0	0	0	0	0
2	13	4	0	0	0	0	0	0	0	0	0

	Truck Volumes	Auto Volumes	Totals	Truck Percentage
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JOSHUA ST

EBL	0	24	24	1%
EBTH	0	71	71	1%
EBR	0	13	13	1%
WBL	4	28	32	13%
WBTH	0	15	15	1%
WBR	16	66	82	20%

HIGHWAY 395

NBL	0	16	16	1%
NBTH	50	911	961	6%
NBR	14	52	66	22%
SBL	12	42	54	23%
SBTH	74	499	573	13%
SBR	1	17	18	6%



SUBJECT	BY	DATE	JOB NO.	SHEET	OF
TURN MOVEMENTS	TNM	9-Sep-20	BRTLDSXP-0003	1	OF 2

E/W STREET : JOSHUA ST
N/S STREET : I-15 SB RAMP
CONDITION : PM PEAK HOUR

INTERSECTION : 2

TURN MOVEMENTS

Condition	Existing Condition Traffic	Opening Year 2024 No Build Traffic	Opening Year 2024 Project Trips	Opening Year 2024 Build Traffic	Future Year 2045 No Build Traffic	Future Year 2045 Project Trips	Future Year 2045 Build Traffic
	1.2	2.2		3.2	4.2		5.2

JOSHUA ST

EB Left	0	0	0	0	0	0	0
EB Thru	173	173	0	173	170	0	170
EB Right	0	0	0	0	0	0	0
WB Left	0	0	0	0	0	0	0
WB Thru	72	84	26	110	366	76	442
WB Right	0	0	0	0	0	0	0

I-15 SB RAMP

NB Left	0	0	0	0	0	0	0
NB Thru	0	0	0	0	0	0	0
NB Right	0	0	0	0	0	0	0
SB Left	5	6	8	14	9	19	28
SB Thru	0	0	0	0	0	0	0
SB Right	61	74	0	74	193	0	193
TOTALS	311	337	34	371	738	95	833



SUBJECT	BY	DATE	JOB NO.	SHEET OF
TURN VOLUME SUMMARY	TNM	9-Sep-20	BRTLDSXP-0003	2 OF 2

E/W STREET : JOSHUA ST N/S STREET : I-15 SB RAMP
CONDITION : PM PEAK HOUR PHF : 0.98

NORTH LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
11	0	3	0	0	0	0	0	0	4	0	0
11	0	0	1	0	0	0	0	0	5	0	0
7	0	0	0	0	0	1	0	0	1	0	0
19	0	2	1	0	0	0	0	0	0	0	0

SOUTH LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0

EAST LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
0	14	0	0	1	0	0	0	0	0	5	0
0	13	0	0	1	0	0	0	0	0	3	0
0	21	0	0	0	0	0	0	0	0	1	0
0	8	0	0	3	0	0	0	0	0	2	0

WEST LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
0	29	0	0	1	0	0	1	0	0	7	0
0	30	0	0	0	0	0	0	0	0	14	0
0	40	0	0	0	0	0	0	0	0	7	0
0	32	0	0	1	0	0	1	0	0	10	0

	Truck Volumes	Auto Volumes	Totals	Truck Percentage
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JOSHUA ST				
EBL	0	0	0	0%
EBTH	42	131	173	25%
EBR	0	0	0	0%
WBL	0	0	0	0%
WBTH	16	56	72	23%
WBR	0	0	0	0%

I-15 SB RAMP				
NBL	0	0	0	0%
NBTH	0	0	0	0%
NBR	0	0	0	0%
SBL	0	5	5	1%
SBTH	0	0	0	0%
SBR	13	48	61	22%



SUBJECT	BY	DATE	JOB NO.	SHEET	OF
TURN MOVEMENTS	TNM	9-Sep-20	BRTLDSXP-0003	1	OF 2

E/W STREET : JOSHUA ST
N/S STREET : I-15 NB RAMP
CONDITION : PM PEAK HOUR

INTERSECTION : 3

TURN MOVEMENTS

Condition	Existing Condition Traffic	Opening Year 2024 No Build Traffic	Opening Year 2024 Project Trips	Opening Year 2024 Build Traffic	Future Year 2045 No Build Traffic	Future Year 2045 Project Trips	Future Year 2045 Build Traffic
	1.2	2.2		3.2	4.2		5.2

JOSHUA ST

EB Left	100	116	26	142	93	76	169
EB Thru	80	93	22	115	86	65	151
EB Right	0	0	0	0	0	0	0
WB Left	0	0	0	0	0	0	0
WB Thru	72	84	7	91	366	65	431
WB Right	17	20	0	20	31	0	31

I-15 NB RAMP

NB Left	0	0	0	0	0	0	0
NB Thru	0	0	0	0	0	0	0
NB Right	0	0	0	0	0	0	0
SB Left	0	0	0	0	0	0	0
SB Thru	0	0	0	0	0	0	0
SB Right	0	0	0	0	0	0	0
TOTALS	269	313	55	368	576	206	782



SUBJECT	BY	DATE	JOB NO.	SHEET OF
TURN VOLUME SUMMARY	TNM	9-Sep-20	BRTLDSXP-0003	2 OF 2

E/W STREET : JOSHUA ST N/S STREET : I-15 NB RAMP
CONDITION : PM PEAK HOUR PHF : 0.95

NORTH LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0

SOUTH LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0

EAST LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
1	15	0	0	1	0	1	0	0	1	5	0
2	13	0	2	1	0	0	0	0	1	3	0
1	18	0	0	1	0	1	0	0	1	2	0
6	10	0	0	2	0	0	0	0	0	1	0

WEST LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
0	10	22	0	0	1	0	1	0	0	5	2
0	17	13	0	0	0	0	0	0	0	3	11
0	20	20	0	0	0	0	0	0	0	3	4
0	15	21	0	1	0	0	1	0	0	4	6

Truck Volumes	Auto Volumes	Totals	Truck Percentage
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JOSHUA ST			
	Truck Volumes	Auto Volumes	Truck Percentage
EBL	24	76	24%
EBTH	18	62	23%
EBR	0	0	0%
WBL	0	0	0%
WBTH	16	56	23%
WBR	7	10	42%

I-15 NB RAMP			
	Truck Volumes	Auto Volumes	Truck Percentage
NBL	0	0	0%
NBTH	0	0	0%
NBR	0	0	0%
SBL	0	0	0%
SBTH	0	0	0%
SBR	0	0	0%



SUBJECT	BY	DATE	JOB NO.	SHEET	OF
TURN MOVEMENTS	TNM	9-Sep-20	BRTLDSXP-0003	1	OF 2

E/W STREET : JOSHUA ST
N/S STREET : MARIPOSA
CONDITION : PM PEAK HOUR

INTERSECTION : 4

TURN MOVEMENTS

Condition	Existing Condition Traffic	Opening Year 2024 No Build Traffic	Opening Year 2024 Project Trips	Opening Year 2024 Build Traffic	Future Year 2045 No Build Traffic	Future Year 2045 Project Trips	Future Year 2045 Build Traffic
	1.2	2.2		3.2	4.2		5.2

JOSHUA ST

EB Left	39	47	15	62	31	43	74
EB Thru	0	0	0	0	0	0	0
EB Right	42	49	8	57	56	22	78
WB Left	0	0	0	0	0	0	0
WB Thru	0	0	0	0	0	0	0
WB Right	0	0	0	0	0	0	0

MARIPOSA

NB Left	57	67	3	70	356	6	362
NB Thru	25	29	0	29	337	0	337
NB Right	0	0	0	0	0	0	0
SB Left	0	0	0	0	0	0	0
SB Thru	24	28	0	28	92	0	92
SB Right	44	52	5	57	46	11	57
TOTALS	231	272	31	303	918	82	1000



DAVID EVANS
AND ASSOCIATES INC.

SUBJECT	BY	DATE	JOB NO.	SHEET OF
TURN VOLUME SUMMARY	TNM	9-Sep-20	BRTLDSXP-0003	2 OF 2

E/W STREET : **JOSHUA ST** **N/S STREET** : **MARIPOSA**
CONDITION : **PM PEAK HOUR** **PHF** : **0.98**

NORTH LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
6	2	0	2	2	0	1	0	0	0	1	0
12	0	0	0	1	0	1	0	0	1	3	0
8	8	0	0	0	0	0	1	0	2	0	0
10	5	0	0	0	0	0	0	0	1	1	0

SOUTH LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
0	4	7	0	0	0	0	0	1	0	4	3
0	0	12	0	2	2	0	3	1	0	0	1
0	4	15	0	0	0	0	0	0	0	2	1
0	5	12	0	1	0	0	0	0	0	0	2

EAST LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0

WEST LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
13	0	10	0	0	0	0	0	0	1	0	1
10	0	7	0	0	0	0	0	0	0	0	1
8	0	9	0	0	0	0	0	0	1	0	0
7	0	11	0	0	0	0	0	0	2	0	0

Truck Volumes	Auto Volumes	Totals	Truck Percentage
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JOSHUA ST

EBL	2	37	39	6%
EBTH	0	0	0	0%
EBR	4	38	42	10%
WBL	0	0	0	0%
WBTH	0	0	0	0%
WBR	0	0	0	0%

MARIPOSA

NBL	11	46	57	20%
NBTH	12	13	25	48%
NBR	0	0	0	0%
SBL	0	0	0	0%
SBTH	9	15	24	38%
SBR	8	36	44	19%



SUBJECT	BY	DATE	JOB NO.	SHEET	OF
TURN MOVEMENTS	TNM	9-Sep-20	BRTLDSXP-0003	1	OF 2

E/W STREET : FOOTHILL BLVD

INTERSECTION : 5

N/S STREET : INTERSTATE 15 SB RAMPS

CONDITION : PM PEAK HOUR

TURN MOVEMENTS

Condition	Existing Condition Traffic	Opening	Opening	Opening	Future	Future	Future
		Year 2024 No Build Traffic	Year 2024 Project Trips	Year 2024 Build Traffic	Year 2045 No Build Traffic	Year 2045 Project Trips	Year 2045 Build Traffic
	1.2	2.2		3.2	4.2		5.2

FOOTHILL BLVD

EB Left	0	0	0	0	0	0	0
EB Thru	2270	2634	16	2650	2,602	39	2641
EB Right	879	879	0	879	879	0	879
WB Left	0	0	0	0	0	0	0
WB Thru	1831	2124	4	2128	2,018	9	2027
WB Right	469	469	0	469	469	0	469

INTERSTATE 15 SB RAMPS

NB Left	0	0	0	0	0	0	0
NB Thru	0	0	0	0	0	0	0
NB Right	0	0	0	0	0	0	0
SB Left	143	166	0	166	212	0	212
SB Thru	0	0	0	0	0	0	0
SB Right	417	484	18	502	506	48	554
TOTALS	6009	6756	38	6794	6686	96	6782



SUBJECT	BY	DATE	JOB NO.	SHEET	OF
TURN VOLUME SUMMARY	TNM	9/9/2020	BRTLDSXP-0003	2	OF 2

E/W STREET : FOOTHILL BLVD N/S STREET : INTERSTATE 15 SB RAMPS
CONDITION : PM PEAK HOUR PHF : 0.90

NORTH LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
101	0	37	1	0	0	0	0	1	4	0	0
128	0	35	0	0	0	0	0	0	3	0	1
81	0	35	1	0	0	4	0	1	2	0	3
81	0	28	4	0	0	4	0	0	3	0	2

SOUTH LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0

EAST LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
142	371	0	0	1	0	2	1	0	1	11	0
85	429	0	0	0	0	0	0	0	1	1	0
115	531	0	0	0	0	0	1	0	2	3	0
118	479	0	0	0	0	0	0	0	3	3	0

WEST LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
209	532	0	0	3	0	0	1	0	5	5	0
207	504	0	0	1	0	0	0	0	1	1	0
229	664	0	0	1	0	0	0	0	0	5	0
227	548	0	0	1	0	0	0	0	1	4	0

	Truck Volumes	Auto Volumes	Totals	Truck Percentage
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FOOTHILL BLVD

EBL	0	0	0	0%
EBTH	22	2248	2270	1%
EBR	7	872	879	1%
WBL	0	0	0	0%
WBTH	21	1810	1831	2%
WBR	9	460	469	2%

INTERSTATE 15 SB RAM

NBL	0	0	0	0%
NBTH	0	0	0	0%
NBR	0	0	0	0%
SBL	8	135	143	6%
SBTH	0	0	0	0%
SBR	26	391	417	7%



SUBJECT	BY	DATE	JOB NO.	SHEET	OF
TURN MOVEMENTS	TNM	9-Sep-20	BRTLDSXP-0003	1	OF 2

E/W STREET : FOOTHILL BLVD

INTERSECTION : 6

N/S STREET : INTERSTATE 15 NB RAMPS

CONDITION : PM PEAK HOUR

TURN MOVEMENTS

Condition	Existing Condition Traffic	Opening Year 2024 No Build Traffic	Opening Year 2024 Project Trips	Opening Year 2024 Build Traffic	Future Year 2045 No Build Traffic	Future Year 2045 Project Trips	Future Year 2045 Build Traffic
	1.2	2.2		3.2	4.2		5.2

FOOTHILL BLVD

EB Left	0	0	0	0	0	0	0
EB Thru	1097	1273	3	1276	2,479	6	2485
EB Right	208	208	13	221	335	33	368
WB Left	0	0	0	0	0	0	0
WB Thru	999	1199	4	1203	1,430	9	1439
WB Right	819	983	0	983	869	0	869

INTERSTATE 15 NB RAMPS

NB Left	743	892	0	892	1,058	0	1058
NB Thru	0	0	0	0	0	0	0
NB Right	395	474	0	474	627	0	627
SB Left	0	0	0	0	0	0	0
SB Thru	0	0	0	0	0	0	0
SB Right	0	0	0	0	0	0	0
TOTALS	4261	5029	20	5049	6798	48	6846



SUBJECT	BY	DATE	JOB NO.	SHEET	OF
TURN VOLUME SUMMARY	TNM	9/9/2020	BRTLDSXP-0003	2	OF 2

E/W STREET : FOOTHILL BLVD N/S STREET : INTERSTATE 15 NB RAMPS
CONDITION : PM PEAK HOUR PHF : 0.91

NORTH LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0

SOUTH LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
136	0	196	2	0	1	0	0	0	2	0	4
95	0	156	1	0	0	0	0	0	2	0	1
76	0	229	1	0	0	0	0	0	2	0	3
76	0	151	0	0	0	0	0	0	2	0	2

EAST LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
196	248	0	0	0	0	0	1	0	2	5	0
180	235	0	0	3	0	0	1	0	0	0	0
239	281	0	0	3	0	1	0	0	0	1	0
200	217	0	0	2	0	0	0	0	1	2	0

WEST LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
52	251	0	1	0	0	0	0	0	8	1	0
40	275	0	0	0	0	0	0	0	2	1	0
50	282	0	0	1	0	0	0	0	6	1	0
48	282	0	0	0	0	0	0	0	1	3	0

Truck Volumes	Auto Volumes	Totals	Truck Percentage
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FOOTHILL BLVD				
	Truck Volumes	Auto Volumes	Totals	Truck Percentage
EBL	0	0	0	0%
EBTH	7	1090	1097	1%
EBR	18	190	208	9%
WBL	0	0	0	0%
WBTH	18	981	999	2%
WBR	4	815	819	1%

INTERSTATE 15 NB RAM				
	Truck Volumes	Auto Volumes	Totals	Truck Percentage
NBL	11	732	743	2%
NBTH	0	0	0	0%
NBR	12	383	395	4%
SBL	0	0	0	0%
SBTH	0	0	0	0%
SBR	0	0	0	0%



SUBJECT	BY	DATE	JOB NO.	SHEET	OF
TURN MOVEMENTS	TNM	9-Sep-20	BRTLDSXP-0003	1	OF 2

E/W STREET : FOURTH STREET

INTERSECTION : 7

N/S STREET : INTERSTATE 15 SB RAMPS

CONDITION : PM PEAK HOUR

TURN MOVEMENTS

Condition	Existing Condition Traffic	Opening Year 2024 No Build Traffic	Opening Year 2024 Project Trips	Opening Year 2024 Build Traffic	Future Year 2045 No Build Traffic	Future Year 2045 Project Trips	Future Year 2045 Build Traffic
	1.2	2.2		3.2	4.2		5.2

FOURTH STREET

EB Left	514	658	6	664	488	15	503
EB Thru	857	995	2	997	1,308	3	1311
EB Right	52	67	0	67	56	0	56
WB Left	72	93	0	93	89	0	89
WB Thru	681	818	10	828	948	27	975
WB Right	204	262	0	262	223	0	223

INTERSTATE 15 SB RAMPS

NB Left	110	128	0	128	186	0	186
NB Thru	181	218	0	218	240	0	240
NB Right	36	42	0	42	77	0	77
SB Left	69	81	0	81	103	0	103
SB Thru	144	179	0	179	150	0	150
SB Right	344	400	0	400	405	0	405
TOTALS	3264	3941	18	3959	4273	45	4318



SUBJECT	BY	DATE	JOB NO.	SHEET	OF
TURN VOLUME SUMMARY	TNM	9/9/2020	BRTLDSXP-0003	2	OF 2

E/W STREET : FOURTH STREET N/S STREET : INTERSTATE 15 SB RAMPS
CONDITION : PM PEAK HOUR PHF : 0.99

NORTH LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
90	41	13	1	0	0	0	0	1	2	0	4
89	35	9	0	0	1	0	0	1	1	0	4
84	33	18	0	0	0	0	0	0	2	0	2
73	35	11	0	0	1	0	0	0	2	0	4

SOUTH LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
7	30	22	0	0	1	0	0	0	0	0	0
10	68	31	0	0	1	0	0	0	0	0	0
10	43	28	0	0	1	0	0	1	0	0	0
9	40	25	0	0	0	0	0	0	0	0	0

EAST LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
40	164	16	1	4	0	2	2	0	6	9	0
41	131	15	0	3	0	4	3	0	6	14	0
48	164	20	1	2	0	1	1	0	5	10	0
45	159	21	0	7	0	2	3	0	2	5	0

WEST LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
16	188	122	0	4	2	0	3	2	0	0	6
15	217	110	0	2	0	0	4	0	1	6	4
10	199	120	0	3	2	0	4	1	0	5	8
10	216	130	0	2	2	0	1	1	0	3	4

	Truck Volumes	Auto Volumes	Totals	Truck Percentage
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FOURTH STREET				
EBL	32	482	514	7%
EBTH	37	820	857	5%
EBR	1	51	52	2%
WBL	0	72	72	1%
WBTH	63	618	681	10%
WBR	30	174	204	15%

INTERSTATE 15 SB RAM				
NBL	4	106	110	4%
NBTH	0	181	181	1%
NBR	0	36	36	1%
SBL	18	51	69	27%
SBTH	0	144	144	1%
SBR	8	336	344	3%



SUBJECT	BY	DATE	JOB NO.	SHEET	OF
TURN MOVEMENTS	TNM	9-Sep-20	BRTLDSXP-0003	1	OF 2

E/W STREET : FOURTH STREET

INTERSECTION : 8

N/S STREET : INTERSTATE 15 NB RAMPS

CONDITION : PM PEAK HOUR

TURN MOVEMENTS

Condition	Existing Condition Traffic	Opening Year 2024 No Build Traffic	Opening Year 2024 Project Trips	Opening Year 2024 Build Traffic	Future Year 2045 No Build Traffic	Future Year 2045 Project Trips	Future Year 2045 Build Traffic
	1.2	2.2		3.2	4.2		5.2

FOURTH STREET

EB Left	526	611	0	611	699	0	699
EB Thru	391	454	2	456	726	3	729
EB Right	47	47	0	47	64	0	64
WB Left	30	30	0	30	21	0	21
WB Thru	403	403	2	405	460	5	465
WB Right	145	169	0	169	96	0	96

INTERSTATE 15 NB RAMPS

NB Left	47	57	0	57	60	0	60
NB Thru	58	58	0	58	43	0	43
NB Right	42	49	0	49	44	0	44
SB Left	123	143	0	143	145	0	145
SB Thru	37	43	0	43	32	0	32
SB Right	508	610	8	618	739	22	761
TOTALS	2357	2674	12	2686	3129	30	3159



SUBJECT	BY	DATE	JOB NO.	SHEET	OF
TURN VOLUME SUMMARY	TNM	9/9/2020	BRTLDSXP-0003	2	OF 2

E/W STREET : FOURTH STREET N/S STREET : INTERSTATE 15 NB RAMPS
CONDITION : PM PEAK HOUR PHF : 0.96

NORTH LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
113	4	13	1	1	1	1	0	0	8	0	12
105	17	35	0	0	1	1	0	0	9	0	0
120	10	12	2	0	3	0	0	0	8	0	7
135	5	30	2	0	3	1	0	0	2	0	6

SOUTH LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
15	15	7	0	0	1	0	0	0	0	0	0
12	11	13	0	0	0	0	0	0	0	0	0
7	25	11	0	0	0	1	0	0	0	0	1
6	7	13	1	0	0	0	0	1	0	0	0

EAST LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
33	102	10	0	3	0	0	3	0	1	7	0
51	68	3	1	3	0	0	6	1	6	11	0
26	99	6	0	1	0	1	3	1	2	6	0
20	78	9	0	5	0	2	3	0	2	5	0

WEST LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
12	73	115	0	4	0	0	4	0	0	9	0
13	91	137	0	3	0	0	5	0	0	8	2
13	88	123	0	2	0	0	4	0	1	7	0
6	80	149	0	3	0	0	1	0	2	9	0

Truck Volumes	Auto Volumes	Totals	Truck Percentage
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FOURTH STREET

EBL	2	524	526	1%
EBTH	59	332	391	16%
EBR	3	44	47	7%
WBL	2	28	30	7%
WBTH	56	347	403	14%
WBR	15	130	145	11%

INTERSTATE 15 NB RAM

NBL	3	44	47	7%
NBTH	0	58	58	1%
NBR	2	40	42	5%
SBL	33	90	123	27%
SBTH	1	36	37	3%
SBR	35	473	508	7%



SUBJECT	BY	DATE	JOB NO.	SHEET	OF
TURN MOVEMENTS	TNM	9-Sep-20	BRTLDSXP-0003	1	OF 2

E/W STREET : I-210 WB RAMPS

INTERSECTION : 9

N/S STREET : MILLIKEN AVE

CONDITION : PM PEAK HOUR

TURN MOVEMENTS

Condition	Existing Condition Traffic	Opening Year 2024 No Build Traffic	Opening Year 2024 Project Trips	Opening Year 2024 Build	Future Year 2045 No Build	Future Year 2045 Project	Future Year 2045 Build
	1.2	2.2		3.2	4.2		5.2

I-210 WB RAMPS

EB Left	0	0	0	0	0	0	0
EB Thru	0	0	0	0	0	0	0
EB Right	0	0	0	0	0	0	0
WB Left	178	178	4	182	167	9	176
WB Thru	7	7	0	7	7	0	7
WB Right	68	82	0	82	87	0	87

MILLIKEN AVE

NB Left	193	193	10	203	192	24	216
NB Thru	514	597	0	597	696	0	696
NB Right	0	0	0	0	0	0	0
SB Left	0	0	0	0	0	0	0
SB Thru	517	517	0	517	529	0	529
SB Right	73	73	0	73	75	0	75
TOTALS	1550	1647	14	1661	1753	33	1786



SUBJECT	BY	DATE	JOB NO.	SHEET	OF
TURN VOLUME SUMMARY	TNM	9-Sep-20	BRTLDSXP-0003	2	OF 2

E/W STREET : I-210 WB RAMPS
CONDITION : PM PEAK HOUR

N/S STREET : MILLIKEN AVE
PHF : 0.96

NORTH LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
20	136	0	1	0	0	0	0	0	0	0	0
17	129	0	0	1	0	0	0	0	0	0	0
15	132	0	0	1	0	0	0	0	0	0	0
19	118	0	1	0	0	0	0	0	0	0	0

SOUTH LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
0	113	40	0	0	3	0	0	1	0	0	1
0	139	46	0	0	2	0	0	0	0	1	2
0	141	47	0	0	1	0	0	0	0	0	3
0	118	46	0	1	0	0	0	0	0	1	1

EAST LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
19	4	41	1	0	1	0	0	1	0	0	3
12	3	44	1	0	2	2	0	1	0	0	2
12	0	37	0	0	1	1	0	1	0	0	1
20	0	38	0	0	2	0	0	0	0	0	3

WEST LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0

Truck Volumes	Auto Volumes	Totals	Truck Percentage
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I-210 WB RAMPS

EBL	0	0	0	0%
EBTH	0	0	0	0%
EBR	0	0	0	0%
WBL	18	160	178	11%
WBTH	0	7	7	1%
WBR	5	63	68	8%

MILLIKEN AVE

NBL	14	179	193	8%
NBTH	3	511	514	1%
NBR	0	0	0	0%
SBL	0	0	0	0%
SBTH	2	515	517	1%
SBR	2	71	73	3%



SUBJECT	BY	DATE	JOB NO.	SHEET	OF
TURN MOVEMENTS	TNM	9-Sep-20	BRTLDSXP-0003	1	OF 2

E/W STREET : FOOTHILL BLVD

INTERSECTION : 11

N/S STREET : MILLIKEN AVE

CONDITION : PM PEAK HOUR

TURN MOVEMENTS

Condition	Existing Condition Traffic	Opening Year 2024 No Build Traffic	Opening Year 2024 Project Trips	Opening Year 2024 Build	Future Year 2045 No Build	Future Year 2045 Project	Future Year 2045 Build
	1.2	2.2		3.2	4.2		5.2

FOOTHILL BLVD

EB Left	247	297	0	297	234	0	234
EB Thru	1291	1550	0	1550	1,590	0	1590
EB Right	106	140	5	145	96	13	109
WB Left	178	235	21	256	239	56	295
WB Thru	703	816	0	816	928	0	928
WB Right	101	122	0	122	143	0	143

MILLIKEN AVE

NB Left	221	257	4	261	234	9	243
NB Thru	558	648	12	660	630	30	660
NB Right	260	302	16	318	382	39	421
SB Left	133	155	0	155	163	0	163
SB Thru	243	243	16	259	218	43	261
SB Right	98	114	0	114	87	0	87
TOTALS	4139	4879	74	4953	4944	190	5134



SUBJECT	BY	DATE	JOB NO.	SHEET OF
TURN VOLUME SUMMARY	TNM	9/9/2020	BRTLDSXP-0003	2 OF 2

E/W STREET : FOOTHILL BLVD N/S STREET : MILLIKEN AVE
CONDITION : PM PEAK HOUR PHF : 0.91

NORTH LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
23	67	47	0	0	0	0	0	0	0	1	0
27	43	28	0	1	0	0	0	0	0	1	0
24	62	21	1	4	0	0	1	0	0	1	0
23	62	36	0	0	0	0	0	0	0	0	1

SOUTH LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
75	172	54	0	1	1	0	0	0	0	1	0
64	97	63	0	0	1	1	0	0	0	0	0
67	128	44	2	1	0	1	1	0	0	1	0
48	153	57	1	1	0	0	0	0	1	2	1

EAST LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
23	175	37	0	0	0	0	1	0	1	1	0
19	180	42	0	1	0	0	0	0	0	0	0
27	150	45	0	0	0	0	1	0	1	1	0
30	193	54	0	0	0	0	0	0	0	0	0

WEST LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
28	321	55	0	0	1	0	0	0	0	0	0
16	330	52	0	1	0	0	0	0	2	0	0
20	278	63	1	5	0	0	0	0	0	0	0
39	353	76	0	3	0	0	0	0	0	0	0

Truck Volumes	Auto Volumes	Totals	Truck Percentage
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FOOTHILL BLVD				
	Truck Volumes	Auto Volumes	Totals	Truck Percentage
EBL	1	246	247	1%
EBTH	9	1282	1291	1%
EBR	3	103	106	3%
WBL	0	178	178	1%
WBTH	5	698	703	1%
WBR	2	99	101	2%

MILLIKEN AVE				
	Truck Volumes	Auto Volumes	Totals	Truck Percentage
NBL	3	218	221	2%
NBTH	8	550	558	2%
NBR	6	254	260	3%
SBL	1	132	133	1%
SBTH	9	234	243	4%
SBR	1	97	98	2%



SUBJECT	BY	DATE	JOB NO.	SHEET	OF
TURN MOVEMENTS	TNM	9-Sep-20	BRTLDSXP-0003	1	OF 2

E/W STREET : 4TH ST
N/S STREET : MILLIKEN AVE
CONDITION : PM PEAK HOUR

INTERSECTION : 12

TURN MOVEMENTS

Condition	Existing Condition Traffic	Opening Year 2024 No Build Traffic	Opening Year 2024 Project Trips	Opening Year 2024 Build	Future Year 2045 No Build	Future Year 2045 Project	Future Year 2045 Build
	1.2	2.2		3.2	4.2		5.2

4TH ST

EB Left	197	229	4	233	274	6	280
EB Thru	559	649	0	649	931	0	931
EB Right	148	172	0	172	325	0	325
WB Left	254	295	0	295	350	0	350
WB Thru	431	518	0	518	514	0	514
WB Right	133	155	10	165	116	18	134

MILLIKEN AVE

NB Left	242	281	0	281	542	0	542
NB Thru	735	853	98	951	1,201	266	1467
NB Right	85	99	0	99	167	0	167
SB Left	222	258	8	266	169	18	187
SB Thru	668	668	74	742	671	186	857
SB Right	56	65	3	68	49	6	55
TOTALS	3730	4242	197	4439	5309	500	5809



SUBJECT	BY	DATE	JOB NO.	SHEET OF
TURN VOLUME SUMMARY	TNM	9/9/2020	BRTLDSXP-0003	2 OF 2

E/W STREET : **4TH ST** **N/S STREET** : **MILLIKEN AVE**
CONDITION : **PM PEAK HOUR** **PHF** : **0.98**

NORTH LEG												
AUTOS			2 AXLE			3 AXLE			4(+) AXLE			
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	
16	157	62	0	4	1	0	2	1	0	5	1	
13	147	58	1	3	0	0	1	0	0	9	2	
9	156	40	0	2	1	1	1	0	0	7	1	
16	161	54	0	3	0	0	1	0	0	9	1	

SOUTH LEG												
AUTOS			2 AXLE			3 AXLE			4(+) AXLE			
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	
21	168	51	1	5	0	2	3	0	0	6	0	
13	170	68	0	2	2	0	1	0	3	15	0	
25	156	61	1	5	0	1	0	0	0	15	0	
17	173	60	0	4	0	1	4	0	0	8	0	

EAST LEG												
AUTOS			2 AXLE			3 AXLE			4(+) AXLE			
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	
19	78	56	0	1	0	2	1	1	0	1	1	
35	109	66	2	1	2	0	0	0	1	2	0	
43	115	60	0	2	0	0	0	0	0	4	0	
30	112	68	0	1	0	0	1	0	1	3	0	

WEST LEG												
AUTOS			2 AXLE			3 AXLE			4(+) AXLE			
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	
41	137	56	0	2	0	1	1	0	0	2	0	
43	131	41	0	5	0	1	0	0	0	4	1	
32	139	50	1	3	0	0	0	0	0	2	0	
28	126	49	1	2	0	0	2	0	0	3	0	

	Truck Volumes	Auto Volumes	Totals	Truck Percentage
4TH ST				
EBL	1	196	197	1%
EBTH	26	533	559	5%
EBR	4	144	148	3%
WBL	4	250	254	2%
WBTH	17	414	431	4%
WBR	6	127	133	5%

MILLIKEN AVE				
NBL	2	240	242	1%
NBTH	68	667	735	10%
NBR	9	76	85	11%
SBL	8	214	222	4%
SBTH	47	621	668	8%
SBR	2	54	56	4%



SUBJECT	BY	DATE	JOB NO.	SHEET	OF
TURN MOVEMENTS	TNM	9-Sep-20	BRTLDSXP-0003	1	OF 2

E/W STREET : AZUSA CT
N/S STREET : MILLIKEN AVE
CONDITION : PM PEAK HOUR

INTERSECTION : 13

TURN MOVEMENTS

Condition	Existing Condition Traffic	Opening Year 2024 No Build Traffic	Opening Year 2024 Project Trips	Opening Year 2024 Build	Future Year 2045 No Build	Future Year 2045 Project	Future Year 2045 Build
	1.2	2.2		3.2	4.2		5.2

AZUSA CT

EB Left	0	0	0	0	0	0	0
EB Thru	0	0	0	0	0	0	0
EB Right	30	30	42	72	32	105	137
WB Left	0	0	0	0	0	0	0
WB Thru	0	0	0	0	0	0	0
WB Right	0	0	0	0	0	0	0

MILLIKEN AVE

NB Left	0	0	0	0	0	0	0
NB Thru	1441	1730	0	1730	1,616	0	1616
NB Right	0	0	0	0	0	0	0
SB Left	0	0	0	0	0	0	0
SB Thru	786	786	0	786	813	0	813
SB Right	26	26	32	58	26	86	112
TOTALS	2283	2572	74	2646	2487	191	2678



SUBJECT	BY	DATE	JOB NO.	SHEET	OF
TURN VOLUME SUMMARY	TNM	9-Sep-20	BRTLDSXP-0003	2	OF 2

E/W STREET : AZUSA CT N/S STREET : MILLIKEN AVE
CONDITION : PM PEAK HOUR PHF : 0.98

NORTH LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
6	202	0	0	3	0	0	2	0	0	6	0
9	183	0	0	1	0	0	0	0	0	4	0
5	196	0	0	0	0	0	2	0	1	11	0
5	164	0	0	2	0	0	4	0	0	6	0

SOUTH LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
0	332	0	0	3	0	0	3	0	0	4	0
0	351	0	0	1	0	0	0	0	0	5	0
0	332	0	0	6	0	0	3	0	0	4	0
0	386	0	0	2	0	0	4	0	0	5	0

EAST LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0

WEST LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
5	0	0	0	0	0	0	0	0	0	0	0
14	0	0	0	0	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0

Truck Volumes	Auto Volumes	Totals	Truck Percentage
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AZUSA CT

EBL	0	0	0	0%
EBTH	0	0	0	0%
EBR	0	30	30	1%
WBL	0	0	0	0%
WBTH	0	0	0	0%
WBR	0	0	0	0%

MILLIKEN AVE

NBL	0	0	0	0%
NBTH	40	1401	1441	3%
NBR	0	0	0	0%
SBL	0	0	0	0%
SBTH	41	745	786	6%
SBR	1	25	26	4%



SUBJECT	BY	DATE	JOB NO.	SHEET	OF
TURN MOVEMENTS	TNM	9-Sep-20	BRTLDSXP-0003	1	OF 2

E/W STREET : 7TH ST

INTERSECTION : 14

N/S STREET : MILLIKEN AVE

CONDITION : PM PEAK HOUR

TURN MOVEMENTS

Condition	Existing Condition Traffic	Opening Year 2024 No Build Traffic	Opening Year 2024 Project Trips	Opening Year 2024 Build	Future Year 2045 No Build	Future Year 2045 Project	Future Year 2045 Build
	1.2	2.2		3.2	4.2		5.2

7TH ST

EB Left	107	129	36	165	140	90	230
EB Thru	2	3	0	3	3	0	3
EB Right	42	51	42	93	44	105	149
WB Left	13	16	0	16	12	0	12
WB Thru	0	0	0	0	0	0	0
WB Right	19	19	0	19	22	0	22

MILLIKEN AVE

NB Left	38	45	110	155	136	300	436
NB Thru	1315	1526	0	1526	1,455	0	1455
NB Right	9	11	0	11	9	0	9
SB Left	7	7	0	7	8	0	8
SB Thru	800	800	55	855	800	150	950
SB Right	9	11	16	27	37	43	80
TOTALS	2361	2618	259	2877	2666	688	3354



SUBJECT	BY	DATE	JOB NO.	SHEET	OF
TURN MOVEMENTS	TNM	9-Sep-20	BRTLDSXP-0003	2	OF 2

E/W STREET : I-10 WB RAMPS

INTERSECTION : 15

N/S STREET : MILLIKEN AVE

CONDITION : PM PEAK HOUR

TURN MOVEMENTS

Condition	Existing Condition Traffic	Opening Year 2024 No Build Traffic	Opening Year 2024 Project Trips	Opening Year 2024 Build	Future Year 2045 No Build	Future Year 2045 Project	Future Year 2045 Build
	1.2	2.2		3.2	4.2		5.2

I-10 WB RAMPS

EB Left	136	158	32	190	115	86	201
EB Thru	157	157	0	157	188	0	188
EB Right	60	70	0	70	61	0	61
WB Left	560	650	0	650	631	0	631
WB Thru	204	204	0	204	163	0	163
WB Right	101	118	0	118	95	0	95

MILLIKEN AVE

NB Left	265	382	0	382	358	0	358
NB Thru	781	906	51	957	1235	137	1372
NB Right	204	237	0	237	459	0	459
SB Left	250	290	0	290	390	0	390
SB Thru	725	841	38	879	955	96	1051
SB Right	397	572	36	608	371	90	461
TOTALS	3840	4585	157	4742	5021	409	5430



SUBJECT	BY	DATE	JOB NO.	SHEET OF
TURN VOLUME SUMMARY	TNM	9-Sep-20	BRTLDSXP-0003	2 OF 2

E/W STREET : I-10 WB RAMPS N/S STREET : MILLIKEN AVE
CONDITION : PM PEAK HOUR PHF : 0.83

NORTH LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
79	192	83	0	2	0	0	0	0	9	18	0
89	113	52	1	1	0	0	0	0	3	18	0
76	177	48	0	0	0	0	0	0	8	4	0
132	196	67	0	1	0	0	0	0	0	3	0

SOUTH LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
41	150	58	0	5	0	0	1	0	6	6	4
29	146	57	2	4	0	0	0	0	4	7	9
21	199	63	0	3	0	1	5	0	14	16	2
69	222	52	0	1	2	0	1	1	17	15	17

EAST LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
2	25	123	1	0	0	1	1	0	16	0	8
14	104	82	1	0	0	0	0	0	5	0	3
18	34	165	0	0	0	0	0	0	4	0	1
17	40	176	2	0	0	0	0	2	20	0	0

WEST LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
30	27	22	0	0	0	0	1	0	0	0	1
11	37	34	0	0	0	0	1	1	0	0	0
10	41	38	0	0	0	0	0	0	0	1	0
9	48	38	0	0	1	0	0	0	0	1	1

Truck Volumes	Auto Volumes	Totals	Truck Percentage
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I-10 WB RAMPS

EBL	4	132	136	3%
EBTH	4	153	157	3%
EBR	0	60	60	1%
WBL	14	546	560	3%
WBTH	1	203	204	1%
WBR	50	51	101	50%

MILLIKEN AVE

NBL	35	230	265	14%
NBTH	64	717	781	9%
NBR	44	160	204	22%
SBL	0	250	250	1%
SBTH	47	678	725	7%
SBR	21	376	397	6%



SUBJECT	BY	DATE	JOB NO.	SHEET	OF
TURN MOVEMENTS	TNM	9-Sep-20	BRTLDSXP-0003	1	OF 2

E/W STREET : I-10 EB RAMPS
N/S STREET : MILLIKEN AVE
CONDITION : PM PEAK HOUR

INTERSECTION : 16

TURN MOVEMENTS

Condition	Existing Condition Traffic	Opening Year 2024 No Build Traffic	Opening Year 2024 Project Trips	Opening Year 2024 Build	Future Year 2045 No Build	Future Year 2045 Project	Future Year 2045 Build
	1.2	2.2		3.2	4.2		5.2

I-10 EB RAMPS

EB Left	292	339	48	387	410	129	539
EB Thru	0	0	0	0	0	0	0
EB Right	181	218	0	218	156	0	156
WB Left	0	0	0	0	0	0	0
WB Thru	0	0	0	0	0	0	0
WB Right	0	0	0	0	0	0	0

MILLIKEN AVE

NB Left	271	326	0	326	139	0	139
NB Thru	778	903	4	907	1641	9	1650
NB Right	0	0	0	0	0	0	0
SB Left	0	0	0	0	0	0	0
SB Thru	385	447	3	450	908	6	914
SB Right	388	466	36	502	738	90	828
TOTALS	2295	2699	91	2790	3992	234	4226



SUBJECT	BY	DATE	JOB NO.	SHEET OF
TURN VOLUME SUMMARY	TNM	9-Sep-20	BRTLDSXP-0003	2 OF 2

E/W STREET : I-10 EB RAMPS
CONDITION : PM PEAK HOUR

N/S STREET : MILLIKEN AVE
PHF : 0.97

NORTH LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
69	80	0	0	0	0	3	0	0	12	0	0
70	110	0	2	0	0	0	0	0	15	5	0
98	75	0	0	0	0	0	0	0	18	4	0
68	107	0	2	2	0	1	0	0	30	2	0

SOUTH LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
0	141	81	0	0	0	0	0	1	0	11	20
0	189	34	0	0	0	0	0	0	0	20	27
0	178	26	0	0	0	0	0	0	0	25	25
0	188	40	0	0	0	0	0	0	0	26	17

EAST LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0

WEST LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
44	0	91	0	0	1	0	0	0	9	0	0
91	0	28	0	0	0	0	0	0	2	0	0
8	0	90	6	0	0	0	0	0	5	0	4
15	0	74	0	0	0	0	0	0	1	0	4

Truck Volumes	Auto Volumes	Totals	Truck Percentage
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I-10 EB RAMPS

	Truck Volumes	Auto Volumes	Totals	Truck Percentage
EBL	9	283	292	4%
EBTH	0	0	0	0%
EBR	23	158	181	13%
WBL	0	0	0	0%
WBTH	0	0	0	0%
WBR	0	0	0	0%

MILLIKEN AVE

	Truck Volumes	Auto Volumes	Totals	Truck Percentage
NBL	90	181	271	34%
NBTH	82	696	778	11%
NBR	0	0	0	0%
SBL	0	0	0	0%
SBTH	13	372	385	4%
SBR	83	305	388	22%

Step 1:

WEEKDAY PM

Location				2016 Peak Period	2040 Peak Period
1	I-15 Ramps/Highway 395 at Joshua St	APPROACH	NB	3,847	4,313
			SB	3,279	3,261
			EB	928	2,866
			WB	577	1,987
		DEPARTURE	NB	2,311	2,043
			SB	3,763	8,020
			EB	390	757
			WB	1,967	1,587
2	I-15 SB Off-ramp at Joshua St	APPROACH	NB	0	0
			SB	421	846
			EB	1,967	1,587
			WB	317	1,241
		DEPARTURE	NB	0	0
			SB	0	0
			EB	577	1,987
			WB	2,128	1,707
3	I-15 NB On-ramp at Joshua Street	APPROACH	NB	0	0
			SB	0	0
			EB	2,128	1,707
			WB	326	1,297
		DEPARTURE	NB	0	0
			SB	181	56
			EB	317	1,241
			WB	1,956	1,707
4	Mariposa Rd at Joshua St	APPROACH	NB	304	2,458
			SB	267	517
			EB	1,956	1,707
			WB	0	0
		DEPARTURE	NB	797	1,037
			SB	1,405	2,353
			EB	326	1,297
			WB	0	0
5	I-15 SB Ramps at Foothill Blvd (Rt 66)	APPROACH	NB	0	0
			SB	1,497	1,936
			EB	11,648	12,444
			WB	5,170	5,755
		DEPARTURE	NB	4,124	3,887
			SB	0	0
			EB	6,426	7,355
			WB	7,764	9,092
6	I-15 NB Ramps at Foothill Blvd (Rt 66)	APPROACH	NB	5,869	6,649
			SB	0	0
			EB	4,411	5,784
			WB	5,002	5,296
		DEPARTURE	NB	0	0
			SB	2,056	2,214
			EB	7,601	7,761
			WB	7,680	9,968
7	I-15 SB Ramps/Ontario Mills Dr at Fourth Street	APPROACH	NB	173	722
			SB	1,468	1,728
			EB	7,551	9,006
			WB	3,871	4,820
		DEPARTURE	NB	120	169
			SB	2,837	2,936
			EB	4,376	5,682
			WB	5,731	7,489
8	I-15 NB Ramps at Fourth Street	APPROACH	NB	0	0
			SB	1,858	2,680
			EB	5,731	7,489
			WB	2,886	2,775
		DEPARTURE	NB	0	0
			SB	2,422	2,752
			EB	3,871	4,820
			WB	4,182	5,372

Step 1:

WEEKDAY PM

Location			2016 Peak Period	2040 Peak Period	
9	I-210 WB Ramps at Milliken Ave	APPROACH	NB	3,261	3,726
			SB	2,070	1,426
			EB	0	0
			WB	1,182	1,112
	DEPARTURE	NB	2,393	1,731	
		SB	2,598	3,205	
		EB	1,521	1,328	
		WB	0	0	
10	I-210 EB Ramps at Milliken Ave	APPROACH	NB	3,095	3,352
			SB	2,393	1,731
			EB	1,335	1,585
			WB	0	0
	DEPARTURE	NB	2,602	2,215	
		SB	3,261	3,726	
		EB	0	0	
		WB	961	727	
11	Milliken Ave at Foothill Blvd (Rt 66)	APPROACH	NB	6,294	7,044
			SB	3,035	2,773
			EB	5,234	6,180
			WB	3,351	4,491
	DEPARTURE	NB	2,904	2,948	
		SB	6,101	6,413	
		EB	3,277	4,029	
		WB	5,633	7,097	
12	Milliken Ave at Fourth Street	APPROACH	NB	5,498	8,819
			SB	5,731	4,460
			EB	5,138	7,606
			WB	5,256	5,962
	DEPARTURE	NB	5,977	6,904	
		SB	5,877	7,671	
		EB	4,048	5,255	
		WB	5,721	7,017	
13	Milliken Ave at Azusa Ct	APPROACH	NB	5,928	6,457
			SB	4,425	4,139
			EB	7	7
			WB	0	0
	DEPARTURE	NB	4,425	4,139	
		SB	5,928	6,457	
		EB	7	7	
		WB	0	0	
14	Milliken Ave at 7th St	APPROACH	NB	5,062	5,557
			SB	4,425	4,140
			EB	707	785
			WB	173	157
	DEPARTURE	NB	4,045	3,379	
		SB	5,928	6,457	
		EB	302	707	
		WB	92	95	
15	I-10 WB Ramps at Milliken Ave	APPROACH	NB	7,301	9,828
			SB	4,976	5,953
			EB	0	0
			WB	3,497	3,484
	DEPARTURE	NB	7,397	8,357	
		SB	4,242	5,668	
		EB	1,950	1,982	
		WB	3,450	4,897	
16	I-10 EB Ramps at Milliken Ave	APPROACH	NB	8,025	10,344
			SB	7,397	8,357
			EB	1,264	1,375
			WB	0	0
	DEPARTURE	NB	6,948	7,496	
		SB	7,301	9,828	
		EB	2,436	2,751	
		WB	0	0	

Intersection Volume Development

3 of 6

WEEKDAY PM

Step 2:

Peak period to peak hour: 0.28

Location			2016 Peak Hour	2040 Peak Hour	
1	I-15 Ramps/Highway 395 at Joshua St	APPROACH	NB	1,021	1,208
			SB	918	913
			EB	280	803
			WB	162	551
		DEPARTURE	NB	647	572
			SB	1,054	2,246
			EB	109	212
			WB	551	444
2	I-15 SB Off-ramp at Joshua St	APPROACH	NB	0	0
			SB	118	237
			EB	551	444
			WB	89	347
		DEPARTURE	NB	0	0
			SB	0	0
			EB	162	551
			WB	596	478
3	I-15 NB On-ramp at Joshua Street	APPROACH	NB	0	0
			SB	0	0
			EB	596	478
			WB	91	363
		DEPARTURE	NB	0	0
			SB	51	18
			EB	89	347
			WB	548	478
4	Mariposa Rd at Joshua St	APPROACH	NB	85	688
			SB	75	145
			EB	548	478
			WB	0	0
		DEPARTURE	NB	223	290
			SB	393	659
			EB	91	363
			WB	0	0
5	I-15 SB Ramps at Foothill Blvd (Rt 66)	APPROACH	NB	0	0
			SB	419	542
			EB	3,261	3,484
			WB	1,448	1,611
		DEPARTURE	NB	1,155	1,032
			SB	0	0
			EB	1,799	2,060
			WB	2,174	2,546
6	I-15 NB Ramps at Foothill Blvd (Rt 66)	APPROACH	NB	1,643	1,862
			SB	0	0
			EB	1,235	1,619
			WB	1,400	1,483
		DEPARTURE	NB	0	0
			SB	576	620
			EB	2,128	2,173
			WB	2,151	2,791
7	I-15 SB Ramps/Ontario Mills Dr at Fourth Street	APPROACH	NB	48	202
			SB	411	484
			EB	2,114	2,522
			WB	1,084	1,350
		DEPARTURE	NB	34	47
			SB	794	822
			EB	1,225	1,591
			WB	1,605	2,097
8	I-15 NB Ramps at Fourth Street	APPROACH	NB	0	0
			SB	520	750
			EB	1,605	2,097
			WB	808	777
		DEPARTURE	NB	0	0
			SB	678	771
			EB	1,084	1,350
			WB	1,171	1,504

Intersection Volume Development

WEEKDAY PM

Step 2:

Peak period to peak hour: 0.38

Location				2016 Peak Hour	2040 Peak Hour
9	I-210 WB Ramps at Milliken Ave	APPROACH	NB	913	1,043
			SB	580	399
			EB	0	0
			WB	331	311
	DEPARTURE	NB	670	485	
		SB	728	897	
		EB	426	372	
		WB	0	0	
10	I-210 EB Ramps at Milliken Ave	APPROACH	NB	867	939
			SB	670	485
			EB	374	444
			WB	0	0
	DEPARTURE	NB	728	620	
		SB	913	1,043	
		EB	0	0	
		WB	269	203	
11	Milliken Ave at Foothill Blvd (Rt 66)	APPROACH	NB	1,762	1,972
			SB	850	778
			EB	1,465	1,730
			WB	938	1,257
	DEPARTURE	NB	813	826	
		SB	1,708	1,796	
		EB	918	1,128	
		WB	1,577	1,987	
12	Milliken Ave at Fourth Street	APPROACH	NB	1,539	2,489
			SB	1,805	1,249
			EB	1,439	2,130
			WB	1,472	1,669
	DEPARTURE	NB	1,674	1,933	
		SB	1,646	2,148	
		EB	1,133	1,471	
		WB	1,602	1,965	
13	Milliken Ave at Azusa Ct	APPROACH	NB	1,660	1,808
			SB	1,239	1,159
			EB	2	2
			WB	0	0
	DEPARTURE	NB	1,239	1,159	
		SB	1,660	1,808	
		EB	2	2	
		WB	0	0	
14	Milliken Ave at 7th St	APPROACH	NB	1,417	1,556
			SB	1,239	1,159
			EB	198	220
			WB	48	44
	DEPARTURE	NB	1,132	946	
		SB	1,660	1,808	
		EB	85	198	
		WB	26	27	
15	I-10 WB Ramps at Milliken Ave	APPROACH	NB	2,044	2,752
			SB	1,393	1,667
			EB	0	0
			WB	979	976
	DEPARTURE	NB	2,071	2,340	
		SB	1,188	1,587	
		EB	546	555	
		WB	966	1,371	
16	I-10 EB Ramps at Milliken Ave	APPROACH	NB	2,247	2,896
			SB	2,071	2,340
			EB	354	385
			WB	0	0
	DEPARTURE	NB	1,945	2,099	
		SB	2,044	2,752	
		EB	682	770	
		WB	0	0	

Step 3:

WEEKDAY PM

Location			a	b	c		
			Difference 2040-2016	Annual Growth	Growth 2020 to 2045	Existing 2020	2045 adjusted
1 I-15 Ramps/Highway 395 at Joshua St	APPROACH	NB	188	8	200	1,043	1,243
		SB	-5	0	0	645	645
		EB	543	23	575	108	683
		WB	389	17	425	129	554
	DEPARTURE	NB	-75	0	0	618	618
		SB	1,192	50	1250	1,067	2,317
		EB	103	5	125	49	174
		WB	-106	0	0	191	191
2 I-15 SB Off-ramp at Joshua St	APPROACH	NB	0	0	0	0	0
		SB	119	5	125	66	191
		EB	-106	0	0	173	173
		WB	259	11	275	72	347
	DEPARTURE	NB	0	0	0	0	0
		SB	0	0	0	0	0
		EB	389	17	425	133	558
		WB	-118	0	0	178	178
3 I-15 NB On-ramp at Joshua Street	APPROACH	NB	0	0	0	0	0
		SB	0	0	0	0	0
		EB	-118	0	0	180	180
		WB	272	12	300	89	389
	DEPARTURE	NB	0	0	0	0	0
		SB	-35	0	0	117	117
		EB	259	11	275	72	347
		WB	-70	0	0	80	80
4 Mariposa Rd at Joshua St	APPROACH	NB	603	26	650	82	732
		SB	70	3	75	68	143
		EB	-70	0	0	81	81
		WB	0	0	0	0	0
	DEPARTURE	NB	67	3	75	66	141
		SB	265	12	300	64	364
		EB	272	12	300	101	401
		WB	0	0	0	0	0
5 I-15 SB Ramps at Foothill Blvd (Rt 66)	APPROACH	NB	0	0	0	0	0
		SB	123	6	150	560	710
		EB	223	10	250	3,149	3,399
		WB	164	7	175	2,300	2,475
	DEPARTURE	NB	-122	0	0	879	879
		SB	0	0	0	469	469
		EB	260	11	275	2,248	2,523
		WB	372	16	400	2,413	2,813
6 I-15 NB Ramps at Foothill Blvd (Rt 66)	APPROACH	NB	218	10	250	1,138	1,388
		SB	0	0	0	0	0
		EB	384	17	425	1,305	1,730
		WB	82	4	100	1,818	1,918
	DEPARTURE	NB	0	0	0	208	208
		SB	44	2	50	819	869
		EB	45	2	50	1,742	1,792
		WB	640	27	675	1,492	2,167
7 I-15 SB Ramps/Ontario Mills Dr at Fourth Street	APPROACH	NB	154	7	175	327	502
		SB	73	4	100	557	657
		EB	408	17	425	1,423	1,848
		WB	266	12	300	957	1,257
	DEPARTURE	NB	14	1	25	268	293
		SB	28	2	50	899	949
		EB	366	16	400	1,135	1,535
		WB	492	21	525	962	1,487
8 I-15 NB Ramps at Fourth Street	APPROACH	NB	0	0	0	147	147
		SB	230	10	250	668	918
		EB	492	21	525	964	1,489
		WB	-31	0	0	578	578
	DEPARTURE	NB	0	0	0	114	114
		SB	93	4	100	729	829
		EB	266	12	300	958	1,258
		WB	333	14	350	556	906

Year 2045 Intersection Volume Development

Step 3:

WEEKDAY PM

Location			a	b	c		
			Difference 2040-2016	Annual Growth	Growth 2020 to 2045	Existing 2020	2045 adjusted
9 I-210 WB Ramps at Milliken Ave	APPROACH	NB	130	8	150	707	857
		SB	-180	0	0	590	590
		EB	0	0	0	0	0
		WB	-20	0	0	253	253
	DEPARTURE	NB	-186	0	0	695	695
		SB	170	8	200	582	782
		EB	-54	0	0	273	273
		WB	0	0	0	0	0
10 I-210 EB Ramps at Milliken Ave	APPROACH	NB	72	3	75	939	1,014
		SB	-186	0	0	697	697
		EB	70	3	75	232	307
		WB	0	0	0	0	0
	DEPARTURE	NB	-108	0	0	658	658
		SB	130	6	150	707	857
		EB	0	0	0	0	0
		WB	-66	0	0	503	503
11 Milliken Ave at Foothill Blvd (Rt 66)	APPROACH	NB	210	9	225	1,039	1,264
		SB	-73	0	0	474	474
		EB	265	12	300	1,644	1,944
		WB	319	14	350	982	1,332
	DEPARTURE	NB	12	1	25	527	552
		SB	87	4	100	908	1,006
		EB	211	9	225	1,022	1,247
		WB	410	18	450	1,884	2,134
12 Milliken Ave at Fourth Street	APPROACH	NB	930	39	975	1,062	2,037
		SB	-356	0	0	946	946
		EB	691	29	725	904	1,629
		WB	198	9	225	818	1,043
	DEPARTURE	NB	259	11	275	1,070	1,345
		SB	502	21	525	1,065	1,590
		EB	338	15	375	729	1,104
		WB	363	16	400	866	1,266
13 Milliken Ave at Azusa Ct	APPROACH	NB	148	7	175	1,441	1,616
		SB	-80	0	0	812	812
		EB	0	0	0	30	30
		WB	0	0	0	0	0
	DEPARTURE	NB	-80	0	0	816	816
		SB	148	7	175	1,441	1,616
		EB	0	0	0	26	26
		WB	0	0	0	0	0
14 Milliken Ave at 7th St	APPROACH	NB	139	6	150	1,362	1,512
		SB	-80	0	0	816	816
		EB	22	1	25	151	176
		WB	-4	0	0	32	32
	DEPARTURE	NB	-186	0	0	855	855
		SB	148	7	175	1,441	1,616
		EB	113	5	125	47	172
		WB	1	0	0	18	18
15 I-10 WB Ramps at Milliken Ave	APPROACH	NB	708	30	750	1,250	2,000
		SB	274	12	300	1,372	1,672
		EB	0	0	0	353	353
		WB	-4	0	0	865	865
	DEPARTURE	NB	269	12	300	1,345	1,645
		SB	399	17	425	1,018	1,443
		EB	9	1	25	866	891
		WB	405	17	425	611	1,036
16 I-10 EB Ramps at Milliken Ave	APPROACH	NB	649	28	700	1,049	1,749
		SB	269	12	300	773	1,073
		EB	31	2	50	473	523
		WB	0	0	0	0	0
	DEPARTURE	NB	154	7	175	568	741
		SB	708	30	750	1,070	1,820
		EB	88	4	100	659	759
		WB	0	0	0	0	0

Appendix A.1.3 - Intersection Forecasting Worksheets Friday Peak



SUBJECT	BY	DATE	JOB NO.	SHEET	OF
TURN MOVEMENTS	TNM	9-Sep-20	BRTLDSXP-0003	1	OF 1

E/W STREET : JOSHUA ST
N/S STREET : HIGHWAY 395
CONDITION : FRI PEAK HOUR

INTERSECTION : 1

TURN MOVEMENTS

Condition	Existing Condition Traffic	Opening Year 2024 No Build Traffic	Opening Year 2024 Project Trips	Opening Year 2024 Build Traffic	Future Year 2045 No Build Traffic	Future Year 2045 Project Trips	Future Year 2045 Build Traffic
	1.3	2.3		3.3	4.3		5.3

JOSHUA ST

EB Left	36	42	0	42	823	0	823
EB Thru	104	121	0	121	210	0	210
EB Right	19	19	0	19	47	0	47
WB Left	40	40	0	40	32	0	32
WB Thru	19	23	0	23	91	0	91
WB Right	101	118	25	143	757	74	831

HIGHWAY 395

NB Left	26	32	0	32	23	0	23
NB Thru	1,538	1,785	0	1,785	2,047	0	2,047
NB Right	106	106	0	106	13	0	13
SB Left	51	51	8	59	40	19	59
SB Thru	533	533	0	533	515	0	515
SB Right	17	21	0	21	100	0	100
TOTALS	2,590	2,891	33	2,924	4,698	93	4,791



SUBJECT	BY	DATE	JOB NO.	SHEET	OF
TURN MOVEMENTS	TNM	9-Sep-20	BRTLDSXP-0003	1	OF 1

E/W STREET : JOSHUA ST
N/S STREET : I-15 SB RAMP
CONDITION : FRI PEAK HOUR

INTERSECTION : 1

TURN MOVEMENTS

Condition	Existing Condition Traffic	Opening Year 2024 No Build Traffic	Opening Year 2024 Project Trips	Opening Year 2024 Build Traffic	Future Year 2045 No Build Traffic	Future Year 2045 Project Trips	Future Year 2045 Build Traffic
	1.3	2.3		3.3	4.3		5.3

JOSHUA ST

EB Left	0	0	0	0	0	0	0
EB Thru	253	253	0	253	336	0	336
EB Right	0	0	0	0	0	0	0
WB Left	0	0	0	0	0	0	0
WB Thru	88	103	25	128	438	74	512
WB Right	0	0	0	0	0	0	0

I-15 SB RAMP

NB Left	0	0	0	0	0	0	0
NB Thru	0	0	0	0	0	0	0
NB Right	0	0	0	0	0	0	0
SB Left	5	6	8	14	19	19	38
SB Thru	0	0	0	0	0	0	0
SB Right	57	69	0	69	169	0	169
TOTALS	403	431	33	464	962	93	1055



SUBJECT	BY	DATE	JOB NO.	SHEET	OF
TURN MOVEMENTS	TNM	9-Sep-20	BRTLDSXP-0003	1	OF 1

E/W STREET : JOSHUA ST
N/S STREET : I-15 NB RAMP
CONDITION : FRI PEAK HOUR

INTERSECTION : 3

TURN MOVEMENTS

Condition	Existing Condition Traffic	Opening Year 2024 No Build Traffic	Opening Year 2024 Project Trips	Opening Year 2024 Build Traffic	Future Year 2045 No Build Traffic	Future Year 2045 Project Trips	Future Year 2045 Build Traffic
	1.3	2.3		3.3	4.3		5.3

JOSHUA ST

EB Left	160	186	25	211	143	74	217
EB Thru	117	136	22	158	212	63	275
EB Right	0	0	0	0	0	0	0
WB Left	0	0	0	0	0	0	0
WB Thru	88	103	7	110	438	63	501
WB Right	28	33	0	33	46	0	46

I-15 NB RAMP

NB Left	0	0	0	0	0	0	0
NB Thru	0	0	0	0	0	0	0
NB Right	0	0	0	0	0	0	0
SB Left	0	0	0	0	0	0	0
SB Thru	0	0	0	0	0	0	0
SB Right	0	0	0	0	0	0	0
TOTALS	393	458	54	512	839	200	1039



SUBJECT	BY	DATE	JOB NO.	SHEET	OF
TURN MOVEMENTS	TNM	9-Sep-20	BRTLDSXP-0003	1	OF 2

E/W STREET : JOSHUA ST
N/S STREET : MARIPOSA
CONDITION : FRI PEAK HOUR

INTERSECTION : 4

TURN MOVEMENTS

Condition	Existing Condition Traffic	Opening Year 2024 No Build Traffic	Opening Year 2024 Project Trips	Opening Year 2024 Build Traffic	Future Year 2045 No Build Traffic	Future Year 2045 Project Trips	Future Year 2045 Build Traffic
	1.3	2.3		3.3	4.3		5.3

JOSHUA ST

EB Left	46	54	15	69	124	42	166
EB Thru	0	0	0	0	0	0	0
EB Right	72	84	8	92	89	21	110
WB Left	0	0	0	0	0	0	0
WB Thru	0	0	0	0	0	0	0
WB Right	0	0	0	0	0	0	0

MARIPOSA

NB Left	66	77	3	80	257	6	263
NB Thru	23	27	0	27	246	0	246
NB Right	0	0	0	0	0	0	0
SB Left	0	0	0	0	0	0	0
SB Thru	22	27	0	27	106	0	106
SB Right	57	67	5	72	217	11	228
TOTALS	286	336	31	367	1039	80	1119



DAVID EVANS
AND ASSOCIATES INC.

SUBJECT	BY	DATE	JOB NO.	SHEET	OF
TURN VOLUME SUMMARY	TNM	9/9/2020	BRTLDSXP-0003	2	OF 2

E/W STREET : JOSHUA ST N/S STREET : MARIPOSA
CONDITION : FRI PEAK HOUR PHF : 0.92

NORTH LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
9	3	0	1	1	0	0	0	0	0	0	0
14	5	0	0	0	0	0	0	0	0	0	0
18	3	0	0	2	0	0	0	0	0	0	0
15	7	0	0	1	0	0	0	0	0	0	0

SOUTH LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
0	4	18	0	2	0	0	0	0	0	0	1
0	3	13	0	0	0	0	1	0	0	0	0
0	5	15	0	2	0	0	0	0	0	0	2
0	3	16	0	2	0	0	1	0	0	0	1

EAST LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0

WEST LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
21	0	12	0	0	2	0	0	0	0	0	0
14	0	10	0	0	0	0	0	0	2	0	0
15	0	9	0	0	0	0	0	1	0	0	0
20	0	11	0	0	0	0	0	1	0	0	0

Truck Volumes	Auto Volumes	Totals	Truck Percentage
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JOSHUA ST				
EBL	4	42	46	9%
EBTH	0	0	0	0%
EBR	2	70	72	3%
WBL	0	0	0	0%
WBTH	0	0	0	0%
WBR	0	0	0	0%

MARIPOSA				
NBL	4	62	66	7%
NBTH	8	15	23	35%
NBR	0	0	0	0%
SBL	0	0	0	0%
SBTH	4	18	22	19%
SBR	1	56	57	2%



SUBJECT	BY	DATE	JOB NO.	SHEET	OF
TURN MOVEMENTS	TNM	9-Sep-20	BRTLDSXP-0003	1	OF 2

E/W STREET : FOOTHILL BLVD

INTERSECTION : 5

N/S STREET : INTERSTATE 15 SB RAMPS

CONDITION : FRI PEAK HOUR

TURN MOVEMENTS

Condition	Existing Condition Traffic	Opening Year 2024 No Build Traffic	Opening Year 2024 Project Trips	Opening Year 2024 Build Traffic	Future Year 2045 No Build Traffic	Future Year 2045 Project Trips	Future Year 2045 Build Traffic
	4.3	2.3		3.3	4.3		5.3

FOOTHILL BLVD

EB Left	0	0	0	0	0	0	0
EB Thru	974	1169	22	1191	1,384	52	1436
EB Right	816	816	0	816	816	0	816
WB Left	0	0	0	0	0	0	0
WB Thru	1082	1256	6	1262	1,186	15	1201
WB Right	535	535	0	535	535	0	535

INTERSTATE 15 SB RAMPS

NB Left	0	0	0	0	0	0	0
NB Thru	0	0	0	0	0	0	0
NB Right	0	0	0	0	0	0	0
SB Left	314	377	0	377	507	0	507
SB Thru	0	0	0	0	0	0	0
SB Right	552	641	30	671	649	82	731
TOTALS	4273	4794	58	4852	5077	149	5226



SUBJECT	BY	DATE	JOB NO.	SHEET OF
TURN VOLUME SUMMARY	TNM	9/9/2020	BRTLDSXP-0003	2 OF 2

E/W STREET : FOOTHILL BLVD N/S STREET : INTERSTATE 15 SB RAMPS
CONDITION : FRI PEAK HOUR PHF : 0.92

NORTH LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
120	0	89	2	0	2	1	0	1	4	0	2
138	0	63	2	0	1	2	0	0	2	0	6
138	0	63	1	0	3	3	0	1	3	0	2
128	0	75	2	0	1	2	0	1	4	0	4

SOUTH LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0

EAST LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
145	264	0	0	0	0	0	0	0	4	2	0
144	355	0	2	0	0	2	0	0	3	5	0
116	194	0	1	0	0	0	1	0	3	0	0
106	260	0	1	0	0	2	0	0	6	1	0

WEST LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
198	319	0	0	2	0	1	1	0	4	2	0
203	205	0	1	3	0	1	0	0	5	2	0
184	169	0	1	0	0	0	0	0	4	1	0
205	258	0	2	1	0	4	0	0	3	11	0

Truck Volumes	Auto Volumes	Totals	Truck Percentage
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FOOTHILL BLVD

EBL	0	0	0	0%
EBTH	23	951	974	3%
EBR	26	790	816	4%
WBL	0	0	0	0%
WBTH	9	1073	1082	1%
WBR	24	511	535	5%

INTERSTATE 15 SB RAM

NBL	0	0	0	0%
NBTH	0	0	0	0%
NBR	0	0	0	0%
SBL	24	290	314	8%
SBTH	0	0	0	0%
SBR	28	524	552	6%



SUBJECT	BY	DATE	JOB NO.	SHEET	OF
TURN MOVEMENTS	TNM	9-Sep-20	BRTLDSXP-0003	1	OF 2

E/W STREET : FOOTHILL BLVD

INTERSECTION : 6

N/S STREET : INTERSTATE 15 NB RAMPS

CONDITION : FRI PEAK HOUR

TURN MOVEMENTS

Condition	Existing Condition Traffic	Opening Year 2024 No Build Traffic	Opening Year 2024 Project Trips	Opening Year 2024 Build Traffic	Future Year 2045 No Build Traffic	Future Year 2045 Project Trips	Future Year 2045 Build Traffic
	1.3	2.3		3.3	4.3		5.3

FOOTHILL BLVD

EB Left	0	0	0	0	0	0	0
EB Thru	902	1047	4	1051	1,620	8	1628
EB Right	270	270	18	288	270	44	314
WB Left	0	0	0	0	0	0	0
WB Thru	1015	1218	6	1224	1,510	15	1525
WB Right	776	932	0	932	826	0	826

INTERSTATE 15 NB RAMPS

NB Left	556	668	0	668	211	0	211
NB Thru	0	0	0	0	0	0	0
NB Right	305	354	0	354	138	0	138
SB Left	0	0	0	0	0	0	0
SB Thru	0	0	0	0	0	0	0
SB Right	0	0	0	0	0	0	0
TOTALS	3824	4489	28	4517	4575	67	4642



SUBJECT	BY	DATE	JOB NO.	SHEET OF
TURN VOLUME SUMMARY	TNM	9/9/2020	BRTLDSXP-0003	2 OF 2

E/W STREET : FOOTHILL BLVD N/S STREET : INTERSTATE 15 NB RAMPS
CONDITION : FRI PEAK HOUR PHF : 0.88

NORTH LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0

SOUTH LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
77	0	133	0	0	1	0	0	0	0	0	3
64	0	121	0	0	0	0	0	0	0	0	1
60	0	129	0	0	1	0	0	0	0	0	4
103	0	155	0	0	0	0	0	0	1	0	8

EAST LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
217	366	0	0	1	0	0	2	0	0	5	0
124	190	0	0	1	0	1	1	0	3	2	0
154	238	0	0	0	0	0	2	0	5	3	0
266	202	0	1	0	0	0	0	0	5	2	0

WEST LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
68	199	0	2	2	0	0	0	0	2	6	0
52	182	0	2	1	0	0	1	0	1	0	0
74	264	0	0	2	0	3	2	0	7	0	0
54	239	0	0	2	0	0	2	0	5	0	0

Truck Volumes	Auto Volumes	Totals	Truck Percentage
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FOOTHILL BLVD

EBL	0	0	0	0%
EBTH	18	884	902	2%
EBR	22	248	270	9%
WBL	0	0	0	0%
WBTH	19	996	1015	2%
WBR	15	761	776	2%

INTERSTATE 15 NB RAM

NBL	18	538	556	4%
NBTH	0	0	0	0%
NBR	1	304	305	1%
SBL	0	0	0	0%
SBTH	0	0	0	0%
SBR	0	0	0	0%



SUBJECT	BY	DATE	JOB NO.	SHEET	OF
TURN MOVEMENTS	TNM	9-Sep-20	BRTLDSXP-0003	1	OF 2

E/W STREET : FOURTH STREET

INTERSECTION : 7

N/S STREET : INTERSTATE 15 SB RAMPS

CONDITION : FRI PEAK HOUR

TURN MOVEMENTS

Condition	Existing Condition Traffic	Opening Year 2024 No Build Traffic	Opening Year 2024 Project Trips	Opening Year 2024 Build Traffic	Future Year 2045 No Build Traffic	Future Year 2045 Project Trips	Future Year 2045 Build Traffic
	1.3	2.3		3.3	4.3		5.3

FOURTH STREET

EB Left	518	684	8	692	546	20	566
EB Thru	1081	1254	2	1256	1,684	4	1688
EB Right	72	90	0	90	76	0	76
WB Left	83	103	0	103	99	0	99
WB Thru	725	841	17	858	1,047	45	1092
WB Right	175	231	0	231	211	0	211

INTERSTATE 15 SB RAMPS

NB Left	120	140	0	140	132	0	132
NB Thru	151	176	0	176	138	0	138
NB Right	20	24	0	24	27	0	27
SB Left	74	86	0	86	115	0	115
SB Thru	153	184	0	184	160	0	160
SB Right	354	411	0	411	447	0	447
TOTALS	3526	4224	27	4251	4682	69	4751



SUBJECT	BY	DATE	JOB NO.	SHEET OF
TURN VOLUME SUMMARY	TNM	9/9/2020	BRTLDSXP-0003	2 OF 2

E/W STREET : FOURTH STREET N/S STREET : INTERSTATE 15 SB RAMPS
CONDITION : FRI PEAK HOUR PHF : 0.97

NORTH LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
98	35	7	0	0	3	0	0	1	3	0	2
84	35	12	1	0	0	0	0	1	1	1	5
88	39	20	0	0	0	0	0	0	0	0	3
79	43	19	0	0	0	0	0	0	0	0	1

SOUTH LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
1	38	35	0	0	0	0	0	0	1	0	0
4	38	25	0	2	1	0	0	0	1	0	0
6	36	31	0	0	0	0	0	0	0	0	0
7	37	28	0	0	0	0	0	0	0	0	0

EAST LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
42	162	21	3	4	0	1	0	0	6	10	0
28	162	18	1	2	1	1	1	0	2	9	0
41	166	23	1	4	0	0	3	0	5	8	0
42	187	20	0	3	0	0	0	0	2	4	0

WEST LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
20	276	108	0	2	2	0	3	3	0	10	8
14	225	168	1	2	2	0	3	2	0	7	5
20	276	116	0	2	0	0	2	0	0	5	0
17	264	104	0	1	0	0	1	0	0	2	0

Truck Volumes	Auto Volumes	Totals	Truck Percentage
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FOURTH STREET

EBL	22	496	518	5%
EBTH	40	1041	1081	4%
EBR	1	71	72	2%
WBL	1	82	83	2%
WBTH	48	677	725	7%
WBR	22	153	175	13%

INTERSTATE 15 SB RAM

NBL	1	119	120	1%
NBTH	2	149	151	2%
NBR	2	18	20	10%
SBL	16	58	74	22%
SBTH	1	152	153	1%
SBR	5	349	354	2%



SUBJECT	BY	DATE	JOB NO.	SHEET	OF
TURN MOVEMENTS	TNM	9-Sep-20	BRTLDSXP-0003	1	OF 2

E/W STREET : FOURTH STREET

INTERSECTION : 8

N/S STREET : INTERSTATE 15 NB RAMPS

CONDITION : FRI PEAK HOUR

TURN MOVEMENTS

Condition	Existing Condition Traffic	Opening Year 2024 No Build Traffic	Opening Year 2024 Project Trips	Opening Year 2024 Build Traffic	Future Year 2045 No Build Traffic	Future Year 2045 Project Trips	Future Year 2045 Build Traffic
	1.3	2.3		3.3	4.3		5.3

FOURTH STREET

EB Left	625	750	0	750	821	0	821
EB Thru	484	562	2	564	913	4	917
EB Right	68	68	0	68	92	0	92
WB Left	34	34	0	34	22	0	22
WB Thru	448	448	3	451	520	8	528
WB Right	125	150	0	150	78	0	78

INTERSTATE 15 NB RAMPS

NB Left	60	70	0	70	122	0	122
NB Thru	73	73	0	73	79	0	79
NB Right	50	58	0	58	78	0	78
SB Left	148	172	0	172	174	0	174
SB Thru	54	63	0	63	46	0	46
SB Right	469	545	14	559	716	37	753
TOTALS	2638	2993	19	3012	3661	49	3710



SUBJECT	BY	DATE	JOB NO.	SHEET OF
TURN VOLUME SUMMARY	TNM	9/9/2020	BRTLDSXP-0003	2 OF 2

E/W STREET : FOURTH STREET N/S STREET : INTERSTATE 15 NB RAMPS
CONDITION : FRI PEAK HOUR PHF : 0.96

NORTH LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
98	8	25	4	1	4	0	0	2	7	0	4
119	18	36	3	1	0	0	0	1	6	0	4
107	13	28	5	0	2	0	0	0	3	0	5
114	12	35	0	1	1	0	0	0	3	0	1

SOUTH LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
4	15	19	2	1	0	1	0	0	2	0	0
17	16	10	1	0	0	0	0	0	0	0	0
12	16	17	0	0	0	0	0	0	0	0	0
11	24	14	0	1	0	0	0	0	0	0	0

EAST LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
42	109	9	1	3	0	0	1	1	1	9	0
19	75	5	0	1	0	0	2	1	1	5	1
25	107	9	0	0	0	0	3	0	1	7	0
34	120	7	0	3	0	0	0	1	1	3	0

WEST LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
12	109	169	1	3	1	0	2	2	1	7	5
16	93	127	0	1	1	0	3	1	0	12	1
24	116	163	0	2	0	0	2	0	0	6	1
14	124	152	0	1	0	0	0	1	0	3	1

Truck Volumes	Auto Volumes	Totals	Truck Percentage
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FOURTH STREET

EBL	14	611	625	3%
EBTH	42	442	484	9%
EBR	2	66	68	3%
WBL	4	30	34	12%
WBTH	37	411	448	9%
WBR	5	120	125	4%

INTERSTATE 15 NB RAM

NBL	0	60	60	1%
NBTH	2	71	73	3%
NBR	6	44	50	12%
SBL	24	124	148	17%
SBTH	3	51	54	6%
SBR	31	438	469	7%



SUBJECT	BY	DATE	JOB NO.	SHEET	OF
TURN MOVEMENTS	TNM	9-Sep-20	BRTLDSXP-0003	1	OF 1

E/W STREET : I-210 WB RAMPS

INTERSECTION : 9

N/S STREET : MILLIKEN AVE

CONDITION : FRI PEAK HOUR

TURN MOVEMENTS

Condition	Existing Condition Traffic	Opening Year 2024 No Build Traffic	Opening Year 2024 Project Trips	Opening Year 2024 Build	Future Year 2045 No Build	Future Year 2045 Project	Future Year 2045 Build
	1.3	2.3		3.3	4.3		5.3

I-210 WB RAMPS

EB Left	0	0	0	0	0	0	0
EB Thru	0	0	0	0	0	0	0
EB Right	0	0	0	0	0	0	0
WB Left	189	189	6	195	109	15	124
WB Thru	8	8	0	8	11	0	11
WB Right	73	88	0	88	375	0	375

MILLIKEN AVE

NB Left	205	205	13	218	79	32	111
NB Thru	545	633	0	633	812	0	812
NB Right	0	0	0	0	0	0	0
SB Left	0	0	0	0	0	0	0
SB Thru	368	368	0	368	647	0	647
SB Right	52	52	0	52	212	0	212
TOTALS	1440	1543	19	1562	2245	47	2292



SUBJECT	BY	DATE	JOB NO.	SHEET	OF
TURN MOVEMENTS	TNM	9-Sep-20	BRTLDSXP-0003	1	OF 2

E/W STREET : FOOTHILL BLVD

INTERSECTION : 11

N/S STREET : MILLIKEN AVE

CONDITION : FRI PEAK HOUR

TURN MOVEMENTS

Condition	Existing Condition Traffic	Opening Year 2024 No Build Traffic	Opening Year 2024 Project Trips	Opening Year 2024 Build	Future Year 2045 No Build	Future Year 2045 Project	Future Year 2045 Build
	1.3	2.3		3.3	4.3		5.3

FOOTHILL BLVD

EB Left	187	225	0	225	447	0	447
EB Thru	1326	1592	0	1592	1,742	0	1742
EB Right	91	121	8	129	71	23	94
WB Left	149	197	35	232	192	96	288
WB Thru	1205	1398	0	1398	1,788	0	1788
WB Right	80	96	0	96	315	0	315

MILLIKEN AVE

NB Left	275	319	5	324	42	12	54
NB Thru	654	759	6	765	260	40	300
NB Right	154	179	21	200	34	52	86
SB Left	188	219	0	219	318	0	318
SB Thru	460	460	27	487	463	74	537
SB Right	168	195	0	195	195	0	195
TOTALS	4937	5760	102	5862	5867	297	6164



SUBJECT	BY	DATE	JOB NO.	SHEET OF
TURN VOLUME SUMMARY	TNM	9/9/2020	BRTLDSXP-0003	2 OF 2

E/W STREET : FOOTHILL BLVD N/S STREET : MILLIKEN AVE
CONDITION : FRI PEAK HOUR PHF : 0.96

NORTH LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
40	93	39	0	1	0	0	0	0	0	5	0
43	109	45	0	2	0	0	1	0	0	4	0
47	134	54	0	1	1	1	2	1	1	5	5
34	98	43	1	2	0	0	0	0	1	3	0

SOUTH LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
40	153	65	0	2	0	0	1	0	0	4	0
43	163	70	0	1	0	0	0	1	1	2	0
36	168	66	0	1	0	0	1	0	1	3	0
30	151	72	1	2	0	1	2	0	1	0	1

EAST LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
23	310	30	0	1	0	0	0	1	0	6	0
22	301	42	0	1	0	0	0	0	0	1	0
19	280	43	0	2	1	0	1	0	1	3	0
14	293	28	1	3	0	0	1	1	0	2	3

WEST LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
20	335	43	0	1	0	0	0	0	0	3	0
26	336	47	0	1	0	0	0	1	0	3	1
20	327	50	0	2	0	0	1	0	0	1	1
22	311	41	1	1	0	1	0	1	1	4	2

Truck Volumes	Auto Volumes	Totals	Truck Percentage
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FOOTHILL BLVD				
EBL	6	181	187	4%
EBTH	17	1309	1326	2%
EBR	3	88	91	4%
WBL	6	143	149	5%
WBTH	21	1184	1205	2%
WBR	2	78	80	3%

MILLIKEN AVE				
NBL	2	273	275	1%
NBTH	19	635	654	3%
NBR	5	149	154	4%
SBL	7	181	188	4%
SBTH	26	434	460	6%
SBR	4	164	168	3%



SUBJECT	BY	DATE	JOB NO.	SHEET	OF
TURN MOVEMENTS	TNM	9-Sep-20	BRTLDSXP-0003	1	OF 2

E/W STREET : 4TH ST

INTERSECTION : 12

N/S STREET : MILLIKEN AVE

CONDITION : FRI PEAK HOUR

TURN MOVEMENTS

Condition	Existing Condition Traffic	Opening Year 2024 No Build Traffic	Opening Year 2024 Project Trips	Opening Year 2024 Build	Future Year 2045 No Build	Future Year 2045 Project	Future Year 2045 Build
	1.3	2.3		3.3	4.3		5.3

4TH ST

EB Left	144	168	0	168	473	8	481
EB Thru	1174	1362	6	1368	1,610	0	1610
EB Right	151	176	0	176	563	0	563
WB Left	170	198	0	198	140	0	140
WB Thru	1025	1230	0	1230	1,645	0	1645
WB Right	151	176	16	192	428	24	452

MILLIKEN AVE

NB Left	181	210	0	210	694	0	694
NB Thru	924	1072	165	1237	1,536	458	1994
NB Right	162	188	0	188	214	0	214
SB Left	162	188	10	198	206	24	230
SB Thru	787	787	97	884	817	245	1062
SB Right	132	154	4	158	60	8	68
TOTALS	5163	5909	298	6207	8386	767	9153



DAVID EVANS
AND ASSOCIATES INC.

SUBJECT	BY	DATE	JOB NO.	SHEET OF
TURN VOLUME SUMMARY	TNM	9/9/2020	BRTLDSXP-0003	2 OF 2

E/W STREET : 4TH ST N/S STREET : MILLIKEN AVE
CONDITION : FRI PEAK HOUR PHF : 0.99

NORTH LEG											
AUTOS			2 AXLE			3 AXLE			4(+)-AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
23	170	38	1	3	0	0	1	1	0	9	4
33	189	40	0	2	0	0	0	0	0	12	0
42	205	36	0	3	1	0	1	0	0	4	0
32	177	37	0	3	1	0	1	2	1	7	2

SOUTH LEG											
AUTOS			2 AXLE			3 AXLE			4(+)-AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
36	191	48	2	2	0	0	1	0	2	16	0
38	212	35	0	1	0	0	0	1	1	9	0
39	233	44	2	4	0	0	0	1	2	5	1
38	239	47	1	3	2	0	2	0	1	6	2

EAST LEG											
AUTOS			2 AXLE			3 AXLE			4(+)-AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
43	248	55	0	3	0	0	0	0	0	4	0
48	252	42	1	5	0	0	0	0	1	9	0
31	233	35	0	2	0	0	1	0	0	7	1
24	252	32	1	2	2	1	0	1	1	7	2

WEST LEG											
AUTOS			2 AXLE			3 AXLE			4(+)-AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
42	284	27	1	4	2	0	3	0	1	8	0
37	290	33	0	6	0	0	1	0	0	12	0
33	256	41	0	2	1	0	1	0	0	7	0
34	291	38	0	1	1	0	0	0	3	8	1

Truck Volumes	Auto Volumes	Totals	Truck Percentage
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4TH ST			
EBL	5	139	144 4%
EBTH	53	1121	1174 5%
EBR	5	146	151 4%
WBL	6	164	170 4%
WBTH	40	985	1025 4%
WBR	5	146	151 4%

MILLIKEN AVE			
NBL	7	174	181 4%
NBTH	49	875	924 6%
NBR	11	151	162 7%
SBL	11	151	162 7%
SBTH	46	741	787 6%
SBR	2	130	132 2%



SUBJECT	BY	DATE	JOB NO.	SHEET	OF
TURN MOVEMENTS	TNM	9-Sep-20	BRTLDSXP-0003	1	OF 2

E/W STREET : AZUSA CT

INTERSECTION : 13

N/S STREET : MILLIKEN AVE

CONDITION : FRI PEAK HOUR

TURN MOVEMENTS

Condition	Existing Condition Traffic	Opening Year 2024 No Build Traffic	Opening Year 2024 Project Trips	Opening Year 2024 Build	Future Year 2045 No Build	Future Year 2045 Project	Future Year 2045 Build
	1.3	2.3		3.3	4.3		5.3

AZUSA CT

EB Left	0	0	0	0	0	0	0
EB Thru	0	0	0	0	0	0	0
EB Right	32	32	55	87	32	138	170
WB Left	0	0	0	0	0	0	0
WB Thru	0	0	0	0	0	0	0
WB Right	0	0	0	0	0	0	0

MILLIKEN AVE

NB Left	0	0	0	0	0	0	0
NB Thru	1715	2058	0	2058	1,915	0	1915
NB Right	0	0	0	0	0	0	0
SB Left	0	0	0	0	0	0	0
SB Thru	897	897	0	897	897	0	897
SB Right	30	30	53	83	30	148	178
TOTALS	2674	3017	108	3125	2874	286	3160



SUBJECT	BY	DATE	JOB NO.	SHEET	OF
TURN MOVEMENTS	TNM	9-Sep-20	BRTLDSXP-0003	1	OF 2

E/W STREET : 7TH ST

INTERSECTION : 14

N/S STREET : MILLIKEN AVE

CONDITION : FRI PEAK HOUR

TURN MOVEMENTS

Condition	Existing Condition Traffic	Opening Year 2024 No Build Traffic	Opening Year 2024 Project Trips	Opening Year 2024 Build	Future Year 2045 No Build	Future Year 2045 Project	Future Year 2045 Build
	1.3	2.3		3.3	4.3		5.3

7TH ST

EB Left	122	147	47	194	135	119	254
EB Thru	0	0	0	0	0	0	0
EB Right	44	53	55	108	57	138	195
WB Left	14	17	0	17	16	0	16
WB Thru	0	0	0	0	0	0	0
WB Right	22	22	0	22	21	0	21

MILLIKEN AVE

NB Left	46	54	186	240	162	517	679
NB Thru	1565	1816	0	1816	1,760	0	1760
NB Right	11	13	0	13	11	0	11
SB Left	8	8	0	8	15	0	15
SB Thru	912	912	93	1005	754	259	1013
SB Right	11	13	27	40	161	74	235
TOTALS	2755	3055	408	3463	3092	1107	4199



SUBJECT	BY	DATE	JOB NO.	SHEET	OF
TURN MOVEMENTS	TNM	9-Sep-20	BRTLDSXP-0003	1	OF 2

E/W STREET : I-10 WB RAMPS

INTERSECTION : 15

N/S STREET : MILLIKEN AVE

CONDITION : FRI PEAK HOUR

CONDITION DIAGRAMS

TURN MOVEMENTS

Condition	Existing Condition Traffic	Opening Year 2024 No Build Traffic	Opening Year 2024 Project Trips	Opening Year 2024 Build	Future Year 2045 No Build	Future Year 2045 Project	Future Year 2045 Build
	1.3	2.3		3.3	4.3		5.3

I-10 WB RAMPS

EB Left	137	159	53	212	519	148	667
EB Thru	208	208	0	208	264	0	264
EB Right	164	191	0	191	96	0	96
WB Left	476	553	0	553	398	0	398
WB Thru	172	172	0	172	154	0	154
WB Right	152	177	0	177	828	0	828

MILLIKEN AVE

NB Left	187	307	0	307	60	0	60
NB Thru	971	1127	85	1212	1870	237	2107
NB Right	207	241	0	241	134	0	134
SB Left	212	246	0	246	783	0	783
SB Thru	613	736	50	786	1036	127	1163
SB Right	267	438	47	485	484	119	603
TOTALS	3766	4555	235	4790	6626	631	7257



SUBJECT	BY	DATE	JOB NO.	SHEET OF
TURN VOLUME SUMMARY	TNM	9/9/2020	BRTLDSXP-0003	2 OF 2

E/W STREET : I-10 WB RAMPS N/S STREET : MILLIKEN AVE
CONDITION : FRI PEAK HOUR PHF : 0.96

NORTH LEG											
AUTOS			2 AXLE			3 AXLE			4(+)-AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
66	141	52	0	1	1	0	0	0	4	7	1
73	150	60	2	1	0	0	1	0	2	3	0
58	140	52	3	2	1	0	2	0	2	5	2
53	153	41	0	3	0	0	1	1	4	3	1

SOUTH LEG											
AUTOS			2 AXLE			3 AXLE			4(+)-AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
48	225	43	0	1	0	0	0	0	1	4	0
56	235	48	0	3	1	1	1	1	0	4	1
46	254	40	1	2	1	0	0	1	1	5	2
49	228	48	1	4	0	2	2	1	1	3	0

EAST LEG											
AUTOS			2 AXLE			3 AXLE			4(+)-AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
37	50	130	0	0	0	0	0	1	3	0	0
40	41	117	1	1	0	0	0	2	1	0	0
32	39	101	0	1	2	1	1	0	0	2	0
37	34	118	0	1	1	0	1	2	0	1	2

WEST LEG											
AUTOS			2 AXLE			3 AXLE			4(+)-AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
31	50	33	0	0	0	1	0	1	1	1	2
39	61	30	0	1	2	0	0	0	0	1	3
42	52	26	1	0	2	1	1	1	1	2	4
42	36	28	2	2	3	2	1	0	1	0	2

Truck Volumes	Auto Volumes	Totals	Truck Percentage
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I-10 WB RAMPS

EBL	20	117	137	15%
EBTH	9	199	208	5%
EBR	10	154	164	7%
WBL	10	466	476	3%
WBTH	8	164	172	5%
WBR	6	146	152	4%

MILLIKEN AVE

NBL	8	179	187	5%
NBTH	29	942	971	3%
NBR	8	199	207	4%
SBL	7	205	212	4%
SBTH	29	584	613	5%
SBR	17	250	267	7%



SUBJECT	BY	DATE	JOB NO.	SHEET	OF
TURN MOVEMENTS	TNM	9-Sep-20	BRTLDSXP-0003	1	OF 1

E/W STREET : I-10 EB RAMPS
N/S STREET : MILLIKEN AVE
CONDITION : FRI PEAK HOUR

INTERSECTION : 16

TURN MOVEMENTS

Condition	Existing Condition Traffic	Opening Year 2024 No Build Traffic	Opening Year 2024 Project Trips	Opening Year 2024 Build	Future Year 2045 No Build Traffic	Future Year 2045 Project	Future Year 2045 Build
	1.3	2.3		3.3	4.3		5.3

I-10 EB RAMPS

EB Left	363	422	80	502	1392	222	1614
EB Thru	0	0	0	0	0	0	0
EB Right	169	197	0	197	11	0	11
WB Left	0	0	0	0	0	0	0
WB Thru	0	0	0	0	0	0	0
WB Right	0	0	0	0	0	0	0

MILLIKEN AVE

NB Left	296	486	0	486	5	0	5
NB Thru	849	985	0	985	671	0	671
NB Right	0	0	0	0	0	0	0
SB Left	0	0	0	0	0	0	0
SB Thru	308	370	4	374	617	8	625
SB Right	311	511	47	558	703	119	822
TOTALS	2296	2971	131	3102	3399	349	3748

Step 1:

FRIDAY PEAK

Location			2016 Peak Period	2040 Peak Period	
1	I-15 Ramps/Highway 395 at Joshua St	APPROACH	NB	5,840	6,908
			SB	3,055	3,039
			EB	1,367	4,220
			WB	716	2,440
	DEPARTURE	NB	2,214	1,957	
		SB	5,907	12,590	
		EB	494	958	
		WB	2,688	2,169	
2	I-15 SB Off-ramp at Joshua St	APPROACH	NB	0	0
			SB	395	794
			EB	2,877	2,322
			WB	387	1,517
	DEPARTURE	NB	0	0	
		SB	0	0	
		EB	629	2,144	
		WB	3,085	2,474	
3	I-15 NB On-ramp at Joshua Street	APPROACH	NB	0	0
			SB	0	0
			EB	3,275	2,627
			WB	424	1,891
	DEPARTURE	NB	0	0	
		SB	290	91	
		EB	387	1,517	
		WB	2,861	2,496	
4	Mariposa Rd at Joshua St	APPROACH	NB	330	2,668
			SB	311	601
			EB	2,850	2,487
			WB	0	0
	DEPARTURE	NB	1,135	1,477	
		SB	1,515	2,537	
		EB	397	1,580	
		WB	0	0	
5	I-15 SB Ramps at Foothill Blvd (Rt 66)	APPROACH	NB	0	0
			SB	2,314	2,993
			EB	6,621	7,074
			WB	3,635	4,046
	DEPARTURE	NB	3,829	3,423	
		SB	0	0	
		EB	4,671	5,346	
		WB	4,144	4,853	
6	I-15 NB Ramps at Foothill Blvd (Rt 66)	APPROACH	NB	4,440	5,031
			SB	0	0
			EB	3,961	5,194
			WB	4,927	5,217
	DEPARTURE	NB	0	0	
		SB	1,948	2,097	
		EB	6,855	6,999	
		WB	6,213	8,064	
7	I-15 SB Ramps/Ontario Mills Dr at Fourth Street	APPROACH	NB	154	642
			SB	1,532	1,802
			EB	8,866	10,576
			WB	3,977	4,951
	DEPARTURE	NB	138	194	
		SB	2,663	2,757	
		EB	4,622	6,003	
		WB	7,000	9,148	
8	I-15 NB Ramps at Fourth Street	APPROACH	NB	0	0
			SB	1,866	2,692
			EB	6,997	9,144
			WB	3,031	2,914
	DEPARTURE	NB	0	0	
		SB	2,734	3,107	
		EB	3,948	4,916	
		WB	5,130	6,589	

Step 1:

FRIDAY PEAK

Location			2016 Peak Period	2040 Peak Period	
9	I-210 WB Ramps at Milliken Ave	APPROACH	NB	3,459	3,953
			SB	1,474	1,015
			EB	0	0
			WB	1,261	1,187
	DEPARTURE	NB	1,918	1,387	
		SB	2,759	3,404	
		EB	1,477	1,289	
		WB	0	0	
10	I-210 EB Ramps at Milliken Ave	APPROACH	NB	3,286	3,559
			SB	1,689	1,222
			EB	2,372	2,815
			WB	0	0
	DEPARTURE	NB	2,704	2,302	
		SB	3,413	3,900	
		EB	0	0	
		WB	911	689	
11	Milliken Ave at Foothill Blvd (Rt 66)	APPROACH	NB	6,561	7,342
			SB	5,225	4,774
			EB	5,107	6,029
			WB	4,894	6,558
	DEPARTURE	NB	3,857	3,916	
		SB	6,202	6,519	
		EB	5,284	6,497	
		WB	5,579	7,029	
12	Milliken Ave at Fourth Street	APPROACH	NB	6,560	10,521
			SB	6,549	5,096
			EB	8,349	12,359
			WB	8,648	9,811
	DEPARTURE	NB	6,189	7,149	
		SB	6,727	8,781	
		EB	7,430	9,644	
		WB	9,896	12,138	
13	Milliken Ave at Azusa Ct	APPROACH	NB	7,055	7,885
			SB	5,052	4,726
			EB	7	7
			WB	0	0
	DEPARTURE	NB	5,038	4,713	
		SB	7,055	7,885	
		EB	8	8	
		WB	0	0	
14	Milliken Ave at 7th St	APPROACH	NB	6,028	6,618
			SB	5,049	4,723
			EB	777	863
			WB	194	177
	DEPARTURE	NB	4,589	3,833	
		SB	7,030	7,658	
		EB	366	857	
		WB	97	101	
15	I-10 WB Ramps at Milliken Ave	APPROACH	NB	7,973	10,733
			SB	3,960	4,738
			EB	0	0
			WB	3,235	3,222
	DEPARTURE	NB	6,891	7,785	
		SB	5,250	7,016	
		EB	1,410	1,433	
		WB	3,540	5,026	
16	I-10 EB Ramps at Milliken Ave	APPROACH	NB	8,759	11,290
			SB	5,923	6,692
			EB	1,421	1,546
			WB	0	0
	DEPARTURE	NB	5,855	6,318	
		SB	8,270	11,133	
		EB	2,244	2,534	
		WB	0	0	

Intersection Volume Development

FRIDAY PEAK

Step 2:

Peak period to peak hour: 0.28

Location			2016 Peak Hour	2040 Peak Hour	
1	I-15 Ramps/Highway 395 at Joshua St	APPROACH	NB	1,835	1,934
			SB	856	851
			EB	383	1,182
			WB	200	683
		DEPARTURE	NB	620	548
			SB	1,854	3,525
			EB	138	268
			WB	753	607
2	I-15 SB Off-ramp at Joshua St	APPROACH	NB	0	0
			SB	111	222
			EB	806	650
			WB	108	425
		DEPARTURE	NB	0	0
			SB	0	0
			EB	178	600
			WB	864	693
3	I-15 NB On-ramp at Joshua Street	APPROACH	NB	0	0
			SB	0	0
			EB	917	735
			WB	119	473
		DEPARTURE	NB	0	0
			SB	81	25
			EB	108	425
			WB	801	699
4	Mariposa Rd at Joshua St	APPROACH	NB	92	747
			SB	87	168
			EB	798	696
			WB	0	0
		DEPARTURE	NB	318	413
			SB	424	710
			EB	111	442
			WB	0	0
5	I-15 SB Ramps at Foothill Blvd (Rt 66)	APPROACH	NB	0	0
			SB	648	838
			EB	1,854	1,981
			WB	1,018	1,133
		DEPARTURE	NB	1,072	958
			SB	0	0
			EB	1,308	1,497
			WB	1,160	1,359
6	I-15 NB Ramps at Foothill Blvd (Rt 66)	APPROACH	NB	1,243	1,409
			SB	0	0
			EB	1,109	1,454
			WB	1,380	1,461
		DEPARTURE	NB	0	0
			SB	546	587
			EB	1,919	1,960
			WB	1,740	2,258
7	I-15 SB Ramps/Ontario Mills Dr at Fourth Street	APPROACH	NB	43	180
			SB	429	505
			EB	2,483	2,961
			WB	1,113	1,386
		DEPARTURE	NB	39	54
			SB	746	772
			EB	1,294	1,681
			WB	1,960	2,561
8	I-15 NB Ramps at Fourth Street	APPROACH	NB	0	0
			SB	523	754
			EB	1,959	2,560
			WB	849	816
		DEPARTURE	NB	0	0
			SB	765	870
			EB	1,105	1,376
			WB	1,436	1,845

Intersection Volume Development

FRIDAY PEAK

Step 2:

Peak period to peak hour: 0.38

Location				2016 Peak Hour	2040 Peak Hour
9	I-210 WB Ramps at Milliken Ave	APPROACH	NB	989	1,107
			SB	413	284
			EB	0	0
			WB	353	332
	DEPARTURE	NB	537	388	
		SB	773	953	
		EB	414	361	
		WB	0	0	
10	I-210 EB Ramps at Milliken Ave	APPROACH	NB	920	996
			SB	473	342
			EB	664	788
			WB	0	0
	DEPARTURE	NB	757	645	
		SB	956	1,092	
		EB	0	0	
		WB	255	193	
11	Milliken Ave at Foothill Blvd (Rt 66)	APPROACH	NB	1,837	2,056
			SB	1,463	1,337
			EB	1,430	1,688
			WB	1,370	1,836
	DEPARTURE	NB	1,080	1,097	
		SB	1,736	1,825	
		EB	1,480	1,819	
		WB	1,562	1,968	
12	Milliken Ave at Fourth Street	APPROACH	NB	1,837	2,946
			SB	1,834	1,427
			EB	2,338	3,461
			WB	2,421	2,747
	DEPARTURE	NB	1,733	2,002	
		SB	1,884	2,459	
		EB	2,080	2,700	
		WB	2,771	3,399	
13	Milliken Ave at Azusa Ct	APPROACH	NB	1,975	2,152
			SB	1,415	1,323
			EB	2	2
			WB	0	0
	DEPARTURE	NB	1,411	1,320	
		SB	1,975	2,152	
		EB	2	2	
		WB	0	0	
14	Milliken Ave at 7th St	APPROACH	NB	1,688	1,853
			SB	1,414	1,323
			EB	218	242
			WB	54	49
	DEPARTURE	NB	1,285	1,073	
		SB	1,968	2,144	
		EB	103	240	
		WB	27	28	
15	I-10 WB Ramps at Milliken Ave	APPROACH	NB	2,232	3,005
			SB	1,109	1,327
			EB	0	0
			WB	906	902
	DEPARTURE	NB	1,929	2,180	
		SB	1,470	1,964	
		EB	395	401	
		WB	991	1,407	
16	I-10 EB Ramps at Milliken Ave	APPROACH	NB	2,453	3,161
			SB	1,659	1,874
			EB	398	433
			WB	0	0
	DEPARTURE	NB	1,639	1,789	
		SB	2,316	3,117	
		EB	628	709	
		WB	0	0	

Step 3:

FRIDAY PEAK

Location			a	b	c		
			Difference 2040-2016	Annual Growth	Growth 2020 to 2045	Existing 2020	2045 adjusted
1 I-15 Ramps/Highway 395 at Joshua St	APPROACH	NB	299	13	325	1,870	1,995
		SB	-5	0	0	601	601
		EB	799	34	850	159	1,009
		WB	483	21	525	160	685
	DEPARTURE	NB	-72	0	0	592	592
		SB	1,871	78	1950	1,875	3,625
		EB	130	6	150	62	212
		WB	-145	0	0	261	261
2 I-15 SB Off-ramp at Joshua St	APPROACH	NB	0	0	0	0	0
		SB	112	5	125	62	187
		EB	-156	0	0	253	253
		WB	316	14	350	88	438
	DEPARTURE	NB	0	0	0	0	0
		SB	0	0	0	0	0
		EB	424	18	450	145	595
		WB	-171	0	0	258	258
3 I-15 NB On-ramp at Joshua Street	APPROACH	NB	0	0	0	0	0
		SB	0	0	0	0	0
		EB	-181	0	0	277	277
		WB	355	15	375	116	491
	DEPARTURE	NB	0	0	0	0	0
		SB	-56	0	0	188	188
		EB	316	14	350	88	438
		WB	-102	0	0	117	117
4 Mariposa Rd at Joshua St	APPROACH	NB	655	28	700	89	789
		SB	81	4	100	79	179
		EB	-102	0	0	118	118
		WB	0	0	0	0	0
	DEPARTURE	NB	96	4	100	94	194
		SB	286	12	300	69	369
		EB	331	14	350	123	473
		WB	0	0	0	0	0
5 I-15 SB Ramps at Foothill Blvd (Rt 66)	APPROACH	NB	0	0	0	0	0
		SB	190	8	200	866	1,066
		EB	127	6	150	1,790	1,940
		WB	115	5	125	1,617	1,742
	DEPARTURE	NB	-114	0	0	816	816
		SB	0	0	0	535	535
		EB	189	8	200	1,634	1,834
		WB	198	9	225	1,288	1,513
6 I-15 NB Ramps at Foothill Blvd (Rt 66)	APPROACH	NB	165	7	175	861	1,036
		SB	0	0	0	0	0
		EB	345	15	375	1,172	1,547
		WB	81	4	100	1,791	1,891
	DEPARTURE	NB	0	0	0	270	270
		SB	42	2	50	776	826
		EB	40	2	50	1,571	1,621
		WB	518	22	550	1,207	1,757
7 I-15 SB Ramps/Ontario Mills Dr at Fourth Street	APPROACH	NB	137	6	150	291	441
		SB	76	4	100	581	681
		EB	479	20	500	1,671	2,171
		WB	273	12	300	983	1,283
	DEPARTURE	NB	16	1	25	308	333
		SB	26	2	50	844	894
		EB	386	17	425	1,199	1,624
		WB	601	26	650	1,175	1,825
8 I-15 NB Ramps at Fourth Street	APPROACH	NB	0	0	0	483	483
		SB	231	10	250	671	921
		EB	601	26	650	1,177	1,827
		WB	-33	0	0	607	607
	DEPARTURE	NB	0	0	0	158	158
		SB	105	5	125	823	948
		EB	271	12	300	977	1,277
		WB	408	18	450	682	1,132

Step 3:

FRIDAY PEAK

Location			a	b	Growth 2020 to 2045	Existing 2020	c
			Difference 2040-2016	Annual Growth			2045 adjusted
9 I-210 WB Ramps at Milliken Ave	APPROACH	NB	138	8	150	750	900
		SB	-128	0	0	420	420
		EB	0	0	0	0	0
		WB	-21	0	0	270	270
	DEPARTURE	NB	-149	0	0	557	557
		SB	180	8	200	618	818
		EB	-53	0	0	265	265
		WB	0	0	0	0	0
10 I-210 EB Ramps at Milliken Ave	APPROACH	NB	76	4	100	997	1,097
		SB	-131	0	0	492	492
		EB	124	6	150	412	562
		WB	0	0	0	0	0
	DEPARTURE	NB	-113	0	0	684	684
		SB	136	6	150	740	890
		EB	0	0	0	0	0
		WB	-62	0	0	477	477
11 Milliken Ave at Foothill Blvd (Rt 66)	APPROACH	NB	219	10	250	1,083	1,333
		SB	-128	0	0	816	816
		EB	258	11	275	1,604	1,879
		WB	466	20	500	1,434	1,934
	DEPARTURE	NB	17	1	25	700	725
		SB	89	4	100	921	1,021
		EB	340	15	375	1,648	2,023
		WB	406	17	425	1,668	2,093
12 Milliken Ave at Fourth Street	APPROACH	NB	1,109	47	1175	1,267	2,442
		SB	-407	0	0	1,081	1,081
		EB	1,123	47	1175	1,469	2,644
		WB	325	14	350	1,346	1,696
	DEPARTURE	NB	269	12	300	1,108	1,408
		SB	575	24	600	1,219	1,819
		EB	620	26	650	1,338	1,988
		WB	628	27	675	1,498	2,173
13 Milliken Ave at Azusa Ct	APPROACH	NB	177	8	200	1,715	1,915
		SB	-91	0	0	927	927
		EB	0	0	0	32	32
		WB	0	0	0	0	0
	DEPARTURE	NB	-91	0	0	929	929
		SB	177	8	200	1,715	1,915
		EB	0	0	0	30	30
		WB	0	0	0	0	0
14 Milliken Ave at 7th St	APPROACH	NB	165	7	175	1,622	1,797
		SB	-91	0	0	931	931
		EB	24	1	25	166	191
		WB	-5	0	0	36	36
	DEPARTURE	NB	-211	0	0	970	970
		SB	176	8	200	1,709	1,909
		EB	138	6	150	57	207
		WB	1	0	0	19	19
15 I-10 WB Ramps at Milliken Ave	APPROACH	NB	773	33	825	1,365	2,190
		SB	218	10	250	1,092	1,342
		EB	0	0	0	509	509
		WB	-3	0	0	800	800
	DEPARTURE	NB	250	11	275	1,253	1,528
		SB	494	21	525	1,260	1,785
		EB	6	1	25	626	651
		WB	416	18	450	627	1,077
16 I-10 EB Ramps at Milliken Ave	APPROACH	NB	709	30	750	1,145	1,895
		SB	215	9	225	619	844
		EB	35	2	50	532	582
		WB	0	0	0	0	0
	DEPARTURE	NB	129	6	150	477	627
		SB	801	34	850	1,212	2,062
		EB	81	4	100	607	707
		WB	0	0	0	0	0

Appendix A.1.4 - Intersection Forecasting Worksheets Sunday Peak



SUBJECT	BY	DATE	JOB NO.	SHEET	OF
TURN MOVEMENTS	TNM	9-Sep-20	BRTLDSXP-0003	1	OF 1

E/W STREET : JOSHUA ST
N/S STREET : HIGHWAY 395
CONDITION : SUN PEAK HOUR

INTERSECTION : 1

TURN MOVEMENTS

Condition	Existing Condition Traffic	Opening Year 2024 No Build Traffic	Opening Year 2024 Project Trips	Opening Year 2024 Build Traffic	Future Year 2045 No Build Traffic	Future Year 2045 Project Trips	Future Year 2045 Build Traffic
	1.4	2.4		3.4	4.4		5.4

JOSHUA ST

EB Left	27	32	0	32	148	0	148
EB Thru	79	92	0	92	175	0	175
EB Right	15	15	0	15	52	0	52
WB Left	35	35	0	35	35	0	35
WB Thru	17	20	0	20	77	0	77
WB Right	89	104	5	109	590	10	600

HIGHWAY 395

NB Left	20	24	0	24	19	0	19
NB Thru	1,183	1,373	0	1,373	1,595	0	1,595
NB Right	82	82	0	82	11	0	11
SB Left	57	57	5	62	34	10	44
SB Thru	602	602	0	602	567	0	567
SB Right	19	23	0	23	123	0	123
TOTALS	2,225	2,459	10	2,469	3,426	20	3,446



SUBJECT	BY	DATE	JOB NO.	SHEET	OF
TURN MOVEMENTS	TNM	9-Sep-20	BRTLDSXP-0003	1	OF 1

E/W STREET : JOSHUA ST
N/S STREET : I-15 SB RAMP
CONDITION : SUN PEAK HOUR

INTERSECTION : 1

TURN MOVEMENTS

Condition	Existing Condition Traffic	Opening Year 2024 No Build Traffic	Opening Year 2024 Project Trips	Opening Year 2024 Build Traffic	Future Year 2045 No Build Traffic	Future Year 2045 Project Trips	Future Year 2045 Build Traffic
	1.4	2.4		3.4	4.4		5.4

JOSHUA ST

EB Left	0	0	0	0	0	0	0
EB Thru	193	193	0	193	187	0	187
EB Right	0	0	0	0	0	0	0
WB Left	0	0	0	0	0	0	0
WB Thru	78	91	5	96	383	10	393
WB Right	0	0	0	0	0	0	0

I-15 SB RAMP

NB Left	0	0	0	0	0	0	0
NB Thru	0	0	0	0	0	0	0
NB Right	0	0	0	0	0	0	0
SB Left	6	7	5	12	13	10	23
SB Thru	0	0	0	0	0	0	0
SB Right	65	78	0	78	211	0	211
TOTALS	342	369	10	379	794	20	814



SUBJECT	BY	DATE	JOB NO.	SHEET	OF
TURN MOVEMENTS	TNM	9-Sep-20	BRTLDSXP-0003	1	OF 1

E/W STREET : JOSHUA ST
N/S STREET : I-15 NB RAMP
CONDITION : SUN PEAK HOUR

INTERSECTION : 3

TURN MOVEMENTS

Condition	Existing Condition Traffic	Opening Year 2024 No Build Traffic	Opening Year 2024 Project Trips	Opening Year 2024 Build Traffic	Future Year 2045 No Build Traffic	Future Year 2045 Project Trips	Future Year 2045 Build Traffic
	1.4	2.4		3.4	4.4		5.4

JOSHUA ST

EB Left	123	143	5	148	108	10	118
EB Thru	89	104	4	108	91	8	99
EB Right	0	0	0	0	0	0	0
WB Left	0	0	0	0	0	0	0
WB Thru	78	91	4	95	383	8	391
WB Right	21	25	0	25	36	0	36

I-15 NB RAMP

NB Left	0	0	0	0	0	0	0
NB Thru	0	0	0	0	0	0	0
NB Right	0	0	0	0	0	0	0
SB Left	0	0	0	0	0	0	0
SB Thru	0	0	0	0	0	0	0
SB Right	0	0	0	0	0	0	0
TOTALS	311	363	13	376	618	26	644



SUBJECT	BY	DATE	JOB NO.	SHEET	OF
TURN MOVEMENTS	TNM	9-Sep-20	BRTLDSXP-0003	1	OF 2

E/W STREET : JOSHUA ST
N/S STREET : MARIPOSA
CONDITION : SUN PEAK HOUR

INTERSECTION : 4

TURN MOVEMENTS

Condition	Existing Condition Traffic	Opening Year 2024 No Build Traffic	Opening Year 2024 Project Trips	Opening Year 2024 Build Traffic	Future Year 2045 No Build Traffic	Future Year 2045 Project Trips	Future Year 2045 Build Traffic
	1.4	2.4		3.4	4.4		5.4

JOSHUA ST

EB Left	39	46	3	49	18	6	24
EB Thru	0	0	0	0	0	0	0
EB Right	51	60	2	62	74	3	77
WB Left	0	0	0	0	0	0	0
WB Thru	0	0	0	0	0	0	0
WB Right	0	0	0	0	0	0	0

MARIPOSA

NB Left	69	69	2	71	410	3	413
NB Thru	31	38	0	38	379	0	379
NB Right	0	0	0	0	0	0	0
SB Left	0	0	0	0	0	0	0
SB Thru	27	27	0	27	110	0	110
SB Right	40	40	3	43	25	6	31
TOTALS	257	280	10	290	1016	18	1034



SUBJECT	BY	DATE	JOB NO.	SHEET	OF
TURN VOLUME SUMMARY	TNM	9-Sep-20	BRTLDSXP-0003	2	OF 2

E/W STREET : JOSHUA ST N/S STREET : MARIPOSA
CONDITION : SUN PEAK HOUR PHF : 0.89

NORTH LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
10	5	0	0	0	0	2	0	0	0	0	0
9	9	0	1	0	0	0	0	0	0	0	0
6	4	0	0	0	0	1	1	0	1	0	0
8	8	0	1	0	0	1	0	0	0	0	0

SOUTH LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
0	10	12	0	0	0	0	0	0	0	0	0
0	2	19	0	1	1	0	1	0	0	0	0
0	6	15	0	0	1	0	1	0	0	0	0
0	9	21	0	1	0	0	0	0	0	0	0

EAST LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0

WEST LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
13	0	9	1	0	0	0	0	0	0	0	1
9	0	7	0	0	0	0	0	1	1	0	0
10	0	12	2	0	0	1	0	0	0	0	0
12	0	8	1	0	1	0	0	0	1	0	0

Truck Volumes	Auto Volumes	Totals	Truck Percentage
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JOSHUA ST				
EBL	3	36	39	8%
EBTH	0	0	0	0%
EBR	7	44	51	14%
WBL	0	0	0	0%
WBTH	0	0	0	0%
WBR	0	0	0	0%

MARIPOSA				
NBL	2	67	69	3%
NBTH	4	27	31	13%
NBR	0	0	0	0%
SBL	0	0	0	0%
SBTH	1	26	27	4%
SBR	7	33	40	18%



SUBJECT	BY	DATE	JOB NO.	SHEET	OF
TURN MOVEMENTS	TNM	9-Sep-20	BRTLDSXP-0003	1	OF 2

E/W STREET : FOOTHILL BLVD
N/S STREET : INTERSTATE 15 SB RAMPS
CONDITION : SUN PEAK HOUR

INTERSECTION : 5

TURN MOVEMENTS

Condition	Existing Condition Traffic	Opening Year 2024 No Build Traffic	Opening Year 2024 Project Trips	Opening Year 2024 Build Traffic	Future Year 2045 No Build Traffic	Future Year 2045 Project Trips	Future Year 2045 Build Traffic
	1.4	2.4		3.4	4.4		5.4

FOOTHILL BLVD

EB Left	0	0	0	0	0	0	0
EB Thru	1333	1547	28	1575	1,740	81	1821
EB Right	634	634	0	634	634	0	634
WB Left	0	0	0	0	0	0	0
WB Thru	1811	2174	4	2178	2,022	8	2030
WB Right	304	304	0	304	304	0	304

INTERSTATE 15 SB RAMPS

NB Left	0	0	0	0	0	0	0
NB Thru	0	0	0	0	0	0	0
NB Right	0	0	0	0	0	0	0
SB Left	122	142	0	142	190	0	190
SB Thru	0	0	0	0	0	0	0
SB Right	299	359	18	377	364	44	408
TOTALS	4503	5160	50	5210	5254	133	5387



SUBJECT	BY	DATE	JOB NO.	SHEET	OF
TURN VOLUME SUMMARY	TNM	9/9/2020	BRTLDSXP-0003	2	OF 2

E/W STREET : FOOTHILL BLVD N/S STREET : INTERSTATE 15 SB RAMPS
CONDITION : SUN PEAK HOUR PHF : 0.97

NORTH LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
75	0	32	0	0	0	0	0	3	2	0	0
62	0	25	3	0	0	3	0	2	1	0	0
77	0	28	0	0	1	0	0	1	3	0	1
69	0	29	1	0	0	2	0	0	1	0	0

SOUTH LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0

EAST LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
87	471	0	0	0	0	1	3	0	0	1	0
70	456	0	1	1	0	1	3	0	1	1	0
75	361	0	0	2	0	1	2	0	1	0	0
65	509	0	0	0	0	0	1	0	1	0	0

WEST LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
156	321	0	2	0	0	0	1	0	2	0	0
146	274	0	0	0	0	0	3	0	0	0	0
181	400	0	0	1	0	2	2	0	1	1	0
141	328	0	1	0	0	0	1	0	2	1	0

Truck Volumes	Auto Volumes	Totals	Truck Percentage
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FOOTHILL BLVD				
EBL	0	0	0	0%
EBTH	10	1323	1333	1%
EBR	10	624	634	2%
WBL	0	0	0	0%
WBTH	14	1797	1811	1%
WBR	7	297	304	3%

INTERSTATE 15 SB RAM				
NBL	0	0	0	0%
NBTH	0	0	0	0%
NBR	0	0	0	0%
SBL	8	114	122	7%
SBTH	0	0	0	0%
SBR	16	283	299	6%



SUBJECT	BY	DATE	JOB NO.	SHEET	OF
TURN MOVEMENTS	TNM	9-Sep-20	BRTLDSXP-0003	1	OF 2

E/W STREET : FOOTHILL BLVD

INTERSECTION : 6

N/S STREET : INTERSTATE 15 NB RAMPS

CONDITION : SUN PEAK HOUR

TURN MOVEMENTS

Condition	Existing Condition Traffic	Opening Year 2024 No Build Traffic	Opening Year 2024 Project Trips	Opening Year 2024 Build Traffic	Future Year 2045 No Build Traffic	Future Year 2045 Project Trips	Future Year 2045 Build Traffic
	1.4	2.4		3.4	4.4		5.4

FOOTHILL BLVD

EB Left	0	0	0	0	0	0	0
EB Thru	1019	1183	5	1188	1,455	13	1468
EB Right	474	474	23	497	474	68	542
WB Left	0	0	0	0	0	0	0
WB Thru	959	1151	4	1155	1,040	8	1048
WB Right	271	347	0	347	296	0	296

INTERSTATE 15 NB RAMPS

NB Left	1139	1322	0	1322	1,286	0	1286
NB Thru	0	0	0	0	0	0	0
NB Right	431	535	0	535	646	0	646
SB Left	0	0	0	0	0	0	0
SB Thru	0	0	0	0	0	0	0
SB Right	0	0	0	0	0	0	0
TOTALS	4293	5012	32	5044	5197	89	5286



SUBJECT	BY	DATE	JOB NO.	SHEET	OF
TURN VOLUME SUMMARY	TNM	9/9/2020	BRTLDSXP-0003	2	OF 2

E/W STREET : FOOTHILL BLVD N/S STREET : INTERSTATE 15 NB RAMPS
CONDITION : SUN PEAK HOUR PHF : 0.94

NORTH LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0

SOUTH LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
123	0	301	0	0	0	0	0	6	0	0	1
114	0	276	1	0	0	0	0	4	0	0	1
95	0	232	0	0	2	0	0	2	0	0	1
98	0	311	0	0	0	0	0	1	0	0	1

EAST LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
57	246	0	0	0	0	0	4	0	0	2	0
100	255	0	0	0	0	0	0	0	0	0	0
60	247	0	0	2	0	2	4	0	0	1	0
52	197	0	0	0	0	0	1	0	0	0	0

WEST LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
112	280	0	0	1	0	1	2	0	1	0	0
38	316	0	0	1	0	2	2	0	0	0	0
81	217	0	0	0	0	3	2	0	0	0	0
236	195	0	0	0	0	0	1	0	0	2	0

	Truck Volumes	Auto Volumes	Totals	Truck Percentage
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FOOTHILL BLVD				
EBL	0	0	0	0%
EBTH	11	1008	1019	2%
EBR	7	467	474	2%
WBL	0	0	0	0%
WBTH	14	945	959	2%
WBR	2	269	271	1%

INTERSTATE 15 NB RAM				
NBL	19	1120	1139	2%
NBTH	0	0	0	0%
NBR	1	430	431	1%
SBL	0	0	0	0%
SBTH	0	0	0	0%
SBR	0	0	0	0%



SUBJECT	BY	DATE	JOB NO.	SHEET	OF
TURN MOVEMENTS	TNM	9-Sep-20	BRTLDSXP-0003	1	OF 2

E/W STREET : FOURTH STREET

INTERSECTION : 7

N/S STREET : INTERSTATE 15 SB RAMPS

CONDITION : SUN PEAK HOUR

TURN MOVEMENTS

Condition	Existing Condition Traffic	Opening Year 2024 No Build Traffic	Opening Year 2024 Project Trips	Opening Year 2024 Build Traffic	Future Year 2045 No Build Traffic	Future Year 2045 Project Trips	Future Year 2045 Build Traffic
	1.4	2.4		3.4	4.4		5.4

FOURTH STREET

EB Left	418	502	11	513	404	31	435
EB Thru	613	712	3	715	938	7	945
EB Right	45	54	0	54	51	0	51
WB Left	152	183	0	183	174	0	174
WB Thru	607	705	10	715	838	24	862
WB Right	90	108	0	108	88	0	88

INTERSTATE 15 SB RAMPS

NB Left	112	130	0	130	198	0	198
NB Thru	178	207	0	207	221	0	221
NB Right	45	53	0	53	89	0	89
SB Left	92	107	0	107	124	0	124
SB Thru	240	288	0	288	239	0	239
SB Right	450	522	0	522	540	0	540
TOTALS	3042	3571	24	3595	3904	62	3966



SUBJECT	BY	DATE	JOB NO.	SHEET	OF
TURN VOLUME SUMMARY	TNM	9/9/2020	BRTLDSXP-0003	2	OF 2

E/W STREET : FOURTH STREET N/S STREET : INTERSTATE 15 SB RAMPS
CONDITION : SUN PEAK HOUR PHF : 0.97

NORTH LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
102	77	18	0	0	0	0	0	0	1	1	2
115	65	29	0	0	0	0	0	0	0	1	0
120	52	22	0	0	0	0	0	0	1	0	1
111	44	19	0	0	1	0	0	0	0	0	0

SOUTH LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
13	47	25	0	0	0	0	0	0	0	0	0
15	40	20	0	0	0	0	0	0	0	0	0
9	53	37	0	0	0	0	0	0	0	0	0
8	38	30	0	0	0	0	0	0	0	0	0

EAST LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
20	164	27	0	1	0	0	0	0	1	2	0
23	129	32	0	0	1	0	0	0	1	2	0
23	132	52	0	0	0	0	1	0	2	1	0
15	166	40	1	1	0	1	1	0	3	7	0

WEST LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
9	134	100	0	1	0	0	0	1	0	0	0
14	139	105	0	1	0	0	0	0	0	0	0
12	157	109	0	1	0	0	1	0	0	2	0
10	176	103	0	1	0	0	0	0	0	0	0

Truck Volumes	Auto Volumes	Totals	Truck Percentage
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FOURTH STREET			
EBL	1	417	418 1%
EBTH	7	606	613 2%
EBR	0	45	45 1%
WBL	1	151	152 1%
WBTH	16	591	607 3%
WBR	9	81	90 10%

INTERSTATE 15 SB RAM			
NBL	0	112	112 1%
NBTH	0	178	178 1%
NBR	0	45	45 1%
SBL	4	88	92 5%
SBTH	2	238	240 1%
SBR	2	448	450 1%



SUBJECT	BY	DATE	JOB NO.	SHEET	OF
TURN MOVEMENTS	TNM	9-Sep-20	BRTLDSXP-0003	1	OF 2

E/W STREET : FOURTH STREET

INTERSECTION : 8

N/S STREET : INTERSTATE 15 NB RAMPS

CONDITION : SUN PEAK HOUR

TURN MOVEMENTS

Condition	Existing Condition Traffic	Opening Year 2024 No Build Traffic	Opening Year 2024 Project Trips	Opening Year 2024 Build Traffic	Future Year 2045 No Build Traffic	Future Year 2045 Project Trips	Future Year 2045 Build Traffic
	1.4	2.4		3.4	4.4		5.4

FOURTH STREET

EB Left	476	553	0	553	639	0	639
EB Thru	195	227	3	230	406	7	413
EB Right	79	79	0	79	107	0	107
WB Left	9	9	0	9	5	0	5
WB Thru	190	190	2	192	200	4	204
WB Right	30	35	0	35	15	0	15

INTERSTATE 15 NB RAMPS

NB Left	62	72	0	72	79	0	79
NB Thru	54	54	0	54	32	0	32
NB Right	35	41	0	41	32	0	32
SB Left	50	58	0	58	50	0	50
SB Thru	41	48	0	48	27	0	27
SB Right	597	693	8	701	821	20	841
TOTALS	1818	2059	13	2072	2413	31	2444



SUBJECT	BY	DATE	JOB NO.	SHEET	OF
TURN VOLUME SUMMARY	TNM	9/9/2020	BRTLDSXP-0003	2	OF 2

E/W STREET : FOURTH STREET N/S STREET : INTERSTATE 15 NB RAMPS
CONDITION : SUN PEAK HOUR PHF : 0.92

NORTH LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
143	9	10	0	0	0	0	0	0	1	0	0
137	9	14	0	0	0	0	0	0	1	0	1
142	9	11	0	0	0	0	0	0	1	0	1
166	14	12	0	0	0	1	0	0	5	0	1

SOUTH LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
9	12	10	0	0	1	0	0	0	0	0	0
3	12	12	0	0	0	0	0	0	0	0	0
17	19	23	0	0	0	0	0	0	0	0	0
6	10	16	0	1	0	0	0	0	0	0	0

EAST LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
4	59	3	0	0	0	0	0	0	0	2	0
11	34	0	0	1	0	0	0	0	0	2	0
7	41	4	0	0	0	0	1	0	2	2	0
3	45	2	0	2	0	0	1	0	3	0	0

WEST LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
20	41	107	0	1	0	0	0	0	0	1	0
11	40	128	0	1	0	0	1	0	0	1	1
31	51	106	0	1	0	0	1	0	0	2	1
15	48	131	1	2	0	0	1	0	1	3	2

Truck Volumes	Auto Volumes	Totals	Truck Percentage
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FOURTH STREET				
EBL	4	472	476	1%
EBTH	15	180	195	8%
EBR	2	77	79	3%
WBL	0	9	9	1%
WBTH	11	179	190	6%
WBR	5	25	30	17%

INTERSTATE 15 NB RAM				
NBL	1	61	62	2%
NBTH	1	53	54	2%
NBR	0	35	35	1%
SBL	3	47	50	6%
SBTH	0	41	41	1%
SBR	9	588	597	2%



SUBJECT	BY	DATE	JOB NO.	SHEET	OF
TURN MOVEMENTS	TNM	9-Sep-20	BRTLDSXP-0003	1	OF 1

E/W STREET : I-210 WB RAMPS

INTERSECTION : 9

N/S STREET : MILLIKEN AVE

CONDITION : SUN PEAK HOUR

TURN MOVEMENTS

Condition	Existing Condition Traffic	Opening Year 2024 No Build Traffic	Opening Year 2024 Project Trips	Opening Year 2024 Build	Future Year 2045 No Build	Future Year 2045 Project	Future Year 2045 Build
	1.4	2.4		3.4	4.4		5.4

I-210 WB RAMPS

EB Left	0	0	0	0	0	0	0
EB Thru	0	0	0	0	0	0	0
EB Right	0	0	0	0	0	0	0
WB Left	162	162	4	166	168	8	176
WB Thru	7	7	0	7	7	0	7
WB Right	62	75	0	75	80	0	80

MILLIKEN AVE

NB Left	153	153	17	170	158	49	207
NB Thru	407	473	0	473	553	0	553
NB Right	0	0	0	0	0	0	0
SB Left	0	0	0	0	0	0	0
SB Thru	259	259	0	259	266	0	266
SB Right	37	37	0	37	36	0	36
TOTALS	1087	1166	21	1187	1268	57	1325



SUBJECT	BY	DATE	JOB NO.	SHEET	OF
TURN MOVEMENTS	TNM	9-Sep-20	BRTLDSXP-0003	1	OF 2

E/W STREET : FOOTHILL BLVD

INTERSECTION : 11

N/S STREET : MILLIKEN AVE

CONDITION : SUN PEAK HOUR

TURN MOVEMENTS

Condition	Existing Condition Traffic	Opening Year 2024 No Build Traffic	Opening Year 2024 Project Trips	Opening Year 2024 Build	Future Year 2045 No Build	Future Year 2045 Project	Future Year 2045 Build
	1.4	2.4		3.4	4.4		5.4

FOOTHILL BLVD

EB Left	159	191	0	191	144	0	144
EB Thru	847	1017	0	1017	1,035	0	1035
EB Right	65	86	5	91	55	12	67
WB Left	267	353	21	374	353	52	405
WB Thru	1138	1321	0	1321	1,463	0	1463
WB Right	89	107	0	107	126	0	126

MILLIKEN AVE

NB Left	238	277	7	284	249	19	268
NB Thru	519	603	21	624	598	62	660
NB Right	131	152	28	180	205	80	285
SB Left	156	181	0	181	196	0	196
SB Thru	368	368	16	384	319	40	359
SB Right	66	77	0	77	56	0	56
TOTALS	4043	4733	98	4831	4799	265	5064



SUBJECT	BY	DATE	JOB NO.	SHEET OF
TURN VOLUME SUMMARY	TNM	9/9/2020	BRTLDSXP-0003	2 OF 2

E/W STREET : FOOTHILL BLVD N/S STREET : MILLIKEN AVE
CONDITION : SUN PEAK HOUR PHF : 0.94

NORTH LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
20	90	37	0	3	0	0	1	1	0	3	1
18	82	44	0	4	0	0	1	0	1	4	1
14	87	34	1	4	2	1	0	1	1	4	0
8	79	35	0	3	0	1	1	0	1	2	0

SOUTH LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
28	138	52	0	3	1	0	0	0	2	2	0
28	105	46	1	5	0	0	2	0	1	4	1
35	117	57	1	3	0	2	0	2	0	3	2
31	125	72	0	5	2	0	2	0	2	5	3

EAST LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
16	273	64	1	7	0	0	2	1	2	9	1
17	254	66	2	5	0	0	0	0	1	10	3
24	262	54	0	4	2	0	1	1	3	8	2
19	282	69	2	8	2	1	1	1	1	12	1

WEST LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
7	192	36	0	5	2	0	1	0	3	7	1
14	185	36	2	3	0	2	0	1	2	9	3
13	198	31	2	5	0	1	0	3	1	11	1
14	222	43	2	2	1	1	1	0	1	6	1

Truck Volumes	Auto Volumes	Totals	Truck Percentage
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FOOTHILL BLVD

EBL	13	146	159	9%
EBTH	50	797	847	6%
EBR	17	48	65	27%
WBL	14	253	267	6%
WBTH	67	1071	1138	6%
WBR	13	76	89	15%

MILLIKEN AVE

NBL	11	227	238	5%
NBTH	34	485	519	7%
NBR	9	122	131	7%
SBL	6	150	156	4%
SBTH	30	338	368	9%
SBR	6	60	66	10%



SUBJECT	BY	DATE	JOB NO.	SHEET	OF
TURN MOVEMENTS	TNM	9-Sep-20	BRTLDSXP-0003	1	OF 2

E/W STREET : 4TH ST

INTERSECTION : 12

N/S STREET : MILLIKEN AVE

CONDITION : SUN PEAK HOUR

TURN MOVEMENTS

Condition	Existing Condition Traffic	Opening Year 2024 No Build Traffic	Opening Year 2024 Project Trips	Opening Year 2024 Build	Future Year 2045 No Build	Future Year 2045 Project	Future Year 2045 Build
	1.4	2.4		3.4	4.4		5.4

4TH ST

EB Left	156	181	0	181	244	13	257
EB Thru	377	438	4	442	650	0	650
EB Right	161	187	0	187	329	0	329
WB Left	379	440	0	440	483	0	483
WB Thru	414	497	0	497	521	0	521
WB Right	141	164	10	174	138	37	175

MILLIKEN AVE

NB Left	206	239	0	239	451	0	451
NB Thru	422	490	99	589	714	248	962
NB Right	99	115	0	115	185	0	185
SB Left	225	261	13	274	192	37	229
SB Thru	460	460	129	589	465	380	845
SB Right	86	100	5	105	86	13	99
TOTALS	3126	3572	260	3832	4458	728	5186



DAVID EVANS
AND ASSOCIATES INC.

SUBJECT	BY	DATE	JOB NO.	SHEET OF
TURN VOLUME SUMMARY	TNM	9/9/2020	BRTLDSXP-0003	2 OF 2

E/W STREET : 4TH ST N/S STREET : MILLIKEN AVE
CONDITION : SUN PEAK HOUR PHF : 0.98

NORTH LEG												
AUTOS			2 AXLE			3 AXLE			4(+) AXLE			
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	
24	116	47	0	2	0	1	2	0	0	3	0	
19	101	61	0	4	0	0	0	0	0	5	0	
19	91	57	0	3	0	0	0	0	0	3	0	
22	123	60	0	3	0	0	0	0	1	4	0	

SOUTH LEG												
AUTOS			2 AXLE			3 AXLE			4(+) AXLE			
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	
24	90	44	0	3	0	1	0	1	0	4	2	
32	109	50	0	2	0	1	1	3	0	5	0	
16	95	54	0	1	0	0	0	0	0	3	1	
24	103	51	0	3	0	1	1	0	0	2	0	

EAST LEG												
AUTOS			2 AXLE			3 AXLE			4(+) AXLE			
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	
43	106	97	0	4	1	0	1	1	0	4	0	
33	85	104	1	2	1	0	1	0	1	5	0	
29	95	88	0	1	0	0	0	0	1	3	0	
33	97	87	0	3	0	0	2	0	0	5	0	

WEST LEG												
AUTOS			2 AXLE			3 AXLE			4(+) AXLE			
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	
35	72	47	0	2	0	0	0	0	0	4	0	
42	88	34	1	2	2	0	1	1	0	2	0	
44	99	39	0	3	0	0	0	0	0	4	0	
38	96	33	0	1	0	1	1	0	0	2	0	

Truck Volumes	Auto Volumes	Totals	Truck Percentage
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4TH ST				
EBL	3	153	156	2%
EBTH	22	355	377	6%
EBR	2	159	161	2%
WBL	3	376	379	1%
WBTH	31	383	414	8%
WBR	3	138	141	3%

MILLIKEN AVE				
NBL	7	199	206	4%
NBTH	25	397	422	6%
NBR	3	96	99	4%
SBL	0	225	225	1%
SBTH	29	431	460	7%
SBR	2	84	86	3%



SUBJECT	BY	DATE	JOB NO.	SHEET	OF
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E/W STREET : AZUSA CT
N/S STREET : MILLIKEN AVE
CONDITION : SUN PEAK HOUR

INTERSECTION : 13

TURN MOVEMENTS

Condition	Existing Condition Traffic	Opening Year 2024 No Build Traffic	Opening Year 2024 Project Trips	Opening Year 2024 Build	Future Year 2045 No Build	Future Year 2045 Project	Future Year 2045 Build
	1.4	2.4		3.4	4.4		5.4

AZUSA CT

EB Left	0	0	0	0	0	0	0
EB Thru	0	0	0	0	0	0	0
EB Right	28	33	73	106	28	215	243
WB Left	0	0	0	0	0	0	0
WB Thru	0	0	0	0	0	0	0
WB Right	0	0	0	0	0	0	0

MILLIKEN AVE

NB Left	0	0	0	0	0	0	0
NB Thru	980	1137	0	1137	1,105	0	1105
NB Right	0	0	0	0	0	0	0
SB Left	0	0	0	0	0	0	0
SB Thru	645	645	0	645	645	0	645
SB Right	22	26	32	58	22	80	102
TOTALS	1675	1841	105	1946	1800	295	2095



SUBJECT	BY	DATE	JOB NO.	SHEET	OF
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E/W STREET : 7TH ST

INTERSECTION : 14

N/S STREET : MILLIKEN AVE

CONDITION : SUN PEAK HOUR

TURN MOVEMENTS

Condition	Existing Condition Traffic	Opening Year 2023 No Build Traffic	Opening Year 2023 Project Trips	Opening Year 2023 Build Traffic	Future Year 2045 No Build	Future Year 2045 Project Trips	Future Year 2045 Build Traffic
	1.4	2.4		3.4	4.4		5.4

7TH ST

EB Left	73	88	63	151	97	184	281
EB Thru	0	0	0	0	0	0	0
EB Right	40	48	73	121	42	215	257
WB Left	13	16	0	16	7	0	7
WB Thru	0	0	0	0	0	0	0
WB Right	13	13	0	13	15	0	15

MILLIKEN AVE

NB Left	26	31	112	143	93	280	373
NB Thru	895	1039	0	1039	994	0	994
NB Right	7	9	0	9	7	0	7
SB Left	6	6	0	6	7	0	7
SB Thru	656	656	56	712	633	140	773
SB Right	8	10	16	26	35	40	75
TOTALS	1737	1916	320	2236	1930	859	2789



SUBJECT	BY	DATE	JOB NO.	SHEET	OF
TURN MOVEMENTS	TNM	9-Sep-20	BRTLDSXP-0003	2	OF 2

E/W STREET : I-10 WB RAMPS
N/S STREET : MILLIKEN AVE
CONDITION : SUN PEAK HOUR

INTERSECTION : 15

TURN MOVEMENTS

Condition	Existing Condition Traffic	Opening Year 2024 No Build Traffic	Opening Year 2024 Project Trips	Opening Year 2024 Build	Future Year 2045 No Build	Future Year 2045 Project	Future Year 2045 Build
	1.4	2.4		3.4	4.4		5.4

I-10 WB RAMPS

EB Left	200	368	32	400	190	80	270
EB Thru	265	265	0	265	330	0	330
EB Right	143	166	0	166	127	0	127
WB Left	262	304	0	304	305	0	305
WB Thru	283	329	0	329	246	0	246
WB Right	162	299	0	299	201	0	201

MILLIKEN AVE

NB Left	289	336	0	336	307	0	307
NB Thru	394	473	51	524	598	128	726
NB Right	193	232	0	232	384	0	384
SB Left	159	159	0	159	296	0	296
SB Thru	610	610	67	677	810	196	1006
SB Right	321	373	63	436	319	184	503
TOTALS	3281	3914	213	4127	4113	588	4701



SUBJECT	BY	DATE	JOB NO.	SHEET OF
TURN VOLUME SUMMARY	TNM	9-Sep-20	BRTLDSXP-0003	2 OF 2

E/W STREET : I-10 WB RAMPS N/S STREET : MILLIKEN AVE
CONDITION : SUN PEAK HOUR PHF : 0.94

NORTH LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
75	191	41	1	2	0	1	2	0	4	6	0
72	124	35	2	3	1	0	2	0	3	1	1
78	138	40	1	2	1	3	0	0	1	2	1
77	129	38	2	4	0	0	0	0	1	4	1

SOUTH LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
40	100	64	1	3	2	1	1	0	1	2	0
49	83	70	2	2	1	1	0	1	0	3	1
45	90	69	1	1	2	1	0	0	0	4	2
50	99	74	0	1	1	0	2	1	1	3	1

EAST LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
39	56	75	1	2	2	0	0	0	0	1	0
36	57	58	0	3	1	0	0	0	0	1	0
38	68	63	0	1	1	0	2	0	1	0	2
46	89	57	1	0	3	0	0	0	0	3	0

WEST LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
36	67	48	2	0	2	0	1	1	1	0	2
31	57	36	1	3	2	2	0	2	0	0	2
39	68	40	0	1	2	0	1	2	0	1	1
28	62	55	3	2	0	0	1	3	0	1	2

Truck Volumes	Auto Volumes	Totals	Truck Percentage
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I-10 WB RAMPS

EBL	21	179	200	11%
EBTH	11	254	265	5%
EBR	9	134	143	7%
WBL	9	253	262	4%
WBTH	13	270	283	5%
WBR	3	159	162	2%

MILLIKEN AVE

NBL	12	277	289	5%
NBTH	22	372	394	6%
NBR	9	184	193	5%
SBL	5	154	159	4%
SBTH	28	582	610	5%
SBR	19	302	321	6%



SUBJECT	BY	DATE	JOB NO.	SHEET	OF
TURN MOVEMENTS	TNM	9-Sep-20	BRTLDSXP-0003	1	OF 1

E/W STREET : I-10 EB RAMPS
N/S STREET : MILLIKEN AVE
CONDITION : SUN PEAK HOUR

INTERSECTION : 16

TURN MOVEMENTS

Condition	Existing Condition Traffic	Opening Year 2024 No Build Traffic	Opening Year 2024 Project Trips	Opening Year 2024 Build	Future Year 2045 No Build Traffic	Future Year 2045 Project	Future Year 2045 Build
	1.4	2.4		3.4	4.4		5.4

I-10 EB RAMPS

EB Left	217	400	48	448	268	120	388
EB Thru	0	0	0	0	0	0	0
EB Right	136	158	0	158	111	0	111
WB Left	0	0	0	0	0	0	0
WB Thru	0	0	0	0	0	0	0
WB Right	0	0	0	0	0	0	0

MILLIKEN AVE

NB Left	190	228	0	228	195	0	195
NB Thru	545	654	0	654	1020	0	1020
NB Right	0	0	0	0	0	0	0
SB Left	0	0	0	0	0	0	0
SB Thru	305	305	5	310	456	13	469
SB Right	307	307	63	370	378	184	562
TOTALS	1700	2052	116	2168	2428	317	2745

Step 1:

SUNDAY PEAK

Location				2016 Peak Period	2040 Peak Period
1	I-15 Ramps/Highway 395 at Joshua St	APPROACH	NB	4,493	5,314
			SB	3,447	3,428
			EB	1,040	3,211
			WB	631	2,150
	DEPARTURE	NB	2,438	2,155	
		SB	4,581	9,764	
		EB	446	865	
		WB	2,246	1,812	
2	I-15 SB Off-ramp at Joshua St	APPROACH	NB	0	0
			SB	453	910
			EB	2,195	1,771
			WB	343	1,344
	DEPARTURE	NB	0	0	
		SB	0	0	
		EB	620	2,115	
		WB	2,379	1,908	
3	I-15 NB On-ramp at Joshua Street	APPROACH	NB	0	0
			SB	0	0
			EB	2,506	2,010
			WB	362	1,443
	DEPARTURE	NB	0	0	
		SB	222	69	
		EB	343	1,344	
		WB	2,176	1,899	
4	Mariposa Rd at Joshua St	APPROACH	NB	371	2,997
			SB	264	510
			EB	2,174	1,897
			WB	0	0
	DEPARTURE	NB	942	1,225	
		SB	1,537	2,574	
		EB	351	1,400	
		WB	0	0	
5	I-15 SB Ramps at Foothill Blvd (Rt 66)	APPROACH	NB	0	0
			SB	1,125	1,455
			EB	7,276	7,773
			WB	4,754	5,292
	DEPARTURE	NB	2,975	2,659	
		SB	0	0	
		EB	6,031	6,904	
		WB	4,682	5,482	
6	I-15 NB Ramps at Foothill Blvd (Rt 66)	APPROACH	NB	8,097	9,173
			SB	0	0
			EB	5,046	6,617
			WB	3,384	3,583
	DEPARTURE	NB	0	0	
		SB	680	732	
		EB	9,154	9,347	
		WB	7,464	9,687	
7	I-15 SB Ramps/Ontario Mills Dr at Fourth Street	APPROACH	NB	177	740
			SB	2,062	2,426
			EB	5,709	6,810
			WB	3,434	4,276
	DEPARTURE	NB	196	275	
		SB	2,164	2,241	
		EB	4,507	5,852	
		WB	4,468	5,839	
8	I-15 NB Ramps at Fourth Street	APPROACH	NB	0	0
			SB	1,914	2,760
			EB	4,459	5,827
			WB	1,144	1,099
	DEPARTURE	NB	0	0	
		SB	1,860	2,114	
		EB	3,431	4,272	
		WB	2,106	2,705	

Step 1:

SUNDAY PEAK

Location			2016 Peak Period	2040 Peak Period	
9	I-210 WB Ramps at Milliken Ave	APPROACH	NB	2,583	2,952
			SB	1,039	715
			EB	0	0
			WB	1,079	1,015
	DEPARTURE	NB	1,450	1,048	
		SB	2,094	2,583	
		EB	1,098	958	
WB	0	0			
10	I-210 EB Ramps at Milliken Ave	APPROACH	NB	2,452	2,656
			SB	1,195	864
			EB	2,239	2,658
			WB	0	0
	DEPARTURE	NB	2,301	1,959	
		SB	2,698	3,083	
		EB	0	0	
WB	600	454			
11	Milliken Ave at Foothill Blvd (Rt 66)	APPROACH	NB	5,379	6,020
			SB	3,778	3,452
			EB	3,410	4,026
			WB	5,098	6,832
	DEPARTURE	NB	3,857	3,916	
		SB	5,165	5,429	
		EB	4,624	5,685	
WB	3,793	4,779			
12	Milliken Ave at Fourth Street	APPROACH	NB	3,764	6,037
			SB	4,671	3,635
			EB	3,945	5,839
			WB	6,001	6,808
	DEPARTURE	NB	5,586	6,452	
		SB	3,968	5,179	
		EB	3,920	5,089	
WB	4,631	5,680			
13	Milliken Ave at Azusa Ct	APPROACH	NB	4,031	4,392
			SB	3,635	3,400
			EB	6	6
			WB	0	0
	DEPARTURE	NB	3,650	3,414	
		SB	4,031	4,392	
		EB	6	6	
WB	0	0			
14	Milliken Ave at 7th St	APPROACH	NB	3,449	3,786
			SB	3,633	3,399
			EB	529	587
			WB	140	128
	DEPARTURE	NB	3,354	2,802	
		SB	4,035	4,396	
		EB	218	511	
WB	67	69			
15	I-10 WB Ramps at Milliken Ave	APPROACH	NB	5,117	6,888
			SB	3,953	4,729
			EB	0	0
			WB	2,859	2,848
	DEPARTURE	NB	5,582	6,307	
		SB	3,150	4,210	
		EB	2,011	2,044	
WB	3,483	4,946			
16	I-10 EB Ramps at Milliken Ave	APPROACH	NB	5,623	7,248
			SB	5,856	6,616
			EB	943	1,026
			WB	0	0
	DEPARTURE	NB	5,413	5,841	
		SB	5,200	6,999	
		EB	1,837	2,074	
WB	0	0			

Intersection Volume Development

SUNDAY PEAK

Step 2:

Peak period to peak hour: 0.28

Location			2016 Peak Hour	2040 Peak Hour	
1	I-15 Ramps/Highway 395 at Joshua St	APPROACH	NB	1,258	1,488
			SB	965	960
			EB	291	899
			WB	177	602
		DEPARTURE	NB	683	603
			SB	1,283	2,734
			EB	125	242
			WB	629	507
2	I-15 SB Off-ramp at Joshua St	APPROACH	NB	0	0
			SB	127	255
			EB	615	496
			WB	96	376
		DEPARTURE	NB	0	0
			SB	0	0
			EB	174	592
			WB	666	534
3	I-15 NB On-ramp at Joshua Street	APPROACH	NB	0	0
			SB	0	0
			EB	702	563
			WB	101	404
		DEPARTURE	NB	0	0
			SB	62	19
			EB	96	376
			WB	609	532
4	Mariposa Rd at Joshua St	APPROACH	NB	104	839
			SB	74	143
			EB	609	531
			WB	0	0
		DEPARTURE	NB	264	343
			SB	430	721
			EB	98	392
			WB	0	0
5	I-15 SB Ramps at Foothill Blvd (Rt 66)	APPROACH	NB	0	0
			SB	315	407
			EB	2,037	2,176
			WB	1,331	1,482
		DEPARTURE	NB	833	745
			SB	0	0
			EB	1,689	1,933
			WB	1,311	1,535
6	I-15 NB Ramps at Foothill Blvd (Rt 66)	APPROACH	NB	2,267	2,569
			SB	0	0
			EB	1,413	1,853
			WB	947	1,003
		DEPARTURE	NB	0	0
			SB	191	205
			EB	2,563	2,617
			WB	2,090	2,712
7	I-15 SB Ramps/Ontario Mills Dr at Fourth Street	APPROACH	NB	50	207
			SB	577	679
			EB	1,599	1,907
			WB	962	1,197
		DEPARTURE	NB	55	77
			SB	606	627
			EB	1,262	1,639
			WB	1,251	1,635
8	I-15 NB Ramps at Fourth Street	APPROACH	NB	0	0
			SB	536	773
			EB	1,248	1,631
			WB	320	308
		DEPARTURE	NB	0	0
			SB	521	592
			EB	961	1,196
			WB	590	757

Intersection Volume Development

Step 2:

Peak period to peak hour: 0.38

SUNDAY PEAK

Location			2016 Peak Hour	2040 Peak Hour	
9	I-210 WB Ramps at Milliken Ave	APPROACH	NB	723	826
			SB	291	200
			EB	0	0
			WB	302	284
	DEPARTURE	NB	408	294	
		SB	586	723	
		EB	307	268	
WB	0	0			
10	I-210 EB Ramps at Milliken Ave	APPROACH	NB	687	744
			SB	335	242
			EB	627	744
			WB	0	0
	DEPARTURE	NB	644	549	
		SB	756	863	
		EB	0	0	
WB	168	127			
11	Milliken Ave at Foothill Blvd (Rt 66)	APPROACH	NB	1,506	1,686
			SB	1,058	966
			EB	955	1,127
			WB	1,428	1,913
	DEPARTURE	NB	1,080	1,097	
		SB	1,446	1,520	
		EB	1,295	1,592	
WB	1,062	1,338			
12	Milliken Ave at Fourth Street	APPROACH	NB	1,054	1,690
			SB	1,308	1,018
			EB	1,104	1,635
			WB	1,680	1,906
	DEPARTURE	NB	1,564	1,807	
		SB	1,111	1,450	
		EB	1,098	1,425	
WB	1,297	1,590			
13	Milliken Ave at Azusa Ct	APPROACH	NB	1,129	1,230
			SB	1,018	952
			EB	2	2
			WB	0	0
	DEPARTURE	NB	1,022	956	
		SB	1,129	1,230	
		EB	2	2	
WB	0	0			
14	Milliken Ave at 7th St	APPROACH	NB	966	1,060
			SB	1,017	952
			EB	148	164
			WB	39	36
	DEPARTURE	NB	939	785	
		SB	1,130	1,231	
		EB	61	143	
WB	19	19			
15	I-10 WB Ramps at Milliken Ave	APPROACH	NB	1,433	1,929
			SB	1,107	1,324
			EB	0	0
			WB	800	797
	DEPARTURE	NB	1,563	1,766	
		SB	882	1,179	
		EB	563	572	
WB	975	1,385			
16	I-10 EB Ramps at Milliken Ave	APPROACH	NB	1,574	2,029
			SB	1,640	1,853
			EB	264	287
			WB	0	0
	DEPARTURE	NB	1,516	1,635	
		SB	1,456	1,960	
		EB	514	581	
WB	0	0			

Step 3:

SUNDAY PEAK

Location			a	b	c		
			Difference 2040-2016	Annual Growth	Growth 2020 to 2045	Existing 2020	2045 adjusted
1 I-15 Ramps/Highway 395 at Joshua St	APPROACH	NB	230	10	250	1,285	1,535
		SB	-5	0	0	678	678
		EB	608	26	650	121	771
		WB	425	18	450	141	591
	DEPARTURE	NB	-79	0	0	652	652
		SB	1,451	61	1525	1,299	2,824
		EB	117	5	125	56	181
		WB	-121	0	0	218	218
2 I-15 SB Off-ramp at Joshua St	APPROACH	NB	0	0	0	0	0
		SB	128	6	150	71	221
		EB	-119	0	0	193	193
		WB	280	12	300	78	378
	DEPARTURE	NB	0	0	0	0	0
		SB	0	0	0	0	0
		EB	418	18	450	143	593
		WB	-132	0	0	199	199
3 I-15 NB On-ramp at Joshua Street	APPROACH	NB	0	0	0	0	0
		SB	0	0	0	0	0
		EB	-139	0	0	212	212
		WB	303	13	325	99	424
	DEPARTURE	NB	0	0	0	0	0
		SB	-43	0	0	144	144
		EB	280	12	300	78	378
		WB	-78	0	0	89	89
4 Mariposa Rd at Joshua St	APPROACH	NB	735	31	775	100	875
		SB	69	3	75	67	142
		EB	-78	0	0	90	90
		WB	0	0	0	0	0
	DEPARTURE	NB	79	4	100	78	178
		SB	290	13	325	70	395
		EB	294	13	325	109	434
		WB	0	0	0	0	0
5 I-15 SB Ramps at Foothill Blvd (Rt 66)	APPROACH	NB	0	0	0	0	0
		SB	92	4	100	421	521
		EB	139	6	150	1,967	2,117
		WB	151	7	175	2,115	2,290
	DEPARTURE	NB	-88	0	0	634	634
		SB	0	0	0	304	304
		EB	244	11	275	2,110	2,385
		WB	224	10	250	1,455	1,705
6 I-15 NB Ramps at Foothill Blvd (Rt 66)	APPROACH	NB	301	13	325	1,570	1,895
		SB	0	0	0	0	0
		EB	440	19	475	1,493	1,968
		WB	56	3	75	1,230	1,305
	DEPARTURE	NB	0	0	0	474	474
		SB	15	1	25	271	296
		EB	54	3	75	2,098	2,173
		WB	622	26	650	1,450	2,100
7 I-15 SB Ramps/Ontario Mills Dr at Fourth Street	APPROACH	NB	158	7	175	335	510
		SB	102	5	125	782	907
		EB	308	13	325	1,076	1,401
		WB	236	10	250	849	1,099
	DEPARTURE	NB	22	1	25	437	462
		SB	21	1	25	686	711
		EB	377	16	400	1,169	1,569
		WB	384	16	400	750	1,150
8 I-15 NB Ramps at Fourth Street	APPROACH	NB	0	0	0	151	151
		SB	237	10	250	688	938
		EB	383	16	400	750	1,150
		WB	-12	0	0	229	229
	DEPARTURE	NB	0	0	0	129	129
		SB	71	3	75	560	635
		EB	235	10	250	849	1,099
		WB	168	7	175	280	455

Step 3:

SUNDAY PEAK

Location			a	b	Growth 2020 to 2045	Existing 2020	c	
			Difference 2040-2016	Annual Growth			2045 adjusted	
9	I-210 WB Ramps at Milliken Ave	APPROACH	NB	103	5	125	580	685
			SB	-91	0	0	296	296
			EB	0	0	0	0	0
			WB	-18	0	0	231	231
	DEPARTURE	NB	-112	0	0	421	421	
		SB	137	6	150	469	619	
		EB	-39	0	0	197	197	
		WB	0	0	0	0	0	
10	I-210 EB Ramps at Milliken Ave	APPROACH	NB	57	3	75	744	819
			SB	-93	0	0	348	348
			EB	117	5	125	389	514
			WB	0	0	0	0	0
	DEPARTURE	NB	-96	0	0	582	582	
		SB	108	5	125	585	710	
		EB	0	0	0	0	0	
		WB	-41	0	0	314	314	
11	Milliken Ave at Foothill Blvd (Rt 66)	APPROACH	NB	179	8	200	888	1,088
			SB	-91	0	0	590	590
			EB	172	8	200	1,071	1,271
			WB	486	21	525	1,494	2,019
	DEPARTURE	NB	17	1	25	700	725	
		SB	74	4	100	787	867	
		EB	297	13	325	1,442	1,767	
		WB	276	12	300	1,134	1,434	
12	Milliken Ave at Fourth Street	APPROACH	NB	636	27	675	727	1,402
			SB	-290	0	0	771	771
			EB	530	23	575	694	1,269
			WB	226	10	250	934	1,184
	DEPARTURE	NB	242	11	275	1,000	1,275	
		SB	339	15	375	719	1,094	
		EB	327	14	350	708	1,058	
		WB	294	13	325	701	1,026	
13	Milliken Ave at Azusa Ct	APPROACH	NB	101	5	125	980	1,105
			SB	-66	0	0	667	667
			EB	0	0	0	28	28
			WB	0	0	0	0	0
	DEPARTURE	NB	-66	0	0	673	673	
		SB	101	5	125	980	1,105	
		EB	0	0	0	22	22	
		WB	0	0	0	0	0	
14	Milliken Ave at 7th St	APPROACH	NB	95	4	100	928	1,028
			SB	-66	0	0	670	670
			EB	16	1	25	113	138
			WB	-4	0	0	26	26
	DEPARTURE	NB	-155	0	0	709	709	
		SB	101	5	125	981	1,106	
		EB	82	4	100	34	134	
		WB	1	0	0	13	13	
15	I-10 WB Ramps at Milliken Ave	APPROACH	NB	496	21	525	876	1,401
			SB	217	10	250	1,090	1,340
			EB	0	0	0	608	608
			WB	-3	0	0	707	707
	DEPARTURE	NB	203	9	225	1,015	1,240	
		SB	297	13	325	756	1,081	
		EB	9	1	25	893	918	
		WB	409	18	450	617	1,067	
16	I-10 EB Ramps at Milliken Ave	APPROACH	NB	455	19	475	735	1,210
			SB	213	9	225	612	837
			EB	23	1	25	353	378
			WB	0	0	0	0	0
	DEPARTURE	NB	120	5	125	441	566	
		SB	504	21	525	762	1,287	
		EB	66	3	75	497	572	
		WB	0	0	0	0	0	

Appendix A.1.5 - Future Directional Link to Directional Turn Volume Calculations

**CALCULATION OF FUTURE DIRECTIONAL TURN VOLUMES FROM
FUTURE DIRECTIONAL LINK VOLUMES (NCHRP 255)**

Intersection No.: 1
North/South Street: HIGHWAY 395
East/West Street: JOSHUA ST

Analysis Condition: YEAR 2045 FUTURE TRAFFIC

A.M. Peak Hour

Approach Direction	Base Year Count	Forecast Future Year					
		Link Volume	Turn Volume	Balanced Volume			
South leg	Left	2	Approach	456	Left	9	13
NB	Through	418	Departure	1,493	Through	305	437
	Right	36			Right	4	7
North leg	Left	81	Approach	2,062	Left	162	163
SB	Through	799	Departure	495	Through	1,453	1,454
	Right	7			Right	528	528
West leg	Left	11	Approach	74	Left	70	70
EB	Through	12	Departure	671	Through	12	13
	Right	1			Right	1	1
East leg	Left	143	Approach	271	Left	39	39
WB	Through	12	Departure	179	Through	134	135
	Right	66			Right	120	121

P.M. Peak Hour

Approach Direction	Base Year Count	Forecast Future Year					
		Link Volume	Turn Volume	Balanced Volume			
South leg	Left	16	Approach	1,243	Left	18	19
NB	Through	961	Departure	618	Through	1,308	1,309
	Right	66			Right	9	9
North leg	Left	54	Approach	645	Left	29	29
SB	Through	573	Departure	2,317	Through	537	537
	Right	18			Right	82	82
West leg	Left	24	Approach	683	Left	526	526
EB	Through	71	Departure	174	Through	153	154
	Right	13			Right	49	49
East leg	Left	32	Approach	554	Left	32	33
WB	Through	15	Departure	191	Through	74	74
	Right	82			Right	483	484

Friday Peak Hour

Approach Direction	Base Year Count	Forecast Future Year					
		Link Volume	Turn Volume	Balanced Volume			
South leg NB	Left Through Right	26 1,538 106	Approach Departure	1,995 592	Left Through Right	1 539 1	23 2,047 13
North leg SB	Left Through Right	51 533 17	Approach Departure	601 3,625	Left Through Right	139 578 188	40 515 100
West leg EB	Left Through Right	36 104 19	Approach Departure	1,009 212	Left Through Right	1,798 121 9	823 210 47
East leg WB	Left Through Right	40 19 101	Approach Departure	685 261	Left Through Right	5 23 1,288	32 91 757

Sunday Peak Hour

Approach Direction	Base Year Count	Forecast Future Year					
		Link Volume	Turn Volume	Balanced Volume			
South leg NB	Left Through Right	20 1,183 82	Approach Departure	1,535 652	Left Through Right	20 1,662 11	19 1,595 11
North leg SB	Left Through Right	57 602 19	Approach Departure	678 2,824	Left Through Right	35 570 87	34 567 123
West leg EB	Left Through Right	27 79 15	Approach Departure	771 181	Left Through Right	620 172 51	148 175 52
East leg WB	Left Through Right	35 17 89	Approach Departure	591 218	Left Through Right	31 74 541	35 77 590

**CALCULATION OF FUTURE DIRECTIONAL TURN VOLUMES FROM
FUTURE DIRECTIONAL LINK VOLUMES (NCHRP 255)**

Intersection No.: 2
North/South Street: I-15 SB RAMP
East/West Street: JOSHUA ST

Analysis Condition: YEAR 2045 FUTURE TRAFFIC

A.M. Peak Hour

Approach Direction	Base Year Count	Forecast Future Year					
		Link Volume	Turn Volume	Balanced Volume			
South leg	Left	0	Approach	0	Left	0	0
NB	Through	0	Departure	0	Through	0	0
	Right	0			Right	0	0
North leg	Left	5	Approach	92	Left	5	6
SB	Through	0	Departure	0	Through	0	0
	Right	87			Right	87	87
West leg	Left	0	Approach	137	Left	0	0
EB	Through	87	Departure	218	Through	137	162
	Right	0			Right	0	0
East leg	Left	0	Approach	131	Left	0	0
WB	Through	81	Departure	142	Through	131	134
	Right	0			Right	0	0

P.M. Peak Hour

Approach Direction	Base Year Count	Forecast Future Year					
		Link Volume	Turn Volume	Balanced Volume			
South leg	Left	0	Approach	0	Left	0	0
NB	Through	0	Departure	0	Through	0	0
	Right	0			Right	0	0
North leg	Left	5	Approach	191	Left	8	9
SB	Through	0	Departure	0	Through	0	0
	Right	61			Right	192	193
West leg	Left	0	Approach	173	Left	0	0
EB	Through	173	Departure	558	Through	170	170
	Right	0			Right	0	0
East leg	Left	0	Approach	347	Left	0	0
WB	Through	72	Departure	178	Through	366	366
	Right	0			Right	0	0

Friday Peak Hour

Approach Direction		Base Year Count	Forecast Future Year				
			Link Volume		Turn Volume	Balanced Volume	
South leg	Left	0	Approach	0	Left	0	0
NB	Through	0	Departure	0	Through	0	0
	Right	0			Right	0	0
North leg	Left	5	Approach	187	Left	14	19
SB	Through	0	Departure	0	Through	0	0
	Right	57			Right	168	169
West leg	Left	0	Approach	253	Left	0	0
EB	Through	253	Departure	595	Through	244	336
	Right	0			Right	0	0
East leg	Left	0	Approach	438	Left	0	0
WB	Through	88	Departure	258	Through	427	438
	Right	0			Right	0	0

Sunday Peak Hour

Approach Direction		Base Year Count	Forecast Future Year				
			Link Volume		Turn Volume	Balanced Volume	
South leg	Left	0	Approach	0	Left	0	0
NB	Through	0	Departure	0	Through	0	0
	Right	0			Right	0	0
North leg	Left	6	Approach	221	Left	13	13
SB	Through	0	Departure	0	Through	0	0
	Right	65			Right	210	211
West leg	Left	0	Approach	193	Left	0	0
EB	Through	193	Departure	593	Through	186	187
	Right	0			Right	0	0
East leg	Left	0	Approach	378	Left	0	0
WB	Through	78	Departure	199	Through	383	383
	Right	0			Right	0	0

**CALCULATION OF FUTURE DIRECTIONAL TURN VOLUMES FROM
FUTURE DIRECTIONAL LINK VOLUMES (NCHRP 255)**

Intersection No.: 3
North/South Street: I-15 NB RAMP
East/West Street: JOSHUA ST

Analysis Condition: YEAR 2045 FUTURE TRAFFIC

A.M. Peak Hour

Approach Direction		Base Year Count	Forecast Future Year				
			Link Volume		Turn Volume	Balanced Volume	
South leg NB	Left	0	Approach	0	Left	0	0
	Through	0	Departure	0	Through	0	0
	Right	0			Right	0	0
North leg SB	Left	0	Approach	0	Left	0	0
	Through	0	Departure	56	Through	0	0
	Right	0			Right	0	0
West leg EB	Left	34	Approach	141	Left	36	36
	Through	57	Departure	134	Through	132	132
	Right	0			Right	0	0
East leg WB	Left	0	Approach	131	Left	0	0
	Through	84	Departure	132	Through	134	134
	Right	22			Right	20	21

P.M. Peak Hour

Approach Direction		Base Year Count	Forecast Future Year				
			Link Volume		Turn Volume	Balanced Volume	
South leg NB	Left	0	Approach	0	Left	0	0
	Through	0	Departure	0	Through	0	0
	Right	0			Right	0	0
North leg SB	Left	0	Approach	0	Left	0	0
	Through	0	Departure	117	Through	0	0
	Right	0			Right	0	0
West leg EB	Left	100	Approach	180	Left	86	93
	Through	80	Departure	347	Through	80	86
	Right	0			Right	0	0
East leg WB	Left	0	Approach	389	Left	0	0
	Through	72	Departure	80	Through	347	366
	Right	17			Right	31	31

Friday Peak Hour

Approach Direction		Base Year Count	Forecast Future Year				
			Link Volume		Turn Volume	Balanced Volume	
South leg	Left	0	Approach	0	Left	0	0
NB	Through	0	Departure	0	Through	0	0
	Right	0			Right	0	0
North leg	Left	0	Approach	0	Left	0	0
SB	Through	0	Departure	188	Through	0	0
	Right	0			Right	0	0
West leg	Left	160	Approach	277	Left	142	143
EB	Through	117	Departure	438	Through	117	212
	Right	0			Right	0	0
East leg	Left	0	Approach	491	Left	0	0
WB	Through	88	Departure	117	Through	438	438
	Right	28			Right	46	46

Sunday Peak Hour

Approach Direction		Base Year Count	Forecast Future Year				
			Link Volume		Turn Volume	Balanced Volume	
South leg	Left	0	Approach	0	Left	0	0
NB	Through	0	Departure	0	Through	0	0
	Right	0			Right	0	0
North leg	Left	0	Approach	0	Left	0	0
SB	Through	0	Departure	144	Through	0	0
	Right	0			Right	0	0
West leg	Left	123	Approach	212	Left	108	108
EB	Through	89	Departure	378	Through	89	91
	Right	0			Right	0	0
East leg	Left	0	Approach	424	Left	0	0
WB	Through	78	Departure	89	Through	378	383
	Right	21			Right	36	36

**CALCULATION OF FUTURE DIRECTIONAL TURN VOLUMES FROM
FUTURE DIRECTIONAL LINK VOLUMES (NCHRP 255)**

Intersection No.: 4
North/South Street: MARIPOSA
East/West Street: JOSHUA ST

Analysis Condition: YEAR 2045 FUTURE TRAFFIC

A.M. Peak Hour

Approach Direction	Base Year Count	Forecast Future Year					
		Link Volume	Turn Volume	Balanced Volume			
South leg	Left	66	Approach	84	Left	119	119
NB	Through	18	Departure	406	Through	62	63
	Right	0			Right	0	0
North leg	Left	0	Approach	414	Left	0	0
SB	Through	25	Departure	65	Through	310	310
	Right	39			Right	11	12
West leg	Left	22	Approach	128	Left	3	4
EB	Through	0	Departure	130	Through	0	0
	Right	31			Right	96	129
East leg	Left	0	Approach	0	Left	0	0
WB	Through	0	Departure	0	Through	0	0
	Right	0			Right	0	0

P.M. Peak Hour

Approach Direction	Base Year Count	Forecast Future Year					
		Link Volume	Turn Volume	Balanced Volume			
South leg	Left	57	Approach	732	Left	356	356
NB	Through	25	Departure	141	Through	337	337
	Right	0			Right	0	0
North leg	Left	0	Approach	143	Left	0	0
SB	Through	24	Departure	364	Through	91	92
	Right	44			Right	45	46
West leg	Left	39	Approach	81	Left	27	31
EB	Through	0	Departure	401	Through	0	0
	Right	42			Right	50	56
East leg	Left	0	Approach	0	Left	0	0
WB	Through	0	Departure	0	Through	0	0
	Right	0			Right	0	0

Friday Peak Hour**Forecast Future Year**

Approach Direction		Base Year Count	Forecast Future Year				
			Link Volume		Turn Volume	Balanced Volume	
South leg	Left	66	Approach	789	Left	257	257
NB	Through	23	Departure	194	Through	246	246
	Right	0			Right	0	0
North leg	Left	0	Approach	179	Left	0	0
SB	Through	22	Departure	369	Through	105	106
	Right	57			Right	216	217
West leg	Left	46	Approach	118	Left	123	124
EB	Through	0	Departure	473	Through	0	0
	Right	72			Right	89	89
East leg	Left	66	Approach	0	Left	0	0
WB	Through	0	Departure	0	Through	0	0
	Right	0			Right	0	0

Sunday Peak Hour**Forecast Future Year**

Approach Direction		Base Year Count	Forecast Future Year				
			Link Volume		Turn Volume	Balanced Volume	
South leg	Left	69	Approach	875	Left	409	410
NB	Through	31	Departure	178	Through	379	379
	Right	0			Right	0	0
North leg	Left	0	Approach	142	Left	0	0
SB	Through	27	Departure	395	Through	109	110
	Right	40			Right	25	25
West leg	Left	39	Approach	90	Left	16	18
EB	Through	0	Departure	434	Through	0	0
	Right	51			Right	69	74
East leg	Left	0	Approach	0	Left	0	0
WB	Through	0	Departure	0	Through	0	0
	Right	0			Right	0	0
							409

**CALCULATION OF FUTURE DIRECTIONAL TURN VOLUMES FROM
FUTURE DIRECTIONAL LINK VOLUMES (NCHRP 255)**

Intersection No.: 5
North/South Street: INTERSTATE 15 SB RAMPS
East/West Street: FOOTHILL BLVD

Analysis Condition: YEAR 2045 FUTURE TRAFFIC

A.M. Peak Hour

Approach Direction		Base Year Count	Forecast Future Year				
			Link Volume		Turn Volume	Balanced Volume	
South leg NB	Left	0	Approach	0	Left	0	0
	Through	0	Departure	692	Through	0	0
	Right	0			Right	0	0
North leg SB	Left	138	Approach	650	Left	243	497
	Through	0	Departure	532	Through	0	0
	Right	487			Right	423	424
West leg EB	Left	0	Approach	1,189	Left	0	0
	Through	422	Departure	1,708	Through	567	1,161
	Right	692			Right	692	692
East leg WB	Left	0	Approach	1,803	Left	0	0
	Through	1,071	Departure	810	Through	1,285	1,285
	Right	532			Right	532	532

P.M. Peak Hour

Approach Direction		Base Year Count	Forecast Future Year				
			Link Volume		Turn Volume	Balanced Volume	
South leg NB	Left	0	Approach	0	Left	0	0
	Through	0	Departure	879	Through	0	0
	Right	0			Right	0	0
North leg SB	Left	143	Approach	710	Left	212	212
	Through	0	Departure	469	Through	0	0
	Right	417			Right	506	506
West leg EB	Left	0	Approach	3,399	Left	0	0
	Through	2,270	Departure	2,523	Through	2,601	2,602
	Right	879			Right	879	879
East leg WB	Left	0	Approach	2,475	Left	0	0
	Through	1,831	Departure	2,813	Through	2,017	2,018
	Right	469			Right	469	469

Friday Peak Hour

Approach Direction		Base Year Count	Forecast Future Year				
			Link Volume		Turn Volume	Balanced Volume	
South leg NB	Left	0	Approach	0	Left	0	0
	Through	0	Departure	816	Through	0	0
	Right	0			Right	0	0
North leg SB	Left	314	Approach	1,066	Left	405	507
	Through	0	Departure	535	Through	0	0
	Right	552			Right	649	649
West leg EB	Left	0	Approach	1,940	Left	0	0
	Through	974	Departure	1,834	Through	1,108	1,384
	Right	816			Right	816	816
East leg WB	Left	0	Approach	1,742	Left	0	0
	Through	1,082	Departure	1,513	Through	1,185	1,186
	Right	535			Right	535	535

Sunday Peak Hour

Approach Direction		Base Year Count	Forecast Future Year				
			Link Volume		Turn Volume	Balanced Volume	
South leg NB	Left	0	Approach	0	Left	0	0
	Through	0	Departure	634	Through	0	0
	Right	0			Right	0	0
North leg SB	Left	122	Approach	521	Left	168	190
	Through	0	Departure	304	Through	0	0
	Right	299			Right	363	364
West leg EB	Left	0	Approach	2,117	Left	0	0
	Through	1,333	Departure	2,385	Through	1,537	1,740
	Right	634			Right	634	634
East leg WB	Left	0	Approach	2,290	Left	0	0
	Through	1,811	Departure	1,705	Through	2,022	2,022
	Right	304			Right	304	304

**CALCULATION OF FUTURE DIRECTIONAL TURN VOLUMES FROM
FUTURE DIRECTIONAL LINK VOLUMES (NCHRP 255)**

Intersection No.: 6
North/South Street: INTERSTATE 15 NB RAMPS
East/West Street: FOOTHILL BLVD

Analysis Condition: YEAR 2045 FUTURE TRAFFIC

A.M. Peak Hour

Approach Direction	Base Year Count	Forecast Future Year					
		Link Volume	Turn Volume	Balanced Volume			
South leg	Left	750	Approach	1,128	Left	215	343
NB	Through	0	Departure	125	Through	0	0
	Right	378			Right	181	182
North leg	Left	0	Approach	0	Left	0	0
SB	Through	0	Departure	200	Through	0	0
	Right	0			Right	0	0
West leg	Left	0	Approach	1,135	Left	0	0
EB	Through	785	Departure	1,142	Through	1,532	1,532
	Right	125			Right	125	125
East leg	Left	0	Approach	817	Left	0	0
WB	Through	392	Departure	1,713	Through	927	1,475
	Right	175			Right	200	200

P.M. Peak Hour

Approach Direction	Base Year Count	Forecast Future Year					
		Link Volume	Turn Volume	Balanced Volume			
South leg	Left	743	Approach	1,388	Left	762	1,058
NB	Through	0	Departure	208	Through	0	0
	Right	395			Right	627	627
North leg	Left	0	Approach	0	Left	0	0
SB	Through	0	Departure	869	Through	0	0
	Right	0			Right	0	0
West leg	Left	0	Approach	1,730	Left	0	0
EB	Through	1,097	Departure	1,792	Through	1,540	2,479
	Right	208			Right	208	335
East leg	Left	0	Approach	1,918	Left	0	0
WB	Through	999	Departure	2,167	Through	1,030	1,430
	Right	819			Right	869	869

Friday Peak Hour**Forecast Future Year**

Approach Direction		Base Year Count	Forecast Future Year				
			Link Volume		Turn Volume	Balanced Volume	
South leg NB	Left	556	Approach	1,036	Left	199	211
	Through	0	Departure	270	Through	0	0
	Right	305			Right	138	138
North leg SB	Left	0	Approach	0	Left	0	0
	Through	0	Departure	826	Through	0	0
	Right	0			Right	0	0
West leg EB	Left	0	Approach	1,547	Left	0	0
	Through	902	Departure	1,621	Through	1,619	1,620
	Right	270			Right	270	270
East leg WB	Left	0	Approach	1,891	Left	0	0
	Through	1,015	Departure	1,757	Through	1,422	1,510
	Right	776			Right	826	826

Sunday Peak Hour**Forecast Future Year**

Approach Direction		Base Year Count	Forecast Future Year				
			Link Volume		Turn Volume	Balanced Volume	
South leg NB	Left	1,139	Approach	1,895	Left	1,201	1,286
	Through	0	Departure	474	Through	0	0
	Right	431			Right	645	646
North leg SB	Left	0	Approach	0	Left	0	0
	Through	0	Departure	296	Through	0	0
	Right	0			Right	0	0
West leg EB	Left	0	Approach	1,968	Left	0	0
	Through	1,019	Departure	2,173	Through	1,455	1,455
	Right	474			Right	474	474
East leg WB	Left	0	Approach	1,305	Left	0	0
	Through	959	Departure	2,100	Through	972	1,040
	Right	271			Right	296	296
							1,286

**CALCULATION OF FUTURE DIRECTIONAL TURN VOLUMES FROM
FUTURE DIRECTIONAL LINK VOLUMES (NCHRP 255)**

Intersection No.: 7
North/South Street: INTERSTATE 15 SB RAMPS
East/West Street: FOURTH STREET

Analysis Condition: YEAR 2045 FUTURE TRAFFIC

A.M. Peak Hour

Approach Direction	Base Year Count	Forecast Future Year					
		Link Volume	Turn Volume	Balanced Volume			
South leg	Left	67	Approach	167	Left	111	111
NB	Through	63	Departure	291	Through	96	97
	Right	37			Right	62	63
North leg	Left	122	Approach	695	Left	150	151
SB	Through	147	Departure	577	Through	152	153
	Right	301			Right	366	367
West leg	Left	188	Approach	777	Left	317	318
EB	Through	203	Departure	1,443	Through	375	375
	Right	36			Right	56	56
East leg	Left	83	Approach	1,259	Left	83	88
WB	Through	825	Departure	587	Through	966	1,021
	Right	151			Right	163	173

P.M. Peak Hour

Approach Direction	Base Year Count	Forecast Future Year					
		Link Volume	Turn Volume	Balanced Volume			
South leg	Left	110	Approach	502	Left	186	186
NB	Through	181	Departure	293	Through	240	240
	Right	36			Right	77	77
North leg	Left	69	Approach	657	Left	102	103
SB	Through	144	Departure	949	Through	149	150
	Right	344			Right	404	405
West leg	Left	514	Approach	1,848	Left	487	488
EB	Through	857	Departure	1,535	Through	1,308	1,308
	Right	52			Right	55	56
East leg	Left	72	Approach	1,257	Left	88	89
WB	Through	681	Departure	1,487	Through	945	948
	Right	204			Right	222	223

Friday Peak Hour

Approach Direction	Base Year Count	Forecast Future Year					
		Link Volume	Turn Volume	Balanced Volume			
South leg	Left	120	Approach	441	Left	132	132
NB	Through	151	Departure	333	Through	138	138
	Right	20			Right	27	27
North leg	Left	74	Approach	681	Left	115	115
SB	Through	153	Departure	894	Through	159	160
	Right	354			Right	446	447
West leg	Left	518	Approach	2,171	Left	546	546
EB	Through	1,081	Departure	1,624	Through	1,683	1,684
	Right	72			Right	75	76
East leg	Left	83	Approach	1,283	Left	99	99
WB	Through	725	Departure	1,825	Through	1,046	1,047
	Right	175			Right	210	211

Sunday Peak Hour

Approach Direction	Base Year Count	Forecast Future Year					
		Link Volume	Turn Volume	Balanced Volume			
South leg	Left	112	Approach	510	Left	197	198
NB	Through	178	Departure	462	Through	221	221
	Right	45			Right	89	89
North leg	Left	92	Approach	907	Left	123	124
SB	Through	240	Departure	711	Through	238	239
	Right	450			Right	539	540
West leg	Left	418	Approach	1,401	Left	403	404
EB	Through	613	Departure	1,569	Through	938	938
	Right	45			Right	51	51
East leg	Left	152	Approach	1,099	Left	173	174
WB	Through	607	Departure	1,150	Through	832	838
	Right	90			Right	87	88
							197

**CALCULATION OF FUTURE DIRECTIONAL TURN VOLUMES FROM
FUTURE DIRECTIONAL LINK VOLUMES (NCHRP 255)**

Intersection No.: 8
North/South Street: INTERSTATE 15 NB RAMPS
East/West Street: FOURTH STREET

Analysis Condition: YEAR 2045 FUTURE TRAFFIC

A.M. Peak Hour

Approach Direction	Base Year Count	Forecast Future Year					
		Link Volume	Turn Volume	Balanced Volume			
South leg	Left	45	Approach	97	Left	130	130
NB	Through	23	Departure	90	Through	40	41
	Right	29			Right	89	89
North leg	Left	277	Approach	1,134	Left	272	272
SB	Through	55	Departure	215	Through	37	37
	Right	802			Right	740	740
West leg	Left	117	Approach	584	Left	121	132
EB	Through	214	Departure	1,280	Through	385	419
	Right	28			Right	34	38
East leg	Left	15	Approach	523	Left	19	20
WB	Through	233	Departure	745	Through	411	411
	Right	50			Right	54	54

P.M. Peak Hour

Approach Direction	Base Year Count	Forecast Future Year					
		Link Volume	Turn Volume	Balanced Volume			
South leg	Left	47	Approach	147	Left	60	60
NB	Through	58	Departure	114	Through	43	43
	Right	42			Right	43	44
North leg	Left	123	Approach	918	Left	145	145
SB	Through	37	Departure	829	Through	31	32
	Right	508			Right	738	739
West leg	Left	526	Approach	1,489	Left	691	699
EB	Through	391	Departure	1,258	Through	718	726
	Right	47			Right	62	64
East leg	Left	30	Approach	578	Left	20	21
WB	Through	403	Departure	906	Through	460	460
	Right	145			Right	96	96

Friday Peak Hour

Approach Direction		Base Year Count	Forecast Future Year				
			Link Volume		Turn Volume	Balanced Volume	
South leg	Left	60	Approach	483	Left	114	122
NB	Through	73	Departure	156	Through	79	79
	Right	50			Right	78	78
North leg	Left	148	Approach	921	Left	174	174
SB	Through	54	Departure	948	Through	46	46
	Right	469			Right	674	716
West leg	Left	625	Approach	1,827	Left	791	821
EB	Through	484	Departure	1,277	Through	880	913
	Right	68			Right	89	92
East leg	Left	34	Approach	607	Left	22	22
WB	Through	448	Departure	1,132	Through	489	520
	Right	125			Right	78	78

Sunday Peak Hour

Approach Direction		Base Year Count	Forecast Future Year				
			Link Volume		Turn Volume	Balanced Volume	
South leg	Left	62	Approach	151	Left	79	79
NB	Through	54	Departure	129	Through	32	32
	Right	35			Right	32	32
North leg	Left	50	Approach	938	Left	49	50
SB	Through	41	Departure	635	Through	26	27
	Right	597			Right	821	821
West leg	Left	476	Approach	1,150	Left	589	639
EB	Through	195	Departure	1,099	Through	374	406
	Right	79			Right	98	107
East leg	Left	9	Approach	229	Left	4	5
WB	Through	190	Departure	455	Through	200	200
	Right	30			Right	15	15

**CALCULATION OF FUTURE DIRECTIONAL TURN VOLUMES FROM
FUTURE DIRECTIONAL LINK VOLUMES (NCHRP 255)**

Intersection No.: 9
North/South Street: MILLIKEN AVE
East/West Street: I-210 WB RAMPS

Analysis Condition: YEAR 2045 FUTURE TRAFFIC

A.M. Peak Hour

Approach Direction	Base Year Count	Forecast Future Year					
		Link Volume	Turn Volume	Balanced Volume			
South leg	Left	245	Approach	449	Left	144	208
NB	Through	204	Departure	668	Through	166	241
	Right	0			Right	0	0
North leg	Left	0	Approach	689	Left	0	0
SB	Through	383	Departure	260	Through	579	751
	Right	81			Right	181	182
West leg	Left	0	Approach	0	Left	0	0
EB	Through	0	Departure	330	Through	0	0
	Right	0			Right	0	0
East leg	Left	110	Approach	170	Left	89	116
WB	Through	4	Departure	0	Through	5	5
	Right	56			Right	94	94

P.M. Peak Hour

Approach Direction	Base Year Count	Forecast Future Year					
		Link Volume	Turn Volume	Balanced Volume			
South leg	Left	193	Approach	857	Left	191	192
NB	Through	514	Departure	695	Through	695	696
	Right	0			Right	0	0
North leg	Left	0	Approach	590	Left	0	0
SB	Through	517	Departure	782	Through	529	529
	Right	73			Right	75	75
West leg	Left	0	Approach	0	Left	0	0
EB	Through	0	Departure	273	Through	0	0
	Right	0			Right	0	0
East leg	Left	178	Approach	253	Left	166	167
WB	Through	7	Departure	0	Through	7	7
	Right	68			Right	87	87

Friday Peak Hour

Approach Direction		Base Year Count	Forecast Future Year				
			Link Volume		Turn Volume	Balanced Volume	
South leg NB	Left	205	Approach	900	Left	43	79
	Through	545	Departure	557	Through	443	812
	Right	0			Right	0	0
North leg SB	Left	0	Approach	420	Left	0	0
	Through	368	Departure	818	Through	477	647
	Right	52			Right	211	212
West leg EB	Left	0	Approach	0	Left	0	0
	Through	0	Departure	265	Through	0	0
	Right	0			Right	0	0
East leg WB	Left	189	Approach	270	Left	80	109
	Through	8	Departure	0	Through	11	11
	Right	73			Right	375	375

Sunday Peak Hour

Approach Direction		Base Year Count	Forecast Future Year				
			Link Volume		Turn Volume	Balanced Volume	
South leg NB	Left	153	Approach	685	Left	155	158
	Through	407	Departure	421	Through	545	553
	Right	0			Right	0	0
North leg SB	Left	0	Approach	296	Left	0	0
	Through	259	Departure	619	Through	266	266
	Right	37			Right	35	36
West leg EB	Left	0	Approach	0	Left	0	0
	Through	0	Departure	197	Through	0	0
	Right	0			Right	0	0
East leg WB	Left	162	Approach	231	Left	155	168
	Through	7	Departure	0	Through	6	7
	Right	62			Right	74	80
							157

**CALCULATION OF FUTURE DIRECTIONAL TURN VOLUMES FROM
FUTURE DIRECTIONAL LINK VOLUMES (NCHRP 255)**

Intersection No.: 11
North/South Street: MILLIKEN AVE
East/West Street: FOOTHILL BLVD

Analysis Condition: YEAR 2045 FUTURE TRAFFIC

A.M. Peak Hour

Approach Direction	Base Year Count	Forecast Future Year					
		Link Volume	Turn Volume	Balanced Volume			
South leg	Left	63	Approach	453	Left	58	59
NB	Through	131	Departure	712	Through	158	158
	Right	59			Right	82	82
North leg	Left	105	Approach	734	Left	183	184
SB	Through	314	Departure	334	Through	465	465
	Right	115			Right	134	134
West leg	Left	34	Approach	644	Left	53	54
EB	Through	311	Departure	976	Through	560	560
	Right	49			Right	75	75
East leg	Left	99	Approach	1,016	Left	172	173
WB	Through	573	Departure	825	Through	784	785
	Right	69			Right	123	123

P.M. Peak Hour

Approach Direction	Base Year Count	Forecast Future Year					
		Link Volume	Turn Volume	Balanced Volume			
South leg	Left	221	Approach	1,264	Left	234	234
NB	Through	558	Departure	552	Through	630	630
	Right	260			Right	382	382
North leg	Left	133	Approach	474	Left	163	163
SB	Through	243	Departure	1,006	Through	218	218
	Right	98			Right	86	87
West leg	Left	247	Approach	1,944	Left	234	234
EB	Through	1,291	Departure	1,247	Through	1,589	1,590
	Right	106			Right	96	96
East leg	Left	178	Approach	1,332	Left	239	239
WB	Through	703	Departure	2,134	Through	927	928
	Right	101			Right	142	143

Friday Peak Hour

Approach Direction	Base Year Count	Forecast Future Year					
		Link Volume	Turn Volume	Balanced Volume			
South leg NB	Left Through Right	275 654 154	Approach Departure	1,333 725	Left Through Right	41 260 34	42 260 34
North leg SB	Left Through Right	188 460 168	Approach Departure	816 1,021	Left Through Right	318 462 194	318 463 195
West leg EB	Left Through Right	187 1,326 91	Approach Departure	1,879 2,023	Left Through Right	446 1,741 71	447 1,742 71
East leg WB	Left Through Right	149 1,205 80	Approach Departure	1,934 2,093	Left Through Right	192 1,787 315	192 1,788 315

Sunday Peak Hour

Approach Direction	Base Year Count	Forecast Future Year					
		Link Volume	Turn Volume	Balanced Volume			
South leg NB	Left Through Right	238 519 131	Approach Departure	1,088 725	Left Through Right	249 598 204	249 598 205
North leg SB	Left Through Right	156 368 66	Approach Departure	590 867	Left Through Right	196 318 56	196 319 56
West leg EB	Left Through Right	159 847 65	Approach Departure	1,271 1,767	Left Through Right	143 1,034 55	144 1,035 55
East leg WB	Left Through Right	267 1,138 89	Approach Departure	2,019 1,434	Left Through Right	352 1,463 126	353 1,463 126

**CALCULATION OF FUTURE DIRECTIONAL TURN VOLUMES FROM
FUTURE DIRECTIONAL LINK VOLUMES (NCHRP 255)**

Intersection No.: 12
North/South Street: MILLIKEN AVE
East/West Street: 4TH ST

Analysis Condition: YEAR 2045 FUTURE TRAFFIC

A.M. Peak Hour

Approach Direction	Base Year Count	Forecast Future Year					
		Link Volume	Turn Volume	Balanced Volume			
South leg	Left	60	Approach	648	Left	18	19
NB	Through	456	Departure	1,368	Through	242	243
	Right	82			Right	19	20
North leg	Left	80	Approach	1,035	Left	92	92
SB	Through	423	Departure	613	Through	856	856
	Right	57			Right	84	85
West leg	Left	77	Approach	724	Left	212	212
EB	Through	247	Departure	460	Through	298	298
	Right	100			Right	213	213
East leg	Left	195	Approach	818	Left	299	300
WB	Through	318	Departure	409	Through	358	358
	Right	80			Right	159	159

P.M. Peak Hour

Approach Direction	Base Year Count	Forecast Future Year					
		Link Volume	Turn Volume	Balanced Volume			
South leg	Left	242	Approach	2,037	Left	542	542
NB	Through	735	Departure	1,345	Through	1,201	1,201
	Right	85			Right	167	167
North leg	Left	222	Approach	946	Left	169	169
SB	Through	668	Departure	1,590	Through	671	671
	Right	56			Right	49	49
West leg	Left	197	Approach	1,629	Left	273	274
EB	Through	559	Departure	1,104	Through	930	931
	Right	148			Right	325	325
East leg	Left	254	Approach	1,043	Left	349	350
WB	Through	431	Departure	1,266	Through	513	514
	Right	133			Right	116	116

**CALCULATION OF FUTURE DIRECTIONAL TURN VOLUMES FROM
FUTURE DIRECTIONAL LINK VOLUMES (NCHRP 255)**

Intersection No.: 13
North/South Street: MILLIKEN AVE
East/West Street: AZUSA CT

Analysis Condition: YEAR 2045 FUTURE TRAFFIC

A.M. Peak Hour

Approach Direction	Base Year Count	Forecast Future Year					
		Link Volume	Turn Volume	Balanced Volume			
South leg	Left	0	Approach	616	Left	0	0
NB	Through	491	Departure	667	Through	616	616
	Right	0			Right	0	0
North leg	Left	0	Approach	699	Left	0	0
SB	Through	565	Departure	616	Through	665	766
	Right	34			Right	34	34
West leg	Left	0	Approach	2	Left	0	0
EB	Through	0	Departure	34	Through	0	0
	Right	2			Right	2	3
East leg	Left	0	Approach	0	Left	0	0
WB	Through	0	Departure	0	Through	0	0
	Right	0			Right	0	0

P.M. Peak Hour

Approach Direction	Base Year Count	Forecast Future Year					
		Link Volume	Turn Volume	Balanced Volume			
South leg	Left	0	Approach	1,616	Left	0	0
NB	Through	1,441	Departure	816	Through	1,616	1,616
	Right	0			Right	0	0
North leg	Left	0	Approach	812	Left	0	0
SB	Through	786	Departure	1,616	Through	786	813
	Right	26			Right	26	26
West leg	Left	0	Approach	30	Left	0	0
EB	Through	0	Departure	26	Through	0	0
	Right	30			Right	30	32
East leg	Left	0	Approach	0	Left	0	0
WB	Through	0	Departure	0	Through	0	0
	Right	0			Right	0	0

Friday Peak Hour

Approach Direction		Base Year Count	Forecast Future Year				
			Link Volume		Turn Volume	Balanced Volume	
South leg	Left	0	Approach	1,915	Left	0	0
NB	Through	1,715	Departure	929	Through	1,915	1,915
	Right	0			Right	0	0
North leg	Left	0	Approach	927	Left	0	0
SB	Through	897	Departure	1,915	Through	897	897
	Right	30			Right	30	30
West leg	Left	0	Approach	32	Left	0	0
EB	Through	0	Departure	30	Through	0	0
	Right	32			Right	32	32
East leg	Left	0	Approach	0	Left	0	0
WB	Through	0	Departure	0	Through	0	0
	Right	0			Right	0	0

Sunday Peak Hour

Approach Direction		Base Year Count	Forecast Future Year				
			Link Volume		Turn Volume	Balanced Volume	
South leg	Left	0	Approach	1,105	Left	0	0
NB	Through	980	Departure	673	Through	1,105	1,105
	Right	0			Right	0	0
North leg	Left	0	Approach	667	Left	0	0
SB	Through	645	Departure	1,105	Through	645	645
	Right	22			Right	22	22
West leg	Left	0	Approach	28	Left	0	0
EB	Through	0	Departure	22	Through	0	0
	Right	28			Right	28	28
East leg	Left	0	Approach	0	Left	0	0
WB	Through	0	Departure	0	Through	0	0
	Right	0			Right	0	0

**CALCULATION OF FUTURE DIRECTIONAL TURN VOLUMES FROM
FUTURE DIRECTIONAL LINK VOLUMES (NCHRP 255)**

Intersection No.: 14
North/South Street: MILLIKEN AVE
East/West Street: 7TH ST

Analysis Condition: YEAR 2045 FUTURE TRAFFIC

A.M. Peak Hour

Approach Direction	Base Year Count	Forecast Future Year					
		Link Volume	Turn Volume	Balanced Volume			
South leg	Left	57	Approach	543	Left	27	27
NB	Through	475	Departure	677	Through	364	365
	Right	11			Right	0	1
North leg	Left	19	Approach	669	Left	29	30
SB	Through	545	Departure	617	Through	655	656
	Right	5			Right	84	84
West leg	Left	12	Approach	188	Left	237	238
EB	Through	2	Departure	114	Through	2	3
	Right	24			Right	21	21
East leg	Left	8	Approach	15	Left	1	2
WB	Through	2	Departure	32	Through	4	4
	Right	5			Right	15	16

P.M. Peak Hour

Approach Direction	Base Year Count	Forecast Future Year					
		Link Volume	Turn Volume	Balanced Volume			
South leg	Left	38	Approach	1,512	Left	136	136
NB	Through	1,315	Departure	855	Through	1,455	1,455
	Right	9			Right	8	9
North leg	Left	7	Approach	816	Left	7	8
SB	Through	800	Departure	1,616	Through	800	800
	Right	9			Right	36	37
West leg	Left	107	Approach	176	Left	139	140
EB	Through	2	Departure	172	Through	2	3
	Right	42			Right	44	44
East leg	Left	13	Approach	32	Left	12	12
WB	Through	0	Departure	18	Through	0	0
	Right	19			Right	22	22

**CALCULATION OF FUTURE DIRECTIONAL TURN VOLUMES FROM
FUTURE DIRECTIONAL LINK VOLUMES (NCHRP 255)**

Intersection No.: 15
North/South Street: MILLIKEN AVE
East/West Street: I-10 WB RAMPS

Analysis Condition: YEAR 2045 FUTURE TRAFFIC

A.M. Peak Hour

Approach Direction	Base Year Count	Forecast Future Year					
		Link Volume	Turn Volume	Balanced Volume			
South leg	Left	94	Approach	540	Left	40	65
NB	Through	361	Departure	1,090	Through	258	420
	Right	85			Right	56	92
North leg	Left	42	Approach	772	Left	91	92
SB	Through	237	Departure	541	Through	685	823
	Right	143			Right	198	199
West leg	Left	37	Approach	91	Left	46	46
EB	Through	34	Departure	276	Through	39	39
	Right	20			Right	30	37
East leg	Left	183	Approach	515	Left	374	450
WB	Through	39	Departure	186	Through	38	39
	Right	143			Right	238	238

P.M. Peak Hour

Approach Direction	Base Year Count	Forecast Future Year					
		Link Volume	Turn Volume	Balanced Volume			
South leg	Left	265	Approach	2,000	Left	357	358
NB	Through	781	Departure	1,645	Through	1,234	1,235
	Right	204			Right	459	459
North leg	Left	250	Approach	1,672	Left	390	390
SB	Through	725	Departure	1,443	Through	955	955
	Right	397			Right	371	371
West leg	Left	136	Approach	353	Left	114	115
EB	Through	157	Departure	891	Through	187	188
	Right	60			Right	60	61
East leg	Left	560	Approach	865	Left	630	631
WB	Through	204	Departure	1,036	Through	163	163
	Right	101			Right	95	95

**CALCULATION OF FUTURE DIRECTIONAL TURN VOLUMES FROM
FUTURE DIRECTIONAL LINK VOLUMES (NCHRP 255)**

Intersection No.: 16
North/South Street: MILLIKEN AVE
East/West Street: I-10 EB RAMPS

Analysis Condition: YEAR 2045 FUTURE TRAFFIC

A.M. Peak Hour

Approach Direction		Base Year Count	Forecast Future Year				
			Link Volume		Turn Volume	Balanced Volume	
South leg NB	Left	178	Approach	481	Left	93	93
	Through	303	Departure	1,401	Through	234	235
	Right	0			Right	0	0
North leg SB	Left	0	Approach	1,120	Left	0	0
	Through	356	Departure	575	Through	1,109	1,109
	Right	114			Right	199	200
West leg EB	Left	272	Approach	542	Left	341	341
	Through	0	Departure	292	Through	0	0
	Right	195			Right	292	293
East leg WB	Left	0	Approach	0	Left	0	0
	Through	0	Departure	0	Through	0	0
	Right	0			Right	0	0

P.M. Peak Hour

Approach Direction		Base Year Count	Forecast Future Year				
			Link Volume		Turn Volume	Balanced Volume	
South leg NB	Left	271	Approach	1,749	Left	283	139
	Through	778	Departure	741	Through	1,456	1,641
	Right	0			Right	0	0
North leg SB	Left	0	Approach	1,073	Left	0	0
	Through	385	Departure	1,820	Through	585	908
	Right	388			Right	476	738
West leg EB	Left	292	Approach	523	Left	364	410
	Through	0	Departure	759	Through	0	0
	Right	181			Right	156	156
East leg WB	Left	0	Approach	0	Left	0	0
	Through	0	Departure	0	Through	0	0
	Right	0			Right	0	0

Friday Peak Hour

Approach Direction		Base Year Count	Forecast Future Year				
			Link Volume		Turn Volume	Balanced Volume	
South leg NB	Left	296	Approach	1,895	Left	4	5
	Through	849	Departure	627	Through	671	671
	Right	0			Right	0	0
North leg SB	Left	0	Approach	844	Left	0	0
	Through	308	Departure	2,062	Through	617	617
	Right	311			Right	703	703
West leg EB	Left	363	Approach	582	Left	1,391	1,392
	Through	0	Departure	707	Through	0	0
	Right	169			Right	10	11
East leg WB	Left	0	Approach	0	Left	0	0
	Through	0	Departure	0	Through	0	0
	Right	0			Right	0	0

Sunday Peak Hour

Approach Direction		Base Year Count	Forecast Future Year				
			Link Volume		Turn Volume	Balanced Volume	
South leg NB	Left	190	Approach	1,210	Left	194	195
	Through	545	Departure	566	Through	1,019	1,020
	Right	0			Right	0	0
North leg SB	Left	0	Approach	837	Left	0	0
	Through	305	Departure	1,287	Through	455	456
	Right	307			Right	378	378
West leg EB	Left	217	Approach	378	Left	268	268
	Through	0	Departure	572	Through	0	0
	Right	136			Right	111	111
East leg WB	Left	0	Approach	0	Left	0	0
	Through	0	Departure	0	Through	0	0
	Right	0			Right	0	0
						194	

Appendix A.2 - Opening and Horizon Year Forecasting Adjustments

Appendix A.2.1 - 2024 No Build to 2045 No Build Area Growth

OPENING YEAR (2024) NO BUILD (Original)

AM PEAK HOUR

#	Name	Jurisdiction	2	3	4	5	6	7	8	9	10	11	12	13	YEAR	NB	SB	EB	WB	TOT
			NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR						
1	Highway 395 / Joshua St	Hesperia													2020	466	1037	29	235	1767
2	Interstate 15 SB off-ramp / Joshua St	Hesperia	3	418	45	101	927	9	13	15	1	143	15	77	2020	0	114	108	98	320
3	Interstate 15 NB on-ramp / Joshua St	Hesperia				6		108							2020	0	0	110	153	263
4	Mariposa Rd / Joshua St	Hesperia	96	18				29	57	28		36			2020	114	86	64	0	264
5	Interstate 15 SB ramps / Foothill Blvd (RT 66)	Rancho Cucamonga					232		819				1286	532	2020	0	1051	1199	1818	4068
6	Interstate 15 NB ramps / Foothill Blvd (RT 66)	Rancho Cucamonga	750		378					911	125		455	231	2020	1128	0	1036	686	2850
7	Interstate 15 SB ramps / Fourth St	Rancho Cucamonga	78	63	43	142	177	350	219	236	71	163	957	176	2020	184	669	526	1296	2675
8	Interstate 15 NB ramps / Fourth St	Rancho Cucamonga	53	23	34	322	55	931	146	249	28	15	280	62	2020	110	1308	423	357	2198
9	Milliken Ave / Interstate 210 WB Ramps	Rancho Cucamonga	245	204			460	98				132	4	56	2020	449	558	0	192	1199
10	Milliken Ave / Interstate 210 EB Ramps	Rancho Cucamonga			384	282	108	492		64	7	159			2020	666	600	230	0	1496
11	Milliken Ave / Foothill Blvd (RT 66)	Rancho Cucamonga	76	158	71	122	365	138	40	361	59	119	665	81	2020	305	625	460	865	2255
12	Milliken Ave / Fourth St	Rancho Cucamonga	77	566	82	80	491	73	77	287	116	227	382	80	2020	725	644	480	689	2538
13	Milliken Ave / Azusa Ct	Rancho Cucamonga			590		678	41				3			2020	590	719	3	0	1312
14	Milliken Ave / 7th St	Rancho Cucamonga	73	475	11	23	654	7	15	3	29	10	2	6	2020	559	684	47	18	1308
15	Milliken Ave / Interstate 10 WB Ramps	Ontario	94	361	160	79	275	166	37	34	24	213	47	172	2020	615	520	95	432	1662
16	Milliken Ave / Interstate 10 EB Ramps	Ontario	178	303			413	133	338			227			2020	481	546	565	0	1592

PM PEAK HOUR

#	Name	Jurisdiction	2	3	4	5	6	7	8	9	10	11	12	13	YEAR	NB	SB	EB	WB	TOT
			NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR						
1	Highway 395 / Joshua St	Hesperia	20	1115	66	54	573	22	28	83	13	32	18	96	2020	1201	649	124	146	2120
2	Interstate 15 SB off-ramp / Joshua St	Hesperia				6		74		173			84		2020	0	80	173	84	337
3	Interstate 15 NB on-ramp / Joshua St	Hesperia							116	93			84	20	2020	0	0	209	104	313
4	Mariposa Rd / Joshua St	Hesperia	67	29			28	52	47		49				2020	96	80	96	0	272
5	Interstate 15 SB ramps / Foothill Blvd (RT 66)	Rancho Cucamonga				166		484		2634	879		2124	469	2020	0	650	3513	2593	6756
6	Interstate 15 NB ramps / Foothill Blvd (RT 66)	Rancho Cucamonga	892		474					1273	208		1199	983	2020	1366	0	1481	2182	5029
7	Interstate 15 SB ramps / Fourth St	Rancho Cucamonga	128	218	42	81	179	400	658	995	67	93	818	262	2020	388	660	1720	1173	3941
8	Interstate 15 NB ramps / Fourth St	Rancho Cucamonga	57	58	49	143	43	610	611	454	47	30	403	169	2020	164	796	1112	602	2674
9	Milliken Ave / Interstate 210 WB Ramps	Rancho Cucamonga	193	597			517	73				178	7	82	2020	790	590	0	267	1647
10	Milliken Ave / Interstate 210 EB Ramps	Rancho Cucamonga			657	433	122	575		170	10	97			2020	1090	697	277	0	2064
11	Milliken Ave / Foothill Blvd (RT 66)	Rancho Cucamonga	257	648	302	155	243	114	297	1550	140	235	816	122	2020	1207	512	1987	1173	4879
12	Milliken Ave / Fourth St	Rancho Cucamonga	281	853	99	258	668	65	229	649	172	295	518	155	2020	1233	991	1050	968	4242
13	Milliken Ave / Azusa Ct	Rancho Cucamonga			1730		786	26			30				2020	1730	812	30	0	2572
14	Milliken Ave / 7th St	Rancho Cucamonga	45	1526	11	7	800	11	129	3	51	16		19	2020	1582	818	183	35	2618
15	Milliken Ave / Interstate 10 WB Ramps	Ontario	382	906	237	290	841	572	158	157	70	650	204	118	2020	1525	1703	385	972	4585
16	Milliken Ave / Interstate 10 EB Ramps	Ontario	326	903			447	466	339		218				2020	1229	913	557	0	2699

HORIZON YEAR (2045) NO BUILD (Original)

AM PEAK HOUR

#	Name	Jurisdiction	2	3	4	5	6	7	8	9	10	11	12	13	YEAR	NB	SB	EB	WB	TOT
			NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR						
1	Highway 395 / Joshua St	Hesperia	13	437	7	163	1454	528	70	13	1	39	135	121	2045	457	2145	84	295	2981
2	Interstate 15 SB off-ramp / Joshua St	Hesperia				6		87		162			134		2045	0	93	162	134	389
3	Interstate 15 NB on-ramp / Joshua St	Hesperia							36	132			134	21	2045	0	0	168	155	323
4	Mariposa Rd / Joshua St	Hesperia	119	63			310	12	4		129				2045	182	322	133	0	637
5	Interstate 15 SB ramps / Foothill Blvd (RT 66)	Rancho Cucamonga				497		424		1161	692		1285	532	2045	0	921	1853	1817	4591
6	Interstate 15 NB ramps / Foothill Blvd (RT 66)	Rancho Cucamonga	343		182					1532	125		1475	200	2045	525	0	1657	1675	3857
7	Interstate 15 SB ramps / Fourth St	Rancho Cucamonga	111	97	63	151	153	367	318	375	56	88	1021	173	2045	271	671	749	1282	2973
8	Interstate 15 NB ramps / Fourth St	Rancho Cucamonga	130	41	89	272	37	740	132	419	38	20	411	54	2045	260	1049	589	485	2383
9	Milliken Ave / Interstate 210 WB Ramps	Rancho Cucamonga	208	241			751	182				116	5	94	2045	449	933	0	215	1597
10	Milliken Ave / Interstate 210 EB Ramps	Rancho Cucamonga		300	67	308	559		149	8	109				2045	367	867	266	0	1500
11	Milliken Ave / Foothill Blvd (RT 66)	Rancho Cucamonga	59	158	82	184	465	134	54	560	75	173	785	123	2045	299	783	689	1081	2852
12	Milliken Ave / Fourth St	Rancho Cucamonga	19	243	20	92	856	85	212	298	213	300	358	159	2045	282	1033	723	817	2855
13	Milliken Ave / Azusa Ct	Rancho Cucamonga		616			766	34				3			2045	616	800	3	0	1419
14	Milliken Ave / 7th St	Rancho Cucamonga	27	365	1	30	656	84	238	3	21	2	4	16	2045	393	770	262	22	1447
15	Milliken Ave / Interstate 10 WB Ramps	Ontario	65	420	92	92	823	199	46	39	37	450	39	238	2045	577	1114	122	727	2540
16	Milliken Ave / Interstate 10 EB Ramps	Ontario	93	235			1109	200	341		293				2045	328	1309	634	0	2271

PM PEAK HOUR

#	Name	Jurisdiction	2	3	4	5	6	7	8	9	10	11	12	13	YEAR	NB	SB	EB	WB	TOT
			NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR						
1	Highway 395 / Joshua St	Hesperia	19	1309	9	29	537	82	526	154	49	33	74	484	2045	1337	648	729	591	3305
2	Interstate 15 SB off-ramp / Joshua St	Hesperia				9		193		170			366		2045	0	202	170	366	738
3	Interstate 15 NB on-ramp / Joshua St	Hesperia							93	86			366	31	2045	0	0	179	397	576
4	Mariposa Rd / Joshua St	Hesperia	356	337			92	46	31		56				2045	693	138	87	0	918
5	Interstate 15 SB ramps / Foothill Blvd (RT 66)	Rancho Cucamonga				212		506		2602	879		2018	469	2045	0	718	3481	2487	6686
6	Interstate 15 NB ramps / Foothill Blvd (RT 66)	Rancho Cucamonga	1058		627					2479	335		1430	869	2045	1685	0	2814	2299	6798
7	Interstate 15 SB ramps / Fourth St	Rancho Cucamonga	186	240	77	103	150	405	488	1308	56	89	948	223	2045	503	658	1852	1260	4273
8	Interstate 15 NB ramps / Fourth St	Rancho Cucamonga	60	43	44	145	32	739	699	726	64	21	460	96	2045	147	916	1489	577	3129
9	Milliken Ave / Interstate 210 WB Ramps	Rancho Cucamonga	192	696			529	75				167	7	87	2045	888	604	0	261	1753
10	Milliken Ave / Interstate 210 EB Ramps	Rancho Cucamonga		676	286	131	565		212	9	176				2045	962	696	397	0	2055
11	Milliken Ave / Foothill Blvd (RT 66)	Rancho Cucamonga	234	630	382	163	218	87	234	1590	96	239	928	143	2045	1246	468	1920	1310	4944
12	Milliken Ave / Fourth St	Rancho Cucamonga	542	1201	167	169	671	49	274	931	325	350	514	116	2045	1910	889	1530	980	5309
13	Milliken Ave / Azusa Ct	Rancho Cucamonga		1616			813	26			32				2045	1616	839	32	0	2487
14	Milliken Ave / 7th St	Rancho Cucamonga	136	1455	9	8	800	37	140	3	44	12		22	2045	1600	845	187	34	2666
15	Milliken Ave / Interstate 10 WB Ramps	Ontario	358	1235	459	390	955	371	115	188	61	631	163	95	2045	2052	1716	364	889	5021
16	Milliken Ave / Interstate 10 EB Ramps	Ontario	139	1641			908	738	410		156				2045	1780	1646	566	0	3992

TOTAL DELTAS (2024 NO BUILD to 2045 NO BUILD) (Original)

AM PEAK HOUR

#	Name	Jurisdiction	2	3	4	5	6	7	8	9	10	11	12	13
			NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
1	Highway 395 / Joshua St	Hesperia	10	19	-38	62	527	519	57	-2	0	-104	120	44
2	Interstate 15 SB off-ramp / Joshua St	Hesperia				0		-21		54			36	
3	Interstate 15 NB on-ramp / Joshua St	Hesperia							-5	63			13	-11
4	Mariposa Rd / Joshua St	Hesperia	23	45			281	-45	-34		93			
5	Interstate 15 SB ramps / Foothill Blvd (RT 66)	Rancho Cucamonga				265		-395		654	0		-1	0
6	Interstate 15 NB ramps / Foothill Blvd (RT 66)	Rancho Cucamonga	-407		-196					621	0		1020	-31
7	Interstate 15 SB ramps / Fourth St	Rancho Cucamonga	33	34	20	9	-24	17	99	139	-15	-75	64	-3
8	Interstate 15 NB ramps / Fourth St	Rancho Cucamonga	77	18	55	-50	-18	-191	-14	170	10	5	131	-8
9	Milliken Ave / Interstate 210 WB Ramps	Rancho Cucamonga	-37	37			291	84				-16	1	38
10	Milliken Ave / Interstate 210 EB Ramps	Rancho Cucamonga		-84	-215	200	67		85	1	-50			
11	Milliken Ave / Foothill Blvd (RT 66)	Rancho Cucamonga	-17	0	11	62	100	-4	14	199	16	54	120	42
12	Milliken Ave / Fourth St	Rancho Cucamonga	-58	-323	-62	12	365	12	135	11	97	73	-24	79
13	Milliken Ave / Azusa Ct	Rancho Cucamonga		26			88	-7						
14	Milliken Ave / 7th St	Rancho Cucamonga	-46	-110	-10	7	2	77	223	0	-8	-8	2	10
15	Milliken Ave / Interstate 10 WB Ramps	Ontario	-29	59	-68	13	548	33	9	5	13	237	-8	66
16	Milliken Ave / Interstate 10 EB Ramps	Ontario	-85	-68			696	67	3		66			

Calculated Area Annual Factors

Victor Valley 3.55% ← Annual Factor to Convert 2024 NB to 2025 NB in Hesperia
 Rancho Cuc. 0.73% ← Annual Factor to Convert 2024 NB to 2025 NB in Rancho Cucamonga/Ontario

PM PEAK HOUR

#	Name	Jurisdiction	2	3	4	5	6	7	8	9	10	11	12	13
			NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
1	Highway 395 / Joshua St	Hesperia	-1	194	-57	-25	-36	60	498	71	36	1	56	388
2	Interstate 15 SB off-ramp / Joshua St	Hesperia				3		119		-3			282	
3	Interstate 15 NB on-ramp / Joshua St	Hesperia							-23	-7			282	11
4	Mariposa Rd / Joshua St	Hesperia	289	308			64	-6	-16		7			
5	Interstate 15 SB ramps / Foothill Blvd (RT 66)	Rancho Cucamonga				46		22		-32	0		-106	0
6	Interstate 15 NB ramps / Foothill Blvd (RT 66)	Rancho Cucamonga	166		153					1206	127		231	-114
7	Interstate 15 SB ramps / Fourth St	Rancho Cucamonga	58	22	35	22	-29	5	-170	313	-11	-4	130	-39
8	Interstate 15 NB ramps / Fourth St	Rancho Cucamonga	3	-15	-5	2	-11	129	88	272	17	-9	57	-73
9	Milliken Ave / Interstate 210 WB Ramps	Rancho Cucamonga	-1	99			12	2				-11	0	5
10	Milliken Ave / Interstate 210 EB Ramps	Rancho Cucamonga		19	-147	9	-10		42	-1	79			
11	Milliken Ave / Foothill Blvd (RT 66)	Rancho Cucamonga	-23	-18	80	8	-25	-27	-63	40	-44	4	112	21
12	Milliken Ave / Fourth St	Rancho Cucamonga	261	348	68	-89	3	-16	45	282	153	55	-4	-39
13	Milliken Ave / Azusa Ct	Rancho Cucamonga		-114			27	0			2			
14	Milliken Ave / 7th St	Rancho Cucamonga	91	-71	-2	1	0	26	11	0	-7	-4		3
15	Milliken Ave / Interstate 10 WB Ramps	Ontario	-24	329	222	100	114	-201	-43	31	-9	-19	-41	-23
16	Milliken Ave / Interstate 10 EB Ramps	Ontario	-187	738			461	272	71		-62			

Calculated Area Annual Factors

Victor Valley 3.55% ← Annual Factor to Convert 2024 NB to 2025 NB in Hesperia
 Rancho Cuc. 0.73% ← Annual Factor to Convert 2024 NB to 2025 NB in Rancho Cucamonga/Ontario

Appendix A.2.2 - 2024 No Build to 2025 No Build Adjustments

OPENING YEAR (2024) NO BUILD (Original)

AM PEAK HOUR

#	Name	Jurisdiction	2	3	4	5	6	7	8	9	10	11	12	13	YEAR	NB	SB	EB	WB	TOT
			NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR						
1	Highway 395 / Joshua St	Hesperia	3	418	45	101	927	9	13	15	1	143	15	77	2024	466	1037	29	235	1767
2	Interstate 15 SB off-ramp / Joshua St	Hesperia				6		108		108			98		2024	0	114	108	98	320
3	Interstate 15 NB on-ramp / Joshua St	Hesperia							41	69			121	32	2024	0	0	110	153	263
4	Mariposa Rd / Joshua St	Hesperia	96	18			29	57	28		36				2024	114	86	64	0	264
5	Interstate 15 SB ramps / Foothill Blvd (RT 66)	Rancho Cucamonga				232		819		507	692		1286	532	2024	0	1051	1199	1818	4068
6	Interstate 15 NB ramps / Foothill Blvd (RT 66)	Rancho Cucamonga	750		378					911	125		455	231	2024	1128	0	1036	686	2850
7	Interstate 15 SB ramps / Fourth St	Rancho Cucamonga	78	63	43	142	177	350	219	236	71	163	957	176	2024	184	669	526	1296	2675
8	Interstate 15 NB ramps / Fourth St	Rancho Cucamonga	53	23	34	322	55	931	146	249	28	15	280	62	2024	110	1308	423	357	2198
9	Milliken Ave / Interstate 210 WB Ramps	Rancho Cucamonga	245	204			460	98				132	4	56	2024	449	558	0	192	1199
10	Milliken Ave / Interstate 210 EB Ramps	Rancho Cucamonga		384	282	108	492		64	7	159				2024	666	600	230	0	1496
11	Milliken Ave / Foothill Blvd (RT 66)	Rancho Cucamonga	76	158	71	122	365	138	40	361	59	119	665	81	2024	305	625	460	865	2255
12	Milliken Ave / Fourth St	Rancho Cucamonga	77	566	82	80	491	73	77	287	116	227	382	80	2024	725	644	480	689	2538
13	Milliken Ave / Azusa Ct	Rancho Cucamonga		590			678	41				3			2024	590	719	3	0	1312
14	Milliken Ave / 7th St	Rancho Cucamonga	73	475	11	23	654	7	15	3	29	10	2	6	2024	559	684	47	18	1308
15	Milliken Ave / Interstate 10 WB Ramps	Ontario	94	361	160	79	275	166	37	34	24	213	47	172	2024	615	520	95	432	1662
16	Milliken Ave / Interstate 10 EB Ramps	Ontario	178	303			413	133	338		227				2024	481	546	565	0	1592

OPENING YEAR (2024) NO BUILD (Original)

PM PEAK HOUR

#	Name	Jurisdiction	2	3	4	5	6	7	8	9	10	11	12	13	YEAR	NB	SB	EB	WB	TOT
			NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR						
1	Highway 395 / Joshua St	Hesperia	20	1115	66	54	573	22	28	83	13	32	18	96	2024	1201	649	124	146	2120
2	Interstate 15 SB off-ramp / Joshua St	Hesperia				6		74		173			84		2024	0	80	173	84	337
3	Interstate 15 NB on-ramp / Joshua St	Hesperia							116	93			84	20	2024	0	0	209	104	313
4	Mariposa Rd / Joshua St	Hesperia	67	29			28	52	47		49				2024	96	80	96	0	272
5	Interstate 15 SB ramps / Foothill Blvd (RT 66)	Rancho Cucamonga				166		484		2634	879		2124	469	2024	0	650	3513	2593	6756
6	Interstate 15 NB ramps / Foothill Blvd (RT 66)	Rancho Cucamonga	892		474					1273	208		1199	983	2024	1366	0	1481	2182	5029
7	Interstate 15 SB ramps / Fourth St	Rancho Cucamonga	128	218	42	81	179	400	658	995	67	93	818	262	2024	388	660	1720	1173	3941
8	Interstate 15 NB ramps / Fourth St	Rancho Cucamonga	57	58	49	143	43	610	611	454	47	30	403	169	2024	164	796	1112	602	2674
9	Milliken Ave / Interstate 210 WB Ramps	Rancho Cucamonga	193	597			517	73				178	7	82	2024	790	590	0	267	1647
10	Milliken Ave / Interstate 210 EB Ramps	Rancho Cucamonga		657	433	122	575		170	10	97				2024	1090	697	277	0	2064
11	Milliken Ave / Foothill Blvd (RT 66)	Rancho Cucamonga	257	648	302	155	243	114	297	1550	140	235	816	122	2024	1207	512	1987	1173	4879
12	Milliken Ave / Fourth St	Rancho Cucamonga	281	853	99	258	668	65	229	649	172	295	518	155	2024	1233	991	1050	968	4242
13	Milliken Ave / Azusa Ct	Rancho Cucamonga		1730			786	26				30			2024	1730	812	30	0	2572
14	Milliken Ave / 7th St	Rancho Cucamonga	45	1526	11	7	800	11	129	3	51	16		19	2024	1582	818	183	35	2618
15	Milliken Ave / Interstate 10 WB Ramps	Ontario	382	906	237	290	841	572	158	157	70	650	204	118	2024	1525	1703	385	972	4585
16	Milliken Ave / Interstate 10 EB Ramps	Ontario	326	903			447	466	339		218				2024	1229	913	557	0	2699

2024 --> 2025

OPENING YEAR (2025) NO BUILD

One-year Area Factors		<u>AM PEAK HOUR</u>																			
#	Name	Jurisdiction	2	3	4	5	6	7	8	9	10	11	12	13	YEAR	NB	SB	EB	WB	TOT	
3.55%	1 Highway 395 / Joshua St	Hesperia	3	433	47	105	960	9	13	16	1	148	16	80	2025	483	1074	30	244	1831	
3.55%	2 Interstate 15 SB off-ramp / Joshua St	Hesperia				6		112					101		2025	0	118	112	101	331	
3.55%	3 Interstate 15 NB on-ramp / Joshua St	Hesperia							42	71			125	33	2025	0	0	113	158	271	
3.55%	4 Mariposa Rd / Joshua St	Hesperia	99	19			30	59	29		37				2025	118	89	66	0	273	
0.73%	5 Interstate 15 SB ramps / Foothill Blvd (RT 66)	Rancho Cucamonga				234		825		511	697		1295	536	2025	0	1059	1208	1831	4098	
0.73%	6 Interstate 15 NB ramps / Foothill Blvd (RT 66)	Rancho Cucamonga	755		381					918	126		458	233	2025	1136	0	1044	691	2871	
0.73%	7 Interstate 15 SB ramps / Fourth St	Rancho Cucamonga	79	63	43	143	178	353	221	238	72	164	964	177	2025	185	674	531	1305	2695	
0.73%	8 Interstate 15 NB ramps / Fourth St	Rancho Cucamonga	53	23	34	324	55	938	147	251	28	15	282	62	2025	110	1317	426	359	2212	
0.73%	9 Milliken Ave / Interstate 210 WB Ramps	Rancho Cucamonga	247	205			463	99				133	4	56	2025	452	562	0	193	1207	
0.73%	10 Milliken Ave / Interstate 210 EB Ramps	Rancho Cucamonga		387	284	109	496		64	7	160				2025	671	605	231	0	1507	
0.73%	11 Milliken Ave / Foothill Blvd (RT 66)	Rancho Cucamonga	77	159	72	123	368	139	40	364	59	120	670	82	2025	308	630	463	872	2273	
0.73%	12 Milliken Ave / Fourth St	Rancho Cucamonga	78	570	83	81	495	74	78	289	117	229	385	81	2025	731	650	484	695	2560	
0.73%	13 Milliken Ave / Azusa Ct	Rancho Cucamonga		594			683	41			3				2025	594	724	3	0	1321	
0.73%	14 Milliken Ave / 7th St	Rancho Cucamonga	74	478	11	23	659	7	15	3	29	10	2	6	2025	563	689	47	18	1317	
0.73%	15 Milliken Ave / Interstate 10 WB Ramps	Ontario	95	364	161	80	277	167	37	34	24	215	47	173	2025	620	524	95	435	1674	
0.73%	16 Milliken Ave / Interstate 10 EB Ramps	Ontario	179	305			416	134	340		229				2025	484	550	569	0	1603	

2024 --> 2025

OPENING YEAR (2025) NO BUILD

One-year Area Factors		<u>PM PEAK HOUR</u>																			
#	Name	Jurisdiction	2	3	4	5	6	7	8	9	10	11	12	13	YEAR	NB	SB	EB	WB	TOT	
3.55%	1 Highway 395 / Joshua St	Hesperia	21	1155	68	56	593	23	29	86	13	33	19	99	2025	1244	672	128	151	2195	
3.55%	2 Interstate 15 SB off-ramp / Joshua St	Hesperia				6		77		179			87		2025	0	83	179	87	349	
3.55%	3 Interstate 15 NB on-ramp / Joshua St	Hesperia							120	96			87	21	2025	0	0	216	108	324	
3.55%	4 Mariposa Rd / Joshua St	Hesperia	69	30			29	54	49		51				2025	99	83	100	0	282	
0.73%	5 Interstate 15 SB ramps / Foothill Blvd (RT 66)	Rancho Cucamonga				167		488		2653	885		2139	472	2025	0	655	3538	2611	6804	
0.73%	6 Interstate 15 NB ramps / Foothill Blvd (RT 66)	Rancho Cucamonga	899		477					1282	210		1208	990	2025	1376	0	1492	2198	5066	
0.73%	7 Interstate 15 SB ramps / Fourth St	Rancho Cucamonga	129	220	42	82	180	403	663	1002	67	94	824	264	2025	391	665	1732	1182	3970	
0.73%	8 Interstate 15 NB ramps / Fourth St	Rancho Cucamonga	57	58	49	144	43	614	615	457	47	30	406	170	2025	164	801	1119	606	2690	
0.73%	9 Milliken Ave / Interstate 210 WB Ramps	Rancho Cucamonga	194	601			521	74				179	7	83	2025	795	595	0	269	1659	
0.73%	10 Milliken Ave / Interstate 210 EB Ramps	Rancho Cucamonga		662	436	123	579		171	10	98				2025	1098	702	279	0	2079	
0.73%	11 Milliken Ave / Foothill Blvd (RT 66)	Rancho Cucamonga	259	653	304	156	245	115	299	1561	141	237	822	123	2025	1216	516	2001	1182	4915	
0.73%	12 Milliken Ave / Fourth St	Rancho Cucamonga	283	859	100	260	673	65	231	654	173	297	522	156	2025	1242	998	1058	975	4273	
0.73%	13 Milliken Ave / Azusa Ct	Rancho Cucamonga		1743			792	26			30				2025	1743	818	30	0	2591	
0.73%	14 Milliken Ave / 7th St	Rancho Cucamonga	45	1537	11	7	806	11	130	3	51	16		19	2025	1593	824	184	35	2636	
0.73%	15 Milliken Ave / Interstate 10 WB Ramps	Ontario	385	913	239	292	847	576	159	158	71	655	205	119	2025	1537	1715	388	979	4619	
0.73%	16 Milliken Ave / Interstate 10 EB Ramps	Ontario	328	910			450	469	341		220				2025	1238	919	561	0	2718	

OPENING YEAR (2024) NO BUILD (Original)

FRIDAY PEAK HOUR

#	Name	Jurisdiction	2	3	4	5	6	7	8	9	10	11	12	13	YEAR	NB	SB	EB	WB	TOT
			NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR						
1	Highway 395 / Joshua St	Hesperia	32	1785	106	51	533	21	42	121	19	40	23	118	2024	1923	605	182	181	2891
2	Interstate 15 SB off-ramp / Joshua St	Hesperia				6		69		253			103		2024	0	75	253	103	431
3	Interstate 15 NB on-ramp / Joshua St	Hesperia							186	136			103	33	2024	0	0	322	136	458
4	Mariposa Rd / Joshua St	Hesperia	77	27			27	67	54		84				2024	104	94	138	0	336
5	Interstate 15 SB ramps / Foothill Blvd (RT 66)	Rancho Cucamonga				377		641		1169	816		1256	535	2024	0	1018	1985	1791	4794
6	Interstate 15 NB ramps / Foothill Blvd (RT 66)	Rancho Cucamonga	668		354					1047	270		1218	932	2024	1022	0	1317	2150	4489
7	Interstate 15 SB ramps / Fourth St	Rancho Cucamonga	120	151	20	74	153	354	684	1254	90	103	841	231	2024	291	581	2028	1175	4075
8	Interstate 15 NB ramps / Fourth St	Rancho Cucamonga	70	73	58	172	63	545	750	562	68	34	448	150	2024	201	780	1380	632	2993
9	Milliken Ave / Interstate 210 WB Ramps	Rancho Cucamonga	205	633			368	52				189	8	88	2024	838	420	0	285	1543
10	Milliken Ave / Interstate 210 EB Ramps	Rancho Cucamonga		750	351	114	378		110	12	306				2024	1101	492	428	0	2021
11	Milliken Ave / Foothill Blvd (RT 66)	Rancho Cucamonga	319	759	179	219	460	195	225	1592	121	197	1398	96	2024	1257	874	1938	1691	5760
12	Milliken Ave / Fourth St	Rancho Cucamonga	210	1072	188	188	787	154	168	1362	176	198	1230	176	2024	1470	1129	1706	1604	5909
13	Milliken Ave / Azusa Ct	Rancho Cucamonga		2058			897	30			32				2024	2058	927	32	0	3017
14	Milliken Ave / 7th St	Rancho Cucamonga	54	1816	13	8	912	13	147		53	17		22	2024	1883	933	200	39	3055
15	Milliken Ave / Interstate 10 WB Ramps	Ontario	307	1127	241	246	736	438	159	208	191	553	172	177	2024	1675	1420	558	902	4555
16	Milliken Ave / Interstate 10 EB Ramps	Ontario	486	985			370	511	422		197				2024	1471	881	619	0	2971

OPENING YEAR (2024) NO BUILD (Original)

SUNDAY PEAK HOUR

#	Name	Jurisdiction	2	3	4	5	6	7	8	9	10	11	12	13	YEAR	NB	SB	EB	WB	TOT
			NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR						
1	Highway 395 / Joshua St	Hesperia	24	1373	82	57	602	23	32	92	15	35	20	104	2024	1479	682	139	159	2459
2	Interstate 15 SB off-ramp / Joshua St	Hesperia				7		78		193			91		2024	0	85	193	91	369
3	Interstate 15 NB on-ramp / Joshua St	Hesperia							143	104			91	25	2024	0	0	247	116	363
4	Mariposa Rd / Joshua St	Hesperia	69	38			27	40	46		60				2024	107	67	106	0	280
5	Interstate 15 SB ramps / Foothill Blvd (RT 66)	Rancho Cucamonga				142		359		1547	634		2174	304	2024	0	501	2181	2478	5160
6	Interstate 15 NB ramps / Foothill Blvd (RT 66)	Rancho Cucamonga	1322		535					1183	474		1151	347	2024	1857	0	1657	1498	5012
7	Interstate 15 SB ramps / Fourth St	Rancho Cucamonga	112	178	45	92	240	450	502	712	54	183	705	108	2024	335	782	1268	996	3381
8	Interstate 15 NB ramps / Fourth St	Rancho Cucamonga	72	54	41	58	48	693	553	227	79	9	190	35	2024	167	799	859	234	2059
9	Milliken Ave / Interstate 210 WB Ramps	Rancho Cucamonga	153	473			259	37				162	7	75	2024	626	296	0	244	1166
10	Milliken Ave / Interstate 210 EB Ramps	Rancho Cucamonga		500	244	63	285		85	7	345				2024	744	348	437	0	1529
11	Milliken Ave / Foothill Blvd (RT 66)	Rancho Cucamonga	277	603	152	181	368	77	191	1017	86	353	1321	107	2024	1032	626	1294	1781	4733
12	Milliken Ave / Fourth St	Rancho Cucamonga	239	490	115	261	460	100	181	438	187	440	497	164	2024	844	821	806	1101	3572
13	Milliken Ave / Azusa Ct	Rancho Cucamonga		1137			645	26			33				2024	1137	671	33	0	1841
14	Milliken Ave / 7th St	Rancho Cucamonga	31	1039	9	6	656	10	88		48	16		13	2024	1079	672	136	29	1916
15	Milliken Ave / Interstate 10 WB Ramps	Ontario	336	473	232	159	610	373	368	265	166	304	329	299	2024	1041	1142	799	932	3914
16	Milliken Ave / Interstate 10 EB Ramps	Ontario	228	654			305	307	400		158				2024	882	612	558	0	2052

2024 --> 2025

One-year Area Factors
3.55%
3.55%
3.55%
3.55%
0.73%
0.73%
0.73%
0.73%
0.73%
0.73%
0.73%
0.73%
0.73%
0.73%
0.73%
0.73%
0.73%
0.73%

OPENING YEAR (2025) NO BUILD

FRIDAY PEAK HOUR

#	Name	Jurisdiction	2	3	4	5	6	7	8	9	10	11	12	13	YEAR	NB	SB	EB	WB	TOT
1	Highway 395 / Joshua St	Hesperia	33	1848	110	53	552	22	43	125	20	41	24	122	2024	1991	627	188	187	2993
2	Interstate 15 SB off-ramp / Joshua St	Hesperia				6		71		262			107		2024	0	77	262	107	446
3	Interstate 15 NB on-ramp / Joshua St	Hesperia							193	141			107	34	2024	0	0	334	141	475
4	Mariposa Rd / Joshua St	Hesperia	80	28			28	69	56		87				2024	108	97	143	0	348
5	Interstate 15 SB ramps / Foothill Blvd (RT 66)	Rancho Cucamonga				380		646		1178	822		1265	539	2024	0	1026	2000	1804	4830
6	Interstate 15 NB ramps / Foothill Blvd (RT 66)	Rancho Cucamonga	673		357					1055	272		1227	939	2024	1030	0	1327	2166	4523
7	Interstate 15 SB ramps / Fourth St	Rancho Cucamonga	121	152	20	75	154	357	689	1263	91	104	847	233	2024	293	586	2043	1184	4106
8	Interstate 15 NB ramps / Fourth St	Rancho Cucamonga	71	74	58	173	63	549	755	566	68	34	451	151	2024	203	785	1389	636	3013
9	Milliken Ave / Interstate 210 WB Ramps	Rancho Cucamonga	206	638			371	52				190	8	89	2024	844	423	0	287	1554
10	Milliken Ave / Interstate 210 EB Ramps	Rancho Cucamonga		755	354	115	381		111	12	308				2024	1109	496	431	0	2036
11	Milliken Ave / Foothill Blvd (RT 66)	Rancho Cucamonga	321	765	180	221	463	196	227	1604	122	198	1408	97	2024	1266	880	1953	1703	5802
12	Milliken Ave / Fourth St	Rancho Cucamonga	212	1080	189	189	793	155	169	1372	177	199	1239	177	2024	1481	1137	1718	1615	5951
13	Milliken Ave / Azusa Ct	Rancho Cucamonga		2073			904	30			32				2024	2073	934	32	0	3039
14	Milliken Ave / 7th St	Rancho Cucamonga	54	1829	13	8	919	13	148		53	17		22	2024	1896	940	201	39	3076
15	Milliken Ave / Interstate 10 WB Ramps	Ontario	309	1135	243	248	741	441	160	210	192	557	173	178	2024	1687	1430	562	908	4587
16	Milliken Ave / Interstate 10 EB Ramps	Ontario	490	992			373	515	425		198				2024	1482	888	623	0	2993

2024 --> 2025

One-year Area Factors
3.55%
3.55%
3.55%
3.55%
0.73%
0.73%
0.73%
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0.73%
0.73%

OPENING YEAR (2025) NO BUILD

SUNDAY PEAK HOUR

#	Name	Jurisdiction	2	3	4	5	6	7	8	9	10	11	12	13	YEAR	NB	SB	EB	WB	TOT
1	Highway 395 / Joshua St	Hesperia	25	1422	85	59	623	24	33	95	16	36	21	108	2024	1532	706	144	165	2547
2	Interstate 15 SB off-ramp / Joshua St	Hesperia				7		81		200			94		2024	0	88	200	94	382
3	Interstate 15 NB on-ramp / Joshua St	Hesperia							148	108			94	26	2024	0	0	256	120	376
4	Mariposa Rd / Joshua St	Hesperia	71	39			28	41	48		62				2024	110	69	110	0	289
5	Interstate 15 SB ramps / Foothill Blvd (RT 66)	Rancho Cucamonga				143		362		1558	639		2190	306	2024	0	505	2197	2496	5198
6	Interstate 15 NB ramps / Foothill Blvd (RT 66)	Rancho Cucamonga	1332		539					1192	477		1159	350	2024	1871	0	1669	1509	5049
7	Interstate 15 SB ramps / Fourth St	Rancho Cucamonga	113	179	45	93	242	453	506	717	54	184	710	109	2024	337	788	1277	1003	3405
8	Interstate 15 NB ramps / Fourth St	Rancho Cucamonga	73	54	41	58	48	698	557	229	80	9	191	35	2024	168	804	866	235	2073
9	Milliken Ave / Interstate 210 WB Ramps	Rancho Cucamonga	154	476			261	37				163	7	76	2024	630	298	0	246	1174
10	Milliken Ave / Interstate 210 EB Ramps	Rancho Cucamonga		504	246	63	287		86	7	348				2024	750	350	441	0	1541
11	Milliken Ave / Foothill Blvd (RT 66)	Rancho Cucamonga	279	607	153	182	371	78	192	1024	87	356	1331	108	2024	1039	631	1303	1795	4768
12	Milliken Ave / Fourth St	Rancho Cucamonga	241	494	116	263	463	101	182	441	188	443	501	165	2024	851	827	811	1109	3598
13	Milliken Ave / Azusa Ct	Rancho Cucamonga		1145			650	26			33				2024	1145	676	33	0	1854
14	Milliken Ave / 7th St	Rancho Cucamonga	31	1047	9	6	661	10	89		48	16		13	2024	1087	677	137	29	1930
15	Milliken Ave / Interstate 10 WB Ramps	Ontario	338	476	234	160	614	376	371	267	167	306	331	301	2024	1048	1150	805	938	3941
16	Milliken Ave / Interstate 10 EB Ramps	Ontario	230	659			307	309	403		159				2024	889	616	562	0	2067

Appendix A.2.3 - 2025 No Build to 2025 Build Adjustments

OPENING YEAR (2025) NO BUILD

AM PEAK HOUR

#	Name	Jurisdiction	2	3	4	5	6	7	8	9	10	11	12	13	YEAR	NB	SB	EB	WB	TOT
			NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR						
1	Highway 395 / Joshua St	Hesperia	3	433	47	105	960	9	13	16	1	148	16	80	2025	483	1074	30	244	1831
2	Interstate 15 SB off-ramp / Joshua St	Hesperia				6		112		112			101		2025	0	118	112	101	331
3	Interstate 15 NB on-ramp / Joshua St	Hesperia							42	71			125	33	2025	0	0	113	158	271
4	Mariposa Rd / Joshua St	Hesperia	99	19			30	59	29		37				2025	118	89	66	0	273
5	Interstate 15 SB ramps / Foothill Blvd (RT 66)	Rancho Cucamonga				334		825		710	697		995	536	2025	0	1159	1407	1531	4097
6	Interstate 15 NB ramps / Foothill Blvd (RT 66)	Rancho Cucamonga	755		381					918	126		776	233	2025	1136	0	1044	1009	3189
7	Interstate 15 SB ramps / Fourth St	Rancho Cucamonga	79	63	43	143	178	353	221	238	72	164	964	177	2025	185	674	531	1305	2695
8	Interstate 15 NB ramps / Fourth St	Rancho Cucamonga	53	23	34	324	55	938	147	251	28	15	282	62	2025	110	1317	426	359	2212
9	Milliken Ave / Interstate 210 WB Ramps	Rancho Cucamonga	247	205			463	99				133	4	56	2025	452	562	0	193	1207
10	Milliken Ave / Interstate 210 EB Ramps	Rancho Cucamonga		387	284	109	496		64	7	160				2025	671	605	231	0	1507
11	Milliken Ave / Foothill Blvd (RT 66)	Rancho Cucamonga	77	159	72	123	368	139	40	364	59	120	670	82	2025	308	630	463	872	2273
12	Milliken Ave / Fourth St	Rancho Cucamonga	78	570	83	81	495	74	78	289	117	229	385	81	2025	731	650	484	695	2560
13	Milliken Ave / Azusa Ct	Rancho Cucamonga		594			683	41			3				2025	594	724	3	0	1321
14	Milliken Ave / 7th St	Rancho Cucamonga	74	478	11	23	659	7	15	3	29	10	2	6	2025	563	689	47	18	1317
15	Milliken Ave / Interstate 10 WB Ramps	Ontario	95	389	161	80	311	167	37	34	24	215	47	173	2025	645	558	95	435	1733
16	Milliken Ave / Interstate 10 EB Ramps	Ontario	179	305			416	134	340		229				2025	484	550	569	0	1603

* Volume adjustments for redistribution of growth and interchange balancing

OPENING YEAR (2025) NO BUILD

PM PEAK HOUR

#	Name	Jurisdiction	2	3	4	5	6	7	8	9	10	11	12	13	YEAR	NB	SB	EB	WB	TOT
			NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR						
1	Highway 395 / Joshua St	Hesperia	21	1155	68	56	593	23	29	86	13	33	19	99	2025	1244	672	128	151	2195
2	Interstate 15 SB off-ramp / Joshua St	Hesperia				6		77		179			87		2025	0	83	179	87	349
3	Interstate 15 NB on-ramp / Joshua St	Hesperia							120	96			87	21	2025	0	0	216	108	324
4	Mariposa Rd / Joshua St	Hesperia	69	30			29	54	49		51				2025	99	83	100	0	282
5	Interstate 15 SB ramps / Foothill Blvd (RT 66)	Rancho Cucamonga				167		488		2253	885		1839	472	2025	0	655	3138	2311	6104
6	Interstate 15 NB ramps / Foothill Blvd (RT 66)	Rancho Cucamonga	1003		477					2110	310		1308	990	2025	1480	0	2420	2298	6198
7	Interstate 15 SB ramps / Fourth St	Rancho Cucamonga	129	220	42	82	180	403	663	995	67	94	719	264	2025	391	665	1725	1077	3858
8	Interstate 15 NB ramps / Fourth St	Rancho Cucamonga	57	58	49	144	43	614	615	457	47	30	406	170	2025	164	801	1119	606	2690
9	Milliken Ave / Interstate 210 WB Ramps	Rancho Cucamonga	194	601			521	74				179	7	83	2025	795	595	0	269	1659
10	Milliken Ave / Interstate 210 EB Ramps	Rancho Cucamonga		662	436	123	579		171	10	98				2025	1098	702	279	0	2079
11	Milliken Ave / Foothill Blvd (RT 66)	Rancho Cucamonga	259	653	304	156	245	115	299	1561	141	237	822	123	2025	1216	516	2001	1182	4915
12	Milliken Ave / Fourth St	Rancho Cucamonga	283	859	100	260	673	65	231	654	173	297	522	156	2025	1242	998	1058	975	4273
13	Milliken Ave / Azusa Ct	Rancho Cucamonga		1743			792	26			30				2025	1743	818	30	0	2591
14	Milliken Ave / 7th St	Rancho Cucamonga	45	1537	11	7	806	11	130	3	51	16			2025	1593	824	184	35	2636
15	Milliken Ave / Interstate 10 WB Ramps	Ontario	335	913	239	292	777	576	159	158	71	505	205	119	2025	1487	1645	388	829	4349
16	Milliken Ave / Interstate 10 EB Ramps	Ontario	328	1076			684	669	411		220				2025	1404	1353	631	0	3388

* Volume adjustments for redistribution of growth and interchange balancing

OPENING YEAR (2025) Build Trip Assignments

AM PEAK HOUR

#	Name	Jurisdiction	2	3	4	5	6	7	8	9	10	11	12	13
			NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
1	Highway 395 / Joshua St	Hesperia	0	0	0	37	0	0	0	0	0	0	0	15
2	Interstate 15 SB off-ramp / Joshua St	Hesperia	0	0	0	37	0	0	0	0	0	0	15	0
3	Interstate 15 NB on-ramp / Joshua St	Hesperia	0	0	0	0	0	0	15	13	0	0	32	0
4	Mariposa Rd / Joshua St	Hesperia	14	0	0	0	0	23	9	0	5	0	0	0
5	Interstate 15 SB ramps / Foothill Blvd (RT 66)	Rancho Cucamonga	0	0	0	0	0	8	0	22	0	0	2	0
6	Interstate 15 NB ramps / Foothill Blvd (RT 66)	Rancho Cucamonga	0	0	0	0	0	0	0	4	18	0	2	0
7	Interstate 15 SB ramps / Fourth St	Rancho Cucamonga	0	0	0	0	0	0	8	3	0	0	4	0
8	Interstate 15 NB ramps / Fourth St	Rancho Cucamonga	0	0	0	0	0	4	0	3	0	0	1	0
9	Milliken Ave / Interstate 210 WB Ramps	Rancho Cucamonga	14	0	0	0	0	0	0	0	0	2	0	0
10	Milliken Ave / Interstate 210 EB Ramps	Rancho Cucamonga	0	14	4	0	2	0	0	0	6	0	0	0
11	Milliken Ave / Foothill Blvd (RT 66)	Rancho Cucamonga	6	17	22	0	7	0	0	0	2	9	0	0
12	Milliken Ave / Fourth St	Rancho Cucamonga	0	43	0	11	103	4	2	0	0	0	0	4
13	Milliken Ave / Azusa Ct	Rancho Cucamonga	0	50	0	0	4	14	0	0	58	0	0	0
14	Milliken Ave / 7th St	Rancho Cucamonga	48	0	0	0	58	4	50	0	58	0	0	0
15	Milliken Ave / Interstate 10 WB Ramps	Ontario	0	22	0	0	53	50	14	0	0	0	0	0
16	Milliken Ave / Interstate 10 EB Ramps	Ontario	0	2	0	0	4	50	21	0	0	0	0	0

OPENING YEAR (2025) Build Trip Assignments

PM PEAK HOUR

#	Name	Jurisdiction	2	3	4	5	6	7	8	9	10	11	12	13
			NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
1	Highway 395 / Joshua St	Hesperia	0	0	0	12	0	0	0	0	0	0	0	42
2	Interstate 15 SB off-ramp / Joshua St	Hesperia	0	0	0	12	0	0	0	0	0	0	42	0
3	Interstate 15 NB on-ramp / Joshua St	Hesperia	0	0	0	0	0	0	42	35	0	0	11	0
4	Mariposa Rd / Joshua St	Hesperia	5	0	0	0	0	8	24	0	13	0	0	0
5	Interstate 15 SB ramps / Foothill Blvd (RT 66)	Rancho Cucamonga	0	0	0	0	0	27	0	21	0	0	6	0
6	Interstate 15 NB ramps / Foothill Blvd (RT 66)	Rancho Cucamonga	0	0	0	0	0	0	0	4	17	0	6	0
7	Interstate 15 SB ramps / Fourth St	Rancho Cucamonga	0	0	0	0	0	0	8	3	0	0	15	0
8	Interstate 15 NB ramps / Fourth St	Rancho Cucamonga	0	0	0	0	0	12	0	3	0	0	3	0
9	Milliken Ave / Interstate 210 WB Ramps	Rancho Cucamonga	13	0	0	0	0	0	0	0	0	6	0	0
10	Milliken Ave / Interstate 210 EB Ramps	Rancho Cucamonga	0	13	4	0	6	0	0	0	19	0	0	0
11	Milliken Ave / Foothill Blvd (RT 66)	Rancho Cucamonga	5	16	21	0	24	0	0	0	7	31	0	0
12	Milliken Ave / Fourth St	Rancho Cucamonga	0	146	0	11	97	4	6	0	0	0	0	15
13	Milliken Ave / Azusa Ct	Rancho Cucamonga	0	47	0	0	15	48	0	0	55	0	0	0
14	Milliken Ave / 7th St	Rancho Cucamonga	164	0	0	0	55	15	47	0	55	0	0	0
15	Milliken Ave / Interstate 10 WB Ramps	Ontario	0	76	0	0	50	47	48	0	0	0	0	0
16	Milliken Ave / Interstate 10 EB Ramps	Ontario	0	6	0	0	4	47	72	0	0	0	0	0

OPENING YEAR (2025) BUILD

AM PEAK HOUR

#	Name	Jurisdiction	2	3	4	5	6	7	8	9	10	11	12	13	YEAR	NB	SB	EB	WB	TOT
			NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR						
1	Highway 395 / Joshua St	Hesperia	3	433	47	142	960	9	13	16	1	148	16	95	2025	483	1111	30	259	1883
2	Interstate 15 SB off-ramp / Joshua St	Hesperia				43		112		112			116		2025	0	155	112	116	383
3	Interstate 15 NB on-ramp / Joshua St	Hesperia							57	84			157	33	2025	0	0	141	190	331
4	Mariposa Rd / Joshua St	Hesperia	113	19			30	82	38		42				2025	132	112	80	0	324
5	Interstate 15 SB ramps / Foothill Blvd (RT 66)	Rancho Cucamonga				334		833		732	697		997	536	2025	0	1167	1429	1533	4129
6	Interstate 15 NB ramps / Foothill Blvd (RT 66)	Rancho Cucamonga	755		381					922	144		778	233	2025	1136	0	1066	1011	3213
7	Interstate 15 SB ramps / Fourth St	Rancho Cucamonga	79	63	43	143	178	353	229	241	72	164	968	177	2025	185	674	542	1309	2710
8	Interstate 15 NB ramps / Fourth St	Rancho Cucamonga	53	23	34	324	55	942	147	254	28	15	283	62	2025	110	1321	429	360	2220
9	Milliken Ave / Interstate 210 WB Ramps	Rancho Cucamonga	261	205			463	99				135	4	56	2025	466	562	0	195	1223
10	Milliken Ave / Interstate 210 EB Ramps	Rancho Cucamonga		401	288	109	498		64	7	166				2025	689	607	237	0	1533
11	Milliken Ave / Foothill Blvd (RT 66)	Rancho Cucamonga	83	176	94	123	375	139	40	364	61	129	670	82	2025	353	637	465	881	2336
12	Milliken Ave / Fourth St	Rancho Cucamonga	78	613	83	92	598	78	80	289	117	229	385	85	2025	774	768	486	699	2727
13	Milliken Ave / Azusa Ct	Rancho Cucamonga		644			687	55			61				2025	644	742	61	0	1447
14	Milliken Ave / 7th St	Rancho Cucamonga	122	478	11	23	717	11	65	3	87	10	2	6	2025	611	751	155	18	1535
15	Milliken Ave / Interstate 10 WB Ramps	Ontario	95	411	161	80	364	217	51	34	24	215	47	173	2025	667	661	109	435	1872
16	Milliken Ave / Interstate 10 EB Ramps	Ontario	179	307			420	184	361		229				2025	486	604	590	0	1680

OPENING YEAR (2025) BUILD

PM PEAK HOUR

#	Name	Jurisdiction	2	3	4	5	6	7	8	9	10	11	12	13	YEAR	NB	SB	EB	WB	TOT
			NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR						
1	Highway 395 / Joshua St	Hesperia	21	1155	68	68	593	23	29	86	13	33	19	141	2025	1244	684	128	193	2249
2	Interstate 15 SB off-ramp / Joshua St	Hesperia				18		77		179			129		2025	0	95	179	129	403
3	Interstate 15 NB on-ramp / Joshua St	Hesperia							162	131			98	21	2025	0	0	293	119	412
4	Mariposa Rd / Joshua St	Hesperia	74	30			29	62	73		64				2025	104	91	137	0	332
5	Interstate 15 SB ramps / Foothill Blvd (RT 66)	Rancho Cucamonga				167		515		2274	885		1845	472	2025	0	682	3159	2317	6158
6	Interstate 15 NB ramps / Foothill Blvd (RT 66)	Rancho Cucamonga	1003		477					2114	327		1314	990	2025	1480	0	2441	2304	6225
7	Interstate 15 SB ramps / Fourth St	Rancho Cucamonga	129	220	42	82	180	403	671	998	67	94	734	264	2025	391	665	1736	1092	3884
8	Interstate 15 NB ramps / Fourth St	Rancho Cucamonga	57	58	49	144	43	626	615	460	47	30	409	170	2025	164	813	1122	609	2708
9	Milliken Ave / Interstate 210 WB Ramps	Rancho Cucamonga	207	601			521	74				185	7	83	2025	808	595	0	275	1678
10	Milliken Ave / Interstate 210 EB Ramps	Rancho Cucamonga		675	440	123	585		171	10	117				2025	1115	708	298	0	2121
11	Milliken Ave / Foothill Blvd (RT 66)	Rancho Cucamonga	264	669	325	156	269	115	299	1561	148	268	822	123	2025	1258	540	2008	1213	5019
12	Milliken Ave / Fourth St	Rancho Cucamonga	283	1005	100	271	770	69	237	654	173	297	522	171	2025	1388	1110	1064	990	4552
13	Milliken Ave / Azusa Ct	Rancho Cucamonga		1790			807	74			85				2025	1790	881	85	0	2756
14	Milliken Ave / 7th St	Rancho Cucamonga	209	1537	11	7	861	26	177	3	106	16		19	2025	1757	894	286	35	2972
15	Milliken Ave / Interstate 10 WB Ramps	Ontario	335	989	239	292	827	623	207	158	71	505	205	119	2025	1563	1742	436	829	4570
16	Milliken Ave / Interstate 10 EB Ramps	Ontario	328	1082			688	716	483		220				2025	1410	1404	703	0	3517

OPENING YEAR (2025) NO BUILD

FRIDAY PEAK HOUR

#	Name	Jurisdiction	2	3	4	5	6	7	8	9	10	11	12	13	YEAR	NB	SB	EB	WB	TOT
			NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR						
1	Highway 395 / Joshua St	Hesperia	33	1848	110	53	552	22	43	125	20	41	24	122	2025	1991	627	188	187	2993
2	Interstate 15 SB off-ramp / Joshua St	Hesperia				6		71		262			107		2025	0	77	262	107	446
3	Interstate 15 NB on-ramp / Joshua St	Hesperia							193	141			107	34	2025	0	0	334	141	475
4	Mariposa Rd / Joshua St	Hesperia	80	28			28	69	56		87				2025	108	97	143	0	348
5	Interstate 15 SB ramps / Foothill Blvd (RT 66)	Rancho Cucamonga				380		646		1178	822		1205	539	2025	0	1026	2000	1744	4770
6	Interstate 15 NB ramps / Foothill Blvd (RT 66)	Rancho Cucamonga	517		357					1286	272		1227	939	2025	874	0	1558	2166	4598
7	Interstate 15 SB ramps / Fourth St	Rancho Cucamonga	121	152	22	80	154	357	689	1287	91	104	847	233	2025	295	591	2067	1184	4137
8	Interstate 15 NB ramps / Fourth St	Rancho Cucamonga	91	74	58	173	63	642	755	566	68	34	451	151	2025	223	878	1389	636	3126
9	Milliken Ave / Interstate 210 WB Ramps	Rancho Cucamonga	206	638			371	52				190	8	89	2025	844	423	0	287	1554
10	Milliken Ave / Interstate 210 EB Ramps	Rancho Cucamonga		755	354	115	381		111	12	308				2025	1109	496	431	0	2036
11	Milliken Ave / Foothill Blvd (RT 66)	Rancho Cucamonga	321	765	180	221	463	196	227	1604	122	198	1408	97	2025	1266	880	1953	1703	5802
12	Milliken Ave / Fourth St	Rancho Cucamonga	212	1080	189	189	793	155	169	1372	177	199	1239	177	2025	1481	1137	1718	1615	5951
13	Milliken Ave / Azusa Ct	Rancho Cucamonga		2073			904	30			32				2025	2073	934	32	0	3039
14	Milliken Ave / 7th St	Rancho Cucamonga	54	1829	13	8	919	13	148		53	17		22	2025	1896	940	201	39	3076
15	Milliken Ave / Interstate 10 WB Ramps	Ontario	309	1135	243	248	741	441	160	210	192	557	173	178	2025	1687	1430	562	908	4587
16	Milliken Ave / Interstate 10 EB Ramps	Ontario	490	992			775	715	695		198				2025	1482	1490	893	0	3865

* Volume adjustments for redistribution of growth and interchange balancing

OPENING YEAR (2025) NO BUILD

SUNDAY PEAK HOUR

#	Name	Jurisdiction	2	3	4	5	6	7	8	9	10	11	12	13	YEAR	NB	SB	EB	WB	TOT
			NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR						
1	Highway 395 / Joshua St	Hesperia	25	1422	85	59	623	24	33	95	16	36	21	108	2025	1532	706	144	165	2547
2	Interstate 15 SB off-ramp / Joshua St	Hesperia				7		81		200			94		2025	0	88	200	94	382
3	Interstate 15 NB on-ramp / Joshua St	Hesperia							148	108			94	26	2025	0	0	256	120	376
4	Mariposa Rd / Joshua St	Hesperia	71	39			28	41	48		62				2025	110	69	110	0	289
5	Interstate 15 SB ramps / Foothill Blvd (RT 66)	Rancho Cucamonga				143		362		1558	639		2190	306	2025	0	505	2197	2496	5198
6	Interstate 15 NB ramps / Foothill Blvd (RT 66)	Rancho Cucamonga	1332		539					1192	477		1159	350	2025	1871	0	1669	1509	5049
7	Interstate 15 SB ramps / Fourth St	Rancho Cucamonga	113	179	45	93	242	453	506	717	54	184	710	109	2025	337	788	1277	1003	3405
8	Interstate 15 NB ramps / Fourth St	Rancho Cucamonga	73	54	41	58	48	698	557	229	80	9	191	35	2025	168	804	866	235	2073
9	Milliken Ave / Interstate 210 WB Ramps	Rancho Cucamonga	154	476			261	37				163	7	76	2025	630	298	0	246	1174
10	Milliken Ave / Interstate 210 EB Ramps	Rancho Cucamonga		504	246	63	287		86	7	348				2025	750	350	441	0	1541
11	Milliken Ave / Foothill Blvd (RT 66)	Rancho Cucamonga	279	607	153	182	371	78	192	1024	87	356	1331	108	2025	1039	631	1303	1795	4768
12	Milliken Ave / Fourth St	Rancho Cucamonga	241	494	116	263	463	101	182	441	188	443	501	165	2025	851	827	811	1109	3598
13	Milliken Ave / Azusa Ct	Rancho Cucamonga		1145			650	26			33				2025	1145	676	33	0	1854
14	Milliken Ave / 7th St	Rancho Cucamonga	31	1047	9	6	661	10	89		48	16		13	2025	1087	677	137	29	1930
15	Milliken Ave / Interstate 10 WB Ramps	Ontario	338	476	234	160	614	376	371	267	127	275	331	301	2025	1048	1150	765	907	3870
16	Milliken Ave / Interstate 10 EB Ramps	Ontario	230	645			507	509	403		159				2025	875	1016	562	0	2453

* Volume adjustments for redistribution of growth and interchange balancing

OPENING YEAR (2025) Build Trip Assignments

FRIDAY PEAK HOUR

#	Name	Jurisdiction	2	3	4	5	6	7	8	9	10	11	12	13
			NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
1	Highway 395 / Joshua St	Hesperia	0	0	0	12	0	0	0	0	0	0	0	27
2	Interstate 15 SB off-ramp / Joshua St	Hesperia	0	0	0	12	0	0	0	0	0	0	27	0
3	Interstate 15 NB on-ramp / Joshua St	Hesperia	0	0	0	0	0	0	27	23	0	0	11	0
4	Mariposa Rd / Joshua St	Hesperia	5	0	0	0	0	8	15	0	8	0	0	0
5	Interstate 15 SB ramps / Foothill Blvd (RT 66)	Rancho Cucamonga	0	0	0	0	0	26	0	25	0	0	6	0
6	Interstate 15 NB ramps / Foothill Blvd (RT 66)	Rancho Cucamonga	0	0	0	0	0	0	0	5	20	0	6	0
7	Interstate 15 SB ramps / Fourth St	Rancho Cucamonga	0	0	0	0	0	0	9	3	0	0	14	0
8	Interstate 15 NB ramps / Fourth St	Rancho Cucamonga	0	0	0	0	0	11	0	3	0	0	3	0
9	Milliken Ave / Interstate 210 WB Ramps	Rancho Cucamonga	16	0	0	0	0	0	0	0	0	6	0	0
10	Milliken Ave / Interstate 210 EB Ramps	Rancho Cucamonga	0	16	5	0	6	0	0	0	19	0	0	0
11	Milliken Ave / Foothill Blvd (RT 66)	Rancho Cucamonga	6	19	25	0	23	0	0	0	7	36	0	0
12	Milliken Ave / Fourth St	Rancho Cucamonga	0	140	0	13	116	5	6	0	0	0	0	14
13	Milliken Ave / Azusa Ct	Rancho Cucamonga	0	56	0	0	14	46	0	0	66	0	0	0
14	Milliken Ave / 7th St	Rancho Cucamonga	157	0	0	0	66	14	56	0	66	0	0	0
15	Milliken Ave / Interstate 10 WB Ramps	Ontario	0	73	0	0	60	56	46	0	0	0	0	0
16	Milliken Ave / Interstate 10 EB Ramps	Ontario	0	6	0	0	5	56	68	0	0	0	0	0

OPENING YEAR (2025) Build Trip Assignments

SUNDAY PEAK HOUR

#	Name	Jurisdiction	2	3	4	5	6	7	8	9	10	11	12	13
			NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
1	Highway 395 / Joshua St	Hesperia	0	0	0	8	0	0	0	0	0	0	0	7
2	Interstate 15 SB off-ramp / Joshua St	Hesperia	0	0	0	8	0	0	0	0	0	0	7	0
3	Interstate 15 NB on-ramp / Joshua St	Hesperia	0	0	0	0	0	0	7	6	0	0	7	0
4	Mariposa Rd / Joshua St	Hesperia	3	0	0	0	0	5	4	0	2	0	0	0
5	Interstate 15 SB ramps / Foothill Blvd (RT 66)	Rancho Cucamonga	0	0	0	0	0	21	0	24	0	0	5	0
6	Interstate 15 NB ramps / Foothill Blvd (RT 66)	Rancho Cucamonga	0	0	0	0	0	0	0	5	20	0	5	0
7	Interstate 15 SB ramps / Fourth St	Rancho Cucamonga	0	0	0	0	0	0	9	3	0	0	12	0
8	Interstate 15 NB ramps / Fourth St	Rancho Cucamonga	0	0	0	0	0	9	0	3	0	0	2	0
9	Milliken Ave / Interstate 210 WB Ramps	Rancho Cucamonga	15	0	0	0	0	0	0	0	0	5	0	0
10	Milliken Ave / Interstate 210 EB Ramps	Rancho Cucamonga	0	15	5	0	5	0	0	0	15	0	0	0
11	Milliken Ave / Foothill Blvd (RT 66)	Rancho Cucamonga	6	18	24	0	19	0	0	0	6	24	0	0
12	Milliken Ave / Fourth St	Rancho Cucamonga	0	114	0	12	112	5	5	0	0	0	0	12
13	Milliken Ave / Azusa Ct	Rancho Cucamonga	0	55	0	0	12	37	0	0	64	0	0	0
14	Milliken Ave / 7th St	Rancho Cucamonga	128	0	0	0	64	12	55	0	64	0	0	0
15	Milliken Ave / Interstate 10 WB Ramps	Ontario	0	59	0	0	58	55	37	0	0	0	0	0
16	Milliken Ave / Interstate 10 EB Ramps	Ontario	0	5	0	0	5	55	56	0	0	0	0	0

OPENING YEAR (2025) BUILD

FRIDAY PEAK HOUR

#	Name	Jurisdiction	2	3	4	5	6	7	8	9	10	11	12	13	YEAR	NB	SB	EB	WB	TOT
1	Highway 395 / Joshua St	Hesperia	33	1848	110	65	552	22	43	125	20	41	24	149	2025	1991	639	188	214	3032
2	Interstate 15 SB off-ramp / Joshua St	Hesperia				18		71		262			134		2025	0	89	262	134	485
3	Interstate 15 NB on-ramp / Joshua St	Hesperia							220	164				34	2025	0	0	384	152	536
4	Mariposa Rd / Joshua St	Hesperia	85	28			28	77	71		95				2025	113	105	166	0	384
5	Interstate 15 SB ramps / Foothill Blvd (RT 66)	Rancho Cucamonga				380		672		1203	822		1211	539	2025	0	1052	2025	1750	4827
6	Interstate 15 NB ramps / Foothill Blvd (RT 66)	Rancho Cucamonga	517		357					1291	292		1233	939	2025	874	0	1583	2172	4629
7	Interstate 15 SB ramps / Fourth St	Rancho Cucamonga	121	152	22	80	154	357	698	1290	91	104	861	233	2025	295	591	2079	1198	4163
8	Interstate 15 NB ramps / Fourth St	Rancho Cucamonga	91	74	58	173	63	653	755	569	68	34	454	151	2025	223	889	1392	639	3143
9	Milliken Ave / Interstate 210 WB Ramps	Rancho Cucamonga	222	638			371	52				196	8	89	2025	860	423	0	293	1576
10	Milliken Ave / Interstate 210 EB Ramps	Rancho Cucamonga		771	359	115	387		111	12	327				2025	1130	502	450	0	2082
11	Milliken Ave / Foothill Blvd (RT 66)	Rancho Cucamonga	327	784	205	221	486	196	227	1604	129	228	1408	97	2025	1316	903	1960	1733	5912
12	Milliken Ave / Fourth St	Rancho Cucamonga	212	1220	189	202	909	160	175	1372	177	199	1239	191	2025	1621	1271	1724	1629	6245
13	Milliken Ave / Azusa Ct	Rancho Cucamonga		2129			918	76				98			2025	2129	994	98	0	3221
14	Milliken Ave / 7th St	Rancho Cucamonga	211	1829	13	8	985	27	204		119	17		22	2025	2053	1020	323	39	3435
15	Milliken Ave / Interstate 10 WB Ramps	Ontario	309	1208	243	248	801	497	206	210	192	557	173	178	2025	1760	1546	608	908	4822
16	Milliken Ave / Interstate 10 EB Ramps	Ontario	490	998			780	771	763		198				2025	1488	1551	961	0	4000

OPENING YEAR (2025) BUILD

SUNDAY PEAK HOUR

#	Name	Jurisdiction	2	3	4	5	6	7	8	9	10	11	12	13	YEAR	NB	SB	EB	WB	TOT
1	Highway 395 / Joshua St	Hesperia	25	1422	85	67	623	24	33	95	16	36	21	115	2025	1532	714	144	172	2562
2	Interstate 15 SB off-ramp / Joshua St	Hesperia				15		81		200			101		2025	0	96	200	101	397
3	Interstate 15 NB on-ramp / Joshua St	Hesperia							155	114			101	26	2025	0	0	269	127	396
4	Mariposa Rd / Joshua St	Hesperia	74	39			28	46	52		64				2025	113	74	116	0	303
5	Interstate 15 SB ramps / Foothill Blvd (RT 66)	Rancho Cucamonga				143		383		1582	639		2195	306	2025	0	526	2221	2501	5248
6	Interstate 15 NB ramps / Foothill Blvd (RT 66)	Rancho Cucamonga	1332		539					1197	497		1164	350	2025	1871	0	1694	1514	5079
7	Interstate 15 SB ramps / Fourth St	Rancho Cucamonga	113	179	45	93	242	453	515	720	54	184	722	109	2025	337	788	1289	1015	3429
8	Interstate 15 NB ramps / Fourth St	Rancho Cucamonga	73	54	41	58	48	707	557	232	80	9	193	35	2025	168	813	869	237	2087
9	Milliken Ave / Interstate 210 WB Ramps	Rancho Cucamonga	169	476			261	37				168	7	76	2025	645	298	0	251	1194
10	Milliken Ave / Interstate 210 EB Ramps	Rancho Cucamonga		519	251	63	292		86	7	363				2025	770	355	456	0	1581
11	Milliken Ave / Foothill Blvd (RT 66)	Rancho Cucamonga	285	625	177	182	390	78	192	1024	93	380	1331	108	2025	1087	650	1309	1819	4865
12	Milliken Ave / Fourth St	Rancho Cucamonga	241	608	116	275	575	106	187	441	188	443	501	177	2025	965	956	816	1121	3858
13	Milliken Ave / Azusa Ct	Rancho Cucamonga		1200			662	63			97				2025	1200	725	97	0	2022
14	Milliken Ave / 7th St	Rancho Cucamonga	159	1047	9	6	725	22	144		112	16		13	2025	1215	753	256	29	2253
15	Milliken Ave / Interstate 10 WB Ramps	Ontario	338	535	234	160	672	431	408	267	127	275	331	301	2025	1107	1263	802	907	4079
16	Milliken Ave / Interstate 10 EB Ramps	Ontario	230	650			512	564	459		159				2025	880	1076	618	0	2574

Appendix A.2.4 - 2045 No Build to 2045 Build Adjustments

HORIZON YEAR (2045) NO BUILD

AM PEAK HOUR

#	Name	Jurisdiction	2	3	4	5	6	7	8	9	10	11	12	13	YEAR	NB	SB	EB	WB	TOT
			NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR						
1	Highway 395 / Joshua St	Hesperia	13	437	7	163	1454	528	70	13	1	39	135	121	2045	457	2145	84	295	2981
2	Interstate 15 SB off-ramp / Joshua St	Hesperia				6		87		162			134		2045	0	93	162	134	389
3	Interstate 15 NB on-ramp / Joshua St	Hesperia							36	132			134	21	2045	0	0	168	155	323
4	Mariposa Rd / Joshua St	Hesperia	119	63			310	12	4		129				2045	182	322	133	0	637
5	Interstate 15 SB ramps / Foothill Blvd (RT 66)	Rancho Cucamonga				497		424		1161	692		1285	532	2045	0	921	1853	1817	4591
6	Interstate 15 NB ramps / Foothill Blvd (RT 66)	Rancho Cucamonga	343		182					1532	125		1475	200	2045	525	0	1657	1675	3857
7	Interstate 15 SB ramps / Fourth St	Rancho Cucamonga	111	97	63	151	153	367	318	375	56	88	1021	173	2045	271	671	749	1282	2973
8	Interstate 15 NB ramps / Fourth St	Rancho Cucamonga	130	41	89	272	37	740	132	419	38	20	411	54	2045	260	1049	589	485	2383
9	Milliken Ave / Interstate 210 WB Ramps	Rancho Cucamonga	208	241			751	182				116	5	94	2045	449	933	0	215	1597
10	Milliken Ave / Interstate 210 EB Ramps	Rancho Cucamonga		300	67	308	559		149	8	109				2045	367	867	266	0	1500
11	Milliken Ave / Foothill Blvd (RT 66)	Rancho Cucamonga	59	158	82	184	465	134	54	560	75	173	785	123	2045	299	783	689	1081	2852
12	Milliken Ave / Fourth St	Rancho Cucamonga	19	243	20	92	856	85	212	298	213	300	358	159	2045	282	1033	723	817	2855
13	Milliken Ave / Azusa Ct	Rancho Cucamonga		616			766	34			3				2045	616	800	3	0	1419
14	Milliken Ave / 7th St	Rancho Cucamonga	27	365	1	30	656	84	238	3	21	2	4	16	2045	393	770	262	22	1447
15	Milliken Ave / Interstate 10 WB Ramps	Ontario	65	420	92	92	823	199	46	39	37	450	39	238	2045	577	1114	122	727	2540
16	Milliken Ave / Interstate 10 EB Ramps	Ontario	93	235			1109	200	341		293				2045	328	1309	634	0	2271

HORIZON YEAR (2045) NO BUILD

PM PEAK HOUR

#	Name	Jurisdiction	2	3	4	5	6	7	8	9	10	11	12	13	YEAR	NB	SB	EB	WB	TOT
			NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR						
1	Highway 395 / Joshua St	Hesperia	19	1309	9	29	537	82	241	351	137	101	154	336	2045	1337	648	729	591	3305
2	Interstate 15 SB off-ramp / Joshua St	Hesperia				9		225		389			366		2045	0	234	389	366	989
3	Interstate 15 NB on-ramp / Joshua St	Hesperia							150	248			366	31	2045	0	0	398	397	795
4	Mariposa Rd / Joshua St	Hesperia	351	337			92	46	122		125				2045	688	138	247	0	1073
5	Interstate 15 SB ramps / Foothill Blvd (RT 66)	Rancho Cucamonga				212		506		2602	879		2018	469	2045	0	718	3481	2487	6686
6	Interstate 15 NB ramps / Foothill Blvd (RT 66)	Rancho Cucamonga	1058		627					2479	335		1430	869	2045	1685	0	2814	2299	6798
7	Interstate 15 SB ramps / Fourth St	Rancho Cucamonga	186	240	77	103	150	405	488	1308	56	89	948	223	2045	503	658	1852	1260	4273
8	Interstate 15 NB ramps / Fourth St	Rancho Cucamonga	60	43	44	145	32	739	699	726	64	21	460	96	2045	147	916	1489	577	3129
9	Milliken Ave / Interstate 210 WB Ramps	Rancho Cucamonga	192	696			529	75				167	7	87	2045	888	604	0	261	1753
10	Milliken Ave / Interstate 210 EB Ramps	Rancho Cucamonga		676	286	131	565		212	9	176				2045	962	696	397	0	2055
11	Milliken Ave / Foothill Blvd (RT 66)	Rancho Cucamonga	234	630	382	163	218	87	234	1590	96	239	928	143	2045	1246	468	1920	1310	4944
12	Milliken Ave / Fourth St	Rancho Cucamonga	542	1201	167	169	671	49	274	931	325	350	514	116	2045	1910	889	1530	980	5309
13	Milliken Ave / Azusa Ct	Rancho Cucamonga		1616			813	26			32				2045	1616	839	32	0	2487
14	Milliken Ave / 7th St	Rancho Cucamonga	136	1455	9	8	800	37	140	3	44	12		22	2045	1600	845	187	34	2666
15	Milliken Ave / Interstate 10 WB Ramps	Ontario	358	1235	459	390	955	371	115	188	61	631	163	95	2045	2052	1716	364	889	5021
16	Milliken Ave / Interstate 10 EB Ramps	Ontario	139	1641			908	738	410		156				2045	1780	1646	566	0	3992

* Volume adjustments for redistribution of growth and interchange balancing

HORIZON YEAR (2045) Build Trip Assignments

AM PEAK HOUR

#	Name	Jurisdiction	2	3	4	5	6	7	8	9	10	11	12	13
			NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
1	Highway 395 / Joshua St	Hesperia	0	0	0	89	0	0	0	0	0	0	0	28
2	Interstate 15 SB off-ramp / Joshua St	Hesperia	0	0	0	89	0	0	0	0	0	0	28	0
3	Interstate 15 NB on-ramp / Joshua St	Hesperia	0	0	0	0	0	0	28	24	0	0	78	0
4	Mariposa Rd / Joshua St	Hesperia	33	0	0	0	0	55	16	0	9	0	0	0
5	Interstate 15 SB ramps / Foothill Blvd (RT 66)	Rancho Cucamonga	0	0	0	0	0	15	0	47	0	0	3	0
6	Interstate 15 NB ramps / Foothill Blvd (RT 66)	Rancho Cucamonga	0	0	0	0	0	0	0	9	38	0	3	0
7	Interstate 15 SB ramps / Fourth St	Rancho Cucamonga	0	0	0	0	0	0	18	6	0	0	9	0
8	Interstate 15 NB ramps / Fourth St	Rancho Cucamonga	0	0	0	0	0	7	0	6	0	0	2	0
9	Milliken Ave / Interstate 210 WB Ramps	Rancho Cucamonga	29	0	0	0	0	0	0	0	0	3	0	0
10	Milliken Ave / Interstate 210 EB Ramps	Rancho Cucamonga	0	29	9	0	3	0	0	0	11	0	0	0
11	Milliken Ave / Foothill Blvd (RT 66)	Rancho Cucamonga	12	35	47	0	14	0	0	0	4	18	0	0
12	Milliken Ave / Fourth St	Rancho Cucamonga	0	84	0	24	218	9	3	0	0	0	0	9
13	Milliken Ave / Azusa Ct	Rancho Cucamonga	0	106	0	0	9	28	0	0	124	0	0	0
14	Milliken Ave / 7th St	Rancho Cucamonga	95	0	0	0	124	9	106	0	124	0	0	0
15	Milliken Ave / Interstate 10 WB Ramps	Ontario	0	44	0	0	112	106	28	0	0	0	0	0
16	Milliken Ave / Interstate 10 EB Ramps	Ontario	0	3	0	0	9	106	41	0	0	0	0	0

HORIZON YEAR (2045) Build Trip Assignments

PM PEAK HOUR

#	Name	Jurisdiction	2	3	4	5	6	7	8	9	10	11	12	13
			NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
1	Highway 395 / Joshua St	Hesperia	0	0	0	22	0	0	0	0	0	0	0	82
2	Interstate 15 SB off-ramp / Joshua St	Hesperia	0	0	0	22	0	0	0	0	0	0	82	0
3	Interstate 15 NB on-ramp / Joshua St	Hesperia	0	0	0	0	0	0	82	69	0	0	19	0
4	Mariposa Rd / Joshua St	Hesperia	8	0	0	0	0	14	47	0	25	0	0	0
5	Interstate 15 SB ramps / Foothill Blvd (RT 66)	Rancho Cucamonga	0	0	0	0	0	52	0	40	0	0	12	0
6	Interstate 15 NB ramps / Foothill Blvd (RT 66)	Rancho Cucamonga	0	0	0	0	0	0	0	7	32	0	12	0
7	Interstate 15 SB ramps / Fourth St	Rancho Cucamonga	0	0	0	0	0	0	15	5	0	0	29	0
8	Interstate 15 NB ramps / Fourth St	Rancho Cucamonga	0	0	0	0	0	23	0	5	0	0	6	0
9	Milliken Ave / Interstate 210 WB Ramps	Rancho Cucamonga	25	0	0	0	0	0	0	0	0	12	0	0
10	Milliken Ave / Interstate 210 EB Ramps	Rancho Cucamonga	0	25	7	0	12	0	0	0	38	0	0	0
11	Milliken Ave / Foothill Blvd (RT 66)	Rancho Cucamonga	10	30	40	0	46	0	0	0	14	61	0	0
12	Milliken Ave / Fourth St	Rancho Cucamonga	0	283	0	20	184	7	12	0	0	0	0	29
13	Milliken Ave / Azusa Ct	Rancho Cucamonga	0	89	0	0	29	92	0	0	104	0	0	0
14	Milliken Ave / 7th St	Rancho Cucamonga	317	0	0	0	104	29	89	0	104	0	0	0
15	Milliken Ave / Interstate 10 WB Ramps	Ontario	0	147	0	0	94	89	92	0	0	0	0	0
16	Milliken Ave / Interstate 10 EB Ramps	Ontario	0	12	0	0	7	89	138	0	0	0	0	0

HORIZON YEAR (2045) BUILD

AM PEAK HOUR

#	Name	Jurisdiction	2	3	4	5	6	7	8	9	10	11	12	13	YEAR	NB	SB	EB	WB	TOT
			NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR						
1	Highway 395 / Joshua St	Hesperia	13	437	7	252	1454	528	70	13	1	39	135	149	2045	457	2234	84	323	3098
2	Interstate 15 SB off-ramp / Joshua St	Hesperia				95		87		162			162		2045	0	182	162	162	506
3	Interstate 15 NB on-ramp / Joshua St	Hesperia							64	156			212	21	2045	0	0	220	233	453
4	Mariposa Rd / Joshua St	Hesperia	152	63			310	67	20		138				2045	215	377	158	0	750
5	Interstate 15 SB ramps / Foothill Blvd (RT 66)	Rancho Cucamonga				497		439		1208	692		1288	532	2045	0	936	1900	1820	4656
6	Interstate 15 NB ramps / Foothill Blvd (RT 66)	Rancho Cucamonga	343		182					1541	163		1478	200	2045	525	0	1704	1678	3907
7	Interstate 15 SB ramps / Fourth St	Rancho Cucamonga	111	97	63	151	153	367	336	381	56	88	1030	173	2045	271	671	773	1291	3006
8	Interstate 15 NB ramps / Fourth St	Rancho Cucamonga	130	41	89	272	37	747	132	425	38	20	413	54	2045	260	1056	595	487	2398
9	Milliken Ave / Interstate 210 WB Ramps	Rancho Cucamonga	237	241			751	182				119	5	94	2045	478	933	0	218	1629
10	Milliken Ave / Interstate 210 EB Ramps	Rancho Cucamonga		329	76	308	562		149	8	120				2045	405	870	277	0	1552
11	Milliken Ave / Foothill Blvd (RT 66)	Rancho Cucamonga	71	193	129	184	479	134	54	560	79	191	785	123	2045	393	797	693	1099	2982
12	Milliken Ave / Fourth St	Rancho Cucamonga	19	327	20	116	1074	94	215	298	213	300	358	168	2045	366	1284	726	826	3202
13	Milliken Ave / Azusa Ct	Rancho Cucamonga		722			775	62			127				2045	722	837	127	0	1686
14	Milliken Ave / 7th St	Rancho Cucamonga	122	365	1	30	780	93	344	3	145	2	4	16	2045	488	903	492	22	1905
15	Milliken Ave / Interstate 10 WB Ramps	Ontario	65	464	92	92	935	305	74	39	37	450	39	238	2045	621	1332	150	727	2830
16	Milliken Ave / Interstate 10 EB Ramps	Ontario	93	238			1118	306	382		293				2045	331	1424	675	0	2430

HORIZON YEAR (2045) BUILD

PM PEAK HOUR

#	Name	Jurisdiction	2	3	4	5	6	7	8	9	10	11	12	13	YEAR	NB	SB	EB	WB	TOT
			NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR						
1	Highway 395 / Joshua St	Hesperia	19	1309	9	51	537	82	241	351	137	101	154	418	2045	1337	670	729	673	3409
2	Interstate 15 SB off-ramp / Joshua St	Hesperia				31		225		389			448		2045	0	256	389	448	1093
3	Interstate 15 NB on-ramp / Joshua St	Hesperia							232	317			385	31	2045	0	0	549	416	965
4	Mariposa Rd / Joshua St	Hesperia	359	337			92	60	169		150				2045	696	152	319	0	1167
5	Interstate 15 SB ramps / Foothill Blvd (RT 66)	Rancho Cucamonga				212		558		2642	879		2030	469	2045	0	770	3521	2499	6790
6	Interstate 15 NB ramps / Foothill Blvd (RT 66)	Rancho Cucamonga	1058		627					2486	367		1442	869	2045	1685	0	2853	2311	6849
7	Interstate 15 SB ramps / Fourth St	Rancho Cucamonga	186	240	77	103	150	405	503	1313	56	89	977	223	2045	503	658	1872	1289	4322
8	Interstate 15 NB ramps / Fourth St	Rancho Cucamonga	60	43	44	145	32	762	699	731	64	21	466	96	2045	147	939	1494	583	3163
9	Milliken Ave / Interstate 210 WB Ramps	Rancho Cucamonga	217	696			529	75				179	7	87	2045	913	604	0	273	1790
10	Milliken Ave / Interstate 210 EB Ramps	Rancho Cucamonga		701	293	131	577		212	9	214				2045	994	708	435	0	2137
11	Milliken Ave / Foothill Blvd (RT 66)	Rancho Cucamonga	244	660	422	163	264	87	234	1590	110	300	928	143	2045	1326	514	1934	1371	5145
12	Milliken Ave / Fourth St	Rancho Cucamonga	542	1484	167	189	855	56	286	931	325	350	514	145	2045	2193	1100	1542	1009	5844
13	Milliken Ave / Azusa Ct	Rancho Cucamonga		1705			842	118			136				2045	1705	960	136	0	2801
14	Milliken Ave / 7th St	Rancho Cucamonga	453	1455	9	8	904	66	229	3	148	12		22	2045	1917	978	380	34	3309
15	Milliken Ave / Interstate 10 WB Ramps	Ontario	358	1382	459	390	1049	460	207	188	61	631	163	95	2045	2199	1899	456	889	5443
16	Milliken Ave / Interstate 10 EB Ramps	Ontario	139	1653			915	827	548		156				2045	1792	1742	704	0	4238

HORIZON YEAR (2045) NO BUILD

FRIDAY PEAK HOUR

#	Name	Jurisdiction	2	3	4	5	6	7	8	9	10	11	12	13	YEAR	NB	SB	EB	WB	TOT
			NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR						
1	Highway 395 / Joshua St	Hesperia	23	2047	13	40	515	100	358	519	203	109	158	355	2045	2083	655	1080	622	4440
2	Interstate 15 SB off-ramp / Joshua St	Hesperia			19			169		564			438		2045	0	188	564	438	1190
3	Interstate 15 NB on-ramp / Joshua St	Hesperia							245	357			438	46	2045	0	0	602	484	1086
4	Mariposa Rd / Joshua St	Hesperia	257	246			106	217	172		198				2045	503	323	370	0	1196
5	Interstate 15 SB ramps / Foothill Blvd (RT 66)	Rancho Cucamonga				507		649		1384	816		1186	535	2045	0	1156	2200	1721	5077
6	Interstate 15 NB ramps / Foothill Blvd (RT 66)	Rancho Cucamonga	211		138					1620	270		1510	826	2045	349	0	1890	2336	4575
7	Interstate 15 SB ramps / Fourth St	Rancho Cucamonga	132	138	27	115	160	447	546	1684	76	99	1047	211	2045	297	722	2306	1357	4682
8	Interstate 15 NB ramps / Fourth St	Rancho Cucamonga	122	79	78	174	46	716	821	913	92	22	520	78	2045	279	936	1826	620	3661
9	Milliken Ave / Interstate 210 WB Ramps	Rancho Cucamonga	79	812			647	212				109	11	375	2045	891	859	0	495	2245
10	Milliken Ave / Interstate 210 EB Ramps	Rancho Cucamonga		344	89	356	399		547	34	286				2045	433	755	867	0	2055
11	Milliken Ave / Foothill Blvd (RT 66)	Rancho Cucamonga	42	260	34	318	463	195	447	1742	71	192	1788	315	2045	336	976	2260	2295	5867
12	Milliken Ave / Fourth St	Rancho Cucamonga	694	1536	214	206	817	60	473	1610	563	140	1645	428	2045	2444	1083	2646	2213	8386
13	Milliken Ave / Azusa Ct	Rancho Cucamonga		1915			897	30							2045	1915	927	32	0	2874
14	Milliken Ave / 7th St	Rancho Cucamonga	162	1760	11	15	754	161	135			57	16		2045	1933	930	192	37	3092
15	Milliken Ave / Interstate 10 WB Ramps	Ontario	60	1870	134	455	1278	570	519	264	96	576	478	326	2045	2064	2303	879	1380	6626
16	Milliken Ave / Interstate 10 EB Ramps	Ontario	5	671			947	1003	1392			11			2045	676	1950	1403	0	4029

* Volume adjustments for redistribution of growth and interchange balancing

HORIZON YEAR (2045) NO BUILD

SUNDAY PEAK HOUR

#	Name	Jurisdiction	2	3	4	5	6	7	8	9	10	11	12	13	YEAR	NB	SB	EB	WB	TOT
			NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR						
1	Highway 395 / Joshua St	Hesperia	19	1595	11	34	567	123	116	193	66	111	169	367	2045	1625	724	375	647	3371
2	Interstate 15 SB off-ramp / Joshua St	Hesperia				35		264		238			383		2045	0	299	238	383	920
3	Interstate 15 NB on-ramp / Joshua St	Hesperia							132	141			383	36	2045	0	0	273	419	692
4	Mariposa Rd / Joshua St	Hesperia	394	379			110	25	63		78				2045	773	135	141	0	1049
5	Interstate 15 SB ramps / Foothill Blvd (RT 66)	Rancho Cucamonga				190		364		1740	634		2022	304	2045	0	554	2374	2326	5254
6	Interstate 15 NB ramps / Foothill Blvd (RT 66)	Rancho Cucamonga	1286		646					1455	474		1040	296	2045	1932	0	1929	1336	5197
7	Interstate 15 SB ramps / Fourth St	Rancho Cucamonga	198	221	89	124	239	540	404	938	51	174	838	88	2045	508	903	1393	1100	3904
8	Interstate 15 NB ramps / Fourth St	Rancho Cucamonga	79	32	32	50	27	821	639	406	107	5	200	15	2045	143	898	1152	220	2413
9	Milliken Ave / Interstate 210 WB Ramps	Rancho Cucamonga	158	553			266	36				168	7	80	2045	711	302	0	255	1268
10	Milliken Ave / Interstate 210 EB Ramps	Rancho Cucamonga		558	227	87	288		153	11	328				2045	785	375	492	0	1652
11	Milliken Ave / Foothill Blvd (RT 66)	Rancho Cucamonga	249	598	205	196	319	56	144	1035	55	353	1463	126	2045	1052	571	1234	1942	4799
12	Milliken Ave / Fourth St	Rancho Cucamonga	451	714	185	192	465	86	244	650	329	483	521	138	2045	1350	743	1223	1142	4458
13	Milliken Ave / Azusa Ct	Rancho Cucamonga		1105			645	22							2045	1105	667	28	0	1800
14	Milliken Ave / 7th St	Rancho Cucamonga	93	994	7	7	633	35	97			7		15	2045	1094	675	139	22	1930
15	Milliken Ave / Interstate 10 WB Ramps	Ontario	307	598	384	296	810	319	190	330	127	305	246	201	2045	1289	1425	647	752	4113
16	Milliken Ave / Interstate 10 EB Ramps	Ontario	195	1020			664	578	268			111			2045	1215	1242	379	0	2836

* Volume adjustments for redistribution of growth and interchange balancing

HORIZON YEAR (2045) Build Trip Assgiments

FRIDAY PEAK HOUR

#	Name	Jurisdiction	2	3	4	5	6	7	8	9	10	11	12	13
			NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
1	Highway 395 / Joshua St	Hesperia	0	0	0	22	0	0	0	0	0	0	0	76
2	Interstate 15 SB off-ramp / Joshua St	Hesperia	0	0	0	22	0	0	0	0	0	0	76	0
3	Interstate 15 NB on-ramp / Joshua St	Hesperia	0	0	0	0	0	0	76	64	0	0	19	0
4	Mariposa Rd / Joshua St	Hesperia	8	0	0	0	0	14	44	0	23	0	0	0
5	Interstate 15 SB ramps / Foothill Blvd (RT 66)	Rancho Cucamonga	0	0	0	0	0	78	0	54	0	0	17	0
6	Interstate 15 NB ramps / Foothill Blvd (RT 66)	Rancho Cucamonga	0	0	0	0	0	0	0	10	44	0	17	0
7	Interstate 15 SB ramps / Fourth St	Rancho Cucamonga	0	0	0	0	0	0	20	7	0	0	43	0
8	Interstate 15 NB ramps / Fourth St	Rancho Cucamonga	0	0	0	0	0	35	0	7	0	0	9	0
9	Milliken Ave / Interstate 210 WB Ramps	Rancho Cucamonga	34	0	0	0	0	0	0	0	0	17	0	0
10	Milliken Ave / Interstate 210 EB Ramps	Rancho Cucamonga	0	34	10	0	17	0	0	0	56	0	0	0
11	Milliken Ave / Foothill Blvd (RT 66)	Rancho Cucamonga	14	41	54	0	69	0	0	0	22	91	0	0
12	Milliken Ave / Fourth St	Rancho Cucamonga	0	423	0	27	251	10	17	0	0	0	43	0
13	Milliken Ave / Azusa Ct	Rancho Cucamonga	0	122	0	0	43	138	0	0	143	0	0	0
14	Milliken Ave / 7th St	Rancho Cucamonga	475	0	0	0	143	43	122	0	143	0	0	0
15	Milliken Ave / Interstate 10 WB Ramps	Ontario	0	220	0	0	129	122	138	0	0	0	0	0
16	Milliken Ave / Interstate 10 EB Ramps	Ontario	0	17	0	0	10	122	207	0	0	0	0	0

HORIZON YEAR (2045) Build Trip Assgiments

SUNDAY PEAK HOUR

#	Name	Jurisdiction	2	3	4	5	6	7	8	9	10	11	12	13
			NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
1	Highway 395 / Joshua St	Hesperia	0	0	0	10	0	0	0	0	0	0	0	10
2	Interstate 15 SB off-ramp / Joshua St	Hesperia	0	0	0	10	0	0	0	0	0	0	10	0
3	Interstate 15 NB on-ramp / Joshua St	Hesperia	0	0	0	0	0	0	10	8	0	0	9	0
4	Mariposa Rd / Joshua St	Hesperia	4	0	0	0	0	6	6	0	3	0	0	0
5	Interstate 15 SB ramps / Foothill Blvd (RT 66)	Rancho Cucamonga	0	0	0	0	0	47	0	70	0	0	10	0
6	Interstate 15 NB ramps / Foothill Blvd (RT 66)	Rancho Cucamonga	0	0	0	0	0	0	0	13	57	0	10	0
7	Interstate 15 SB ramps / Fourth St	Rancho Cucamonga	0	0	0	0	0	0	26	9	0	0	26	0
8	Interstate 15 NB ramps / Fourth St	Rancho Cucamonga	0	0	0	0	0	21	0	9	0	0	5	0
9	Milliken Ave / Interstate 210 WB Ramps	Rancho Cucamonga	44	0	0	0	0	0	0	0	0	10	0	0
10	Milliken Ave / Interstate 210 EB Ramps	Rancho Cucamonga	0	44	13	0	10	0	0	0	34	0	0	0
11	Milliken Ave / Foothill Blvd (RT 66)	Rancho Cucamonga	17	52	70	0	41	0	0	0	13	54	0	0
12	Milliken Ave / Fourth St	Rancho Cucamonga	0	253	0	35	322	13	10	0	0	0	26	0
13	Milliken Ave / Azusa Ct	Rancho Cucamonga	0	157	0	0	26	83	0	0	183	0	0	0
14	Milliken Ave / 7th St	Rancho Cucamonga	284	0	0	0	183	26	157	0	183	0	0	0
15	Milliken Ave / Interstate 10 WB Ramps	Ontario	0	132	0	0	166	157	83	0	0	0	0	0
16	Milliken Ave / Interstate 10 EB Ramps	Ontario	0	10	0	0	13	157	124	0	0	0	0	0

HORIZON YEAR (2045) BUILD

FRIDAY PEAK HOUR

#	Name	Jurisdiction	2	3	4	5	6	7	8	9	10	11	12	13	YEAR	NB	SB	EB	WB	TOT
			NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR						
1	Highway 395 / Joshua St	Hesperia	23	2047	13	62	515	100	358	519	203	109	158	431	2045	2083	677	1080	698	4538
2	Interstate 15 SB off-ramp / Joshua St	Hesperia				41		169		564			514		2045	0	210	564	514	1288
3	Interstate 15 NB on-ramp / Joshua St	Hesperia							321	421			457	46	2045	0	0	742	503	1245
4	Mariposa Rd / Joshua St	Hesperia	265	246			106	231	216		221				2045	511	337	437	0	1285
5	Interstate 15 SB ramps / Foothill Blvd (RT 66)	Rancho Cucamonga				507		727		1438	816		1203	535	2045	0	1234	2254	1738	5226
6	Interstate 15 NB ramps / Foothill Blvd (RT 66)	Rancho Cucamonga	211		138					1630	314		1527	826	2045	349	0	1944	2353	4646
7	Interstate 15 SB ramps / Fourth St	Rancho Cucamonga	132	138	27	115	160	447	566	1691	76	99	1090	211	2045	297	722	2333	1400	4752
8	Interstate 15 NB ramps / Fourth St	Rancho Cucamonga	122	79	78	174	46	751	821	920	92	22	529	78	2045	279	971	1833	629	3712
9	Milliken Ave / Interstate 210 WB Ramps	Rancho Cucamonga	113	812			647	212				126	11	375	2045	925	859	0	512	2296
10	Milliken Ave / Interstate 210 EB Ramps	Rancho Cucamonga		378	99	356	416		547	34	342				2045	477	772	923	0	2172
11	Milliken Ave / Foothill Blvd (RT 66)	Rancho Cucamonga	56	301	88	318	532	195	447	1742	93	283	1788	315	2045	445	1045	2282	2386	6158
12	Milliken Ave / Fourth St	Rancho Cucamonga	694	1959	214	233	1068	70	490	1610	563	140	1645	471	2045	2867	1371	2663	2256	9157
13	Milliken Ave / Azusa Ct	Rancho Cucamonga		2037			940	168			175				2045	2037	1108	175	0	3320
14	Milliken Ave / 7th St	Rancho Cucamonga	637	1760	11	15	897	204	257		200	16		21	2045	2408	1116	457	37	4018
15	Milliken Ave / Interstate 10 WB Ramps	Ontario	60	2090	134	455	1407	692	657	264	96	576	478	326	2045	2284	2554	1017	1380	7235
16	Milliken Ave / Interstate 10 EB Ramps	Ontario	5	688			957	1125	1599		11				2045	693	2082	1610	0	4385

HORIZON YEAR (2045) BUILD

SUNDAY PEAK HOUR

#	Name	Jurisdiction	2	3	4	5	6	7	8	9	10	11	12	13	YEAR	NB	SB	EB	WB	TOT
			NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR						
1	Highway 395 / Joshua St	Hesperia	19	1595	11	44	567	123	116	193	66	111	169	377	2045	1625	734	375	657	3391
2	Interstate 15 SB off-ramp / Joshua St	Hesperia				45		264		238			393		2045	0	309	238	393	940
3	Interstate 15 NB on-ramp / Joshua St	Hesperia							142	149			392	36	2045	0	0	291	428	719
4	Mariposa Rd / Joshua St	Hesperia	398	379			110	31	69		81				2045	777	141	150	0	1068
5	Interstate 15 SB ramps / Foothill Blvd (RT 66)	Rancho Cucamonga				190		411		1810	634		2032	304	2045	0	601	2444	2336	5381
6	Interstate 15 NB ramps / Foothill Blvd (RT 66)	Rancho Cucamonga	1286		646					1468	531		1050	296	2045	1932	0	1999	1346	5277
7	Interstate 15 SB ramps / Fourth St	Rancho Cucamonga	198	221	89	124	239	540	430	947	51	174	864	88	2045	508	903	1428	1126	3965
8	Interstate 15 NB ramps / Fourth St	Rancho Cucamonga	79	32	32	50	27	842	639	415	107	5	205	15	2045	143	919	1161	225	2448
9	Milliken Ave / Interstate 210 WB Ramps	Rancho Cucamonga	202	553			266	36				178	7	80	2045	755	302	0	265	1322
10	Milliken Ave / Interstate 210 EB Ramps	Rancho Cucamonga		602	240	87	298		153	11	362				2045	842	385	526	0	1753
11	Milliken Ave / Foothill Blvd (RT 66)	Rancho Cucamonga	266	650	275	196	360	56	144	1035	68	407	1463	126	2045	1191	612	1247	1996	5046
12	Milliken Ave / Fourth St	Rancho Cucamonga	451	967	185	227	787	99	254	650	329	483	521	164	2045	1603	1113	1233	1168	5117
13	Milliken Ave / Azusa Ct	Rancho Cucamonga		1262			671	105			211				2045	1262	776	211	0	2249
14	Milliken Ave / 7th St	Rancho Cucamonga	377	994	7	7	816	61	254		225	7		15	2045	1378	884	479	22	2763
15	Milliken Ave / Interstate 10 WB Ramps	Ontario	307	730	384	296	976	476	273	330	127	305	246	201	2045	1421	1748	730	752	4651
16	Milliken Ave / Interstate 10 EB Ramps	Ontario	195	1030			677	735	392		111				2045	1225	1412	503	0	3140

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Appendix B

Station Trip Generation, Mode Share, and Trip Distribution

Appendix B.1 - Apple Valley and Rancho Cucamonga Train Ridership Projections

Departure & Arrival Tables By Station, Day & Year

Year-> 2025

Rancho

50%	Vehicular Arrival			Vehicular Departure			Total		
	2025			2025			2025		
	Wed	Fri	Sun	Wed	Fri	Sun	Wed	Fri	Sun
Avg. 6-8am									
High-Speed	216	262	322	83	108	108	299	370	430
Commuter	106	106	8	34	34	9	141	141	17
(Less) On/Off SB Line	53	53	4	17	17	4	70	70	8
Employees	15	15	15	15	15	15	30	30	30
Total	285	330	341	115	141	128	400	471	469
Avg. 4-6pm									
High-Speed	272	322	322	267	322	322	540	644	644
Commuter	31	31	17	130	81	17	161	112	34
(Less) On/Off SB Line	16	16	8	17	17	4	32	33	13
Employees	15	15	15	15	15	15	30	30	30
Total	303	353	346	395	400	349	698	753	695

Apple Valley

27%	Vehicular Arrival			Vehicular Departure			Total		
	2025			2025			2025		
	Wed	Fri	Sun	Wed	Fri	Sun	Wed	Fri	Sun
Avg. 6-8am									
High-Speed	115	139	171	87	114	114	202	253	285
Commuter									
Employees	24	24	24	24	24	24	48	48	48
Total	139	163	195	111	138	138	250	301	333
Avg. 4-6pm									
High-Speed	145	171	171	142	171	171	287	343	343
Commuter									
Employees	24	24	24	24	24	24	48	48	48
Total	169	195	195	166	195	195	335	391	391

Hesperia

	Vehicular Arrival			Vehicular Departure			Total		
	2025			2025			2025		
	Wed	Fri	Sun	Wed	Fri	Sun	Wed	Fri	Sun
Avg. 6-8am									
High-Speed	34	34	9	106	106	8	141	141	17
Commuter	6	6	6	6	6	6	12	12	12
Employees									
Total	40	40	15	112	112	14	153	153	29
Avg. 4-6pm									
High-Speed	130	81	17	31	31	17	161	112	34
Commuter	6	6	6	6	6	6	12	12	12
Employees									
Total	136	87	23	37	37	23	173	124	46

YEAR 2025 (WEEKDAY AM PEAK HOUR)

Rancho Cucamonga Station Morning Arrivals Mode Share (Passengers Arriving by Train / Leaving Station by Other Mode)						
Mode	High Speed Train		Commute		Employees	
	Mode Share	AVO	Mode Share	AVO	Mode Share	AVO
Self-drive and park	66%	1.85	1%	1.18	100%	1.18
Pick-up	4%	1.85	15%	1.00	0%	1.18
Taxi / TNC	15%	1.85	50%	1.00	0%	1.18
Public transit (bus)	15%	20.00	33%	20.00	0%	1.18
Walk / Bicycle	0%	1.00	1%	1.00	0%	1.18
Total	100%		100%		100%	

Rancho Cucamonga Station Morning Departures Mode Share (Passengers Departing by Train / Entering Station by Other Mode)						
Mode	High Speed Train		Commute		Employees	
	Mode Share	AVO	Mode Share	AVO	Mode Share	AVO
Self-drive and park	66%	1.85	70%	1.18	100%	1.18
Drop-off	4%	1.85	10%	1.00	0%	1.18
Taxi / TNC	15%	1.85	5%	1.00	0%	1.18
Public transit (bus)	15%	20.00	14%	20.00	0%	1.18
Walk / Bicycle	0%	1.00	1%	1.00	0%	1.18
Total	100%		100%		100%	

Rancho Cucamonga Station Morning Arrival Trip Generation (Passengers Arriving by Train / Leaving Station by Other Mode)			
Mode	High Speed Train	Commute	Employees
	Outbound Trips	Outbound Trips	Outbound Trips
Passengers	216	54	15
Self-drive and park	77	0	13
Pick-up	10	16	0
Taxi / TNC	18	27	0
Public transit (bus)	2	1	0
Walk / Bicycle	0	1	0
Total	106	45	13
TOTAL OUTBOUND			164

Rancho Cucamonga Station Morning Departure Trip Generation (Passengers Departing by Train / Entering Station by Other Mode)			
Mode	High Speed Train	Commute	Employees
	Inbound Trips	Inbound Trips	Inbound Trips
Passengers	83	17	15
Self-drive and park	30	10	13
Drop-off	4	3	0
Taxi / TNC	7	1	0
Public transit (bus)	1	1	0
Walk / Bicycle	0	0	0
Total	41	16	13
TOTAL INBOUND			69

Hesperia Station Morning Arrivals Mode Share (Passengers Arriving by Train / Leaving Station by Other Mode)						
Mode	High Speed Train		Commute		Employees	
	Mode Share	AVO	Mode Share	AVO	Mode Share	AVO
Self-drive and park	66%	1.85	1%	1.18	100%	1.18
Pick-up	4%	1.85	25%	1.00	0%	1.18
Taxi / TNC	15%	1.85	53%	1.00	0%	1.18
Public transit (bus)	15%	20.00	20%	20.00	0%	1.18
Walk / Bicycle	0%	1.00	1%	1.00	0%	1.18
Total	100%		100%		100%	

Hesperia Station Morning Departures Mode Share (Passengers Departing by Train / Entering Station by Other Mode)						
Mode	High Speed Train		Commute		Employees	
	Mode Share	AVO	Mode Share	AVO	Mode Share	AVO
Self-drive and park	66%	1.85	70%	1.18	100%	1.18
Drop-off	4%	1.85	10%	1.00	0%	1.18
Taxi / TNC	15%	1.85	5%	1.00	0%	1.18
Public transit (bus)	15%	20.00	14%	20.00	0%	1.18
Walk / Bicycle	0%	1.00	1%	1.00	0%	1.18
Total	100%		100%		100%	

Hesperia Station Morning Arrival Trip Generation (Passengers Arriving by Train / Leaving Station by Other Mode)			
Mode	High Speed Train	Commute	Employees
	Outbound Trips	Outbound Trips	Outbound Trips
Passengers	0	34	6
Self-drive and park	0	0	5
Pick-up	0	17	0
Taxi / TNC	0	18	0
Public transit (bus)	0	1	0
Walk / Bicycle	0	0	0
Total	0	37	5
TOTAL OUTBOUND			42

Hesperia Station Morning Departure Trip Generation (Passengers Departing by Train / Entering Station by Other Mode)			
Mode	High Speed Train	Commute	Employees
	Inbound Trips	Inbound Trips	Inbound Trips
Passengers	0	106	6
Self-drive and park	0	63	5
Drop-off	0	21	0
Taxi / TNC	0	5	0
Public transit (bus)	0	1	0
Walk / Bicycle	0	1	0
Total	0	92	5
TOTAL INBOUND			97

YEAR 2025 (WEEKDAY PM PEAK HOUR)

Rancho Cucamonga Station Afternoon Arrivals Mode Share (Passengers Arriving by Train / Leaving Station by Other Mode)						
Mode	High Speed Train		Commute		Employees	
	Mode Share	AVO	Mode Share	AVO	Mode Share	AVO
Self-drive and park	66%	1.85	70%	1.18	100%	1.18
Pick-up	4%	1.85	10%	1.00	0%	1.18
Taxi / TNC	15%	1.85	5%	1.00	0%	1.18
Public transit (bus)	15%	20.00	14%	20.00	0%	1.18
Walk / Bicycle	0%	1.00	1%	1.00	0%	1.18
Total	100%		100%		100%	

Rancho Cucamonga Station Afternoon Departures Mode Share (Passengers Departing by Train / Entering Station by Other Mode)						
Mode	High Speed Train		Commute		Employees	
	Mode Share	AVO	Mode Share	AVO	Mode Share	AVO
Self-drive and park	66%	1.85	1%	1.18	100%	1.18
Drop-off	4%	1.85	15%	1.00	0%	1.18
Taxi / TNC	15%	1.85	50%	1.00	0%	1.18
Public transit (bus)	15%	10.00	33%	20.00	0%	1.18
Walk / Bicycle	0%	1.00	1%	1.00	0%	1.18
Total	100%		100%		100%	

Rancho Cucamonga Station Afternoon Arrival Trip Generation (Passengers Arriving by Train / Leaving Station by Other Mode)			
Mode	High Speed Train	Commute	Employees
	Outbound Trips	Outbound Trips	Outbound Trips
Passengers	272	16	15
Self-drive and park	97	9	13
Pick-up	6	3	0
Taxi / TNC	22	1	0
Public transit (bus)	2	1	0
Walk / Bicycle	0	0	0
Total	127	14	13
TOTAL OUTBOUND			155

Rancho Cucamonga Station Afternoon Departure Trip Generation (Passengers Departing by Train / Entering Station by Other Mode)			
Mode	High Speed Train	Commute	Employees
	Inbound Trips	Inbound Trips	Inbound Trips
Passengers	267	113	15
Self-drive and park	95	1	13
Drop-off	6	34	0
Taxi / TNC	22	56	0
Public transit (bus)	4	2	0
Walk / Bicycle	0	1	0
Total	127	94	13
TOTAL INBOUND			234

Hesperia Station Afternoon Arrivals Mode Share (Passengers Arriving by Train / Leaving Station by Other Mode)						
Mode	High Speed Train		Commute		Employees	
	Mode Share	AVO	Mode Share	AVO	Mode Share	AVO
Self-drive and park	66%	1.85	70%	1.18	100%	1.18
Pick-up	4%	1.85	10%	1.00	0%	1.18
Taxi / TNC	15%	1.85	5%	1.00	0%	1.18
Public transit (bus)	15%	20.00	14%	20.00	0%	1.18
Walk / Bicycle	0%	1.00	1%	1.00	0%	1.18
Total	100%		100%		100%	

Hesperia Station Afternoon Departures Mode Share (Passengers Departing by Train / Entering Station by Other Mode)						
Mode	High Speed Train		Commute		Employees	
	Mode Share	AVO	Mode Share	AVO	Mode Share	AVO
Self-drive and park	66%	1.85	1%	1.18	100%	1.18
Drop-off	4%	1.85	15%	1.00	0%	1.18
Taxi / TNC	15%	1.85	50%	1.00	0%	1.18
Public transit (bus)	15%	20.00	33%	20.00	0%	1.18
Walk / Bicycle	0%	1.00	1%	1.00	0%	1.18
Total	100%		100%		100%	

Hesperia Station Afternoon Arrival Trip Generation (Passengers Arriving by Train / Leaving Station by Other Mode)			
Mode	High Speed Train	Commute	Employees
	Outbound Trips	Outbound Trips	Outbound Trips
Passengers	0	130	6
Self-drive and park	0	77	5
Pick-up	0	26	0
Taxi / TNC	0	6	0
Public transit (bus)	0	1	0
Walk / Bicycle	0	1	0
Total	0	112	5
TOTAL OUTBOUND			117

Hesperia Station Afternoon Departure Trip Generation (Passengers Departing by Train / Entering Station by Other Mode)			
Mode	High Speed Train	Commute	Employees
	Inbound Trips	Inbound Trips	Inbound Trips
Passengers	0	31	6
Self-drive and park	0	0	5
Drop-off	0	9	0
Taxi / TNC	0	16	0
Public transit (bus)	0	1	0
Walk / Bicycle	0	0	0
Total	0	27	5
TOTAL INBOUND			32

YEAR 2025 (FRIDAY AM PEAK HOUR)

Rancho Cucamonga Station Morning Arrivals Mode Share (Passengers Arriving by Train / Leaving Station by Other Mode)						
Mode	High Speed Train		Commute		Employees	
	Mode Share	AVO	Mode Share	AVO	Mode Share	AVO
Self-drive and park	66%	1.85	1%	1.18	100%	1.18
Pick-up	4%	1.85	15%	1.00	0%	1.18
Taxi / TNC	15%	1.85	50%	1.00	0%	1.18
Public transit (bus)	15%	20.00	33%	20.00	0%	1.18
Walk / Bicycle	0%	1.00	1%	1.00	0%	1.18
Total	100%		100%		100%	

Rancho Cucamonga Station Morning Departures Mode Share (Passengers Departing by Train / Entering Station by Other Mode)						
Mode	High Speed Train		Commute		Employees	
	Mode Share	AVO	Mode Share	AVO	Mode Share	AVO
Self-drive and park	66%	1.85	70%	1.18	100%	1.18
Drop-off	4%	1.85	10%	1.00	0%	1.18
Taxi / TNC	15%	1.85	5%	1.00	0%	1.18
Public transit (bus)	15%	20.00	14%	20.00	0%	1.18
Walk / Bicycle	0%	1.00	1%	1.00	0%	1.18
Total	100%		100%		100%	

Rancho Cucamonga Station Morning Arrival Trip Generation (Passengers Arriving by Train / Leaving Station by Other Mode)			
Mode	High Speed Train	Commute	Employees
	Outbound Trips	Outbound Trips	Outbound Trips
Passengers	262	54	15
Self-drive and park	93	0	13
Pick-up	12	16	0
Taxi / TNC	21	27	0
Public transit (bus)	2	1	0
Walk / Bicycle	0	1	0
Total	128	45	13
TOTAL OUTBOUND			186

Rancho Cucamonga Station Morning Departure Trip Generation (Passengers Departing by Train / Entering Station by Other Mode)			
Mode	High Speed Train	Commute	Employees
	Inbound Trips	Inbound Trips	Inbound Trips
Passengers	108	17	15
Self-drive and park	39	10	13
Drop-off	5	3	0
Taxi / TNC	9	1	0
Public transit (bus)	1	1	0
Walk / Bicycle	0	0	0
Total	53	16	13
TOTAL INBOUND			82

Hesperia Station Morning Arrivals Mode Share (Passengers Arriving by Train / Leaving Station by Other Mode)						
Mode	High Speed Train		Commute		Employees	
	Mode Share	AVO	Mode Share	AVO	Mode Share	AVO
Self-drive and park	66%	1.85	1%	1.18	100%	1.18
Pick-up	4%	1.85	25%	1.00	0%	1.18
Taxi / TNC	15%	1.85	53%	1.00	0%	1.18
Public transit (bus)	15%	20.00	20%	20.00	0%	1.18
Walk / Bicycle	0%	1.00	1%	1.00	0%	1.18
Total	100%		100%		100%	

Hesperia Station Morning Departures Mode Share (Passengers Departing by Train / Entering Station by Other Mode)						
Mode	High Speed Train		Commute		Employees	
	Mode Share	AVO	Mode Share	AVO	Mode Share	AVO
Self-drive and park	66%	1.85	70%	1.18	100%	1.18
Drop-off	4%	1.85	10%	1.00	0%	1.18
Taxi / TNC	15%	1.85	5%	1.00	0%	1.18
Public transit (bus)	15%	20.00	14%	20.00	0%	1.18
Walk / Bicycle	0%	1.00	1%	1.00	0%	1.18
Total	100%		100%		100%	

Hesperia Station Morning Arrival Trip Generation (Passengers Arriving by Train / Leaving Station by Other Mode)			
Mode	High Speed Train	Commute	Employees
	Outbound Trips	Outbound Trips	Outbound Trips
Passengers	0	34	6
Self-drive and park	0	0	5
Pick-up	0	17	0
Taxi / TNC	0	18	0
Public transit (bus)	0	1	0
Walk / Bicycle	0	0	0
Total	0	37	5
TOTAL OUTBOUND			42

Hesperia Station Morning Departure Trip Generation (Passengers Departing by Train / Entering Station by Other Mode)			
Mode	High Speed Train	Commute	Employees
	Inbound Trips	Inbound Trips	Inbound Trips
Passengers	0	106	6
Self-drive and park	0	63	5
Drop-off	0	21	0
Taxi / TNC	0	5	0
Public transit (bus)	0	1	0
Walk / Bicycle	0	1	0
Total	0	92	5
TOTAL INBOUND			97

YEAR 2025 (FRIDAY PM PEAK HOUR)

Rancho Cucamonga Station Afternoon Arrivals Mode Share (Passengers Arriving by Train / Leaving Station by Other Mode)						
Mode	High Speed Train		Commute		Employees	
	Mode Share	AVO	Mode Share	AVO	Mode Share	AVO
Self-drive and park	66%	1.85	70%	1.18	100%	1.18
Pick-up	4%	1.85	10%	1.00	0%	1.18
Taxi / TNC	15%	1.85	5%	1.00	0%	1.18
Public transit (bus)	15%	20.00	14%	20.00	0%	1.18
Walk / Bicycle	0%	1.00	1%	1.00	0%	1.18
Total	100%		100%		100%	

Rancho Cucamonga Station Afternoon Departures Mode Share (Passengers Departing by Train / Entering Station by Other Mode)						
Mode	High Speed Train		Commute		Employees	
	Mode Share	AVO	Mode Share	AVO	Mode Share	AVO
Self-drive and park	66%	1.85	1%	1.18	100%	1.18
Drop-off	4%	1.85	15%	1.00	0%	1.18
Taxi / TNC	15%	1.85	50%	1.00	0%	1.18
Public transit (bus)	15%	20.00	33%	20.00	0%	1.18
Walk / Bicycle	0%	1.00	1%	1.00	0%	1.18
Total	100%		100%		100%	

Rancho Cucamonga Station Afternoon Arrival Trip Generation (Passengers Arriving by Train / Leaving Station by Other Mode)			
Mode	High Speed Train	Commute	Employees
	Outbound Trips	Outbound Trips	Outbound Trips
Passengers	322	16	15
Self-drive and park	115	9	13
Pick-up	15	3	0
Taxi / TNC	26	1	0
Public transit (bus)	2	1	0
Walk / Bicycle	0	0	0
Total	158	14	13
TOTAL OUTBOUND			185

Rancho Cucamonga Station Afternoon Departure Trip Generation (Passengers Departing by Train / Entering Station by Other Mode)			
Mode	High Speed Train	Commute	Employees
	Inbound Trips	Inbound Trips	Inbound Trips
Passengers	322	63	15
Self-drive and park	115	1	13
Drop-off	15	19	0
Taxi / TNC	26	32	0
Public transit (bus)	2	1	0
Walk / Bicycle	0	1	0
Total	158	53	13
TOTAL INBOUND			224

Hesperia Station Afternoon Arrivals Mode Share (Passengers Arriving by Train / Leaving Station by Other Mode)						
Mode	High Speed Train		Commute		Employees	
	Mode Share	AVO	Mode Share	AVO	Mode Share	AVO
Self-drive and park	66%	1.85	70%	1.18	100%	1.18
Pick-up	4%	1.85	10%	1.00	0%	1.18
Taxi / TNC	15%	1.85	5%	1.00	0%	1.18
Public transit (bus)	15%	20.00	14%	20.00	0%	1.18
Walk / Bicycle	0%	1.00	1%	1.00	0%	1.18
Total	100%		100%		100%	

Hesperia Station Afternoon Departures Mode Share (Passengers Departing by Train / Entering Station by Other Mode)						
Mode	High Speed Train		Commute		Employees	
	Mode Share	AVO	Mode Share	AVO	Mode Share	AVO
Self-drive and park	66%	1.85	1%	1.18	100%	1.18
Drop-off	4%	1.85	15%	1.00	0%	1.18
Taxi / TNC	15%	1.85	50%	1.00	0%	1.18
Public transit (bus)	15%	20.00	33%	20.00	0%	1.18
Walk / Bicycle	0%	1.00	1%	1.00	0%	1.18
Total	100%		100%		100%	

Hesperia Station Afternoon Arrival Trip Generation (Passengers Arriving by Train / Leaving Station by Other Mode)			
Mode	High Speed Train	Commute	Employees
	Outbound Trips	Outbound Trips	Outbound Trips
Passengers	0	81	6
Self-drive and park	0	48	5
Pick-up	0	16	0
Taxi / TNC	0	4	0
Public transit (bus)	0	1	0
Walk / Bicycle	0	1	0
Total	0	70	5
TOTAL OUTBOUND			75

Hesperia Station Afternoon Departure Trip Generation (Passengers Departing by Train / Entering Station by Other Mode)			
Mode	High Speed Train	Commute	Employees
	Inbound Trips	Inbound Trips	Inbound Trips
Passengers	0	31	6
Self-drive and park	0	0	5
Drop-off	0	9	0
Taxi / TNC	0	16	0
Public transit (bus)	0	1	0
Walk / Bicycle	0	0	0
Total	0	27	5
TOTAL INBOUND			32

YEAR 2025 (SUNDAY AM PEAK HOUR)

Rancho Cucamonga Station Morning Arrivals Mode Share (Passengers Arriving by Train / Leaving Station by Other Mode)						
Mode	High Speed Train		Commute		Employees	
	Mode Share	AVO	Mode Share	AVO	Mode Share	AVO
Self-drive and park	66%	1.85	1%	1.18	100%	1.18
Pick-up	4%	1.85	15%	1.00	0%	1.18
Taxi / TNC	15%	1.85	50%	1.00	0%	1.18
Public transit (bus)	15%	20.00	33%	20.00	0%	1.18
Walk / Bicycle	0%	1.00	1%	1.00	0%	1.18
Total	100%		100%		100%	

Rancho Cucamonga Station Morning Departures Mode Share (Passengers Departing by Train / Entering Station by Other Mode)						
Mode	High Speed Train		Commute		Employees	
	Mode Share	AVO	Mode Share	AVO	Mode Share	AVO
Self-drive and park	66%	1.85	70%	1.18	100%	1.18
Drop-off	4%	1.85	10%	1.00	0%	1.18
Taxi / TNC	15%	1.85	5%	1.00	0%	1.18
Public transit (bus)	15%	20.00	14%	20.00	0%	1.18
Walk / Bicycle	0%	1.00	1%	1.00	0%	1.18
Total	100%		100%		100%	

Rancho Cucamonga Station Morning Arrival Trip Generation (Passengers Arriving by Train / Leaving Station by Other Mode)			
Mode	High Speed Train	Commute	Employees
	Outbound Trips	Outbound Trips	Outbound Trips
Passengers	322	4	15
Self-drive and park	115	0	13
Pick-up	15	1	0
Taxi / TNC	26	2	0
Public transit (bus)	2	1	0
Walk / Bicycle	0	0	0
Total	158	4	13
TOTAL OUTBOUND			175

Rancho Cucamonga Station Morning Departure Trip Generation (Passengers Departing by Train / Entering Station by Other Mode)			
Mode	High Speed Train	Commute	Employees
	Inbound Trips	Inbound Trips	Inbound Trips
Passengers	108	4	15
Self-drive and park	39	3	15
Drop-off	5	1	0
Taxi / TNC	9	0	0
Public transit (bus)	1	1	0
Walk / Bicycle	0	0	0
Total	53	5	15
TOTAL INBOUND			73

Hesperia Station Morning Arrivals Mode Share (Passengers Arriving by Train / Leaving Station by Other Mode)						
Mode	High Speed Train		Commute		Employees	
	Mode Share	AVO	Mode Share	AVO	Mode Share	AVO
Self-drive and park	66%	1.85	1%	1.18	100%	1.18
Pick-up	4%	1.85	25%	1.00	0%	1.18
Taxi / TNC	15%	1.85	53%	1.00	0%	1.18
Public transit (bus)	15%	20.00	20%	20.00	0%	1.18
Walk / Bicycle	0%	1.00	1%	1.00	0%	1.18
Total	100%		100%		100%	

Hesperia Station Morning Departures Mode Share (Passengers Departing by Train / Entering Station by Other Mode)						
Mode	High Speed Train		Commute		Employees	
	Mode Share	AVO	Mode Share	AVO	Mode Share	AVO
Self-drive and park	66%	1.85	70%	1.18	100%	1.18
Drop-off	4%	1.85	10%	1.00	0%	1.18
Taxi / TNC	15%	1.85	5%	1.00	0%	1.18
Public transit (bus)	15%	20.00	14%	20.00	0%	1.18
Walk / Bicycle	0%	1.00	1%	1.00	0%	1.18
Total	100%		100%		100%	

Hesperia Station Morning Arrival Trip Generation (Passengers Arriving by Train / Leaving Station by Other Mode)			
Mode	High Speed Train	Commute	Employees
	Outbound Trips	Outbound Trips	Outbound Trips
Passengers	0	9	6
Self-drive and park	0	0	5
Pick-up	0	4	0
Taxi / TNC	0	5	0
Public transit (bus)	0	1	0
Walk / Bicycle	0	0	0
Total	0	10	5
TOTAL OUTBOUND			15

Hesperia Station Morning Departure Trip Generation (Passengers Departing by Train / Entering Station by Other Mode)			
Mode	High Speed Train	Commute	Employees
	Inbound Trips	Inbound Trips	Inbound Trips
Passengers	0	8	6
Self-drive and park	0	5	5
Drop-off	0	2	0
Taxi / TNC	0	0	0
Public transit (bus)	0	1	0
Walk / Bicycle	0	0	0
Total	0	8	5
TOTAL INBOUND			13

YEAR 2025 (SUNDAY PM PEAK HOUR)

Rancho Cucamonga Station Afternoon Arrivals Mode Share (Passengers Arriving by Train / Leaving Station by Other Mode)						
Mode	High Speed Train		Commute		Employees	
	Mode Share	AVO	Mode Share	AVO	Mode Share	AVO
Self-drive and park	66%	1.85	70%	1.18	100%	1.18
Pick-up	4%	1.85	10%	1.00	0%	1.18
Taxi / TNC	15%	1.85	5%	1.00	0%	1.18
Public transit (bus)	15%	20.00	14%	20.00	0%	1.18
Walk / Bicycle	0%	1.00	1%	1.00	0%	1.18
Total	100%		100%		100%	

Rancho Cucamonga Station Afternoon Departures Mode Share (Passengers Departing by Train / Entering Station by Other Mode)						
Mode	High Speed Train		Commute		Employees	
	Mode Share	AVO	Mode Share	AVO	Mode Share	AVO
Self-drive and park	66%	1.85	1%	1.18	100%	1.18
Drop-off	4%	1.85	15%	1.00	0%	1.18
Taxi / TNC	15%	1.85	50%	1.00	0%	1.18
Public transit (bus)	15%	20.00	33%	20.00	0%	1.18
Walk / Bicycle	0%	1.00	1%	1.00	0%	1.18
Total	100%		100%		100%	

Rancho Cucamonga Station Afternoon Arrival Trip Generation (Passengers Arriving by Train / Leaving Station by Other Mode)			
Mode	High Speed Train	Commute	Employees
	Outbound Trips	Outbound Trips	Outbound Trips
Passengers	322	9	15
Self-drive and park	115	5	13
Pick-up	15	2	0
Taxi / TNC	26	0	0
Public transit (bus)	2	1	0
Walk / Bicycle	0	0	0
Total	158	8	13
TOTAL OUTBOUND			179

Rancho Cucamonga Station Afternoon Departure Trip Generation (Passengers Departing by Train / Entering Station by Other Mode)			
Mode	High Speed Train	Commute	Employees
	Inbound Trips	Inbound Trips	Inbound Trips
Passengers	322	12	15
Self-drive and park	115	0	13
Drop-off	15	4	0
Taxi / TNC	26	6	0
Public transit (bus)	2	1	0
Walk / Bicycle	0	0	0
Total	158	11	13
TOTAL INBOUND			182

Hesperia Station Afternoon Arrivals Mode Share (Passengers Arriving by Train / Leaving Station by Other Mode)						
Mode	High Speed Train		Commute		Employees	
	Mode Share	AVO	Mode Share	AVO	Mode Share	AVO
Self-drive and park	66%	1.85	70%	1.18	100%	1.18
Pick-up	4%	1.85	10%	1.00	0%	1.18
Taxi / TNC	15%	1.85	5%	1.00	0%	1.18
Public transit (bus)	15%	20.00	14%	20.00	0%	1.18
Walk / Bicycle	0%	1.00	1%	1.00	0%	1.18
Total	100%		100%		100%	

Hesperia Station Afternoon Departures Mode Share (Passengers Departing by Train / Entering Station by Other Mode)						
Mode	High Speed Train		Commute		Employees	
	Mode Share	AVO	Mode Share	AVO	Mode Share	AVO
Self-drive and park	66%	1.85	1%	1.18	100%	1.18
Drop-off	4%	1.85	15%	1.00	0%	1.18
Taxi / TNC	15%	1.85	50%	1.00	0%	1.18
Public transit (bus)	15%	20.00	33%	20.00	0%	1.18
Walk / Bicycle	0%	1.00	1%	1.00	0%	1.18
Total	100%		100%		100%	

Hesperia Station Afternoon Arrival Trip Generation (Passengers Arriving by Train / Leaving Station by Other Mode)			
Mode	High Speed Train	Commute	Employees
	Outbound Trips	Outbound Trips	Outbound Trips
Passengers	0	17	6
Self-drive and park	0	10	5
Pick-up	0	3	0
Taxi / TNC	0	1	0
Public transit (bus)	0	1	0
Walk / Bicycle	0	0	0
Total	0	15	5
TOTAL OUTBOUND			20

Hesperia Station Afternoon Departure Trip Generation (Passengers Departing by Train / Entering Station by Other Mode)			
Mode	High Speed Train	Commute	Employees
	Inbound Trips	Inbound Trips	Inbound Trips
Passengers	0	17	6
Self-drive and park	0	0	5
Drop-off	0	5	0
Taxi / TNC	0	9	0
Public transit (bus)	0	1	0
Walk / Bicycle	0	0	0
Total	0	15	5
TOTAL INBOUND			20

Departure & Arrival Tables By Station, Day & Year

Year-> 2045

Rancho

50%	Vehicular Arrival			Vehicular Departure			Total		
	2045			2045			2045		
	Wed	Fri	Sun	Wed	Fri	Sun	Wed	Fri	Sun
Avg. 6-8am									
High-Speed	401	485	732	153	326	209	554	811	941
Commuter	265	267	12	69	69	14	334	336	26
(Less) On/Off SB Line	114	115	5	30	30	6	144	145	11
Employees	30	30	30	30	30	30	60	60	60
Total	581	667	769	223	395	247	804	1,062	1,016
Avg. 4-6pm									
High-Speed	505	701	968	496	968	742	1,001	1,669	1,710
Commuter	63	63	26	260	242	25	323	305	52
(Less) On/Off SB Line	27	27	11	30	30	6	57	57	17
Employees	30	30	30	30	30	30	60	60	60
Total	571	767	1,013	756	1,211	791	1,327	1,977	1,804

Apple Valley

27%	Vehicular Arrival			Vehicular Departure			Total		
	2045			2045			2045		
	Wed	Fri	Sun	Wed	Fri	Sun	Wed	Fri	Sun
Avg. 6-8am									
High-Speed	213	258	389	162	343	221	375	602	610
Commuter									
Employees	43	43	43	43	43	43	86	86	86
Total	256	301	432	205	386	264	461	688	696
Avg. 4-6pm									
High-Speed	269	373	515	264	515	394	532	888	910
Commuter									
Employees	43	43	43	43	43	43	86	86	86
Total	312	416	558	307	558	437	618	974	996

Hesperia

	Vehicular Arrival			Vehicular Departure			Total		
	2045			2045			2045		
	Wed	Fri	Sun	Wed	Fri	Sun	Wed	Fri	Sun
Avg. 6-8am									
High-Speed									
Commuter	69	69	14	265	267	12	334	336	26
Employees	6	6	6	6	6	6	12	12	12
Total	75	75	20	271	273	18	346	348	38
Avg. 4-6pm									
High-Speed									
Commuter	260	242	25	63	63	26	323	305	52
Employees	6	6	6	6	6	6	12	12	12
Total	266	248	31	69	69	32	335	317	64

YEAR 2045 (WEEKDAY AM PEAK HOUR)

Rancho Cucamonga Station Morning Arrivals Mode Share (Passengers Arriving by Train / Leaving Station by Other Mode)						
Mode	High Speed Train		Commute		Employees	
	Mode Share	AVO	Mode Share	AVO	Mode Share	AVO
Self-drive and park	66%	1.85	1%	1.18	100%	1.18
Pick-up	4%	1.85	15%	1.00	0%	1.18
Taxi / TNC	15%	1.85	50%	1.00	0%	1.18
Public transit (bus)	15%	20.00	33%	20.00	0%	1.18
Walk / Bicycle	0%	1.00	1%	1.00	0%	1.18
Total	100%		100%		100%	

Rancho Cucamonga Station Morning Departures Mode Share (Passengers Departing by Train / Entering Station by Other Mode)						
Mode	High Speed Train		Commute		Employees	
	Mode Share	AVO	Mode Share	AVO	Mode Share	AVO
Self-drive and park	66%	1.85	70%	1.18	100%	1.18
Drop-off	4%	1.85	10%	1.00	0%	1.18
Taxi / TNC	15%	1.85	5%	1.00	0%	1.18
Public transit (bus)	15%	20.00	14%	20.00	0%	1.18
Walk / Bicycle	0%	1.00	1%	1.00	0%	1.18
Total	100%		100%		100%	

Rancho Cucamonga Station Morning Arrival Trip Generation (Passengers Arriving by Train / Leaving Station by Other Mode)			
Mode	High Speed Train	Commute	Employees
	Outbound Trips	Outbound Trips	Outbound Trips
Passengers	401	150	30
Self-drive and park	143	1	25
Pick-up	18	45	0
Taxi / TNC	32	75	0
Public transit (bus)	3	2	0
Walk / Bicycle	0	2	0
Total	197	126	25
TOTAL OUTBOUND			348

Rancho Cucamonga Station Morning Departure Trip Generation (Passengers Departing by Train / Entering Station by Other Mode)			
Mode	High Speed Train	Commute	Employees
	Inbound Trips	Inbound Trips	Inbound Trips
Passengers	153	39	30
Self-drive and park	55	23	25
Drop-off	7	8	0
Taxi / TNC	12	2	0
Public transit (bus)	1	1	0
Walk / Bicycle	0	0	0
Total	75	34	25
TOTAL INBOUND			135

Hesperia Station Morning Arrivals Mode Share (Passengers Arriving by Train / Leaving Station by Other Mode)						
Mode	High Speed Train		Commute		Employees	
	Mode Share	AVO	Mode Share	AVO	Mode Share	AVO
Self-drive and park	66%	1.85	1%	1.18	100%	1.18
Pick-up	4%	1.85	25%	1.00	0%	1.18
Taxi / TNC	15%	1.85	53%	1.00	0%	1.18
Public transit (bus)	15%	20.00	20%	20.00	0%	1.18
Walk / Bicycle	0%	1.00	1%	1.00	0%	1.18
Total	100%		100%		100%	

Hesperia Station Morning Departures Mode Share (Passengers Departing by Train / Entering Station by Other Mode)						
Mode	High Speed Train		Commute		Employees	
	Mode Share	AVO	Mode Share	AVO	Mode Share	AVO
Self-drive and park	66%	1.85	70%	1.18	100%	1.18
Drop-off	4%	1.85	10%	1.00	0%	1.18
Taxi / TNC	15%	1.85	5%	1.00	0%	1.18
Public transit (bus)	15%	20.00	14%	20.00	0%	1.18
Walk / Bicycle	0%	1.00	1%	1.00	0%	1.18
Total	100%		100%		100%	

Hesperia Station Morning Arrival Trip Generation (Passengers Arriving by Train / Leaving Station by Other Mode)			
Mode	High Speed Train	Commute	Employees
	Outbound Trips	Outbound Trips	Outbound Trips
Passengers	0	69	6
Self-drive and park	0	1	5
Pick-up	0	34	0
Taxi / TNC	0	37	0
Public transit (bus)	0	1	0
Walk / Bicycle	0	1	0
Total	0	73	5
TOTAL OUTBOUND			78

Hesperia Station Morning Departure Trip Generation (Passengers Departing by Train / Entering Station by Other Mode)			
Mode	High Speed Train	Commute	Employees
	Inbound Trips	Inbound Trips	Inbound Trips
Passengers	0	265	6
Self-drive and park	0	157	5
Drop-off	0	53	0
Taxi / TNC	0	13	0
Public transit (bus)	0	2	0
Walk / Bicycle	0	3	0
Total	0	228	5
TOTAL INBOUND			233

YEAR 2045 (WEEKDAY PM PEAK HOUR)

Rancho Cucamonga Station Afternoon Arrivals Mode Share (Passengers Arriving by Train / Leaving Station by Other Mode)						
Mode	High Speed Train		Commute		Employees	
	Mode Share	AVO	Mode Share	AVO	Mode Share	AVO
Self-drive and park	66%	1.85	70%	1.18	100%	1.18
Pick-up	4%	1.85	10%	1.00	0%	1.18
Taxi / TNC	15%	1.85	5%	1.00	0%	1.18
Public transit (bus)	15%	20.00	14%	20.00	0%	1.18
Walk / Bicycle	0%	1.00	1%	1.00	0%	1.18
Total	100%		100%		100%	

Rancho Cucamonga Station Afternoon Departures Mode Share (Passengers Departing by Train / Entering Station by Other Mode)						
Mode	High Speed Train		Commute		Employees	
	Mode Share	AVO	Mode Share	AVO	Mode Share	AVO
Self-drive and park	66%	1.85	1%	1.18	100%	1.18
Drop-off	4%	1.85	15%	1.00	0%	1.18
Taxi / TNC	15%	1.85	50%	1.00	0%	1.18
Public transit (bus)	15%	10.00	33%	20.00	0%	1.18
Walk / Bicycle	0%	1.00	1%	1.00	0%	1.18
Total	100%		100%		100%	

Rancho Cucamonga Station Afternoon Arrival Trip Generation (Passengers Arriving by Train / Leaving Station by Other Mode)			
Mode	High Speed Train	Commute	Employees
	Outbound Trips	Outbound Trips	Outbound Trips
Passengers	505	36	30
Self-drive and park	180	21	25
Pick-up	11	7	0
Taxi / TNC	41	2	0
Public transit (bus)	4	1	0
Walk / Bicycle	0	0	0
Total	236	32	25
TOTAL OUTBOUND			293

Rancho Cucamonga Station Afternoon Departure Trip Generation (Passengers Departing by Train / Entering Station by Other Mode)			
Mode	High Speed Train	Commute	Employees
	Inbound Trips	Inbound Trips	Inbound Trips
Passengers	496	230	30
Self-drive and park	177	2	25
Drop-off	11	69	0
Taxi / TNC	40	115	0
Public transit (bus)	7	4	0
Walk / Bicycle	0	2	0
Total	236	192	25
TOTAL INBOUND			453

Hesperia Station Afternoon Arrivals Mode Share (Passengers Arriving by Train / Leaving Station by Other Mode)						
Mode	High Speed Train		Commute		Employees	
	Mode Share	AVO	Mode Share	AVO	Mode Share	AVO
Self-drive and park	66%	1.85	70%	1.18	100%	1.18
Pick-up	4%	1.85	10%	1.00	0%	1.18
Taxi / TNC	15%	1.85	5%	1.00	0%	1.18
Public transit (bus)	15%	20.00	14%	20.00	0%	1.18
Walk / Bicycle	0%	1.00	1%	1.00	0%	1.18
Total	100%		100%		100%	

Hesperia Station Afternoon Departures Mode Share (Passengers Departing by Train / Entering Station by Other Mode)						
Mode	High Speed Train		Commute		Employees	
	Mode Share	AVO	Mode Share	AVO	Mode Share	AVO
Self-drive and park	66%	1.85	1%	1.18	100%	1.18
Drop-off	4%	1.85	15%	1.00	0%	1.18
Taxi / TNC	15%	1.85	50%	1.00	0%	1.18
Public transit (bus)	15%	20.00	33%	20.00	0%	1.18
Walk / Bicycle	0%	1.00	1%	1.00	0%	1.18
Total	100%		100%		100%	

Hesperia Station Afternoon Arrival Trip Generation (Passengers Arriving by Train / Leaving Station by Other Mode)			
Mode	High Speed Train	Commute	Employees
	Outbound Trips	Outbound Trips	Outbound Trips
Passengers	0	260	6
Self-drive and park	0	154	5
Pick-up	0	52	0
Taxi / TNC	0	13	0
Public transit (bus)	0	2	0
Walk / Bicycle	0	3	0
Total	0	224	5
TOTAL OUTBOUND			229

Hesperia Station Afternoon Departure Trip Generation (Passengers Departing by Train / Entering Station by Other Mode)			
Mode	High Speed Train	Commute	Employees
	Inbound Trips	Inbound Trips	Inbound Trips
Passengers	0	63	6
Self-drive and park	0	1	5
Drop-off	0	19	0
Taxi / TNC	0	32	0
Public transit (bus)	0	1	0
Walk / Bicycle	0	1	0
Total	0	53	5
TOTAL INBOUND			58

YEAR 2045 (FRIDAY AM PEAK HOUR)

Rancho Cucamonga Station Morning Arrivals Mode Share (Passengers Arriving by Train / Leaving Station by Other Mode)						
Mode	High Speed Train		Commute		Employees	
	Mode Share	AVO	Mode Share	AVO	Mode Share	AVO
Self-drive and park	66%	1.85	1%	1.18	100%	1.18
Pick-up	4%	1.85	15%	1.00	0%	1.18
Taxi / TNC	15%	1.85	50%	1.00	0%	1.18
Public transit (bus)	15%	20.00	33%	20.00	0%	1.18
Walk / Bicycle	0%	1.00	1%	1.00	0%	1.18
Total	100%		100%		100%	

Rancho Cucamonga Station Morning Departures Mode Share (Passengers Departing by Train / Entering Station by Other Mode)						
Mode	High Speed Train		Commute		Employees	
	Mode Share	AVO	Mode Share	AVO	Mode Share	AVO
Self-drive and park	66%	1.85	70%	1.18	100%	1.18
Drop-off	4%	1.85	10%	1.00	0%	1.18
Taxi / TNC	15%	1.85	5%	1.00	0%	1.18
Public transit (bus)	15%	20.00	14%	20.00	0%	1.18
Walk / Bicycle	0%	1.00	1%	1.00	0%	1.18
Total	100%		100%		100%	

Rancho Cucamonga Station Morning Arrival Trip Generation (Passengers Arriving by Train / Leaving Station by Other Mode)			
Mode	High Speed Train	Commute	Employees
	Outbound Trips	Outbound Trips	Outbound Trips
Passengers	485	152	30
Self-drive and park	173	1	25
Pick-up	22	45	0
Taxi / TNC	39	76	0
Public transit (bus)	4	3	0
Walk / Bicycle	0	2	0
Total	238	127	25
TOTAL OUTBOUND			390

Rancho Cucamonga Station Morning Departure Trip Generation (Passengers Departing by Train / Entering Station by Other Mode)			
Mode	High Speed Train	Commute	Employees
	Inbound Trips	Inbound Trips	Inbound Trips
Passengers	326	39	30
Self-drive and park	116	23	25
Drop-off	15	8	0
Taxi / TNC	26	2	0
Public transit (bus)	2	1	0
Walk / Bicycle	0	0	0
Total	160	35	25
TOTAL INBOUND			220

Hesperia Station Morning Arrivals Mode Share (Passengers Arriving by Train / Leaving Station by Other Mode)						
Mode	High Speed Train		Commute		Employees	
	Mode Share	AVO	Mode Share	AVO	Mode Share	AVO
Self-drive and park	66%	1.85	1%	1.18	100%	1.18
Pick-up	4%	1.85	25%	1.00	0%	1.18
Taxi / TNC	15%	1.85	53%	1.00	0%	1.18
Public transit (bus)	15%	20.00	20%	20.00	0%	1.18
Walk / Bicycle	0%	1.00	1%	1.00	0%	1.18
Total	100%		100%		100%	

Hesperia Station Morning Departures Mode Share (Passengers Departing by Train / Entering Station by Other Mode)						
Mode	High Speed Train		Commute		Employees	
	Mode Share	AVO	Mode Share	AVO	Mode Share	AVO
Self-drive and park	66%	1.85	70%	1.18	100%	1.18
Drop-off	4%	1.85	10%	1.00	0%	1.18
Taxi / TNC	15%	1.85	5%	1.00	0%	1.18
Public transit (bus)	15%	20.00	14%	20.00	0%	1.18
Walk / Bicycle	0%	1.00	1%	1.00	0%	1.18
Total	100%		100%		100%	

Hesperia Station Morning Arrival Trip Generation (Passengers Arriving by Train / Leaving Station by Other Mode)			
Mode	High Speed Train	Commute	Employees
	Outbound Trips	Outbound Trips	Outbound Trips
Passengers	0	69	6
Self-drive and park	0	1	5
Pick-up	0	35	0
Taxi / TNC	0	37	0
Public transit (bus)	0	1	0
Walk / Bicycle	0	1	0
Total	0	74	5
TOTAL OUTBOUND			79

Hesperia Station Morning Departure Trip Generation (Passengers Departing by Train / Entering Station by Other Mode)			
Mode	High Speed Train	Commute	Employees
	Inbound Trips	Inbound Trips	Inbound Trips
Passengers	0	267	6
Self-drive and park	0	158	5
Drop-off	0	53	0
Taxi / TNC	0	13	0
Public transit (bus)	0	2	0
Walk / Bicycle	0	3	0
Total	0	229	5
TOTAL INBOUND			234

YEAR 2045 (FRIDAY PM PEAK HOUR)

Rancho Cucamonga Station Afternoon Arrivals Mode Share (Passengers Arriving by Train / Leaving Station by Other Mode)						
Mode	High Speed Train		Commute		Employees	
	Mode Share	AVO	Mode Share	AVO	Mode Share	AVO
Self-drive and park	66%	1.85	70%	1.18	100%	1.18
Pick-up	4%	1.85	10%	1.00	0%	1.18
Taxi / TNC	15%	1.85	5%	1.00	0%	1.18
Public transit (bus)	15%	20.00	14%	20.00	0%	1.18
Walk / Bicycle	0%	1.00	1%	1.00	0%	1.18
Total	100%		100%		100%	

Rancho Cucamonga Station Afternoon Departures Mode Share (Passengers Departing by Train / Entering Station by Other Mode)						
Mode	High Speed Train		Commute		Employees	
	Mode Share	AVO	Mode Share	AVO	Mode Share	AVO
Self-drive and park	66%	1.85	1%	1.18	100%	1.18
Drop-off	4%	1.85	15%	1.00	0%	1.18
Taxi / TNC	15%	1.85	50%	1.00	0%	1.18
Public transit (bus)	15%	20.00	33%	20.00	0%	1.18
Walk / Bicycle	0%	1.00	1%	1.00	0%	1.18
Total	100%		100%		100%	

Rancho Cucamonga Station Afternoon Arrival Trip Generation (Passengers Arriving by Train / Leaving Station by Other Mode)			
Mode	High Speed Train	Commute	Employees
	Outbound Trips	Outbound Trips	Outbound Trips
Passengers	701	36	30
Self-drive and park	250	21	25
Pick-up	32	7	0
Taxi / TNC	57	2	0
Public transit (bus)	5	1	0
Walk / Bicycle	0	0	0
Total	344	32	25
TOTAL OUTBOUND			401

Rancho Cucamonga Station Afternoon Departure Trip Generation (Passengers Departing by Train / Entering Station by Other Mode)			
Mode	High Speed Train	Commute	Employees
	Inbound Trips	Inbound Trips	Inbound Trips
Passengers	968	212	30
Self-drive and park	346	2	25
Drop-off	44	64	0
Taxi / TNC	79	106	0
Public transit (bus)	7	4	0
Walk / Bicycle	0	2	0
Total	475	177	25
TOTAL INBOUND			678

Hesperia Station Afternoon Arrivals Mode Share (Passengers Arriving by Train / Leaving Station by Other Mode)						
Mode	High Speed Train		Commute		Employees	
	Mode Share	AVO	Mode Share	AVO	Mode Share	AVO
Self-drive and park	66%	1.85	70%	1.18	100%	1.18
Pick-up	4%	1.85	10%	1.00	0%	1.18
Taxi / TNC	15%	1.85	5%	1.00	0%	1.18
Public transit (bus)	15%	20.00	14%	20.00	0%	1.18
Walk / Bicycle	0%	1.00	1%	1.00	0%	1.18
Total	100%		100%		100%	

Hesperia Station Afternoon Departures Mode Share (Passengers Departing by Train / Entering Station by Other Mode)						
Mode	High Speed Train		Commute		Employees	
	Mode Share	AVO	Mode Share	AVO	Mode Share	AVO
Self-drive and park	66%	1.85	1%	1.18	100%	1.18
Drop-off	4%	1.85	15%	1.00	0%	1.18
Taxi / TNC	15%	1.85	50%	1.00	0%	1.18
Public transit (bus)	15%	20.00	33%	20.00	0%	1.18
Walk / Bicycle	0%	1.00	1%	1.00	0%	1.18
Total	100%		100%		100%	

Hesperia Station Afternoon Arrival Trip Generation (Passengers Arriving by Train / Leaving Station by Other Mode)			
Mode	High Speed Train	Commute	Employees
	Outbound Trips	Outbound Trips	Outbound Trips
Passengers	0	242	6
Self-drive and park	0	144	5
Pick-up	0	48	0
Taxi / TNC	0	12	0
Public transit (bus)	0	2	0
Walk / Bicycle	0	2	0
Total	0	208	5
TOTAL OUTBOUND			213

Hesperia Station Afternoon Departure Trip Generation (Passengers Departing by Train / Entering Station by Other Mode)			
Mode	High Speed Train	Commute	Employees
	Inbound Trips	Inbound Trips	Inbound Trips
Passengers	0	63	6
Self-drive and park	0	1	5
Drop-off	0	19	0
Taxi / TNC	0	32	0
Public transit (bus)	0	1	0
Walk / Bicycle	0	1	0
Total	0	53	5
TOTAL INBOUND			58

YEAR 2045 (SUNDAY AM PEAK HOUR)

Rancho Cucamonga Station Morning Arrivals Mode Share (Passengers Arriving by Train / Leaving Station by Other Mode)						
Mode	High Speed Train		Commute		Employees	
	Mode Share	AVO	Mode Share	AVO	Mode Share	AVO
Self-drive and park	66%	1.85	1%	1.18	100%	1.18
Pick-up	4%	1.85	15%	1.00	0%	1.18
Taxi / TNC	15%	1.85	50%	1.00	0%	1.18
Public transit (bus)	15%	20.00	33%	20.00	0%	1.18
Walk / Bicycle	0%	1.00	1%	1.00	0%	1.18
Total	100%		100%		100%	

Rancho Cucamonga Station Morning Departures Mode Share (Passengers Departing by Train / Entering Station by Other Mode)						
Mode	High Speed Train		Commute		Employees	
	Mode Share	AVO	Mode Share	AVO	Mode Share	AVO
Self-drive and park	66%	1.85	70%	1.18	100%	1.18
Drop-off	4%	1.85	10%	1.00	0%	1.18
Taxi / TNC	15%	1.85	5%	1.00	0%	1.18
Public transit (bus)	15%	20.00	14%	20.00	0%	1.18
Walk / Bicycle	0%	1.00	1%	1.00	0%	1.18
Total	100%		100%		100%	

Rancho Cucamonga Station Morning Arrival Trip Generation (Passengers Arriving by Train / Leaving Station by Other Mode)			
Mode	High Speed Train	Commute	Employees
	Outbound Trips	Outbound Trips	Outbound Trips
Passengers	732	7	30
Self-drive and park	261	0	25
Pick-up	33	2	0
Taxi / TNC	59	3	0
Public transit (bus)	5	1	0
Walk / Bicycle	0	0	0
Total	359	7	25
TOTAL OUTBOUND			391

Rancho Cucamonga Station Morning Departure Trip Generation (Passengers Departing by Train / Entering Station by Other Mode)			
Mode	High Speed Train	Commute	Employees
	Inbound Trips	Inbound Trips	Inbound Trips
Passengers	209	8	30
Self-drive and park	75	5	30
Drop-off	10	2	0
Taxi / TNC	17	0	0
Public transit (bus)	2	1	0
Walk / Bicycle	0	0	0
Total	103	8	30
TOTAL INBOUND			140

Hesperia Station Morning Arrivals Mode Share (Passengers Arriving by Train / Leaving Station by Other Mode)						
Mode	High Speed Train		Commute		Employees	
	Mode Share	AVO	Mode Share	AVO	Mode Share	AVO
Self-drive and park	66%	1.85	1%	1.18	100%	1.18
Pick-up	4%	1.85	25%	1.00	0%	1.18
Taxi / TNC	15%	1.85	53%	1.00	0%	1.18
Public transit (bus)	15%	20.00	20%	20.00	0%	1.18
Walk / Bicycle	0%	1.00	1%	1.00	0%	1.18
Total	100%		100%		100%	

Hesperia Station Morning Departures Mode Share (Passengers Departing by Train / Entering Station by Other Mode)						
Mode	High Speed Train		Commute		Employees	
	Mode Share	AVO	Mode Share	AVO	Mode Share	AVO
Self-drive and park	66%	1.85	70%	1.18	100%	1.18
Drop-off	4%	1.85	10%	1.00	0%	1.18
Taxi / TNC	15%	1.85	5%	1.00	0%	1.18
Public transit (bus)	15%	20.00	14%	20.00	0%	1.18
Walk / Bicycle	0%	1.00	1%	1.00	0%	1.18
Total	100%		100%		100%	

Hesperia Station Morning Arrival Trip Generation (Passengers Arriving by Train / Leaving Station by Other Mode)			
Mode	High Speed Train	Commute	Employees
	Outbound Trips	Outbound Trips	Outbound Trips
Passengers	0	14	6
Self-drive and park	0	0	5
Pick-up	0	7	0
Taxi / TNC	0	7	0
Public transit (bus)	0	1	0
Walk / Bicycle	0	0	0
Total	0	15	5
TOTAL OUTBOUND			20

Hesperia Station Morning Departure Trip Generation (Passengers Departing by Train / Entering Station by Other Mode)			
Mode	High Speed Train	Commute	Employees
	Inbound Trips	Inbound Trips	Inbound Trips
Passengers	0	12	6
Self-drive and park	0	7	5
Drop-off	0	2	0
Taxi / TNC	0	1	0
Public transit (bus)	0	1	0
Walk / Bicycle	0	0	0
Total	0	11	5
TOTAL INBOUND			17

YEAR 2045 (SUNDAY PM PEAK HOUR)

Rancho Cucamonga Station Afternoon Arrivals Mode Share (Passengers Arriving by Train / Leaving Station by Other Mode)						
Mode	High Speed Train		Commute		Employees	
	Mode Share	AVO	Mode Share	AVO	Mode Share	AVO
Self-drive and park	66%	1.85	70%	1.18	100%	1.18
Pick-up	4%	1.85	10%	1.00	0%	1.18
Taxi / TNC	15%	1.85	5%	1.00	0%	1.18
Public transit (bus)	15%	20.00	14%	20.00	0%	1.18
Walk / Bicycle	0%	1.00	1%	1.00	0%	1.18
Total	100%		100%		100%	

Rancho Cucamonga Station Afternoon Departures Mode Share (Passengers Departing by Train / Entering Station by Other Mode)						
Mode	High Speed Train		Commute		Employees	
	Mode Share	AVO	Mode Share	AVO	Mode Share	AVO
Self-drive and park	66%	1.85	1%	1.18	100%	1.18
Drop-off	4%	1.85	15%	1.00	0%	1.18
Taxi / TNC	15%	1.85	50%	1.00	0%	1.18
Public transit (bus)	15%	20.00	33%	20.00	0%	1.18
Walk / Bicycle	0%	1.00	1%	1.00	0%	1.18
Total	100%		100%		100%	

Rancho Cucamonga Station Afternoon Arrival Trip Generation (Passengers Arriving by Train / Leaving Station by Other Mode)			
Mode	High Speed Train	Commute	Employees
	Outbound Trips	Outbound Trips	Outbound Trips
Passengers	968	15	30
Self-drive and park	346	9	25
Pick-up	44	3	0
Taxi / TNC	79	1	0
Public transit (bus)	7	1	0
Walk / Bicycle	0	0	0
Total	475	14	25
TOTAL OUTBOUND			514

Rancho Cucamonga Station Afternoon Departure Trip Generation (Passengers Departing by Train / Entering Station by Other Mode)			
Mode	High Speed Train	Commute	Employees
	Inbound Trips	Inbound Trips	Inbound Trips
Passengers	742	20	30
Self-drive and park	265	0	25
Drop-off	34	6	0
Taxi / TNC	60	10	0
Public transit (bus)	6	1	0
Walk / Bicycle	0	0	0
Total	364	17	25
TOTAL INBOUND			406

Hesperia Station Afternoon Arrivals Mode Share (Passengers Arriving by Train / Leaving Station by Other Mode)						
Mode	High Speed Train		Commute		Employees	
	Mode Share	AVO	Mode Share	AVO	Mode Share	AVO
Self-drive and park	66%	1.85	70%	1.18	100%	1.18
Pick-up	4%	1.85	10%	1.00	0%	1.18
Taxi / TNC	15%	1.85	5%	1.00	0%	1.18
Public transit (bus)	15%	20.00	14%	20.00	0%	1.18
Walk / Bicycle	0%	1.00	1%	1.00	0%	1.18
Total	100%		100%		100%	

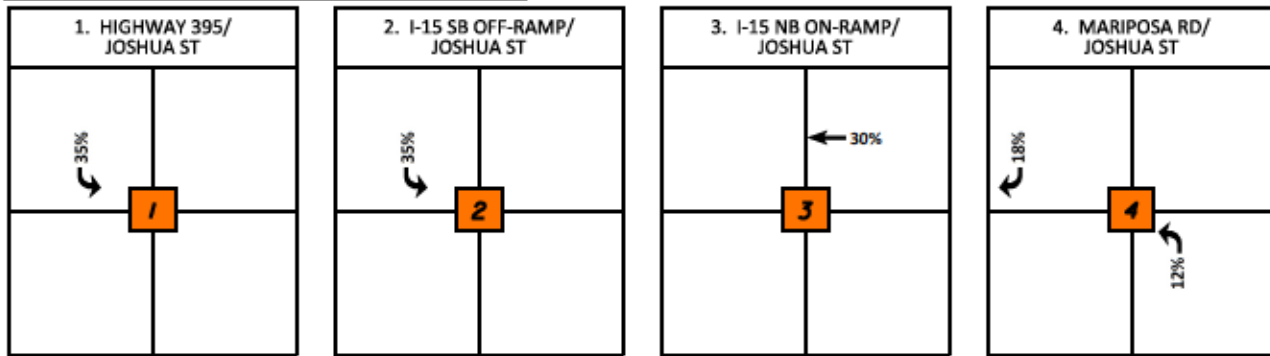
Hesperia Station Afternoon Departures Mode Share (Passengers Departing by Train / Entering Station by Other Mode)						
Mode	High Speed Train		Commute		Employees	
	Mode Share	AVO	Mode Share	AVO	Mode Share	AVO
Self-drive and park	66%	1.85	1%	1.18	100%	1.18
Drop-off	4%	1.85	15%	1.00	0%	1.18
Taxi / TNC	15%	1.85	50%	1.00	0%	1.18
Public transit (bus)	15%	20.00	33%	20.00	0%	1.18
Walk / Bicycle	0%	1.00	1%	1.00	0%	1.18
Total	100%		100%		100%	

Hesperia Station Afternoon Arrival Trip Generation (Passengers Arriving by Train / Leaving Station by Other Mode)			
Mode	High Speed Train	Commute	Employees
	Outbound Trips	Outbound Trips	Outbound Trips
Passengers	0	25	6
Self-drive and park	0	15	5
Pick-up	0	5	0
Taxi / TNC	0	1	0
Public transit (bus)	0	1	0
Walk / Bicycle	0	0	0
Total	0	23	5
TOTAL OUTBOUND			28

Hesperia Station Afternoon Departure Trip Generation (Passengers Departing by Train / Entering Station by Other Mode)			
Mode	High Speed Train	Commute	Employees
	Inbound Trips	Inbound Trips	Inbound Trips
Passengers	0	26	6
Self-drive and park	0	0	5
Drop-off	0	8	0
Taxi / TNC	0	13	0
Public transit (bus)	0	1	0
Walk / Bicycle	0	0	0
Total	0	22	5
TOTAL INBOUND			27

Appendix B.2 - Trip Distribution Percentages for Hesperia and Rancho Cucamonga Stations

BUILD INBOUND TRIP ASSIGNMENTS (PERCENTAGE)



BUILD OUTBOUND TRIP ASSIGNMENTS (PERCENTAGE)

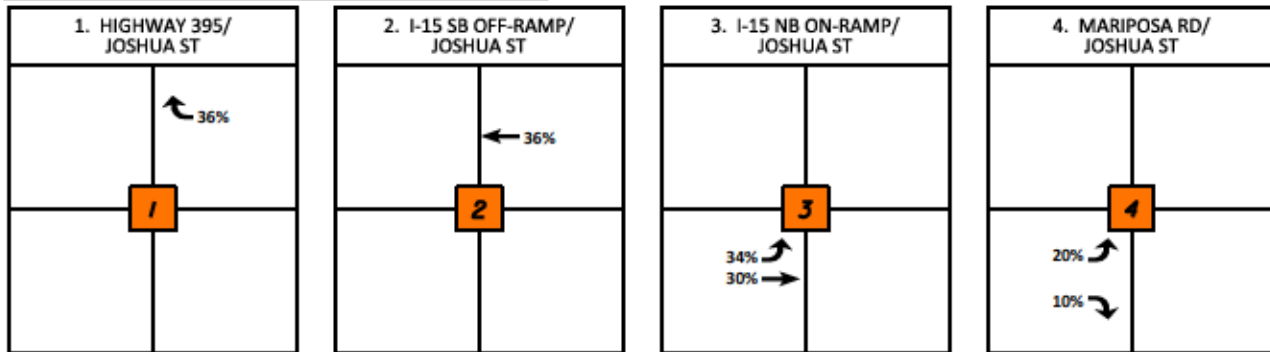
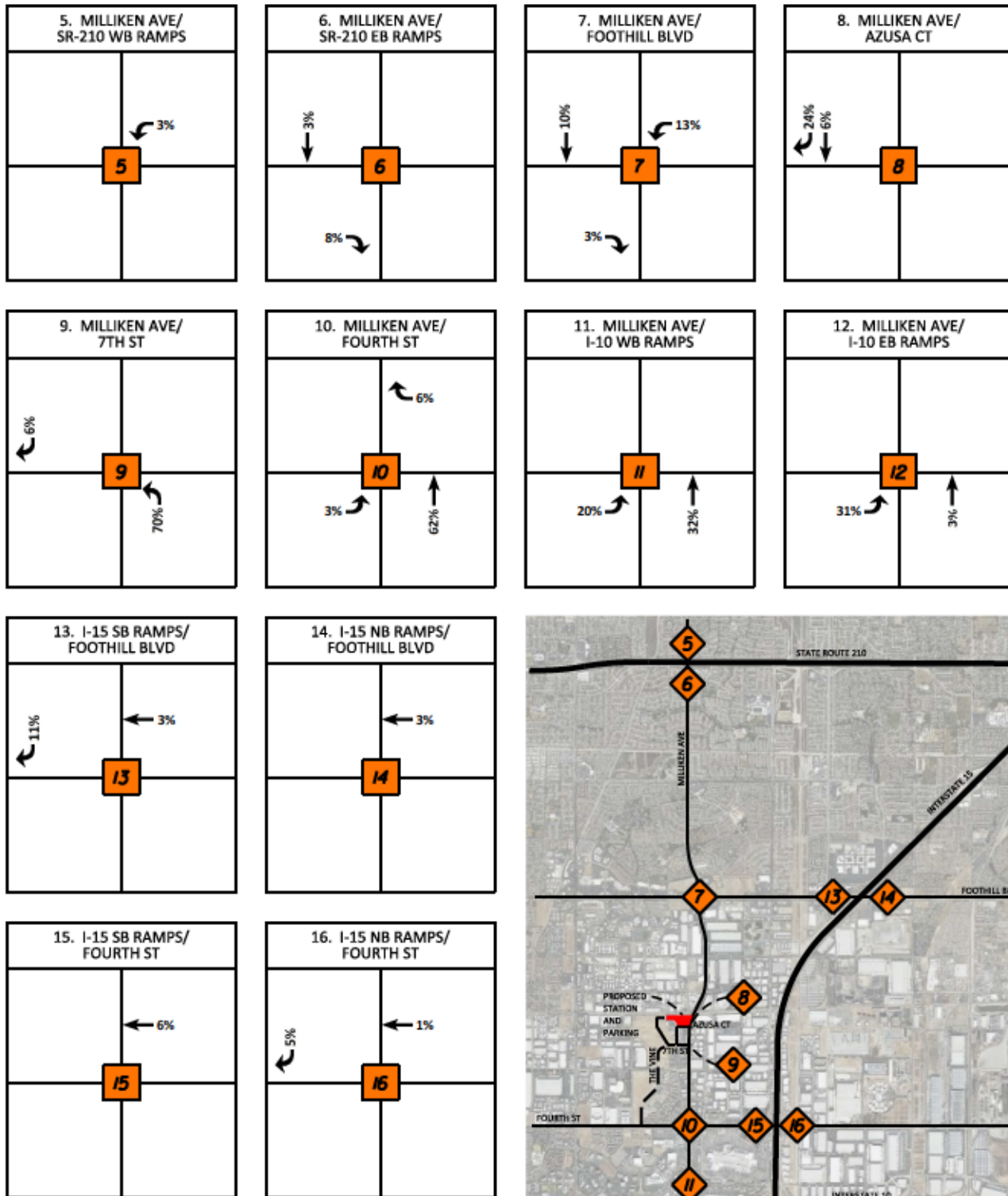


FIGURE B-1
INTERSECTION BUILD INBOUND AND OUTBOUND
TRIP ASSIGNMENTS
HESPERIA INTERSECTIONS



(PERCENTAGE)

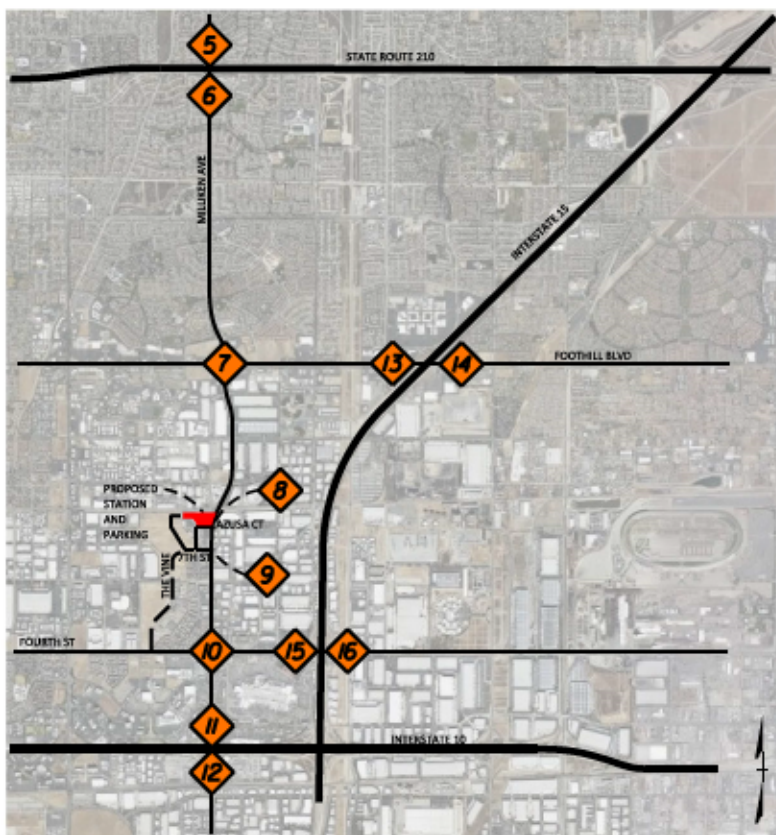
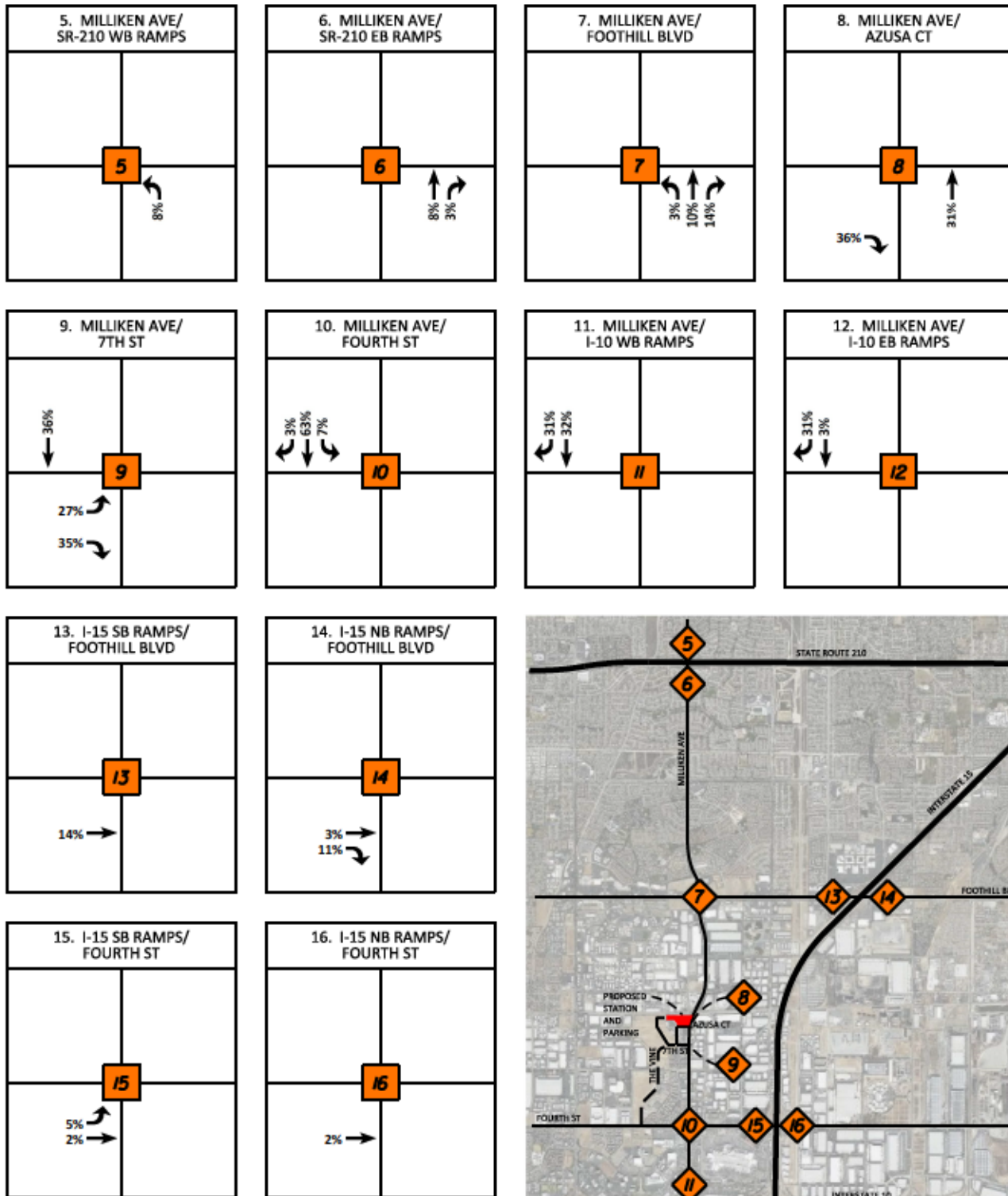


FIGURE B-2
 INTERSECTION BUILD INBOUND
 TRIP ASSIGNMENTS
 RANCHO CUCAMONGA INTERSECTIONS



(PERCENTAGE)

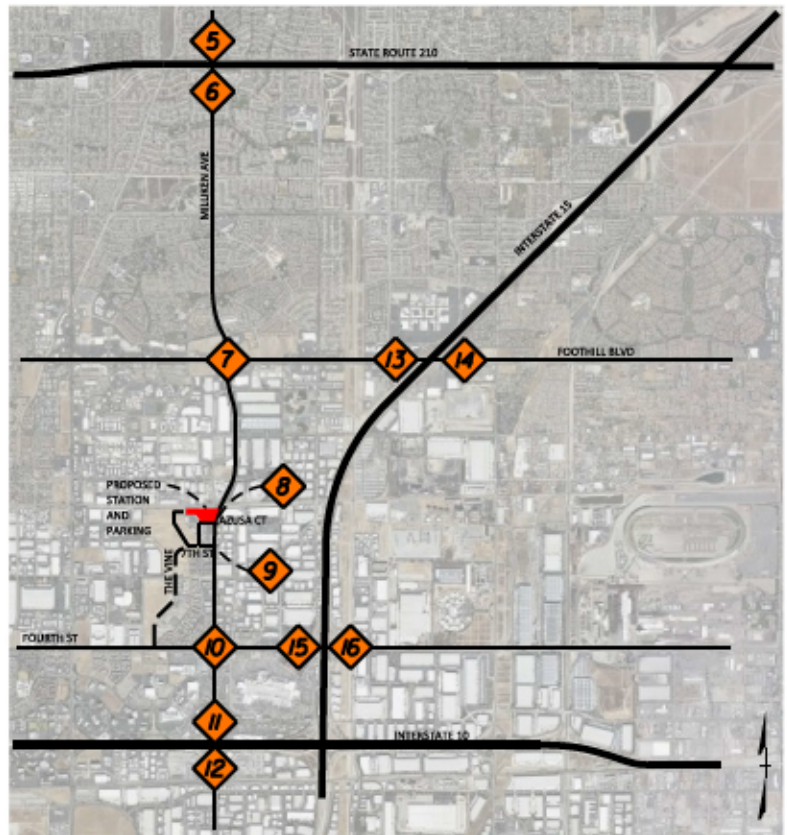
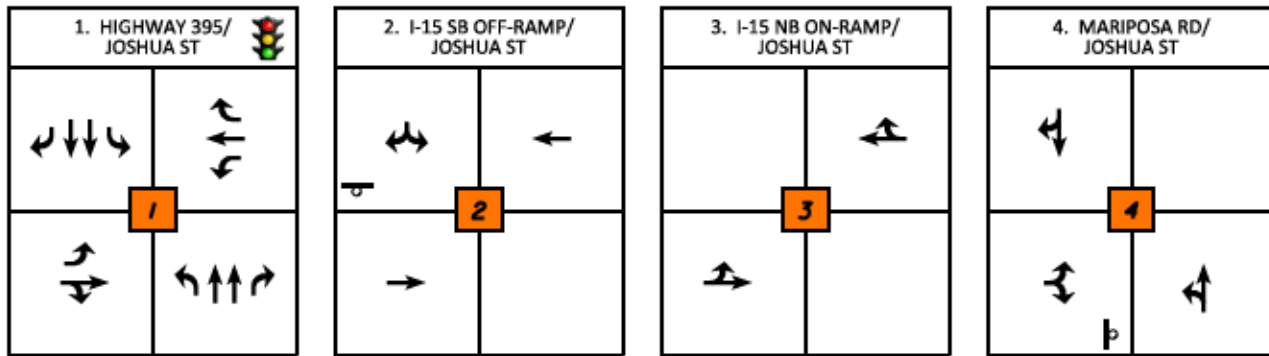


FIGURE B-3
 INTERSECTION BUILD OUTBOUND
 TRIP ASSIGNMENTS
 RANCHO CUCAMONGA INTERSECTIONS

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Appendix C

Study Intersection Lane Configurations



LEGEND





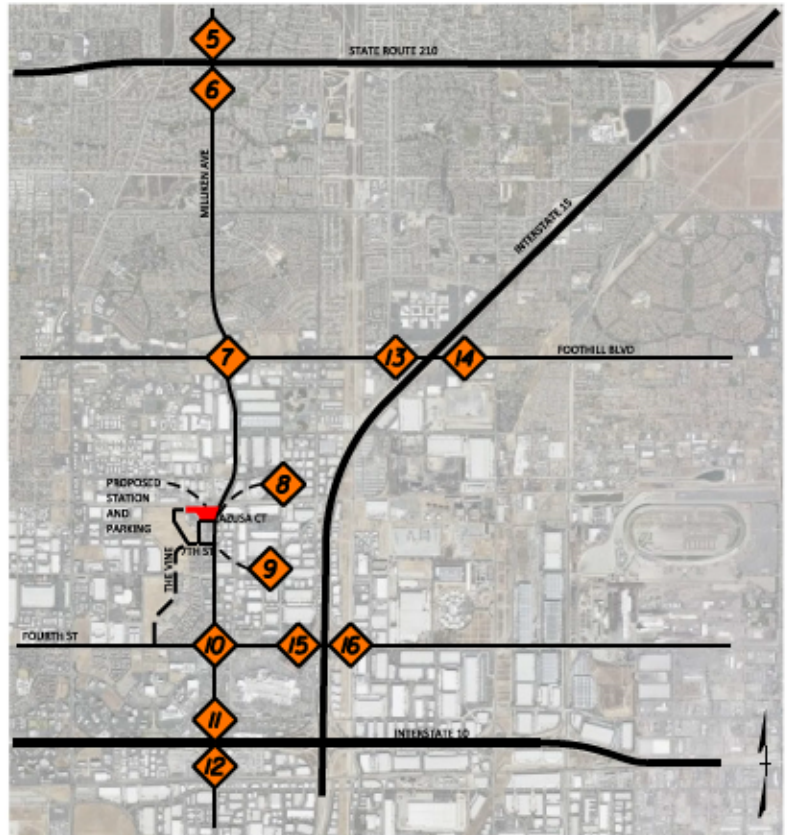
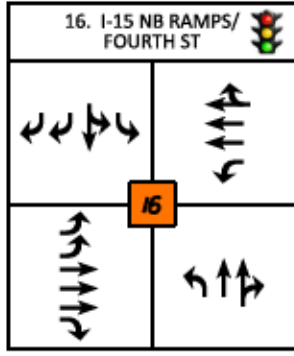
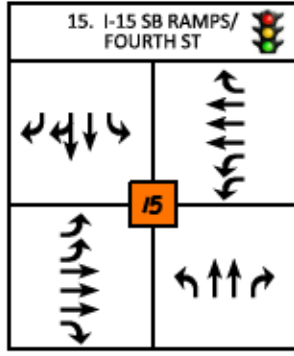
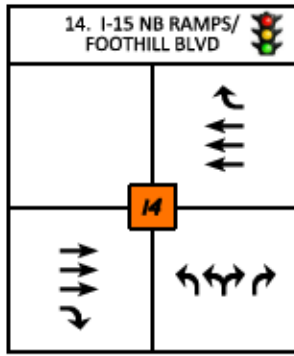
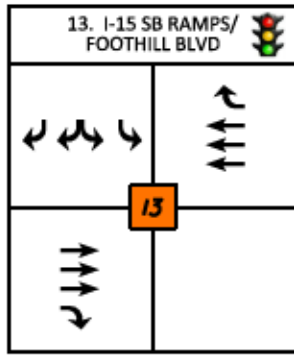
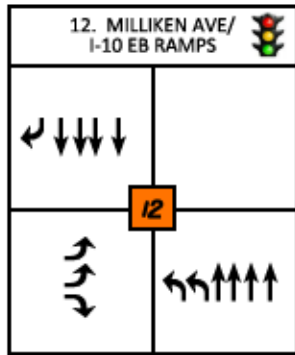
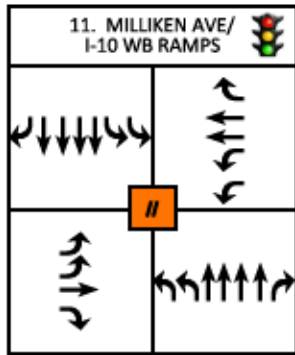
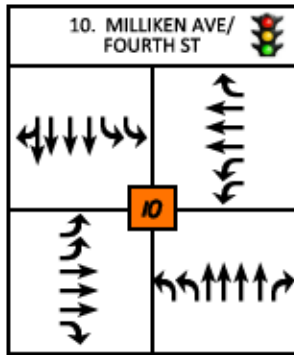
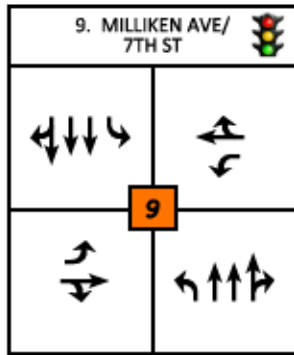
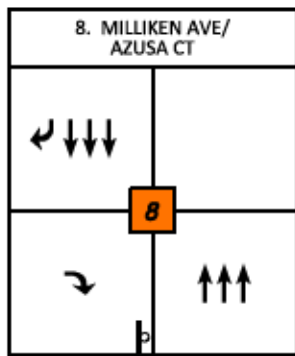
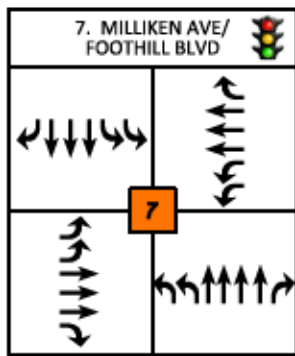
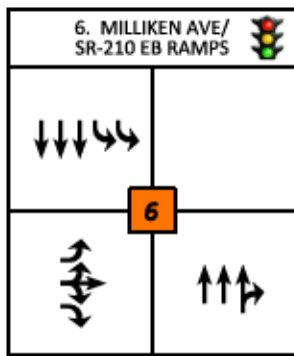
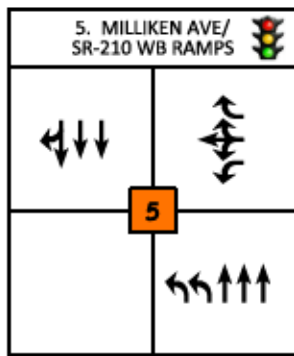
-  EXISTING GEOMETRICS
-  STUDY INTERSECTIONS
-  STOP-CONTROLLED APPROACH
-  SIGNALIZED INTERSECTIONS



FIGURE C-1
INTERSECTION LANE CONFIGURATIONS
(ALL SCENARIOS)
HESPERIA INTERSECTIONS



LEGEND

- EXISTING GEOMETRICS
- STUDY INTERSECTIONS
- STOP-CONTROLLED APPROACH
- SIGNALIZED INTERSECTIONS

FIGURE C-2
INTERSECTION LANE CONFIGURATIONS
(ALL SCENARIOS)
RANCHO CUCAMONGA INTERSECTIONS

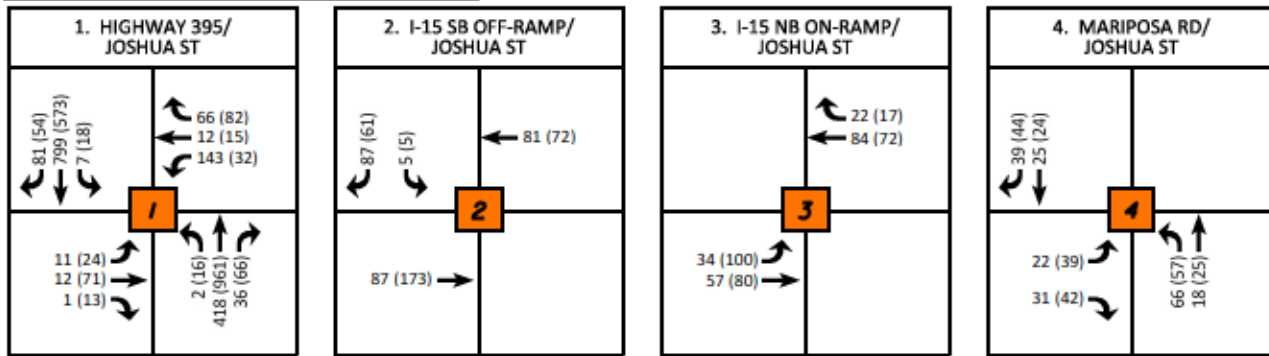
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Appendix D

Intersection Turning Movement Volumes (All Scenarios)

Appendix D.1 - 2020 Existing Turning Movement Volumes

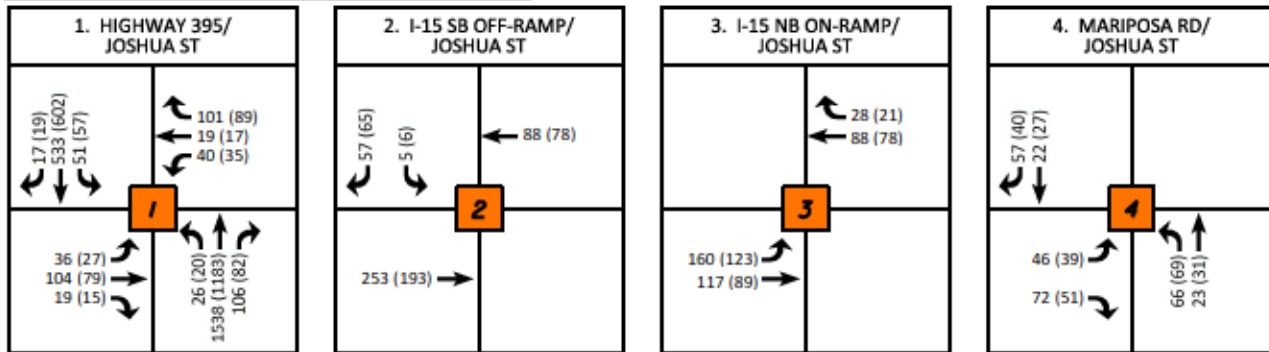
WEEKDAYS AM AND PM PEAK HOUR VOLUMES



LEGEND

XX (YY) = AM (PM) PEAK HOUR VOLUMES

FRIDAY PM AND SUNDAY PM PEAK HOUR VOLUMES

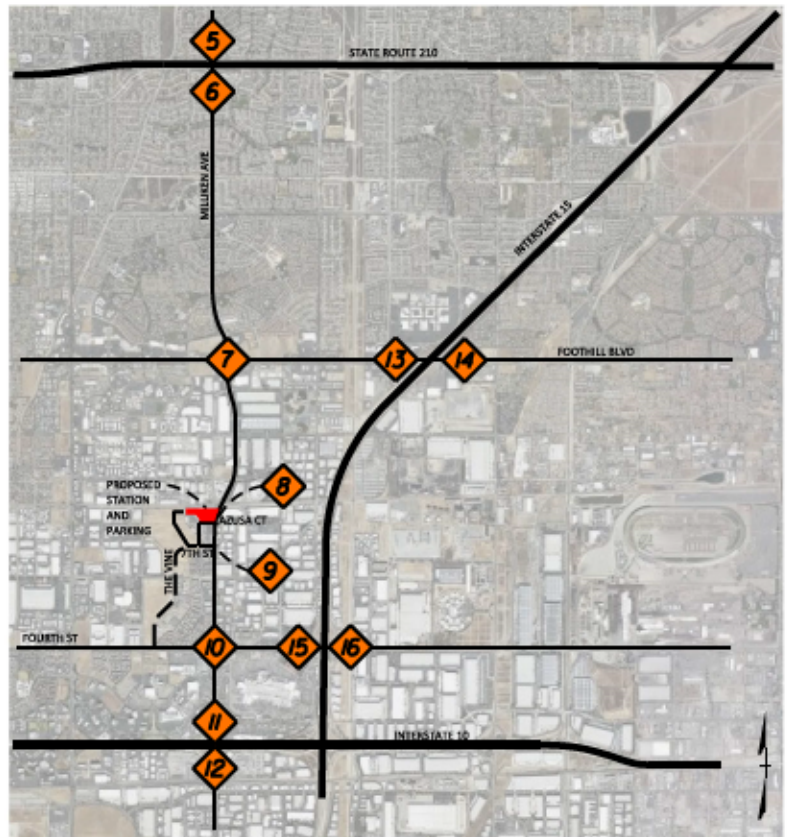
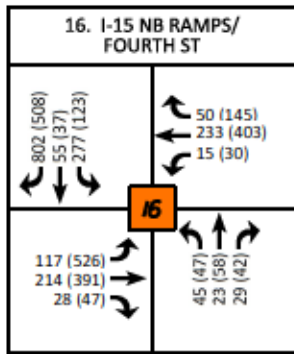
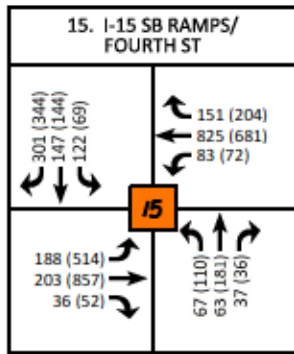
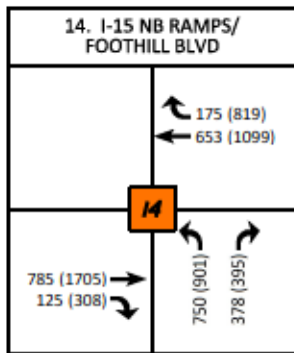
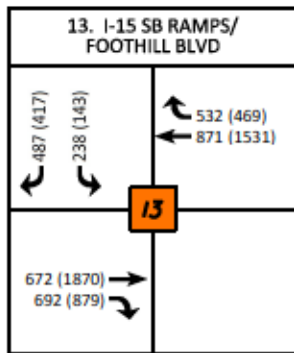
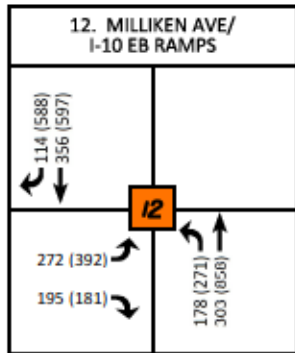
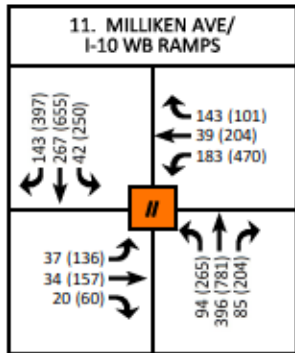
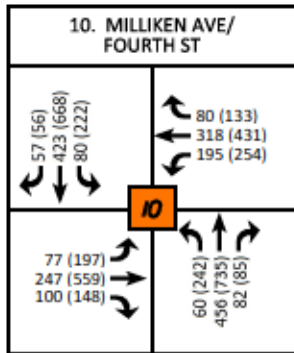
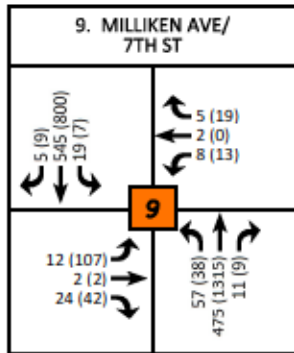
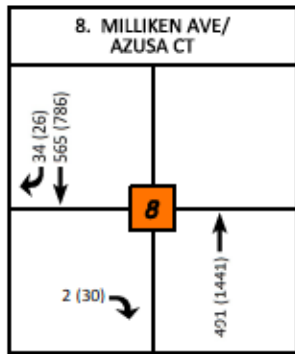
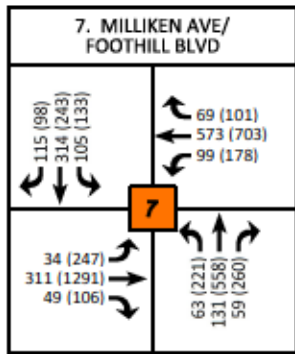
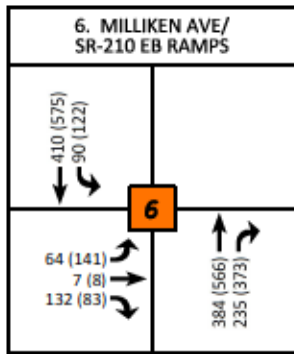
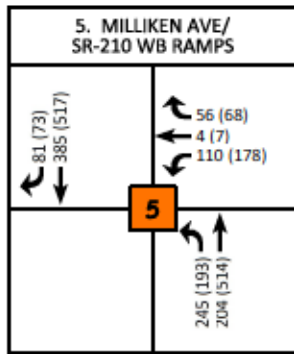


LEGEND

XX (YY) = FRI PM (SUN PM) PEAK HOUR VOLUMES

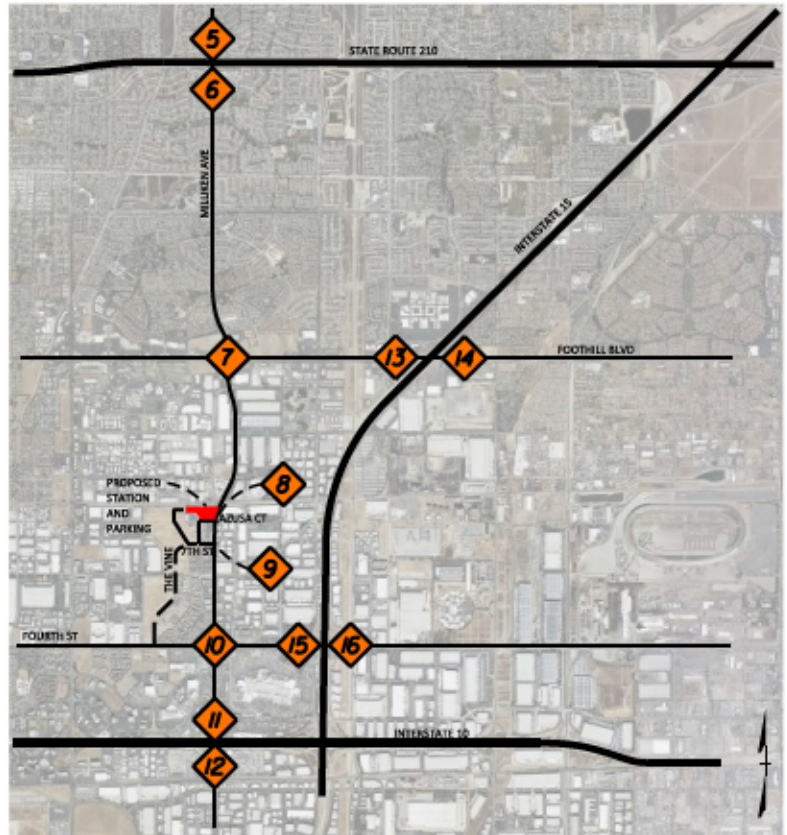
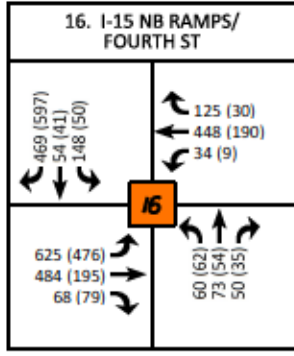
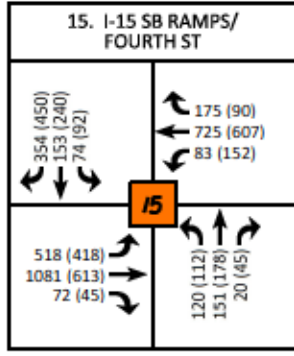
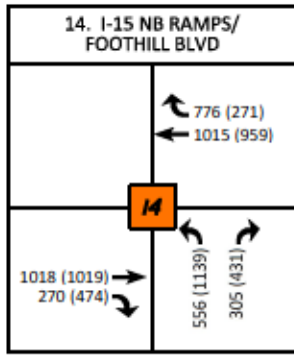
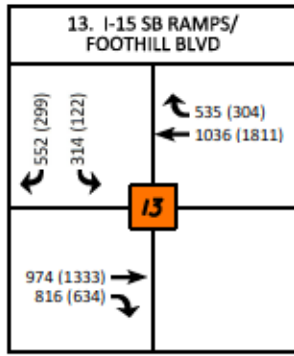
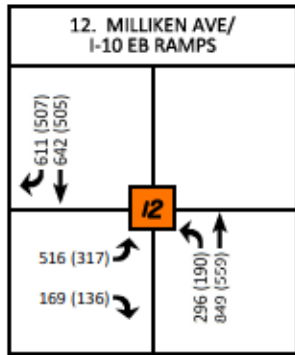
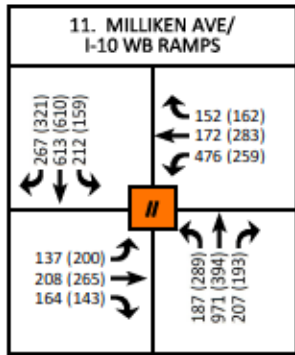
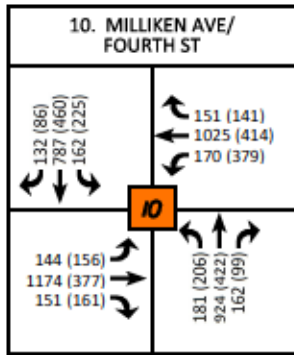
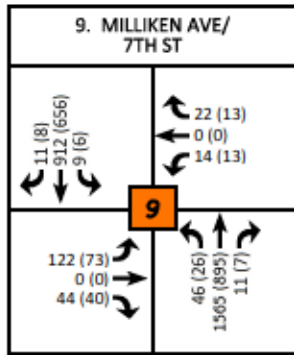
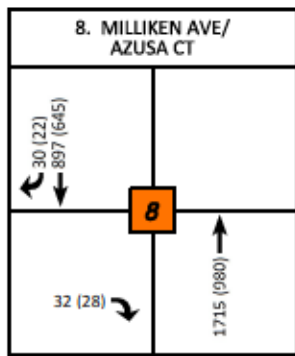
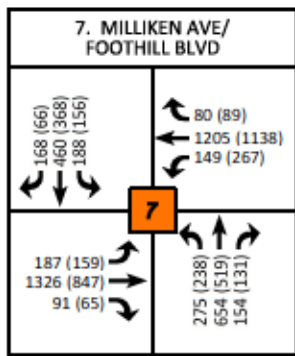
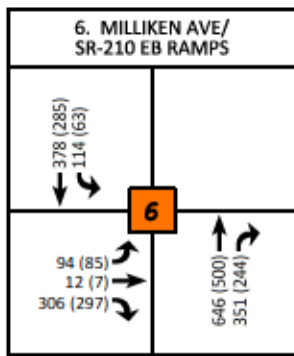
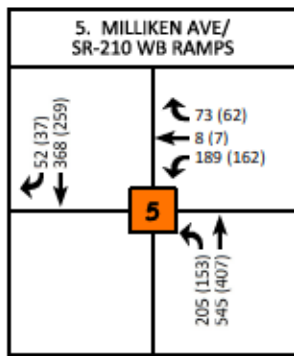


FIGURE D-1
INTERSECTION PEAK HOUR VOLUMES
2020 EXISTING CONDITIONS (ALL SCENARIOS)
HESPERIA INTERSECTIONS



LEGEND
XX (YY) = AM (PM) PEAK HOUR VOLUMES

FIGURE D-2
INTERSECTION PEAK HOUR VOLUMES
2020 EXISTING CONDITIONS (WEEKDAYS AM/PM)
RANCHO CUCAMONGA INTERSECTIONS

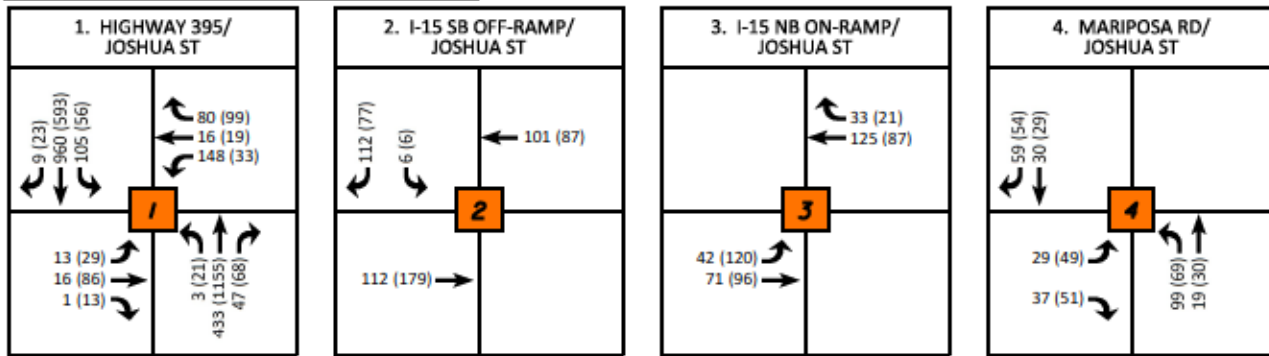


LEGEND
XX (YY) = FRI PM (SUN PM) PEAK HOUR VOLUMES

FIGURE D-3
INTERSECTION PEAK HOUR VOLUMES
2020 EXISTING CONDITIONS (WEEKENDS FRIDAY PM/SUNDAY PM)
RANCHO CUCAMONGA INTERSECTIONS

Appendix D.2 - 2025 No Build Turning Movement Volumes

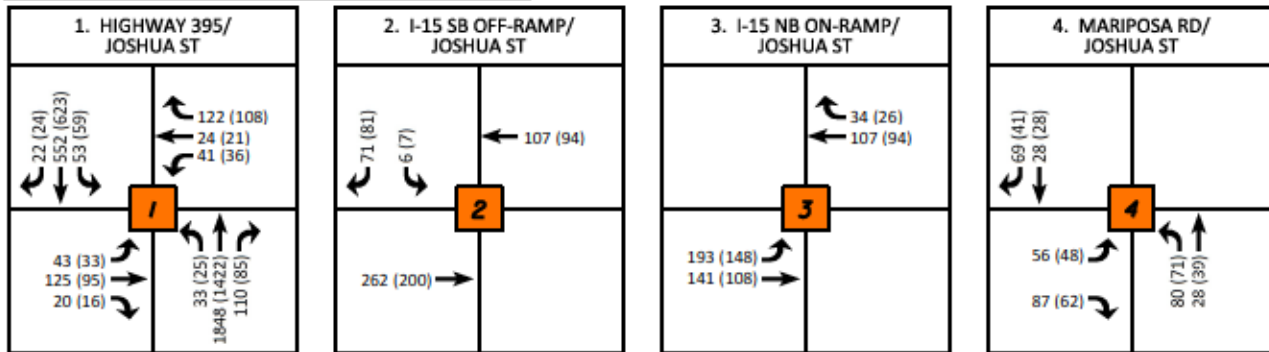
WEEKDAYS AM AND PM PEAK HOUR VOLUMES



LEGEND

XX (YY) = AM (PM) PEAK HOUR VOLUMES

FRIDAY PM AND SUNDAY PM PEAK HOUR VOLUMES

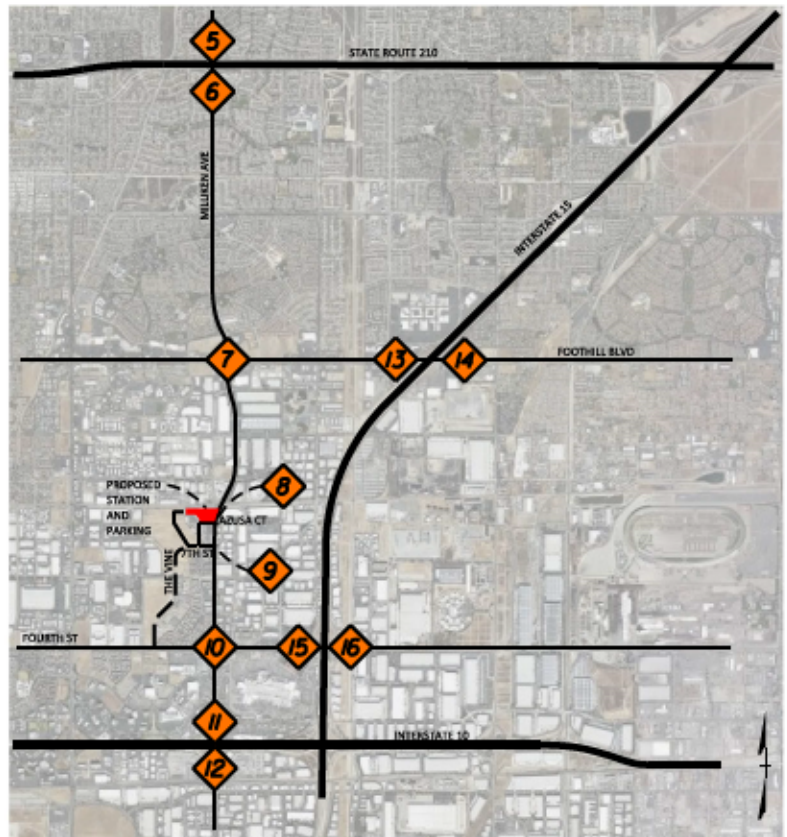
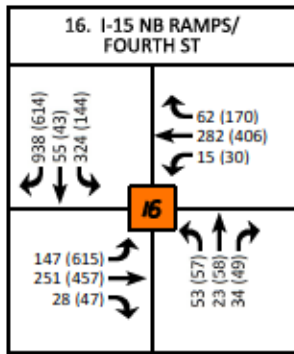
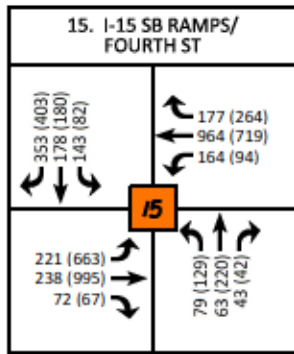
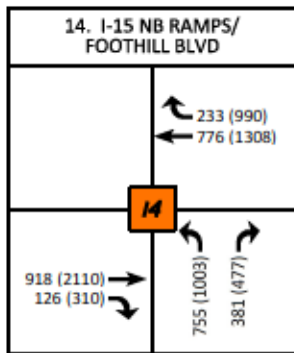
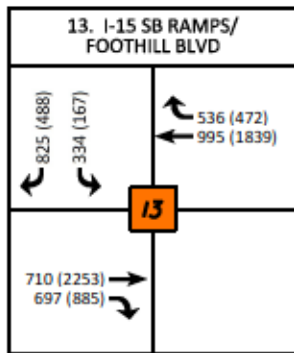
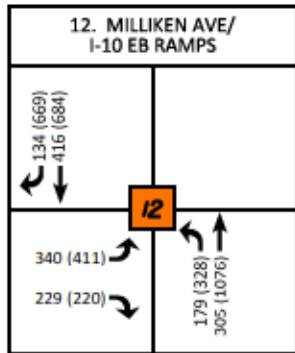
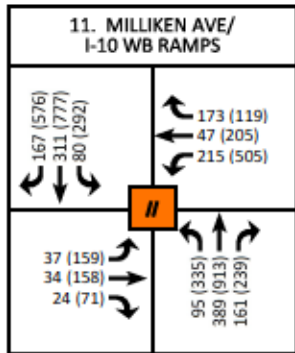
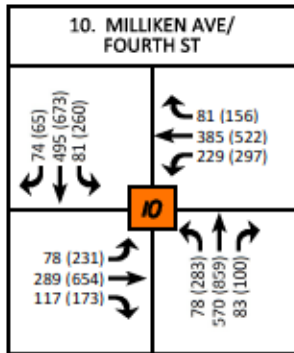
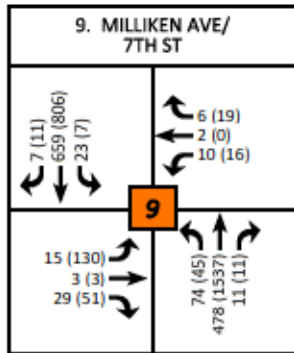
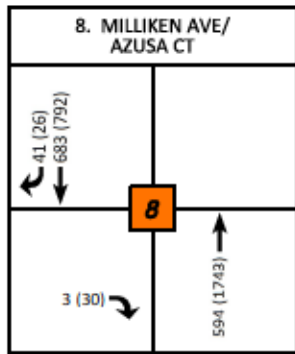
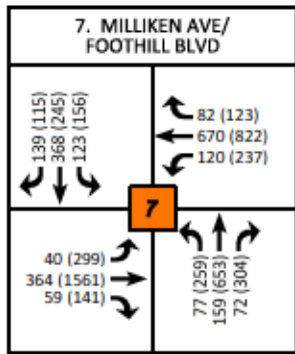
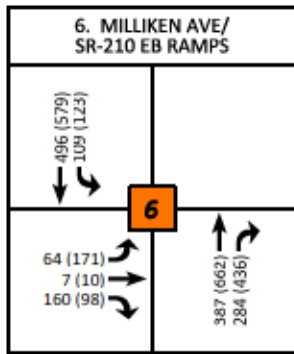
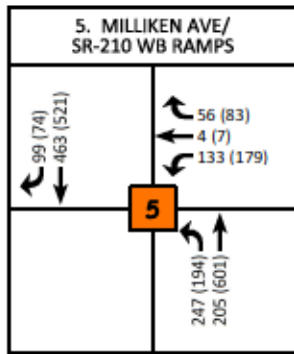


LEGEND

XX (YY) = FRI PM (SUN PM) PEAK HOUR VOLUMES

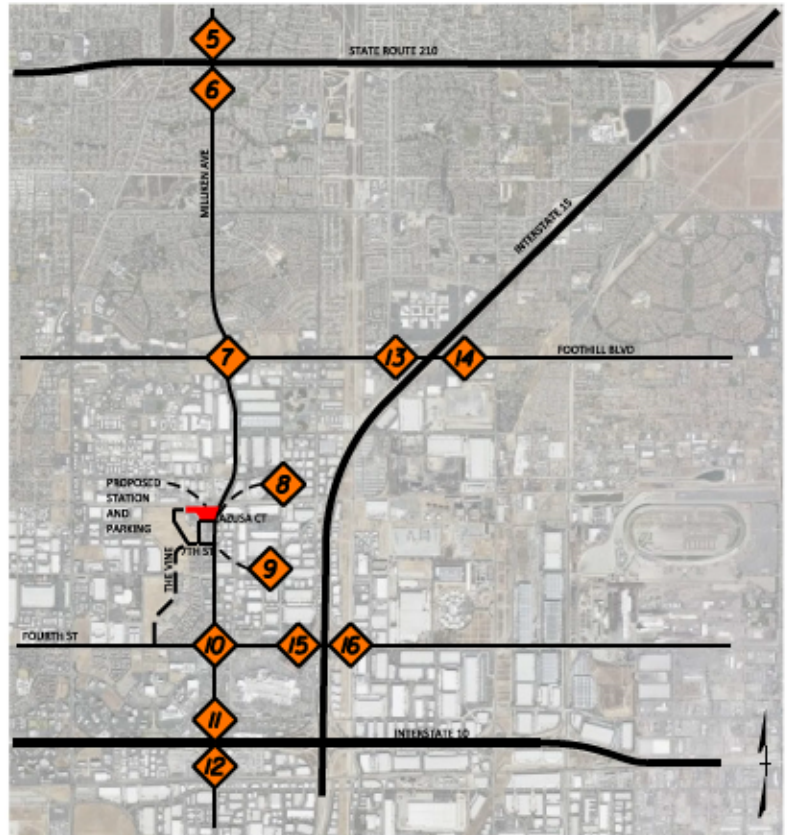
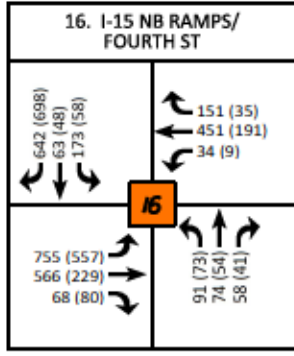
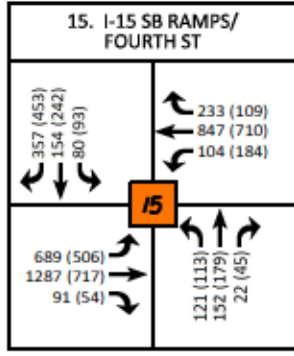
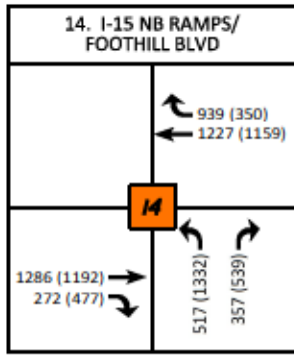
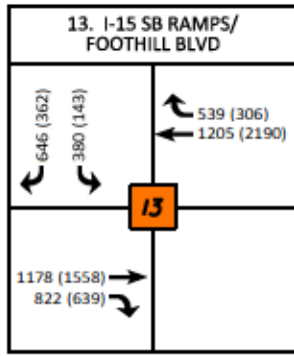
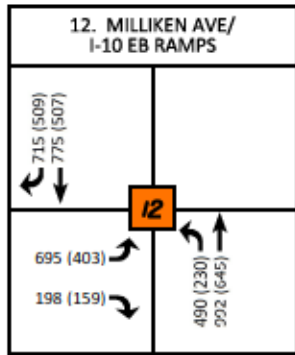
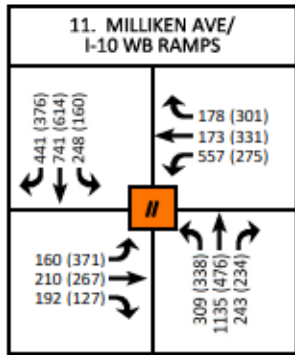
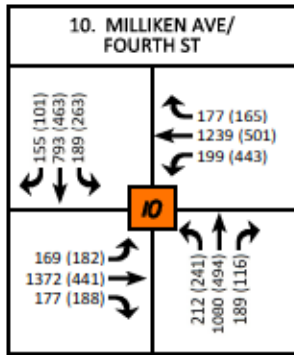
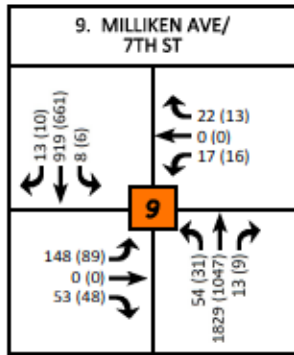
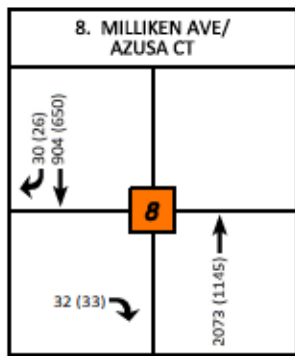
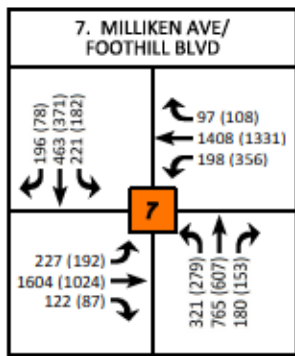
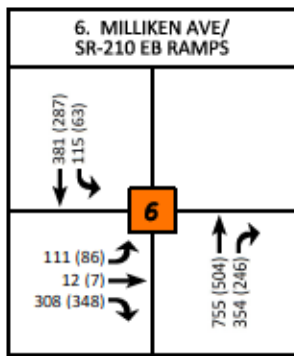
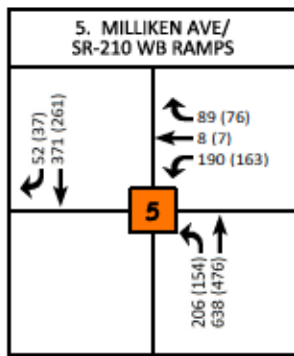


FIGURE D-4
INTERSECTION PEAK HOUR VOLUMES
2025 NO BUILD (ALL SCENARIOS)
HESPERIA INTERSECTIONS



LEGEND
XX (YY) = AM (PM) PEAK HOUR VOLUMES

FIGURE D-5
INTERSECTION PEAK HOUR VOLUMES
2025 NO BUILD (WEEKDAYS AM/PM)
RANCHO CUCAMONGA INTERSECTIONS

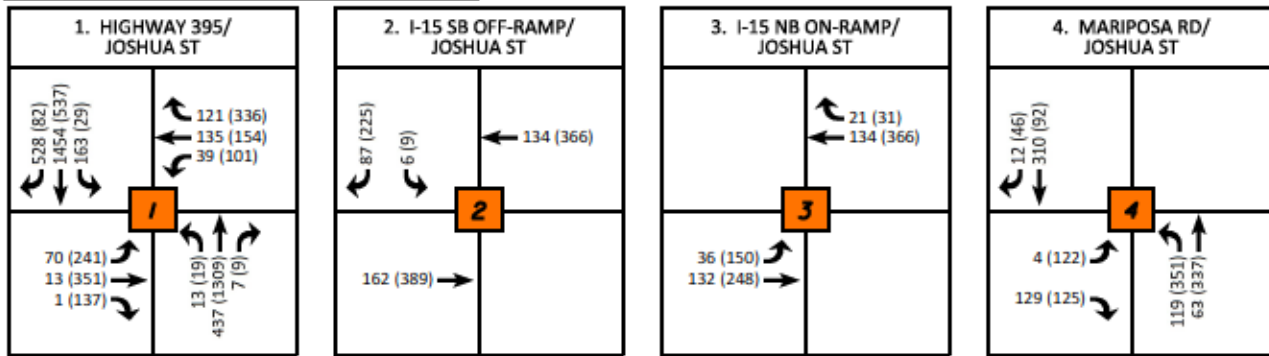


LEGEND
XX (YY) = FRI PM (SUN PM) PEAK HOUR VOLUMES

FIGURE D-6
INTERSECTION PEAK HOUR VOLUMES
2025 NO BUILD (WEEKENDS FRIDAY PM/SUNDAY PM)
RANCHO CUCAMONGA INTERSECTIONS

Appendix D.3 - 2045 No Build Turning Movement Volumes

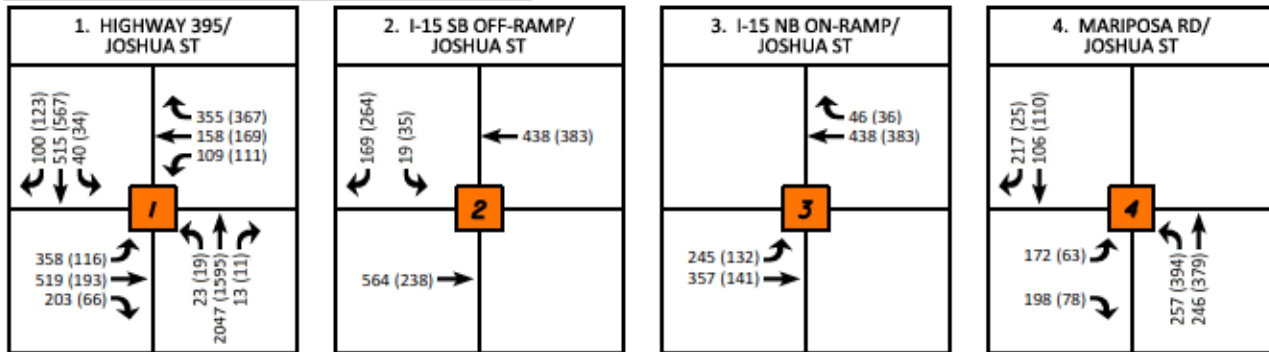
WEEKDAYS AM AND PM PEAK HOUR VOLUMES



LEGEND

XX (YY) = AM (PM) PEAK HOUR VOLUMES

FRIDAY PM AND SUNDAY PM PEAK HOUR VOLUMES

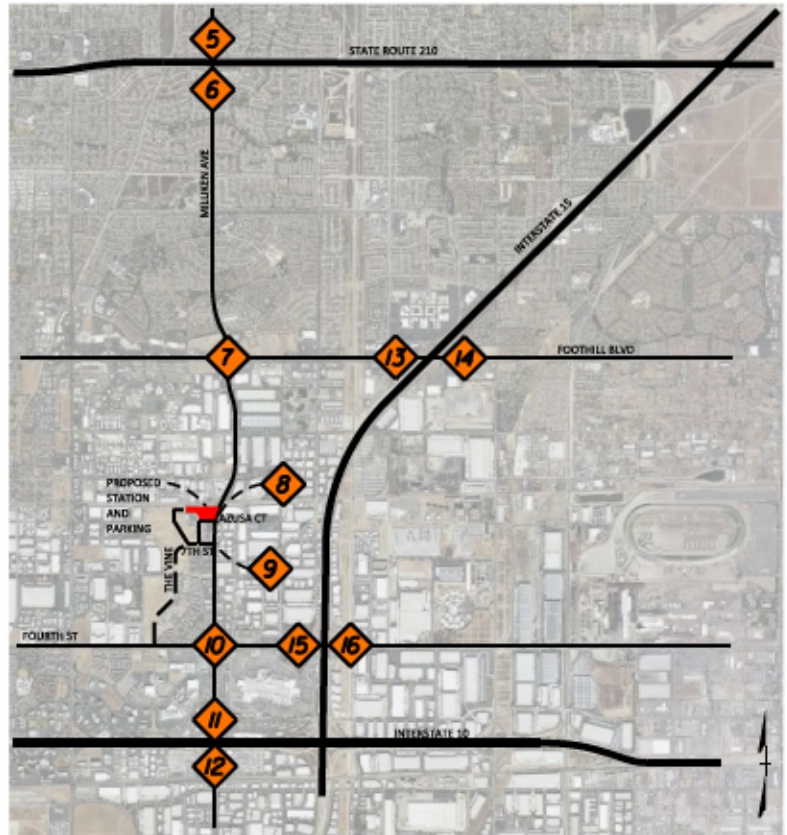
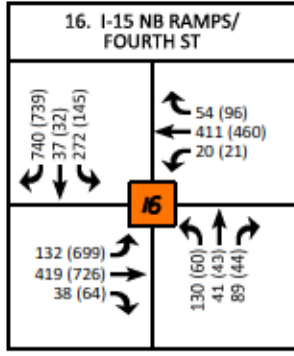
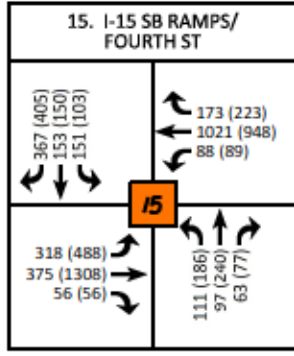
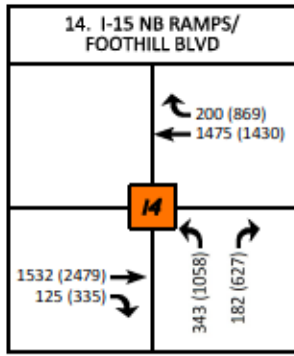
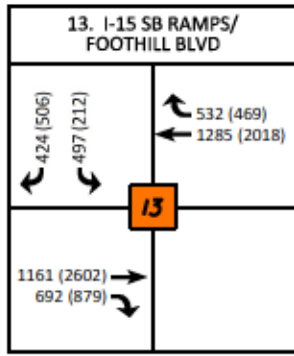
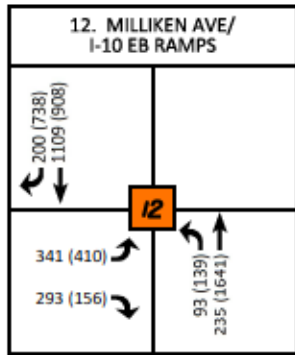
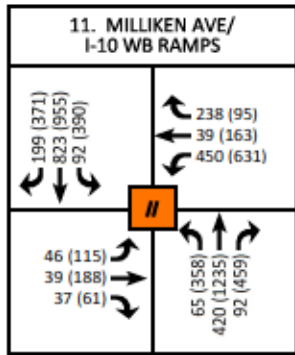
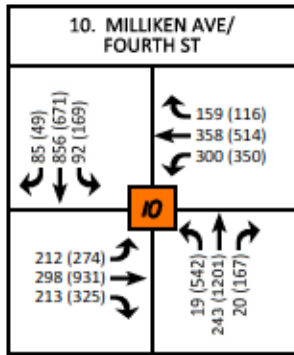
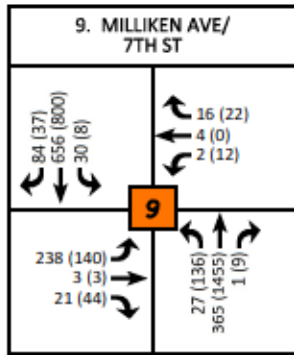
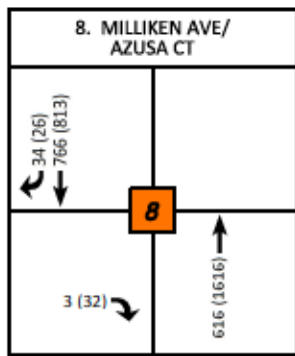
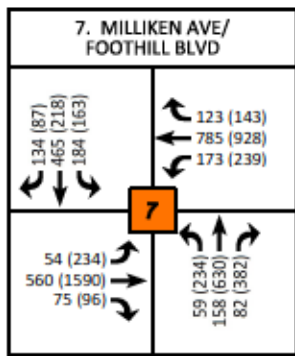
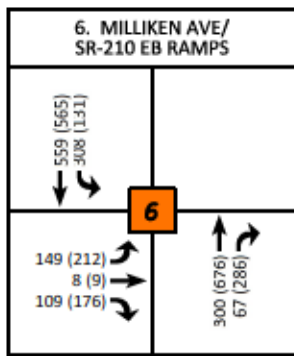
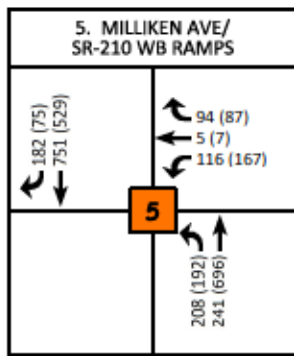


LEGEND

XX (YY) = FRI PM (SUN PM) PEAK HOUR VOLUMES

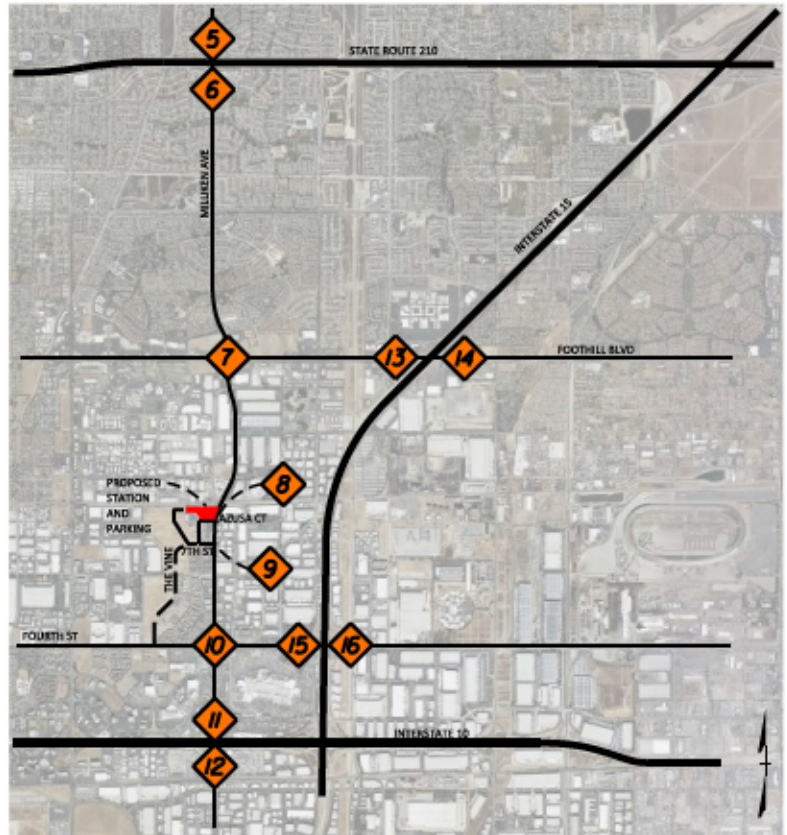
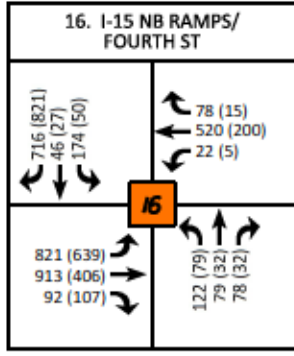
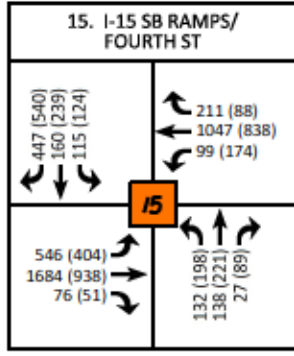
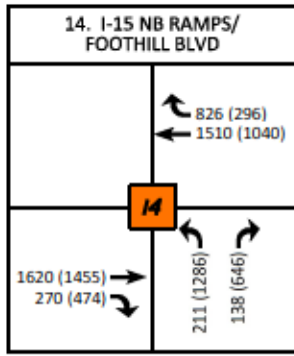
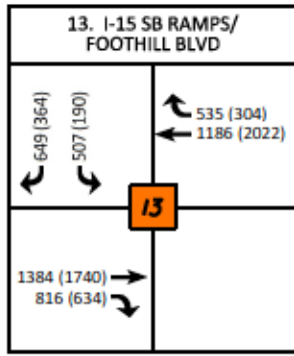
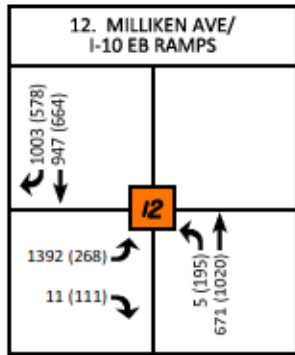
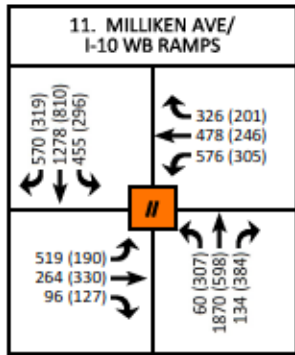
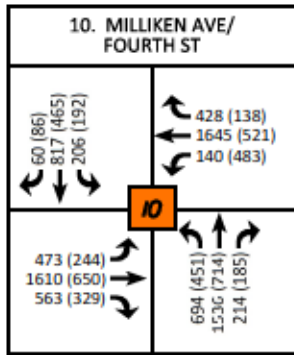
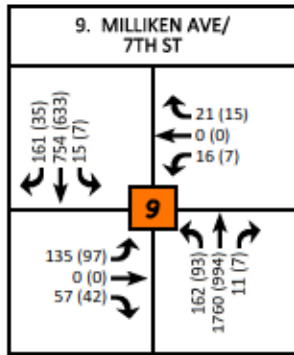
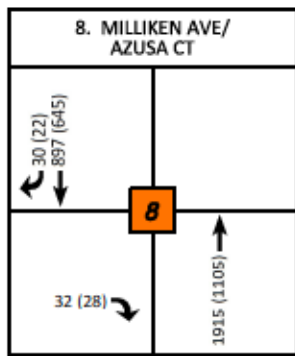
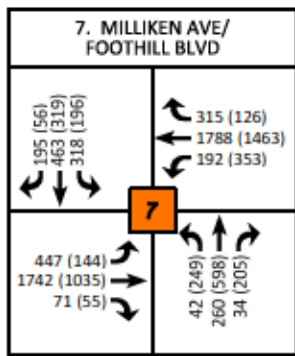
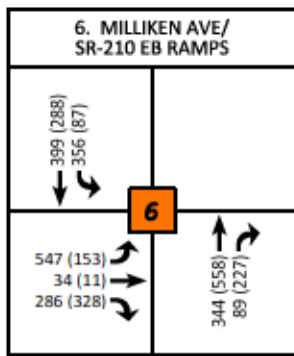
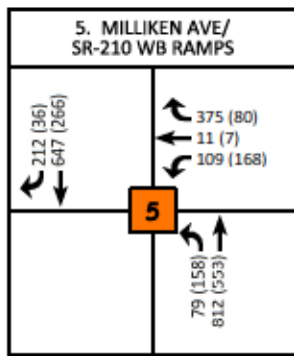


FIGURE D-7
INTERSECTION PEAK HOUR VOLUMES
2045 NO BUILD (ALL SCENARIOS)
HESPERIA INTERSECTIONS



LEGEND
XX (YY) = AM (PM) PEAK HOUR VOLUMES

FIGURE D-8
INTERSECTION PEAK HOUR VOLUMES
2045 NO BUILD (WEEKDAYS AM/PM)
RANCHO CUCAMONGA INTERSECTIONS

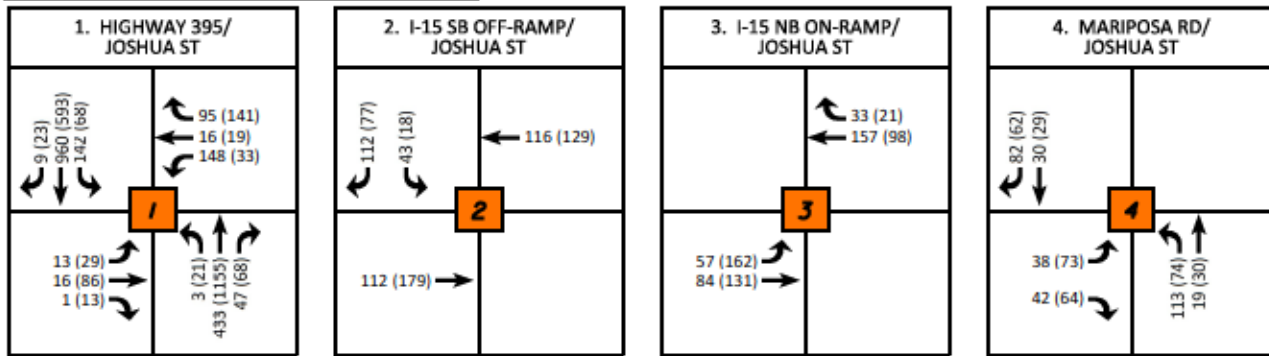


LEGEND
XX (YY) = FRI PM (SUN PM) PEAK HOUR VOLUMES

FIGURE D-9
INTERSECTION PEAK HOUR VOLUMES
2045 NO BUILD (WEEKENDS FRIDAY PM/SUNDAY PM)
RANCHO CUCAMONGA INTERSECTIONS

Appendix D.4 - 2025 Build Turning Movement Volumes

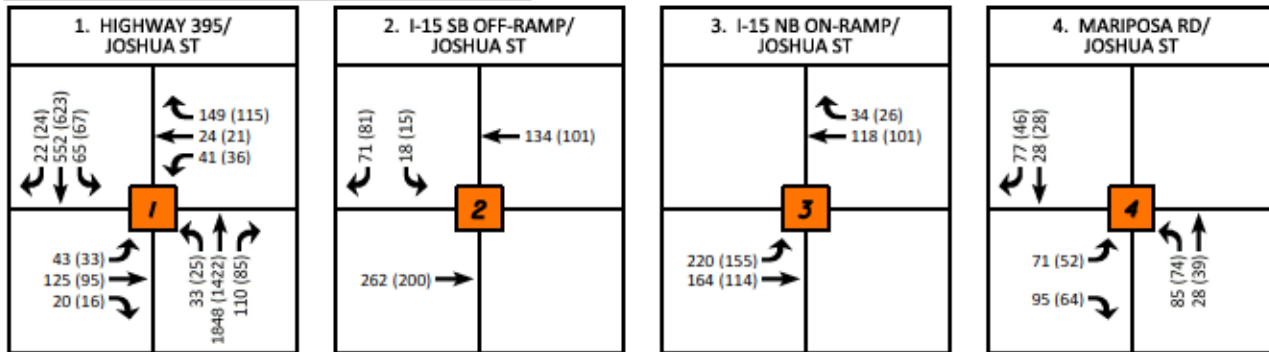
WEEKDAYS AM AND PM PEAK HOUR VOLUMES



LEGEND

XX (YY) = AM (PM) PEAK HOUR VOLUMES

FRIDAY PM AND SUNDAY PM PEAK HOUR VOLUMES

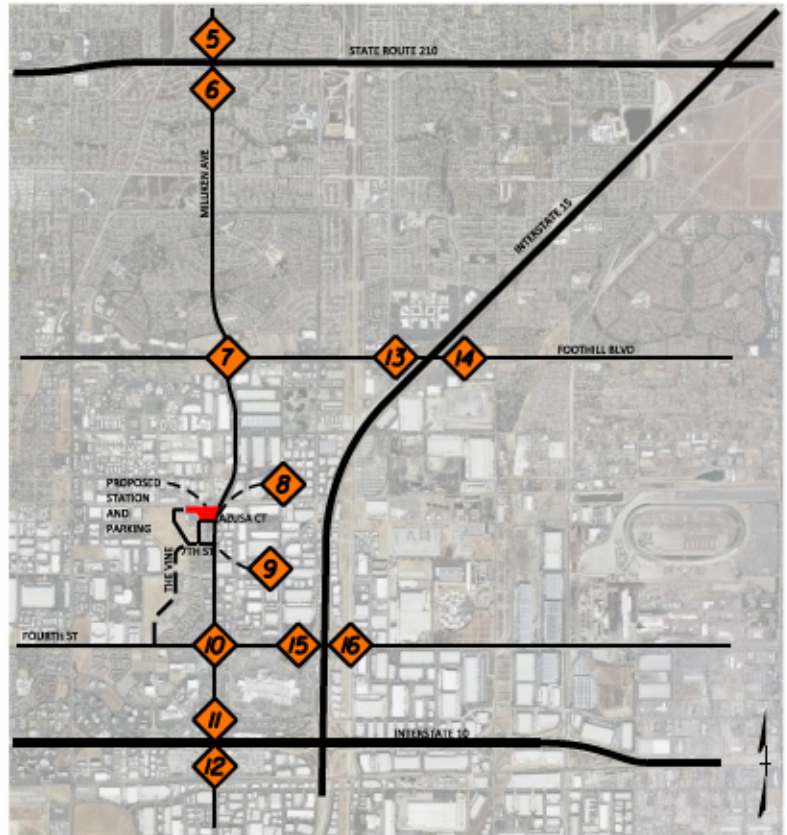
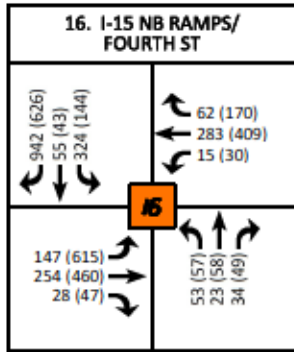
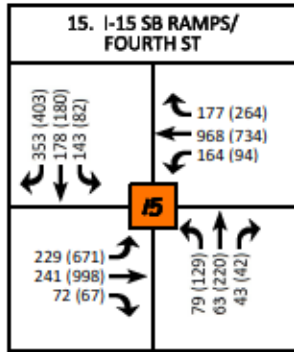
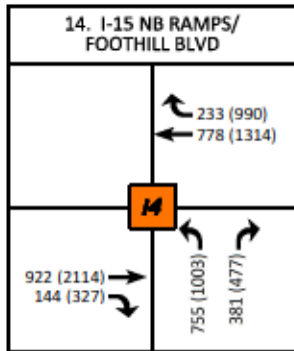
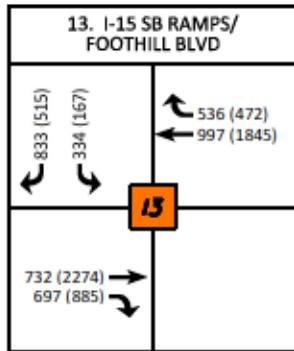
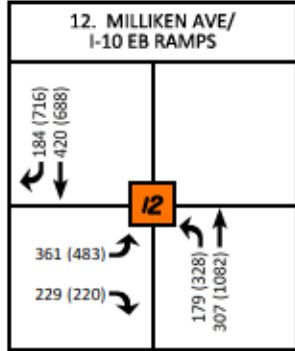
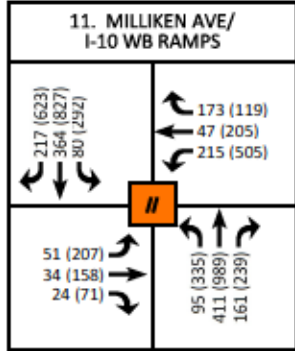
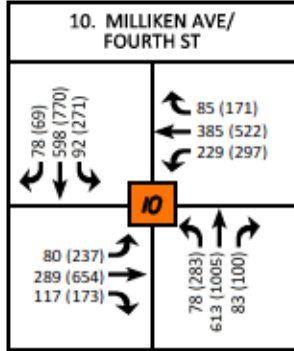
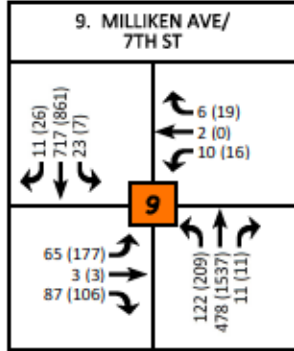
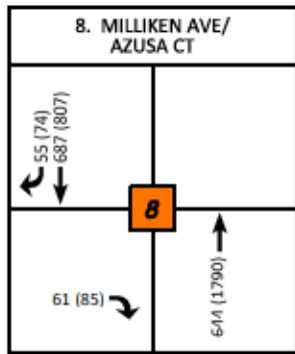
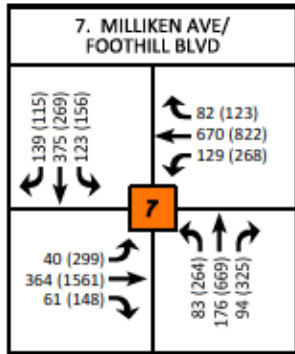
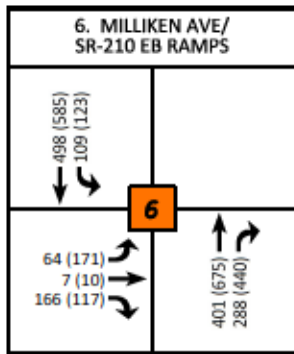
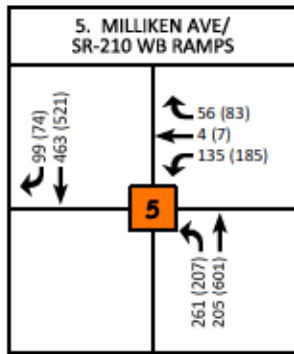


LEGEND

XX (YY) = FRI PM (SUN PM) PEAK HOUR VOLUMES

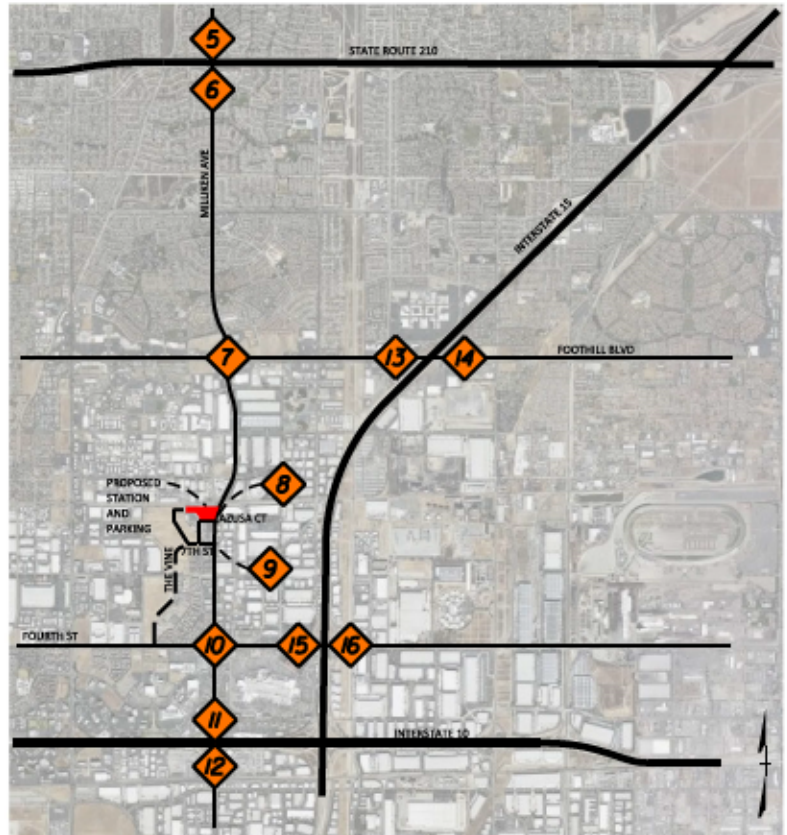
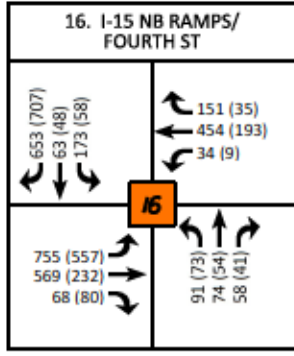
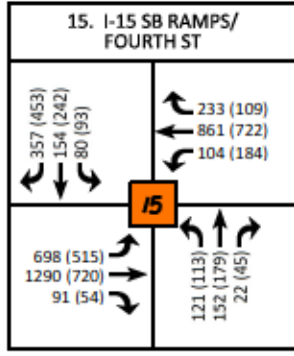
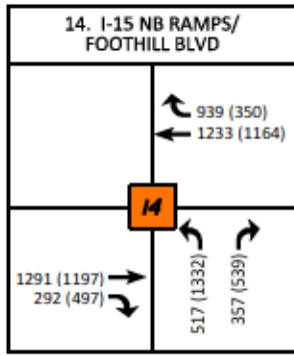
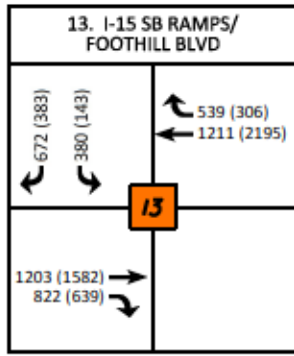
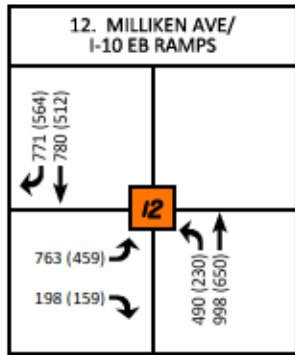
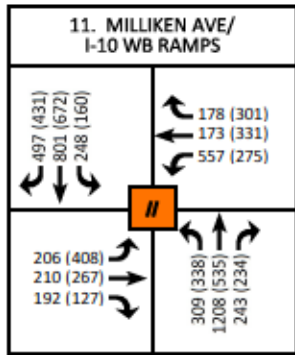
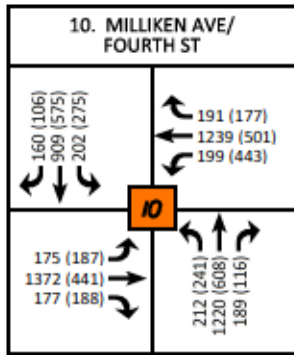
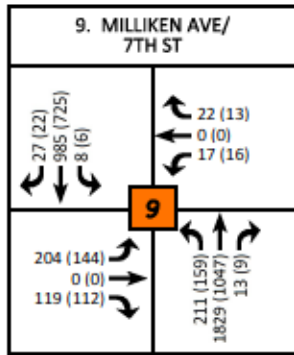
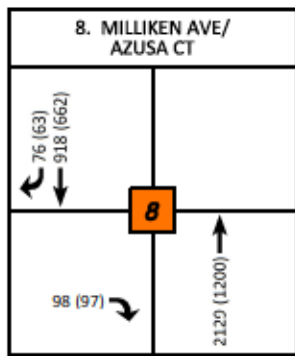
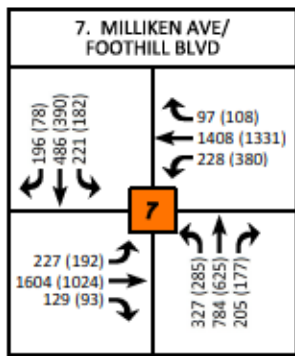
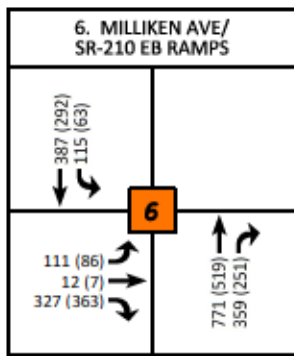
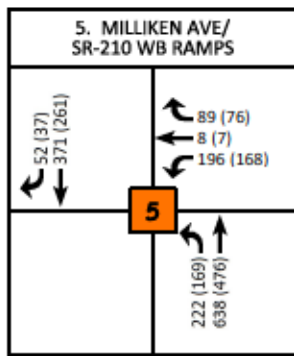


FIGURE D-10
INTERSECTION PEAK HOUR VOLUMES
2025 BUILD (ALL SCENARIOS)
HESPERIA INTERSECTIONS



LEGEND
XX (YY) = AM (PM) PEAK HOUR VOLUMES

FIGURE D-11
INTERSECTION PEAK HOUR VOLUMES
2025 BUILD (WEEKDAYS AM/PM)
RANCHO CUCAMONGA INTERSECTIONS

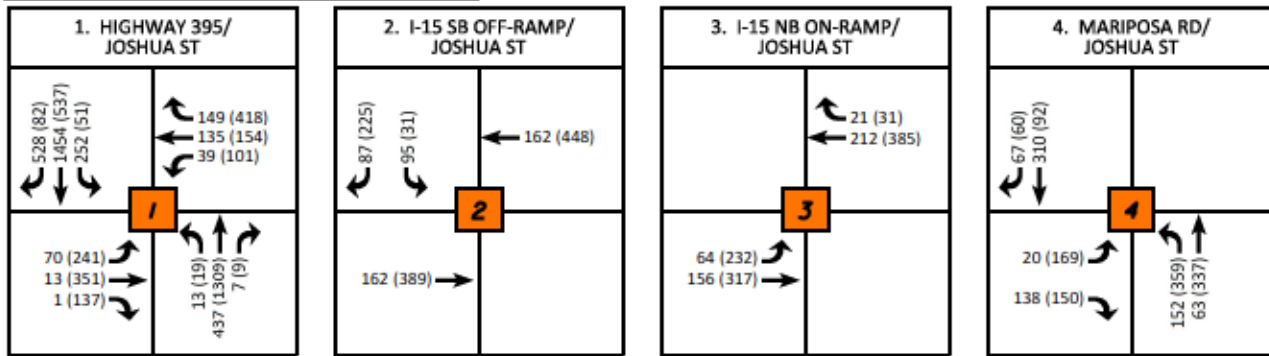


LEGEND
XX (YY) = FRI PM (SUN PM) PEAK HOUR VOLUMES

FIGURE D-12
INTERSECTION PEAK HOUR VOLUMES
2025 BUILD (WEEKENDS FRIDAY PM/SUNDAY PM)
RANCHO CUCAMONGA INTERSECTIONS

Appendix D.5 - 2045 Build Turning Movement Volumes

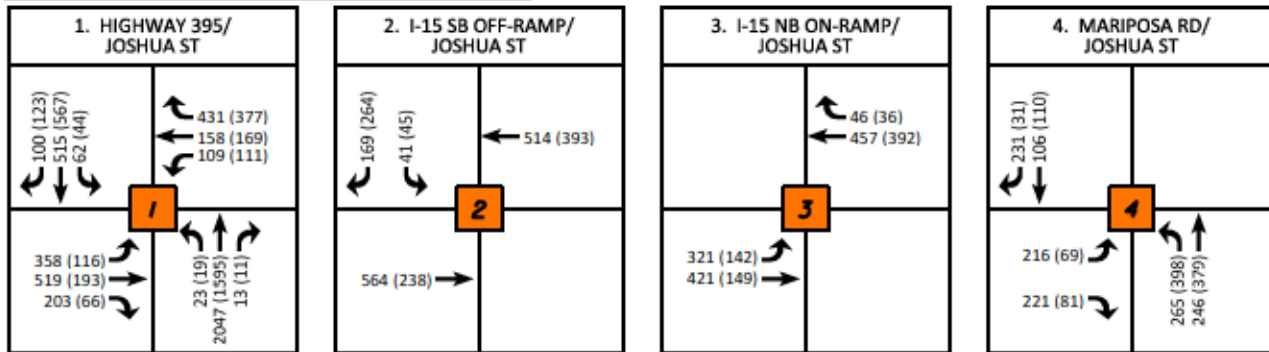
WEEKDAYS AM AND PM PEAK HOUR VOLUMES



LEGEND

XX (YY) = AM (PM) PEAK HOUR VOLUMES

FRIDAY PM AND SUNDAY PM PEAK HOUR VOLUMES

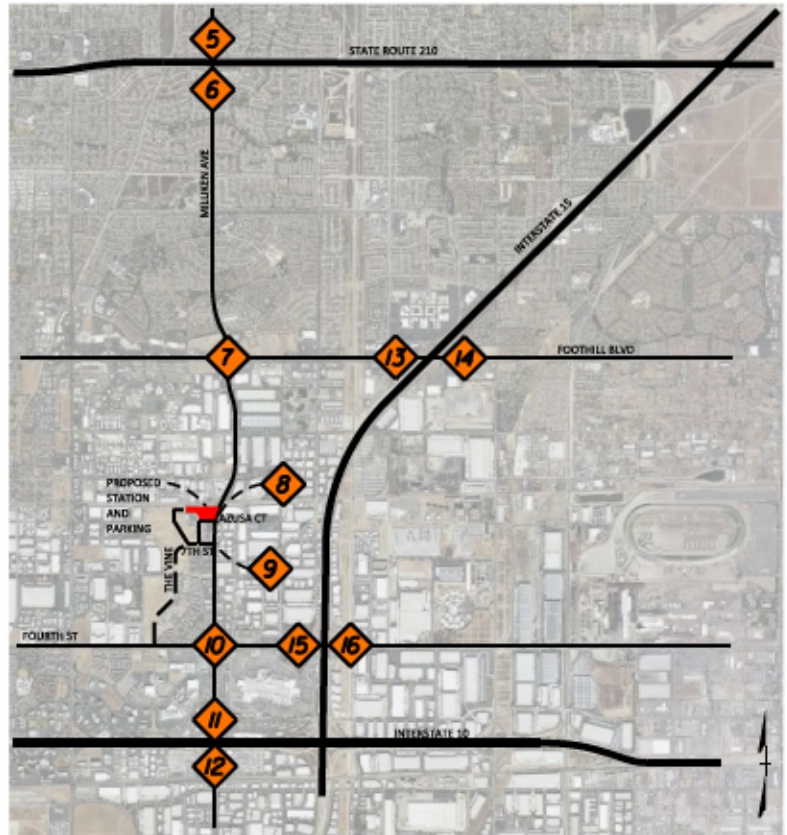
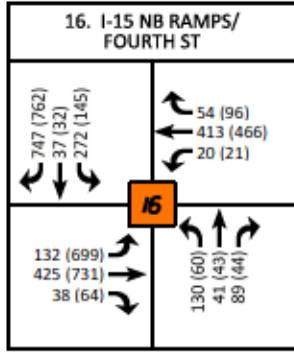
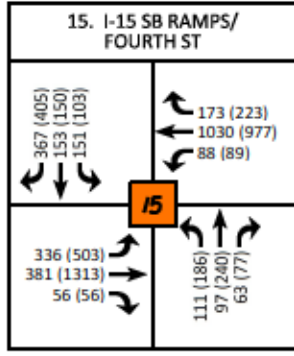
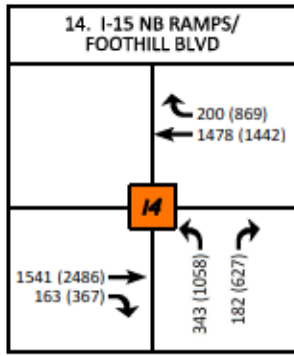
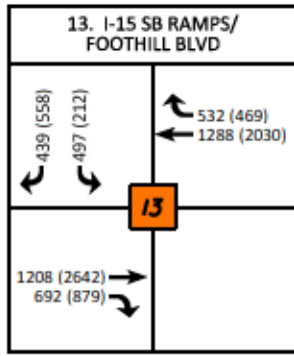
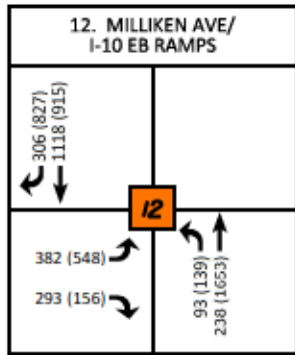
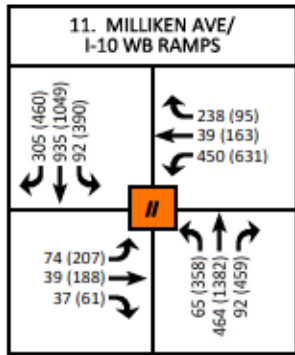
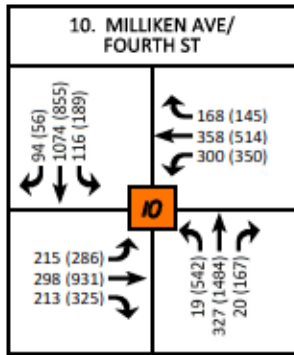
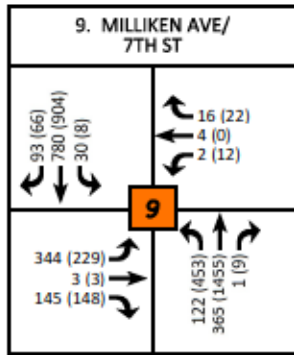
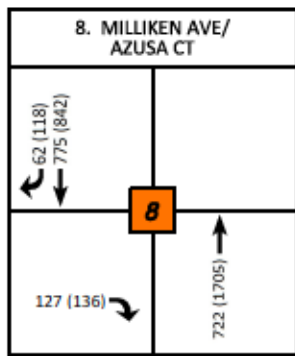
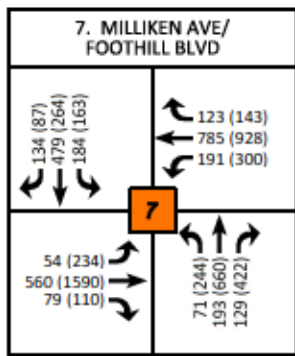
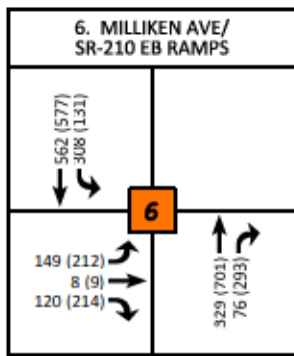
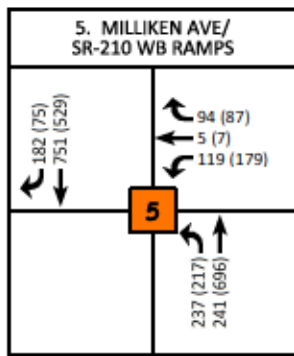


LEGEND

XX (YY) = FRI PM (SUN PM) PEAK HOUR VOLUMES

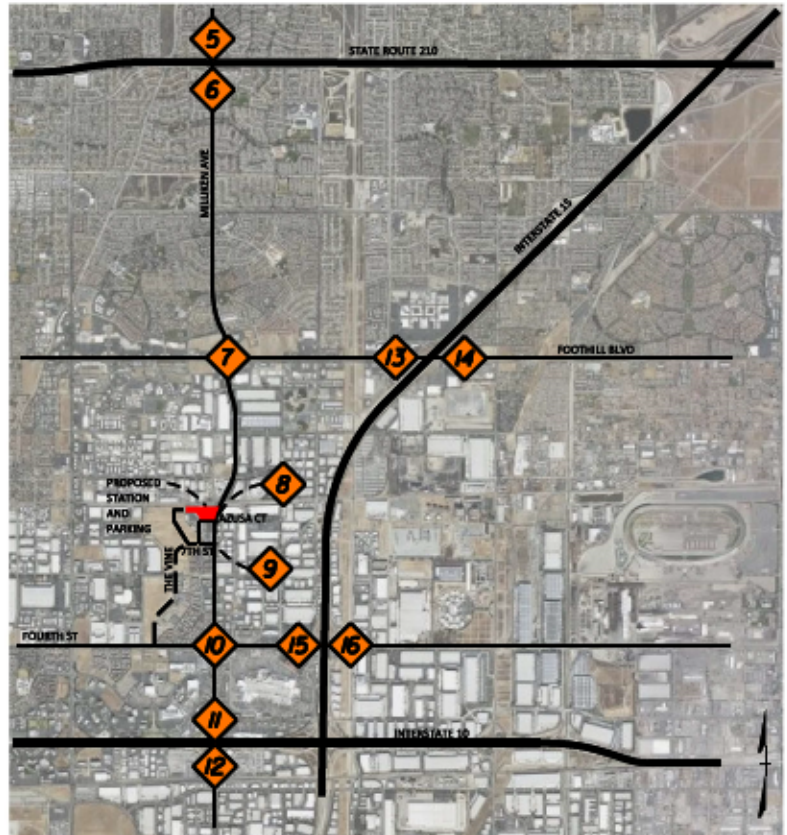
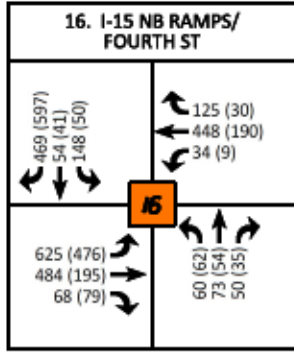
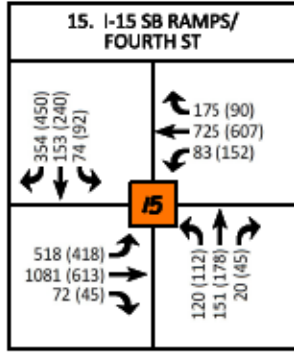
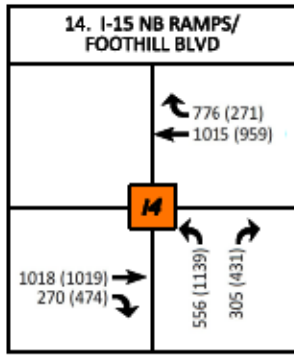
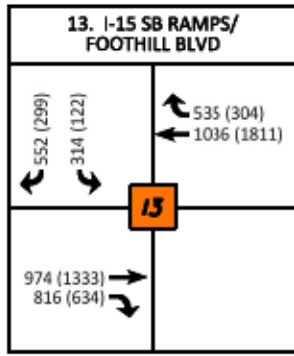
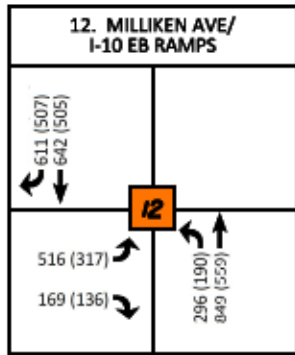
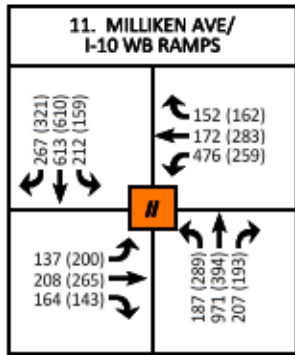
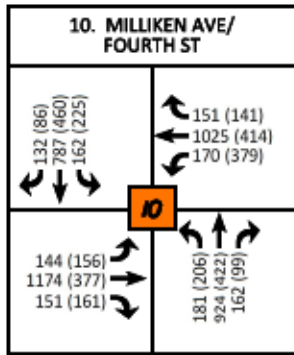
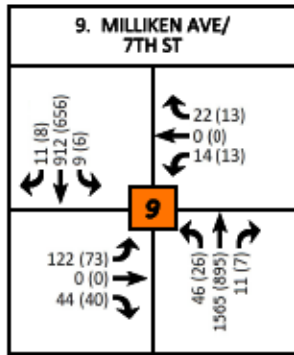
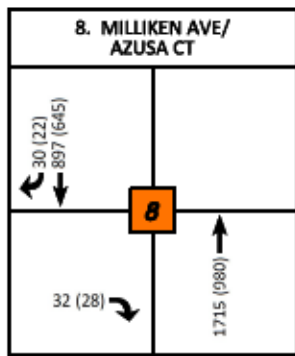
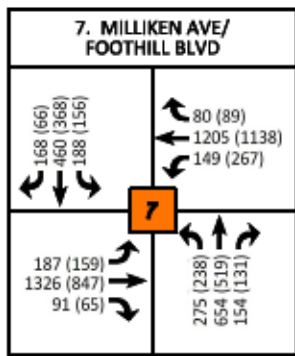
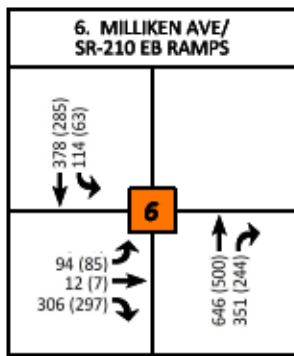
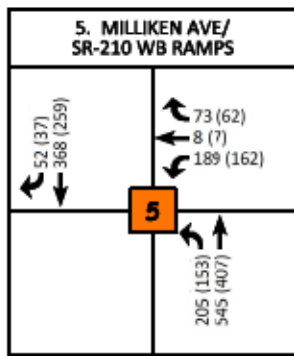


FIGURE D-13
INTERSECTION PEAK HOUR VOLUMES
2045 BUILD (ALL SCENARIOS)
HESPERIA INTERSECTIONS



LEGEND
XX (YY) = AM (PM) PEAK HOUR VOLUMES

FIGURE D-14
INTERSECTION PEAK HOUR VOLUMES
2045 BUILD (WEEKDAYS AM/PM)
RANCHO CUCAMONGA INTERSECTIONS



LEGEND
XX (YY) = FRI PM (SUN PM) PEAK HOUR VOLUMES

FIGURE D-35
INTERSECTION PEAK HOUR VOLUMES
2048 BKIB.DWG (REVISED) (SUNDAY PM)
RANCHO CUCAMONGA INTERSECTIONS

Appendix E
**Intersection Level of Service (LOS) Worksheets (All
Scenarios)**

See next page for notes on this appendix.

Appendix Note:

For the content in this appendix, refer to the table below for corresponding intersection numbers presented in the report.

Intersection Number in Appendix	Intersection Name	Intersection Number in Report
1	Highway 395 / Joshua St	1
2	Interstate 15 SB off-ramp / Joshua St	2
3	Interstate 15 NB on-ramp / Joshua St	3
4	Mariposa Rd / Joshua St	4
5	Interstate 15 SB ramps / Foothill Blvd	13
6	Interstate 15 NB ramps / Foothill Blvd	14
7	Interstate 15 SB ramps / Fourth St	15
8	Interstate 15 NB ramps / Fourth St	16
9	Milliken Ave / State Route 210 WB Ramps	5
10	Milliken Ave / State Route 210 EB Ramps	6
11	Milliken Ave / Foothill Blvd	7
12	Milliken Ave / Fourth St	10
13	Milliken Ave / Azusa Ct	8
14	Milliken Ave / 7th St	9
15	Milliken Ave / Interstate 10 WB Ramps	11
16	Milliken Ave / Interstate 10 EB Ramps	12

Appendix E.1 - 2020 Existing Intersection Level of Service Calculation Worksheets

HCM 6th Signalized Intersection Summary

1: Highway 395 & Joshua St

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↶	↷		↶	↷	↶	↶	↷	↷	↶	↷	↶
Traffic Volume (veh/h)	11	12	1	143	12	66	2	418	36	81	799	7
Future Volume (veh/h)	11	12	1	143	12	66	2	418	36	81	799	7
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1209	1674	1674	1355	1674	1281	1037	1463	1632	1435	1547	1393
Adj Flow Rate, veh/h	12	13	1	157	13	73	2	459	40	89	878	8
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	37	9	9	26	9	37	50	24	12	20	18	29
Cap, veh/h	269	292	22	300	319	207	2	1554	773	106	1865	749
Arrive On Green	0.19	0.19	0.19	0.19	0.19	0.19	0.00	0.56	0.56	0.08	0.63	0.63
Sat Flow, veh/h	895	1534	118	1071	1674	1085	988	2780	1383	1366	2940	1180
Grp Volume(v), veh/h	12	0	14	157	13	73	2	459	40	89	878	8
Grp Sat Flow(s),veh/h/ln	895	0	1652	1071	1674	1085	988	1390	1383	1366	1470	1180
Q Serve(g_s), s	0.8	0.0	0.5	9.7	0.4	4.0	0.1	6.0	0.9	4.5	10.8	0.2
Cycle Q Clear(g_c), s	1.2	0.0	0.5	10.2	0.4	4.0	0.1	6.0	0.9	4.5	10.8	0.2
Prop In Lane	1.00		0.07	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	269	0	315	300	319	207	2	1554	773	106	1865	749
VC Ratio(X)	0.04	0.00	0.04	0.52	0.04	0.35	0.93	0.30	0.05	0.84	0.47	0.01
Avail Cap(c_a), veh/h	718	0	1144	837	1158	751	85	1554	773	296	1865	749
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.4	0.0	22.9	27.1	22.9	24.4	34.6	8.1	6.9	31.6	6.6	4.7
Incr Delay (d2), s/veh	0.1	0.0	0.1	1.4	0.1	1.0	259.3	0.5	0.1	15.8	0.9	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	0.2	2.5	0.2	1.1	0.2	1.3	0.2	1.8	2.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.5	0.0	23.0	28.5	23.0	25.4	293.9	8.6	7.1	47.3	7.5	4.7
LnGrp LOS	C	A	C	C	C	C	F	A	A	D	A	A
Approach Vol, veh/h		26			243			501			975	
Approach Delay, s/veh		23.2			27.3			9.6			11.1	
Approach LOS		C			C			A			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.4	42.8		17.2	4.2	48.0		17.2				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	15.0	35.0		48.0	6.0	44.0		48.0				
Max Q Clear Time (g_c+I1), s	6.5	8.0		3.2	2.1	12.8		12.2				
Green Ext Time (p_c), s	0.1	2.8		0.1	0.0	6.0		1.1				

Intersection Summary

HCM 6th Ctrl Delay	13.1
HCM 6th LOS	B

Intersection						
Int Delay, s/veh	3.4					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		∩	
Traffic Vol, veh/h	0	87	81	0	5	87
Future Vol, veh/h	0	87	81	0	5	87
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	2	23	25	2	1	25
Mvmt Flow	0	100	93	0	6	100

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	-	0	-	0	193 93
Stage 1	-	-	-	-	93 -
Stage 2	-	-	-	-	100 -
Critical Hdwy	-	-	-	-	6.41 6.45
Critical Hdwy Stg 1	-	-	-	-	5.41 -
Critical Hdwy Stg 2	-	-	-	-	5.41 -
Follow-up Hdwy	-	-	-	-	3.509 3.525
Pot Cap-1 Maneuver	0	-	-	0	798 904
Stage 1	0	-	-	0	933 -
Stage 2	0	-	-	0	927 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	-	798 904
Mov Cap-2 Maneuver	-	-	-	-	798 -
Stage 1	-	-	-	-	933 -
Stage 2	-	-	-	-	927 -

Approach	EB	WB	SB
HCM Control Delay, s	0	0	9.5
HCM LOS			A

Minor Lane/Major Mvmt	EBT	WBT	SBLn1
Capacity (veh/h)	-	-	898
HCM Lane V/C Ratio	-	-	0.118
HCM Control Delay (s)	-	-	9.5
HCM Lane LOS	-	-	A
HCM 95th %tile Q(veh)	-	-	0.4

Intersection												
Int Delay, s/veh	1.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↗			↕				
Traffic Vol, veh/h	34	57	0	0	84	22	0	0	0	0	0	0
Future Vol, veh/h	34	57	0	0	84	22	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	16965	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	79	79	92	92	79	79	92	92	92	79	92	79
Heavy Vehicles, %	50	11	2	2	30	32	2	2	2	2	2	2
Mvmt Flow	43	72	0	0	106	28	0	0	0	0	0	0

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	134	0	-
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	4.6	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	2.65	-	-
Pot Cap-1 Maneuver	1202	0	0
Stage 1	-	0	0
Stage 2	-	0	0
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1202	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	3	0	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	WBT	WBR
Capacity (veh/h)	-	1202	-	-	-
HCM Lane V/C Ratio	-	0.036	-	-	-
HCM Control Delay (s)	0	8.1	0	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	-	0.1	-	-	-

Intersection						
Int Delay, s/veh	5.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	Y			↑	↑	
Traffic Vol, veh/h	22	31	66	18	25	39
Future Vol, veh/h	22	31	66	18	25	39
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	82	82	82	82	82	82
Heavy Vehicles, %	19	4	29	23	12	21
Mvmt Flow	27	38	80	22	30	48

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	236	54	78	0	-	0
Stage 1	54	-	-	-	-	-
Stage 2	182	-	-	-	-	-
Critical Hdwy	6.59	6.24	4.39	-	-	-
Critical Hdwy Stg 1	5.59	-	-	-	-	-
Critical Hdwy Stg 2	5.59	-	-	-	-	-
Follow-up Hdwy	3.671	3.336	2.461	-	-	-
Pot Cap-1 Maneuver	716	1008	1366	-	-	-
Stage 1	927	-	-	-	-	-
Stage 2	810	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	674	1008	1366	-	-	-
Mov Cap-2 Maneuver	674	-	-	-	-	-
Stage 1	872	-	-	-	-	-
Stage 2	810	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.7	6.1	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1366	-	836	-	-
HCM Lane V/C Ratio	0.059	-	0.077	-	-
HCM Control Delay (s)	7.8	0	9.7	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.2	-	0.3	-	-

HCM 6th Signalized Intersection Summary

5: I-15 SB On-ramp/I-15 SB Off-ramp & Foothill Blvd/Foothill Blvd

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↑		↑↑↑	↑				↑	↑↓	↑
Traffic Volume (veh/h)	0	672	692	0	871	532	0	0	0	238	0	487
Future Volume (veh/h)	0	672	692	0	871	532	0	0	0	238	0	487
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1702	1772	0	1772	1744				1646	1772	1702
Adj Flow Rate, veh/h	0	755	0	0	979	0				178	0	642
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89				0.89	0.89	0.89
Percent Heavy Veh, %	0	7	2	0	2	4				11	2	7
Cap, veh/h	0	2991		0	3114					419	0	771
Arrive On Green	0.00	0.64	0.00	0.00	0.64	0.00				0.27	0.00	0.27
Sat Flow, veh/h	0	4799	1502	0	4997	1478				1567	0	2884
Grp Volume(v), veh/h	0	755	0	0	979	0				178	0	642
Grp Sat Flow(s),veh/h/ln	0	1549	1502	0	1612	1478				1567	0	1442
Q Serve(g_s), s	0.0	6.2	0.0	0.0	8.1	0.0				8.4	0.0	18.9
Cycle Q Clear(g_c), s	0.0	6.2	0.0	0.0	8.1	0.0				8.4	0.0	18.9
Prop In Lane	0.00		1.00	0.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2991		0	3114					419	0	771
V/C Ratio(X)	0.00	0.25		0.00	0.31					0.42	0.00	0.83
Avail Cap(c_a), veh/h	0	2991		0	3114					679	0	1250
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.00	0.00	0.85	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	6.8	0.0	0.0	7.2	0.0				27.3	0.0	31.1
Incr Delay (d2), s/veh	0.0	0.2	0.0	0.0	0.2	0.0				0.7	0.0	2.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	1.6	0.0	0.0	2.1	0.0				3.1	0.0	6.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	7.0	0.0	0.0	7.4	0.0				27.9	0.0	33.7
LnGrp LOS	A	A		A	A					C	A	C
Approach Vol, veh/h		755	A		979	A					820	
Approach Delay, s/veh		7.0			7.4						32.5	
Approach LOS		A			A						C	
Timer - Assigned Phs		2		4		6						
Phs Duration (G+Y+Rc), s		61.9		28.1		61.9						
Change Period (Y+Rc), s		4.0		4.0		4.0						
Max Green Setting (Gmax), s		43.0		39.0		43.0						
Max Q Clear Time (g_c+I1), s		8.2		20.9		10.1						
Green Ext Time (p_c), s		5.2		3.2		7.0						

Intersection Summary

HCM 6th Ctrl Delay 15.3
 HCM 6th LOS B

Notes

User approved volume balancing among the lanes for turning movement.
 Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th Signalized Intersection Summary

6: I-15 NB Off-ramp/I-15 NB On-ramp & Foothill Blvd /Foothill Blvd

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↑		↑↑↑	↑	↑	↑	↑			
Traffic Volume (veh/h)	0	785	125	0	653	175	750	0	378	0	0	0
Future Volume (veh/h)	0	785	125	0	653	175	750	0	378	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No		No		No		No				
Adj Sat Flow, veh/h/ln	0	1772	1646	0	1674	1632	1758	1772	1730			
Adj Flow Rate, veh/h	0	882	0	0	734	0	975	0	283			
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89			
Percent Heavy Veh, %	0	2	11	0	9	12	3	2	5			
Cap, veh/h	0	2717		0	2567		1170	0	512			
Arrive On Green	0.00	0.56	0.00	0.00	0.56	0.00	0.35	0.00	0.35			
Sat Flow, veh/h	0	4997	1395	0	4720	1383	3348	0	1466			
Grp Volume(v), veh/h	0	882	0	0	734	0	975	0	283			
Grp Sat Flow(s),veh/h/ln	0	1612	1395	0	1523	1383	1674	0	1466			
Q Serve(g_s), s	0.0	8.8	0.0	0.0	7.5	0.0	24.1	0.0	14.0			
Cycle Q Clear(g_c), s	0.0	8.8	0.0	0.0	7.5	0.0	24.1	0.0	14.0			
Prop In Lane	0.00		1.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	0	2717		0	2567		1170	0	512			
V/C Ratio(X)	0.00	0.32		0.00	0.29		0.83	0.00	0.55			
Avail Cap(c_a), veh/h	0	2717		0	2567		2009	0	880			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.00	0.94	0.00	0.00	1.00	0.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	0.0	10.6	0.0	0.0	10.3	0.0	26.9	0.0	23.6			
Incr Delay (d2), s/veh	0.0	0.3	0.0	0.0	0.3	0.0	1.6	0.0	0.9			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.0	3.0	0.0	0.0	2.4	0.0	9.3	0.0	4.7			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	10.9	0.0	0.0	10.6	0.0	28.5	0.0	24.5			
LnGrp LOS		A	B		A	B	C	A	C			
Approach Vol, veh/h		882	A		734	A		1258				
Approach Delay, s/veh		10.9			10.6			27.6				
Approach LOS		B			B			C				
Timer - Assigned Phs		2			6			8				
Phs Duration (G+Y+Rc), s		54.6			54.6			35.4				
Change Period (Y+Rc), s		4.0			4.0			4.0				
Max Green Setting (Gmax), s		28.0			28.0			54.0				
Max Q Clear Time (g_c+I1), s		10.8			9.5			26.1				
Green Ext Time (p_c), s		5.8			5.0			5.4				

Intersection Summary

HCM 6th Ctrl Delay	18.1
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th Signalized Intersection Summary
 7: Ontario Mills Dr./I-15 SB Ramps & Fourth St

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔	↑↑↑	↗	↔↔	↑↑↑	↗	↔	↑↑	↗	↔	↑↑	↗
Traffic Volume (veh/h)	188	203	36	83	825	151	67	63	37	122	147	301
Future Volume (veh/h)	188	203	36	83	825	151	67	63	37	122	147	301
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No		No		No		No		No		No
Adj Sat Flow, veh/h/ln	1375	1561	1758	1538	1660	1238	1660	1617	1646	1315	1758	1758
Adj Flow Rate, veh/h	198	214	38	87	868	159	71	66	39	128	155	317
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	18	17	3	5	10	40	3	13	11	29	3	3
Cap, veh/h	241	2745	960	126	2688	623	88	221	100	146	234	396
Arrive On Green	0.09	0.64	0.64	0.09	1.00	1.00	0.06	0.07	0.07	0.12	0.13	0.13
Sat Flow, veh/h	2541	4262	1490	2841	4531	1049	1581	3073	1395	1253	1758	2979
Grp Volume(v), veh/h	198	214	38	87	868	159	71	66	39	128	155	317
Grp Sat Flow(s),veh/h/ln	1271	1421	1490	1420	1510	1049	1581	1537	1395	1253	1758	1490
Q Serve(g_s), s	9.9	2.4	1.2	3.9	0.0	0.0	5.8	2.6	3.5	13.1	10.9	13.4
Cycle Q Clear(g_c), s	9.9	2.4	1.2	3.9	0.0	0.0	5.8	2.6	3.5	13.1	10.9	13.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	241	2745	960	126	2688	623	88	221	100	146	234	396
VC Ratio(X)	0.82	0.08	0.04	0.69	0.32	0.26	0.81	0.30	0.39	0.87	0.66	0.80
Avail Cap(c_a), veh/h	430	2745	960	372	2688	623	207	402	182	289	406	688
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.82	0.82	0.82	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	57.7	8.7	8.4	58.4	0.0	0.0	60.7	57.2	57.6	56.5	53.6	54.7
Incr Delay (d2), s/veh	6.8	0.1	0.1	5.5	0.3	0.8	15.5	0.8	2.5	14.7	3.2	3.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.3	0.7	0.4	1.4	0.1	0.1	2.7	1.0	1.3	4.7	5.0	5.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	64.5	8.7	8.5	63.9	0.3	0.8	76.2	58.0	60.1	71.2	56.8	58.5
LnGrp LOS	E	A	A	E	A	A	E	E	E	E	E	E
Approach Vol, veh/h		450			1114			176			600	
Approach Delay, s/veh		33.3			5.3			65.8			60.8	
Approach LOS		C			A			E			E	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.7	87.7	11.2	21.3	16.3	81.1	19.2	13.3				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	17.0	50.0	17.0	30.0	22.0	45.0	30.0	17.0				
Max Q Clear Time (g_c+1/3), s	15.9	4.4	7.8	15.4	11.9	2.0	15.1	5.5				
Green Ext Time (p_c), s	0.1	1.4	0.1	1.8	0.4	6.8	0.3	0.3				

Intersection Summary

HCM 6th Ctrl Delay	29.5
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

HCM 6th Signalized Intersection Summary

8: Fourth St & I-15 NB Ramps

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔	↑↑↑	↗	↖	↑↑↑		↖	↑↑		↖	↗	↗↗
Traffic Volume (veh/h)	117	214	28	15	233	50	45	23	29	277	55	802
Future Volume (veh/h)	117	214	28	15	233	50	45	23	29	277	55	802
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No		No		No		No		No		No
Adj Sat Flow, veh/h/ln	1688	1491	1295	958	1351	1351	761	1491	1491	1309	1281	1702
Adj Flow Rate, veh/h	124	228	30	16	248	53	48	24	31	337	0	853
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	8	22	36	60	32	32	74	22	22	35	37	7
Cap, veh/h	896	2587	697	12	1109	227	59	116	103	364	0	1251
Arrive On Green	0.09	0.21	0.21	0.01	0.36	0.36	0.08	0.08	0.08	0.15	0.00	0.15
Sat Flow, veh/h	3118	4071	1097	912	3068	628	725	1417	1264	2493	0	2884
Grp Volume(v), veh/h	124	228	30	16	197	104	48	24	31	337	0	853
Grp Sat Flow(s),veh/h/ln	1559	1357	1097	912	1229	1238	725	1417	1264	1246	0	1442
Q Serve(g_s), s	4.7	5.9	2.8	1.8	7.2	7.7	8.5	2.1	3.0	17.4	0.0	0.0
Cycle Q Clear(g_c), s	4.7	5.9	2.8	1.8	7.2	7.7	8.5	2.1	3.0	17.4	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.51	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	896	2587	697	12	889	447	59	116	103	364	0	1251
V/C Ratio(X)	0.14	0.09	0.04	1.30	0.22	0.23	0.81	0.21	0.30	0.93	0.00	0.68
Avail Cap(c_a), veh/h	896	2587	697	56	889	447	229	447	399	364	0	1251
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.96	0.96	0.96	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	44.1	21.0	19.8	64.1	28.8	28.9	58.7	55.8	56.2	54.8	0.0	29.6
Incr Delay (d2), s/veh	0.1	0.1	0.1	219.0	0.6	1.2	22.2	0.9	1.6	29.0	0.0	1.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	1.7	0.7	1.1	2.1	2.3	1.9	0.8	1.0	6.9	0.0	10.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	44.1	21.1	20.0	283.1	29.4	30.2	80.9	56.6	57.8	83.8	0.0	31.1
LnGrp LOS	D	C	B	F	C	C	F	E	E	F	A	C
Approach Vol, veh/h		382			317			103			1190	
Approach Delay, s/veh		28.5			42.4			68.3			46.0	
Approach LOS		C			D			E			D	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.8	86.6		23.0	41.4	51.0		14.6				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	46.0	46.0		19.0	7.0	47.0		41.0				
Max Q Clear Time (g_c+1), s	7.9	7.9		19.4	6.7	9.7		10.5				
Green Ext Time (p_c), s	0.0	1.5		0.0	0.0	1.7		0.4				

Intersection Summary

HCM 6th Ctrl Delay	43.3
HCM 6th LOS	D

Notes

- User approved pedestrian interval to be less than phase max green.
- User approved volume balancing among the lanes for turning movement.

HCM 6th Signalized Intersection Summary
 9: Milliken Ave & I-210 WB On-ramp/I-210 WB Off-ramp

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↘	↔	↗	↘↗	↑↑↑			↑↑↑	
Traffic Volume (veh/h)	0	0	0	110	4	56	245	204	0	0	385	81
Future Volume (veh/h)	0	0	0	110	4	56	245	204	0	0	385	81
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach				No		No		No				No
Adj Sat Flow, veh/h/ln				1528	1786	1646	1538	1758	0	0	1772	1772
Adj Flow Rate, veh/h				133	0	40	253	210	0	0	397	84
Peak Hour Factor				0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %				13	1	11	5	3	0	0	2	2
Cap, veh/h				366	0	176	342	3555	0	0	2228	457
Arrive On Green				0.13	0.00	0.13	0.12	0.74	0.00	0.00	0.55	0.55
Sat Flow, veh/h				2910	0	1395	2841	4957	0	0	4182	825
Grp Volume(v), veh/h				133	0	40	253	210	0	0	316	165
Grp Sat Flow(s),veh/h/ln				1455	0	1395	1420	1600	0	0	1612	1623
Q Serve(g_s), s				2.5	0.0	1.5	5.2	0.7	0.0	0.0	2.9	3.0
Cycle Q Clear(g_c), s				2.5	0.0	1.5	5.2	0.7	0.0	0.0	2.9	3.0
Prop In Lane				1.00		1.00	1.00		0.00	0.00		0.51
Lane Grp Cap(c), veh/h				366	0	176	342	3555	0	0	1786	899
V/C Ratio(X)				0.36	0.00	0.23	0.74	0.06	0.00	0.00	0.18	0.18
Avail Cap(c_a), veh/h				388	0	186	426	3555	0	0	1786	899
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.98	0.98	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				24.0	0.0	23.6	25.5	2.1	0.0	0.0	6.6	6.6
Incr Delay (d2), s/veh				0.6	0.0	0.7	5.1	0.0	0.0	0.0	0.2	0.5
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				0.8	0.0	0.5	1.9	0.1	0.0	0.0	0.8	0.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				24.6	0.0	24.3	30.6	2.1	0.0	0.0	6.8	7.1
LnGrp LOS				C	A	C	C	A	A	A	A	A
Approach Vol, veh/h						173		463			481	
Approach Delay, s/veh						24.5		17.7			6.9	
Approach LOS						C		B			A	
Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		48.4			11.2	37.2		11.6				
Change Period (Y+Rc), s		4.0			4.0	4.0		4.0				
Max Green Setting (Gmax), s		44.0			9.0	31.0		8.0				
Max Q Clear Time (g_c+I1), s		2.7			7.2	5.0		4.5				
Green Ext Time (p_c), s		1.5			0.2	3.2		0.2				

Intersection Summary

HCM 6th Ctrl Delay	14.1
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

HCM 6th Signalized Intersection Summary
 10: Milliken Ave & I-210 EB Off-ramp/I-210 EB On-ramp

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	64	7	132	0	0	0	0	384	235	90	410	0
Future Volume (veh/h)	64	7	132	0	0	0	0	384	235	90	410	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No						No			No		
Adj Sat Flow, veh/h/ln	1594	1786	1660				0	1772	1772	1475	1744	0
Adj Flow Rate, veh/h	49	0	170				0	417	255	98	446	0
Peak Hour Factor	0.92	0.92	0.92				0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	8	1	10				0	2	2	10	4	0
Cap, veh/h	197	0	365				0	1827	851	282	3508	0
Arrive On Green	0.13	0.00	0.13				0.00	0.57	0.57	0.21	1.00	0.00
Sat Flow, veh/h	1518	0	2813				0	3384	1502	2726	4918	0
Grp Volume(v), veh/h	49	0	170				0	417	255	98	446	0
Grp Sat Flow(s),veh/h/ln	1518	0	1406				0	1612	1502	1363	1587	0
Q Serve(g_s), s	1.7	0.0	3.4				0.0	3.9	5.3	1.8	0.0	0.0
Cycle Q Clear(g_c), s	1.7	0.0	3.4				0.0	3.9	5.3	1.8	0.0	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	197	0	365				0	1827	851	282	3508	0
V/C Ratio(X)	0.25	0.00	0.47				0.00	0.23	0.30	0.35	0.13	0.00
Avail Cap(c_a), veh/h	202	0	375				0	1827	851	282	3508	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	0.99	0.99	0.00
Uniform Delay (d), s/veh	23.5	0.0	24.2				0.0	6.5	6.8	22.1	0.0	0.0
Incr Delay (d2), s/veh	0.7	0.0	0.9				0.0	0.3	0.9	0.7	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.0	1.1				0.0	1.1	1.5	0.6	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	24.1	0.0	25.1				0.0	6.8	7.7	22.8	0.1	0.0
LnGrp LOS	C	A	C				A	A	A	C	A	A
Approach Vol, veh/h	219						672			544		
Approach Delay, s/veh	24.9						7.1			4.2		
Approach LOS	C						A			A		
Timer - Assigned Phs	1	2	4	6								
Phs Duration (G+Y+Rc), s	30.2	38.0	11.8	48.2								
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0								
Max Green Setting (Gmax), s	30.0	34.0	8.0	44.0								
Max Q Clear Time (g_c+13), s	3.0	7.3	5.4	2.0								
Green Ext Time (p_c), s	0.0	4.9	0.2	3.4								

Intersection Summary

HCM 6th Ctrl Delay	8.7
HCM 6th LOS	A

Notes

User approved volume balancing among the lanes for turning movement.

HCM 6th Signalized Intersection Summary

11: Milliken Ave & Foothill Blvd

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔	↑↑↑	↗	↔↔	↑↑↑	↗	↔↔	↑↑↑	↗	↔↔	↑↑↑	↗
Traffic Volume (veh/h)	34	311	49	99	573	69	63	131	59	105	314	115
Future Volume (veh/h)	34	311	49	99	573	69	63	131	59	105	314	115
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No		No		No		No		No		No
Adj Sat Flow, veh/h/ln	1563	1716	1786	1513	1758	1758	1500	1744	1702	1588	1744	1716
Adj Flow Rate, veh/h	35	324	51	103	597	72	66	136	61	109	327	120
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	3	6	1	7	3	3	8	4	7	1	4	6
Cap, veh/h	94	1078	348	195	1282	398	146	1256	302	211	1088	332
Arrive On Green	0.03	0.23	0.23	0.07	0.27	0.27	0.05	0.21	0.21	0.07	0.23	0.23
Sat Flow, veh/h	2887	4684	1514	2795	4799	1490	2772	5999	1442	2933	4761	1454
Grp Volume(v), veh/h	35	324	51	103	597	72	66	136	61	109	327	120
Grp Sat Flow(s),veh/h/ln	1444	1561	1514	1397	1600	1490	1386	1500	1442	1467	1587	1454
Q Serve(g_s), s	0.5	2.2	1.0	1.4	4.0	1.4	0.9	0.7	1.3	1.4	2.2	2.6
Cycle Q Clear(g_c), s	0.5	2.2	1.0	1.4	4.0	1.4	0.9	0.7	1.3	1.4	2.2	2.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	94	1078	348	195	1282	398	146	1256	302	211	1088	332
VC Ratio(X)	0.37	0.30	0.15	0.53	0.47	0.18	0.45	0.11	0.20	0.52	0.30	0.36
Avail Cap(c_a), veh/h	302	6257	2022	293	6410	1990	363	7070	1700	307	5486	1676
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	18.1	12.2	11.7	17.2	11.7	10.8	17.5	12.2	12.5	17.1	12.2	12.4
Incr Delay (d2), s/veh	2.4	0.2	0.2	2.2	0.3	0.2	2.2	0.0	0.3	2.0	0.2	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.5	0.2	0.4	0.9	0.3	0.3	0.2	0.3	0.4	0.5	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	20.5	12.3	11.9	19.4	12.0	11.0	19.7	12.2	12.8	19.0	12.4	13.0
LnGrp LOS	C	B	B	B	B	B	B	B	B	B	B	B
Approach Vol, veh/h		410			772			263			556	
Approach Delay, s/veh		13.0			12.9			14.2			13.8	
Approach LOS		B			B			B			B	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	6.7	12.8	6.0	12.7	5.2	14.2	6.7	12.0				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	4.0	51.0	5.0	44.0	4.0	51.0	4.0	45.0				
Max Q Clear Time (g_c+13), s	4.0	4.2	2.9	4.6	2.5	6.0	3.4	3.3				
Green Ext Time (p_c), s	0.0	2.2	0.0	2.4	0.0	4.2	0.0	1.0				

Intersection Summary

HCM 6th Ctrl Delay	13.3
HCM 6th LOS	B

HCM 6th Signalized Intersection Summary

12: Milliken Ave & Fourth St

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔	↑↑↑	↗	↔↔	↑↑↑	↗	↔↔	↑↑↑	↗	↔↔	↑↑↑	↗
Traffic Volume (veh/h)	77	247	100	195	318	80	60	456	82	80	423	57
Future Volume (veh/h)	77	247	100	195	318	80	60	456	82	80	423	57
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No		No		No		No		No		No
Adj Sat Flow, veh/h/ln	1550	1632	1772	1538	1632	1702	1550	1646	1688	1513	1547	1547
Adj Flow Rate, veh/h	86	274	111	217	353	89	67	507	91	89	470	63
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	4	12	2	5	12	7	4	11	8	7	18	18
Cap, veh/h	133	523	176	280	754	244	107	3113	928	131	2688	349
Arrive On Green	0.05	0.12	0.12	0.10	0.17	0.17	0.04	0.55	0.55	0.05	0.56	0.56
Sat Flow, veh/h	2864	4454	1502	2841	4454	1442	2864	5661	1430	2795	4804	623
Grp Volume(v), veh/h	86	274	111	217	353	89	67	507	91	89	388	145
Grp Sat Flow(s),veh/h/ln	1432	1485	1502	1420	1485	1442	1432	1415	1430	1397	1331	1435
Q Serve(g_s), s	2.5	4.9	6.0	6.4	6.1	4.7	2.0	3.8	2.0	2.7	4.1	4.2
Cycle Q Clear(g_c), s	2.5	4.9	6.0	6.4	6.1	4.7	2.0	3.8	2.0	2.7	4.1	4.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.43
Lane Grp Cap(c), veh/h	133	523	176	280	754	244	107	3113	928	131	2234	803
VC Ratio(X)	0.64	0.52	0.63	0.77	0.47	0.36	0.63	0.16	0.10	0.68	0.17	0.18
Avail Cap(c_a), veh/h	268	2762	931	332	2867	928	168	3113	928	131	2234	803
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.0	35.5	35.9	37.6	32.0	31.4	40.6	9.5	5.6	40.1	9.2	9.2
Incr Delay (d2), s/veh	5.1	0.8	3.7	9.2	0.5	0.9	5.9	0.1	0.2	13.4	0.2	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	1.7	2.2	2.4	2.0	1.5	0.7	1.0	0.5	1.1	1.0	1.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	45.2	36.3	39.6	46.8	32.5	32.3	46.5	9.6	5.8	53.5	9.4	9.7
LnGrp LOS	D	D	D	D	C	C	D	A	A	D	A	A
Approach Vol, veh/h		471			659			665			622	
Approach Delay, s/veh		38.7			37.2			12.8			15.7	
Approach LOS		D			D			B			B	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	8.0	51.0	12.4	14.0	7.2	51.8	8.0	18.5				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	4.0	47.0	10.0	53.0	5.0	46.0	8.0	55.0				
Max Q Clear Time (g_c+14), s	4.0	5.8	8.4	8.0	4.0	6.2	4.5	8.1				
Green Ext Time (p_c), s	0.0	3.6	0.1	2.0	0.0	3.4	0.1	2.5				

Intersection Summary

HCM 6th Ctrl Delay	25.3
HCM 6th LOS	C

Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↗		↑↑↑	↑↑↑	↗
Traffic Vol, veh/h	0	2	0	491	565	34
Future Vol, veh/h	0	2	0	491	565	34
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	175
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	1	2	9	9	1
Mvmt Flow	0	2	0	517	595	36

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	-	298	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	7.12	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	3.91	-
Pot Cap-1 Maneuver	0	598	0
Stage 1	0	-	0
Stage 2	0	-	0
Platoon blocked, %			
Mov Cap-1 Maneuver	-	598	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

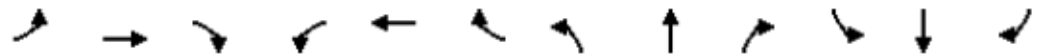
Approach	EB	NB	SB
HCM Control Delay, s	11	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT EBLn1	SBT	SBR
Capacity (veh/h)	-	598	-
HCM Lane V/C Ratio	-	0.004	-
HCM Control Delay (s)	-	11	-
HCM Lane LOS	-	B	-
HCM 95th %tile Q(veh)	-	0	-

HCM 6th Signalized Intersection Summary

14: Milliken Ave & 7th St

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↑↑↑		↖	↑↑↑	
Traffic Volume (veh/h)	12	2	24	8	2	5	57	475	11	19	545	5
Future Volume (veh/h)	12	2	24	8	2	5	57	475	11	19	545	5
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1475	1786	1786	1037	1098	1098	1673	1688	1688	1687	1674	1674
Adj Flow Rate, veh/h	12	2	25	8	2	5	59	495	11	20	568	5
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	17	1	1	50	50	50	2	8	8	1	9	9
Cap, veh/h	175	8	103	143	20	50	72	3461	77	29	3361	30
Arrive On Green	0.07	0.07	0.07	0.07	0.07	0.07	0.05	0.75	0.75	0.02	0.72	0.72
Sat Flow, veh/h	1172	113	1417	810	278	695	1594	4638	103	1606	4671	41
Grp Volume(v), veh/h	12	0	27	8	0	7	59	327	179	20	370	203
Grp Sat Flow(s),veh/h/ln	1172	0	1531	810	0	973	1594	1536	1669	1606	1523	1666
Q Serve(g_s), s	0.7	0.0	1.2	0.7	0.0	0.5	2.7	2.2	2.2	0.9	2.9	2.9
Cycle Q Clear(g_c), s	1.2	0.0	1.2	1.9	0.0	0.5	2.7	2.2	2.2	0.9	2.9	2.9
Prop In Lane	1.00		0.93	1.00		0.71	1.00		0.06	1.00		0.02
Lane Grp Cap(c), veh/h	175	0	111	143	0	71	72	2292	1246	29	2191	1199
VC Ratio(X)	0.07	0.00	0.24	0.06	0.00	0.10	0.82	0.14	0.14	0.68	0.17	0.17
Avail Cap(c_a), veh/h	996	0	1184	710	0	753	216	2292	1246	131	2191	1199
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	32.5	0.0	32.3	33.2	0.0	31.9	34.9	2.7	2.7	36.0	3.3	3.3
Incr Delay (d2), s/veh	0.2	0.0	1.1	0.2	0.0	0.6	19.9	0.1	0.2	24.4	0.2	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	0.5	0.1	0.0	0.1	1.4	0.3	0.4	0.5	0.5	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	32.6	0.0	33.4	33.3	0.0	32.5	54.8	2.8	2.9	60.4	3.5	3.6
LnGrp LOS	C	A	C	C	A	C	D	A	A	E	A	A
Approach Vol, veh/h		39			15			565			593	
Approach Delay, s/veh		33.2			33.0			8.2			5.4	
Approach LOS		C			C			A			A	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.3	59.0		9.4	7.3	57.0		9.4				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	6.0	55.0		57.0	10.0	51.0		57.0				
Max Q Clear Time (g_c+I1), s	2.9	4.2		3.2	4.7	4.9		3.9				
Green Ext Time (p_c), s	0.0	3.0		0.2	0.0	3.5		0.1				

Intersection Summary

HCM 6th Ctrl Delay	8.0
HCM 6th LOS	A

HCM 6th Signalized Intersection Summary
 15: Milliken Ave & I-10 WB Ramps/Ontario Mills Pkwy

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖↗	↑	↗	↖↗	↖↗	↗	↖↗	↑↑↑	↗	↖↗	↑↑↑	↗
Traffic Volume (veh/h)	37	34	20	183	39	143	94	396	85	42	267	143
Future Volume (veh/h)	37	34	20	183	39	143	94	396	85	42	267	143
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No		No		No		No		No		No
Adj Sat Flow, veh/h/ln	1425	1463	1730	1550	1786	1365	739	1632	1252	1588	1632	1561
Adj Flow Rate, veh/h	42	39	23	208	44	162	107	450	97	48	303	162
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	14	24	5	4	1	31	69	12	39	1	12	17
Cap, veh/h	76	181	182	191	549	187	256	3371	708	91	2494	626
Arrive On Green	0.03	0.12	0.12	0.07	0.16	0.16	0.06	0.20	0.20	0.03	0.44	0.44
Sat Flow, veh/h	2633	1463	1466	2864	3393	1157	1365	5612	1061	2933	5612	1323
Grp Volume(v), veh/h	42	39	23	208	44	162	107	450	97	48	303	162
Grp Sat Flow(s),veh/h/ln	1317	1463	1466	1432	1697	1157	683	1403	1061	1467	1403	1323
Q Serve(g_s), s	1.4	2.2	0.9	6.0	1.0	12.3	6.8	5.9	5.7	1.5	2.9	2.9
Cycle Q Clear(g_c), s	1.4	2.2	0.9	6.0	1.0	12.3	6.8	5.9	5.7	1.5	2.9	2.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	76	181	182	191	549	187	256	3371	708	91	2494	626
VC Ratio(X)	0.55	0.22	0.13	1.09	0.08	0.87	0.42	0.13	0.14	0.53	0.12	0.26
Avail Cap(c_a), veh/h	117	260	261	191	679	231	256	3371	708	130	2494	626
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.94	0.94	0.94	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.1	35.5	16.5	42.0	32.0	36.8	37.5	16.8	11.9	43.0	14.7	5.5
Incr Delay (d2), s/veh	6.1	0.6	0.3	91.0	0.1	23.8	1.0	0.1	0.4	4.7	0.1	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.8	0.5	4.5	0.4	4.6	1.2	1.9	1.4	0.6	0.9	1.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	49.2	36.1	16.8	133.0	32.1	60.5	38.5	16.9	12.3	47.6	14.8	6.5
LnGrp LOS	D	D	B	F	C	E	D	B	B	D	B	A
Approach Vol, veh/h		104		414		654		513				
Approach Delay, s/veh		37.1		93.9		19.7		15.2				
Approach LOS		D		F		B		B				
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	6.8	58.1	10.0	15.1	20.9	44.0	6.6	18.5				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	4.0	48.0	6.0	16.0	12.0	40.0	4.0	18.0				
Max Q Clear Time (g_c+13), s	4.0	7.9	8.0	4.2	8.8	4.9	3.4	14.3				
Green Ext Time (p_c), s	0.0	3.8	0.0	0.1	0.1	2.8	0.0	0.3				

Intersection Summary

HCM 6th Ctrl Delay	37.7
HCM 6th LOS	D

HCM 6th Signalized Intersection Summary

16: Milliken Ave & I-10 EB Ramps

11/03/2021



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↶↷	↷	↶↷	↑↑↑	↑↑↑	↷
Traffic Volume (veh/h)	272	195	178	303	356	114
Future Volume (veh/h)	272	195	178	303	356	114
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1475	1660	1051	1505	1519	958
Adj Flow Rate, veh/h	320	229	209	356	419	134
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	10	10	44	21	20	60
Cap, veh/h	540	279	258	3692	2799	595
Arrive On Green	0.20	0.20	0.13	0.71	0.18	0.18
Sat Flow, veh/h	2726	1406	1942	5388	5439	812
Grp Volume(v), veh/h	320	229	209	356	419	134
Grp Sat Flow(s),veh/h/ln	1363	1406	971	1294	1307	812
Q Serve(g_s), s	9.6	14.0	9.4	1.9	6.1	7.4
Cycle Q Clear(g_c), s	9.6	14.0	9.4	1.9	6.1	7.4
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	540	279	258	3692	2799	595
VC Ratio(X)	0.59	0.82	0.81	0.10	0.15	0.23
Avail Cap(c_a), veh/h	939	484	561	3692	2799	595
HCM Platoon Ratio	1.00	1.00	1.00	1.00	0.33	0.33
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.96	0.96
Uniform Delay (d), s/veh	32.8	34.6	37.9	4.0	19.7	7.4
Incr Delay (d2), s/veh	1.0	6.0	6.0	0.1	0.1	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.2	10.8	2.4	0.4	1.9	2.9
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	33.8	40.6	43.9	4.0	19.8	8.3
LnGrp LOS	C	D	D	A	B	A
Approach Vol, veh/h	549			565	553	
Approach Delay, s/veh	36.6			18.8	17.0	
Approach LOS	D			B	B	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		68.2		21.8	16.0	52.2
Change Period (Y+Rc), s		4.0		4.0	4.0	4.0
Max Green Setting (Gmax), s		51.0		31.0	26.0	21.0
Max Q Clear Time (g_c+I1), s		3.9		16.0	11.4	9.4
Green Ext Time (p_c), s		2.8		1.8	0.6	2.6
Intersection Summary						
HCM 6th Ctrl Delay			24.1			
HCM 6th LOS			C			

HCM 6th Signalized Intersection Summary

1: Highway 395 & Joshua St

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↶	↷		↶	↷	↷	↶	↷↷	↷	↶	↷↷	↷
Traffic Volume (veh/h)	24	71	13	32	15	82	16	961	66	54	573	18
Future Volume (veh/h)	24	71	13	32	15	82	16	961	66	54	573	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1687	1786	1786	1528	1786	1519	1687	1716	1491	1395	1617	1716
Adj Flow Rate, veh/h	27	79	14	36	17	91	18	1068	73	60	637	20
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	1	1	1	13	1	20	1	6	22	23	13	6
Cap, veh/h	249	180	32	191	217	157	32	2099	814	67	2073	981
Arrive On Green	0.12	0.12	0.12	0.12	0.12	0.12	0.02	0.64	0.64	0.05	0.67	0.67
Sat Flow, veh/h	1224	1477	262	1123	1786	1287	1606	3260	1264	1329	3073	1454
Grp Volume(v), veh/h	27	0	93	36	17	91	18	1068	73	60	637	20
Grp Sat Flow(s),veh/h/ln	1224	0	1739	1123	1786	1287	1606	1630	1264	1329	1537	1454
Q Serve(g_s), s	1.3	0.0	3.2	2.0	0.6	4.4	0.7	11.3	1.4	2.9	5.5	0.3
Cycle Q Clear(g_c), s	1.9	0.0	3.2	5.2	0.6	4.4	0.7	11.3	1.4	2.9	5.5	0.3
Prop In Lane	1.00		0.15	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	249	0	212	191	217	157	32	2099	814	67	2073	981
VC Ratio(X)	0.11	0.00	0.44	0.19	0.08	0.58	0.57	0.51	0.09	0.90	0.31	0.02
Avail Cap(c_a), veh/h	1001	0	1280	882	1315	948	148	2099	814	163	2073	981
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.2	0.0	26.6	29.0	25.4	27.1	31.7	6.1	4.4	30.8	4.4	3.5
Incr Delay (d2), s/veh	0.2	0.0	1.4	0.5	0.2	3.4	15.1	0.9	0.2	30.6	0.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	1.4	0.5	0.2	1.4	0.4	2.2	0.2	1.4	0.9	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	26.4	0.0	28.0	29.5	25.6	30.5	46.8	7.0	4.6	61.4	4.7	3.5
LnGrp LOS	C	A	C	C	C	C	D	A	A	E	A	A
Approach Vol, veh/h		120			144			1159				717
Approach Delay, s/veh		27.7			29.6			7.5				9.4
Approach LOS		C			C			A				A
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.3	46.0		11.9	5.3	48.0		11.9				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	8.0	42.0		48.0	6.0	44.0		48.0				
Max Q Clear Time (g_c+I1), s	4.9	13.3		5.2	2.7	7.5		7.2				
Green Ext Time (p_c), s	0.0	7.8		0.6	0.0	4.1		0.6				
Intersection Summary												
HCM 6th Ctrl Delay				10.8								
HCM 6th LOS				B								

Intersection						
Int Delay, s/veh	2					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		∩	
Traffic Vol, veh/h	0	173	72	0	5	61
Future Vol, veh/h	0	173	72	0	5	61
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	0	25	23	0	1	22
Mvmt Flow	0	177	73	0	5	62

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	-	0	-	0	250 73
Stage 1	-	-	-	-	73 -
Stage 2	-	-	-	-	177 -
Critical Hdwy	-	-	-	-	6.41 6.42
Critical Hdwy Stg 1	-	-	-	-	5.41 -
Critical Hdwy Stg 2	-	-	-	-	5.41 -
Follow-up Hdwy	-	-	-	-	3.509 3.498
Pot Cap-1 Maneuver	0	-	-	0	741 936
Stage 1	0	-	-	0	952 -
Stage 2	0	-	-	0	856 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	-	741 936
Mov Cap-2 Maneuver	-	-	-	-	741 -
Stage 1	-	-	-	-	952 -
Stage 2	-	-	-	-	856 -

Approach	EB	WB	SB
HCM Control Delay, s	0	0	9.2
HCM LOS			A

Minor Lane/Major Mvmt	EBT	WBT	SBLn1
Capacity (veh/h)	-	-	918
HCM Lane V/C Ratio	-	-	0.073
HCM Control Delay (s)	-	-	9.2
HCM Lane LOS	-	-	A
HCM 95th %tile Q(veh)	-	-	0.2

Intersection												
Int Delay, s/veh	2.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↗			↕				
Traffic Vol, veh/h	100	80	0	0	72	17	0	0	0	0	0	0
Future Vol, veh/h	100	80	0	0	72	17	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	16965	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	92	92	95	95	92	92	92	95	92	95
Heavy Vehicles, %	24	23	2	2	23	42	2	2	2	2	2	2
Mvmt Flow	105	84	0	0	76	18	0	0	0	0	0	0

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	94	0	-
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	4.34	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	2.416	-	-
Pot Cap-1 Maneuver	1373	0	0
Stage 1	-	0	0
Stage 2	-	0	0
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1373	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	4.4	0	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	WBT	WBR
Capacity (veh/h)	-	1373	-	-	-
HCM Lane V/C Ratio	-	0.077	-	-	-
HCM Control Delay (s)	0	7.8	0	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	-	0.2	-	-	-

Intersection						
Int Delay, s/veh	5.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	Y			↑	↑	
Traffic Vol, veh/h	39	42	57	25	24	44
Future Vol, veh/h	39	42	57	25	24	44
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	6	10	20	48	38	19
Mvmt Flow	40	43	58	26	24	45

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	189	47	69	0	0
Stage 1	47	-	-	-	-
Stage 2	142	-	-	-	-
Critical Hdwy	6.46	6.3	4.3	-	-
Critical Hdwy Stg 1	5.46	-	-	-	-
Critical Hdwy Stg 2	5.46	-	-	-	-
Follow-up Hdwy	3.554	3.39	2.38	-	-
Pot Cap-1 Maneuver	791	1000	1425	-	-
Stage 1	965	-	-	-	-
Stage 2	875	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	759	1000	1425	-	-
Mov Cap-2 Maneuver	759	-	-	-	-
Stage 1	925	-	-	-	-
Stage 2	875	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.6	5.3	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1425	-	867	-	-
HCM Lane V/C Ratio	0.041	-	0.095	-	-
HCM Control Delay (s)	7.6	0	9.6	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0.3	-	-

HCM 6th Signalized Intersection Summary

5: I-15 SB On-ramp/I-15 SB Off-ramp & Foothill Blvd/Foothill Blvd

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↗		↑↑↑	↗				↘	↕	↗
Traffic Volume (veh/h)	0	1870	879	0	1531	469	0	0	0	143	0	417
Future Volume (veh/h)	0	1870	879	0	1531	469	0	0	0	143	0	417
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1786	1786	0	1772	1772				1716	1772	1702
Adj Flow Rate, veh/h	0	2078	0	0	1701	0				106	0	520
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90				0.90	0.90	0.90
Percent Heavy Veh, %	0	1	1	0	2	2				6	2	7
Cap, veh/h	0	3403		0	3377					348	0	615
Arrive On Green	0.00	0.70	0.00	0.00	1.00	0.00				0.21	0.00	0.21
Sat Flow, veh/h	0	5036	1514	0	4997	1502				1634	0	2884
Grp Volume(v), veh/h	0	2078	0	0	1701	0				106	0	520
Grp Sat Flow(s),veh/h/ln	0	1625	1514	0	1612	1502				1634	0	1442
Q Serve(g_s), s	0.0	20.2	0.0	0.0	0.0	0.0				4.9	0.0	15.6
Cycle Q Clear(g_c), s	0.0	20.2	0.0	0.0	0.0	0.0				4.9	0.0	15.6
Prop In Lane	0.00		1.00	0.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	3403		0	3377					348	0	615
V/C Ratio(X)	0.00	0.61		0.00	0.50					0.30	0.00	0.85
Avail Cap(c_a), veh/h	0	3403		0	3377					454	0	801
HCM Platoon Ratio	1.00	1.00	1.00	1.00	2.00	2.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.00	0.00	0.67	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	7.2	0.0	0.0	0.0	0.0				29.8	0.0	34.0
Incr Delay (d2), s/veh	0.0	0.8	0.0	0.0	0.4	0.0				0.5	0.0	6.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	4.8	0.0	0.0	0.1	0.0				1.9	0.0	5.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	8.0	0.0	0.0	0.4	0.0				30.3	0.0	40.6
LnGrp LOS	A	A		A	A					C	A	D
Approach Vol, veh/h		2078	A		1701	A					626	
Approach Delay, s/veh		8.0			0.4						38.9	
Approach LOS		A			A						D	
Timer - Assigned Phs		2		4		6						
Phs Duration (G+Y+Rc), s		66.8		23.2		66.8						
Change Period (Y+Rc), s		4.0		4.0		4.0						
Max Green Setting (Gmax), s		57.0		25.0		57.0						
Max Q Clear Time (g_c+I1), s		22.2		17.6		2.0						
Green Ext Time (p_c), s		20.2		1.6		17.6						

Intersection Summary

HCM 6th Ctrl Delay	9.4
HCM 6th LOS	A

Notes

User approved volume balancing among the lanes for turning movement.

Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th Signalized Intersection Summary

6: I-15 NB Off-ramp/I-15 NB On-ramp & Foothill Blvd /Foothill Blvd

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↑		↑↑↑	↑	↑	↑↓	↑			
Traffic Volume (veh/h)	0	1705	308	0	1099	819	901	0	395	0	0	0
Future Volume (veh/h)	0	1705	308	0	1099	819	901	0	395	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No		No		No		No				
Adj Sat Flow, veh/h/ln	0	1786	1674	0	1772	1786	1772	1772	1744			
Adj Flow Rate, veh/h	0	1874	0	0	1208	0	1125	0	289			
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91			
Percent Heavy Veh, %	0	1	9	0	2	1	2	2	4			
Cap, veh/h	0	2529		0	2509		1325	0	580			
Arrive On Green	0.00	1.00	0.00	0.00	0.52	0.00	0.39	0.00	0.39			
Sat Flow, veh/h	0	5036	1418	0	4997	1514	3375	0	1478			
Grp Volume(v), veh/h	0	1874	0	0	1208	0	1125	0	289			
Grp Sat Flow(s),veh/h/ln	0	1625	1418	0	1612	1514	1688	0	1478			
Q Serve(g_s), s	0.0	0.0	0.0	0.0	14.4	0.0	27.3	0.0	13.3			
Cycle Q Clear(g_c), s	0.0	0.0	0.0	0.0	14.4	0.0	27.3	0.0	13.3			
Prop In Lane	0.00		1.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	0	2529		0	2509		1325	0	580			
V/C Ratio(X)	0.00	0.74		0.00	0.48		0.85	0.00	0.50			
Avail Cap(c_a), veh/h	0	2529		0	2509		1913	0	837			
HCM Platoon Ratio	1.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.00	0.71	0.00	0.00	1.00	0.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	0.0	0.0	0.0	0.0	13.9	0.0	24.9	0.0	20.6			
Incr Delay (d2), s/veh	0.0	1.4	0.0	0.0	0.7	0.0	2.6	0.0	0.7			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.0	0.3	0.0	0.0	5.1	0.0	10.7	0.0	4.4			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	1.4	0.0	0.0	14.6	0.0	27.5	0.0	21.3			
LnGrp LOS	A	A		A	B		C	A	C			
Approach Vol, veh/h		1874	A		1208	A		1414				
Approach Delay, s/veh		1.4			14.6			26.3				
Approach LOS		A			B			C				
Timer - Assigned Phs		2			6			8				
Phs Duration (G+Y+Rc), s		50.7			50.7			39.3				
Change Period (Y+Rc), s		4.0			4.0			4.0				
Max Green Setting (Gmax), s		31.0			31.0			51.0				
Max Q Clear Time (g_c+I1), s		2.0			16.4			29.3				
Green Ext Time (p_c), s		18.0			7.4			6.0				

Intersection Summary

HCM 6th Ctrl Delay	12.8
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th Signalized Intersection Summary
 7: Ontario Mills Dr./I-15 SB Ramps & Fourth St

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖↗	↑↑↑	↖	↖↗	↑↑↑	↖	↖	↑↑	↖	↖	↑↑	↖
Traffic Volume (veh/h)	514	857	52	72	681	204	110	181	36	69	144	344
Future Volume (veh/h)	514	857	52	72	681	204	110	181	36	69	144	344
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No		No		No		No		No		No
Adj Sat Flow, veh/h/ln	1513	1730	1772	1588	1660	1589	1647	1786	1786	1342	1786	1758
Adj Flow Rate, veh/h	519	866	53	73	688	206	111	183	36	70	145	347
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	7	5	2	1	10	15	4	1	1	27	1	3
Cap, veh/h	590	2488	791	472	2159	642	138	266	119	161	208	976
Arrive On Green	0.21	0.53	0.53	0.32	0.95	0.95	0.09	0.08	0.08	0.13	0.12	0.12
Sat Flow, veh/h	2795	4722	1502	2933	4531	1347	1569	3393	1514	1278	1786	2979
Grp Volume(v), veh/h	519	866	53	73	688	206	111	183	36	70	145	347
Grp Sat Flow(s),veh/h/ln	1397	1574	1502	1467	1510	1347	1569	1697	1514	1278	1786	1490
Q Serve(g_s), s	23.4	13.8	1.5	2.3	1.3	0.9	9.0	6.8	2.9	6.6	10.2	11.5
Cycle Q Clear(g_c), s	23.4	13.8	1.5	2.3	1.3	0.9	9.0	6.8	2.9	6.6	10.2	11.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	590	2488	791	472	2159	642	138	266	119	161	208	976
VC Ratio(X)	0.88	0.35	0.07	0.15	0.32	0.32	0.80	0.69	0.30	0.43	0.70	0.36
Avail Cap(c_a), veh/h	871	2488	791	472	2159	642	235	561	250	172	268	1076
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.93	0.93	0.93	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	49.7	17.8	7.0	37.8	1.6	0.7	58.2	58.4	56.6	52.5	55.2	33.3
Incr Delay (d2), s/veh	7.2	0.4	0.2	0.1	0.4	1.2	10.2	3.1	1.4	1.8	5.4	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.4	4.7	0.8	0.8	0.4	0.5	4.0	3.0	1.2	2.2	4.9	4.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	56.8	18.2	7.2	37.9	2.0	1.9	68.4	61.5	58.0	54.3	60.6	33.5
LnGrp LOS	E	B	A	D	A	A	E	E	E	D	E	C
Approach Vol, veh/h		1438			967			330			562	
Approach Delay, s/veh		31.7			4.7			63.4			43.1	
Approach LOS		C			A			E			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	34.4	72.0	15.0	18.6	31.0	65.4	19.9	13.7				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	68.0	68.0	19.0	19.0	40.0	36.0	17.0	21.0				
Max Q Clear Time (g_c+14), s	14.3	15.8	11.0	13.5	25.4	3.3	8.6	8.8				
Green Ext Time (p_c), s	0.0	6.3	0.1	1.1	1.6	5.2	0.1	0.9				

Intersection Summary

HCM 6th Ctrl Delay	28.9
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

HCM 6th Signalized Intersection Summary

8: Fourth St & I-15 NB Ramps

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔	↑↑↑	↗	↗	↑↑↑		↗	↑↑		↗	↖	↖↖
Traffic Volume (veh/h)	526	391	47	30	403	145	47	58	42	123	37	508
Future Volume (veh/h)	526	391	47	30	403	145	47	58	42	123	37	508
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No		No		No		No		No		No
Adj Sat Flow, veh/h/ln	1786	1575	1702	1702	1603	1603	1702	1786	1786	1421	1758	1702
Adj Flow Rate, veh/h	548	407	49	31	420	151	49	60	44	84	101	529
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	1	16	7	7	14	14	7	1	1	27	3	7
Cap, veh/h	1205	3026	1015	38	1162	400	99	119	80	120	156	1310
Arrive On Green	0.61	1.00	1.00	0.02	0.36	0.36	0.06	0.06	0.06	0.09	0.09	0.09
Sat Flow, veh/h	3300	4301	1442	1621	3215	1107	1621	1949	1299	1353	1758	2884
Grp Volume(v), veh/h	548	407	49	31	380	191	49	51	53	84	101	529
Grp Sat Flow(s),veh/h/ln	1650	1434	1442	1621	1459	1404	1621	1697	1552	1353	1758	1442
Q Serve(g_s), s	11.7	0.0	0.0	2.5	12.4	13.1	3.8	3.8	4.3	7.8	7.2	0.0
Cycle Q Clear(g_c), s	11.7	0.0	0.0	2.5	12.4	13.1	3.8	3.8	4.3	7.8	7.2	0.0
Prop In Lane	1.00		1.00	1.00		0.79	1.00		0.84	1.00		1.00
Lane Grp Cap(c), veh/h	1205	3026	1015	38	1055	508	99	104	95	120	156	1310
V/C Ratio(X)	0.45	0.13	0.05	0.82	0.36	0.38	0.49	0.49	0.55	0.70	0.65	0.40
Avail Cap(c_a), veh/h	1205	3026	1015	87	1055	508	511	535	489	167	216	1408
HCM Platoon Ratio	1.67	1.67	1.67	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.96	0.96	0.96	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	18.4	0.0	0.0	63.2	30.5	30.7	59.1	59.1	59.3	57.5	57.2	23.7
Incr Delay (d2), s/veh	0.3	0.1	0.1	33.8	1.0	2.1	3.7	3.6	4.9	7.3	4.4	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.6	0.0	0.0	1.3	4.3	4.5	1.7	1.7	1.8	2.9	3.4	5.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	18.6	0.1	0.1	97.1	31.4	32.8	62.8	62.7	64.2	64.9	61.7	23.9
LnGrp LOS	B	A	A	F	C	C	E	E	E	E	E	C
Approach Vol, veh/h		1004			602			153			714	
Approach Delay, s/veh		10.2			35.2			63.2			34.1	
Approach LOS		B			D			E			C	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.0	95.5		15.6	51.5	51.0		12.0				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	7.0	50.0		16.0	10.0	47.0		41.0				
Max Q Clear Time (g_c+14), s	7.0	2.0		9.8	13.7	15.1		6.3				
Green Ext Time (p_c), s	0.0	2.7		1.7	0.0	3.4		0.7				

Intersection Summary

HCM 6th Ctrl Delay	26.5
HCM 6th LOS	C

Notes

- User approved pedestrian interval to be less than phase max green.
- User approved volume balancing among the lanes for turning movement.

HCM 6th Signalized Intersection Summary
 9: Milliken Ave & I-210 WB On-ramp/I-210 WB Off-ramp

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↘ ↙	↔	↗	↘ ↙	↕			↕	
Traffic Volume (veh/h)	0	0	0	178	7	68	193	514	0	0	517	73
Future Volume (veh/h)	0	0	0	178	7	68	193	514	0	0	517	73
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach				No		No		No				No
Adj Sat Flow, veh/h/ln				1554	1786	1688	1500	1786	0	0	1786	1786
Adj Flow Rate, veh/h				210	0	50	201	535	0	0	539	76
Peak Hour Factor				0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %				11	1	8	8	1	0	0	1	1
Cap, veh/h				390	0	188	374	3584	0	0	2308	320
Arrive On Green				0.13	0.00	0.13	0.27	1.00	0.00	0.00	0.53	0.53
Sat Flow, veh/h				2960	0	1430	2772	5036	0	0	4488	601
Grp Volume(v), veh/h				210	0	50	201	535	0	0	403	212
Grp Sat Flow(s),veh/h/ln				1480	0	1430	1386	1625	0	0	1625	1678
Q Serve(g_s), s				4.0	0.0	1.9	3.7	0.0	0.0	0.0	4.0	4.1
Cycle Q Clear(g_c), s				4.0	0.0	1.9	3.7	0.0	0.0	0.0	4.0	4.1
Prop In Lane				1.00		1.00	1.00		0.00	0.00		0.36
Lane Grp Cap(c), veh/h				390	0	188	374	3584	0	0	1734	895
V/C Ratio(X)				0.54	0.00	0.27	0.54	0.15	0.00	0.00	0.23	0.24
Avail Cap(c_a), veh/h				444	0	215	374	3584	0	0	1734	895
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.95	0.95	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				24.4	0.0	23.4	20.3	0.0	0.0	0.0	7.5	7.5
Incr Delay (d2), s/veh				1.2	0.0	0.7	1.4	0.1	0.0	0.0	0.3	0.6
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				1.3	0.0	0.6	1.1	0.0	0.0	0.0	1.2	1.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				25.5	0.0	24.2	21.7	0.1	0.0	0.0	7.8	8.1
LnGrp LOS				C	A	C	C	A	A	A	A	A
Approach Vol, veh/h						260		736			615	
Approach Delay, s/veh						25.3		6.0			7.9	
Approach LOS						C		A			A	
Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		48.1			12.1	36.0		11.9				
Change Period (Y+Rc), s		4.0			4.0	4.0		4.0				
Max Green Setting (Gmax), s		43.0			7.0	32.0		9.0				
Max Q Clear Time (g_c+I1), s		2.0			5.7	6.1		6.0				
Green Ext Time (p_c), s		4.2			0.1	4.2		0.3				

Intersection Summary

HCM 6th Ctrl Delay	9.8
HCM 6th LOS	A

Notes

User approved volume balancing among the lanes for turning movement.

HCM 6th Signalized Intersection Summary
 10: Milliken Ave & I-210 EB Off-ramp/I-210 EB On-ramp

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	141	8	83	0	0	0	0	566	373	122	575	0
Future Volume (veh/h)	141	8	83	0	0	0	0	566	373	122	575	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No						No			No		
Adj Sat Flow, veh/h/ln	1660	1786	1702				0	1758	1758	1575	1758	0
Adj Flow Rate, veh/h	178	0	61				0	596	393	128	605	0
Peak Hour Factor	0.95	0.95	0.95				0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	1	7				0	3	3	2	3	0
Cap, veh/h	414	0	189				0	1813	844	298	3531	0
Arrive On Green	0.13	0.00	0.13				0.00	0.57	0.57	0.20	1.00	0.00
Sat Flow, veh/h	3162	0	1442				0	3358	1490	2910	4957	0
Grp Volume(v), veh/h	178	0	61				0	596	393	128	605	0
Grp Sat Flow(s),veh/h/ln	1581	0	1442				0	1600	1490	1455	1600	0
Q Serve(g_s), s	3.1	0.0	2.3				0.0	6.0	9.3	2.3	0.0	0.0
Cycle Q Clear(g_c), s	3.1	0.0	2.3				0.0	6.0	9.3	2.3	0.0	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	414	0	189				0	1813	844	298	3531	0
V/C Ratio(X)	0.43	0.00	0.32				0.00	0.33	0.47	0.43	0.17	0.00
Avail Cap(c_a), veh/h	422	0	192				0	1813	844	298	3531	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	0.98	0.98	0.00
Uniform Delay (d), s/veh	24.0	0.0	23.7				0.0	6.9	7.7	22.3	0.0	0.0
Incr Delay (d2), s/veh	0.7	0.0	1.0				0.0	0.5	1.8	1.0	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	0.0	0.8				0.0	1.7	2.7	0.8	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	24.7	0.0	24.6				0.0	7.4	9.5	23.3	0.1	0.0
LnGrp LOS	C	A	C				A	A	A	C	A	A
Approach Vol, veh/h	239						989			733		
Approach Delay, s/veh	24.7						8.2			4.2		
Approach LOS	C						A			A		
Timer - Assigned Phs	1	2	4	6								
Phs Duration (G+Y+Rc), s	38.0		11.9	48.1								
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0								
Max Green Setting (Gmax), s	34.0		8.0	44.0								
Max Q Clear Time (g_c+I), s	11.3		5.1	2.0								
Green Ext Time (p_c), s	0.1	7.3	0.2	4.8								

Intersection Summary

HCM 6th Ctrl Delay	8.7
HCM 6th LOS	A

Notes

User approved volume balancing among the lanes for turning movement.

HCM 6th Signalized Intersection Summary

11: Milliken Ave & Foothill Blvd

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖↗	↑↑↑	↖	↖↗	↑↑↑	↖	↖↗	↑↑↑	↖	↖↗	↑↑↑	↖
Traffic Volume (veh/h)	247	1291	106	178	703	101	221	558	260	133	243	98
Future Volume (veh/h)	247	1291	106	178	703	101	221	558	260	133	243	98
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No		No		No		No		No		No
Adj Sat Flow, veh/h/ln	1588	1786	1758	1588	1786	1772	1575	1772	1758	1588	1744	1772
Adj Flow Rate, veh/h	271	1419	116	196	773	111	243	613	286	146	267	108
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	1	1	3	1	1	2	2	2	3	1	4	2
Cap, veh/h	335	1949	596	259	1823	561	306	1566	383	207	1059	334
Arrive On Green	0.11	0.40	0.40	0.09	0.37	0.37	0.11	0.26	0.26	0.07	0.22	0.22
Sat Flow, veh/h	2933	4876	1490	2933	4876	1502	2910	6095	1490	2933	4761	1502
Grp Volume(v), veh/h	271	1419	116	196	773	111	243	613	286	146	267	108
Grp Sat Flow(s),veh/h/ln	1467	1625	1490	1467	1625	1502	1455	1524	1490	1467	1587	1502
Q Serve(g_s), s	7.8	21.4	4.4	5.7	10.2	4.3	7.1	7.2	15.3	4.2	4.0	5.2
Cycle Q Clear(g_c), s	7.8	21.4	4.4	5.7	10.2	4.3	7.1	7.2	15.3	4.2	4.0	5.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	335	1949	596	259	1823	561	306	1566	383	207	1059	334
VC Ratio(X)	0.81	0.73	0.19	0.76	0.42	0.20	0.79	0.39	0.75	0.70	0.25	0.32
Avail Cap(c_a), veh/h	371	2863	875	304	2751	847	335	3158	772	304	2412	761
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.5	22.1	17.0	38.7	20.2	18.4	37.9	26.7	29.7	39.5	27.8	28.3
Incr Delay (d2), s/veh	11.5	0.5	0.2	8.8	0.2	0.2	11.5	0.2	2.9	4.3	0.1	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.2	7.2	1.4	2.2	3.5	1.4	2.8	2.4	5.3	1.6	1.4	1.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	49.0	22.6	17.1	47.5	20.4	18.6	49.4	26.8	32.6	43.8	27.9	28.8
LnGrp LOS	D	C	B	D	C	B	D	C	C	D	C	C
Approach Vol, veh/h		1806			1080			1142			521	
Approach Delay, s/veh		26.2			25.1			33.1			32.6	
Approach LOS		C			C			C			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	17.0	38.7	13.1	23.3	13.9	36.5	10.1	26.3				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	51.0	51.0	10.0	44.0	11.0	49.0	9.0	45.0				
Max Q Clear Time (g_c+1/3), s	23.4	23.4	9.1	7.2	9.8	12.2	6.2	17.3				
Green Ext Time (p_c), s	0.1	11.3	0.1	2.0	0.1	5.7	0.1	5.0				

Intersection Summary

HCM 6th Ctrl Delay	28.4
HCM 6th LOS	C

HCM 6th Signalized Intersection Summary
 12: Milliken Ave & Fourth St

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔	↑↑↑	↗	↔↔	↑↑↑	↗	↔↔	↑↑↑	↗	↔↔	↑↑↑	↗
Traffic Volume (veh/h)	197	559	148	254	431	133	242	735	85	222	668	56
Future Volume (veh/h)	197	559	148	254	431	133	242	735	85	222	668	56
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No		No		No		No		No		No
Adj Sat Flow, veh/h/ln	1588	1730	1758	1575	1744	1730	1588	1660	1646	1550	1688	1688
Adj Flow Rate, veh/h	201	570	151	259	440	136	247	750	87	227	682	57
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	1	5	3	2	4	5	1	10	11	4	8	8
Cap, veh/h	259	843	266	217	784	241	188	2924	818	183	2820	232
Arrive On Green	0.09	0.18	0.18	0.07	0.16	0.16	0.06	0.51	0.51	0.06	0.51	0.51
Sat Flow, veh/h	2933	4722	1490	2910	4761	1466	2933	5709	1395	2864	5507	453
Grp Volume(v), veh/h	201	570	151	259	440	136	247	750	87	227	537	202
Grp Sat Flow(s),veh/h/ln	1467	1574	1490	1455	1587	1466	1467	1427	1395	1432	1451	1606
Q Serve(g_s), s	6.3	10.6	8.7	7.0	8.0	8.0	6.0	6.9	2.6	6.0	6.4	6.6
Cycle Q Clear(g_c), s	6.3	10.6	8.7	7.0	8.0	8.0	6.0	6.9	2.6	6.0	6.4	6.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.28
Lane Grp Cap(c), veh/h	259	843	266	217	784	241	188	2924	818	183	2230	823
VC Ratio(X)	0.78	0.68	0.57	1.19	0.56	0.56	1.32	0.26	0.11	1.24	0.24	0.25
Avail Cap(c_a), veh/h	282	2670	842	217	2590	798	188	2924	818	183	2230	823
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.8	36.0	35.2	43.4	36.0	36.0	43.9	12.8	8.5	43.9	12.7	12.8
Incr Delay (d2), s/veh	11.8	1.0	1.9	122.5	0.6	2.1	174.5	0.2	0.3	144.9	0.3	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.6	3.8	3.1	6.1	2.9	2.8	6.6	2.0	0.7	5.7	1.9	2.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	53.6	36.9	37.1	165.9	36.7	38.1	218.3	13.1	8.8	188.8	13.0	13.5
LnGrp LOS	D	D	D	F	D	D	F	B	A	F	B	B
Approach Vol, veh/h		922			835			1084			966	
Approach Delay, s/veh		40.6			77.0			59.5			54.4	
Approach LOS		D			E			E			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	40.0	52.0	11.0	20.7	10.0	52.0	12.3	19.4				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	48.0	48.0	7.0	53.0	6.0	48.0	9.0	51.0				
Max Q Clear Time (g_c+10), s	8.9	8.9	9.0	12.6	8.0	8.6	8.3	10.0				
Green Ext Time (p_c), s	0.0	5.5	0.0	4.2	0.0	4.8	0.0	3.2				

Intersection Summary

HCM 6th Ctrl Delay	57.5
HCM 6th LOS	E

Notes

User approved pedestrian interval to be less than phase max green.

Intersection						
Int Delay, s/veh	0.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↗		↑↑↑	↑↑↑	↗
Traffic Vol, veh/h	0	30	0	1441	786	26
Future Vol, veh/h	0	30	0	1441	786	26
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	175
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	2	1	2	3	6	4
Mvmt Flow	0	31	0	1470	802	27

Major/Minor	Minor2	Major1	Major2		
Conflicting Flow All	-	401	-	0	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-
Critical Hdwy	-	7.12	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-
Follow-up Hdwy	-	3.91	-	-	-
Pot Cap-1 Maneuver	0	514	0	-	-
Stage 1	0	-	0	-	-
Stage 2	0	-	0	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	-	514	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	12.4	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT EBLn1	SBT	SBR
Capacity (veh/h)	- 514	-	-
HCM Lane V/C Ratio	- 0.06	-	-
HCM Control Delay (s)	- 12.4	-	-
HCM Lane LOS	- B	-	-
HCM 95th %tile Q(veh)	- 0.2	-	-

HCM 6th Signalized Intersection Summary

14: Milliken Ave & 7th St

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↑↑↑		↖	↑↑↑	
Traffic Volume (veh/h)	107	2	42	13	0	19	38	1315	9	7	800	9
Future Volume (veh/h)	107	2	42	13	0	19	38	1315	9	7	800	9
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1687	1786	1786	1382	1800	1800	1620	1758	1758	1687	1716	1716
Adj Flow Rate, veh/h	108	2	42	13	0	19	38	1328	9	7	808	9
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	1	1	1	24	0	0	6	3	3	1	6	6
Cap, veh/h	236	8	175	191	0	184	44	3543	24	12	3339	37
Arrive On Green	0.12	0.12	0.12	0.12	0.00	0.12	0.03	0.72	0.72	0.01	0.70	0.70
Sat Flow, veh/h	1326	69	1455	1062	0	1525	1543	4918	33	1606	4776	53
Grp Volume(v), veh/h	108	0	44	13	0	19	38	864	473	7	528	289
Grp Sat Flow(s),veh/h/ln	1326	0	1524	1062	0	1525	1543	1600	1752	1606	1561	1706
Q Serve(g_s), s	6.2	0.0	2.1	0.9	0.0	0.9	1.9	8.2	8.2	0.3	4.8	4.9
Cycle Q Clear(g_c), s	7.1	0.0	2.1	3.0	0.0	0.9	1.9	8.2	8.2	0.3	4.8	4.9
Prop In Lane	1.00		0.95	1.00		1.00	1.00		0.02	1.00		0.03
Lane Grp Cap(c), veh/h	236	0	184	191	0	184	44	2305	1262	12	2183	1193
VC Ratio(X)	0.46	0.00	0.24	0.07	0.00	0.10	0.86	0.37	0.37	0.60	0.24	0.24
Avail Cap(c_a), veh/h	1032	0	1098	829	0	1099	156	2305	1262	81	2183	1193
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.1	0.0	31.5	32.8	0.0	31.0	38.3	4.2	4.2	39.2	4.3	4.3
Incr Delay (d2), s/veh	1.4	0.0	0.7	0.1	0.0	0.2	34.9	0.5	0.9	41.6	0.3	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	0.0	0.8	0.2	0.0	0.3	1.1	1.5	1.8	0.3	1.0	1.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	35.5	0.0	32.2	33.0	0.0	31.2	73.1	4.7	5.1	80.8	4.6	4.8
LnGrp LOS	D	A	C	C	A	C	E	A	A	F	A	A
Approach Vol, veh/h		152			32			1375			824	
Approach Delay, s/veh		34.6			31.9			6.7			5.3	
Approach LOS		C			C			A			A	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	4.6	61.0		13.5	6.3	59.3		13.5				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	4.0	57.0		57.0	8.0	53.0		57.0				
Max Q Clear Time (g_c+I1), s	2.3	10.2		9.1	3.9	6.9		5.0				
Green Ext Time (p_c), s	0.0	10.4		0.6	0.0	5.3		0.1				

Intersection Summary

HCM 6th Ctrl Delay	8.3
HCM 6th LOS	A

HCM 6th Signalized Intersection Summary
 15: Milliken Ave & I-10 WB Ramps/Ontario Mills Pkwy

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔	↑	↗	↔↔	↕↕	↗	↔↔	↑↑↑	↗	↔↔	↑↑↑	↗
Traffic Volume (veh/h)	136	157	60	470	204	101	265	781	204	250	655	397
Future Volume (veh/h)	136	157	60	470	204	101	265	781	204	250	655	397
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No		No		No		No		No		No
Adj Sat Flow, veh/h/ln	1563	1758	1786	1563	1786	1098	1425	1674	1491	1588	1702	1716
Adj Flow Rate, veh/h	164	189	72	566	246	122	319	941	246	301	789	478
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Percent Heavy Veh, %	3	3	1	3	1	50	14	9	22	1	7	6
Cap, veh/h	548	217	187	618	502	138	375	2303	776	378	2263	838
Arrive On Green	0.19	0.12	0.12	0.21	0.15	0.15	0.05	0.13	0.13	0.13	0.39	0.39
Sat Flow, veh/h	2887	1758	1514	2887	3393	931	2633	5757	1264	2933	5854	1454
Grp Volume(v), veh/h	164	189	72	566	246	122	319	941	246	301	789	478
Grp Sat Flow(s),veh/h/ln	1444	1758	1514	1444	1697	931	1317	1439	1264	1467	1463	1454
Q Serve(g_s), s	5.9	12.7	5.3	23.0	8.0	15.4	14.4	18.0	5.7	12.0	11.5	10.3
Cycle Q Clear(g_c), s	5.9	12.7	5.3	23.0	8.0	15.4	14.4	18.0	5.7	12.0	11.5	10.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	548	217	187	618	502	138	375	2303	776	378	2263	838
VC Ratio(X)	0.30	0.87	0.38	0.92	0.49	0.89	0.85	0.41	0.32	0.80	0.35	0.57
Avail Cap(c_a), veh/h	601	234	202	674	537	147	505	2303	776	378	2263	838
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.7	51.6	48.4	46.1	47.0	50.1	55.9	39.1	6.0	50.7	26.1	5.7
Incr Delay (d2), s/veh	0.3	26.5	1.3	16.4	0.7	41.2	9.7	0.5	1.0	11.3	0.4	2.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	7.2	2.1	9.6	3.4	5.2	5.6	7.0	2.2	5.0	4.1	2.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	42.0	78.1	49.7	62.5	47.7	91.4	65.6	39.6	7.0	62.1	26.5	8.5
LnGrp LOS	D	E	D	E	D	F	E	D	A	E	C	A
Approach Vol, veh/h		425		934			1506			1568		
Approach Delay, s/veh		59.4		62.4			39.8			27.9		
Approach LOS		E		E			D			C		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	49.5	52.0	29.7	18.8	21.1	50.4	26.8	21.8				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	42.0	48.0	28.0	16.0	23.0	37.0	25.0	19.0				
Max Q Clear Time (g_c+14), s	14.0	20.0	25.0	14.7	16.4	13.5	7.9	17.4				
Green Ext Time (p_c), s	0.0	8.8	0.7	0.2	0.6	8.1	0.5	0.3				

Intersection Summary

HCM 6th Ctrl Delay	42.2
HCM 6th LOS	D

HCM 6th Signalized Intersection Summary

16: Milliken Ave & I-10 EB Ramps

11/03/2021



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↖↖	↘	↖↖	↑↑↑	↓↓↓	↘
Traffic Volume (veh/h)	392	181	271	858	597	588
Future Volume (veh/h)	392	181	271	858	597	588
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1550	1617	1176	1646	1744	1491
Adj Flow Rate, veh/h	404	187	279	885	615	606
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	4	13	34	11	4	22
Cap, veh/h	490	235	326	4314	3472	948
Arrive On Green	0.17	0.17	0.15	0.76	0.77	0.77
Sat Flow, veh/h	2864	1371	2172	5891	6243	1264
Grp Volume(v), veh/h	404	187	279	885	615	606
Grp Sat Flow(s),veh/h/ln	1432	1371	1086	1415	1500	1264
Q Serve(g_s), s	16.3	15.7	15.0	5.3	3.3	21.7
Cycle Q Clear(g_c), s	16.3	15.7	15.0	5.3	3.3	21.7
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	490	235	326	4314	3472	948
VC Ratio(X)	0.82	0.80	0.86	0.21	0.18	0.64
Avail Cap(c_a), veh/h	1193	571	652	4314	3472	948
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.33	1.33
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.79	0.79
Uniform Delay (d), s/veh	48.0	47.7	49.8	4.0	6.2	3.5
Incr Delay (d2), s/veh	3.5	6.1	6.5	0.1	0.1	2.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.1	11.8	4.4	1.4	1.0	7.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	51.5	53.8	56.2	4.1	6.3	6.1
LnGrp LOS	D	D	E	A	A	A
Approach Vol, veh/h	591			1164	1221	
Approach Delay, s/veh	52.2			16.6	6.2	
Approach LOS	D			B	A	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		95.4		24.6	22.0	73.5
Change Period (Y+Rc), s		4.0		4.0	4.0	4.0
Max Green Setting (Gmax), s		62.0		50.0	36.0	22.0
Max Q Clear Time (g_c+I1), s		7.3		18.3	17.0	23.7
Green Ext Time (p_c), s		7.9		2.2	1.0	0.0
Intersection Summary						
HCM 6th Ctrl Delay			19.4			
HCM 6th LOS			B			

HCM 6th Signalized Intersection Summary

1: Highway 395 & Joshua St

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗	↗	↖	↗	↗	↖	↗	↗
Traffic Volume (veh/h)	36	104	19	40	19	101	26	1538	106	51	533	17
Future Volume (veh/h)	36	104	19	40	19	101	26	1538	106	51	533	17
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1687	1786	1786	1528	1786	1519	1687	1716	1491	1395	1617	1716
Adj Flow Rate, veh/h	40	116	21	44	21	112	29	1709	118	57	592	19
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	1	1	1	13	1	20	1	6	22	23	13	6
Cap, veh/h	275	223	40	191	270	195	40	2015	781	72	1990	941
Arrive On Green	0.15	0.15	0.15	0.15	0.15	0.15	0.02	0.62	0.62	0.05	0.65	0.65
Sat Flow, veh/h	1196	1472	266	1080	1786	1287	1606	3260	1264	1329	3073	1454
Grp Volume(v), veh/h	40	0	137	44	21	112	29	1709	118	57	592	19
Grp Sat Flow(s),veh/h/ln	1196	0	1738	1080	1786	1287	1606	1630	1264	1329	1537	1454
Q Serve(g_s), s	2.0	0.0	4.9	2.7	0.7	5.5	1.2	28.6	2.7	2.9	5.7	0.3
Cycle Q Clear(g_c), s	2.7	0.0	4.9	7.6	0.7	5.5	1.2	28.6	2.7	2.9	5.7	0.3
Prop In Lane	1.00		0.15	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	275	0	263	191	270	195	40	2015	781	72	1990	941
VC Ratio(X)	0.15	0.00	0.52	0.23	0.08	0.58	0.73	0.85	0.15	0.79	0.30	0.02
Avail Cap(c_a), veh/h	939	0	1227	790	1261	909	142	2015	781	156	1990	941
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.9	0.0	26.6	30.1	24.8	26.8	32.9	10.4	5.5	31.8	5.2	4.3
Incr Delay (d2), s/veh	0.2	0.0	1.6	0.6	0.1	2.7	22.1	4.7	0.4	17.3	0.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.0	2.1	0.7	0.3	1.8	0.7	7.1	0.5	1.2	1.1	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	26.2	0.0	28.2	30.7	24.9	29.5	55.0	15.1	5.9	49.0	5.6	4.3
LnGrp LOS	C	A	C	C	C	C	D	B	A	D	A	A
Approach Vol, veh/h		177			177			1856			668	
Approach Delay, s/veh		27.7			29.2			15.1			9.3	
Approach LOS		C			C			B			A	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.7	46.0		14.3	5.7	48.0		14.3				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	8.0	42.0		48.0	6.0	44.0		48.0				
Max Q Clear Time (g_c+I1), s	4.9	30.6		6.9	3.2	7.7		9.6				
Green Ext Time (p_c), s	0.0	8.1		1.0	0.0	3.8		0.7				

Intersection Summary

HCM 6th Ctrl Delay	15.4
HCM 6th LOS	B

Intersection						
Int Delay, s/veh	1.4					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		∩	
Traffic Vol, veh/h	0	253	88	0	5	57
Future Vol, veh/h	0	253	88	0	5	57
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	0	25	23	0	1	22
Mvmt Flow	0	258	90	0	5	58
Major/Minor	Major1	Major2	Minor2			
Conflicting Flow All	-	0	-	0	348	90
Stage 1	-	-	-	-	90	-
Stage 2	-	-	-	-	258	-
Critical Hdwy	-	-	-	-	6.41	6.42
Critical Hdwy Stg 1	-	-	-	-	5.41	-
Critical Hdwy Stg 2	-	-	-	-	5.41	-
Follow-up Hdwy	-	-	-	-	3.509	3.498
Pot Cap-1 Maneuver	0	-	-	0	651	915
Stage 1	0	-	-	0	936	-
Stage 2	0	-	-	0	787	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	-	651	915
Mov Cap-2 Maneuver	-	-	-	-	651	-
Stage 1	-	-	-	-	936	-
Stage 2	-	-	-	-	787	-
Approach	EB	WB	SB			
HCM Control Delay, s	0	0	9.4			
HCM LOS						A
Minor Lane/Major Mvmt	EBT	WBT	SBLn1			
Capacity (veh/h)	-	-	886			
HCM Lane V/C Ratio	-	-	0.071			
HCM Control Delay (s)	-	-	9.4			
HCM Lane LOS	-	-	A			
HCM 95th %tile Q(veh)	-	-	0.2			

Intersection												
Int Delay, s/veh	3.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↗			↕				
Traffic Vol, veh/h	160	117	0	0	88	28	0	0	0	0	0	0
Future Vol, veh/h	160	117	0	0	88	28	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	16965	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	92	92	95	95	92	92	92	95	92	95
Heavy Vehicles, %	24	23	2	2	23	42	2	2	2	2	2	2
Mvmt Flow	168	123	0	0	93	29	0	0	0	0	0	0

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	122	0	-
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	4.34	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	2.416	-	-
Pot Cap-1 Maneuver	1340	0	0
Stage 1	-	0	0
Stage 2	-	0	0
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1340	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	4.7	0	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	WBT	WBR
Capacity (veh/h)	-	1340	-	-	-
HCM Lane V/C Ratio	-	0.126	-	-	-
HCM Control Delay (s)	0	8.1	0	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	-	0.4	-	-	-

Intersection						
Int Delay, s/veh	5.8					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	W			↑	↑	
Traffic Vol, veh/h	46	72	66	23	22	57
Future Vol, veh/h	46	72	66	23	22	57
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	6	10	20	48	38	19
Mvmt Flow	47	73	67	23	22	58

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	208	51	80	0	0
Stage 1	51	-	-	-	-
Stage 2	157	-	-	-	-
Critical Hdwy	6.46	6.3	4.3	-	-
Critical Hdwy Stg 1	5.46	-	-	-	-
Critical Hdwy Stg 2	5.46	-	-	-	-
Follow-up Hdwy	3.554	3.39	2.38	-	-
Pot Cap-1 Maneuver	771	995	1411	-	-
Stage 1	961	-	-	-	-
Stage 2	862	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	734	995	1411	-	-
Mov Cap-2 Maneuver	734	-	-	-	-
Stage 1	915	-	-	-	-
Stage 2	862	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.8	5.7	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1411	-	874	-	-
HCM Lane V/C Ratio	0.048	-	0.138	-	-
HCM Control Delay (s)	7.7	0	9.8	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0.5	-	-

HCM 6th Signalized Intersection Summary

5: I-15 SB On-ramp/I-15 SB Off-ramp & Foothill Blvd/Foothill Blvd

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↗		↑↑↑	↗				↘	↕	↗
Traffic Volume (veh/h)	0	974	816	0	1036	535	0	0	0	314	0	552
Future Volume (veh/h)	0	974	816	0	1036	535	0	0	0	314	0	552
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1786	1786	0	1772	1772				1716	1772	1702
Adj Flow Rate, veh/h	0	1082	0	0	1151	0				233	0	738
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90				0.90	0.90	0.90
Percent Heavy Veh, %	0	1	1	0	2	2				6	2	7
Cap, veh/h	0	3103		0	3079					449	0	792
Arrive On Green	0.00	0.64	0.00	0.00	1.00	0.00				0.27	0.00	0.27
Sat Flow, veh/h	0	5036	1514	0	4997	1502				1634	0	2884
Grp Volume(v), veh/h	0	1082	0	0	1151	0				233	0	738
Grp Sat Flow(s),veh/h/ln	0	1625	1514	0	1612	1502				1634	0	1442
Q Serve(g_s), s	0.0	9.3	0.0	0.0	0.0	0.0				10.9	0.0	22.4
Cycle Q Clear(g_c), s	0.0	9.3	0.0	0.0	0.0	0.0				10.9	0.0	22.4
Prop In Lane	0.00		1.00	0.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	3103		0	3079					449	0	792
V/C Ratio(X)	0.00	0.35		0.00	0.37					0.52	0.00	0.93
Avail Cap(c_a), veh/h	0	3103		0	3079					454	0	801
HCM Platoon Ratio	1.00	1.00	1.00	1.00	2.00	2.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.00	0.00	0.77	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	7.6	0.0	0.0	0.0	0.0				27.6	0.0	31.8
Incr Delay (d2), s/veh	0.0	0.3	0.0	0.0	0.3	0.0				1.0	0.0	17.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	2.5	0.0	0.0	0.1	0.0				4.2	0.0	9.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	8.0	0.0	0.0	0.3	0.0				28.6	0.0	49.1
LnGrp LOS	A	A		A	A					C	A	D
Approach Vol, veh/h		1082	A		1151	A					971	
Approach Delay, s/veh		8.0			0.3						44.2	
Approach LOS		A			A						D	
Timer - Assigned Phs		2		4		6						
Phs Duration (G+Y+Rc), s		61.3		28.7		61.3						
Change Period (Y+Rc), s		4.0		4.0		4.0						
Max Green Setting (Gmax), s		57.0		25.0		57.0						
Max Q Clear Time (g_c+I1), s		11.3		24.4		2.0						
Green Ext Time (p_c), s		8.4		0.3		9.3						

Intersection Summary

HCM 6th Ctrl Delay	16.2
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th Signalized Intersection Summary

6: I-15 NB Off-ramp/I-15 NB On-ramp & Foothill Blvd /Foothill Blvd

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↑		↑↑↑	↑	↑	↑↓	↑			
Traffic Volume (veh/h)	0	1018	270	0	1015	776	556	0	305	0	0	0
Future Volume (veh/h)	0	1018	270	0	1015	776	556	0	305	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No		No		No		No				
Adj Sat Flow, veh/h/ln	0	1786	1674	0	1772	1786	1772	1772	1744			
Adj Flow Rate, veh/h	0	1119	0	0	1115	0	715	0	223			
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91			
Percent Heavy Veh, %	0	1	9	0	2	1	2	2	4			
Cap, veh/h	0	3165		0	3141		884	0	387			
Arrive On Green	0.00	1.00	0.00	0.00	0.65	0.00	0.26	0.00	0.26			
Sat Flow, veh/h	0	5036	1418	0	4997	1514	3375	0	1478			
Grp Volume(v), veh/h	0	1119	0	0	1115	0	715	0	223			
Grp Sat Flow(s),veh/h/ln	0	1625	1418	0	1612	1514	1688	0	1478			
Q Serve(g_s), s	0.0	0.0	0.0	0.0	9.5	0.0	17.9	0.0	11.8			
Cycle Q Clear(g_c), s	0.0	0.0	0.0	0.0	9.5	0.0	17.9	0.0	11.8			
Prop In Lane	0.00		1.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	0	3165		0	3141		884	0	387			
VC Ratio(X)	0.00	0.35		0.00	0.36		0.81	0.00	0.58			
Avail Cap(c_a), veh/h	0	3165		0	3141		1913	0	837			
HCM Platoon Ratio	1.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.00	0.90	0.00	0.00	1.00	0.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	0.0	0.0	0.0	0.0	7.2	0.0	31.1	0.0	28.9			
Incr Delay (d2), s/veh	0.0	0.3	0.0	0.0	0.3	0.0	1.8	0.0	1.4			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.0	0.1	0.0	0.0	2.9	0.0	7.2	0.0	4.2			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.3	0.0	0.0	7.5	0.0	32.9	0.0	30.2			
LnGrp LOS	A	A		A	A		C	A	C			
Approach Vol, veh/h		1119	A		1115	A		938				
Approach Delay, s/veh		0.3			7.5			32.3				
Approach LOS		A			A			C				
Timer - Assigned Phs		2			6			8				
Phs Duration (G+Y+Rc), s		62.4			62.4			27.6				
Change Period (Y+Rc), s		4.0			4.0			4.0				
Max Green Setting (Gmax), s		31.0			31.0			51.0				
Max Q Clear Time (g_c+I1), s		2.0			11.5			19.9				
Green Ext Time (p_c), s		9.5			8.0			3.7				

Intersection Summary

HCM 6th Ctrl Delay	12.3
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th Signalized Intersection Summary
 7: Ontario Mills Dr./I-15 SB Ramps & Fourth St

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔	↑↑↑	↗	↔↔	↑↑↑	↗	↔	↑↑	↗	↔	↑↑	↗
Traffic Volume (veh/h)	518	1081	72	83	725	175	120	151	20	74	153	354
Future Volume (veh/h)	518	1081	72	83	725	175	120	151	20	74	153	354
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No		No		No		No		No		No
Adj Sat Flow, veh/h/ln	1513	1730	1772	1588	1660	1589	1647	1786	1786	1342	1786	1758
Adj Flow Rate, veh/h	523	1092	73	84	732	177	121	153	20	75	155	358
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	7	5	2	1	10	15	4	1	1	27	1	3
Cap, veh/h	594	2525	803	442	2141	637	149	233	104	177	200	967
Arrive On Green	0.21	0.53	0.53	0.30	0.95	0.95	0.09	0.07	0.07	0.14	0.11	0.11
Sat Flow, veh/h	2795	4722	1502	2933	4531	1347	1569	3393	1514	1278	1786	2979
Grp Volume(v), veh/h	523	1092	73	84	732	177	121	153	20	75	155	358
Grp Sat Flow(s),veh/h/ln	1397	1574	1502	1467	1510	1347	1569	1697	1514	1278	1786	1490
Q Serve(g_s), s	23.6	18.2	3.1	2.8	1.7	0.8	9.8	5.7	1.6	7.0	11.0	8.8
Cycle Q Clear(g_c), s	23.6	18.2	3.1	2.8	1.7	0.8	9.8	5.7	1.6	7.0	11.0	8.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	594	2525	803	442	2141	637	149	233	104	177	200	967
VC Ratio(X)	0.88	0.43	0.09	0.19	0.34	0.28	0.81	0.66	0.19	0.42	0.77	0.37
Avail Cap(c_a), veh/h	871	2525	803	442	2141	637	247	561	250	177	254	1058
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.94	0.94	0.94	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	49.6	18.3	14.8	39.5	1.9	0.7	57.7	59.1	57.2	51.3	56.1	19.2
Incr Delay (d2), s/veh	7.3	0.5	0.2	0.2	0.4	1.0	10.1	3.2	0.9	1.6	10.9	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.5	6.2	1.1	1.0	0.5	0.5	4.3	2.5	0.6	2.3	5.5	3.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	56.9	18.9	15.0	39.7	2.3	1.8	67.8	62.2	58.0	52.9	67.0	19.4
LnGrp LOS	E	B	B	D	A	A	E	E	E	D	E	B
Approach Vol, veh/h		1688			993			294			588	
Approach Delay, s/veh		30.5			5.4			64.2			36.2	
Approach LOS		C			A			E			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	33.1	73.0	15.8	18.1	31.1	64.9	21.5	12.4				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	7.0	69.0	20.0	18.0	40.0	36.0	17.0	21.0				
Max Q Clear Time (g_c+14), s	14.8	20.2	11.8	13.0	25.6	3.7	9.0	7.7				
Green Ext Time (p_c), s	0.0	8.6	0.2	1.1	1.6	5.5	0.1	0.7				

Intersection Summary

HCM 6th Ctrl Delay	27.2
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

HCM 6th Signalized Intersection Summary

8: Fourth St & I-15 NB Ramps

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔	↑↑↑	↗	↗	↑↑↑		↗	↑↑		↗	↖	↖↖
Traffic Volume (veh/h)	625	484	68	34	448	125	60	73	50	148	54	469
Future Volume (veh/h)	625	484	68	34	448	125	60	73	50	148	54	469
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No		No		No		No		No		No
Adj Sat Flow, veh/h/ln	1786	1575	1702	1702	1603	1603	1702	1786	1786	1421	1758	1702
Adj Flow Rate, veh/h	651	504	71	35	467	130	62	76	52	105	125	489
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	1	16	7	7	14	14	7	1	1	27	3	7
Cap, veh/h	1161	2954	990	43	1240	335	101	125	79	137	178	1306
Arrive On Green	0.59	1.00	1.00	0.03	0.36	0.36	0.06	0.06	0.06	0.10	0.10	0.10
Sat Flow, veh/h	3300	4301	1442	1621	3430	925	1621	1999	1257	1353	1758	2884
Grp Volume(v), veh/h	651	504	71	35	395	202	62	63	65	105	125	489
Grp Sat Flow(s),veh/h/ln	1650	1434	1442	1621	1459	1437	1621	1697	1560	1353	1758	1442
Q Serve(g_s), s	15.8	0.0	0.0	2.8	13.0	13.6	4.8	4.7	5.3	9.8	8.9	0.0
Cycle Q Clear(g_c), s	15.8	0.0	0.0	2.8	13.0	13.6	4.8	4.7	5.3	9.8	8.9	0.0
Prop In Lane	1.00		1.00	1.00		0.64	1.00		0.81	1.00		1.00
Lane Grp Cap(c), veh/h	1161	2954	990	43	1055	519	101	106	98	137	178	1306
VC Ratio(X)	0.56	0.17	0.07	0.82	0.37	0.39	0.61	0.60	0.66	0.77	0.70	0.37
Avail Cap(c_a), veh/h	1161	2954	990	87	1055	519	511	535	492	167	216	1370
HCM Platoon Ratio	1.67	1.67	1.67	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.93	0.93	0.93	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	20.6	0.0	0.0	63.0	30.6	30.8	59.4	59.3	59.6	56.9	56.6	23.4
Incr Delay (d2), s/veh	0.6	0.1	0.1	29.5	1.0	2.2	5.8	5.3	7.4	15.9	7.7	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.7	0.0	0.0	1.5	4.5	4.8	2.1	2.2	2.3	3.9	4.3	4.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	21.2	0.1	0.1	92.5	31.7	33.0	65.2	64.6	67.0	72.9	64.2	23.6
LnGrp LOS	C	A	A	F	C	C	E	E	E	E	E	C
Approach Vol, veh/h		1226			632			190			719	
Approach Delay, s/veh		11.3			35.5			65.6			37.9	
Approach LOS		B			D			E			D	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.4	93.3		17.1	49.7	51.0		12.1				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	7.0	50.0		16.0	10.0	47.0		41.0				
Max Q Clear Time (g_c+14), s	14.8	2.0		11.8	17.8	15.6		7.3				
Green Ext Time (p_c), s	0.0	3.5		1.3	0.0	3.5		0.9				

Intersection Summary

HCM 6th Ctrl Delay	27.5
HCM 6th LOS	C

Notes

- User approved pedestrian interval to be less than phase max green.
- User approved volume balancing among the lanes for turning movement.

HCM 6th Signalized Intersection Summary
 9: Milliken Ave & I-210 WB On-ramp/I-210 WB Off-ramp

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↘	↔	↗	↘↗	↑↑↑			↑↑↑	
Traffic Volume (veh/h)	0	0	0	189	8	73	205	545	0	0	368	52
Future Volume (veh/h)	0	0	0	189	8	73	205	545	0	0	368	52
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach				No		No		No				No
Adj Sat Flow, veh/h/ln				1554	1786	1688	1500	1786	0	0	1786	1786
Adj Flow Rate, veh/h				224	0	53	214	568	0	0	383	54
Peak Hour Factor				0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %				11	1	8	8	1	0	0	1	1
Cap, veh/h				391	0	189	373	3582	0	0	2310	319
Arrive On Green				0.13	0.00	0.13	0.27	1.00	0.00	0.00	0.53	0.53
Sat Flow, veh/h				2960	0	1430	2772	5036	0	0	4492	597
Grp Volume(v), veh/h				224	0	53	214	568	0	0	285	152
Grp Sat Flow(s),veh/h/ln				1480	0	1430	1386	1625	0	0	1625	1678
Q Serve(g_s), s				4.3	0.0	2.0	4.0	0.0	0.0	0.0	2.7	2.8
Cycle Q Clear(g_c), s				4.3	0.0	2.0	4.0	0.0	0.0	0.0	2.7	2.8
Prop In Lane				1.00		1.00	1.00		0.00	0.00		0.36
Lane Grp Cap(c), veh/h				391	0	189	373	3582	0	0	1734	895
V/C Ratio(X)				0.57	0.00	0.28	0.57	0.16	0.00	0.00	0.16	0.17
Avail Cap(c_a), veh/h				444	0	215	373	3582	0	0	1734	895
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.94	0.94	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				24.5	0.0	23.5	20.4	0.0	0.0	0.0	7.2	7.2
Incr Delay (d2), s/veh				1.4	0.0	0.8	2.0	0.1	0.0	0.0	0.2	0.4
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				1.4	0.0	0.7	1.2	0.0	0.0	0.0	0.8	0.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				25.8	0.0	24.3	22.4	0.1	0.0	0.0	7.4	7.6
LnGrp LOS				C	A	C	C	A	A	A	A	A
Approach Vol, veh/h						277		782			437	
Approach Delay, s/veh						25.5		6.2			7.4	
Approach LOS						C		A			A	
Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		48.1			12.1	36.0		11.9				
Change Period (Y+Rc), s		4.0			4.0	4.0		4.0				
Max Green Setting (Gmax), s		43.0			7.0	32.0		9.0				
Max Q Clear Time (g_c+I1), s		2.0			6.0	4.8		6.3				
Green Ext Time (p_c), s		4.5			0.1	2.9		0.3				

Intersection Summary

HCM 6th Ctrl Delay	10.1
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

HCM 6th Signalized Intersection Summary
 10: Milliken Ave & I-210 EB Off-ramp/I-210 EB On-ramp

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	94	12	306	0	0	0	0	646	351	114	378	0
Future Volume (veh/h)	94	12	306	0	0	0	0	646	351	114	378	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No						No			No		
Adj Sat Flow, veh/h/ln	1660	1786	1702				0	1758	1758	1575	1758	0
Adj Flow Rate, veh/h	70	0	361				0	680	369	120	398	0
Peak Hour Factor	0.95	0.95	0.95				0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	1	7				0	3	3	2	3	0
Cap, veh/h	211	0	385				0	1813	844	291	3519	0
Arrive On Green	0.13	0.00	0.13				0.00	0.57	0.57	0.20	1.00	0.00
Sat Flow, veh/h	1581	0	2884				0	3358	1490	2910	4957	0
Grp Volume(v), veh/h	70	0	361				0	680	369	120	398	0
Grp Sat Flow(s),veh/h/ln	1581	0	1442				0	1600	1490	1455	1600	0
Q Serve(g_s), s	2.4	0.0	7.4				0.0	7.0	8.6	2.2	0.0	0.0
Cycle Q Clear(g_c), s	2.4	0.0	7.4				0.0	7.0	8.6	2.2	0.0	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	211	0	385				0	1813	844	291	3519	0
V/C Ratio(X)	0.33	0.00	0.94				0.00	0.38	0.44	0.41	0.11	0.00
Avail Cap(c_a), veh/h	211	0	385				0	1813	844	291	3519	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	0.98	0.98	0.00
Uniform Delay (d), s/veh	23.6	0.0	25.8				0.0	7.2	7.5	22.5	0.0	0.0
Incr Delay (d2), s/veh	0.9	0.0	30.7				0.0	0.6	1.6	0.9	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	0.0	4.0				0.0	2.0	2.5	0.7	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	24.5	0.0	56.4				0.0	7.7	9.1	23.4	0.1	0.0
LnGrp LOS	C	A	E				A	A	A	C	A	A
Approach Vol, veh/h	431						1049			518		
Approach Delay, s/veh	51.2						8.2			5.5		
Approach LOS	D						A			A		
Timer - Assigned Phs	1	2	4	6								
Phs Duration (G+Y+Rc), s	30.0	38.0	12.0	48.0								
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0								
Max Green Setting (Gmax), s	30.0	34.0	8.0	44.0								
Max Q Clear Time (g_c+14), s	10.6	10.6	9.4	2.0								
Green Ext Time (p_c), s	0.1	7.9	0.0	3.0								

Intersection Summary

HCM 6th Ctrl Delay	16.8
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

HCM 6th Signalized Intersection Summary

11: Milliken Ave & Foothill Blvd

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔	↑↑↑	↗	↔↔	↑↑↑	↗	↔↔	↑↑↑	↗	↔↔	↑↑↑	↗
Traffic Volume (veh/h)	187	1326	91	149	1205	80	275	654	154	188	460	168
Future Volume (veh/h)	187	1326	91	149	1205	80	275	654	154	188	460	168
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No		No		No		No		No		No
Adj Sat Flow, veh/h/ln	1588	1786	1758	1588	1786	1772	1575	1772	1758	1588	1744	1772
Adj Flow Rate, veh/h	205	1457	100	164	1324	88	302	719	169	207	505	185
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	1	1	3	1	1	2	2	2	3	1	4	2
Cap, veh/h	270	2040	623	215	1947	600	371	1333	326	278	885	279
Arrive On Green	0.09	0.42	0.42	0.07	0.40	0.40	0.13	0.22	0.22	0.09	0.19	0.19
Sat Flow, veh/h	2933	4876	1490	2933	4876	1502	2910	6095	1490	2933	4761	1502
Grp Volume(v), veh/h	205	1457	100	164	1324	88	302	719	169	207	505	185
Grp Sat Flow(s),veh/h/ln	1467	1625	1490	1467	1625	1502	1455	1524	1490	1467	1587	1502
Q Serve(g_s), s	5.6	20.3	3.4	4.5	18.4	3.1	8.3	8.6	8.2	5.6	7.9	9.4
Cycle Q Clear(g_c), s	5.6	20.3	3.4	4.5	18.4	3.1	8.3	8.6	8.2	5.6	7.9	9.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	270	2040	623	215	1947	600	371	1333	326	278	885	279
VC Ratio(X)	0.76	0.71	0.16	0.76	0.68	0.15	0.81	0.54	0.52	0.75	0.57	0.66
Avail Cap(c_a), veh/h	286	3092	945	215	2973	916	426	3345	818	393	2554	806
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.3	19.8	14.9	37.3	20.3	15.7	34.8	28.4	28.2	36.2	30.4	31.0
Incr Delay (d2), s/veh	10.6	0.5	0.1	15.0	0.4	0.1	10.3	0.3	1.3	4.7	0.6	2.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	6.6	1.0	2.0	6.1	0.9	3.2	2.9	2.8	2.1	2.8	3.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	47.0	20.3	15.0	52.3	20.7	15.8	45.1	28.7	29.5	40.8	31.0	33.7
LnGrp LOS	D	C	B	D	C	B	D	C	C	D	C	C
Approach Vol, veh/h		1762			1576			1190			897	
Approach Delay, s/veh		23.1			23.7			33.0			33.8	
Approach LOS		C			C			C			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	40.0	38.3	14.5	19.2	11.5	36.8	11.8	21.9				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	60.0	52.0	12.0	44.0	8.0	50.0	11.0	45.0				
Max Q Clear Time (g_c+1/5), s	10.5	22.3	10.3	11.4	7.6	20.4	7.6	10.6				
Green Ext Time (p_c), s	0.0	12.0	0.2	3.9	0.0	10.5	0.2	5.5				

Intersection Summary

HCM 6th Ctrl Delay	27.2
HCM 6th LOS	C

HCM 6th Signalized Intersection Summary

12: Milliken Ave & Fourth St

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔	↑↑↑	↗	↔↔	↑↑↑	↗	↔↔	↑↑↑	↗	↔↔	↑↑↑	↗
Traffic Volume (veh/h)	144	1174	151	170	1025	151	181	924	162	162	787	132
Future Volume (veh/h)	144	1174	151	170	1025	151	181	924	162	162	787	132
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No		No		No		No		No		No
Adj Sat Flow, veh/h/ln	1588	1730	1758	1575	1744	1730	1588	1660	1646	1550	1688	1688
Adj Flow Rate, veh/h	147	1198	154	173	1046	154	185	943	165	165	803	135
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	1	5	3	2	4	5	1	10	11	4	8	8
Cap, veh/h	195	1531	483	179	1519	468	154	2405	673	151	2131	351
Arrive On Green	0.07	0.32	0.32	0.06	0.32	0.32	0.05	0.42	0.42	0.05	0.42	0.42
Sat Flow, veh/h	2933	4722	1490	2910	4761	1466	2933	5709	1395	2864	5059	833
Grp Volume(v), veh/h	147	1198	154	173	1046	154	185	943	165	165	689	249
Grp Sat Flow(s),veh/h/ln	1467	1574	1490	1455	1587	1466	1467	1427	1395	1432	1451	1538
Q Serve(g_s), s	5.6	26.2	8.9	6.8	21.8	9.1	6.0	13.0	7.9	6.0	12.4	12.8
Cycle Q Clear(g_c), s	5.6	26.2	8.9	6.8	21.8	9.1	6.0	13.0	7.9	6.0	12.4	12.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.54
Lane Grp Cap(c), veh/h	195	1531	483	179	1519	468	154	2405	673	151	1834	648
V/C Ratio(X)	0.75	0.78	0.32	0.97	0.69	0.33	1.20	0.39	0.25	1.09	0.38	0.38
Avail Cap(c_a), veh/h	232	2197	693	179	2131	656	154	2405	673	151	1834	648
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.3	34.9	29.0	53.4	33.9	29.5	54.0	22.9	17.3	54.0	22.7	22.8
Incr Delay (d2), s/veh	10.9	1.2	0.4	57.7	0.6	0.4	135.4	0.5	0.9	100.7	0.6	1.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	9.5	0.1	3.8	7.9	3.1	5.0	4.2	2.5	4.2	4.1	4.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	63.1	36.1	29.4	111.0	34.4	29.9	189.4	23.3	18.2	154.7	23.3	24.5
LnGrp LOS	E	D	C	F	C	C	F	C	B	F	C	C
Approach Vol, veh/h		1499			1373			1293			1103	
Approach Delay, s/veh		38.0			43.6			46.4			43.2	
Approach LOS		D			D			D			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	40.0	52.0	11.0	40.9	10.0	52.0	11.6	40.4				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	40.0	48.0	7.0	53.0	6.0	48.0	9.0	51.0				
Max Q Clear Time (g_c+10), s	10.0	15.0	8.8	28.2	8.0	14.8	7.6	23.8				
Green Ext Time (p_c), s	0.0	7.5	0.0	8.8	0.0	6.4	0.1	7.7				

Intersection Summary

HCM 6th Ctrl Delay	42.6
HCM 6th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.

Intersection						
Int Delay, s/veh	0.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↗		↑↑↑	↑↑↑	↗
Traffic Vol, veh/h	0	32	0	1715	897	30
Future Vol, veh/h	0	32	0	1715	897	30
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	175
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	2	1	2	3	6	4
Mvmt Flow	0	33	0	1750	915	31

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	-	458	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	7.12	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	3.91	-
Pot Cap-1 Maneuver	0	472	0
Stage 1	0	-	0
Stage 2	0	-	0
Platoon blocked, %			
Mov Cap-1 Maneuver	-	472	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

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

Minor Lane/Major Mvmt	NBT EBLn1	SBT	SBR
Capacity (veh/h)	- 472	-	-
HCM Lane V/C Ratio	- 0.069	-	-
HCM Control Delay (s)	- 13.2	-	-
HCM Lane LOS	- B	-	-
HCM 95th %tile Q(veh)	- 0.2	-	-

HCM 6th Signalized Intersection Summary

14: Milliken Ave & 7th St

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↑↑↑		↖	↑↑↑	
Traffic Volume (veh/h)	122	0	44	14	0	22	46	1565	11	9	912	11
Future Volume (veh/h)	122	0	44	14	0	22	46	1565	11	9	912	11
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1687	1786	1786	1382	1800	1800	1620	1758	1758	1687	1716	1716
Adj Flow Rate, veh/h	123	0	44	14	0	22	46	1581	11	9	921	11
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	1	1	1	24	0	0	6	3	3	1	6	6
Cap, veh/h	250	0	203	204	0	205	54	3480	24	15	3252	39
Arrive On Green	0.13	0.00	0.13	0.13	0.00	0.13	0.04	0.71	0.71	0.01	0.68	0.68
Sat Flow, veh/h	1323	0	1514	1062	0	1525	1543	4917	34	1606	4771	57
Grp Volume(v), veh/h	123	0	44	14	0	22	46	1029	563	9	603	329
Grp Sat Flow(s),veh/h/ln	1323	0	1514	1062	0	1525	1543	1600	1752	1606	1561	1706
Q Serve(g_s), s	7.3	0.0	2.1	1.0	0.0	1.0	2.4	11.2	11.2	0.4	6.1	6.1
Cycle Q Clear(g_c), s	8.3	0.0	2.1	3.0	0.0	1.0	2.4	11.2	11.2	0.4	6.1	6.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.02	1.00		0.03
Lane Grp Cap(c), veh/h	250	0	203	204	0	205	54	2265	1240	15	2129	1163
VC Ratio(X)	0.49	0.00	0.22	0.07	0.00	0.11	0.85	0.45	0.45	0.62	0.28	0.28
Avail Cap(c_a), veh/h	1009	0	1071	814	0	1080	192	2265	1240	80	2129	1163
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.3	0.0	31.1	32.5	0.0	30.6	38.6	5.1	5.1	39.8	5.1	5.1
Incr Delay (d2), s/veh	1.5	0.0	0.5	0.1	0.0	0.2	28.1	0.7	1.2	35.9	0.3	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	0.0	0.8	0.2	0.0	0.4	1.3	2.3	2.7	0.3	1.3	1.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	35.8	0.0	31.6	32.6	0.0	30.9	66.7	5.7	6.3	75.6	5.4	5.7
LnGrp LOS	D	A	C	C	A	C	E	A	A	E	A	A
Approach Vol, veh/h		167			36			1638			941	
Approach Delay, s/veh		34.7			31.5			7.6			6.2	
Approach LOS		C			C			A			A	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	4.7	61.0		14.8	6.8	58.9		14.8				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	4.0	57.0		57.0	10.0	51.0		57.0				
Max Q Clear Time (g_c+I1), s	2.4	13.2		10.3	4.4	8.1		5.0				
Green Ext Time (p_c), s	0.0	13.7		0.6	0.0	6.2		0.2				

Intersection Summary

HCM 6th Ctrl Delay	9.1
HCM 6th LOS	A

HCM 6th Signalized Intersection Summary
 15: Milliken Ave & I-10 WB Ramps/Ontario Mills Pkwy

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔	↑	↗	↔↔	↑↑	↗	↔↔	↑↑↑	↗	↔↔	↑↑↑	↗
Traffic Volume (veh/h)	137	208	164	476	172	152	187	971	207	212	613	267
Future Volume (veh/h)	137	208	164	476	172	152	187	971	207	212	613	267
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No		No		No		No		No		No
Adj Sat Flow, veh/h/ln	1563	1758	1786	1563	1786	1098	1425	1674	1491	1588	1702	1716
Adj Flow Rate, veh/h	165	251	198	573	207	183	225	1170	249	255	739	322
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Percent Heavy Veh, %	3	3	1	3	1	50	14	9	22	1	7	6
Cap, veh/h	552	234	202	624	537	147	278	2303	779	343	2409	877
Arrive On Green	0.19	0.13	0.13	0.22	0.16	0.16	0.07	0.27	0.27	0.12	0.41	0.41
Sat Flow, veh/h	2887	1758	1514	2887	3393	931	2633	5757	1264	2933	5854	1454
Grp Volume(v), veh/h	165	251	198	573	207	183	225	1170	249	255	739	322
Grp Sat Flow(s),veh/h/ln	1444	1758	1514	1444	1697	931	1317	1439	1264	1467	1463	1454
Q Serve(g_s), s	5.9	16.0	15.7	23.3	6.6	19.0	10.1	20.7	5.5	10.1	10.2	4.7
Cycle Q Clear(g_c), s	5.9	16.0	15.7	23.3	6.6	19.0	10.1	20.7	5.5	10.1	10.2	4.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	552	234	202	624	537	147	278	2303	779	343	2409	877
VC Ratio(X)	0.30	1.07	0.98	0.92	0.39	1.24	0.81	0.51	0.32	0.74	0.31	0.37
Avail Cap(c_a), veh/h	601	234	202	674	537	147	505	2303	779	343	2409	877
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	0.67	0.67	0.67	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.92	0.92	0.92	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.6	52.0	51.8	46.0	45.3	50.5	54.6	33.9	4.8	51.2	23.8	4.3
Incr Delay (d2), s/veh	0.3	78.8	57.7	16.9	0.5	153.4	5.2	0.7	1.0	8.4	0.3	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	12.2	9.2	9.8	2.8	10.7	3.7	7.7	2.0	4.1	3.6	1.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	41.9	130.8	109.6	62.9	45.7	203.9	59.8	34.7	5.8	59.6	24.1	5.5
LnGrp LOS	D	F	F	E	D	F	E	C	A	E	C	A
Approach Vol, veh/h		614		963		1644		1316				
Approach Delay, s/veh		100.1		86.0		33.7		26.4				
Approach LOS		F		F		C		C				
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	48.0	52.0	30.0	20.0	16.7	53.4	27.0	23.0				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	48.0	48.0	28.0	16.0	23.0	37.0	25.0	19.0				
Max Q Clear Time (g_c+1/2I), s	22.7	22.7	25.3	18.0	12.1	12.2	7.9	21.0				
Green Ext Time (p_c), s	0.0	10.8	0.7	0.0	0.6	6.9	0.5	0.0				

Intersection Summary

HCM 6th Ctrl Delay	51.7
HCM 6th LOS	D

HCM 6th Signalized Intersection Summary

16: Milliken Ave & I-10 EB Ramps

11/03/2021



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↶↶	↷	↶↶	↑↑↑	↑↑↑	↷
Traffic Volume (veh/h)	516	169	296	849	642	611
Future Volume (veh/h)	516	169	296	849	642	611
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1550	1617	1176	1646	1744	1491
Adj Flow Rate, veh/h	532	174	305	875	662	630
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	4	13	34	11	4	22
Cap, veh/h	623	298	352	4052	3121	932
Arrive On Green	0.22	0.22	0.16	0.72	0.17	0.17
Sat Flow, veh/h	2864	1371	2172	5891	6243	1264
Grp Volume(v), veh/h	532	174	305	875	662	630
Grp Sat Flow(s),veh/h/ln	1432	1371	1086	1415	1500	1264
Q Serve(g_s), s	21.4	13.7	16.4	6.2	11.4	32.4
Cycle Q Clear(g_c), s	21.4	13.7	16.4	6.2	11.4	32.4
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	623	298	352	4052	3121	932
VC Ratio(X)	0.85	0.58	0.87	0.22	0.21	0.68
Avail Cap(c_a), veh/h	1193	571	652	4052	3121	932
HCM Platoon Ratio	1.00	1.00	1.00	1.00	0.33	0.33
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.79	0.79
Uniform Delay (d), s/veh	45.1	42.1	49.0	5.7	28.6	14.5
Incr Delay (d2), s/veh	3.5	1.8	6.4	0.1	0.1	3.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.9	10.5	4.8	1.7	4.6	20.9
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	48.6	43.9	55.4	5.9	28.7	17.6
LnGrp LOS	D	D	E	A	C	B
Approach Vol, veh/h	706			1180	1292	
Approach Delay, s/veh	47.4			18.7	23.3	
Approach LOS	D			B	C	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		89.9		30.1	23.5	66.4
Change Period (Y+Rc), s		4.0		4.0	4.0	4.0
Max Green Setting (Gmax), s		62.0		50.0	36.0	22.0
Max Q Clear Time (g_c+I1), s		8.2		23.4	18.4	34.4
Green Ext Time (p_c), s		7.8		2.7	1.0	0.0
Intersection Summary						
HCM 6th Ctrl Delay			26.9			
HCM 6th LOS			C			

HCM 6th Signalized Intersection Summary

1: Highway 395 & Joshua St

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗	↗	↖	↕	↗	↖	↕	↗
Traffic Volume (veh/h)	27	79	15	35	17	89	20	1183	82	57	602	19
Future Volume (veh/h)	27	79	15	35	17	89	20	1183	82	57	602	19
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1687	1786	1786	1528	1786	1519	1687	1716	1491	1395	1617	1716
Adj Flow Rate, veh/h	30	88	17	39	19	99	22	1314	91	63	669	21
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	1	1	1	13	1	20	1	6	22	23	13	6
Cap, veh/h	249	186	36	185	228	164	86	2098	813	71	1978	936
Arrive On Green	0.13	0.13	0.13	0.13	0.13	0.13	0.05	0.64	0.64	0.05	0.64	0.64
Sat Flow, veh/h	1213	1454	281	1111	1786	1287	1606	3260	1264	1329	3073	1454
Grp Volume(v), veh/h	30	0	105	39	19	99	22	1314	91	63	669	21
Grp Sat Flow(s),veh/h/ln	1213	0	1735	1111	1786	1287	1606	1630	1264	1329	1537	1454
Q Serve(g_s), s	1.5	0.0	3.8	2.3	0.6	5.0	0.9	16.5	1.9	3.2	6.8	0.4
Cycle Q Clear(g_c), s	2.2	0.0	3.8	6.2	0.6	5.0	0.9	16.5	1.9	3.2	6.8	0.4
Prop In Lane	1.00		0.16	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	249	0	221	185	228	164	86	2098	813	71	1978	936
VC Ratio(X)	0.12	0.00	0.47	0.21	0.08	0.60	0.26	0.63	0.11	0.89	0.34	0.02
Avail Cap(c_a), veh/h	945	0	1218	823	1254	904	141	2098	813	117	1978	936
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.3	0.0	27.7	30.6	26.3	28.2	31.1	7.3	4.7	32.2	5.6	4.4
Incr Delay (d2), s/veh	0.2	0.0	1.6	0.6	0.2	3.5	1.6	1.4	0.3	33.8	0.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	1.6	0.6	0.3	1.6	0.3	3.4	0.3	1.6	1.3	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	27.5	0.0	29.3	31.1	26.5	31.7	32.6	8.7	5.0	66.0	6.0	4.5
LnGrp LOS	C	A	C	C	C	C	C	A	A	E	A	A
Approach Vol, veh/h		135			157			1427				753
Approach Delay, s/veh		28.9			30.9			8.8				11.0
Approach LOS		C			C			A				B
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.6	48.0		12.7	7.6	48.0		12.7				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	6.0	44.0		48.0	6.0	44.0		48.0				
Max Q Clear Time (g_c+I1), s	5.2	18.5		5.8	2.9	8.8		8.2				
Green Ext Time (p_c), s	0.0	10.0		0.7	0.0	4.4		0.6				
Intersection Summary												
HCM 6th Ctrl Delay				12.0								
HCM 6th LOS				B								

Intersection						
Int Delay, s/veh	1.9					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↓	
Traffic Vol, veh/h	0	193	78	0	6	65
Future Vol, veh/h	0	193	78	0	6	65
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	0	25	23	0	1	22
Mvmt Flow	0	197	80	0	6	66

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	-	0	-	0	277 80
Stage 1	-	-	-	-	80 -
Stage 2	-	-	-	-	197 -
Critical Hdwy	-	-	-	-	6.41 6.42
Critical Hdwy Stg 1	-	-	-	-	5.41 -
Critical Hdwy Stg 2	-	-	-	-	5.41 -
Follow-up Hdwy	-	-	-	-	3.509 3.498
Pot Cap-1 Maneuver	0	-	-	0	715 927
Stage 1	0	-	-	0	946 -
Stage 2	0	-	-	0	839 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	-	715 927
Mov Cap-2 Maneuver	-	-	-	-	715 -
Stage 1	-	-	-	-	946 -
Stage 2	-	-	-	-	839 -

Approach	EB	WB	SB
HCM Control Delay, s	0	0	9.3
HCM LOS			A

Minor Lane/Major Mvmt	EBT	WBT	SBLn1
Capacity (veh/h)	-	-	904
HCM Lane V/C Ratio	-	-	0.08
HCM Control Delay (s)	-	-	9.3
HCM Lane LOS	-	-	A
HCM 95th %tile Q(veh)	-	-	0.3

Intersection												
Int Delay, s/veh	3.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↗			↕				
Traffic Vol, veh/h	123	89	0	0	78	21	0	0	0	0	0	0
Future Vol, veh/h	123	89	0	0	78	21	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	16965	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	92	92	95	95	92	92	92	95	92	95
Heavy Vehicles, %	24	23	2	2	23	42	2	2	2	2	2	2
Mvmt Flow	129	94	0	0	82	22	0	0	0	0	0	0

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	104	0	-
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	4.34	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	2.416	-	-
Pot Cap-1 Maneuver	1361	0	0
Stage 1	-	0	0
Stage 2	-	0	0
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1361	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	4.6	0	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	WBT	WBR
Capacity (veh/h)	-	1361	-	-	-
HCM Lane V/C Ratio	-	0.095	-	-	-
HCM Control Delay (s)	0	7.9	0	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	-	0.3	-	-	-

Intersection						
Int Delay, s/veh	5.8					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	W			↑	↑	
Traffic Vol, veh/h	46	72	66	23	22	57
Future Vol, veh/h	46	72	66	23	22	57
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	9	3	7	35	19	2
Mvmt Flow	50	78	72	25	24	62

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	224	55	86	0	-	0
Stage 1	55	-	-	-	-	-
Stage 2	169	-	-	-	-	-
Critical Hdwy	6.49	6.23	4.17	-	-	-
Critical Hdwy Stg 1	5.49	-	-	-	-	-
Critical Hdwy Stg 2	5.49	-	-	-	-	-
Follow-up Hdwy	3.581	3.327	2.263	-	-	-
Pot Cap-1 Maneuver	749	1009	1479	-	-	-
Stage 1	950	-	-	-	-	-
Stage 2	844	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	712	1009	1479	-	-	-
Mov Cap-2 Maneuver	712	-	-	-	-	-
Stage 1	903	-	-	-	-	-
Stage 2	844	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.9	5.6	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1479	-	868	-	-
HCM Lane V/C Ratio	0.049	-	0.148	-	-
HCM Control Delay (s)	7.6	0	9.9	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.2	-	0.5	-	-

HCM 6th Signalized Intersection Summary

5: I-15 SB On-ramp/I-15 SB Off-ramp & Foothill Blvd/Foothill Blvd

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↑		↑↑↑	↑				↑	↔	↑
Traffic Volume (veh/h)	0	1333	634	0	1811	304	0	0	0	122	0	299
Future Volume (veh/h)	0	1333	634	0	1811	304	0	0	0	122	0	299
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1786	1772	0	1786	1758				1702	1772	1716
Adj Flow Rate, veh/h	0	1374	0	0	1867	0				84	0	353
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97				0.97	0.97	0.97
Percent Heavy Veh, %	0	1	2	0	1	3				7	2	6
Cap, veh/h	0	3693		0	3693					249	0	447
Arrive On Green	0.00	0.76	0.00	0.00	0.76	0.00				0.15	0.00	0.15
Sat Flow, veh/h	0	5036	1502	0	5036	1490				1621	0	2908
Grp Volume(v), veh/h	0	1374	0	0	1867	0				84	0	353
Grp Sat Flow(s),veh/h/ln	0	1625	1502	0	1625	1490				1621	0	1454
Q Serve(g_s), s	0.0	8.6	0.0	0.0	13.6	0.0				4.2	0.0	10.5
Cycle Q Clear(g_c), s	0.0	8.6	0.0	0.0	13.6	0.0				4.2	0.0	10.5
Prop In Lane	0.00		1.00	0.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	3693		0	3693					249	0	447
V/C Ratio(X)	0.00	0.37		0.00	0.51					0.34	0.00	0.79
Avail Cap(c_a), veh/h	0	3693		0	3693					432	0	775
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.00	0.00	0.70	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	3.7	0.0	0.0	4.3	0.0				34.0	0.0	36.7
Incr Delay (d2), s/veh	0.0	0.3	0.0	0.0	0.3	0.0				0.8	0.0	3.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	1.5	0.0	0.0	2.4	0.0				1.7	0.0	3.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	4.0	0.0	0.0	4.6	0.0				34.8	0.0	39.8
LnGrp LOS	A	A		A	A					C	A	D
Approach Vol, veh/h		1374	A		1867	A					437	
Approach Delay, s/veh		4.0			4.6						38.9	
Approach LOS		A			A						D	
Timer - Assigned Phs		2		4		6						
Phs Duration (G+Y+Rc), s		72.2		17.8		72.2						
Change Period (Y+Rc), s		4.0		4.0		4.0						
Max Green Setting (Gmax), s		58.0		24.0		58.0						
Max Q Clear Time (g_c+I1), s		10.6		12.5		15.6						
Green Ext Time (p_c), s		12.0		1.3		19.0						

Intersection Summary

HCM 6th Ctrl Delay	8.5
HCM 6th LOS	A

Notes

User approved volume balancing among the lanes for turning movement.

Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th Signalized Intersection Summary

6: I-15 NB Off-ramp/I-15 NB On-ramp & Foothill Blvd /Foothill Blvd

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↑		↑↑↑	↑	↑	↑↓	↑			
Traffic Volume (veh/h)	0	1019	474	0	959	271	1139	0	431	0	0	0
Future Volume (veh/h)	0	1019	474	0	959	271	1139	0	431	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No		No		No		No				
Adj Sat Flow, veh/h/ln	0	1772	1772	0	1772	1786	1772	1772	1786			
Adj Flow Rate, veh/h	0	1084	0	0	1020	0	1355	0	306			
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94			
Percent Heavy Veh, %	0	2	2	0	2	1	2	2	1			
Cap, veh/h	0	2174		0	2174		1558	0	699			
Arrive On Green	0.00	0.30	0.00	0.00	0.45	0.00	0.46	0.00	0.46			
Sat Flow, veh/h	0	4997	1502	0	4997	1514	3375	0	1514			
Grp Volume(v), veh/h	0	1084	0	0	1020	0	1355	0	306			
Grp Sat Flow(s),veh/h/ln	0	1612	1502	0	1612	1514	1688	0	1514			
Q Serve(g_s), s	0.0	16.6	0.0	0.0	13.2	0.0	32.5	0.0	12.3			
Cycle Q Clear(g_c), s	0.0	16.6	0.0	0.0	13.2	0.0	32.5	0.0	12.3			
Prop In Lane	0.00		1.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	0	2174		0	2174		1558	0	699			
V/C Ratio(X)	0.00	0.50		0.00	0.47		0.87	0.00	0.44			
Avail Cap(c_a), veh/h	0	2174		0	2174		1988	0	891			
HCM Platoon Ratio	1.00	0.67	0.67	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.00	0.91	0.00	0.00	1.00	0.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	0.0	23.1	0.0	0.0	17.3	0.0	21.8	0.0	16.3			
Incr Delay (d2), s/veh	0.0	0.7	0.0	0.0	0.7	0.0	3.6	0.0	0.4			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.0	6.8	0.0	0.0	4.8	0.0	12.5	0.0	4.1			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	23.9	0.0	0.0	18.0	0.0	25.4	0.0	16.8			
LnGrp LOS	A	C		A	B		C	A	B			
Approach Vol, veh/h		1084	A		1020	A		1661				
Approach Delay, s/veh		23.9			18.0			23.8				
Approach LOS		C			B			C				
Timer - Assigned Phs		2			6			8				
Phs Duration (G+Y+Rc), s		44.5			44.5			45.5				
Change Period (Y+Rc), s		4.0			4.0			4.0				
Max Green Setting (Gmax), s		29.0			29.0			53.0				
Max Q Clear Time (g_c+I1), s		18.6			15.2			34.5				
Green Ext Time (p_c), s		5.4			6.0			7.1				

Intersection Summary

HCM 6th Ctrl Delay	22.3
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th Signalized Intersection Summary
 7: Ontario Mills Dr./I-15 SB Ramps & Fourth St

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔	↑↑↑	↗	↔↔	↑↑↑	↗	↔	↔	↗	↔	↑↑	↗
Traffic Volume (veh/h)	418	613	45	152	607	90	112	178	45	92	240	450
Future Volume (veh/h)	418	613	45	152	607	90	112	178	45	92	240	450
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No		No		No		No		No		No
Adj Sat Flow, veh/h/ln	1588	1772	1786	1588	1758	1660	1687	1786	1786	1634	1786	1786
Adj Flow Rate, veh/h	431	632	46	157	626	93	115	184	46	95	247	464
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	1	2	1	1	3	10	1	1	1	5	1	1
Cap, veh/h	491	1935	605	619	2129	624	138	262	117	293	322	545
Arrive On Green	0.17	0.40	0.40	0.07	0.15	0.15	0.09	0.08	0.08	0.19	0.18	0.18
Sat Flow, veh/h	2933	4837	1514	2933	4799	1406	1606	3393	1514	1556	1786	3027
Grp Volume(v), veh/h	431	632	46	157	626	93	115	184	46	95	247	464
Grp Sat Flow(s),veh/h/ln	1467	1612	1514	1467	1600	1406	1606	1697	1514	1556	1786	1514
Q Serve(g_s), s	18.6	11.7	1.8	6.6	15.1	4.1	9.2	6.9	3.8	6.9	17.1	19.3
Cycle Q Clear(g_c), s	18.6	11.7	1.8	6.6	15.1	4.1	9.2	6.9	3.8	6.9	17.1	19.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	491	1935	605	619	2129	624	138	262	117	293	322	545
V/C Ratio(X)	0.88	0.33	0.08	0.25	0.29	0.15	0.84	0.70	0.39	0.32	0.77	0.85
Avail Cap(c_a), veh/h	722	1935	605	619	2129	624	235	809	361	293	398	675
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.94	0.94	0.94	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.8	26.9	13.7	50.8	37.3	10.3	58.5	58.5	57.1	45.6	50.7	51.6
Incr Delay (d2), s/veh	8.3	0.5	0.2	0.2	0.3	0.5	12.3	3.4	2.1	0.6	7.0	8.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.2	4.4	0.9	2.4	6.5	2.6	4.2	3.1	1.5	2.7	8.2	7.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	61.2	27.4	14.0	51.0	37.7	10.8	70.9	61.9	59.2	46.2	57.7	60.1
LnGrp LOS	E	C	B	D	D	B	E	E	E	D	E	E
Approach Vol, veh/h		1109			876			345			806	
Approach Delay, s/veh		39.9			37.2			64.5			57.7	
Approach LOS		D			D			E			E	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	31.4	56.0	15.1	27.4	25.8	61.7	28.5	14.1				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	11.0	52.0	19.0	29.0	32.0	34.0	17.0	31.0				
Max Q Clear Time (g_c+10), s	10.6	13.7	11.2	21.3	20.6	17.1	8.9	8.9				
Green Ext Time (p_c), s	0.2	4.2	0.1	2.1	1.1	3.6	0.1	1.2				

Intersection Summary

HCM 6th Ctrl Delay	46.5
HCM 6th LOS	D

Notes

User approved volume balancing among the lanes for turning movement.

HCM 6th Signalized Intersection Summary

8: Fourth St & I-15 NB Ramps

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖↗	↑↑↑	↖	↖	↑↑↑		↖	↑↑		↖	↖	↖↗
Traffic Volume (veh/h)	625	484	68	34	448	125	60	73	50	148	54	469
Future Volume (veh/h)	625	484	68	34	448	125	60	73	50	148	54	469
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No		No		No		No		No		No
Adj Sat Flow, veh/h/ln	1758	1674	1758	1632	1674	1674	1786	1758	1758	1561	1716	1702
Adj Flow Rate, veh/h	651	504	71	35	467	130	62	76	52	107	126	489
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.90	0.96
Percent Heavy Veh, %	3	9	3	12	9	9	1	3	3	17	6	7
Cap, veh/h	1151	1757	573	515	1294	349	108	124	78	146	168	1304
Arrive On Green	0.59	0.64	0.64	0.33	0.36	0.36	0.06	0.06	0.06	0.10	0.10	0.10
Sat Flow, veh/h	3248	4569	1490	1554	3580	966	1701	1968	1237	1487	1716	2884
Grp Volume(v), veh/h	651	504	71	35	395	202	62	63	65	107	126	489
Grp Sat Flow(s),veh/h/ln	1624	1523	1490	1554	1523	1500	1701	1670	1535	1487	1716	1442
Q Serve(g_s), s	16.0	6.3	2.4	2.0	12.4	12.9	4.6	4.8	5.3	9.1	9.3	0.0
Cycle Q Clear(g_c), s	16.0	6.3	2.4	2.0	12.4	12.9	4.6	4.8	5.3	9.1	9.3	0.0
Prop In Lane	1.00		1.00	1.00		0.64	1.00		0.81	1.00		1.00
Lane Grp Cap(c), veh/h	1151	1757	573	515	1101	542	108	106	97	146	168	1304
VC Ratio(X)	0.57	0.29	0.12	0.07	0.36	0.37	0.58	0.60	0.66	0.74	0.75	0.37
Avail Cap(c_a), veh/h	1151	1757	573	515	1101	542	536	527	484	183	211	1377
HCM Platoon Ratio	1.67	1.67	1.67	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.97	0.97	0.97	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	20.4	15.4	14.7	29.7	30.4	30.6	59.2	59.3	59.5	57.0	57.1	23.5
Incr Delay (d2), s/veh	0.6	0.4	0.4	0.1	0.9	2.0	4.8	5.4	7.6	11.0	10.8	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.7	2.0	0.8	0.7	4.5	4.7	2.1	2.2	2.3	3.8	4.5	4.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	21.0	15.8	15.2	29.8	31.4	32.6	64.0	64.7	67.1	68.0	67.9	23.7
LnGrp LOS	C	B	B	C	C	C	E	E	E	E	E	C
Approach Vol, veh/h		1226			632			190			722	
Approach Delay, s/veh		18.6			31.7			65.3			37.9	
Approach LOS		B			C			E			D	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	47.1	54.0		16.7	50.1	51.0		12.2				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	50.0	50.0		16.0	10.0	47.0		41.0				
Max Q Clear Time (g_c+14), s	8.3	8.3		11.3	18.0	14.9		7.3				
Green Ext Time (p_c), s	0.0	3.4		1.4	0.0	3.5		0.9				

Intersection Summary

HCM 6th Ctrl Delay	29.8
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

HCM 6th Signalized Intersection Summary
 9: Milliken Ave & I-210 WB On-ramp/I-210 WB Off-ramp

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↘	↔	↗	↘↗	↑↑↑			↑↑↗	
Traffic Volume (veh/h)	0	0	0	162	7	62	153	407	0	0	259	37
Future Volume (veh/h)	0	0	0	162	7	62	153	407	0	0	259	37
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach				No		No		No				No
Adj Sat Flow, veh/h/ln				1554	1786	1688	1500	1786	0	0	1786	1786
Adj Flow Rate, veh/h				192	0	46	159	424	0	0	270	39
Peak Hour Factor				0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %				11	1	8	8	1	0	0	1	1
Cap, veh/h				387	0	187	423	3588	0	0	2232	313
Arrive On Green				0.13	0.00	0.13	0.31	1.00	0.00	0.00	0.52	0.52
Sat Flow, veh/h				2960	0	1430	2772	5036	0	0	4482	606
Grp Volume(v), veh/h				192	0	46	159	424	0	0	201	108
Grp Sat Flow(s),veh/h/ln				1480	0	1430	1386	1625	0	0	1625	1677
Q Serve(g_s), s				3.6	0.0	1.7	2.7	0.0	0.0	0.0	1.9	2.0
Cycle Q Clear(g_c), s				3.6	0.0	1.7	2.7	0.0	0.0	0.0	1.9	2.0
Prop In Lane				1.00		1.00	1.00		0.00	0.00		0.36
Lane Grp Cap(c), veh/h				387	0	187	423	3588	0	0	1679	866
V/C Ratio(X)				0.50	0.00	0.25	0.38	0.12	0.00	0.00	0.12	0.12
Avail Cap(c_a), veh/h				444	0	215	423	3588	0	0	1679	866
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.97	0.97	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				24.2	0.0	23.4	18.6	0.0	0.0	0.0	7.5	7.5
Incr Delay (d2), s/veh				1.0	0.0	0.7	0.5	0.1	0.0	0.0	0.1	0.3
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				1.2	0.0	0.6	0.8	0.0	0.0	0.0	0.6	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				25.2	0.0	24.1	19.1	0.1	0.0	0.0	7.6	7.8
LnGrp LOS				C	A	C	B	A	A	A	A	A
Approach Vol, veh/h						238		583			309	
Approach Delay, s/veh						25.0		5.3			7.7	
Approach LOS						C		A			A	
Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		48.2			13.2	35.0		11.8				
Change Period (Y+Rc), s		4.0			4.0	4.0		4.0				
Max Green Setting (Gmax), s		43.0			8.0	31.0		9.0				
Max Q Clear Time (g_c+I1), s		2.0			4.7	4.0		5.6				
Green Ext Time (p_c), s		3.2			0.1	2.0		0.3				

Intersection Summary

HCM 6th Ctrl Delay	10.1
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

HCM 6th Signalized Intersection Summary
 10: Milliken Ave & I-210 EB Off-ramp/I-210 EB On-ramp

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	85	7	297	0	0	0	0	500	244	63	285	0
Future Volume (veh/h)	85	7	297	0	0	0	0	500	244	63	285	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No						No			No		
Adj Sat Flow, veh/h/ln	1395	1786	1674				0	1688	1688	1176	1617	0
Adj Flow Rate, veh/h	62	0	343				0	521	254	66	297	0
Peak Hour Factor	0.96	0.96	0.96				0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	23	1	9				0	8	8	34	13	0
Cap, veh/h	206	0	441				0	1638	763	242	3141	0
Arrive On Green	0.16	0.00	0.16				0.00	0.53	0.53	0.22	1.00	0.00
Sat Flow, veh/h	1329	0	2837				0	3223	1430	2172	4561	0
Grp Volume(v), veh/h	62	0	343				0	521	254	66	297	0
Grp Sat Flow(s),veh/h/ln	1329	0	1418				0	1536	1430	1086	1472	0
Q Serve(g_s), s	2.5	0.0	7.0				0.0	5.7	6.0	1.5	0.0	0.0
Cycle Q Clear(g_c), s	2.5	0.0	7.0				0.0	5.7	6.0	1.5	0.0	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	206	0	441				0	1638	763	242	3141	0
V/C Ratio(X)	0.30	0.00	0.78				0.00	0.32	0.33	0.27	0.09	0.00
Avail Cap(c_a), veh/h	244	0	520				0	1638	763	242	3141	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	0.99	0.99	0.00
Uniform Delay (d), s/veh	22.5	0.0	24.3				0.0	7.9	7.9	21.3	0.0	0.0
Incr Delay (d2), s/veh	0.8	0.0	6.3				0.0	0.5	1.2	0.6	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	0.0	2.6				0.0	1.6	1.8	0.4	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.3	0.0	30.6				0.0	8.4	9.1	21.9	0.1	0.0
LnGrp LOS	C	A	C				A	A	A	C	A	A
Approach Vol, veh/h	405						775			363		
Approach Delay, s/veh	29.5						8.6			4.0		
Approach LOS	C						A			A		
Timer - Assigned Phs	1	2	4	6								
Phs Duration (G+Y+Rc), s	10.7	36.0	13.3	46.7								
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0								
Max Green Setting (Gmax), s	5.0	32.0	11.0	41.0								
Max Q Clear Time (g_c+I), s	13.5	8.0	9.0	2.0								
Green Ext Time (p_c), s	0.0	5.6	0.4	2.2								

Intersection Summary

HCM 6th Ctrl Delay	13.0
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

HCM 6th Signalized Intersection Summary

11: Milliken Ave & Foothill Blvd

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖↗	↑↑↑	↖	↖↗	↑↑↑	↖	↖↗	↑↑↑	↖	↖↗	↑↑↑	↖
Traffic Volume (veh/h)	159	847	65	267	1138	89	238	519	131	156	368	66
Future Volume (veh/h)	159	847	65	267	1138	89	238	519	131	156	368	66
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No		No		No		No		No		No
Adj Sat Flow, veh/h/ln	1488	1716	1421	1525	1716	1589	1538	1702	1702	1550	1674	1660
Adj Flow Rate, veh/h	169	901	69	284	1211	95	253	552	139	166	391	70
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	9	6	27	6	6	15	5	7	7	4	9	10
Cap, veh/h	245	1661	427	363	1847	531	334	1085	267	242	694	214
Arrive On Green	0.09	0.35	0.35	0.13	0.39	0.39	0.12	0.19	0.19	0.08	0.15	0.15
Sat Flow, veh/h	2749	4684	1204	2818	4684	1347	2841	5854	1442	2864	4569	1406
Grp Volume(v), veh/h	169	901	69	284	1211	95	253	552	139	166	391	70
Grp Sat Flow(s),veh/h/ln	1374	1561	1204	1409	1561	1347	1420	1463	1442	1432	1523	1406
Q Serve(g_s), s	3.9	10.0	2.5	6.3	13.7	3.0	5.6	5.5	5.6	3.7	5.1	2.9
Cycle Q Clear(g_c), s	3.9	10.0	2.5	6.3	13.7	3.0	5.6	5.5	5.6	3.7	5.1	2.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	245	1661	427	363	1847	531	334	1085	267	242	694	214
VC Ratio(X)	0.69	0.54	0.16	0.78	0.66	0.18	0.76	0.51	0.52	0.69	0.56	0.33
Avail Cap(c_a), veh/h	467	3758	966	391	3614	1039	395	4065	1001	354	3102	955
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	28.6	16.7	14.3	27.3	16.0	12.8	27.7	23.7	23.8	28.8	25.5	24.5
Incr Delay (d2), s/veh	3.4	0.3	0.2	9.3	0.4	0.2	6.9	0.4	1.6	3.5	0.7	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3	3.0	0.6	2.3	3.9	0.7	2.0	1.7	1.8	1.2	1.7	0.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	32.1	17.0	14.5	36.6	16.4	13.0	34.6	24.1	25.4	32.3	26.2	25.4
LnGrp LOS	C	B	B	D	B	B	C	C	C	C	C	C
Approach Vol, veh/h		1139			1590			944			627	
Approach Delay, s/veh		19.1			19.8			27.1			27.7	
Approach LOS		B			B			C			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	22.3	27.0	11.6	13.8	9.8	29.5	9.5	16.0				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	52.0	52.0	9.0	44.0	11.0	50.0	8.0	45.0				
Max Q Clear Time (g_c+1/3), s	12.0	12.0	7.6	7.1	5.9	15.7	5.7	7.6				
Green Ext Time (p_c), s	0.1	6.8	0.1	2.7	0.2	9.9	0.1	4.1				

Intersection Summary

HCM 6th Ctrl Delay	22.4
HCM 6th LOS	C

HCM 6th Signalized Intersection Summary

12: Milliken Ave & Fourth St

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔	↑↑↑	↗	↔↔	↑↑↑	↗	↔↔	↑↑↑	↗	↔↔	↑↑↑	↗
Traffic Volume (veh/h)	156	377	161	379	414	141	206	422	99	225	460	86
Future Volume (veh/h)	156	377	161	379	414	141	206	422	99	225	460	86
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No		No		No		No		No		No
Adj Sat Flow, veh/h/ln	1575	1716	1772	1588	1688	1758	1550	1716	1744	1588	1702	1702
Adj Flow Rate, veh/h	159	385	164	387	422	144	210	431	101	230	469	88
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	6	2	1	8	3	4	6	4	1	7	7
Cap, veh/h	251	935	300	485	1285	415	296	1134	528	329	1010	181
Arrive On Green	0.09	0.20	0.20	0.17	0.28	0.28	0.10	0.19	0.19	0.11	0.20	0.20
Sat Flow, veh/h	2910	4684	1502	2933	4607	1490	2864	5902	1478	2933	5027	903
Grp Volume(v), veh/h	159	385	164	387	422	144	210	431	101	230	407	150
Grp Sat Flow(s),veh/h/ln	1455	1561	1502	1467	1536	1490	1432	1476	1478	1467	1463	1539
Q Serve(g_s), s	2.6	3.5	4.7	6.1	3.5	3.7	3.4	3.1	2.3	3.7	3.9	4.2
Cycle Q Clear(g_c), s	2.6	3.5	4.7	6.1	3.5	3.7	3.4	3.1	2.3	3.7	3.9	4.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.59
Lane Grp Cap(c), veh/h	251	935	300	485	1285	415	296	1134	528	329	882	309
VC Ratio(X)	0.63	0.41	0.55	0.80	0.33	0.35	0.71	0.38	0.19	0.70	0.46	0.48
Avail Cap(c_a), veh/h	541	5132	1645	485	4953	1601	296	5735	1680	364	4356	1527
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.4	16.9	17.4	19.4	13.8	13.9	21.0	17.0	10.7	20.7	17.0	17.1
Incr Delay (d2), s/veh	2.7	0.3	1.6	9.1	0.1	0.5	7.6	0.2	0.2	5.2	0.4	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	1.0	1.4	2.2	0.9	1.0	1.2	0.8	0.5	1.3	1.1	1.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	24.0	17.2	19.0	28.5	14.0	14.4	28.6	17.2	10.9	25.9	17.4	18.3
LnGrp LOS	C	B	B	C	B	B	C	B	B	C	B	B
Approach Vol, veh/h		708			953			742			787	
Approach Delay, s/veh		19.1			20.0			19.6			20.0	
Approach LOS		B			B			B			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.4	13.3	12.0	13.7	9.0	13.7	8.2	17.5				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	47.0	47.0	8.0	53.0	5.0	48.0	9.0	52.0				
Max Q Clear Time (g_c+1/5), s	5.1	5.1	8.1	6.7	5.4	6.2	4.6	5.7				
Green Ext Time (p_c), s	0.0	3.1	0.0	2.9	0.0	3.5	0.2	3.1				

Intersection Summary

HCM 6th Ctrl Delay	19.7
HCM 6th LOS	B

Intersection						
Int Delay, s/veh	0.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↗		↑↑↑	↑↑↑	↗
Traffic Vol, veh/h	0	28	0	980	645	22
Future Vol, veh/h	0	28	0	980	645	22
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	175
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	2	1	2	3	6	4
Mvmt Flow	0	29	0	1000	658	22

Major/Minor	Minor2	Major1	Major2		
Conflicting Flow All	-	329	-	0	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-
Critical Hdwy	-	7.12	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-
Follow-up Hdwy	-	3.91	-	-	-
Pot Cap-1 Maneuver	0	571	0	-	-
Stage 1	0	-	0	-	-
Stage 2	0	-	0	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	-	571	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11.6	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT EBLn1	SBT	SBR
Capacity (veh/h)	- 571	-	-
HCM Lane V/C Ratio	- 0.05	-	-
HCM Control Delay (s)	- 11.6	-	-
HCM Lane LOS	- B	-	-
HCM 95th %tile Q(veh)	- 0.2	-	-

HCM 6th Signalized Intersection Summary

14: Milliken Ave & 7th St

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↑↑↑		↖	↑↑↑	
Traffic Volume (veh/h)	73	0	40	13	0	13	26	895	7	6	656	8
Future Volume (veh/h)	73	0	40	13	0	13	26	895	7	6	656	8
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1687	1786	1786	1382	1800	1800	1620	1758	1758	1687	1716	1716
Adj Flow Rate, veh/h	74	0	40	13	0	13	26	904	7	6	663	8
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	1	1	1	24	0	0	6	3	3	1	6	6
Cap, veh/h	215	0	149	172	0	150	34	3633	28	10	3452	42
Arrive On Green	0.10	0.00	0.10	0.10	0.00	0.10	0.02	0.74	0.74	0.01	0.72	0.72
Sat Flow, veh/h	1334	0	1514	1066	0	1525	1543	4912	38	1606	4771	57
Grp Volume(v), veh/h	74	0	40	13	0	13	26	589	322	6	434	237
Grp Sat Flow(s),veh/h/ln	1334	0	1514	1066	0	1525	1543	1600	1751	1606	1561	1705
Q Serve(g_s), s	4.1	0.0	1.9	0.9	0.0	0.6	1.3	4.5	4.5	0.3	3.4	3.4
Cycle Q Clear(g_c), s	4.7	0.0	1.9	2.8	0.0	0.6	1.3	4.5	4.5	0.3	3.4	3.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.02	1.00		0.03
Lane Grp Cap(c), veh/h	215	0	149	172	0	150	34	2366	1295	10	2259	1234
VC Ratio(X)	0.34	0.00	0.27	0.08	0.00	0.09	0.76	0.25	0.25	0.60	0.19	0.19
Avail Cap(c_a), veh/h	1069	0	1119	856	0	1128	140	2366	1295	83	2259	1234
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.7	0.0	32.2	33.4	0.0	31.6	37.5	3.2	3.2	38.2	3.4	3.4
Incr Delay (d2), s/veh	1.0	0.0	1.0	0.2	0.0	0.2	28.6	0.3	0.5	45.8	0.2	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	0.0	0.7	0.2	0.0	0.2	0.7	0.7	0.9	0.2	0.6	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	34.7	0.0	33.1	33.6	0.0	31.8	66.0	3.5	3.7	84.0	3.6	3.8
LnGrp LOS	C	A	C	C	A	C	E	A	A	F	A	A
Approach Vol, veh/h		114			26			937			677	
Approach Delay, s/veh		34.1			32.7			5.3			4.4	
Approach LOS		C			C			A			A	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	4.5	61.0		11.6	5.7	59.8		11.6				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	4.0	57.0		57.0	7.0	54.0		57.0				
Max Q Clear Time (g_c+I1), s	2.3	6.5		6.7	3.3	5.4		4.8				
Green Ext Time (p_c), s	0.0	6.1		0.5	0.0	4.2		0.1				

Intersection Summary

HCM 6th Ctrl Delay	7.2
HCM 6th LOS	A

HCM 6th Signalized Intersection Summary
 15: Milliken Ave & I-10 WB Ramps/Ontario Mills Pkwy

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔	↑	↗	↔↔	↑↑	↗	↔↔	↑↑↑	↗	↔↔	↑↑↑	↗
Traffic Volume (veh/h)	200	265	143	259	283	162	289	394	193	159	610	321
Future Volume (veh/h)	200	265	143	259	283	162	289	394	193	159	610	321
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No		No		No		No		No		No
Adj Sat Flow, veh/h/ln	1463	1730	1702	1550	1730	1772	1538	1716	1730	1550	1730	1716
Adj Flow Rate, veh/h	213	282	152	276	301	172	307	419	205	169	649	341
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	11	5	7	4	5	2	5	6	5	4	5	6
Cap, veh/h	418	316	263	327	467	213	369	2629	820	322	2546	847
Arrive On Green	0.15	0.18	0.18	0.11	0.14	0.14	0.04	0.15	0.15	0.11	0.43	0.43
Sat Flow, veh/h	2703	1730	1442	2864	3287	1502	2841	5902	1466	2864	5951	1454
Grp Volume(v), veh/h	213	282	152	276	301	172	307	419	205	169	649	341
Grp Sat Flow(s),veh/h/ln	1351	1730	1442	1432	1643	1502	1420	1476	1466	1432	1488	1454
Q Serve(g_s), s	8.0	17.5	8.0	10.4	9.5	12.2	11.8	6.8	0.6	6.1	7.7	5.6
Cycle Q Clear(g_c), s	8.0	17.5	8.0	10.4	9.5	12.2	11.8	6.8	0.6	6.1	7.7	5.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	418	316	263	327	467	213	369	2629	820	322	2546	847
VC Ratio(X)	0.51	0.89	0.58	0.84	0.64	0.81	0.83	0.16	0.25	0.52	0.25	0.40
Avail Cap(c_a), veh/h	418	346	288	365	627	287	491	2629	820	322	2546	847
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.96	0.96	0.96	1.00	1.00	1.00
Uniform Delay (d), s/veh	42.7	43.9	23.2	47.8	44.6	45.7	51.4	28.9	20.9	46.0	20.2	4.3
Incr Delay (d2), s/veh	1.0	22.9	2.4	15.2	1.5	11.5	8.5	0.1	0.7	1.6	0.2	1.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.7	9.5	2.9	4.4	4.0	5.2	4.9	2.6	4.4	2.2	2.7	2.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	43.7	66.9	25.6	63.0	46.1	57.3	60.0	29.1	21.6	47.6	20.4	5.7
LnGrp LOS	D	E	C	E	D	E	E	C	C	D	C	A
Approach Vol, veh/h		647		749		931		1159				
Approach Delay, s/veh		49.6		54.9		37.6		20.1				
Approach LOS		D		D		D		C				
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	6.4	53.0	16.6	24.1	18.3	51.1	21.0	19.6				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	4.0	49.0	14.0	22.0	19.0	39.0	15.0	21.0				
Max Q Clear Time (g_c+10), s	8.8	8.8	12.4	19.5	13.8	9.7	10.0	14.2				
Green Ext Time (p_c), s	0.0	3.9	0.2	0.6	0.5	6.5	0.3	1.4				

Intersection Summary

HCM 6th Ctrl Delay	37.7
HCM 6th LOS	D

HCM 6th Signalized Intersection Summary
 16: Milliken Ave & I-10 EB Ramps

11/03/2021



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↶↶	↷	↶↶	↑↑↑	↑↑↑	↷
Traffic Volume (veh/h)	317	136	190	559	505	507
Future Volume (veh/h)	317	136	190	559	505	507
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1550	1617	1176	1646	1744	1491
Adj Flow Rate, veh/h	327	140	196	576	521	523
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	4	13	34	11	4	22
Cap, veh/h	413	197	243	4434	3810	985
Arrive On Green	0.14	0.14	0.11	0.78	0.21	0.21
Sat Flow, veh/h	2864	1371	2172	5891	6243	1264
Grp Volume(v), veh/h	327	140	196	576	521	523
Grp Sat Flow(s),veh/h/ln	1432	1371	1086	1415	1500	1264
Q Serve(g_s), s	12.1	10.7	9.7	2.7	7.8	25.2
Cycle Q Clear(g_c), s	12.1	10.7	9.7	2.7	7.8	25.2
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	413	197	243	4434	3810	985
VC Ratio(X)	0.79	0.71	0.81	0.13	0.14	0.53
Avail Cap(c_a), veh/h	1198	573	612	4434	3810	985
HCM Platoon Ratio	1.00	1.00	1.00	1.00	0.33	0.33
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.91	0.91
Uniform Delay (d), s/veh	45.5	44.9	47.7	2.9	18.9	11.8
Incr Delay (d2), s/veh	3.5	4.6	6.3	0.1	0.1	1.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.5	8.2	2.8	0.6	2.9	14.6
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	49.0	49.5	54.0	2.9	19.0	13.7
LnGrp LOS	D	D	D	A	B	B
Approach Vol, veh/h	467			772	1044	
Approach Delay, s/veh	49.1			15.9	16.4	
Approach LOS	D			B	B	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		90.2		19.8	16.3	73.9
Change Period (Y+Rc), s		4.0		4.0	4.0	4.0
Max Green Setting (Gmax), s		56.0		46.0	31.0	21.0
Max Q Clear Time (g_c+I1), s		4.7		14.1	11.7	27.2
Green Ext Time (p_c), s		4.7		1.7	0.6	0.0
Intersection Summary						
HCM 6th Ctrl Delay			22.9			
HCM 6th LOS			C			

Appendix E.2 - 2025 No Build Intersection Level of Service Calculation
Worksheets

HCM 6th Signalized Intersection Summary

1: Highway 395 & Joshua St

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↶	↷		↶	↷	↷	↶	↷	↷	↶	↷	↷
Traffic Volume (veh/h)	13	16	1	148	16	80	3	433	47	105	960	9
Future Volume (veh/h)	13	16	1	148	16	80	3	433	47	105	960	9
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1209	1674	1674	1355	1674	1281	1037	1463	1632	1435	1547	1393
Adj Flow Rate, veh/h	14	18	1	163	18	88	3	476	52	115	1055	10
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	37	9	9	26	9	37	50	24	12	20	18	29
Cap, veh/h	271	314	17	306	335	217	3	1468	730	138	1840	739
Arrive On Green	0.20	0.20	0.20	0.20	0.20	0.20	0.00	0.53	0.53	0.10	0.63	0.63
Sat Flow, veh/h	879	1571	87	1066	1674	1085	988	2780	1383	1366	2940	1180
Grp Volume(v), veh/h	14	0	19	163	18	88	3	476	52	115	1055	10
Grp Sat Flow(s),veh/h/ln	879	0	1658	1066	1674	1085	988	1390	1383	1366	1470	1180
Q Serve(g_s), s	0.9	0.0	0.7	10.3	0.6	5.0	0.2	6.9	1.3	5.8	14.7	0.2
Cycle Q Clear(g_c), s	1.5	0.0	0.7	10.9	0.6	5.0	0.2	6.9	1.3	5.8	14.7	0.2
Prop In Lane	1.00		0.05	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	271	0	332	306	335	217	3	1468	730	138	1840	739
VC Ratio(X)	0.05	0.00	0.06	0.53	0.05	0.41	0.94	0.32	0.07	0.83	0.57	0.01
Avail Cap(c_a), veh/h	695	0	1132	820	1143	741	84	1468	730	292	1840	739
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.3	0.0	22.7	27.2	22.7	24.5	35.0	9.4	8.1	31.0	7.7	5.0
Incr Delay (d2), s/veh	0.1	0.0	0.1	1.4	0.1	1.2	213.1	0.6	0.2	12.1	1.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	0.3	2.6	0.2	1.3	0.2	1.6	0.3	2.2	3.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.4	0.0	22.8	28.6	22.8	25.7	248.2	10.0	8.3	43.2	9.0	5.0
LnGrp LOS	C	A	C	C	C	C	F	B	A	D	A	A
Approach Vol, veh/h		33			269			531			1180	
Approach Delay, s/veh		23.1			27.3			11.2			12.3	
Approach LOS		C			C			B			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	11.1	41.1		18.1	4.2	48.0		18.1				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	15.0	35.0		48.0	6.0	44.0		48.0				
Max Q Clear Time (g_c+I1), s	7.8	8.9		3.5	2.2	16.7		12.9				
Green Ext Time (p_c), s	0.1	3.0		0.2	0.0	7.4		1.2				

Intersection Summary

HCM 6th Ctrl Delay	14.2
HCM 6th LOS	B

Intersection						
Int Delay, s/veh	3.5					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		∩	
Traffic Vol, veh/h	0	112	101	0	6	112
Future Vol, veh/h	0	112	101	0	6	112
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	2	23	25	2	1	25
Mvmt Flow	0	129	116	0	7	129
Major/Minor	Major1	Major2	Minor2			
Conflicting Flow All	-	0	-	0	245	116
Stage 1	-	-	-	-	116	-
Stage 2	-	-	-	-	129	-
Critical Hdwy	-	-	-	-	6.41	6.45
Critical Hdwy Stg 1	-	-	-	-	5.41	-
Critical Hdwy Stg 2	-	-	-	-	5.41	-
Follow-up Hdwy	-	-	-	-	3.509	3.525
Pot Cap-1 Maneuver	0	-	-	0	746	878
Stage 1	0	-	-	0	911	-
Stage 2	0	-	-	0	899	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	-	746	878
Mov Cap-2 Maneuver	-	-	-	-	746	-
Stage 1	-	-	-	-	911	-
Stage 2	-	-	-	-	899	-
Approach	EB	WB	SB			
HCM Control Delay, s	0	0	9.9			
HCM LOS						A
Minor Lane/Major Mvmt	EBT	WBT	SBLn1			
Capacity (veh/h)	-	-	870			
HCM Lane V/C Ratio	-	-	0.156			
HCM Control Delay (s)	-	-	9.9			
HCM Lane LOS	-	-	A			
HCM 95th %tile Q(veh)	-	-	0.6			

Intersection												
Int Delay, s/veh	1.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↗			↕				
Traffic Vol, veh/h	42	71	0	0	125	33	0	0	0	0	0	0
Future Vol, veh/h	42	71	0	0	125	33	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	16965	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	79	79	92	92	79	79	92	92	92	79	92	79
Heavy Vehicles, %	50	11	2	2	30	32	2	2	2	2	2	2
Mvmt Flow	53	90	0	0	158	42	0	0	0	0	0	0

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	200	0	- - - 0 375 396 90
Stage 1	-	-	- - - 196 196 -
Stage 2	-	-	- - - 179 200 -
Critical Hdwy	4.6	-	- - - 6.42 6.52 6.22
Critical Hdwy Stg 1	-	-	- - - 5.42 5.52 -
Critical Hdwy Stg 2	-	-	- - - 5.42 5.52 -
Follow-up Hdwy	2.65	-	- - - 3.518 4.018 3.318
Pot Cap-1 Maneuver	1131	- 0 0	- - 626 541 968
Stage 1	-	- 0 0	- - 837 739 -
Stage 2	-	- 0 0	- - 852 736 -
Platoon blocked, %		-	- -
Mov Cap-1 Maneuver	1131	- - -	- 595 0 968
Mov Cap-2 Maneuver	-	- - -	- 595 0 -
Stage 1	-	- - -	- 796 0 -
Stage 2	-	- - -	- 852 0 -

Approach	EB	WB	NB
HCM Control Delay, s	3.1	0	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	WBT	WBR
Capacity (veh/h)	-	1131	-	-	-
HCM Lane V/C Ratio	-	0.047	-	-	-
HCM Control Delay (s)	0	8.3	0	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	-	0.1	-	-	-

Intersection						
Int Delay, s/veh	5.4					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	Y			↑	↑	
Traffic Vol, veh/h	29	37	99	19	30	59
Future Vol, veh/h	29	37	99	19	30	59
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	82	82	82	82	82	82
Heavy Vehicles, %	19	4	29	23	12	21
Mvmt Flow	35	45	121	23	37	72

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	338	73	109	0	-	0
Stage 1	73	-	-	-	-	-
Stage 2	265	-	-	-	-	-
Critical Hdwy	6.59	6.24	4.39	-	-	-
Critical Hdwy Stg 1	5.59	-	-	-	-	-
Critical Hdwy Stg 2	5.59	-	-	-	-	-
Follow-up Hdwy	3.671	3.336	2.461	-	-	-
Pot Cap-1 Maneuver	624	983	1329	-	-	-
Stage 1	909	-	-	-	-	-
Stage 2	742	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	567	983	1329	-	-	-
Mov Cap-2 Maneuver	567	-	-	-	-	-
Stage 1	825	-	-	-	-	-
Stage 2	742	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10.4	6.7	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1329	-	743	-	-
HCM Lane V/C Ratio	0.091	-	0.108	-	-
HCM Control Delay (s)	8	0	10.4	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.3	-	0.4	-	-

HCM 6th Signalized Intersection Summary

5: I-15 SB On-ramp/I-15 SB Off-ramp & Foothill Blvd/Foothill Blvd

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↗		↑↑↑	↗				↘	↕	↗
Traffic Volume (veh/h)	0	710	697	0	995	536	0	0	0	334	0	825
Future Volume (veh/h)	0	710	697	0	995	536	0	0	0	334	0	825
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1702	1772	0	1772	1744				1646	1772	1702
Adj Flow Rate, veh/h	0	798	0	0	1118	0				250	0	1061
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89				0.89	0.89	0.89
Percent Heavy Veh, %	0	7	2	0	2	4				11	2	7
Cap, veh/h	0	2364		0	2461					631	0	1160
Arrive On Green	0.00	0.51	0.00	0.00	0.34	0.00				0.40	0.00	0.40
Sat Flow, veh/h	0	4799	1502	0	4997	1478				1567	0	2884
Grp Volume(v), veh/h	0	798	0	0	1118	0				250	0	1061
Grp Sat Flow(s),veh/h/ln	0	1549	1502	0	1612	1478				1567	0	1442
Q Serve(g_s), s	0.0	9.2	0.0	0.0	16.2	0.0				10.2	0.0	31.3
Cycle Q Clear(g_c), s	0.0	9.2	0.0	0.0	16.2	0.0				10.2	0.0	31.3
Prop In Lane	0.00		1.00	0.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2364		0	2461					631	0	1160
V/C Ratio(X)	0.00	0.34		0.00	0.45					0.40	0.00	0.91
Avail Cap(c_a), veh/h	0	2364		0	2461					679	0	1250
HCM Platoon Ratio	1.00	1.00	1.00	1.00	0.67	0.67				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.00	0.00	0.80	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	13.1	0.0	0.0	19.9	0.0				19.1	0.0	25.4
Incr Delay (d2), s/veh	0.0	0.4	0.0	0.0	0.5	0.0				0.4	0.0	10.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	2.8	0.0	0.0	6.3	0.0				3.6	0.0	11.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	13.5	0.0	0.0	20.4	0.0				19.5	0.0	35.5
LnGrp LOS	A	B		A	C					B	A	D
Approach Vol, veh/h		798	A		1118	A					1311	
Approach Delay, s/veh		13.5			20.4						32.4	
Approach LOS		B			C						C	
Timer - Assigned Phs		2		4		6						
Phs Duration (G+Y+Rc), s		49.8		40.2		49.8						
Change Period (Y+Rc), s		4.0		4.0		4.0						
Max Green Setting (Gmax), s		43.0		39.0		43.0						
Max Q Clear Time (g_c+I1), s		11.2		33.3		18.2						
Green Ext Time (p_c), s		5.4		2.9		7.7						

Intersection Summary

HCM 6th Ctrl Delay	23.6
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th Signalized Intersection Summary

6: I-15 NB Off-ramp/I-15 NB On-ramp & Foothill Blvd /Foothill Blvd

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↑		↑↑↑	↑	↑	↑↓	↑			
Traffic Volume (veh/h)	0	918	126	0	776	233	755	0	381	0	0	0
Future Volume (veh/h)	0	918	126	0	776	233	755	0	381	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No		No		No		No				
Adj Sat Flow, veh/h/ln	0	1772	1646	0	1674	1632	1758	1772	1730			
Adj Flow Rate, veh/h	0	1031	0	0	872	0	981	0	285			
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89			
Percent Heavy Veh, %	0	2	11	0	9	12	3	2	5			
Cap, veh/h	0	2708		0	2558		1176	0	515			
Arrive On Green	0.00	0.56	0.00	0.00	0.56	0.00	0.35	0.00	0.35			
Sat Flow, veh/h	0	4997	1395	0	4720	1383	3348	0	1466			
Grp Volume(v), veh/h	0	1031	0	0	872	0	981	0	285			
Grp Sat Flow(s),veh/h/ln	0	1612	1395	0	1523	1383	1674	0	1466			
Q Serve(g_s), s	0.0	10.7	0.0	0.0	9.3	0.0	24.2	0.0	14.1			
Cycle Q Clear(g_c), s	0.0	10.7	0.0	0.0	9.3	0.0	24.2	0.0	14.1			
Prop In Lane	0.00		1.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	0	2708		0	2558		1176	0	515			
VC Ratio(X)	0.00	0.38		0.00	0.34		0.83	0.00	0.55			
Avail Cap(c_a), veh/h	0	2708		0	2558		2009	0	880			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.00	0.91	0.00	0.00	1.00	0.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	0.0	11.1	0.0	0.0	10.8	0.0	26.8	0.0	23.5			
Incr Delay (d2), s/veh	0.0	0.4	0.0	0.0	0.4	0.0	1.6	0.0	0.9			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.0	3.6	0.0	0.0	3.0	0.0	9.4	0.0	4.8			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	11.5	0.0	0.0	11.1	0.0	28.4	0.0	24.4			
LnGrp LOS		A	B		A	B	C	A	C			
Approach Vol, veh/h		1031	A		872	A		1266				
Approach Delay, s/veh		11.5			11.1			27.5				
Approach LOS		B			B			C				
Timer - Assigned Phs		2			6			8				
Phs Duration (G+Y+Rc), s		54.4			54.4			35.6				
Change Period (Y+Rc), s		4.0			4.0			4.0				
Max Green Setting (Gmax), s		28.0			28.0			54.0				
Max Q Clear Time (g_c+I1), s		12.7			11.3			26.2				
Green Ext Time (p_c), s		6.5			5.7			5.4				

Intersection Summary

HCM 6th Ctrl Delay 17.8
 HCM 6th LOS B

Notes

User approved volume balancing among the lanes for turning movement.
 Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th Signalized Intersection Summary
 7: Ontario Mills Dr./I-15 SB Ramps & Fourth St

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖↗	↑↑↑	↖	↖↗	↑↑↑	↖	↖	↑↑	↖	↖	↑↑	↖
Traffic Volume (veh/h)	221	238	72	164	964	177	79	63	43	143	178	353
Future Volume (veh/h)	221	238	72	164	964	177	79	63	43	143	178	353
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No		No		No		No		No		No
Adj Sat Flow, veh/h/ln	1375	1561	1758	1538	1660	1238	1660	1617	1646	1315	1758	1758
Adj Flow Rate, veh/h	233	251	76	173	1015	186	83	66	45	151	187	372
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	18	17	3	5	10	40	3	13	11	29	3	3
Cap, veh/h	277	2489	870	216	2497	578	102	250	113	170	268	454
Arrive On Green	0.11	0.58	0.58	0.15	1.00	1.00	0.06	0.08	0.08	0.14	0.15	0.15
Sat Flow, veh/h	2541	4262	1490	2841	4531	1049	1581	3073	1395	1253	1758	2979
Grp Volume(v), veh/h	233	251	76	173	1015	186	83	66	45	151	187	372
Grp Sat Flow(s),veh/h/ln	1271	1421	1490	1420	1510	1049	1581	1537	1395	1253	1758	1490
Q Serve(g_s), s	11.7	3.4	2.9	7.6	0.0	0.0	6.7	2.6	4.0	15.4	13.1	15.7
Cycle Q Clear(g_c), s	11.7	3.4	2.9	7.6	0.0	0.0	6.7	2.6	4.0	15.4	13.1	15.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	277	2489	870	216	2497	578	102	250	113	170	268	454
VC Ratio(X)	0.84	0.10	0.09	0.80	0.41	0.32	0.81	0.26	0.40	0.89	0.70	0.82
Avail Cap(c_a), veh/h	430	2489	870	372	2497	578	207	402	182	289	406	688
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.78	0.78	0.78	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	56.8	12.0	11.9	54.1	0.0	0.0	60.0	56.1	56.7	55.2	52.3	53.4
Incr Delay (d2), s/veh	8.7	0.1	0.2	5.3	0.4	1.1	14.2	0.6	2.2	16.1	3.3	4.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.9	1.0	1.0	2.6	0.1	0.2	3.1	1.0	1.5	5.6	6.0	6.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	65.6	12.0	12.1	59.4	0.4	1.1	74.2	56.6	58.9	71.3	55.5	58.1
LnGrp LOS	E	B	B	E	A	A	E	E	E	E	E	E
Approach Vol, veh/h		560		1374		194		710				
Approach Delay, s/veh		34.3		7.9		64.7		60.2				
Approach LOS		C		A		E		E				
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	3.9	79.9	12.4	23.8	18.2	75.6	21.6	14.6				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	17.0	50.0	17.0	30.0	22.0	45.0	30.0	17.0				
Max Q Clear Time (g_c+19.6), s	19.6	5.4	8.7	17.7	13.7	2.0	17.4	6.0				
Green Ext Time (p_c), s	0.3	1.8	0.1	2.1	0.5	8.4	0.3	0.3				

Intersection Summary

HCM 6th Ctrl Delay	30.1
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

HCM 6th Signalized Intersection Summary

8: Fourth St & I-15 NB Ramps

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔	↑↑↑	↗	↖	↑↑↑		↖	↑↑		↖	↗	↗↗
Traffic Volume (veh/h)	147	251	28	15	282	62	53	23	34	324	55	938
Future Volume (veh/h)	147	251	28	15	282	62	53	23	34	324	55	938
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No		No		No		No		No		No
Adj Sat Flow, veh/h/ln	1688	1491	1295	958	1351	1351	761	1491	1491	1309	1281	1702
Adj Flow Rate, veh/h	156	267	30	16	300	66	56	24	36	387	0	998
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	8	22	36	60	32	32	74	22	22	35	37	7
Cap, veh/h	860	2539	684	12	1102	233	68	132	118	364	0	1217
Arrive On Green	0.55	1.00	1.00	0.01	0.36	0.36	0.09	0.09	0.09	0.15	0.00	0.15
Sat Flow, veh/h	3118	4071	1097	912	3048	645	725	1417	1264	2493	0	2884
Grp Volume(v), veh/h	156	267	30	16	240	126	56	24	36	387	0	998
Grp Sat Flow(s),veh/h/ln	1559	1357	1097	912	1229	1235	725	1417	1264	1246	0	1442
Q Serve(g_s), s	3.2	0.0	0.0	1.8	9.0	9.5	9.9	2.0	3.5	19.0	0.0	3.9
Cycle Q Clear(g_c), s	3.2	0.0	0.0	1.8	9.0	9.5	9.9	2.0	3.5	19.0	0.0	3.9
Prop In Lane	1.00		1.00	1.00		0.52	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	860	2539	684	12	889	446	68	132	118	364	0	1217
V/C Ratio(X)	0.18	0.11	0.04	1.30	0.27	0.28	0.83	0.18	0.30	1.06	0.00	0.82
Avail Cap(c_a), veh/h	860	2539	684	56	889	446	229	447	399	364	0	1217
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.96	0.96	0.96	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	21.8	0.0	0.0	64.1	29.4	29.5	57.9	54.3	55.0	55.5	0.0	33.2
Incr Delay (d2), s/veh	0.1	0.1	0.1	219.0	0.7	1.6	21.4	0.6	1.4	64.6	0.0	4.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	0.0	0.0	1.1	2.6	2.9	2.2	0.7	1.1	9.2	0.0	14.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	21.9	0.1	0.1	283.1	30.1	31.1	79.3	55.0	56.4	120.1	0.0	37.8
LnGrp LOS	C	A	A	F	C	C	E	D	E	F	A	D
Approach Vol, veh/h		453			382			116			1385	
Approach Delay, s/veh		7.6			41.0			67.2			60.8	
Approach LOS		A			D			E			E	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.8	85.1		23.0	39.8	51.0		16.2				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	46.0	46.0		19.0	7.0	47.0		41.0				
Max Q Clear Time (g_c+1/3), s	2.0	2.0		21.0	5.2	11.5		11.9				
Green Ext Time (p_c), s	0.0	1.7		0.0	0.1	2.1		0.5				

Intersection Summary

HCM 6th Ctrl Delay	47.6
HCM 6th LOS	D

Notes

- User approved pedestrian interval to be less than phase max green.
- User approved volume balancing among the lanes for turning movement.

HCM 6th Signalized Intersection Summary
 9: Milliken Ave & I-210 WB On-ramp/I-210 WB Off-ramp

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↘ ↙	↔	↗	↘ ↙ ↗	↕			↕	
Traffic Volume (veh/h)	0	0	0	133	4	56	247	205	0	0	463	99
Future Volume (veh/h)	0	0	0	133	4	56	247	205	0	0	463	99
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach				No		No		No				
Adj Sat Flow, veh/h/ln				1528	1786	1646	1538	1758	0	0	1772	1772
Adj Flow Rate, veh/h				157	0	40	255	211	0	0	477	102
Peak Hour Factor				0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %				13	1	11	5	3	0	0	2	2
Cap, veh/h				373	0	179	344	3543	0	0	2208	460
Arrive On Green				0.13	0.00	0.13	0.12	0.74	0.00	0.00	0.55	0.55
Sat Flow, veh/h				2910	0	1395	2841	4957	0	0	4170	836
Grp Volume(v), veh/h				157	0	40	255	211	0	0	381	198
Grp Sat Flow(s),veh/h/ln				1455	0	1395	1420	1600	0	0	1612	1621
Q Serve(g_s), s				3.0	0.0	1.5	5.2	0.7	0.0	0.0	3.6	3.7
Cycle Q Clear(g_c), s				3.0	0.0	1.5	5.2	0.7	0.0	0.0	3.6	3.7
Prop In Lane				1.00		1.00	1.00		0.00	0.00		0.52
Lane Grp Cap(c), veh/h				373	0	179	344	3543	0	0	1776	893
V/C Ratio(X)				0.42	0.00	0.22	0.74	0.06	0.00	0.00	0.21	0.22
Avail Cap(c_a), veh/h				388	0	186	426	3543	0	0	1776	893
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.98	0.98	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				24.1	0.0	23.5	25.5	2.1	0.0	0.0	6.9	6.9
Incr Delay (d2), s/veh				0.8	0.0	0.6	5.2	0.0	0.0	0.0	0.3	0.6
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				1.0	0.0	0.5	1.9	0.1	0.0	0.0	1.1	1.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				24.8	0.0	24.1	30.7	2.2	0.0	0.0	7.1	7.5
LnGrp LOS				C	A	C	C	A	A	A	A	A
Approach Vol, veh/h						197		466			579	
Approach Delay, s/veh						24.7		17.8			7.3	
Approach LOS						C		B			A	
Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		48.3			11.3	37.0		11.7				
Change Period (Y+Rc), s		4.0			4.0	4.0		4.0				
Max Green Setting (Gmax), s		44.0			9.0	31.0		8.0				
Max Q Clear Time (g_c+I1), s		2.7			7.2	5.7		5.0				
Green Ext Time (p_c), s		1.5			0.2	4.0		0.2				

Intersection Summary

HCM 6th Ctrl Delay	14.0
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

HCM 6th Signalized Intersection Summary
 10: Milliken Ave & I-210 EB Off-ramp/I-210 EB On-ramp

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	64	7	160	0	0	0	0	387	284	109	496	0
Future Volume (veh/h)	64	7	160	0	0	0	0	387	284	109	496	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No						No			No		
Adj Sat Flow, veh/h/ln	1594	1786	1660				0	1772	1772	1475	1744	0
Adj Flow Rate, veh/h	49	0	201				0	421	309	118	539	0
Peak Hour Factor	0.92	0.92	0.92				0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	8	1	10				0	2	2	10	4	0
Cap, veh/h	199	0	369				0	1827	851	278	3501	0
Arrive On Green	0.13	0.00	0.13				0.00	0.57	0.57	0.20	1.00	0.00
Sat Flow, veh/h	1518	0	2813				0	3384	1502	2726	4918	0
Grp Volume(v), veh/h	49	0	201				0	421	309	118	539	0
Grp Sat Flow(s),veh/h/ln	1518	0	1406				0	1612	1502	1363	1587	0
Q Serve(g_s), s	1.7	0.0	4.0				0.0	3.9	6.7	2.3	0.0	0.0
Cycle Q Clear(g_c), s	1.7	0.0	4.0				0.0	3.9	6.7	2.3	0.0	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	199	0	369				0	1827	851	278	3501	0
V/C Ratio(X)	0.25	0.00	0.54				0.00	0.23	0.36	0.42	0.15	0.00
Avail Cap(c_a), veh/h	202	0	375				0	1827	851	278	3501	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	0.98	0.98	0.00
Uniform Delay (d), s/veh	23.4	0.0	24.4				0.0	6.5	7.1	22.3	0.0	0.0
Incr Delay (d2), s/veh	0.6	0.0	1.6				0.0	0.3	1.2	1.0	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.0	1.3				0.0	1.1	2.0	0.7	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	24.0	0.0	26.0				0.0	6.8	8.3	23.3	0.1	0.0
LnGrp LOS	C	A	C				A	A	A	C	A	A
Approach Vol, veh/h	250						730			657		
Approach Delay, s/veh	25.6						7.4			4.3		
Approach LOS	C						A			A		
Timer - Assigned Phs	1	2	4	6								
Phs Duration (G+Y+Rc), s	30.1	38.0	11.9	48.1								
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0								
Max Green Setting (Gmax), s	30.0	34.0	8.0	44.0								
Max Q Clear Time (g_c+14), s	14.3	8.7	6.0	2.0								
Green Ext Time (p_c), s	0.1	5.3	0.2	4.2								

Intersection Summary

HCM 6th Ctrl Delay	8.9
HCM 6th LOS	A

Notes

User approved volume balancing among the lanes for turning movement.

HCM 6th Signalized Intersection Summary

11: Milliken Ave & Foothill Blvd

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔	↑↑↑	↔	↔↔	↑↑↑	↔	↔↔	↑↑↑	↔	↔↔	↑↑↑	↔
Traffic Volume (veh/h)	40	364	59	120	670	82	77	159	72	123	368	139
Future Volume (veh/h)	40	364	59	120	670	82	77	159	72	123	368	139
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No		No		No		No		No		No
Adj Sat Flow, veh/h/ln	1563	1716	1786	1513	1758	1758	1500	1744	1702	1588	1744	1716
Adj Flow Rate, veh/h	42	379	61	125	698	85	80	166	75	128	383	145
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	3	6	1	7	3	3	8	4	7	1	4	6
Cap, veh/h	107	1206	390	208	1415	439	162	1185	285	221	1020	312
Arrive On Green	0.04	0.26	0.26	0.07	0.29	0.29	0.06	0.20	0.20	0.08	0.21	0.21
Sat Flow, veh/h	2887	4684	1514	2795	4799	1490	2772	5999	1442	2933	4761	1454
Grp Volume(v), veh/h	42	379	61	125	698	85	80	166	75	128	383	145
Grp Sat Flow(s),veh/h/ln	1444	1561	1514	1397	1600	1490	1386	1500	1442	1467	1587	1454
Q Serve(g_s), s	0.6	2.6	1.3	1.8	4.9	1.7	1.1	0.9	1.8	1.7	2.8	3.5
Cycle Q Clear(g_c), s	0.6	2.6	1.3	1.8	4.9	1.7	1.1	0.9	1.8	1.7	2.8	3.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	107	1206	390	208	1415	439	162	1185	285	221	1020	312
V/C Ratio(X)	0.39	0.31	0.16	0.60	0.49	0.19	0.49	0.14	0.26	0.58	0.38	0.47
Avail Cap(c_a), veh/h	285	5898	1906	276	6043	1876	342	6665	1602	290	5172	1580
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	19.1	12.1	11.6	18.2	11.8	10.7	18.5	13.4	13.8	18.1	13.6	13.9
Incr Delay (d2), s/veh	2.3	0.1	0.2	2.8	0.3	0.2	2.3	0.1	0.5	2.4	0.2	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.6	0.3	0.5	1.2	0.4	0.3	0.2	0.5	0.5	0.7	0.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	21.4	12.3	11.8	20.9	12.0	10.9	20.8	13.5	14.2	20.5	13.8	15.0
LnGrp LOS	C	B	B	C	B	B	C	B	B	C	B	B
Approach Vol, veh/h		482			908			321			656	
Approach Delay, s/veh		13.0			13.2			15.5			15.4	
Approach LOS		B			B			B			B	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	7.0	14.4	6.4	12.7	5.5	15.9	7.1	12.0				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	4.0	51.0	5.0	44.0	4.0	51.0	4.0	45.0				
Max Q Clear Time (g_c+1/3), s	4.0	4.6	3.1	5.5	2.6	6.9	3.7	3.8				
Green Ext Time (p_c), s	0.0	2.6	0.0	2.9	0.0	5.1	0.0	1.2				

Intersection Summary

HCM 6th Ctrl Delay	14.1
HCM 6th LOS	B

HCM 6th Signalized Intersection Summary

12: Milliken Ave & Fourth St

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔	↑↑↑	↗	↔↔	↑↑↑	↗	↔↔	↑↑↑	↗	↔↔	↑↑↑	↗
Traffic Volume (veh/h)	78	289	117	229	385	81	78	570	83	81	495	74
Future Volume (veh/h)	78	289	117	229	385	81	78	570	83	81	495	74
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No		No		No		No		No		No
Adj Sat Flow, veh/h/ln	1550	1632	1772	1538	1632	1702	1550	1646	1688	1513	1547	1547
Adj Flow Rate, veh/h	87	321	130	254	428	90	87	633	92	90	550	82
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	4	12	2	5	12	7	4	11	8	7	18	18
Cap, veh/h	134	587	198	313	869	281	133	3011	918	127	2512	363
Arrive On Green	0.05	0.13	0.13	0.11	0.20	0.20	0.05	0.53	0.53	0.05	0.53	0.53
Sat Flow, veh/h	2864	4454	1502	2841	4454	1442	2864	5661	1430	2795	4732	684
Grp Volume(v), veh/h	87	321	130	254	428	90	87	633	92	90	461	171
Grp Sat Flow(s),veh/h/ln	1432	1485	1502	1420	1485	1442	1432	1415	1430	1397	1331	1424
Q Serve(g_s), s	2.6	6.0	7.3	7.7	7.6	4.7	2.6	5.2	2.2	2.8	5.4	5.6
Cycle Q Clear(g_c), s	2.6	6.0	7.3	7.7	7.6	4.7	2.6	5.2	2.2	2.8	5.4	5.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.48
Lane Grp Cap(c), veh/h	134	587	198	313	869	281	133	3011	918	127	2119	756
VC Ratio(X)	0.65	0.55	0.66	0.81	0.49	0.32	0.66	0.21	0.10	0.71	0.22	0.23
Avail Cap(c_a), veh/h	259	2671	901	321	2772	898	162	3011	918	127	2119	756
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.4	35.9	36.5	38.4	31.7	30.5	41.4	10.9	6.1	41.6	11.0	11.1
Incr Delay (d2), s/veh	5.2	0.8	3.7	14.3	0.4	0.6	6.8	0.2	0.2	17.0	0.2	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	2.0	2.7	3.1	2.5	1.6	1.0	1.4	0.5	1.2	1.4	1.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	46.6	36.7	40.1	52.7	32.1	31.2	48.2	11.1	6.3	58.6	11.2	11.7
LnGrp LOS	D	D	D	D	C	C	D	B	A	E	B	B
Approach Vol, veh/h		538			772			812			722	
Approach Delay, s/veh		39.1			38.8			14.5			17.3	
Approach LOS		D			D			B			B	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	8.0	51.0	13.7	15.6	8.1	50.9	8.1	21.2				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	47.0	10.0	53.0	5.0	46.0	8.0	55.0					
Max Q Clear Time (g_c+14), s	7.2	9.7	9.3	4.6	7.6	4.6	9.6					
Green Ext Time (p_c), s	0.0	4.6	0.0	2.4	0.0	4.1	0.1	3.0				

Intersection Summary

HCM 6th Ctrl Delay	26.5
HCM 6th LOS	C

Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↗		↑↑↑	↑↑↑	↗
Traffic Vol, veh/h	0	3	0	594	683	41
Future Vol, veh/h	0	3	0	594	683	41
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	175
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	1	2	9	9	1
Mvmt Flow	0	3	0	625	719	43

Major/Minor	Minor2	Major1	Major2		
Conflicting Flow All	-	360	-	0	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-
Critical Hdwy	-	7.12	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-
Follow-up Hdwy	-	3.91	-	-	-
Pot Cap-1 Maneuver	0	546	0	-	-
Stage 1	0	-	0	-	-
Stage 2	0	-	0	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	-	546	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11.6	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT EBLn1	SBT	SBR
Capacity (veh/h)	- 546	-	-
HCM Lane V/C Ratio	- 0.006	-	-
HCM Control Delay (s)	- 11.6	-	-
HCM Lane LOS	- B	-	-
HCM 95th %tile Q(veh)	- 0	-	-

HCM 6th Signalized Intersection Summary

14: Milliken Ave & 7th St

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↑↑↑		↖	↑↑↑	
Traffic Volume (veh/h)	15	3	29	10	2	6	74	478	11	23	659	7
Future Volume (veh/h)	15	3	29	10	2	6	74	478	11	23	659	7
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1475	1786	1786	1037	1098	1098	1673	1688	1688	1687	1674	1674
Adj Flow Rate, veh/h	16	3	30	10	2	6	77	498	11	24	686	7
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	17	1	1	50	50	50	2	8	8	1	9	9
Cap, veh/h	182	11	112	145	19	58	96	3421	75	34	3258	33
Arrive On Green	0.08	0.08	0.08	0.08	0.08	0.08	0.06	0.74	0.74	0.02	0.70	0.70
Sat Flow, veh/h	1171	140	1395	805	242	726	1594	4639	102	1606	4664	48
Grp Volume(v), veh/h	16	0	33	10	0	8	77	329	180	24	448	245
Grp Sat Flow(s),veh/h/ln	1171	0	1535	805	0	967	1594	1536	1669	1606	1523	1665
Q Serve(g_s), s	1.0	0.0	1.5	0.9	0.0	0.6	3.6	2.3	2.4	1.1	3.9	3.9
Cycle Q Clear(g_c), s	1.5	0.0	1.5	2.4	0.0	0.6	3.6	2.3	2.4	1.1	3.9	3.9
Prop In Lane	1.00		0.91	1.00		0.75	1.00		0.06	1.00		0.03
Lane Grp Cap(c), veh/h	182	0	124	145	0	78	96	2265	1231	34	2128	1163
VC Ratio(X)	0.09	0.00	0.27	0.07	0.00	0.10	0.80	0.15	0.15	0.71	0.21	0.21
Avail Cap(c_a), veh/h	983	0	1173	696	0	739	235	2265	1231	129	2128	1163
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	32.5	0.0	32.2	33.3	0.0	31.8	34.6	2.9	2.9	36.3	4.0	4.0
Incr Delay (d2), s/veh	0.2	0.0	1.1	0.2	0.0	0.6	14.4	0.1	0.2	23.9	0.2	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.0	0.6	0.2	0.0	0.1	1.6	0.3	0.4	0.6	0.7	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	32.7	0.0	33.4	33.5	0.0	32.4	49.0	3.0	3.1	60.2	4.2	4.4
LnGrp LOS	C	A	C	C	A	C	D	A	A	E	A	A
Approach Vol, veh/h		49			18			586			717	
Approach Delay, s/veh		33.1			33.0			9.1			6.1	
Approach LOS		C			C			A			A	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.6	59.0		10.0	8.5	56.1		10.0				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	6.0	55.0		57.0	11.0	50.0		57.0				
Max Q Clear Time (g_c+I1), s	3.1	4.4		3.5	5.6	5.9		4.4				
Green Ext Time (p_c), s	0.0	3.0		0.2	0.1	4.3		0.1				

Intersection Summary

HCM 6th Ctrl Delay	8.7
HCM 6th LOS	A

HCM 6th Signalized Intersection Summary
 15: Milliken Ave & I-10 WB Ramps/Ontario Mills Pkwy

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔	↑	↗	↔↔	↕↕	↗	↔↔	↕↕↕	↗	↔↔	↕↕↕	↗
Traffic Volume (veh/h)	37	34	24	215	47	173	95	389	161	80	311	167
Future Volume (veh/h)	37	34	24	215	47	173	95	389	161	80	311	167
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1425	1463	1730	1550	1786	1365	739	1632	1252	1588	1632	1561
Adj Flow Rate, veh/h	42	39	27	244	53	197	108	442	183	91	353	190
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	14	24	5	4	1	31	69	12	39	1	12	17
Cap, veh/h	76	222	223	191	644	219	217	3138	664	130	2494	626
Arrive On Green	0.03	0.15	0.15	0.07	0.19	0.19	0.05	0.18	0.18	0.04	0.44	0.44
Sat Flow, veh/h	2633	1463	1466	2864	3393	1157	1365	5612	1061	2933	5612	1323
Grp Volume(v), veh/h	42	39	27	244	53	197	108	442	183	91	353	190
Grp Sat Flow(s),veh/h/ln	1317	1463	1466	1432	1697	1157	683	1403	1061	1467	1403	1323
Q Serve(g_s), s	1.4	2.1	1.0	6.0	1.2	15.0	6.9	5.9	11.4	2.8	3.4	4.0
Cycle Q Clear(g_c), s	1.4	2.1	1.0	6.0	1.2	15.0	6.9	5.9	11.4	2.8	3.4	4.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	76	222	223	191	644	219	217	3138	664	130	2494	626
VC Ratio(X)	0.55	0.18	0.12	1.28	0.08	0.90	0.50	0.14	0.28	0.70	0.14	0.30
Avail Cap(c_a), veh/h	117	260	261	191	679	231	217	3138	664	130	2494	626
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.92	0.92	0.92	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.1	33.2	16.5	42.0	30.0	35.6	39.1	18.6	15.6	42.4	14.8	5.8
Incr Delay (d2), s/veh	6.1	0.4	0.2	159.1	0.1	32.4	1.6	0.1	0.9	15.1	0.1	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.8	0.5	6.3	0.5	6.1	1.3	2.0	3.3	1.3	1.1	1.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	49.2	33.6	16.7	201.1	30.1	68.0	40.7	18.7	16.5	57.5	14.9	7.1
LnGrp LOS	D	C	B	F	C	E	D	B	B	E	B	A
Approach Vol, veh/h		108			494			733			634	
Approach Delay, s/veh		35.5			129.7			21.4			18.7	
Approach LOS		D			F			C			B	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	8.0	54.3	10.0	17.7	18.3	44.0	6.6	21.1				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	4.0	48.0	6.0	16.0	12.0	40.0	4.0	18.0				
Max Q Clear Time (g_c+14), s	4.0	13.4	8.0	4.1	8.9	6.0	3.4	17.0				
Green Ext Time (p_c), s	0.0	4.1	0.0	0.1	0.1	3.3	0.0	0.1				

Intersection Summary

HCM 6th Ctrl Delay	48.5
HCM 6th LOS	D

HCM 6th Signalized Intersection Summary

16: Milliken Ave & I-10 EB Ramps

11/03/2021



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↶↶	↷	↶↶	↑↑↑	↑↑↑	↷
Traffic Volume (veh/h)	340	229	179	305	416	134
Future Volume (veh/h)	340	229	179	305	416	134
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1475	1660	1051	1505	1519	958
Adj Flow Rate, veh/h	400	269	211	359	489	158
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	10	10	44	21	20	60
Cap, veh/h	622	321	260	3536	2636	595
Arrive On Green	0.23	0.23	0.13	0.68	0.17	0.17
Sat Flow, veh/h	2726	1406	1942	5388	5439	812
Grp Volume(v), veh/h	400	269	211	359	489	158
Grp Sat Flow(s),veh/h/ln	1363	1406	971	1294	1307	812
Q Serve(g_s), s	11.9	16.4	9.5	2.1	7.2	8.4
Cycle Q Clear(g_c), s	11.9	16.4	9.5	2.1	7.2	8.4
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	622	321	260	3536	2636	595
VC Ratio(X)	0.64	0.84	0.81	0.10	0.19	0.27
Avail Cap(c_a), veh/h	939	484	561	3536	2636	595
HCM Platoon Ratio	1.00	1.00	1.00	1.00	0.33	0.33
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.94	0.94
Uniform Delay (d), s/veh	31.4	33.2	37.9	4.9	21.6	7.3
Incr Delay (d2), s/veh	1.1	7.9	6.0	0.1	0.1	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.9	12.6	2.4	0.5	2.3	3.5
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	32.5	41.1	43.8	4.9	21.8	8.3
LnGrp LOS	C	D	D	A	C	A
Approach Vol, veh/h	669			570	647	
Approach Delay, s/veh	36.0			19.3	18.5	
Approach LOS	D			B	B	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		65.5		24.5	16.1	49.4
Change Period (Y+Rc), s		4.0		4.0	4.0	4.0
Max Green Setting (Gmax), s		51.0		31.0	26.0	21.0
Max Q Clear Time (g_c+I1), s		4.1		18.4	11.5	10.4
Green Ext Time (p_c), s		2.8		2.1	0.6	3.0
Intersection Summary						
HCM 6th Ctrl Delay			24.9			
HCM 6th LOS			C			

HCM 6th Signalized Intersection Summary

1: Highway 395 & Joshua St

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↖	↗	↖	↖↗	↗	↖	↖↗	↗
Traffic Volume (veh/h)	29	86	13	33	19	99	21	1155	68	56	593	23
Future Volume (veh/h)	29	86	13	33	19	99	21	1155	68	56	593	23
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1687	1786	1786	1528	1786	1519	1687	1716	1491	1395	1617	1716
Adj Flow Rate, veh/h	32	96	14	37	21	110	23	1283	76	62	659	26
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	1	1	1	13	1	20	1	6	22	23	13	6
Cap, veh/h	253	199	29	188	233	168	35	2072	803	70	2047	968
Arrive On Green	0.13	0.13	0.13	0.13	0.13	0.13	0.02	0.64	0.64	0.05	0.67	0.67
Sat Flow, veh/h	1198	1524	222	1106	1786	1287	1606	3260	1264	1329	3073	1454
Grp Volume(v), veh/h	32	0	110	37	21	110	23	1283	76	62	659	26
Grp Sat Flow(s),veh/h/ln	1198	0	1746	1106	1786	1287	1606	1630	1264	1329	1537	1454
Q Serve(g_s), s	1.6	0.0	3.9	2.1	0.7	5.4	0.9	15.6	1.5	3.1	6.0	0.4
Cycle Q Clear(g_c), s	2.3	0.0	3.9	6.0	0.7	5.4	0.9	15.6	1.5	3.1	6.0	0.4
Prop In Lane	1.00		0.13	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	253	0	228	188	233	168	35	2072	803	70	2047	968
VC Ratio(X)	0.13	0.00	0.48	0.20	0.09	0.66	0.65	0.62	0.09	0.89	0.32	0.03
Avail Cap(c_a), veh/h	967	0	1269	848	1298	935	146	2072	803	161	2047	968
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.3	0.0	26.7	29.4	25.3	27.3	32.1	7.2	4.7	31.1	4.7	3.8
Incr Delay (d2), s/veh	0.2	0.0	1.6	0.5	0.2	4.3	18.2	1.4	0.2	28.9	0.4	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.0	1.6	0.6	0.3	1.8	0.5	3.2	0.3	1.4	1.0	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	26.5	0.0	28.3	29.9	25.4	31.6	50.3	8.6	4.9	60.0	5.1	3.8
LnGrp LOS	C	A	C	C	C	C	D	A	A	E	A	A
Approach Vol, veh/h		142			168			1382				747
Approach Delay, s/veh		27.9			30.5			9.1				9.6
Approach LOS		C			C			A				A
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.5	46.0		12.6	5.5	48.0		12.6				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	8.0	42.0		48.0	6.0	44.0		48.0				
Max Q Clear Time (g_c+I1), s	5.1	17.6		5.9	2.9	8.0		8.0				
Green Ext Time (p_c), s	0.0	9.4		0.8	0.0	4.3		0.7				

Intersection Summary

HCM 6th Ctrl Delay	11.8
HCM 6th LOS	B

Intersection						
Int Delay, s/veh	2.2					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↓	
Traffic Vol, veh/h	0	179	87	0	6	77
Future Vol, veh/h	0	179	87	0	6	77
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	0	25	23	0	1	22
Mvmt Flow	0	183	89	0	6	79
Major/Minor	Major1	Major2	Minor2			
Conflicting Flow All	-	0	-	0	272	89
Stage 1	-	-	-	-	89	-
Stage 2	-	-	-	-	183	-
Critical Hdwy	-	-	-	-	6.41	6.42
Critical Hdwy Stg 1	-	-	-	-	5.41	-
Critical Hdwy Stg 2	-	-	-	-	5.41	-
Follow-up Hdwy	-	-	-	-	3.509	3.498
Pot Cap-1 Maneuver	0	-	-	0	720	917
Stage 1	0	-	-	0	937	-
Stage 2	0	-	-	0	851	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	-	720	917
Mov Cap-2 Maneuver	-	-	-	-	720	-
Stage 1	-	-	-	-	937	-
Stage 2	-	-	-	-	851	-
Approach	EB	WB	SB			
HCM Control Delay, s	0	0	9.4			
HCM LOS						A
Minor Lane/Major Mvmt	EBT	WBT	SBLn1			
Capacity (veh/h)	-	-	899			
HCM Lane V/C Ratio	-	-	0.094			
HCM Control Delay (s)	-	-	9.4			
HCM Lane LOS	-	-	A			
HCM 95th %tile Q(veh)	-	-	0.3			

Intersection												
Int Delay, s/veh	2.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↗			↕				
Traffic Vol, veh/h	120	96	0	0	87	21	0	0	0	0	0	0
Future Vol, veh/h	120	96	0	0	87	21	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	16965	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	92	92	95	95	92	92	92	95	92	95
Heavy Vehicles, %	24	23	2	2	23	42	2	2	2	2	2	2
Mvmt Flow	126	101	0	0	92	22	0	0	0	0	0	0

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	114	0	0
Stage 1	-	-	353
Stage 2	-	-	103
Critical Hdwy	4.34	-	6.42
Critical Hdwy Stg 1	-	-	5.42
Critical Hdwy Stg 2	-	-	5.42
Follow-up Hdwy	2.416	-	3.518
Pot Cap-1 Maneuver	1349	0	562
Stage 1	-	0	711
Stage 2	-	0	921
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1349	-	506
Mov Cap-2 Maneuver	-	-	506
Stage 1	-	-	641
Stage 2	-	-	921

Approach	EB	WB	NB
HCM Control Delay, s	4.4	0	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	WBT	WBR
Capacity (veh/h)	-	1349	-	-	-
HCM Lane V/C Ratio	-	0.094	-	-	-
HCM Control Delay (s)	0	7.9	0	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	-	0.3	-	-	-

Intersection						
Int Delay, s/veh	5.4					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	W			↑	↑	
Traffic Vol, veh/h	49	51	69	30	29	54
Future Vol, veh/h	49	51	69	30	29	54
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	6	10	20	48	38	19
Mvmt Flow	50	52	70	31	30	55

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	229	58	85	0	0
Stage 1	58	-	-	-	-
Stage 2	171	-	-	-	-
Critical Hdwy	6.46	6.3	4.3	-	-
Critical Hdwy Stg 1	5.46	-	-	-	-
Critical Hdwy Stg 2	5.46	-	-	-	-
Follow-up Hdwy	3.554	3.39	2.38	-	-
Pot Cap-1 Maneuver	750	986	1405	-	-
Stage 1	954	-	-	-	-
Stage 2	849	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	712	986	1405	-	-
Mov Cap-2 Maneuver	712	-	-	-	-
Stage 1	905	-	-	-	-
Stage 2	849	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.9	5.4	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1405	-	830	-	-
HCM Lane V/C Ratio	0.05	-	0.123	-	-
HCM Control Delay (s)	7.7	0	9.9	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.2	-	0.4	-	-

HCM 6th Signalized Intersection Summary

5: I-15 SB On-ramp/I-15 SB Off-ramp & Foothill Blvd/Foothill Blvd

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↑		↑↑↑	↑				↑	↔	↑
Traffic Volume (veh/h)	0	2253	885	0	1839	472	0	0	0	167	0	488
Future Volume (veh/h)	0	2253	885	0	1839	472	0	0	0	167	0	488
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1786	1786	0	1772	1772				1716	1772	1702
Adj Flow Rate, veh/h	0	2503	0	0	2043	0				124	0	608
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90				0.90	0.90	0.90
Percent Heavy Veh, %	0	1	1	0	2	2				6	2	7
Cap, veh/h	0	3269		0	3243					393	0	694
Arrive On Green	0.00	0.67	0.00	0.00	1.00	0.00				0.24	0.00	0.24
Sat Flow, veh/h	0	5036	1514	0	4997	1502				1634	0	2884
Grp Volume(v), veh/h	0	2503	0	0	2043	0				124	0	608
Grp Sat Flow(s),veh/h/ln	0	1625	1514	0	1612	1502				1634	0	1442
Q Serve(g_s), s	0.0	31.3	0.0	0.0	0.0	0.0				5.6	0.0	18.3
Cycle Q Clear(g_c), s	0.0	31.3	0.0	0.0	0.0	0.0				5.6	0.0	18.3
Prop In Lane	0.00		1.00	0.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	3269		0	3243					393	0	694
V/C Ratio(X)	0.00	0.77		0.00	0.63					0.32	0.00	0.88
Avail Cap(c_a), veh/h	0	3269		0	3243					454	0	801
HCM Platoon Ratio	1.00	1.00	1.00	1.00	2.00	2.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.00	0.00	0.49	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	10.0	0.0	0.0	0.0	0.0				28.1	0.0	32.9
Incr Delay (d2), s/veh	0.0	1.8	0.0	0.0	0.5	0.0				0.5	0.0	9.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	8.2	0.0	0.0	0.1	0.0				2.2	0.0	7.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	11.8	0.0	0.0	0.5	0.0				28.5	0.0	42.6
LnGrp LOS	A	B		A	A					C	A	D
Approach Vol, veh/h		2503	A		2043	A					732	
Approach Delay, s/veh		11.8			0.5						40.2	
Approach LOS		B			A						D	
Timer - Assigned Phs		2		4		6						
Phs Duration (G+Y+Rc), s		64.3		25.7		64.3						
Change Period (Y+Rc), s		4.0		4.0		4.0						
Max Green Setting (Gmax), s		57.0		25.0		57.0						
Max Q Clear Time (g_c+I1), s		33.3		20.3		2.0						
Green Ext Time (p_c), s		18.9		1.4		24.6						

Intersection Summary

HCM 6th Ctrl Delay	11.4
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th Signalized Intersection Summary

6: I-15 NB Off-ramp/I-15 NB On-ramp & Foothill Blvd /Foothill Blvd

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↑		↑↑↑	↑	↑	↑↓	↑			
Traffic Volume (veh/h)	0	2110	310	0	1308	990	1003	0	477	0	0	0
Future Volume (veh/h)	0	2110	310	0	1308	990	1003	0	477	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No		No		No		No				
Adj Sat Flow, veh/h/ln	0	1786	1674	0	1772	1786	1772	1772	1744			
Adj Flow Rate, veh/h	0	2319	0	0	1437	0	1265	0	349			
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91			
Percent Heavy Veh, %	0	1	9	0	2	1	2	2	4			
Cap, veh/h	0	2318		0	2300		1470	0	644			
Arrive On Green	0.00	0.95	0.00	0.00	0.48	0.00	0.44	0.00	0.44			
Sat Flow, veh/h	0	5036	1418	0	4997	1514	3375	0	1478			
Grp Volume(v), veh/h	0	2319	0	0	1437	0	1265	0	349			
Grp Sat Flow(s),veh/h/ln	0	1625	1418	0	1612	1514	1688	0	1478			
Q Serve(g_s), s	0.0	42.8	0.0	0.0	19.9	0.0	30.5	0.0	15.7			
Cycle Q Clear(g_c), s	0.0	42.8	0.0	0.0	19.9	0.0	30.5	0.0	15.7			
Prop In Lane	0.00		1.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	0	2318		0	2300		1470	0	644			
V/C Ratio(X)	0.00	1.00		0.00	0.62		0.86	0.00	0.54			
Avail Cap(c_a), veh/h	0	2318		0	2300		1913	0	837			
HCM Platoon Ratio	1.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.00	0.52	0.00	0.00	1.00	0.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	0.0	2.2	0.0	0.0	17.6	0.0	22.9	0.0	18.8			
Incr Delay (d2), s/veh	0.0	13.5	0.0	0.0	1.3	0.0	3.4	0.0	0.7			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.0	3.7	0.0	0.0	7.2	0.0	11.8	0.0	5.1			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	15.7	0.0	0.0	18.9	0.0	26.3	0.0	19.5			
LnGrp LOS	A	F		A	B		C	A	B			
Approach Vol, veh/h		2319	A		1437	A		1614				
Approach Delay, s/veh		15.7			18.9			24.8				
Approach LOS		B			B			C				
Timer - Assigned Phs		2			6			8				
Phs Duration (G+Y+Rc), s		46.8			46.8			43.2				
Change Period (Y+Rc), s		4.0			4.0			4.0				
Max Green Setting (Gmax), s		31.0			31.0			51.0				
Max Q Clear Time (g_c+I1), s		44.8			21.9			32.5				
Green Ext Time (p_c), s		0.0			6.1			6.8				

Intersection Summary

HCM 6th Ctrl Delay 19.3
 HCM 6th LOS B

Notes

User approved volume balancing among the lanes for turning movement.
 Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th Signalized Intersection Summary
 7: Ontario Mills Dr./I-15 SB Ramps & Fourth St

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔	↑↑↑	↗	↔↔	↑↑↑	↗	↔	↑↑	↗	↔	↑↑	↗
Traffic Volume (veh/h)	663	995	67	94	719	264	129	220	42	82	180	403
Future Volume (veh/h)	663	995	67	94	719	264	129	220	42	82	180	403
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No		No		No		No		No		No
Adj Sat Flow, veh/h/ln	1513	1730	1772	1588	1660	1589	1647	1786	1786	1342	1786	1758
Adj Flow Rate, veh/h	670	1005	68	95	726	267	130	222	42	83	182	407
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	7	5	2	1	10	15	4	1	1	27	1	3
Cap, veh/h	742	2525	803	386	1816	540	158	308	137	173	224	1164
Arrive On Green	0.27	0.53	0.53	0.26	0.80	0.80	0.10	0.09	0.09	0.14	0.13	0.13
Sat Flow, veh/h	2795	4722	1502	2933	4531	1347	1569	3393	1514	1278	1786	2979
Grp Volume(v), veh/h	670	1005	68	95	726	267	130	222	42	83	182	407
Grp Sat Flow(s),veh/h/ln	1397	1574	1502	1467	1510	1347	1569	1697	1514	1278	1786	1490
Q Serve(g_s), s	30.1	16.4	2.9	3.3	6.1	5.7	10.6	8.3	3.4	7.8	12.9	8.7
Cycle Q Clear(g_c), s	30.1	16.4	2.9	3.3	6.1	5.7	10.6	8.3	3.4	7.8	12.9	8.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	742	2525	803	386	1816	540	158	308	137	173	224	1164
VC Ratio(X)	0.90	0.40	0.08	0.25	0.40	0.49	0.82	0.72	0.31	0.48	0.81	0.35
Avail Cap(c_a), veh/h	935	2525	803	386	1816	540	235	561	250	173	254	1215
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.90	0.90	0.90	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	46.1	17.9	14.7	42.8	8.3	3.9	57.3	57.5	55.3	52.0	55.4	14.7
Incr Delay (d2), s/veh	10.2	0.5	0.2	0.3	0.6	2.9	13.5	3.2	1.2	2.1	16.3	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	5.6	1.0	1.1	1.6	2.1	4.8	3.7	1.3	2.6	6.8	2.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	56.3	18.4	15.0	43.1	8.9	6.8	70.8	60.7	56.5	54.0	71.7	14.9
LnGrp LOS	E	B	B	D	A	A	E	E	E	D	E	B
Approach Vol, veh/h		1743			1088			394			672	
Approach Delay, s/veh		32.8			11.4			63.6			35.1	
Approach LOS		C			B			E			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	30.6	73.0	16.6	19.8	38.0	55.6	21.1	15.3				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	30.0	69.0	19.0	18.0	43.0	34.0	16.0	21.0				
Max Q Clear Time (g_c+1/3), s	15.3	18.4	12.6	14.9	32.1	8.1	9.8	10.3				
Green Ext Time (p_c), s	0.0	7.7	0.2	0.9	1.9	5.6	0.1	1.0				

Intersection Summary

HCM 6th Ctrl Delay	30.3
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

HCM 6th Signalized Intersection Summary

8: Fourth St & I-15 NB Ramps

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔	↑↑↑	↗	↗	↑↑↑		↗	↑↑		↗	↖	↖↖
Traffic Volume (veh/h)	615	457	47	30	406	170	57	58	49	144	43	614
Future Volume (veh/h)	615	457	47	30	406	170	57	58	49	144	43	614
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No		No		No		No		No		No
Adj Sat Flow, veh/h/ln	1786	1575	1702	1702	1603	1603	1702	1786	1786	1421	1758	1702
Adj Flow Rate, veh/h	641	476	49	31	423	177	59	60	51	98	118	640
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	1	16	7	7	14	14	7	1	1	27	3	7
Cap, veh/h	1171	2981	999	38	1111	444	100	113	86	134	174	1309
Arrive On Green	0.59	1.00	1.00	0.02	0.36	0.36	0.06	0.06	0.06	0.10	0.10	0.10
Sat Flow, veh/h	3300	4301	1442	1621	3073	1228	1621	1833	1398	1353	1758	2884
Grp Volume(v), veh/h	641	476	49	31	401	199	59	55	56	98	118	640
Grp Sat Flow(s),veh/h/ln	1650	1434	1442	1621	1459	1382	1621	1697	1534	1353	1758	1442
Q Serve(g_s), s	15.2	0.0	0.0	2.5	13.2	14.0	4.6	4.1	4.6	9.1	8.4	0.0
Cycle Q Clear(g_c), s	15.2	0.0	0.0	2.5	13.2	14.0	4.6	4.1	4.6	9.1	8.4	0.0
Prop In Lane	1.00		1.00	1.00		0.89	1.00		0.91	1.00		1.00
Lane Grp Cap(c), veh/h	1171	2981	999	38	1055	500	100	104	94	134	174	1309
VC Ratio(X)	0.55	0.16	0.05	0.82	0.38	0.40	0.59	0.53	0.59	0.73	0.68	0.49
Avail Cap(c_a), veh/h	1171	2981	999	87	1055	500	511	535	484	167	216	1378
HCM Platoon Ratio	1.67	1.67	1.67	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.94	0.94	0.94	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	20.2	0.0	0.0	63.2	30.7	31.0	59.4	59.2	59.4	56.9	56.5	24.9
Incr Delay (d2), s/veh	0.5	0.1	0.1	33.8	1.0	2.4	5.5	4.1	5.9	11.7	6.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.5	0.0	0.0	1.3	4.6	4.8	2.0	1.9	1.9	3.5	4.0	6.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	20.7	0.1	0.1	97.1	31.8	33.3	64.9	63.3	65.3	68.6	62.5	25.2
LnGrp LOS	C	A	A	F	C	C	E	E	E	E	E	C
Approach Vol, veh/h		1166			631			170			856	
Approach Delay, s/veh		11.4			35.5			64.5			35.3	
Approach LOS		B			D			E			D	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.0	94.1		16.9	50.1	51.0		12.0				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	7.0	50.0		16.0	10.0	47.0		41.0				
Max Q Clear Time (g_c+14), s	14.5	2.0		11.1	17.2	16.0		6.6				
Green Ext Time (p_c), s	0.0	3.2		1.8	0.0	3.6		0.8				

Intersection Summary

HCM 6th Ctrl Delay	27.2
HCM 6th LOS	C

Notes

- User approved pedestrian interval to be less than phase max green.
- User approved volume balancing among the lanes for turning movement.

HCM 6th Signalized Intersection Summary
 9: Milliken Ave & I-210 WB On-ramp/I-210 WB Off-ramp

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↘	↔	↗	↘↗	↑↑↑			↑↑↑	
Traffic Volume (veh/h)	0	0	0	179	7	83	194	601	0	0	521	74
Future Volume (veh/h)	0	0	0	179	7	83	194	601	0	0	521	74
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach				No		No		No				No
Adj Sat Flow, veh/h/ln				1554	1786	1688	1500	1786	0	0	1786	1786
Adj Flow Rate, veh/h				216	0	60	202	626	0	0	543	77
Peak Hour Factor				0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %				11	1	8	8	1	0	0	1	1
Cap, veh/h				391	0	189	373	3582	0	0	2306	322
Arrive On Green				0.13	0.00	0.13	0.27	1.00	0.00	0.00	0.53	0.53
Sat Flow, veh/h				2960	0	1430	2772	5036	0	0	4485	604
Grp Volume(v), veh/h				216	0	60	202	626	0	0	406	214
Grp Sat Flow(s),veh/h/ln				1480	0	1430	1386	1625	0	0	1625	1677
Q Serve(g_s), s				4.1	0.0	2.3	3.7	0.0	0.0	0.0	4.0	4.1
Cycle Q Clear(g_c), s				4.1	0.0	2.3	3.7	0.0	0.0	0.0	4.0	4.1
Prop In Lane				1.00		1.00	1.00		0.00	0.00		0.36
Lane Grp Cap(c), veh/h				391	0	189	373	3582	0	0	1734	895
V/C Ratio(X)				0.55	0.00	0.32	0.54	0.17	0.00	0.00	0.23	0.24
Avail Cap(c_a), veh/h				444	0	215	373	3582	0	0	1734	895
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.93	0.93	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				24.4	0.0	23.6	20.3	0.0	0.0	0.0	7.5	7.5
Incr Delay (d2), s/veh				1.2	0.0	1.0	1.5	0.1	0.0	0.0	0.3	0.6
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				1.4	0.0	0.8	1.1	0.0	0.0	0.0	1.2	1.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				25.6	0.0	24.5	21.8	0.1	0.0	0.0	7.8	8.1
LnGrp LOS				C	A	C	C	A	A	A	A	A
Approach Vol, veh/h						276		828			620	
Approach Delay, s/veh						25.4		5.4			7.9	
Approach LOS						C		A			A	
Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		48.1			12.1	36.0		11.9				
Change Period (Y+Rc), s		4.0			4.0	4.0		4.0				
Max Green Setting (Gmax), s		43.0			7.0	32.0		9.0				
Max Q Clear Time (g_c+I1), s		2.0			5.7	6.1		6.1				
Green Ext Time (p_c), s		5.0			0.1	4.3		0.3				

Intersection Summary

HCM 6th Ctrl Delay	9.5
HCM 6th LOS	A

Notes

User approved volume balancing among the lanes for turning movement.

HCM 6th Signalized Intersection Summary
 10: Milliken Ave & I-210 EB Off-ramp/I-210 EB On-ramp

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	171	10	98	0	0	0	0	662	436	123	579	0
Future Volume (veh/h)	171	10	98	0	0	0	0	662	436	123	579	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No						No			No		
Adj Sat Flow, veh/h/ln	1660	1786	1702				0	1758	1758	1575	1758	0
Adj Flow Rate, veh/h	216	0	72				0	697	459	129	609	0
Peak Hour Factor	0.95	0.95	0.95				0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	1	7				0	3	3	2	3	0
Cap, veh/h	418	0	191				0	1813	844	294	3525	0
Arrive On Green	0.13	0.00	0.13				0.00	0.57	0.57	0.20	1.00	0.00
Sat Flow, veh/h	3162	0	1442				0	3358	1490	2910	4957	0
Grp Volume(v), veh/h	216	0	72				0	697	459	129	609	0
Grp Sat Flow(s),veh/h/ln	1581	0	1442				0	1600	1490	1455	1600	0
Q Serve(g_s), s	3.8	0.0	2.7				0.0	7.2	11.6	2.3	0.0	0.0
Cycle Q Clear(g_c), s	3.8	0.0	2.7				0.0	7.2	11.6	2.3	0.0	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	418	0	191				0	1813	844	294	3525	0
V/C Ratio(X)	0.52	0.00	0.38				0.00	0.38	0.54	0.44	0.17	0.00
Avail Cap(c_a), veh/h	422	0	192				0	1813	844	294	3525	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	0.97	0.97	0.00
Uniform Delay (d), s/veh	24.2	0.0	23.8				0.0	7.2	8.1	22.4	0.0	0.0
Incr Delay (d2), s/veh	1.1	0.0	1.2				0.0	0.6	2.5	1.0	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4	0.0	0.9				0.0	2.1	3.5	0.8	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	25.3	0.0	25.0				0.0	7.8	10.7	23.4	0.1	0.0
LnGrp LOS	C	A	C				A	A	B	C	A	A
Approach Vol, veh/h	288						1156			738		
Approach Delay, s/veh	25.2						8.9			4.2		
Approach LOS	C						A			A		
Timer - Assigned Phs	1	2	4	6								
Phs Duration (G+Y+Rc), s	30.1	38.0	11.9	48.1								
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0								
Max Green Setting (Gmax), s	30.0	34.0	8.0	44.0								
Max Q Clear Time (g_c+14), s	14.3	13.6	5.8	2.0								
Green Ext Time (p_c), s	0.1	8.4	0.2	4.8								

Intersection Summary

HCM 6th Ctrl Delay	9.5
HCM 6th LOS	A

Notes

User approved volume balancing among the lanes for turning movement.

HCM 6th Signalized Intersection Summary

11: Milliken Ave & Foothill Blvd

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖↗	↑↑↑	↖	↖↗	↑↑↑	↖	↖↗	↑↑↑	↖	↖↗	↑↑↑	↖
Traffic Volume (veh/h)	299	1561	141	237	822	123	259	653	304	156	245	115
Future Volume (veh/h)	299	1561	141	237	822	123	259	653	304	156	245	115
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No		No		No		No		No		No
Adj Sat Flow, veh/h/ln	1588	1786	1758	1588	1786	1772	1575	1772	1758	1588	1744	1772
Adj Flow Rate, veh/h	329	1715	155	260	903	135	285	718	334	171	269	126
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	1	1	3	1	1	2	2	2	3	1	4	2
Cap, veh/h	230	1933	591	184	1856	572	205	2150	526	184	1642	518
Arrive On Green	0.08	0.40	0.40	0.06	0.38	0.38	0.07	0.35	0.35	0.06	0.34	0.34
Sat Flow, veh/h	2933	4876	1490	2933	4876	1502	2910	6095	1490	2933	4761	1502
Grp Volume(v), veh/h	329	1715	155	260	903	135	285	718	334	171	269	126
Grp Sat Flow(s),veh/h/ln	1467	1625	1490	1467	1625	1502	1455	1524	1490	1467	1587	1502
Q Serve(g_s), s	10.0	41.8	8.9	8.0	18.0	7.8	9.0	11.0	23.9	7.4	5.0	7.7
Cycle Q Clear(g_c), s	10.0	41.8	8.9	8.0	18.0	7.8	9.0	11.0	23.9	7.4	5.0	7.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	230	1933	591	184	1856	572	205	2150	526	184	1642	518
VC Ratio(X)	1.43	0.89	0.26	1.41	0.49	0.24	1.39	0.33	0.64	0.93	0.16	0.24
Avail Cap(c_a), veh/h	230	2026	619	184	1949	600	205	2150	526	184	1642	518
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	58.8	35.8	25.9	59.8	30.0	26.9	59.3	30.3	34.4	59.5	29.0	29.9
Incr Delay (d2), s/veh	217.1	5.1	0.2	215.0	0.2	0.2	201.8	0.4	5.8	46.6	0.2	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	16.4	3.1	8.4	6.7	2.7	9.0	4.0	9.1	3.9	1.9	2.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	275.9	40.9	26.2	274.8	30.2	27.1	261.1	30.7	40.2	106.1	29.2	31.0
LnGrp LOS	F	D	C	F	C	C	F	C	D	F	C	C
Approach Vol, veh/h		2199			1298			1337			566	
Approach Delay, s/veh		75.0			78.9			82.2			52.8	
Approach LOS		E			E			F			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	42.0	54.6	13.0	48.0	14.0	52.6	12.0	49.0				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	4.0	53.0	9.0	44.0	10.0	51.0	8.0	45.0				
Max Q Clear Time (g_c+10), s	4.0	43.8	11.0	9.7	12.0	20.0	9.4	25.9				
Green Ext Time (p_c), s	0.0	6.8	0.0	2.0	0.0	6.8	0.0	5.4				

Intersection Summary

HCM 6th Ctrl Delay	75.4
HCM 6th LOS	E

HCM 6th Signalized Intersection Summary

12: Milliken Ave & Fourth St

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔	↑↑↑	↔	↔↔	↑↑↑	↔	↔↔	↑↑↑	↔	↔↔	↑↑↑	↔
Traffic Volume (veh/h)	231	654	173	297	522	156	283	859	100	260	673	65
Future Volume (veh/h)	231	654	173	297	522	156	283	859	100	260	673	65
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No		No		No		No		No		No
Adj Sat Flow, veh/h/ln	1588	1730	1758	1575	1744	1730	1588	1660	1646	1550	1688	1688
Adj Flow Rate, veh/h	236	667	177	303	533	159	289	877	102	265	687	66
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	1	5	3	2	4	5	1	10	11	4	8	8
Cap, veh/h	273	960	303	211	869	268	182	2835	794	178	2700	255
Arrive On Green	0.09	0.20	0.20	0.07	0.18	0.18	0.06	0.50	0.50	0.06	0.50	0.50
Sat Flow, veh/h	2933	4722	1490	2910	4761	1466	2933	5709	1395	2864	5436	514
Grp Volume(v), veh/h	236	667	177	303	533	159	289	877	102	265	548	205
Grp Sat Flow(s),veh/h/ln	1467	1574	1490	1455	1587	1466	1467	1427	1395	1432	1451	1595
Q Serve(g_s), s	7.7	12.7	10.4	7.0	10.0	9.6	6.0	8.8	3.3	6.0	7.0	7.2
Cycle Q Clear(g_c), s	7.7	12.7	10.4	7.0	10.0	9.6	6.0	8.8	3.3	6.0	7.0	7.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.32
Lane Grp Cap(c), veh/h	273	960	303	211	869	268	182	2835	794	178	2162	792
V/C Ratio(X)	0.86	0.69	0.58	1.44	0.61	0.59	1.59	0.31	0.13	1.49	0.25	0.26
Avail Cap(c_a), veh/h	273	2590	817	211	2512	774	182	2835	794	178	2162	792
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.2	35.7	34.8	44.8	36.4	36.2	45.3	14.5	9.7	45.3	14.0	14.1
Incr Delay (d2), s/veh	23.7	0.9	1.8	221.8	0.7	2.1	288.7	0.3	0.3	248.1	0.3	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.5	4.6	3.6	8.9	3.6	3.4	9.4	2.6	0.9	8.2	2.1	2.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	67.0	36.6	36.6	266.7	37.1	38.3	334.0	14.8	10.0	293.4	14.3	14.8
LnGrp LOS	E	D	D	F	D	D	F	B	B	F	B	B
Approach Vol, veh/h		1080			995			1268			1018	
Approach Delay, s/veh		43.3			107.2			87.1			87.1	
Approach LOS		D			F			F			F	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	40.0	52.0	11.0	23.7	10.0	52.0	13.0	21.7				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	48.0	48.0	7.0	53.0	6.0	48.0	9.0	51.0				
Max Q Clear Time (g_c+1/3), s	10.8	10.8	9.0	14.7	8.0	9.2	9.7	12.0				
Green Ext Time (p_c), s	0.0	6.7	0.0	5.0	0.0	4.9	0.0	3.9				

Intersection Summary

HCM 6th Ctrl Delay	80.8
HCM 6th LOS	F

Notes

User approved pedestrian interval to be less than phase max green.

Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↗		↑↑↑	↑↑↑	↗
Traffic Vol, veh/h	0	30	0	1743	792	26
Future Vol, veh/h	0	30	0	1743	792	26
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	175
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	2	1	2	3	6	4
Mvmt Flow	0	31	0	1779	808	27

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	-	404	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	7.12	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	3.91	-
Pot Cap-1 Maneuver	0	512	0
Stage 1	0	-	0
Stage 2	0	-	0
Platoon blocked, %			
Mov Cap-1 Maneuver	-	512	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

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

Minor Lane/Major Mvmt	NBT EBLn1	SBT	SBR
Capacity (veh/h)	-	512	-
HCM Lane V/C Ratio	-	0.06	-
HCM Control Delay (s)	-	12.5	-
HCM Lane LOS	-	B	-
HCM 95th %tile Q(veh)	-	0.2	-

HCM 6th Signalized Intersection Summary

14: Milliken Ave & 7th St

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↑↑↑		↖	↑↑↑	
Traffic Volume (veh/h)	130	3	51	16	0	19	45	1537	11	7	806	11
Future Volume (veh/h)	130	3	51	16	0	19	45	1537	11	7	806	11
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1687	1786	1786	1382	1800	1800	1620	1758	1758	1687	1716	1716
Adj Flow Rate, veh/h	131	3	52	16	0	19	45	1553	11	7	814	11
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	1	1	1	24	0	0	6	3	3	1	6	6
Cap, veh/h	259	12	201	202	0	212	53	3466	25	12	3229	44
Arrive On Green	0.14	0.14	0.14	0.14	0.00	0.14	0.03	0.71	0.71	0.01	0.68	0.68
Sat Flow, veh/h	1326	83	1443	1052	0	1525	1543	4916	35	1606	4763	64
Grp Volume(v), veh/h	131	0	55	16	0	19	45	1011	553	7	533	292
Grp Sat Flow(s),veh/h/ln	1326	0	1526	1052	0	1525	1543	1600	1752	1606	1561	1704
Q Serve(g_s), s	7.7	0.0	2.6	1.1	0.0	0.9	2.3	11.0	11.0	0.4	5.4	5.4
Cycle Q Clear(g_c), s	8.6	0.0	2.6	3.7	0.0	0.9	2.3	11.0	11.0	0.4	5.4	5.4
Prop In Lane	1.00		0.95	1.00		1.00	1.00		0.02	1.00		0.04
Lane Grp Cap(c), veh/h	259	0	213	202	0	212	53	2256	1235	12	2117	1155
VC Ratio(X)	0.51	0.00	0.26	0.08	0.00	0.09	0.85	0.45	0.45	0.61	0.25	0.25
Avail Cap(c_a), veh/h	1010	0	1076	797	0	1076	191	2256	1235	79	2117	1155
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.1	0.0	31.1	32.7	0.0	30.3	38.8	5.1	5.1	40.0	5.1	5.1
Incr Delay (d2), s/veh	1.5	0.0	0.6	0.2	0.0	0.2	28.8	0.6	1.2	41.8	0.3	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.5	0.0	1.0	0.3	0.0	0.3	1.3	2.3	2.7	0.3	1.2	1.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	35.6	0.0	31.7	32.9	0.0	30.5	67.6	5.8	6.3	81.8	5.3	5.6
LnGrp LOS	D	A	C	C	A	C	E	A	A	F	A	A
Approach Vol, veh/h		186			35			1609			832	
Approach Delay, s/veh		34.4			31.6			7.7			6.1	
Approach LOS		C			C			A			A	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	4.6	61.0		15.3	6.8	58.8		15.3				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	4.0	57.0		57.0	10.0	51.0		57.0				
Max Q Clear Time (g_c+I1), s	2.4	13.0		10.6	4.3	7.4		5.7				
Green Ext Time (p_c), s	0.0	13.3		0.7	0.0	5.3		0.2				

Intersection Summary

HCM 6th Ctrl Delay	9.4
HCM 6th LOS	A

HCM 6th Signalized Intersection Summary
 15: Milliken Ave & I-10 WB Ramps/Ontario Mills Pkwy

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↑	↗	↔	↑↑	↗	↔	↑↑↑	↗	↔	↑↑↑	↗
Traffic Volume (veh/h)	159	158	71	505	205	119	335	913	239	292	777	576
Future Volume (veh/h)	159	158	71	505	205	119	335	913	239	292	777	576
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No		No		No		No		No		No
Adj Sat Flow, veh/h/ln	1563	1758	1786	1563	1786	1098	1425	1674	1491	1588	1702	1716
Adj Flow Rate, veh/h	192	190	86	608	247	143	404	1100	288	352	936	694
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Percent Heavy Veh, %	3	3	1	3	1	50	14	9	22	1	7	6
Cap, veh/h	554	218	188	653	537	147	452	2303	791	341	2017	780
Arrive On Green	0.19	0.12	0.12	0.23	0.16	0.16	0.12	0.27	0.27	0.12	0.34	0.34
Sat Flow, veh/h	2887	1758	1514	2887	3393	931	2633	5757	1264	2933	5854	1454
Grp Volume(v), veh/h	192	190	86	608	247	143	404	1100	288	352	936	694
Grp Sat Flow(s),veh/h/ln	1444	1758	1514	1444	1697	931	1317	1439	1264	1467	1463	1454
Q Serve(g_s), s	6.9	12.7	6.3	24.8	7.9	18.3	18.2	19.2	6.2	14.0	15.0	22.5
Cycle Q Clear(g_c), s	6.9	12.7	6.3	24.8	7.9	18.3	18.2	19.2	6.2	14.0	15.0	22.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	554	218	188	653	537	147	452	2303	791	341	2017	780
VC Ratio(X)	0.35	0.87	0.46	0.93	0.46	0.97	0.89	0.48	0.36	1.03	0.46	0.89
Avail Cap(c_a), veh/h	601	234	202	674	537	147	505	2303	791	341	2017	780
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	0.67	0.67	0.67	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.94	0.94	0.94	1.00	1.00	1.00
Uniform Delay (d), s/veh	42.0	51.6	48.8	45.5	45.8	50.2	52.0	33.4	4.7	53.0	30.7	9.0
Incr Delay (d2), s/veh	0.4	26.7	1.7	19.5	0.6	65.0	16.1	0.7	1.2	57.0	0.8	14.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.5	7.2	2.5	10.6	3.4	6.9	7.2	7.2	2.2	7.8	5.4	8.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	42.3	78.3	50.5	65.0	46.5	115.3	68.1	34.1	5.9	110.0	31.4	23.5
LnGrp LOS	D	E	D	E	D	F	E	C	A	F	C	C
Approach Vol, veh/h		468		998		1792		1982				
Approach Delay, s/veh		58.4		67.6		37.2		42.6				
Approach LOS		E		E		D		D				
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	48.0	52.0	31.1	18.9	24.6	45.4	27.0	23.0				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	48.0	48.0	28.0	16.0	23.0	37.0	25.0	19.0				
Max Q Clear Time (g_c+1/3), s	21.2	21.2	26.8	14.7	20.2	24.5	8.9	20.3				
Green Ext Time (p_c), s	0.0	10.6	0.4	0.2	0.5	7.5	0.5	0.0				

Intersection Summary

HCM 6th Ctrl Delay	46.9
HCM 6th LOS	D

HCM 6th Signalized Intersection Summary

16: Milliken Ave & I-10 EB Ramps

11/03/2021



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔↔	↔	↔↔	↑↑↑	↑↑↑	↔
Traffic Volume (veh/h)	411	220	328	1076	684	669
Future Volume (veh/h)	411	220	328	1076	684	669
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1550	1617	1176	1646	1744	1491
Adj Flow Rate, veh/h	424	227	338	1109	705	690
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	4	13	34	11	4	22
Cap, veh/h	563	269	386	4171	3154	913
Arrive On Green	0.20	0.20	0.18	0.74	0.17	0.17
Sat Flow, veh/h	2864	1371	2172	5891	6243	1264
Grp Volume(v), veh/h	424	227	338	1109	705	690
Grp Sat Flow(s),veh/h/ln	1432	1371	1086	1415	1500	1264
Q Serve(g_s), s	16.8	19.1	18.2	7.7	12.1	38.7
Cycle Q Clear(g_c), s	16.8	19.1	18.2	7.7	12.1	38.7
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	563	269	386	4171	3154	913
VC Ratio(X)	0.75	0.84	0.88	0.27	0.22	0.76
Avail Cap(c_a), veh/h	1193	571	652	4171	3154	913
HCM Platoon Ratio	1.00	1.00	1.00	1.00	0.33	0.33
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.72	0.72
Uniform Delay (d), s/veh	45.5	46.4	48.1	5.2	28.5	17.4
Incr Delay (d2), s/veh	2.1	7.0	7.2	0.2	0.1	4.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.1	14.2	5.3	2.1	4.9	23.4
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	47.5	53.4	55.2	5.3	28.6	21.6
LnGrp LOS	D	D	E	A	C	C
Approach Vol, veh/h	651			1447	1395	
Approach Delay, s/veh	49.6			17.0	25.2	
Approach LOS	D			B	C	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		92.4		27.6	25.3	67.1
Change Period (Y+Rc), s		4.0		4.0	4.0	4.0
Max Green Setting (Gmax), s		62.0		50.0	36.0	22.0
Max Q Clear Time (g_c+I1), s		9.7		21.1	20.2	40.7
Green Ext Time (p_c), s		10.8		2.5	1.1	0.0
Intersection Summary						
HCM 6th Ctrl Delay			26.3			
HCM 6th LOS			C			

HCM 6th Signalized Intersection Summary

1: Highway 395 & Joshua St

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗	↗	↖	↗	↗	↖	↗	↗
Traffic Volume (veh/h)	43	125	20	41	24	122	33	1848	110	53	552	22
Future Volume (veh/h)	43	125	20	41	24	122	33	1848	110	53	552	22
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1687	1786	1786	1528	1786	1519	1687	1716	1491	1395	1617	1716
Adj Flow Rate, veh/h	48	139	22	46	27	136	37	2053	122	59	613	24
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	1	1	1	13	1	20	1	6	22	23	13	6
Cap, veh/h	283	252	40	190	299	215	47	1964	761	77	1940	918
Arrive On Green	0.17	0.17	0.17	0.17	0.17	0.17	0.03	0.60	0.60	0.06	0.63	0.63
Sat Flow, veh/h	1164	1505	238	1056	1786	1287	1606	3260	1264	1329	3073	1454
Grp Volume(v), veh/h	48	0	161	46	27	136	37	2053	122	59	613	24
Grp Sat Flow(s),veh/h/ln	1164	0	1743	1056	1786	1287	1606	1630	1264	1329	1537	1454
Q Serve(g_s), s	2.5	0.0	5.9	2.9	0.9	6.9	1.6	42.0	3.0	3.1	6.4	0.4
Cycle Q Clear(g_c), s	3.4	0.0	5.9	8.8	0.9	6.9	1.6	42.0	3.0	3.1	6.4	0.4
Prop In Lane	1.00		0.14	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	283	0	291	190	299	215	47	1964	761	77	1940	918
VC Ratio(X)	0.17	0.00	0.55	0.24	0.09	0.63	0.78	1.05	0.16	0.77	0.32	0.03
Avail Cap(c_a), veh/h	890	0	1200	741	1230	887	138	1964	761	152	1940	918
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.0	0.0	26.6	30.7	24.5	27.0	33.6	13.8	6.1	32.4	5.9	4.8
Incr Delay (d2), s/veh	0.3	0.0	1.6	0.6	0.1	3.0	24.1	33.2	0.5	14.4	0.4	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.0	2.5	0.7	0.4	2.2	0.9	18.2	0.6	1.2	1.3	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	26.3	0.0	28.3	31.3	24.7	30.1	57.7	47.1	6.5	46.8	6.3	4.9
LnGrp LOS	C	A	C	C	C	C	E	F	A	D	A	A
Approach Vol, veh/h		209			209			2212			696	
Approach Delay, s/veh		27.8			29.6			45.0			9.7	
Approach LOS		C			C			D			A	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.0	46.0		15.7	6.0	48.0		15.7				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	8.0	42.0		48.0	6.0	44.0		48.0				
Max Q Clear Time (g_c+I1), s	5.1	44.0		7.9	3.6	8.4		10.8				
Green Ext Time (p_c), s	0.0	0.0		1.2	0.0	4.0		0.8				

Intersection Summary

HCM 6th Ctrl Delay	35.6
HCM 6th LOS	D

Intersection						
Int Delay, s/veh	1.7					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		∩	
Traffic Vol, veh/h	0	262	107	0	6	71
Future Vol, veh/h	0	262	107	0	6	71
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	0	25	23	0	1	22
Mvmt Flow	0	267	109	0	6	72

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	-	0	-	0	376 109
Stage 1	-	-	-	-	109 -
Stage 2	-	-	-	-	267 -
Critical Hdwy	-	-	-	-	6.41 6.42
Critical Hdwy Stg 1	-	-	-	-	5.41 -
Critical Hdwy Stg 2	-	-	-	-	5.41 -
Follow-up Hdwy	-	-	-	-	3.509 3.498
Pot Cap-1 Maneuver	0	-	-	0	627 893
Stage 1	0	-	-	0	918 -
Stage 2	0	-	-	0	780 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	-	627 893
Mov Cap-2 Maneuver	-	-	-	-	627 -
Stage 1	-	-	-	-	918 -
Stage 2	-	-	-	-	780 -

Approach	EB	WB	SB
HCM Control Delay, s	0	0	9.6
HCM LOS			A

Minor Lane/Major Mvmt	EBT	WBT	SBLn1
Capacity (veh/h)	-	-	864
HCM Lane V/C Ratio	-	-	0.091
HCM Control Delay (s)	-	-	9.6
HCM Lane LOS	-	-	A
HCM 95th %tile Q(veh)	-	-	0.3

Intersection												
Int Delay, s/veh	3.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↗			↕				
Traffic Vol, veh/h	193	141	0	0	107	34	0	0	0	0	0	0
Future Vol, veh/h	193	141	0	0	107	34	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	16965	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	92	92	95	95	92	92	92	95	92	95
Heavy Vehicles, %	24	23	2	2	23	42	2	2	2	2	2	2
Mvmt Flow	203	148	0	0	113	36	0	0	0	0	0	0

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	149	0	-
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	4.34	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	2.416	-	-
Pot Cap-1 Maneuver	1308	0	0
Stage 1	-	0	0
Stage 2	-	0	0
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1308	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	4.8	0	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	WBT	WBR
Capacity (veh/h)	-	1308	-	-	-
HCM Lane V/C Ratio	-	0.155	-	-	-
HCM Control Delay (s)	0	8.3	0	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	-	0.5	-	-	-

Intersection						
Int Delay, s/veh	6					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	Y ^W			↑	↑	
Traffic Vol, veh/h	56	87	80	28	28	69
Future Vol, veh/h	56	87	80	28	28	69
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	6	10	20	48	38	19
Mvmt Flow	57	89	82	29	29	70

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	257	64	99	0	0
Stage 1	64	-	-	-	-
Stage 2	193	-	-	-	-
Critical Hdwy	6.46	6.3	4.3	-	-
Critical Hdwy Stg 1	5.46	-	-	-	-
Critical Hdwy Stg 2	5.46	-	-	-	-
Follow-up Hdwy	3.554	3.39	2.38	-	-
Pot Cap-1 Maneuver	723	978	1388	-	-
Stage 1	949	-	-	-	-
Stage 2	830	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	680	978	1388	-	-
Mov Cap-2 Maneuver	680	-	-	-	-
Stage 1	892	-	-	-	-
Stage 2	830	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10.2	5.7	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1388	-	835	-	-
HCM Lane V/C Ratio	0.059	-	0.175	-	-
HCM Control Delay (s)	7.8	0	10.2	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.2	-	0.6	-	-

HCM 6th Signalized Intersection Summary

5: I-15 SB On-ramp/I-15 SB Off-ramp & Foothill Blvd/Foothill Blvd

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↗		↑↑↑	↗				↘	↕	↗
Traffic Volume (veh/h)	0	1178	822	0	1205	539	0	0	0	380	0	646
Future Volume (veh/h)	0	1178	822	0	1205	539	0	0	0	380	0	646
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1786	1786	0	1772	1772				1716	1772	1702
Adj Flow Rate, veh/h	0	1309	0	0	1339	0				281	0	869
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90				0.90	0.90	0.90
Percent Heavy Veh, %	0	1	1	0	2	2				6	2	7
Cap, veh/h	0	3088		0	3064					454	0	801
Arrive On Green	0.00	0.63	0.00	0.00	1.00	0.00				0.28	0.00	0.28
Sat Flow, veh/h	0	5036	1514	0	4997	1502				1634	0	2884
Grp Volume(v), veh/h	0	1309	0	0	1339	0				281	0	869
Grp Sat Flow(s),veh/h/ln	0	1625	1514	0	1612	1502				1634	0	1442
Q Serve(g_s), s	0.0	12.1	0.0	0.0	0.0	0.0				13.5	0.0	25.0
Cycle Q Clear(g_c), s	0.0	12.1	0.0	0.0	0.0	0.0				13.5	0.0	25.0
Prop In Lane	0.00		1.00	0.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	3088		0	3064					454	0	801
V/C Ratio(X)	0.00	0.42		0.00	0.44					0.62	0.00	1.08
Avail Cap(c_a), veh/h	0	3088		0	3064					454	0	801
HCM Platoon Ratio	1.00	1.00	1.00	1.00	2.00	2.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.00	0.00	0.62	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	8.3	0.0	0.0	0.0	0.0				28.3	0.0	32.5
Incr Delay (d2), s/veh	0.0	0.4	0.0	0.0	0.3	0.0				2.6	0.0	57.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	3.3	0.0	0.0	0.1	0.0				5.4	0.0	14.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	8.7	0.0	0.0	0.3	0.0				30.9	0.0	89.7
LnGrp LOS	A	A		A	A					C	A	F
Approach Vol, veh/h		1309	A		1339	A					1150	
Approach Delay, s/veh		8.7			0.3						75.4	
Approach LOS		A			A						E	
Timer - Assigned Phs		2		4		6						
Phs Duration (G+Y+Rc), s		61.0		29.0		61.0						
Change Period (Y+Rc), s		4.0		4.0		4.0						
Max Green Setting (Gmax), s		57.0		25.0		57.0						
Max Q Clear Time (g_c+I1), s		14.1		27.0		2.0						
Green Ext Time (p_c), s		10.9		0.0		11.7						

Intersection Summary

HCM 6th Ctrl Delay 25.9
 HCM 6th LOS C

Notes

User approved volume balancing among the lanes for turning movement.
 Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th Signalized Intersection Summary

6: I-15 NB Off-ramp/I-15 NB On-ramp & Foothill Blvd /Foothill Blvd

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↑		↑↑↑	↑	↑	↑	↑			
Traffic Volume (veh/h)	0	1286	272	0	1227	939	517	0	357	0	0	0
Future Volume (veh/h)	0	1286	272	0	1227	939	517	0	357	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No		No		No		No				
Adj Sat Flow, veh/h/ln	0	1786	1674	0	1772	1786	1772	1772	1744			
Adj Flow Rate, veh/h	0	1413	0	0	1348	0	690	0	261			
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91			
Percent Heavy Veh, %	0	1	9	0	2	1	2	2	4			
Cap, veh/h	0	3197		0	3172		862	0	377			
Arrive On Green	0.00	1.00	0.00	0.00	0.66	0.00	0.26	0.00	0.26			
Sat Flow, veh/h	0	5036	1418	0	4997	1514	3375	0	1478			
Grp Volume(v), veh/h	0	1413	0	0	1348	0	690	0	261			
Grp Sat Flow(s),veh/h/ln	0	1625	1418	0	1612	1514	1688	0	1478			
Q Serve(g_s), s	0.0	0.0	0.0	0.0	12.0	0.0	17.2	0.0	14.4			
Cycle Q Clear(g_c), s	0.0	0.0	0.0	0.0	12.0	0.0	17.2	0.0	14.4			
Prop In Lane	0.00		1.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	0	3197		0	3172		862	0	377			
V/C Ratio(X)	0.00	0.44		0.00	0.42		0.80	0.00	0.69			
Avail Cap(c_a), veh/h	0	3197		0	3172		1913	0	837			
HCM Platoon Ratio	1.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(l)	0.00	0.83	0.00	0.00	1.00	0.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	0.0	0.0	0.0	0.0	7.4	0.0	31.4	0.0	30.3			
Incr Delay (d2), s/veh	0.0	0.4	0.0	0.0	0.4	0.0	1.8	0.0	2.3			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.0	0.1	0.0	0.0	3.7	0.0	6.9	0.0	5.2			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.4	0.0	0.0	7.8	0.0	33.1	0.0	32.6			
LnGrp LOS	A	A		A	A		C	A	C			
Approach Vol, veh/h		1413	A		1348	A		951				
Approach Delay, s/veh		0.4			7.8			33.0				
Approach LOS		A			A			C				
Timer - Assigned Phs		2			6			8				
Phs Duration (G+Y+Rc), s		63.0			63.0			27.0				
Change Period (Y+Rc), s		4.0			4.0			4.0				
Max Green Setting (Gmax), s		31.0			31.0			51.0				
Max Q Clear Time (g_c+I1), s		2.0			14.0			19.2				
Green Ext Time (p_c), s		12.7			9.1			3.8				

Intersection Summary

HCM 6th Ctrl Delay	11.4
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th Signalized Intersection Summary
 7: Ontario Mills Dr./I-15 SB Ramps & Fourth St

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖↗	↑↑↑	↖	↖↗	↑↑↑	↖	↖	↑↑	↖	↖	↑↑	↖
Traffic Volume (veh/h)	689	1287	91	104	847	233	121	152	22	80	154	357
Future Volume (veh/h)	689	1287	91	104	847	233	121	152	22	80	154	357
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1513	1730	1772	1588	1660	1589	1647	1786	1786	1342	1786	1758
Adj Flow Rate, veh/h	696	1300	92	105	856	235	122	154	22	81	156	361
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	7	5	2	1	10	15	4	1	1	27	1	3
Cap, veh/h	768	2597	826	402	1867	555	150	232	104	175	196	1147
Arrive On Green	0.27	0.55	0.55	0.27	0.82	0.82	0.10	0.07	0.07	0.14	0.11	0.11
Sat Flow, veh/h	2795	4722	1502	2933	4531	1347	1569	3393	1514	1278	1786	2979
Grp Volume(v), veh/h	696	1300	92	105	856	235	122	154	22	81	156	361
Grp Sat Flow(s),veh/h/ln	1397	1574	1502	1467	1510	1347	1569	1697	1514	1278	1786	1490
Q Serve(g_s), s	31.3	22.2	3.8	3.6	6.9	4.1	9.9	5.8	1.8	7.6	11.1	7.8
Cycle Q Clear(g_c), s	31.3	22.2	3.8	3.6	6.9	4.1	9.9	5.8	1.8	7.6	11.1	7.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	768	2597	826	402	1867	555	150	232	104	175	196	1147
VC Ratio(X)	0.91	0.50	0.11	0.26	0.46	0.42	0.82	0.66	0.21	0.46	0.79	0.31
Avail Cap(c_a), veh/h	957	2597	826	402	1867	555	223	509	227	175	227	1197
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.89	0.89	0.89	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.5	18.2	14.0	42.1	7.3	3.2	57.7	59.1	57.2	51.7	56.4	15.0
Incr Delay (d2), s/veh	10.4	0.7	0.3	0.3	0.7	2.1	13.2	3.2	1.0	1.9	15.5	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	7.5	1.3	1.3	1.7	1.6	4.5	2.6	0.7	2.5	5.8	2.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	55.9	18.9	14.3	42.4	8.1	5.3	70.9	62.3	58.3	53.6	71.9	15.2
LnGrp LOS	E	B	B	D	A	A	E	E	E	D	E	B
Approach Vol, veh/h	2088			1196			298			598		
Approach Delay, s/veh	31.0			10.5			65.5			35.2		
Approach LOS	C			B			E			D		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	11.3	75.0	15.9	17.8	39.2	57.1	21.3	12.4				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	71.0	71.0	18.0	16.0	44.0	36.0	15.0	19.0				
Max Q Clear Time (g_c+1/5), s	24.2	24.2	11.9	13.1	33.3	8.9	9.6	7.8				
Green Ext Time (p_c), s	0.1	11.1	0.1	0.7	2.0	6.5	0.1	0.6				

Intersection Summary

HCM 6th Ctrl Delay	28.2
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

HCM 6th Signalized Intersection Summary

8: Fourth St & I-15 NB Ramps

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔	↑↑↑	↗	↗	↑↑↑		↗	↑↑		↗	↖	↖↖
Traffic Volume (veh/h)	755	566	68	34	451	151	91	74	58	173	63	642
Future Volume (veh/h)	755	566	68	34	451	151	91	74	58	173	63	642
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1786	1575	1702	1702	1603	1603	1702	1786	1786	1421	1758	1702
Adj Flow Rate, veh/h	786	590	71	35	470	157	95	77	60	123	146	669
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	1	16	7	7	14	14	7	1	1	27	3	7
Cap, veh/h	1063	1654	555	485	1184	382	131	153	108	152	198	1254
Arrive On Green	0.54	0.64	0.64	0.30	0.36	0.36	0.08	0.08	0.08	0.11	0.11	0.11
Sat Flow, veh/h	3300	4301	1442	1621	3275	1056	1621	1896	1345	1353	1758	2884
Grp Volume(v), veh/h	786	590	71	35	417	210	95	68	69	123	146	669
Grp Sat Flow(s),veh/h/ln	1650	1434	1442	1621	1459	1413	1621	1697	1544	1353	1758	1442
Q Serve(g_s), s	23.8	8.3	2.5	2.0	13.8	14.5	7.4	5.0	5.6	11.5	10.4	0.0
Cycle Q Clear(g_c), s	23.8	8.3	2.5	2.0	13.8	14.5	7.4	5.0	5.6	11.5	10.4	0.0
Prop In Lane	1.00		1.00	1.00		0.75	1.00		0.87	1.00		1.00
Lane Grp Cap(c), veh/h	1063	1654	555	485	1055	511	131	137	124	152	198	1254
VC Ratio(X)	0.74	0.36	0.13	0.07	0.40	0.41	0.73	0.50	0.55	0.81	0.74	0.53
Avail Cap(c_a), veh/h	1063	1654	555	485	1055	511	511	535	487	167	216	1284
HCM Platoon Ratio	1.67	1.67	1.67	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.89	0.89	0.89	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.8	15.8	14.8	32.6	30.9	31.1	58.4	57.2	57.5	56.3	55.8	27.0
Incr Delay (d2), s/veh	2.5	0.5	0.4	0.1	1.1	2.4	7.5	2.8	3.8	23.0	11.4	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.9	2.3	0.8	0.8	4.8	5.0	3.3	2.2	2.3	4.9	5.2	7.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	28.3	16.3	15.2	32.7	32.0	33.6	65.9	60.0	61.3	79.3	67.2	27.4
LnGrp LOS	C	B	B	C	C	C	E	E	E	E	E	C
Approach Vol, veh/h		1447			662			232			938	
Approach Delay, s/veh		22.8			32.5			62.8			40.4	
Approach LOS		C			C			E			D	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	42.9	54.0		18.6	45.9	51.0		14.5				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	7.0	50.0		16.0	10.0	47.0		41.0				
Max Q Clear Time (g_c+14), s	14.0	10.3		13.5	25.8	16.5		9.4				
Green Ext Time (p_c), s	0.0	4.1		1.1	0.0	3.8		1.0				

Intersection Summary

HCM 6th Ctrl Delay	32.6
HCM 6th LOS	C

Notes

- User approved pedestrian interval to be less than phase max green.
- User approved volume balancing among the lanes for turning movement.

HCM 6th Signalized Intersection Summary
 9: Milliken Ave & I-210 WB On-ramp/I-210 WB Off-ramp

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↘	↔	↗	↘↗	↑↑↑			↑↑↑	
Traffic Volume (veh/h)	0	0	0	190	8	89	206	638	0	0	371	52
Future Volume (veh/h)	0	0	0	190	8	89	206	638	0	0	371	52
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach				No		No		No			No	
Adj Sat Flow, veh/h/ln				1554	1786	1688	1500	1786	0	0	1786	1786
Adj Flow Rate, veh/h				230	0	65	215	665	0	0	386	54
Peak Hour Factor				0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %				11	1	8	8	1	0	0	1	1
Cap, veh/h				392	0	189	372	3580	0	0	2313	316
Arrive On Green				0.13	0.00	0.13	0.27	1.00	0.00	0.00	0.53	0.53
Sat Flow, veh/h				2960	0	1430	2772	5036	0	0	4497	593
Grp Volume(v), veh/h				230	0	65	215	665	0	0	287	153
Grp Sat Flow(s),veh/h/ln				1480	0	1430	1386	1625	0	0	1625	1679
Q Serve(g_s), s				4.4	0.0	2.5	4.0	0.0	0.0	0.0	2.7	2.8
Cycle Q Clear(g_c), s				4.4	0.0	2.5	4.0	0.0	0.0	0.0	2.7	2.8
Prop In Lane				1.00		1.00	1.00		0.00	0.00		0.35
Lane Grp Cap(c), veh/h				392	0	189	372	3580	0	0	1734	896
V/C Ratio(X)				0.59	0.00	0.34	0.58	0.19	0.00	0.00	0.17	0.17
Avail Cap(c_a), veh/h				444	0	215	372	3580	0	0	1734	896
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.92	0.92	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				24.5	0.0	23.7	20.5	0.0	0.0	0.0	7.2	7.2
Incr Delay (d2), s/veh				1.6	0.0	1.1	2.0	0.1	0.0	0.0	0.2	0.4
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				1.5	0.0	0.8	1.2	0.0	0.0	0.0	0.8	0.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				26.1	0.0	24.7	22.5	0.1	0.0	0.0	7.4	7.6
LnGrp LOS				C	A	C	C	A	A	A	A	A
Approach Vol, veh/h						295		880			440	
Approach Delay, s/veh						25.8		5.6			7.5	
Approach LOS						C		A			A	
Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		48.1			12.1	36.0		11.9				
Change Period (Y+Rc), s		4.0			4.0	4.0		4.0				
Max Green Setting (Gmax), s		43.0			7.0	32.0		9.0				
Max Q Clear Time (g_c+I1), s		2.0			6.0	4.8		6.4				
Green Ext Time (p_c), s		5.3			0.1	2.9		0.3				

Intersection Summary

HCM 6th Ctrl Delay	9.8
HCM 6th LOS	A

Notes

User approved volume balancing among the lanes for turning movement.

HCM 6th Signalized Intersection Summary
 10: Milliken Ave & I-210 EB Off-ramp/I-210 EB On-ramp

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	111	12	308	0	0	0	0	755	354	115	381	0
Future Volume (veh/h)	111	12	308	0	0	0	0	755	354	115	381	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No					No		No			
Adj Sat Flow, veh/h/ln	1660	1786	1702				0	1758	1758	1575	1758	0
Adj Flow Rate, veh/h	82	0	370				0	795	373	121	401	0
Peak Hour Factor	0.95	0.95	0.95				0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	1	7				0	3	3	2	3	0
Cap, veh/h	211	0	385				0	1813	844	291	3519	0
Arrive On Green	0.13	0.00	0.13				0.00	0.57	0.57	0.20	1.00	0.00
Sat Flow, veh/h	1581	0	2884				0	3358	1490	2910	4957	0
Grp Volume(v), veh/h	82	0	370				0	795	373	121	401	0
Grp Sat Flow(s),veh/h/ln	1581	0	1442				0	1600	1490	1455	1600	0
Q Serve(g_s), s	2.8	0.0	7.7				0.0	8.6	8.7	2.2	0.0	0.0
Cycle Q Clear(g_c), s	2.8	0.0	7.7				0.0	8.6	8.7	2.2	0.0	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	211	0	385				0	1813	844	291	3519	0
V/C Ratio(X)	0.39	0.00	0.96				0.00	0.44	0.44	0.42	0.11	0.00
Avail Cap(c_a), veh/h	211	0	385				0	1813	844	291	3519	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	0.98	0.98	0.00
Uniform Delay (d), s/veh	23.8	0.0	25.8				0.0	7.5	7.5	22.5	0.0	0.0
Incr Delay (d2), s/veh	1.2	0.0	36.0				0.0	0.8	1.7	0.9	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	0.0	4.4				0.0	2.5	2.5	0.7	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	24.9	0.0	61.8				0.0	8.3	9.2	23.4	0.1	0.0
LnGrp LOS	C	A	E				A	A	A	C	A	A
Approach Vol, veh/h		452						1168			522	
Approach Delay, s/veh		55.1						8.6			5.5	
Approach LOS		E						A			A	
Timer - Assigned Phs	1	2	4	6								
Phs Duration (G+Y+Rc), s	30.0	38.0	12.0	48.0								
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0								
Max Green Setting (Gmax), s	30.0	34.0	8.0	44.0								
Max Q Clear Time (g_c+14), s	14.2	10.7	9.7	2.0								
Green Ext Time (p_c), s	0.1	9.0	0.0	3.0								

Intersection Summary

HCM 6th Ctrl Delay	17.6
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

HCM 6th Signalized Intersection Summary

11: Milliken Ave & Foothill Blvd

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔	↑↑↑	↔	↔↔	↑↑↑	↔	↔↔	↑↑↑	↔	↔↔	↑↑↑	↔
Traffic Volume (veh/h)	227	1604	122	198	1408	97	321	765	180	221	463	196
Future Volume (veh/h)	227	1604	122	198	1408	97	321	765	180	221	463	196
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No		No		No		No		No		No
Adj Sat Flow, veh/h/ln	1588	1786	1758	1588	1786	1772	1575	1772	1758	1588	1744	1772
Adj Flow Rate, veh/h	249	1763	134	218	1547	107	353	841	198	243	509	215
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	1	1	3	1	1	2	2	2	3	1	4	2
Cap, veh/h	238	2208	675	208	2158	665	325	1295	317	297	963	304
Arrive On Green	0.08	0.45	0.45	0.07	0.44	0.44	0.11	0.21	0.21	0.10	0.20	0.20
Sat Flow, veh/h	2933	4876	1490	2933	4876	1502	2910	6095	1490	2933	4761	1502
Grp Volume(v), veh/h	249	1763	134	218	1547	107	353	841	198	243	509	215
Grp Sat Flow(s),veh/h/ln	1467	1625	1490	1467	1625	1502	1455	1524	1490	1467	1587	1502
Q Serve(g_s), s	8.0	30.5	5.3	7.0	25.5	4.2	11.0	12.4	11.9	8.0	9.4	13.1
Cycle Q Clear(g_c), s	8.0	30.5	5.3	7.0	25.5	4.2	11.0	12.4	11.9	8.0	9.4	13.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	238	2208	675	208	2158	665	325	1295	317	297	963	304
VC Ratio(X)	1.05	0.80	0.20	1.05	0.72	0.16	1.09	0.65	0.63	0.82	0.53	0.71
Avail Cap(c_a), veh/h	238	2572	786	208	2523	777	325	2783	680	298	2125	670
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.3	23.1	16.2	45.8	22.4	16.5	43.8	35.5	35.2	43.4	35.1	36.6
Incr Delay (d2), s/veh	70.9	1.6	0.1	75.1	0.8	0.1	75.2	0.6	2.0	16.2	0.5	3.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1	10.6	1.7	4.6	8.8	1.3	7.1	4.4	4.2	3.4	3.5	4.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	116.2	24.7	16.4	120.9	23.3	16.6	119.0	36.0	37.3	59.5	35.6	39.6
LnGrp LOS	F	C	B	F	C	B	F	D	D	E	D	D
Approach Vol, veh/h		2146			1872			1392			967	
Approach Delay, s/veh		34.8			34.2			57.2			42.5	
Approach LOS		C			C			E			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	48.6	15.0	23.9	12.0	47.6	14.0	24.9					
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0					
Max Green Setting (Gmax), s	52.0	11.0	44.0	8.0	51.0	10.0	45.0					
Max Q Clear Time (g_c+19), s	32.5	13.0	15.1	10.0	27.5	10.0	14.4					
Green Ext Time (p_c), s	0.0	12.1	0.0	3.9	0.0	11.6	0.0	6.5				

Intersection Summary

HCM 6th Ctrl Delay	40.7
HCM 6th LOS	D

HCM 6th Signalized Intersection Summary

12: Milliken Ave & Fourth St

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔	↑↑↑	↗	↔↔	↑↑↑	↗	↔↔	↑↑↑	↗	↔↔	↑↑↑	↗
Traffic Volume (veh/h)	169	1372	177	199	1239	177	212	1080	189	189	793	155
Future Volume (veh/h)	169	1372	177	199	1239	177	212	1080	189	189	793	155
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No		No		No		No		No		No
Adj Sat Flow, veh/h/ln	1588	1730	1758	1575	1744	1730	1588	1660	1646	1550	1688	1688
Adj Flow Rate, veh/h	172	1400	181	203	1264	181	216	1102	193	193	809	158
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	1	5	3	2	4	5	1	10	11	4	8	8
Cap, veh/h	217	1709	539	169	1647	507	146	2271	636	142	1961	374
Arrive On Green	0.07	0.36	0.36	0.06	0.35	0.35	0.05	0.40	0.40	0.05	0.40	0.40
Sat Flow, veh/h	2933	4722	1490	2910	4761	1466	2933	5709	1395	2864	4931	941
Grp Volume(v), veh/h	172	1400	181	203	1264	181	216	1102	193	193	712	255
Grp Sat Flow(s),veh/h/ln	1467	1574	1490	1455	1587	1466	1467	1427	1395	1432	1451	1518
Q Serve(g_s), s	7.0	32.4	10.6	7.0	28.5	11.1	6.0	17.4	10.6	6.0	14.2	14.7
Cycle Q Clear(g_c), s	7.0	32.4	10.6	7.0	28.5	11.1	6.0	17.4	10.6	6.0	14.2	14.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.62
Lane Grp Cap(c), veh/h	217	1709	539	169	1647	507	146	2271	636	142	1732	604
V/C Ratio(X)	0.79	0.82	0.34	1.20	0.77	0.36	1.48	0.49	0.30	1.36	0.41	0.42
Avail Cap(c_a), veh/h	219	2074	654	169	2012	620	146	2271	636	142	1732	604
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	55.0	34.9	28.0	56.8	35.1	29.5	57.3	27.1	20.7	57.3	26.2	26.3
Incr Delay (d2), s/veh	17.7	2.3	0.4	134.2	1.5	0.4	249.5	0.7	1.2	198.7	0.7	2.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.0	11.9	3.6	5.6	10.5	3.8	7.2	5.7	3.4	6.0	4.8	5.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	72.6	37.2	28.3	191.0	36.6	29.9	306.8	27.9	22.0	256.1	26.9	28.5
LnGrp LOS	E	D	C	F	D	C	F	C	C	F	C	C
Approach Vol, veh/h		1753			1648			1511			1160	
Approach Delay, s/veh		39.8			54.9			67.0			65.4	
Approach LOS		D			D			E			E	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	40.0	52.0	11.0	47.7	10.0	52.0	12.9	45.7				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	48.0	48.0	7.0	53.0	6.0	48.0	9.0	51.0				
Max Q Clear Time (g_c+10), s	19.4	19.4	9.0	34.4	8.0	16.7	9.0	30.5				
Green Ext Time (p_c), s	0.0	8.8	0.0	9.2	0.0	6.6	0.0	8.7				

Intersection Summary

HCM 6th Ctrl Delay	55.5
HCM 6th LOS	E

Notes

User approved pedestrian interval to be less than phase max green.

Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↗		↑↑↑	↑↑↑	↗
Traffic Vol, veh/h	0	32	0	2073	904	30
Future Vol, veh/h	0	32	0	2073	904	30
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	175
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	2	1	2	3	6	4
Mvmt Flow	0	33	0	2115	922	31

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	-	461	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	7.12	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	3.91	-
Pot Cap-1 Maneuver	0	470	0
Stage 1	0	-	0
Stage 2	0	-	0
Platoon blocked, %			-
Mov Cap-1 Maneuver	-	470	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

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

Minor Lane/Major Mvmt	NBT EBLn1	SBT	SBR
Capacity (veh/h)	- 470	-	-
HCM Lane V/C Ratio	- 0.069	-	-
HCM Control Delay (s)	- 13.2	-	-
HCM Lane LOS	- B	-	-
HCM 95th %tile Q(veh)	- 0.2	-	-

HCM 6th Signalized Intersection Summary

14: Milliken Ave & 7th St

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↑↑↑		↖	↑↑↑	
Traffic Volume (veh/h)	148	0	53	17	0	22	54	1829	13	8	919	13
Future Volume (veh/h)	148	0	53	17	0	22	54	1829	13	8	919	13
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1687	1786	1786	1382	1800	1800	1620	1758	1758	1687	1716	1716
Adj Flow Rate, veh/h	149	0	54	17	0	22	55	1847	13	8	928	13
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	1	1	1	24	0	0	6	3	3	1	6	6
Cap, veh/h	275	0	234	217	0	236	66	3401	24	13	3126	44
Arrive On Green	0.15	0.00	0.15	0.15	0.00	0.15	0.04	0.69	0.69	0.01	0.66	0.66
Sat Flow, veh/h	1323	0	1514	1053	0	1525	1543	4916	35	1606	4760	67
Grp Volume(v), veh/h	149	0	54	17	0	22	55	1202	658	8	609	332
Grp Sat Flow(s),veh/h/ln	1323	0	1514	1053	0	1525	1543	1600	1752	1606	1561	1704
Q Serve(g_s), s	9.0	0.0	2.6	1.2	0.0	1.0	2.9	15.3	15.3	0.4	6.8	6.9
Cycle Q Clear(g_c), s	10.0	0.0	2.6	3.8	0.0	1.0	2.9	15.3	15.3	0.4	6.8	6.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.02	1.00		0.04
Lane Grp Cap(c), veh/h	275	0	234	217	0	236	66	2213	1212	13	2051	1119
VC Ratio(X)	0.54	0.00	0.23	0.08	0.00	0.09	0.83	0.54	0.54	0.61	0.30	0.30
Avail Cap(c_a), veh/h	986	0	1047	783	0	1055	206	2213	1212	78	2051	1119
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.2	0.0	30.5	32.2	0.0	29.9	39.1	6.3	6.3	40.7	6.0	6.0
Incr Delay (d2), s/veh	1.7	0.0	0.5	0.2	0.0	0.2	22.0	1.0	1.8	38.7	0.4	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.9	0.0	0.9	0.3	0.0	0.4	1.4	3.5	4.0	0.3	1.6	1.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	35.8	0.0	31.0	32.3	0.0	30.1	61.1	7.2	8.0	79.4	6.4	6.7
LnGrp LOS	D	A	C	C	A	C	E	A	A	E	A	A
Approach Vol, veh/h		203			39			1915			949	
Approach Delay, s/veh		34.5			31.1			9.1			7.1	
Approach LOS		C			C			A			A	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	4.7	61.0		16.7	7.5	58.1		16.7				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	4.0	57.0		57.0	11.0	50.0		57.0				
Max Q Clear Time (g_c+I1), s	2.4	17.3		12.0	4.9	8.9		5.8				
Green Ext Time (p_c), s	0.0	17.1		0.8	0.0	6.3		0.2				

Intersection Summary

HCM 6th Ctrl Delay	10.4
HCM 6th LOS	B

HCM 6th Signalized Intersection Summary
 15: Milliken Ave & I-10 WB Ramps/Ontario Mills Pkwy

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔	↑	↗	↔↔	↕↕	↗	↔↔	↑↑↑	↗	↔↔	↑↑↑	↗
Traffic Volume (veh/h)	160	210	192	557	173	178	309	1135	243	248	741	441
Future Volume (veh/h)	160	210	192	557	173	178	309	1135	243	248	741	441
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No		No		No		No		No		No
Adj Sat Flow, veh/h/ln	1563	1758	1786	1563	1786	1098	1425	1674	1491	1588	1702	1716
Adj Flow Rate, veh/h	193	253	231	671	208	214	372	1367	293	299	893	531
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Percent Heavy Veh, %	3	3	1	3	1	50	14	9	22	1	7	6
Cap, veh/h	601	234	202	674	537	147	421	2303	800	293	1992	798
Arrive On Green	0.21	0.13	0.13	0.23	0.16	0.16	0.16	0.40	0.40	0.10	0.34	0.34
Sat Flow, veh/h	2887	1758	1514	2887	3393	931	2633	5757	1264	2933	5854	1454
Grp Volume(v), veh/h	193	253	231	671	208	214	372	1367	293	299	893	531
Grp Sat Flow(s),veh/h/ln	1444	1758	1514	1444	1697	931	1317	1439	1264	1467	1463	1454
Q Serve(g_s), s	6.8	16.0	16.0	27.9	6.6	19.0	16.6	22.4	6.0	12.0	14.3	13.3
Cycle Q Clear(g_c), s	6.8	16.0	16.0	27.9	6.6	19.0	16.6	22.4	6.0	12.0	14.3	13.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	601	234	202	674	537	147	421	2303	800	293	1992	798
VC Ratio(X)	0.32	1.08	1.14	1.00	0.39	1.45	0.88	0.59	0.37	1.02	0.45	0.67
Avail Cap(c_a), veh/h	601	234	202	674	537	147	505	2303	800	293	1992	798
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.88	0.88	0.88	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.3	52.0	52.0	45.9	45.3	50.5	49.3	28.3	3.6	54.0	30.8	7.0
Incr Delay (d2), s/veh	0.3	81.5	107.7	33.6	0.5	237.3	13.4	1.0	1.1	57.6	0.7	4.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.5	12.3	12.1	13.1	2.8	14.1	6.2	7.8	1.9	6.8	5.1	3.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	40.6	133.5	159.7	79.6	45.7	287.8	62.8	29.3	4.7	111.6	31.5	11.4
LnGrp LOS	D	F	F	E	D	F	E	C	A	F	C	B
Approach Vol, veh/h		677		1093				2032			1723	
Approach Delay, s/veh		116.0		113.9				31.9			39.2	
Approach LOS		F		F				C			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	6.0	52.0	32.0	20.0	23.2	44.8	29.0	23.0				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	12.0	48.0	28.0	16.0	23.0	37.0	25.0	19.0				
Max Q Clear Time (g_c+14), s	14.0	24.4	29.9	18.0	18.6	16.3	8.8	21.0				
Green Ext Time (p_c), s	0.0	12.5	0.0	0.0	0.6	8.9	0.5	0.0				

Intersection Summary

HCM 6th Ctrl Delay	60.7
HCM 6th LOS	E

HCM 6th Signalized Intersection Summary
 16: Milliken Ave & I-10 EB Ramps

11/03/2021



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↖↗	↗	↖↗	↑↑↑	↑↑↑	↗
Traffic Volume (veh/h)	695	198	490	992	775	715
Future Volume (veh/h)	695	198	490	992	775	715
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1550	1617	1176	1646	1744	1491
Adj Flow Rate, veh/h	716	204	505	1023	799	737
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	4	13	34	11	4	22
Cap, veh/h	814	390	549	3674	2176	818
Arrive On Green	0.28	0.28	0.25	0.65	0.12	0.12
Sat Flow, veh/h	2864	1371	2172	5891	6243	1264
Grp Volume(v), veh/h	716	204	505	1023	799	737
Grp Sat Flow(s),veh/h/ln	1432	1371	1086	1415	1500	1264
Q Serve(g_s), s	28.6	15.0	27.2	9.3	14.7	42.3
Cycle Q Clear(g_c), s	28.6	15.0	27.2	9.3	14.7	42.3
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	814	390	549	3674	2176	818
VC Ratio(X)	0.88	0.52	0.92	0.28	0.37	0.90
Avail Cap(c_a), veh/h	1193	571	652	3674	2176	818
HCM Platoon Ratio	1.00	1.00	1.00	1.00	0.33	0.33
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.67	0.67
Uniform Delay (d), s/veh	41.0	36.1	43.6	9.0	40.1	20.6
Incr Delay (d2), s/veh	5.5	1.1	16.6	0.2	0.3	10.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	11.8	8.5	2.8	6.0	26.3
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	46.4	37.2	60.2	9.2	40.5	31.5
LnGrp LOS	D	D	E	A	D	C
Approach Vol, veh/h	920			1528	1536	
Approach Delay, s/veh	44.4			26.1	36.1	
Approach LOS	D			C	D	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		81.9		38.1	34.3	47.5
Change Period (Y+Rc), s		4.0		4.0	4.0	4.0
Max Green Setting (Gmax), s		62.0		50.0	36.0	22.0
Max Q Clear Time (g_c+I1), s		11.3		30.6	29.2	44.3
Green Ext Time (p_c), s		9.6		3.5	1.2	0.0
Intersection Summary						
HCM 6th Ctrl Delay			34.2			
HCM 6th LOS			C			

HCM 6th Signalized Intersection Summary

1: Highway 395 & Joshua St

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗	↗	↖	↗	↗	↖	↗	↗
Traffic Volume (veh/h)	33	95	16	36	21	108	25	1422	85	59	623	24
Future Volume (veh/h)	33	95	16	36	21	108	25	1422	85	59	623	24
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1687	1786	1786	1528	1786	1519	1687	1716	1491	1395	1617	1716
Adj Flow Rate, veh/h	37	106	18	40	23	120	28	1580	94	66	692	27
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	1	1	1	13	1	20	1	6	22	23	13	6
Cap, veh/h	256	208	35	184	250	180	90	2059	798	75	1941	918
Arrive On Green	0.14	0.14	0.14	0.14	0.14	0.14	0.06	0.63	0.63	0.06	0.63	0.63
Sat Flow, veh/h	1185	1488	253	1092	1786	1287	1606	3260	1264	1329	3073	1454
Grp Volume(v), veh/h	37	0	124	40	23	120	28	1580	94	66	692	27
Grp Sat Flow(s),veh/h/ln	1185	0	1740	1092	1786	1287	1606	1630	1264	1329	1537	1454
Q Serve(g_s), s	2.0	0.0	4.6	2.5	0.8	6.2	1.2	24.2	2.1	3.4	7.5	0.5
Cycle Q Clear(g_c), s	2.7	0.0	4.6	7.0	0.8	6.2	1.2	24.2	2.1	3.4	7.5	0.5
Prop In Lane	1.00		0.15	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	256	0	244	184	250	180	90	2059	798	75	1941	918
VC Ratio(X)	0.14	0.00	0.51	0.22	0.09	0.67	0.31	0.77	0.12	0.88	0.36	0.03
Avail Cap(c_a), veh/h	907	0	1199	784	1230	887	138	2059	798	114	1941	918
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.3	0.0	27.7	31.0	26.1	28.4	31.6	9.2	5.1	32.6	6.1	4.8
Incr Delay (d2), s/veh	0.3	0.0	1.6	0.6	0.2	4.2	1.9	2.8	0.3	36.0	0.5	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.0	2.0	0.7	0.3	2.0	0.5	5.6	0.4	1.7	1.5	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	27.6	0.0	29.4	31.6	26.3	32.6	33.5	12.0	5.4	68.7	6.6	4.9
LnGrp LOS	C	A	C	C	C	C	C	B	A	E	A	A
Approach Vol, veh/h		161			183			1702				785
Approach Delay, s/veh		29.0			31.6			12.0				11.8
Approach LOS		C			C			B				B
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.9	48.0		13.8	7.9	48.0		13.8				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	6.0	44.0		48.0	6.0	44.0		48.0				
Max Q Clear Time (g_c+I1), s	5.4	26.2		6.6	3.2	9.5		9.0				
Green Ext Time (p_c), s	0.0	10.3		0.9	0.0	4.6		0.7				

Intersection Summary

HCM 6th Ctrl Delay	14.2
HCM 6th LOS	B

Intersection						
Int Delay, s/veh	2.2					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		∩	
Traffic Vol, veh/h	0	200	94	0	7	81
Future Vol, veh/h	0	200	94	0	7	81
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	0	25	23	0	1	22
Mvmt Flow	0	204	96	0	7	83

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	-	0	-	0	300 96
Stage 1	-	-	-	-	96 -
Stage 2	-	-	-	-	204 -
Critical Hdwy	-	-	-	-	6.41 6.42
Critical Hdwy Stg 1	-	-	-	-	5.41 -
Critical Hdwy Stg 2	-	-	-	-	5.41 -
Follow-up Hdwy	-	-	-	-	3.509 3.498
Pot Cap-1 Maneuver	0	-	-	0	694 908
Stage 1	0	-	-	0	930 -
Stage 2	0	-	-	0	833 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	-	694 908
Mov Cap-2 Maneuver	-	-	-	-	694 -
Stage 1	-	-	-	-	930 -
Stage 2	-	-	-	-	833 -

Approach	EB	WB	SB
HCM Control Delay, s	0	0	9.5
HCM LOS			A

Minor Lane/Major Mvmt	EBT	WBT	SBLn1
Capacity (veh/h)	-	-	886
HCM Lane V/C Ratio	-	-	0.101
HCM Control Delay (s)	-	-	9.5
HCM Lane LOS	-	-	A
HCM 95th %tile Q(veh)	-	-	0.3

Intersection												
Int Delay, s/veh	3.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↗			↕				
Traffic Vol, veh/h	148	108	0	0	94	26	0	0	0	0	0	0
Future Vol, veh/h	148	108	0	0	94	26	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	16965	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	92	92	95	95	92	92	92	95	92	95
Heavy Vehicles, %	24	23	2	2	23	42	2	2	2	2	2	2
Mvmt Flow	156	114	0	0	99	27	0	0	0	0	0	0

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	126	0	-
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	4.34	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	2.416	-	-
Pot Cap-1 Maneuver	1335	0	0
Stage 1	-	0	0
Stage 2	-	0	0
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1335	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	4.7	0	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	WBT	WBR
Capacity (veh/h)	-	1335	-	-	-
HCM Lane V/C Ratio	-	0.117	-	-	-
HCM Control Delay (s)	0	8.1	0	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	-	0.4	-	-	-

Intersection						
Int Delay, s/veh	5.7					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	Y			↑	↑	
Traffic Vol, veh/h	48	62	71	39	28	41
Future Vol, veh/h	48	62	71	39	28	41
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	9	3	7	35	19	2
Mvmt Flow	52	67	77	42	30	45

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	249	53	75	0	-	0
Stage 1	53	-	-	-	-	-
Stage 2	196	-	-	-	-	-
Critical Hdwy	6.49	6.23	4.17	-	-	-
Critical Hdwy Stg 1	5.49	-	-	-	-	-
Critical Hdwy Stg 2	5.49	-	-	-	-	-
Follow-up Hdwy	3.581	3.327	2.263	-	-	-
Pot Cap-1 Maneuver	724	1012	1493	-	-	-
Stage 1	952	-	-	-	-	-
Stage 2	821	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	686	1012	1493	-	-	-
Mov Cap-2 Maneuver	686	-	-	-	-	-
Stage 1	902	-	-	-	-	-
Stage 2	821	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10	4.9	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1493	-	838	-	-
HCM Lane V/C Ratio	0.052	-	0.143	-	-
HCM Control Delay (s)	7.5	0	10	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.2	-	0.5	-	-

HCM 6th Signalized Intersection Summary

5: I-15 SB On-ramp/I-15 SB Off-ramp & Foothill Blvd/Foothill Blvd

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↗		↑↑↑	↗				↘	↕	↗
Traffic Volume (veh/h)	0	1558	639	0	2190	306	0	0	0	143	0	362
Future Volume (veh/h)	0	1558	639	0	2190	306	0	0	0	143	0	362
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1786	1772	0	1786	1758				1702	1772	1716
Adj Flow Rate, veh/h	0	1606	0	0	2258	0				98	0	425
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97				0.97	0.97	0.97
Percent Heavy Veh, %	0	1	2	0	1	3				7	2	6
Cap, veh/h	0	3569		0	3569					290	0	521
Arrive On Green	0.00	0.73	0.00	0.00	0.49	0.00				0.18	0.00	0.18
Sat Flow, veh/h	0	5036	1502	0	5036	1490				1621	0	2908
Grp Volume(v), veh/h	0	1606	0	0	2258	0				98	0	425
Grp Sat Flow(s),veh/h/ln	0	1625	1502	0	1625	1490				1621	0	1454
Q Serve(g_s), s	0.0	11.8	0.0	0.0	30.8	0.0				4.8	0.0	12.6
Cycle Q Clear(g_c), s	0.0	11.8	0.0	0.0	30.8	0.0				4.8	0.0	12.6
Prop In Lane	0.00		1.00	0.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	3569		0	3569					290	0	521
V/C Ratio(X)	0.00	0.45		0.00	0.63					0.34	0.00	0.82
Avail Cap(c_a), veh/h	0	3569		0	3569					432	0	775
HCM Platoon Ratio	1.00	1.00	1.00	1.00	0.67	0.67				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.00	0.00	0.51	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	4.8	0.0	0.0	14.0	0.0				32.3	0.0	35.5
Incr Delay (d2), s/veh	0.0	0.4	0.0	0.0	0.4	0.0				0.7	0.0	4.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	2.5	0.0	0.0	11.3	0.0				1.9	0.0	4.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	5.2	0.0	0.0	14.4	0.0				33.0	0.0	39.8
LnGrp LOS	A	A		A	B					C	A	D
Approach Vol, veh/h		1606	A		2258	A					523	
Approach Delay, s/veh		5.2			14.4						38.5	
Approach LOS		A			B						D	
Timer - Assigned Phs		2		4		6						
Phs Duration (G+Y+Rc), s		69.9		20.1		69.9						
Change Period (Y+Rc), s		4.0		4.0		4.0						
Max Green Setting (Gmax), s		58.0		24.0		58.0						
Max Q Clear Time (g_c+I1), s		13.8		14.6		32.8						
Green Ext Time (p_c), s		15.1		1.5		18.0						

Intersection Summary

HCM 6th Ctrl Delay	13.9
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.
 Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th Signalized Intersection Summary

6: I-15 NB Off-ramp/I-15 NB On-ramp & Foothill Blvd /Foothill Blvd

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↑		↑↑↑	↑	↑	↑↓	↑			
Traffic Volume (veh/h)	0	1192	477	0	1159	350	1332	0	539	0	0	0
Future Volume (veh/h)	0	1192	477	0	1159	350	1332	0	539	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No		No		No		No				
Adj Sat Flow, veh/h/ln	0	1772	1772	0	1772	1786	1772	1772	1786			
Adj Flow Rate, veh/h	0	1268	0	0	1233	0	1595	0	382			
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94			
Percent Heavy Veh, %	0	2	2	0	2	1	2	2	1			
Cap, veh/h	0	1862		0	1862		1776	0	796			
Arrive On Green	0.00	0.38	0.00	0.00	0.38	0.00	0.53	0.00	0.53			
Sat Flow, veh/h	0	4997	1502	0	4997	1514	3375	0	1514			
Grp Volume(v), veh/h	0	1268	0	0	1233	0	1595	0	382			
Grp Sat Flow(s),veh/h/ln	0	1612	1502	0	1612	1514	1688	0	1514			
Q Serve(g_s), s	0.0	19.7	0.0	0.0	18.9	0.0	38.2	0.0	14.4			
Cycle Q Clear(g_c), s	0.0	19.7	0.0	0.0	18.9	0.0	38.2	0.0	14.4			
Prop In Lane	0.00		1.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	0	1862		0	1862		1776	0	796			
VC Ratio(X)	0.00	0.68		0.00	0.66		0.90	0.00	0.48			
Avail Cap(c_a), veh/h	0	1862		0	1862		1988	0	891			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.00	0.86	0.00	0.00	1.00	0.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	0.0	23.1	0.0	0.0	22.8	0.0	19.2	0.0	13.5			
Incr Delay (d2), s/veh	0.0	1.8	0.0	0.0	1.9	0.0	5.5	0.0	0.4			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.0	7.5	0.0	0.0	7.2	0.0	14.6	0.0	4.6			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	24.8	0.0	0.0	24.7	0.0	24.7	0.0	14.0			
LnGrp LOS	A	C		A	C		C	A	B			
Approach Vol, veh/h		1268	A		1233	A		1977				
Approach Delay, s/veh		24.8			24.7			22.6				
Approach LOS		C			C			C				
Timer - Assigned Phs		2			6			8				
Phs Duration (G+Y+Rc), s		38.6			38.6			51.4				
Change Period (Y+Rc), s		4.0			4.0			4.0				
Max Green Setting (Gmax), s		29.0			29.0			53.0				
Max Q Clear Time (g_c+I1), s		21.7			20.9			40.2				
Green Ext Time (p_c), s		4.7			5.0			7.2				

Intersection Summary

HCM 6th Ctrl Delay	23.8
HCM 6th LOS	C

Notes

- User approved volume balancing among the lanes for turning movement.
- Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th Signalized Intersection Summary
 7: Ontario Mills Dr./I-15 SB Ramps & Fourth St

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔	↑↑↑	↗	↔↔	↑↑↑	↗	↔	↑↑	↗	↔	↑↑	↗
Traffic Volume (veh/h)	506	717	54	184	710	109	113	179	45	93	242	453
Future Volume (veh/h)	506	717	54	184	710	109	113	179	45	93	242	453
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No		No		No		No		No		No
Adj Sat Flow, veh/h/ln	1588	1772	1786	1588	1758	1660	1687	1786	1786	1634	1786	1786
Adj Flow Rate, veh/h	522	739	56	190	732	112	116	185	46	96	249	467
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	1	2	1	1	3	10	1	1	1	5	1	1
Cap, veh/h	586	2640	826	234	2043	599	139	601	268	116	295	500
Arrive On Green	0.20	0.55	0.55	0.16	0.85	0.85	0.09	0.18	0.18	0.07	0.17	0.17
Sat Flow, veh/h	2933	4837	1514	2933	4799	1406	1606	3393	1514	1556	1786	3027
Grp Volume(v), veh/h	522	739	56	190	732	112	116	185	46	96	249	467
Grp Sat Flow(s),veh/h/ln	1467	1612	1514	1467	1600	1406	1606	1697	1514	1556	1786	1514
Q Serve(g_s), s	22.5	10.6	1.5	8.1	4.2	1.8	9.2	6.2	3.4	7.9	17.6	13.6
Cycle Q Clear(g_c), s	22.5	10.6	1.5	8.1	4.2	1.8	9.2	6.2	3.4	7.9	17.6	13.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	586	2640	826	234	2043	599	139	601	268	116	295	500
VC Ratio(X)	0.89	0.28	0.07	0.81	0.36	0.19	0.84	0.31	0.17	0.83	0.84	0.93
Avail Cap(c_a), veh/h	812	2640	826	338	2043	599	235	757	338	191	357	605
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.82	0.82	0.82	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	50.6	15.8	6.3	53.7	5.9	5.7	58.5	46.6	45.4	59.3	52.6	25.3
Incr Delay (d2), s/veh	9.3	0.3	0.2	7.9	0.4	0.6	12.3	0.3	0.3	13.8	14.3	19.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.7	3.7	0.8	3.0	1.2	0.6	4.2	2.6	1.3	3.5	9.0	6.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	59.9	16.1	6.5	61.6	6.3	6.3	70.8	46.9	45.7	73.1	67.0	44.9
LnGrp LOS	E	B	A	E	A	A	E	D	D	E	E	D
Approach Vol, veh/h		1317			1034			347			812	
Approach Delay, s/veh		33.1			16.4			54.7			55.0	
Approach LOS		C			B			D			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	44.4	74.9	15.2	25.5	30.0	59.3	13.7	27.0				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	15.0	54.0	19.0	26.0	36.0	33.0	16.0	29.0				
Max Q Clear Time (g_c+10), s	10.5	12.6	11.2	19.6	24.5	6.2	9.9	8.2				
Green Ext Time (p_c), s	0.2	5.1	0.1	1.9	1.4	5.0	0.1	1.2				

Intersection Summary

HCM 6th Ctrl Delay	35.4
HCM 6th LOS	D

Notes

User approved volume balancing among the lanes for turning movement.

HCM 6th Signalized Intersection Summary

8: Fourth St & I-15 NB Ramps

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖ ↗	↑ ↑ ↑	↖	↖ ↗	↑ ↑ ↑		↖	↑ ↑		↖	↖	↖ ↗
Traffic Volume (veh/h)	557	229	80	9	191	35	73	54	41	58	48	698
Future Volume (veh/h)	557	229	80	9	191	35	73	54	41	58	48	698
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No		No		No		No		No		No
Adj Sat Flow, veh/h/ln	1758	1674	1758	1632	1674	1674	1786	1758	1758	1561	1716	1702
Adj Flow Rate, veh/h	580	239	83	9	199	36	76	56	43	56	58	727
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.90	0.96
Percent Heavy Veh, %	3	9	3	12	9	9	1	3	3	17	6	7
Cap, veh/h	1229	1863	607	516	1416	246	110	122	85	107	124	1300
Arrive On Green	0.12	0.13	0.13	0.33	0.36	0.36	0.06	0.06	0.06	0.07	0.07	0.07
Sat Flow, veh/h	3248	4569	1490	1554	3917	680	1701	1884	1308	1487	1716	2884
Grp Volume(v), veh/h	580	239	83	9	153	82	76	49	50	56	58	727
Grp Sat Flow(s),veh/h/ln	1624	1523	1490	1554	1523	1551	1701	1670	1522	1487	1716	1442
Q Serve(g_s), s	21.6	6.0	6.4	0.5	4.4	4.6	5.7	3.7	4.1	4.7	4.2	0.0
Cycle Q Clear(g_c), s	21.6	6.0	6.4	0.5	4.4	4.6	5.7	3.7	4.1	4.7	4.2	0.0
Prop In Lane	1.00		1.00	1.00		0.44	1.00		0.86	1.00		1.00
Lane Grp Cap(c), veh/h	1229	1863	607	516	1101	561	110	108	99	107	124	1300
VC Ratio(X)	0.47	0.13	0.14	0.02	0.14	0.15	0.69	0.45	0.51	0.52	0.47	0.56
Avail Cap(c_a), veh/h	1229	1863	607	516	1101	561	536	527	480	183	211	1447
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	44.8	35.9	36.1	29.1	27.9	28.0	59.5	58.6	58.8	58.2	57.9	26.2
Incr Delay (d2), s/veh	0.3	0.1	0.4	0.0	0.3	0.5	7.4	2.9	4.0	3.9	2.7	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	2.2	2.4	0.2	1.6	1.7	2.7	1.6	1.7	1.9	1.9	8.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	45.1	36.0	36.5	29.2	28.2	28.5	67.0	61.5	62.8	62.1	60.7	26.6
LnGrp LOS	D	D	D	C	C	C	E	E	E	E	E	C
Approach Vol, veh/h		902			244			175			841	
Approach Delay, s/veh		41.9			28.3			64.2			31.3	
Approach LOS		D			C			E			C	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	47.2	57.0		13.4	53.2	51.0		12.4				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	4.0	53.0		16.0	10.0	47.0		41.0				
Max Q Clear Time (g_c+I), s	4.0	8.4		6.7	23.6	6.6		7.7				
Green Ext Time (p_c), s	0.0	1.7		2.7	0.0	1.3		0.8				

Intersection Summary

HCM 6th Ctrl Delay	38.1
HCM 6th LOS	D

Notes

User approved volume balancing among the lanes for turning movement.

HCM 6th Signalized Intersection Summary
 9: Milliken Ave & I-210 WB On-ramp/I-210 WB Off-ramp

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↘	↔	↗	↘↗	↑↑↑			↑↑↗	
Traffic Volume (veh/h)	0	0	0	163	7	76	154	476	0	0	261	37
Future Volume (veh/h)	0	0	0	163	7	76	154	476	0	0	261	37
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach				No		No		No			No	
Adj Sat Flow, veh/h/ln				1554	1786	1688	1500	1786	0	0	1786	1786
Adj Flow Rate, veh/h				197	0	55	160	496	0	0	272	39
Peak Hour Factor				0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %				11	1	8	8	1	0	0	1	1
Cap, veh/h				389	0	188	421	3585	0	0	2235	311
Arrive On Green				0.13	0.00	0.13	0.30	1.00	0.00	0.00	0.52	0.52
Sat Flow, veh/h				2960	0	1430	2772	5036	0	0	4486	603
Grp Volume(v), veh/h				197	0	55	160	496	0	0	202	109
Grp Sat Flow(s),veh/h/ln				1480	0	1430	1386	1625	0	0	1625	1677
Q Serve(g_s), s				3.7	0.0	2.1	2.7	0.0	0.0	0.0	1.9	2.0
Cycle Q Clear(g_c), s				3.7	0.0	2.1	2.7	0.0	0.0	0.0	1.9	2.0
Prop In Lane				1.00		1.00	1.00		0.00	0.00		0.36
Lane Grp Cap(c), veh/h				389	0	188	421	3585	0	0	1679	867
V/C Ratio(X)				0.51	0.00	0.29	0.38	0.14	0.00	0.00	0.12	0.13
Avail Cap(c_a), veh/h				444	0	215	421	3585	0	0	1679	867
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.96	0.96	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				24.3	0.0	23.5	18.7	0.0	0.0	0.0	7.5	7.5
Incr Delay (d2), s/veh				1.0	0.0	0.9	0.5	0.1	0.0	0.0	0.1	0.3
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				1.3	0.0	0.7	0.8	0.0	0.0	0.0	0.6	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				25.3	0.0	24.4	19.2	0.1	0.0	0.0	7.6	7.8
LnGrp LOS				C	A	C	B	A	A	A	A	A
Approach Vol, veh/h						252		656			311	
Approach Delay, s/veh						25.1		4.7			7.7	
Approach LOS						C		A			A	
Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		48.1			13.1	35.0		11.9				
Change Period (Y+Rc), s		4.0			4.0	4.0		4.0				
Max Green Setting (Gmax), s		43.0			8.0	31.0		9.0				
Max Q Clear Time (g_c+I1), s		2.0			4.7	4.0		5.7				
Green Ext Time (p_c), s		3.8			0.1	2.0		0.3				

Intersection Summary

HCM 6th Ctrl Delay	9.7
HCM 6th LOS	A

Notes

User approved volume balancing among the lanes for turning movement.

HCM 6th Signalized Intersection Summary
 10: Milliken Ave & I-210 EB Off-ramp/I-210 EB On-ramp

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	86	7	348	0	0	0	0	504	246	63	287	0
Future Volume (veh/h)	86	7	348	0	0	0	0	504	246	63	287	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No						No			No		
Adj Sat Flow, veh/h/ln	1395	1786	1674				0	1688	1688	1176	1617	0
Adj Flow Rate, veh/h	62	0	396				0	525	256	66	299	0
Peak Hour Factor	0.96	0.96	0.96				0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	23	1	9				0	8	8	34	13	0
Cap, veh/h	227	0	486				0	1638	763	207	3071	0
Arrive On Green	0.17	0.00	0.17				0.00	0.53	0.53	0.19	1.00	0.00
Sat Flow, veh/h	1329	0	2837				0	3223	1430	2172	4561	0
Grp Volume(v), veh/h	62	0	396				0	525	256	66	299	0
Grp Sat Flow(s),veh/h/ln	1329	0	1418				0	1536	1430	1086	1472	0
Q Serve(g_s), s	2.4	0.0	8.1				0.0	5.8	6.1	1.6	0.0	0.0
Cycle Q Clear(g_c), s	2.4	0.0	8.1				0.0	5.8	6.1	1.6	0.0	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	227	0	486				0	1638	763	207	3071	0
V/C Ratio(X)	0.27	0.00	0.82				0.00	0.32	0.34	0.32	0.10	0.00
Avail Cap(c_a), veh/h	244	0	520				0	1638	763	207	3071	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	0.99	0.99	0.00
Uniform Delay (d), s/veh	21.6	0.0	24.0				0.0	7.9	8.0	22.6	0.0	0.0
Incr Delay (d2), s/veh	0.6	0.0	9.2				0.0	0.5	1.2	0.9	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	0.0	3.1				0.0	1.7	1.8	0.4	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	22.3	0.0	33.2				0.0	8.4	9.1	23.5	0.1	0.0
LnGrp LOS	C	A	C				A	A	A	C	A	A
Approach Vol, veh/h	458						781			365		
Approach Delay, s/veh	31.7						8.6			4.3		
Approach LOS	C						A			A		
Timer - Assigned Phs	1	2	4	6								
Phs Duration (G+Y+Rc), s	9.7	36.0	14.3	45.7								
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0								
Max Green Setting (Gmax), s	5.0	32.0	11.0	41.0								
Max Q Clear Time (g_c+I), s	13.6	8.1	10.1	2.0								
Green Ext Time (p_c), s	0.0	5.7	0.2	2.2								

Intersection Summary

HCM 6th Ctrl Delay	14.2
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

HCM 6th Signalized Intersection Summary

11: Milliken Ave & Foothill Blvd

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔	↑↑↑	↗	↔↔	↑↑↑	↗	↔↔	↑↑↑	↗	↔↔	↑↑↑	↗
Traffic Volume (veh/h)	192	1024	87	356	1331	108	279	607	153	182	371	78
Future Volume (veh/h)	192	1024	87	356	1331	108	279	607	153	182	371	78
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No		No		No		No		No		No
Adj Sat Flow, veh/h/ln	1488	1716	1421	1525	1716	1589	1538	1702	1702	1550	1674	1660
Adj Flow Rate, veh/h	204	1089	93	379	1416	115	297	646	163	194	395	83
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	9	6	27	6	6	15	5	7	7	4	9	10
Cap, veh/h	274	1850	476	364	1987	571	293	1125	277	222	760	234
Arrive On Green	0.10	0.39	0.39	0.13	0.42	0.42	0.10	0.19	0.19	0.08	0.17	0.17
Sat Flow, veh/h	2749	4684	1204	2818	4684	1347	2841	5854	1442	2864	4569	1406
Grp Volume(v), veh/h	204	1089	93	379	1416	115	297	646	163	194	395	83
Grp Sat Flow(s),veh/h/ln	1374	1561	1204	1409	1561	1347	1420	1463	1442	1432	1523	1406
Q Serve(g_s), s	5.6	14.2	3.9	10.0	19.3	4.2	8.0	7.8	8.0	5.2	6.1	4.1
Cycle Q Clear(g_c), s	5.6	14.2	3.9	10.0	19.3	4.2	8.0	7.8	8.0	5.2	6.1	4.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	274	1850	476	364	1987	571	293	1125	277	222	760	234
VC Ratio(X)	0.74	0.59	0.20	1.04	0.71	0.20	1.01	0.57	0.59	0.88	0.52	0.35
Avail Cap(c_a), veh/h	426	3142	808	364	3021	869	293	3474	856	222	2594	798
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.9	18.5	15.4	33.8	18.4	14.1	34.8	28.4	28.5	35.4	29.5	28.6
Incr Delay (d2), s/veh	4.0	0.3	0.2	58.7	0.5	0.2	55.9	0.5	2.0	29.9	0.6	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	4.4	1.0	6.1	5.9	1.1	4.8	2.5	2.7	2.6	2.1	1.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	37.9	18.8	15.6	92.5	18.9	14.2	90.6	28.9	30.5	65.3	30.0	29.5
LnGrp LOS	D	B	B	F	B	B	F	C	C	E	C	C
Approach Vol, veh/h		1386			1910			1106			672	
Approach Delay, s/veh		21.4			33.2			45.7			40.1	
Approach LOS		C			C			D			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	4.0	34.6	12.0	16.9	11.7	36.9	10.0	18.9				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	10.0	52.0	8.0	44.0	12.0	50.0	6.0	46.0				
Max Q Clear Time (g_c+1.2), s	10.0	16.2	10.0	8.1	7.6	21.3	7.2	10.0				
Green Ext Time (p_c), s	0.0	8.7	0.0	2.8	0.2	11.5	0.0	4.9				

Intersection Summary

HCM 6th Ctrl Delay	33.6
HCM 6th LOS	C

HCM 6th Signalized Intersection Summary

12: Milliken Ave & Fourth St

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔	↑↑↑	↗	↔↔	↑↑↑	↗	↔↔	↑↑↑	↗	↔↔	↑↑↑	↔↔
Traffic Volume (veh/h)	182	441	188	443	501	165	241	494	116	263	463	101
Future Volume (veh/h)	182	441	188	443	501	165	241	494	116	263	463	101
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No		No		No		No		No		No
Adj Sat Flow, veh/h/ln	1575	1716	1772	1588	1688	1758	1550	1716	1744	1588	1702	1702
Adj Flow Rate, veh/h	186	450	192	452	511	168	246	504	118	268	472	103
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	6	2	1	8	3	4	6	4	1	7	7
Cap, veh/h	285	1041	334	465	1304	422	284	1196	534	291	992	206
Arrive On Green	0.10	0.22	0.22	0.16	0.28	0.28	0.10	0.20	0.20	0.10	0.20	0.20
Sat Flow, veh/h	2910	4684	1502	2933	4607	1490	2864	5902	1478	2933	4893	1017
Grp Volume(v), veh/h	186	450	192	452	511	168	246	504	118	268	421	154
Grp Sat Flow(s),veh/h/ln	1455	1561	1502	1467	1536	1490	1432	1476	1478	1467	1463	1519
Q Serve(g_s), s	3.1	4.2	5.7	7.7	4.5	4.6	4.3	3.8	2.8	4.6	4.3	4.5
Cycle Q Clear(g_c), s	3.1	4.2	5.7	7.7	4.5	4.6	4.3	3.8	2.8	4.6	4.3	4.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.67
Lane Grp Cap(c), veh/h	285	1041	334	465	1304	422	284	1196	534	291	890	308
V/C Ratio(X)	0.65	0.43	0.58	0.97	0.39	0.40	0.87	0.42	0.22	0.92	0.47	0.50
Avail Cap(c_a), veh/h	577	4923	1578	465	4659	1507	284	5618	1641	291	4179	1446
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.9	16.9	17.5	21.1	14.6	14.6	22.4	17.5	11.2	22.5	17.7	17.8
Incr Delay (d2), s/veh	2.5	0.3	1.6	34.3	0.2	0.6	23.4	0.2	0.2	33.0	0.4	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0	1.2	1.7	4.3	1.2	1.2	2.1	1.0	0.7	2.6	1.2	1.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	24.4	17.2	19.1	55.4	14.8	15.2	45.8	17.8	11.4	55.5	18.1	19.1
LnGrp LOS	C	B	B	E	B	B	D	B	B	E	B	B
Approach Vol, veh/h		828		1131		868		843				
Approach Delay, s/veh		19.2		31.1		24.8		30.2				
Approach LOS		B		C		C		C				
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.0	14.2	12.0	15.2	9.0	14.2	8.9	18.3				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	5.0	48.0	8.0	53.0	5.0	48.0	10.0	51.0				
Max Q Clear Time (g_c+1/6), s	10.6	5.8	9.7	7.7	6.3	6.5	5.1	6.6				
Green Ext Time (p_c), s	0.0	3.7	0.0	3.5	0.0	3.7	0.2	3.8				
Intersection Summary												
HCM 6th Ctrl Delay				26.7								
HCM 6th LOS				C								

Intersection						
Int Delay, s/veh	0.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↗		↑↑↑	↑↑↑	↗
Traffic Vol, veh/h	0	33	0	1145	650	26
Future Vol, veh/h	0	33	0	1145	650	26
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	175
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	2	1	2	3	6	4
Mvmt Flow	0	34	0	1168	663	27

Major/Minor	Minor2	Major1	Major2		
Conflicting Flow All	-	332	-	0	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-
Critical Hdwy	-	7.12	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-
Follow-up Hdwy	-	3.91	-	-	-
Pot Cap-1 Maneuver	0	569	0	-	-
Stage 1	0	-	0	-	-
Stage 2	0	-	0	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	-	569	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-

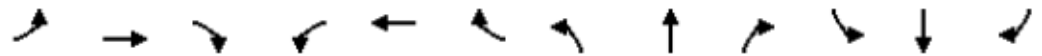
Approach	EB	NB	SB
HCM Control Delay, s	11.7	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT EBLn1	SBT	SBR
Capacity (veh/h)	- 569	-	-
HCM Lane V/C Ratio	- 0.059	-	-
HCM Control Delay (s)	- 11.7	-	-
HCM Lane LOS	- B	-	-
HCM 95th %tile Q(veh)	- 0.2	-	-

HCM 6th Signalized Intersection Summary

14: Milliken Ave & 7th St

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↑↑↑		↖	↑↑↑	
Traffic Volume (veh/h)	89	0	48	16	0	13	31	1047	9	6	661	10
Future Volume (veh/h)	89	0	48	16	0	13	31	1047	9	6	661	10
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1687	1786	1786	1382	1800	1800	1620	1758	1758	1687	1716	1716
Adj Flow Rate, veh/h	90	0	48	16	0	13	31	1058	9	6	668	10
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	1	1	1	24	0	0	6	3	3	1	6	6
Cap, veh/h	220	0	156	171	0	158	39	3610	31	10	3408	51
Arrive On Green	0.10	0.00	0.10	0.10	0.00	0.10	0.03	0.74	0.74	0.01	0.72	0.72
Sat Flow, veh/h	1334	0	1514	1058	0	1525	1543	4908	42	1606	4755	71
Grp Volume(v), veh/h	90	0	48	16	0	13	31	690	377	6	438	240
Grp Sat Flow(s),veh/h/ln	1334	0	1514	1058	0	1525	1543	1600	1750	1606	1561	1703
Q Serve(g_s), s	5.1	0.0	2.3	1.1	0.0	0.6	1.5	5.6	5.6	0.3	3.6	3.6
Cycle Q Clear(g_c), s	5.7	0.0	2.3	3.4	0.0	0.6	1.5	5.6	5.6	0.3	3.6	3.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.02	1.00		0.04
Lane Grp Cap(c), veh/h	220	0	156	171	0	158	39	2353	1288	10	2238	1221
VC Ratio(X)	0.41	0.00	0.31	0.09	0.00	0.08	0.80	0.29	0.29	0.60	0.20	0.20
Avail Cap(c_a), veh/h	1064	0	1113	840	0	1122	139	2353	1288	83	2238	1221
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.0	0.0	32.2	33.7	0.0	31.4	37.6	3.5	3.5	38.4	3.6	3.6
Incr Delay (d2), s/veh	1.2	0.0	1.1	0.2	0.0	0.2	30.0	0.3	0.6	45.8	0.2	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	0.0	0.9	0.3	0.0	0.2	0.9	0.9	1.1	0.2	0.7	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	35.2	0.0	33.3	34.0	0.0	31.6	67.5	3.8	4.0	84.2	3.8	4.0
LnGrp LOS	D	A	C	C	A	C	E	A	A	F	A	A
Approach Vol, veh/h		138			29			1098			684	
Approach Delay, s/veh		34.5			32.9			5.7			4.6	
Approach LOS		C			C			A			A	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	4.5	61.0		12.0	5.9	59.5		12.0				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	4.0	57.0		57.0	7.0	54.0		57.0				
Max Q Clear Time (g_c+I1), s	2.3	7.6		7.7	3.5	5.6		5.4				
Green Ext Time (p_c), s	0.0	7.5		0.6	0.0	4.2		0.1				

Intersection Summary

HCM 6th Ctrl Delay	7.7
HCM 6th LOS	A

HCM 6th Signalized Intersection Summary
 15: Milliken Ave & I-10 WB Ramps/Ontario Mills Pkwy

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔	↑	↗	↔↔	↕↕	↗	↔↔	↑↑↑	↗	↔↔	↑↑↑	↗
Traffic Volume (veh/h)	371	267	127	275	3	301	338	476	234	160	614	376
Future Volume (veh/h)	371	267	127	275	3	301	338	476	234	160	614	376
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No		No		No		No		No		No
Adj Sat Flow, veh/h/ln	1463	1730	1702	1550	1730	1772	1538	1716	1730	1550	1730	1716
Adj Flow Rate, veh/h	395	284	135	293	3	320	360	506	249	170	653	400
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	11	5	7	4	5	2	5	6	5	4	5	6
Cap, veh/h	369	317	264	412	627	287	420	2629	864	234	2258	750
Arrive On Green	0.14	0.18	0.18	0.14	0.19	0.19	0.05	0.15	0.15	0.08	0.38	0.38
Sat Flow, veh/h	2703	1730	1442	2864	3287	1502	2841	5902	1466	2864	5951	1454
Grp Volume(v), veh/h	395	284	135	293	3	320	360	506	249	170	653	400
Grp Sat Flow(s),veh/h/ln	1351	1730	1442	1432	1643	1502	1420	1476	1466	1432	1488	1454
Q Serve(g_s), s	15.0	17.6	6.8	10.7	0.1	21.0	13.8	8.3	0.1	6.4	8.4	7.7
Cycle Q Clear(g_c), s	15.0	17.6	6.8	10.7	0.1	21.0	13.8	8.3	0.1	6.4	8.4	7.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	369	317	264	412	627	287	420	2629	864	234	2258	750
VC Ratio(X)	1.07	0.90	0.51	0.71	0.00	1.12	0.86	0.19	0.29	0.73	0.29	0.53
Avail Cap(c_a), veh/h	369	346	288	412	627	287	491	2629	864	234	2258	750
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.94	0.94	0.94	1.00	1.00	1.00
Uniform Delay (d), s/veh	47.5	43.9	21.6	44.9	36.0	44.5	51.2	29.5	19.3	49.3	23.8	6.5
Incr Delay (d2), s/veh	67.3	23.4	1.5	5.6	0.0	88.1	11.9	0.2	0.8	10.6	0.3	2.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.5	9.6	2.4	4.1	0.0	14.7	6.0	3.2	5.2	2.6	3.0	3.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	114.8	67.3	23.1	50.5	36.0	132.6	63.1	29.7	20.1	59.9	24.1	9.2
LnGrp LOS	F	E	C	D	D	F	E	C	C	E	C	A
Approach Vol, veh/h		814			616			1115			1223	
Approach Delay, s/veh		83.0			93.1			38.3			24.2	
Approach LOS		F			F			D			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	3.0	53.0	19.8	24.2	20.3	45.7	19.0	25.0				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	9.0	49.0	14.0	22.0	19.0	39.0	15.0	21.0				
Max Q Clear Time (g_c+10), s	10.4	10.3	12.7	19.6	15.8	10.4	17.0	23.0				
Green Ext Time (p_c), s	0.0	4.9	0.1	0.5	0.4	6.8	0.0	0.0				

Intersection Summary												
HCM 6th Ctrl Delay											52.4	
HCM 6th LOS											D	

HCM 6th Signalized Intersection Summary
 16: Milliken Ave & I-10 EB Ramps

11/03/2021



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↖↗	↖	↖↗	↑↑↑	↑↑↑	↖
Traffic Volume (veh/h)	403	159	230	645	507	509
Future Volume (veh/h)	403	159	230	645	507	509
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1550	1617	1176	1646	1744	1491
Adj Flow Rate, veh/h	415	164	237	665	523	525
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	4	13	34	11	4	22
Cap, veh/h	507	243	285	4246	3493	960
Arrive On Green	0.18	0.18	0.13	0.75	0.19	0.19
Sat Flow, veh/h	2864	1371	2172	5891	6243	1264
Grp Volume(v), veh/h	415	164	237	665	523	525
Grp Sat Flow(s),veh/h/ln	1432	1371	1086	1415	1500	1264
Q Serve(g_s), s	15.3	12.3	11.7	3.7	8.0	24.6
Cycle Q Clear(g_c), s	15.3	12.3	11.7	3.7	8.0	24.6
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	507	243	285	4246	3493	960
VC Ratio(X)	0.82	0.68	0.83	0.16	0.15	0.55
Avail Cap(c_a), veh/h	1198	573	612	4246	3493	960
HCM Platoon Ratio	1.00	1.00	1.00	1.00	0.33	0.33
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.90	0.90
Uniform Delay (d), s/veh	43.5	42.3	46.6	3.9	21.8	11.9
Incr Delay (d2), s/veh	3.3	3.3	6.2	0.1	0.1	2.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.6	9.3	3.4	0.9	3.0	15.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	46.8	45.6	52.7	4.0	21.9	13.9
LnGrp LOS	D	D	D	A	C	B
Approach Vol, veh/h	579			902	1048	
Approach Delay, s/veh	46.5			16.8	17.9	
Approach LOS	D			B	B	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		86.5		23.5	18.5	68.1
Change Period (Y+Rc), s		4.0		4.0	4.0	4.0
Max Green Setting (Gmax), s		56.0		46.0	31.0	21.0
Max Q Clear Time (g_c+I1), s		5.7		17.3	13.7	26.6
Green Ext Time (p_c), s		5.5		2.2	0.8	0.0
Intersection Summary						
HCM 6th Ctrl Delay			24.0			
HCM 6th LOS			C			

Appendix E.3 - 2045 No Build Intersection Level of Service Calculation Worksheets

HCM 6th Signalized Intersection Summary

1: Highway 395 & Joshua St

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗	↗	↖	↗	↗	↖	↗	↗
Traffic Volume (veh/h)	70	13	1	39	135	121	13	437	7	163	1454	528
Future Volume (veh/h)	70	13	1	39	135	121	13	437	7	163	1454	528
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1209	1674	1674	1355	1674	1281	1037	1463	1632	1435	1547	1393
Adj Flow Rate, veh/h	77	14	1	43	148	133	14	480	8	179	1598	580
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	37	9	9	26	9	37	50	24	12	20	18	29
Cap, veh/h	198	326	23	316	353	229	13	1317	655	209	1802	724
Arrive On Green	0.21	0.21	0.21	0.21	0.21	0.21	0.01	0.47	0.47	0.15	0.61	0.61
Sat Flow, veh/h	750	1544	110	1070	1674	1085	988	2780	1383	1366	2940	1180
Grp Volume(v), veh/h	77	0	15	43	148	133	14	480	8	179	1598	580
Grp Sat Flow(s),veh/h/ln	750	0	1654	1070	1674	1085	988	1390	1383	1366	1470	1180
Q Serve(g_s), s	7.3	0.0	0.5	2.5	5.7	8.1	1.0	8.1	0.2	9.4	34.1	27.6
Cycle Q Clear(g_c), s	13.0	0.0	0.5	3.0	5.7	8.1	1.0	8.1	0.2	9.4	34.1	27.6
Prop In Lane	1.00		0.07	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	198	0	349	316	353	229	13	1317	655	209	1802	724
VC Ratio(X)	0.39	0.00	0.04	0.14	0.42	0.58	1.05	0.36	0.01	0.86	0.89	0.80
Avail Cap(c_a), veh/h	527	0	1074	785	1087	705	80	1317	655	277	1802	724
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.8	0.0	23.2	24.4	25.2	26.2	36.4	12.4	10.3	30.5	12.1	10.9
Incr Delay (d2), s/veh	1.2	0.0	0.1	0.2	0.8	2.3	128.6	0.8	0.0	18.0	6.9	9.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	0.0	0.2	0.6	2.2	2.2	0.7	2.1	0.1	3.8	8.6	6.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	32.1	0.0	23.3	24.6	26.0	28.5	165.1	13.2	10.3	48.5	19.0	20.0
LnGrp LOS	C	A	C	C	C	C	F	B	B	D	B	C
Approach Vol, veh/h		92			324			502			2357	
Approach Delay, s/veh		30.6			26.9			17.3			21.5	
Approach LOS		C			C			B			C	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	15.3	39.0		19.6	5.0	49.3		19.6				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	15.0	35.0		48.0	6.0	44.0		48.0				
Max Q Clear Time (g_c+I1), s	11.4	10.1		15.0	3.0	36.1		10.1				
Green Ext Time (p_c), s	0.1	2.8		0.6	0.0	6.4		1.6				
Intersection Summary												
HCM 6th Ctrl Delay				21.6								
HCM 6th LOS				C								

Intersection						
Int Delay, s/veh	2.4					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		∩	
Traffic Vol, veh/h	0	162	134	0	6	87
Future Vol, veh/h	0	162	134	0	6	87
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	2	23	25	2	1	25
Mvmt Flow	0	186	154	0	7	100

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	-	0	-	0	340 154
Stage 1	-	-	-	-	154 -
Stage 2	-	-	-	-	186 -
Critical Hdwy	-	-	-	-	6.41 6.45
Critical Hdwy Stg 1	-	-	-	-	5.41 -
Critical Hdwy Stg 2	-	-	-	-	5.41 -
Follow-up Hdwy	-	-	-	-	3.509 3.525
Pot Cap-1 Maneuver	0	-	-	0	658 835
Stage 1	0	-	-	0	877 -
Stage 2	0	-	-	0	848 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	-	658 835
Mov Cap-2 Maneuver	-	-	-	-	658 -
Stage 1	-	-	-	-	877 -
Stage 2	-	-	-	-	848 -

Approach	EB	WB	SB
HCM Control Delay, s	0	0	10
HCM LOS			B

Minor Lane/Major Mvmt	EBT	WBT	SBLn1
Capacity (veh/h)	-	-	821
HCM Lane V/C Ratio	-	-	0.13
HCM Control Delay (s)	-	-	10
HCM Lane LOS	-	-	B
HCM 95th %tile Q(veh)	-	-	0.4

Intersection												
Int Delay, s/veh	0.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↗			↕				
Traffic Vol, veh/h	36	132	0	0	134	21	0	0	0	0	0	0
Future Vol, veh/h	36	132	0	0	134	21	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	16965	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	79	79	92	92	79	79	92	92	92	79	92	79
Heavy Vehicles, %	50	11	2	2	30	32	2	2	2	2	2	2
Mvmt Flow	46	167	0	0	170	27	0	0	0	0	0	0

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	197	0	0
Stage 1	-	-	259
Stage 2	-	-	184
Critical Hdwy	4.6	-	6.42
Critical Hdwy Stg 1	-	-	5.42
Critical Hdwy Stg 2	-	-	5.42
Follow-up Hdwy	2.65	-	3.518
Pot Cap-1 Maneuver	1135	0	572
Stage 1	-	0	784
Stage 2	-	0	848
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1135	-	546
Mov Cap-2 Maneuver	-	-	546
Stage 1	-	-	749
Stage 2	-	-	848

Approach	EB	WB	NB
HCM Control Delay, s	1.8	0	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	WBT	WBR
Capacity (veh/h)	-	1135	-	-	-
HCM Lane V/C Ratio	-	0.04	-	-	-
HCM Control Delay (s)	0	8.3	0	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	-	0.1	-	-	-

Intersection						
Int Delay, s/veh	4.3					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	Y			↑	↑	
Traffic Vol, veh/h	4	129	119	63	310	12
Future Vol, veh/h	4	129	119	63	310	12
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	82	82	82	82	82	82
Heavy Vehicles, %	19	4	29	23	12	21
Mvmt Flow	5	157	145	77	378	15

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	753	386	393	0	-	0
Stage 1	386	-	-	-	-	-
Stage 2	367	-	-	-	-	-
Critical Hdwy	6.59	6.24	4.39	-	-	-
Critical Hdwy Stg 1	5.59	-	-	-	-	-
Critical Hdwy Stg 2	5.59	-	-	-	-	-
Follow-up Hdwy	3.671	3.336	2.461	-	-	-
Pot Cap-1 Maneuver	354	657	1033	-	-	-
Stage 1	651	-	-	-	-	-
Stage 2	665	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	302	657	1033	-	-	-
Mov Cap-2 Maneuver	302	-	-	-	-	-
Stage 1	555	-	-	-	-	-
Stage 2	665	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	12.6	5.9	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1033	-	635	-	-
HCM Lane V/C Ratio	0.14	-	0.255	-	-
HCM Control Delay (s)	9.1	0	12.6	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.5	-	1	-	-

HCM 6th Signalized Intersection Summary

5: I-15 SB On-ramp/I-15 SB Off-ramp & Foothill Blvd/Foothill Blvd

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↗		↑↑↑	↗				↘	↕	↗
Traffic Volume (veh/h)	0	1161	692	0	1285	532	0	0	0	497	0	424
Future Volume (veh/h)	0	1161	692	0	1285	532	0	0	0	497	0	424
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1702	1772	0	1772	1744				1646	1772	1702
Adj Flow Rate, veh/h	0	1304	0	0	1444	0				706	0	317
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89				0.89	0.89	0.89
Percent Heavy Veh, %	0	7	2	0	2	4				11	2	7
Cap, veh/h	0	2955		0	3076					862	0	397
Arrive On Green	0.00	0.64	0.00	0.00	0.43	0.00				0.28	0.00	0.28
Sat Flow, veh/h	0	4799	1502	0	4997	1478				3134	0	1442
Grp Volume(v), veh/h	0	1304	0	0	1444	0				706	0	317
Grp Sat Flow(s),veh/h/ln	0	1549	1502	0	1612	1478				1567	0	1442
Q Serve(g_s), s	0.0	12.8	0.0	0.0	19.3	0.0				19.0	0.0	18.4
Cycle Q Clear(g_c), s	0.0	12.8	0.0	0.0	19.3	0.0				19.0	0.0	18.4
Prop In Lane	0.00		1.00	0.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2955		0	3076					862	0	397
V/C Ratio(X)	0.00	0.44		0.00	0.47					0.82	0.00	0.80
Avail Cap(c_a), veh/h	0	2955		0	3076					1358	0	625
HCM Platoon Ratio	1.00	1.00	1.00	1.00	0.67	0.67				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.00	0.00	0.09	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	8.3	0.0	0.0	14.9	0.0				30.5	0.0	30.3
Incr Delay (d2), s/veh	0.0	0.5	0.0	0.0	0.0	0.0				2.3	0.0	3.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	3.3	0.0	0.0	7.1	0.0				7.1	0.0	6.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	8.8	0.0	0.0	15.0	0.0				32.8	0.0	34.2
LnGrp LOS	A	A		A	B					C	A	C
Approach Vol, veh/h		1304	A		1444	A					1023	
Approach Delay, s/veh		8.8			15.0						33.2	
Approach LOS		A			B						C	
Timer - Assigned Phs		2		4		6						
Phs Duration (G+Y+Rc), s		61.2		28.8		61.2						
Change Period (Y+Rc), s		4.0		4.0		4.0						
Max Green Setting (Gmax), s		43.0		39.0		43.0						
Max Q Clear Time (g_c+I1), s		14.8		21.0		21.3						
Green Ext Time (p_c), s		9.8		3.8		9.9						

Intersection Summary

HCM 6th Ctrl Delay	17.8
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th Signalized Intersection Summary

6: I-15 NB Off-ramp/I-15 NB On-ramp & Foothill Blvd /Foothill Blvd

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↑		↑↑↑	↑	↑	↑↓	↑			
Traffic Volume (veh/h)	0	1532	125	0	1475	200	343	0	182	0	0	0
Future Volume (veh/h)	0	1532	125	0	1475	200	343	0	182	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No		No		No		No				
Adj Sat Flow, veh/h/ln	0	1772	1646	0	1674	1632	1758	1772	1730			
Adj Flow Rate, veh/h	0	1721	0	0	1657	0	448	0	136			
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89			
Percent Heavy Veh, %	0	2	11	0	9	12	3	2	5			
Cap, veh/h	0	3566		0	3369		582	0	255			
Arrive On Green	0.00	0.98	0.00	0.00	0.74	0.00	0.17	0.00	0.17			
Sat Flow, veh/h	0	4997	1395	0	4720	1383	3348	0	1466			
Grp Volume(v), veh/h	0	1721	0	0	1657	0	448	0	136			
Grp Sat Flow(s),veh/h/ln	0	1612	1395	0	1523	1383	1674	0	1466			
Q Serve(g_s), s	0.0	1.2	0.0	0.0	13.5	0.0	11.5	0.0	7.6			
Cycle Q Clear(g_c), s	0.0	1.2	0.0	0.0	13.5	0.0	11.5	0.0	7.6			
Prop In Lane	0.00		1.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	0	3566		0	3369		582	0	255			
V/C Ratio(X)	0.00	0.48		0.00	0.49		0.77	0.00	0.53			
Avail Cap(c_a), veh/h	0	3566		0	3369		2009	0	880			
HCM Platoon Ratio	1.00	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.00	0.78	0.00	0.00	1.00	0.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	0.0	0.2	0.0	0.0	4.9	0.0	35.5	0.0	33.9			
Incr Delay (d2), s/veh	0.0	0.4	0.0	0.0	0.5	0.0	2.2	0.0	1.7			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.0	0.3	0.0	0.0	3.4	0.0	4.7	0.0	2.8			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.6	0.0	0.0	5.4	0.0	37.6	0.0	35.6			
LnGrp LOS	A	A		A	A		D	A	D			
Approach Vol, veh/h		1721	A		1657	A		584				
Approach Delay, s/veh		0.6			5.4			37.2				
Approach LOS		A			A			D				
Timer - Assigned Phs		2			6			8				
Phs Duration (G+Y+Rc), s		70.4			70.4			19.6				
Change Period (Y+Rc), s		4.0			4.0			4.0				
Max Green Setting (Gmax), s		28.0			28.0			54.0				
Max Q Clear Time (g_c+I1), s		3.2			15.5			13.5				
Green Ext Time (p_c), s		14.9			8.9			2.2				

Intersection Summary

HCM 6th Ctrl Delay	8.0
HCM 6th LOS	A

Notes

User approved volume balancing among the lanes for turning movement.

Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th Signalized Intersection Summary
 7: Ontario Mills Dr./I-15 SB Ramps & Fourth St

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↗↘	↑↑↑	↗	↗↘	↑↑↑	↗	↖	↑↑	↗	↖	↑↑	↗
Traffic Volume (veh/h)	318	375	56	88	1021	173	111	97	63	151	153	367
Future Volume (veh/h)	318	375	56	88	1021	173	111	97	63	151	153	367
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No		No		No		No		No		No
Adj Sat Flow, veh/h/ln	1375	1561	1758	1538	1660	1238	1660	1617	1646	1315	1758	1758
Adj Flow Rate, veh/h	335	395	59	93	1075	182	117	102	66	159	161	386
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	18	17	3	5	10	40	3	13	11	29	3	3
Cap, veh/h	755	2033	710	451	1533	355	139	200	91	221	270	457
Arrive On Green	0.30	0.48	0.48	0.32	0.68	0.68	0.09	0.07	0.07	0.18	0.15	0.15
Sat Flow, veh/h	2541	4262	1490	2841	4531	1049	1581	3073	1395	1253	1758	2979
Grp Volume(v), veh/h	335	395	59	93	1075	182	117	102	66	159	161	386
Grp Sat Flow(s),veh/h/ln	1271	1421	1490	1420	1510	1049	1581	1537	1395	1253	1758	1490
Q Serve(g_s), s	13.9	6.9	2.8	3.1	19.0	11.2	9.5	4.2	6.0	15.6	11.1	16.4
Cycle Q Clear(g_c), s	13.9	6.9	2.8	3.1	19.0	11.2	9.5	4.2	6.0	15.6	11.1	16.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	755	2033	710	451	1533	355	139	200	91	221	270	457
VC Ratio(X)	0.44	0.19	0.08	0.21	0.70	0.51	0.84	0.51	0.73	0.72	0.60	0.84
Avail Cap(c_a), veh/h	755	2033	710	451	1533	355	219	378	172	270	352	596
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.81	0.81	0.81	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.0	19.6	18.5	38.4	17.0	15.7	58.4	58.8	59.6	50.5	51.3	53.5
Incr Delay (d2), s/veh	0.4	0.2	0.2	0.2	2.2	4.2	15.3	2.0	10.5	7.1	2.1	8.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.2	2.2	1.0	1.0	4.2	2.4	4.4	1.7	2.4	5.3	5.0	6.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	37.4	19.8	18.7	38.6	19.1	19.9	73.6	60.8	70.2	57.6	53.4	62.1
LnGrp LOS	D	B	B	D	B	B	E	E	E	E	D	E
Approach Vol, veh/h		789			1350			285			706	
Approach Delay, s/veh		27.2			20.6			68.2			59.1	
Approach LOS		C			C			E			E	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	24.6	66.0	15.4	23.9	42.6	48.0	26.9	12.5				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	3.0	62.0	18.0	26.0	26.0	44.0	28.0	16.0				
Max Q Clear Time (g_c+11), s	8.9	8.9	11.5	18.4	15.9	21.0	17.6	8.0				
Green Ext Time (p_c), s	0.1	2.7	0.1	1.6	0.8	7.7	0.3	0.4				

Intersection Summary

HCM 6th Ctrl Delay		35.3										
HCM 6th LOS			D									

Notes

User approved volume balancing among the lanes for turning movement.

HCM 6th Signalized Intersection Summary

8: Fourth St & I-15 NB Ramps

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖ ↗	↑ ↑ ↑	↖	↖ ↗	↑ ↑ ↑		↖	↑ ↑		↖	↖	↖ ↗
Traffic Volume (veh/h)	132	419	38	20	411	54	130	41	89	272	37	740
Future Volume (veh/h)	132	419	38	20	411	54	130	41	89	272	37	740
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1688	1491	1295	958	1351	1351	761	1491	1491	1309	1281	1702
Adj Flow Rate, veh/h	140	446	40	21	437	57	138	44	95	317	0	787
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	8	22	36	60	32	32	74	22	22	35	37	7
Cap, veh/h	507	1440	388	155	1196	153	152	297	265	358	0	883
Arrive On Green	0.32	0.71	0.71	0.17	0.36	0.36	0.21	0.21	0.21	0.14	0.00	0.14
Sat Flow, veh/h	3118	4071	1097	912	3309	424	725	1417	1264	2493	0	2884
Grp Volume(v), veh/h	140	446	40	21	323	171	138	44	95	317	0	787
Grp Sat Flow(s),veh/h/ln	1559	1357	1097	912	1229	1274	725	1417	1264	1246	0	1442
Q Serve(g_s), s	4.3	5.3	1.5	2.5	12.5	12.9	24.2	3.3	8.4	16.2	0.0	12.7
Cycle Q Clear(g_c), s	4.3	5.3	1.5	2.5	12.5	12.9	24.2	3.3	8.4	16.2	0.0	12.7
Prop In Lane	1.00		1.00	1.00		0.33	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	507	1440	388	155	889	461	152	297	265	358	0	883
V/C Ratio(X)	0.28	0.31	0.10	0.14	0.36	0.37	0.91	0.15	0.36	0.89	0.00	0.89
Avail Cap(c_a), veh/h	507	1440	388	155	889	461	229	447	399	364	0	890
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	38.2	13.1	12.5	45.8	30.5	30.6	50.2	41.9	43.9	54.6	0.0	43.1
Incr Delay (d2), s/veh	0.3	0.5	0.5	0.4	1.1	2.3	27.1	0.2	0.8	21.9	0.0	11.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	1.4	0.4	0.6	3.7	4.1	5.5	1.2	2.7	6.1	0.0	4.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	38.5	13.6	13.0	46.2	31.6	32.9	77.2	42.2	44.8	76.5	0.0	54.2
LnGrp LOS	D	B	B	D	C	C	E	D	D	E	A	D
Approach Vol, veh/h		626			515			277			1104	
Approach Delay, s/veh		19.1			32.7			60.5			60.6	
Approach LOS		B			C			E			E	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	36.1	50.0		22.7	25.1	51.0		31.2				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	46.0	46.0		19.0	7.0	47.0		41.0				
Max Q Clear Time (g_c+14), s	14.5	7.3		18.2	6.3	14.9		26.2				
Green Ext Time (p_c), s	0.0	2.9		0.4	0.0	2.9		1.1				

Intersection Summary

HCM 6th Ctrl Delay 44.6
 HCM 6th LOS D

Notes

- User approved pedestrian interval to be less than phase max green.
- User approved volume balancing among the lanes for turning movement.

HCM 6th Signalized Intersection Summary
 9: Milliken Ave & I-210 WB On-ramp/I-210 WB Off-ramp

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↘	↔	↗	↘↗	↑↑↑			↑↑↗	
Traffic Volume (veh/h)	0	0	0	116	5	94	208	241	0	0	751	182
Future Volume (veh/h)	0	0	0	116	5	94	208	241	0	0	751	182
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach				No		No		No			No	
Adj Sat Flow, veh/h/ln				1528	1786	1646	1538	1758	0	0	1772	1772
Adj Flow Rate, veh/h				152	0	66	214	248	0	0	774	188
Peak Hour Factor				0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %				13	1	11	5	3	0	0	2	2
Cap, veh/h				328	0	157	290	3710	0	0	2389	575
Arrive On Green				0.11	0.00	0.11	0.20	1.00	0.00	0.00	0.61	0.61
Sat Flow, veh/h				2910	0	1395	2841	4957	0	0	4051	937
Grp Volume(v), veh/h				152	0	66	214	248	0	0	640	322
Grp Sat Flow(s),veh/h/ln				1455	0	1395	1420	1600	0	0	1612	1603
Q Serve(g_s), s				3.4	0.0	3.1	4.9	0.0	0.0	0.0	6.7	6.8
Cycle Q Clear(g_c), s				3.4	0.0	3.1	4.9	0.0	0.0	0.0	6.7	6.8
Prop In Lane				1.00		1.00	1.00		0.00	0.00		0.58
Lane Grp Cap(c), veh/h				328	0	157	290	3710	0	0	1980	984
V/C Ratio(X)				0.46	0.00	0.42	0.74	0.07	0.00	0.00	0.32	0.33
Avail Cap(c_a), veh/h				457	0	219	487	3710	0	0	1980	984
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.98	0.98	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				29.1	0.0	28.9	27.0	0.0	0.0	0.0	6.5	6.5
Incr Delay (d2), s/veh				1.0	0.0	1.8	3.6	0.0	0.0	0.0	0.4	0.9
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				1.2	0.0	1.1	1.6	0.0	0.0	0.0	2.0	2.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				30.1	0.0	30.7	30.6	0.0	0.0	0.0	6.9	7.4
LnGrp LOS				C	A	C	C	A	A	A	A	A
Approach Vol, veh/h						218		462			962	
Approach Delay, s/veh						30.3		14.2			7.1	
Approach LOS						C		B			A	
Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		58.1			11.1	47.0		11.9				
Change Period (Y+Rc), s		4.0			4.0	4.0		4.0				
Max Green Setting (Gmax), s		51.0			12.0	35.0		11.0				
Max Q Clear Time (g_c+I1), s		2.0			6.9	8.8		5.4				
Green Ext Time (p_c), s		1.8			0.3	7.3		0.3				

Intersection Summary

HCM 6th Ctrl Delay	12.2
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

HCM 6th Signalized Intersection Summary
 10: Milliken Ave & I-210 EB Off-ramp/I-210 EB On-ramp

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	149	8	109	0	0	0	0	300	67	308	559	0
Future Volume (veh/h)	149	8	109	0	0	0	0	300	67	308	559	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No						No			No		
Adj Sat Flow, veh/h/ln	1594	1786	1660				0	1772	1772	1475	1744	0
Adj Flow Rate, veh/h	202	0	82				0	326	73	335	608	0
Peak Hour Factor	0.92	0.92	0.92				0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	8	1	10				0	2	2	10	4	0
Cap, veh/h	346	0	160				0	1821	393	702	3675	0
Arrive On Green	0.11	0.00	0.11				0.00	0.46	0.46	0.52	1.00	0.00
Sat Flow, veh/h	3036	0	1406				0	4143	859	2726	4918	0
Grp Volume(v), veh/h	202	0	82				0	262	137	335	608	0
Grp Sat Flow(s),veh/h/ln	1518	0	1406				0	1612	1617	1363	1587	0
Q Serve(g_s), s	4.4	0.0	3.8				0.0	3.4	3.5	5.5	0.0	0.0
Cycle Q Clear(g_c), s	4.4	0.0	3.8				0.0	3.4	3.5	5.5	0.0	0.0
Prop In Lane	1.00		1.00				0.00		0.53	1.00		0.00
Lane Grp Cap(c), veh/h	346	0	160				0	1474	739	702	3675	0
V/C Ratio(X)	0.58	0.00	0.51				0.00	0.18	0.19	0.48	0.17	0.00
Avail Cap(c_a), veh/h	477	0	221				0	1474	739	702	3675	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	0.94	0.94	0.00
Uniform Delay (d), s/veh	29.4	0.0	29.2				0.0	11.2	11.3	13.9	0.0	0.0
Incr Delay (d2), s/veh	1.6	0.0	2.5				0.0	0.3	0.6	0.5	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	0.0	1.4				0.0	1.1	1.3	1.4	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	31.0	0.0	31.7				0.0	11.5	11.8	14.4	0.1	0.0
LnGrp LOS	C	A	C				A	B	B	B	A	A
Approach Vol, veh/h	284						399			943		
Approach Delay, s/veh	31.2						11.6			5.2		
Approach LOS	C						B			A		
Timer - Assigned Phs	1	2	4	6								
Phs Duration (G+Y+Rc), s	32.0	36.0	12.0	58.0								
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0								
Max Green Setting (Gmax), s	15.0	32.0	11.0	51.0								
Max Q Clear Time (g_c+I1), s	5.5	5.5	6.4	2.0								
Green Ext Time (p_c), s	0.7	2.6	0.4	4.9								

Intersection Summary

HCM 6th Ctrl Delay	11.3
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

HCM 6th Signalized Intersection Summary

11: Milliken Ave & Foothill Blvd

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖↗	↑↑↑	↖	↖↗	↑↑↑	↖	↖↗	↑↑↑	↖	↖↗	↑↑↑	↖
Traffic Volume (veh/h)	54	560	75	173	785	123	59	158	82	184	465	134
Future Volume (veh/h)	54	560	75	173	785	123	59	158	82	184	465	134
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No		No		No		No		No		No
Adj Sat Flow, veh/h/ln	1563	1716	1786	1513	1758	1758	1500	1744	1702	1588	1744	1716
Adj Flow Rate, veh/h	56	583	78	180	818	128	61	165	85	192	484	140
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	3	6	1	7	3	3	8	4	7	1	4	6
Cap, veh/h	130	1310	423	252	1559	484	132	1080	260	264	1059	323
Arrive On Green	0.04	0.28	0.28	0.09	0.32	0.32	0.05	0.18	0.18	0.09	0.22	0.22
Sat Flow, veh/h	2887	4684	1514	2795	4799	1490	2772	5999	1442	2933	4761	1454
Grp Volume(v), veh/h	56	583	78	180	818	128	61	165	85	192	484	140
Grp Sat Flow(s),veh/h/ln	1444	1561	1514	1397	1600	1490	1386	1500	1442	1467	1587	1454
Q Serve(g_s), s	0.8	4.5	1.7	2.8	6.2	2.8	1.0	1.0	2.3	2.8	3.9	3.7
Cycle Q Clear(g_c), s	0.8	4.5	1.7	2.8	6.2	2.8	1.0	1.0	2.3	2.8	3.9	3.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	130	1310	423	252	1559	484	132	1080	260	264	1059	323
VC Ratio(X)	0.43	0.44	0.18	0.72	0.52	0.26	0.46	0.15	0.33	0.73	0.46	0.43
Avail Cap(c_a), veh/h	390	5377	1737	252	5293	1643	312	6076	1461	264	4715	1440
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	20.7	13.2	12.2	19.7	12.2	11.1	20.6	15.4	15.9	19.7	14.9	14.9
Incr Delay (d2), s/veh	2.3	0.2	0.2	9.3	0.3	0.3	2.5	0.1	0.7	9.6	0.3	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	1.2	0.4	1.0	1.5	0.7	0.3	0.3	0.6	1.1	1.1	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	22.9	13.4	12.4	28.9	12.5	11.4	23.1	15.4	16.6	29.3	15.3	15.8
LnGrp LOS	C	B	B	C	B	B	C	B	B	C	B	B
Approach Vol, veh/h		717			1126			311			816	
Approach Delay, s/veh		14.0			15.0			17.3			18.7	
Approach LOS		B			B			B			B	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	8.0	16.4	6.1	13.9	6.0	18.4	8.0	12.0				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	4.0	51.0	5.0	44.0	6.0	49.0	4.0	45.0				
Max Q Clear Time (g_c+14), s	4.0	6.5	3.0	5.9	2.8	8.2	4.8	4.3				
Green Ext Time (p_c), s	0.0	4.2	0.0	3.6	0.0	6.3	0.0	1.3				

Intersection Summary

HCM 6th Ctrl Delay	16.0
HCM 6th LOS	B

HCM 6th Signalized Intersection Summary

12: Milliken Ave & Fourth St

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔	↑↑↑	↗	↔↔	↑↑↑	↗	↔↔	↑↑↑	↗	↔↔	↑↑↑	↗
Traffic Volume (veh/h)	212	298	213	300	358	159	19	243	20	92	856	85
Future Volume (veh/h)	212	298	213	300	358	159	19	243	20	92	856	85
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No		No		No		No		No		No
Adj Sat Flow, veh/h/ln	1550	1632	1772	1538	1632	1702	1550	1646	1688	1513	1547	1547
Adj Flow Rate, veh/h	236	331	237	333	398	177	21	270	22	102	951	94
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	4	12	2	5	12	7	4	11	8	7	18	18
Cap, veh/h	293	890	300	295	898	291	51	2765	847	116	2543	249
Arrive On Green	0.10	0.20	0.20	0.10	0.20	0.20	0.02	0.49	0.49	0.04	0.51	0.51
Sat Flow, veh/h	2864	4454	1502	2841	4454	1442	2864	5661	1430	2795	4966	486
Grp Volume(v), veh/h	236	331	237	333	398	177	21	270	22	102	763	282
Grp Sat Flow(s),veh/h/ln	1432	1485	1502	1420	1485	1442	1432	1415	1430	1397	1331	1460
Q Serve(g_s), s	7.8	6.2	14.4	10.0	7.5	10.7	0.7	2.5	0.6	3.5	11.1	11.3
Cycle Q Clear(g_c), s	7.8	6.2	14.4	10.0	7.5	10.7	0.7	2.5	0.6	3.5	11.1	11.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.33
Lane Grp Cap(c), veh/h	293	890	300	295	898	291	51	2765	847	116	2044	748
VC Ratio(X)	0.81	0.37	0.79	1.13	0.44	0.61	0.41	0.10	0.03	0.88	0.37	0.38
Avail Cap(c_a), veh/h	327	2453	827	295	2407	779	119	2765	847	116	2044	748
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	42.3	33.3	36.6	43.1	33.7	35.0	46.8	13.2	8.1	45.9	14.2	14.2
Incr Delay (d2), s/veh	12.6	0.3	4.6	91.4	0.3	2.1	5.2	0.1	0.1	48.1	0.5	1.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.1	2.1	5.3	7.0	2.6	3.7	0.3	0.7	0.2	1.9	3.0	3.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	54.8	33.5	41.2	134.5	34.0	37.0	52.0	13.3	8.2	93.9	14.7	15.7
LnGrp LOS	D	C	D	F	C	D	D	B	A	F	B	B
Approach Vol, veh/h		804			908			313			1147	
Approach Delay, s/veh		42.1			71.5			15.5			22.0	
Approach LOS		D			E			B			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	8.0	51.0	14.0	23.2	5.7	53.3	13.8	23.4				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	4.0	47.0	10.0	53.0	4.0	47.0	11.0	52.0				
Max Q Clear Time (g_c+15), s	4.0	4.5	12.0	16.4	2.7	13.3	9.8	12.7				
Green Ext Time (p_c), s	0.0	1.8	0.0	2.8	0.0	7.4	0.1	3.0				

Intersection Summary

HCM 6th Ctrl Delay	40.6
HCM 6th LOS	D

Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↗		↗↗↗	↗↗↗	↗
Traffic Vol, veh/h	0	3	0	616	766	34
Future Vol, veh/h	0	3	0	616	766	34
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	175
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	1	2	9	9	1
Mvmt Flow	0	3	0	648	806	36

Major/Minor	Minor2	Major1	Major2		
Conflicting Flow All	-	403	-	0	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-
Critical Hdwy	-	7.12	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-
Follow-up Hdwy	-	3.91	-	-	-
Pot Cap-1 Maneuver	0	512	0	-	-
Stage 1	0	-	0	-	-
Stage 2	0	-	0	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	-	512	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	12.1	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT EBLn1	SBT	SBR
Capacity (veh/h)	- 512	-	-
HCM Lane V/C Ratio	- 0.006	-	-
HCM Control Delay (s)	- 12.1	-	-
HCM Lane LOS	- B	-	-
HCM 95th %tile Q(veh)	- 0	-	-

HCM 6th Signalized Intersection Summary

14: Milliken Ave & 7th St

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↑↑↑		↖	↑↑↑	
Traffic Volume (veh/h)	238	3	21	2	4	16	27	365	1	30	656	84
Future Volume (veh/h)	238	3	21	2	4	16	27	365	1	30	656	84
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1475	1786	1786	1037	1098	1098	1673	1688	1688	1687	1674	1674
Adj Flow Rate, veh/h	248	3	22	2	4	17	28	380	1	31	683	88
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	17	1	1	50	50	50	2	8	8	1	9	9
Cap, veh/h	358	48	350	278	47	200	35	2787	7	38	2416	308
Arrive On Green	0.26	0.26	0.26	0.26	0.26	0.26	0.02	0.59	0.59	0.02	0.59	0.59
Sat Flow, veh/h	1157	185	1357	811	183	776	1594	4745	12	1606	4102	524
Grp Volume(v), veh/h	248	0	25	2	0	21	28	246	135	31	506	265
Grp Sat Flow(s),veh/h/ln	1157	0	1542	811	0	958	1594	1536	1685	1606	1523	1579
Q Serve(g_s), s	19.0	0.0	1.1	0.2	0.0	1.5	1.6	3.3	3.3	1.8	7.5	7.6
Cycle Q Clear(g_c), s	20.5	0.0	1.1	1.3	0.0	1.5	1.6	3.3	3.3	1.8	7.5	7.6
Prop In Lane	1.00		0.88	1.00		0.81	1.00		0.01	1.00		0.33
Lane Grp Cap(c), veh/h	358	0	398	278	0	247	35	1804	990	38	1794	930
VC Ratio(X)	0.69	0.00	0.06	0.01	0.00	0.08	0.79	0.14	0.14	0.81	0.28	0.29
Avail Cap(c_a), veh/h	791	0	975	582	0	606	104	1804	990	123	1794	930
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.6	0.0	25.7	26.1	0.0	25.8	44.6	8.5	8.5	44.5	9.3	9.3
Incr Delay (d2), s/veh	2.4	0.0	0.1	0.0	0.0	0.1	31.0	0.2	0.3	31.7	0.4	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.4	0.0	0.4	0.0	0.0	0.3	0.9	0.9	1.1	1.0	2.1	2.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	36.0	0.0	25.7	26.2	0.0	26.0	75.6	8.6	8.8	76.2	9.7	10.1
LnGrp LOS	D	A	C	C	A	C	E	A	A	E	A	B
Approach Vol, veh/h		273			23			409			802	
Approach Delay, s/veh		35.1			26.0			13.3			12.4	
Approach LOS		D			C			B			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.2	57.9		27.6	6.0	58.0		27.6				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	7.0	53.0		58.0	6.0	54.0		58.0				
Max Q Clear Time (g_c+I1), s	3.8	5.3		22.5	3.6	9.6		3.5				
Green Ext Time (p_c), s	0.0	2.2		1.2	0.0	5.0		0.1				

Intersection Summary

HCM 6th Ctrl Delay	16.9
HCM 6th LOS	B

HCM 6th Signalized Intersection Summary
 15: Milliken Ave & I-10 WB Ramps/Ontario Mills Pkwy

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖↗	↑	↖	↖↗	↖↗	↖	↖↗	↑↑↑	↖	↖↗	↑↑↑	↖
Traffic Volume (veh/h)	46	39	37	450	39	238	65	420	92	92	823	199
Future Volume (veh/h)	46	39	37	450	39	238	65	420	92	92	823	199
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No		No		No		No		No		No
Adj Sat Flow, veh/h/ln	1425	1463	1730	1550	1786	1365	739	1632	1252	1588	1632	1561
Adj Flow Rate, veh/h	52	44	42	511	44	270	74	477	105	105	935	226
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	14	24	5	4	1	31	69	12	39	1	12	17
Cap, veh/h	80	117	117	458	711	242	232	2694	679	352	2413	609
Arrive On Green	0.03	0.08	0.08	0.16	0.21	0.21	0.34	0.96	0.96	0.12	0.43	0.43
Sat Flow, veh/h	2633	1463	1466	2864	3393	1157	1365	5612	1061	2933	5612	1323
Grp Volume(v), veh/h	52	44	42	511	44	270	74	477	105	105	935	226
Grp Sat Flow(s),veh/h/ln	1317	1463	1466	1432	1697	1157	683	1403	1061	1467	1403	1323
Q Serve(g_s), s	2.0	2.9	2.7	16.0	1.0	15.6	4.0	0.4	0.0	3.3	11.4	6.4
Cycle Q Clear(g_c), s	2.0	2.9	2.7	16.0	1.0	15.6	4.0	0.4	0.0	3.3	11.4	6.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	80	117	117	458	711	242	232	2694	679	352	2413	609
V/C Ratio(X)	0.65	0.38	0.36	1.12	0.06	1.11	0.32	0.18	0.15	0.30	0.39	0.37
Avail Cap(c_a), veh/h	184	234	235	458	848	289	232	2694	679	352	2413	609
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.90	0.90	0.90	1.00	1.00	1.00
Uniform Delay (d), s/veh	47.9	43.6	43.6	42.0	31.7	22.1	28.7	1.0	0.5	40.2	19.5	8.3
Incr Delay (d2), s/veh	8.4	2.0	1.8	77.3	0.0	89.1	0.7	0.1	0.4	0.5	0.5	1.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	1.1	1.0	10.5	0.4	10.1	0.6	0.1	0.1	1.2	3.7	2.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	56.3	45.6	45.4	119.3	31.7	111.1	29.4	1.2	0.9	40.6	20.0	10.0
LnGrp LOS	E	D	D	F	C	F	C	A	A	D	B	A
Approach Vol, veh/h		138			825			656			1266	
Approach Delay, s/veh		49.6			112.0			4.3			19.9	
Approach LOS		D			F			A			B	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	6.0	52.0	20.0	12.0	21.0	47.0	7.1	24.9				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	4.0	48.0	16.0	16.0	9.0	43.0	7.0	25.0				
Max Q Clear Time (g_c+1/3), s	4.0	2.4	18.0	4.9	6.0	13.4	4.0	17.6				
Green Ext Time (p_c), s	0.0	4.2	0.0	0.2	0.0	8.8	0.0	0.7				

Intersection Summary

HCM 6th Ctrl Delay	44.1
HCM 6th LOS	D

HCM 6th Signalized Intersection Summary

16: Milliken Ave & I-10 EB Ramps

11/03/2021



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↖↗	↖	↖↗	↑↑↑	↑↑↑	↖
Traffic Volume (veh/h)	341	293	93	235	1109	200
Future Volume (veh/h)	341	293	93	235	1109	200
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1475	1660	1051	1505	1519	958
Adj Flow Rate, veh/h	401	345	109	276	1305	235
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	10	10	44	21	20	60
Cap, veh/h	750	387	378	3338	2143	556
Arrive On Green	0.28	0.28	0.19	0.64	0.82	0.82
Sat Flow, veh/h	2726	1406	1942	5388	5439	812
Grp Volume(v), veh/h	401	345	109	276	1305	235
Grp Sat Flow(s),veh/h/ln	1363	1406	971	1294	1307	812
Q Serve(g_s), s	12.5	23.6	4.8	2.0	9.0	6.6
Cycle Q Clear(g_c), s	12.5	23.6	4.8	2.0	9.0	6.6
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	750	387	378	3338	2143	556
V/C Ratio(X)	0.53	0.89	0.29	0.08	0.61	0.42
Avail Cap(c_a), veh/h	927	478	378	3338	2143	556
HCM Platoon Ratio	1.00	1.00	1.00	1.00	2.00	2.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.87	0.87
Uniform Delay (d), s/veh	30.8	34.8	34.4	6.7	6.1	1.8
Incr Delay (d2), s/veh	0.6	16.1	0.4	0.0	1.1	2.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.1	18.3	1.1	0.5	1.6	1.4
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	31.4	50.9	34.8	6.7	7.2	3.9
LnGrp LOS	C	D	C	A	A	A
Approach Vol, veh/h	746			385	1540	
Approach Delay, s/veh	40.4			14.7	6.7	
Approach LOS	D			B	A	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		68.5		31.5	23.5	45.0
Change Period (Y+Rc), s		4.0		4.0	4.0	4.0
Max Green Setting (Gmax), s		58.0		34.0	13.0	41.0
Max Q Clear Time (g_c+I1), s		4.0		25.6	6.8	11.0
Green Ext Time (p_c), s		2.1		2.0	0.1	13.4
Intersection Summary						
HCM 6th Ctrl Delay			17.3			
HCM 6th LOS			B			

HCM 6th Signalized Intersection Summary

1: Highway 395 & Joshua St

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↖	↖	↖	↖↖	↖	↖	↖↖	↖
Traffic Volume (veh/h)	241	351	137	101	154	336	19	1309	9	29	537	82
Future Volume (veh/h)	241	351	137	101	154	336	19	1309	9	29	537	82
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1687	1786	1786	1528	1786	1519	1687	1716	1491	1395	1617	1716
Adj Flow Rate, veh/h	268	390	152	112	171	373	21	1454	10	32	597	91
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	1	1	1	13	1	20	1	6	22	23	13	6
Cap, veh/h	348	503	196	162	734	529	403	1499	581	35	724	343
Arrive On Green	0.41	0.41	0.41	0.41	0.41	0.41	0.25	0.46	0.46	0.03	0.24	0.24
Sat Flow, veh/h	821	1223	477	745	1786	1287	1606	3260	1264	1329	3073	1454
Grp Volume(v), veh/h	268	0	542	112	171	373	21	1454	10	32	597	91
Grp Sat Flow(s),veh/h/ln	821	0	1700	745	1786	1287	1606	1630	1264	1329	1537	1454
Q Serve(g_s), s	36.9	0.0	32.2	15.8	7.3	28.1	1.2	50.8	0.5	2.8	21.5	6.0
Cycle Q Clear(g_c), s	44.2	0.0	32.2	48.0	7.3	28.1	1.2	50.8	0.5	2.8	21.5	6.0
Prop In Lane	1.00		0.28	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	348	0	698	162	734	529	403	1499	581	35	724	343
VC Ratio(X)	0.77	0.00	0.78	0.69	0.23	0.71	0.05	0.97	0.02	0.91	0.82	0.27
Avail Cap(c_a), veh/h	348	0	698	162	734	529	403	1506	584	68	1420	672
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.8	0.0	29.8	51.3	22.4	28.6	33.2	30.8	17.2	56.7	42.4	36.4
Incr Delay (d2), s/veh	10.2	0.0	5.5	11.8	0.2	4.2	0.1	16.5	0.0	49.0	2.4	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.2	0.0	14.0	3.8	3.1	9.1	0.4	21.2	0.1	1.4	7.9	2.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	47.0	0.0	35.3	63.1	22.6	32.8	33.3	47.2	17.2	105.7	44.8	36.8
LnGrp LOS	D	A	D	E	C	C	C	D	B	F	D	D
Approach Vol, veh/h		810			656			1485			720	
Approach Delay, s/veh		39.2			35.3			46.8			46.5	
Approach LOS		D			D			D			D	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.1	57.7		52.0	33.3	31.5		52.0				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	6.0	54.0		48.0	6.0	54.0		48.0				
Max Q Clear Time (g_c+I1), s	4.8	52.8		46.2	3.2	23.5		50.0				
Green Ext Time (p_c), s	0.0	0.9		1.0	0.0	4.0		0.0				

Intersection Summary

HCM 6th Ctrl Delay	43.0
HCM 6th LOS	D

Intersection						
Int Delay, s/veh	3.4					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		∩	
Traffic Vol, veh/h	0	389	366	0	9	225
Future Vol, veh/h	0	389	366	0	9	225
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	0	25	23	0	1	22
Mvmt Flow	0	397	373	0	9	230

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	-	0	-	0	770 373
Stage 1	-	-	-	-	373 -
Stage 2	-	-	-	-	397 -
Critical Hdwy	-	-	-	-	6.41 6.42
Critical Hdwy Stg 1	-	-	-	-	5.41 -
Critical Hdwy Stg 2	-	-	-	-	5.41 -
Follow-up Hdwy	-	-	-	-	3.509 3.498
Pot Cap-1 Maneuver	0	-	-	0	370 631
Stage 1	0	-	-	0	699 -
Stage 2	0	-	-	0	681 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	-	370 631
Mov Cap-2 Maneuver	-	-	-	-	370 -
Stage 1	-	-	-	-	699 -
Stage 2	-	-	-	-	681 -

Approach	EB	WB	SB
HCM Control Delay, s	0	0	14.5
HCM LOS			B

Minor Lane/Major Mvmt	EBT	WBT	SBLn1
Capacity (veh/h)	-	-	614
HCM Lane V/C Ratio	-	-	0.389
HCM Control Delay (s)	-	-	14.5
HCM Lane LOS	-	-	B
HCM 95th %tile Q(veh)	-	-	1.8

Intersection												
Int Delay, s/veh	1.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↗			↕				
Traffic Vol, veh/h	150	248	0	0	366	31	0	0	0	0	0	0
Future Vol, veh/h	150	248	0	0	366	31	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	16965	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	92	92	95	95	92	92	92	95	92	95
Heavy Vehicles, %	24	23	2	2	23	42	2	2	2	2	2	2
Mvmt Flow	158	261	0	0	385	33	0	0	0	0	0	0

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	418	0	0
Stage 1	-	-	577
Stage 2	-	-	402
Critical Hdwy	4.34	-	6.42
Critical Hdwy Stg 1	-	-	5.42
Critical Hdwy Stg 2	-	-	5.42
Follow-up Hdwy	2.416	-	3.518
Pot Cap-1 Maneuver	1032	0	277
Stage 1	-	0	562
Stage 2	-	0	676
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1032	-	227
Mov Cap-2 Maneuver	-	-	227
Stage 1	-	-	461
Stage 2	-	-	676

Approach	EB	WB	NB
HCM Control Delay, s	3.4	0	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	WBT	WBR
Capacity (veh/h)	-	1032	-	-	-
HCM Lane V/C Ratio	-	0.153	-	-	-
HCM Control Delay (s)	0	9.1	0	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	-	0.5	-	-	-

Intersection						
Int Delay, s/veh	28.9					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	Y			↑	↑	
Traffic Vol, veh/h	122	125	351	337	92	46
Future Vol, veh/h	122	125	351	337	92	46
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	6	10	20	48	38	19
Mvmt Flow	124	128	358	344	94	47

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	1178	118	141	0	0
Stage 1	118	-	-	-	-
Stage 2	1060	-	-	-	-
Critical Hdwy	6.46	6.3	4.3	-	-
Critical Hdwy Stg 1	5.46	-	-	-	-
Critical Hdwy Stg 2	5.46	-	-	-	-
Follow-up Hdwy	3.554	3.39	2.38	-	-
Pot Cap-1 Maneuver	207	913	1339	-	-
Stage 1	897	-	-	-	-
Stage 2	327	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	138	913	1339	-	-
Mov Cap-2 Maneuver	138	-	-	-	-
Stage 1	600	-	-	-	-
Stage 2	327	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	113.2	4.4	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1339	-	242	-	-
HCM Lane V/C Ratio	0.267	-	1.041	-	-
HCM Control Delay (s)	8.7	0	113.2	-	-
HCM Lane LOS	A	A	F	-	-
HCM 95th %tile Q(veh)	1.1	-	10.4	-	-

HCM 6th Signalized Intersection Summary

5: I-15 SB On-ramp/I-15 SB Off-ramp & Foothill Blvd/Foothill Blvd

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↗		↑↑↑	↗				↘	↕	↗
Traffic Volume (veh/h)	0	2602	879	0	2018	469	0	0	0	212	0	506
Future Volume (veh/h)	0	2602	879	0	2018	469	0	0	0	212	0	506
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1786	1786	0	1772	1772				1716	1772	1702
Adj Flow Rate, veh/h	0	2891	0	0	2242	0				157	0	646
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90				0.90	0.90	0.90
Percent Heavy Veh, %	0	1	1	0	2	2				6	2	7
Cap, veh/h	0	3374		0	3347					403	0	711
Arrive On Green	0.00	0.69	0.00	0.00	0.92	0.00				0.25	0.00	0.25
Sat Flow, veh/h	0	5036	1514	0	4997	1502				1634	0	2884
Grp Volume(v), veh/h	0	2891	0	0	2242	0				157	0	646
Grp Sat Flow(s),veh/h/ln	0	1625	1514	0	1612	1502				1634	0	1442
Q Serve(g_s), s	0.0	58.3	0.0	0.0	12.5	0.0				10.4	0.0	28.3
Cycle Q Clear(g_c), s	0.0	58.3	0.0	0.0	12.5	0.0				10.4	0.0	28.3
Prop In Lane	0.00		1.00	0.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	3374		0	3347					403	0	711
V/C Ratio(X)	0.00	0.86		0.00	0.67					0.39	0.00	0.91
Avail Cap(c_a), veh/h	0	3374		0	3347					453	0	799
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.33	1.33				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.00	0.00	0.62	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	15.1	0.0	0.0	2.1	0.0				40.8	0.0	47.6
Incr Delay (d2), s/veh	0.0	3.0	0.0	0.0	0.7	0.0				0.6	0.0	13.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	18.4	0.0	0.0	1.8	0.0				4.3	0.0	11.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	18.2	0.0	0.0	2.8	0.0				41.4	0.0	60.9
LnGrp LOS	A	B		A	A					D	A	E
Approach Vol, veh/h		2891	A		2242	A					803	
Approach Delay, s/veh		18.2			2.8						57.1	
Approach LOS		B			A						E	
Timer - Assigned Phs		2		4		6						
Phs Duration (G+Y+Rc), s		94.0		36.0		94.0						
Change Period (Y+Rc), s		4.0		4.0		4.0						
Max Green Setting (Gmax), s		86.0		36.0		86.0						
Max Q Clear Time (g_c+I1), s		60.3		30.3		14.5						
Green Ext Time (p_c), s		22.6		1.8		32.5						

Intersection Summary

HCM 6th Ctrl Delay 17.6
 HCM 6th LOS B

Notes

User approved volume balancing among the lanes for turning movement.
 Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th Signalized Intersection Summary

6: I-15 NB Off-ramp/I-15 NB On-ramp & Foothill Blvd /Foothill Blvd

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↑		↑↑↑	↑	↑	↑↓	↑			
Traffic Volume (veh/h)	0	2479	335	0	1430	869	1058	0	627	0	0	0
Future Volume (veh/h)	0	2479	335	0	1430	869	1058	0	627	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No		No		No		No				
Adj Sat Flow, veh/h/ln	0	1786	1674	0	1772	1786	1772	1772	1744			
Adj Flow Rate, veh/h	0	2724	0	0	1571	0	1377	0	459			
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91			
Percent Heavy Veh, %	0	1	9	0	2	1	2	2	4			
Cap, veh/h	0	2663		0	2642		1324	0	580			
Arrive On Green	0.00	0.55	0.00	0.00	0.55	0.00	0.39	0.00	0.39			
Sat Flow, veh/h	0	5036	1418	0	4997	1514	3375	0	1478			
Grp Volume(v), veh/h	0	2724	0	0	1571	0	1377	0	459			
Grp Sat Flow(s),veh/h/ln	0	1625	1418	0	1612	1514	1688	0	1478			
Q Serve(g_s), s	0.0	71.0	0.0	0.0	28.4	0.0	51.0	0.0	35.6			
Cycle Q Clear(g_c), s	0.0	71.0	0.0	0.0	28.4	0.0	51.0	0.0	35.6			
Prop In Lane	0.00		1.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	0	2663		0	2642		1324	0	580			
V/C Ratio(X)	0.00	1.02		0.00	0.59		1.04	0.00	0.79			
Avail Cap(c_a), veh/h	0	2663		0	2642		1324	0	580			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.00	0.37	0.00	0.00	1.00	0.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	0.0	29.5	0.0	0.0	19.8	0.0	39.5	0.0	34.8			
Incr Delay (d2), s/veh	0.0	17.1	0.0	0.0	1.0	0.0	35.8	0.0	7.4			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.0	30.6	0.0	0.0	10.7	0.0	27.1	0.0	13.7			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	46.6	0.0	0.0	20.8	0.0	75.3	0.0	42.2			
LnGrp LOS	A	F		A	C		F	A	D			
Approach Vol, veh/h		2724	A		1571	A		1836				
Approach Delay, s/veh		46.6			20.8			67.0				
Approach LOS		D			C			E				
Timer - Assigned Phs		2			6			8				
Phs Duration (G+Y+Rc), s		75.0			75.0			55.0				
Change Period (Y+Rc), s		4.0			4.0			4.0				
Max Green Setting (Gmax), s		71.0			71.0			51.0				
Max Q Clear Time (g_c+I1), s		73.0			30.4			53.0				
Green Ext Time (p_c), s		0.0			17.0			0.0				

Intersection Summary

HCM 6th Ctrl Delay 46.1
 HCM 6th LOS D

Notes

User approved volume balancing among the lanes for turning movement.
 Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th Signalized Intersection Summary
 7: Ontario Mills Dr./I-15 SB Ramps & Fourth St

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↗↘	↑↑↑	↗	↗↘	↑↑↑	↗	↗	↑↑	↗	↗	↑↑	↗
Traffic Volume (veh/h)	488	1308	56	89	948	223	186	240	77	103	150	405
Future Volume (veh/h)	488	1308	56	89	948	223	186	240	77	103	150	405
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1513	1730	1772	1588	1660	1589	1647	1786	1786	1342	1786	1758
Adj Flow Rate, veh/h	493	1321	57	90	958	225	188	242	78	104	152	409
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	7	5	2	1	10	15	4	1	1	27	1	3
Cap, veh/h	557	2379	757	414	2019	600	218	333	148	191	194	917
Arrive On Green	0.20	0.50	0.50	0.28	0.89	0.89	0.14	0.10	0.10	0.15	0.11	0.11
Sat Flow, veh/h	2795	4722	1502	2933	4531	1347	1569	3393	1514	1278	1786	2979
Grp Volume(v), veh/h	493	1321	57	90	958	225	188	242	78	104	152	409
Grp Sat Flow(s),veh/h/ln	1397	1574	1502	1467	1510	1347	1569	1697	1514	1278	1786	1490
Q Serve(g_s), s	22.3	25.1	2.5	3.1	5.2	2.2	15.2	9.0	6.4	9.8	10.8	9.7
Cycle Q Clear(g_c), s	22.3	25.1	2.5	3.1	5.2	2.2	15.2	9.0	6.4	9.8	10.8	9.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	557	2379	757	414	2019	600	218	333	148	191	194	917
V/C Ratio(X)	0.89	0.56	0.08	0.22	0.47	0.37	0.86	0.73	0.53	0.54	0.78	0.45
Avail Cap(c_a), veh/h	699	2379	757	414	2019	600	320	587	262	202	227	972
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.87	0.87	0.87	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	50.6	22.2	16.6	41.2	4.2	1.6	54.8	56.9	55.8	51.2	56.4	18.5
Incr Delay (d2), s/veh	11.1	0.9	0.2	0.2	0.7	1.6	14.9	3.0	2.9	2.7	14.1	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/lr	8.3	8.7	0.9	1.1	1.2	1.0	6.9	4.0	2.5	3.3	5.6	3.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	61.7	23.2	16.8	41.4	4.9	3.1	69.7	60.0	58.6	53.9	70.6	18.9
LnGrp LOS	E	C	B	D	A	A	E	E	E	D	E	B
Approach Vol, veh/h		1871			1273			508			665	
Approach Delay, s/veh		33.1			7.2			63.4			36.2	
Approach LOS		C			A			E			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	31.8	69.0	21.5	17.6	29.4	61.4	22.9	16.2				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	30.0	65.0	26.0	16.0	32.0	40.0	20.0	22.0				
Max Q Clear Time (g_c+1/3), s	15.0	27.1	17.2	12.8	24.3	7.2	11.8	11.0				
Green Ext Time (p_c), s	0.0	10.7	0.3	0.8	1.1	7.6	0.1	1.2				

Intersection Summary

HCM 6th Ctrl Delay	29.5
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

HCM 6th Signalized Intersection Summary

8: Fourth St & I-15 NB Ramps

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔	↑↑↑	↗	↗	↑↑↑		↗	↑↑		↗	↖	↖↖
Traffic Volume (veh/h)	699	726	64	21	460	96	60	43	44	145	32	739
Future Volume (veh/h)	699	726	64	21	460	96	60	43	44	145	32	739
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No		No		No		No		No		No
Adj Sat Flow, veh/h/ln	1786	1575	1702	1702	1603	1603	1702	1786	1786	1421	1758	1702
Adj Flow Rate, veh/h	728	756	67	22	479	100	62	45	46	175	0	770
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	1	16	7	7	14	14	7	1	1	27	3	7
Cap, veh/h	1185	1687	566	532	1318	268	99	104	93	257	0	1310
Arrive On Green	0.60	0.66	0.66	0.33	0.36	0.36	0.06	0.06	0.06	0.09	0.00	0.09
Sat Flow, veh/h	3300	4301	1442	1621	3645	743	1621	1697	1514	2707	0	2884
Grp Volume(v), veh/h	728	756	67	22	381	198	62	45	46	175	0	770
Grp Sat Flow(s),veh/h/ln	1650	1434	1442	1621	1459	1470	1621	1697	1514	1353	0	1442
Q Serve(g_s), s	18.2	11.2	2.3	1.2	12.5	12.9	4.9	3.3	3.8	8.1	0.0	0.0
Cycle Q Clear(g_c), s	18.2	11.2	2.3	1.2	12.5	12.9	4.9	3.3	3.8	8.1	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.51	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	1185	1687	566	532	1055	531	99	104	93	257	0	1310
VC Ratio(X)	0.61	0.45	0.12	0.04	0.36	0.37	0.62	0.43	0.50	0.68	0.00	0.59
Avail Cap(c_a), veh/h	1185	1687	566	532	1055	531	511	535	477	333	0	1391
HCM Platoon Ratio	1.67	1.67	1.67	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.87	0.87	0.87	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	20.3	15.5	14.0	29.7	30.5	30.6	59.6	58.8	59.1	56.9	0.0	26.4
Incr Delay (d2), s/veh	0.8	0.8	0.4	0.0	1.0	2.0	6.3	2.8	4.1	3.7	0.0	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.2	3.0	0.8	0.5	4.3	4.6	2.2	1.5	1.6	2.9	0.0	8.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	21.1	16.3	14.4	29.7	31.4	32.6	65.8	61.7	63.1	60.7	0.0	27.0
LnGrp LOS	C	B	B	C	C	C	E	E	E	E	A	C
Approach Vol, veh/h		1551			601			153			945	
Approach Delay, s/veh		18.5			31.8			63.8			33.2	
Approach LOS		B			C			E			C	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	46.7	55.0		16.3	50.7	51.0		12.0				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	60.0	51.0		16.0	10.0	47.0		41.0				
Max Q Clear Time (g_c+1/3), s	13.2	13.2		10.1	20.2	14.9		6.9				
Green Ext Time (p_c), s	0.0	5.3		2.2	0.0	3.4		0.7				

Intersection Summary

HCM 6th Ctrl Delay	27.4
HCM 6th LOS	C

Notes

- User approved pedestrian interval to be less than phase max green.
- User approved volume balancing among the lanes for turning movement.

HCM 6th Signalized Intersection Summary
 9: Milliken Ave & I-210 WB On-ramp/I-210 WB Off-ramp

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↘	↔	↗	↘↗	↑↑↑			↑↑↑	
Traffic Volume (veh/h)	0	0	0	167	7	87	192	696	0	0	529	75
Future Volume (veh/h)	0	0	0	167	7	87	192	696	0	0	529	75
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach				No		No		No				No
Adj Sat Flow, veh/h/ln				1554	1786	1688	1500	1786	0	0	1786	1786
Adj Flow Rate, veh/h				205	0	63	200	725	0	0	551	78
Peak Hour Factor				0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %				11	1	8	8	1	0	0	1	1
Cap, veh/h				390	0	189	374	3583	0	0	2307	322
Arrive On Green				0.13	0.00	0.13	0.27	1.00	0.00	0.00	0.53	0.53
Sat Flow, veh/h				2960	0	1430	2772	5036	0	0	4485	603
Grp Volume(v), veh/h				205	0	63	200	725	0	0	412	217
Grp Sat Flow(s),veh/h/ln				1480	0	1430	1386	1625	0	0	1625	1677
Q Serve(g_s), s				3.9	0.0	2.4	3.7	0.0	0.0	0.0	4.1	4.2
Cycle Q Clear(g_c), s				3.9	0.0	2.4	3.7	0.0	0.0	0.0	4.1	4.2
Prop In Lane				1.00		1.00	1.00		0.00	0.00		0.36
Lane Grp Cap(c), veh/h				390	0	189	374	3583	0	0	1734	895
V/C Ratio(X)				0.53	0.00	0.33	0.54	0.20	0.00	0.00	0.24	0.24
Avail Cap(c_a), veh/h				444	0	215	374	3583	0	0	1734	895
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.93	0.93	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				24.3	0.0	23.7	20.3	0.0	0.0	0.0	7.5	7.5
Incr Delay (d2), s/veh				1.1	0.0	1.0	1.4	0.1	0.0	0.0	0.3	0.6
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				1.3	0.0	0.8	1.1	0.0	0.0	0.0	1.2	1.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				25.4	0.0	24.7	21.7	0.1	0.0	0.0	7.8	8.1
LnGrp LOS				C	A	C	C	A	A	A	A	A
Approach Vol, veh/h						268		925			629	
Approach Delay, s/veh						25.2		4.8			7.9	
Approach LOS						C		A			A	
Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		48.1			12.1	36.0		11.9				
Change Period (Y+Rc), s		4.0			4.0	4.0		4.0				
Max Green Setting (Gmax), s		43.0			7.0	32.0		9.0				
Max Q Clear Time (g_c+I1), s		2.0			5.7	6.2		5.9				
Green Ext Time (p_c), s		5.9			0.1	4.3		0.3				

Intersection Summary

HCM 6th Ctrl Delay	8.9
HCM 6th LOS	A

Notes

User approved volume balancing among the lanes for turning movement.

HCM 6th Signalized Intersection Summary
 10: Milliken Ave & I-210 EB Off-ramp/I-210 EB On-ramp

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	212	9	176	0	0	0	0	676	286	131	565	0
Future Volume (veh/h)	212	9	176	0	0	0	0	676	286	131	565	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No						No			No		
Adj Sat Flow, veh/h/ln	1660	1786	1702				0	1758	1758	1575	1758	0
Adj Flow Rate, veh/h	284	0	126				0	712	301	138	595	0
Peak Hour Factor	0.95	0.95	0.95				0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	1	7				0	3	3	2	3	0
Cap, veh/h	421	0	192				0	1882	786	291	3520	0
Arrive On Green	0.13	0.00	0.13				0.00	0.57	0.57	0.20	1.00	0.00
Sat Flow, veh/h	3162	0	1442				0	3480	1386	2910	4957	0
Grp Volume(v), veh/h	284	0	126				0	685	328	138	595	0
Grp Sat Flow(s),veh/h/ln	1581	0	1442				0	1600	1508	1455	1600	0
Q Serve(g_s), s	5.1	0.0	5.0				0.0	7.1	7.2	2.5	0.0	0.0
Cycle Q Clear(g_c), s	5.1	0.0	5.0				0.0	7.1	7.2	2.5	0.0	0.0
Prop In Lane	1.00		1.00				0.00		0.92	1.00		0.00
Lane Grp Cap(c), veh/h	421	0	192				0	1813	855	291	3520	0
V/C Ratio(X)	0.67	0.00	0.66				0.00	0.38	0.38	0.47	0.17	0.00
Avail Cap(c_a), veh/h	422	0	192				0	1813	855	291	3520	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	0.98	0.98	0.00
Uniform Delay (d), s/veh	24.8	0.0	24.7				0.0	7.2	7.2	22.6	0.0	0.0
Incr Delay (d2), s/veh	4.2	0.0	7.8				0.0	0.6	1.3	1.2	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	0.0	2.0				0.0	2.0	2.1	0.8	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	29.0	0.0	32.5				0.0	7.8	8.5	23.8	0.1	0.0
LnGrp LOS	C	A	C				A	A	A	C	A	A
Approach Vol, veh/h	410						1013			733		
Approach Delay, s/veh	30.1						8.0			4.6		
Approach LOS	C						A			A		
Timer - Assigned Phs	1	2	4	6								
Phs Duration (G+Y+Rc), s	30.0	38.0	12.0	48.0								
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0								
Max Green Setting (Gmax), s	30.0	34.0	8.0	44.0								
Max Q Clear Time (g_c+14), s	14.5	9.2	7.1	2.0								
Green Ext Time (p_c), s	0.1	7.7	0.2	4.7								

Intersection Summary

HCM 6th Ctrl Delay	11.0
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

HCM 6th Signalized Intersection Summary

11: Milliken Ave & Foothill Blvd

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖↗	↑↑↑	↖	↖↗	↑↑↑	↖	↖↗	↑↑↑	↖	↖↗	↑↑↑	↖
Traffic Volume (veh/h)	234	1590	96	239	928	143	234	630	382	163	218	87
Future Volume (veh/h)	234	1590	96	239	928	143	234	630	382	163	218	87
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1588	1786	1758	1588	1786	1772	1575	1772	1758	1588	1744	1772
Adj Flow Rate, veh/h	257	1747	105	263	1020	157	257	692	420	179	240	96
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	1	1	3	1	1	2	2	2	3	1	4	2
Cap, veh/h	271	1950	596	226	1875	578	179	2110	516	158	1611	508
Arrive On Green	0.09	0.40	0.40	0.08	0.38	0.38	0.06	0.35	0.35	0.05	0.34	0.34
Sat Flow, veh/h	2933	4876	1490	2933	4876	1502	2910	6095	1490	2933	4761	1502
Grp Volume(v), veh/h	257	1747	105	263	1020	157	257	692	420	179	240	96
Grp Sat Flow(s),veh/h/ln	1467	1625	1490	1467	1625	1502	1455	1524	1490	1467	1587	1502
Q Serve(g_s), s	11.3	43.6	5.9	10.0	21.2	9.3	8.0	10.9	33.4	7.0	4.6	5.9
Cycle Q Clear(g_c), s	11.3	43.6	5.9	10.0	21.2	9.3	8.0	10.9	33.4	7.0	4.6	5.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	271	1950	596	226	1875	578	179	2110	516	158	1611	508
VC Ratio(X)	0.95	0.90	0.18	1.17	0.54	0.27	1.44	0.33	0.81	1.13	0.15	0.19
Avail Cap(c_a), veh/h	271	1950	596	226	1875	578	179	2110	516	158	1611	508
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	58.7	36.5	25.2	60.0	31.1	27.5	61.0	31.3	38.7	61.5	30.0	30.4
Incr Delay (d2), s/veh	41.0	6.9	0.6	111.9	1.1	1.2	224.7	0.4	13.2	111.9	0.2	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.6	17.5	2.1	7.1	8.1	3.4	8.5	3.9	13.5	5.0	1.7	2.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	99.7	43.4	25.8	171.9	32.3	28.6	285.7	31.8	51.9	173.4	30.2	31.2
LnGrp LOS	F	D	C	F	C	C	F	C	D	F	C	C
Approach Vol, veh/h	2109			1440			1369			515		
Approach Delay, s/veh	49.4			57.4			85.6			80.2		
Approach LOS	D			E			F			F		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	4.0	56.0	12.0	48.0	16.0	54.0	11.0	49.0				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	10.0	52.0	8.0	44.0	12.0	50.0	7.0	45.0				
Max Q Clear Time (g_c+1.2), s	11.3	45.6	10.0	7.9	13.3	23.2	9.0	35.4				
Green Ext Time (p_c), s	0.0	5.0	0.0	1.8	0.0	7.7	0.0	4.0				

Intersection Summary

HCM 6th Ctrl Delay	63.5
HCM 6th LOS	E

HCM 6th Signalized Intersection Summary
12: Milliken Ave & Fourth St

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔	↑↑↑	↔	↔↔	↑↑↑	↔	↔↔	↑↑↑	↔	↔↔	↑↑↑	↔
Traffic Volume (veh/h)	274	931	325	350	514	116	542	1201	167	169	671	49
Future Volume (veh/h)	274	931	325	350	514	116	542	1201	167	169	671	49
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No		No		No		No		No		No
Adj Sat Flow, veh/h/ln	1588	1730	1758	1575	1744	1730	1588	1660	1646	1550	1688	1688
Adj Flow Rate, veh/h	280	950	332	357	524	118	553	1226	170	172	685	50
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	1	5	3	2	4	5	1	10	11	4	8	8
Cap, veh/h	188	1534	484	224	1607	495	264	1948	583	147	1685	121
Arrive On Green	0.06	0.32	0.32	0.08	0.34	0.34	0.09	0.34	0.34	0.05	0.30	0.30
Sat Flow, veh/h	2933	4722	1490	2910	4761	1466	2933	5709	1395	2864	5568	401
Grp Volume(v), veh/h	280	950	332	357	524	118	553	1226	170	172	534	201
Grp Sat Flow(s),veh/h/ln	1467	1574	1490	1455	1587	1466	1467	1427	1395	1432	1451	1615
Q Serve(g_s), s	5.0	13.2	15.1	6.0	6.4	4.5	7.0	14.0	6.3	4.0	7.6	7.7
Cycle Q Clear(g_c), s	5.0	13.2	15.1	6.0	6.4	4.5	7.0	14.0	6.3	4.0	7.6	7.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.25
Lane Grp Cap(c), veh/h	188	1534	484	224	1607	495	264	1948	583	147	1318	489
VC Ratio(X)	1.49	0.62	0.69	1.59	0.33	0.24	2.10	0.63	0.29	1.17	0.41	0.41
Avail Cap(c_a), veh/h	188	3216	1015	224	3303	1017	264	3741	1021	147	2686	996
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.4	22.2	22.8	35.9	19.2	18.6	35.4	21.5	15.0	36.9	21.6	21.6
Incr Delay (d2), s/veh	244.7	0.4	1.7	286.1	0.1	0.2	505.9	0.3	0.3	126.6	0.2	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	4.3	4.8	10.9	2.0	1.4	20.8	4.1	1.7	3.9	2.3	2.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	281.1	22.6	24.6	322.0	19.3	18.8	541.4	21.8	15.3	163.5	21.8	22.2
LnGrp LOS	F	C	C	F	B	B	F	C	B	F	C	C
Approach Vol, veh/h		1562			999			1949			907	
Approach Delay, s/veh		69.4			127.4			168.7			48.7	
Approach LOS		E			F			F			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	8.0	30.5	10.0	29.3	11.0	27.5	9.0	30.3				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	10.0	51.0	6.0	53.0	7.0	48.0	5.0	54.0				
Max Q Clear Time (g_c+115), s	10.0	16.0	8.0	17.1	9.0	9.7	7.0	8.4				
Green Ext Time (p_c), s	0.0	10.5	0.0	8.2	0.0	4.8	0.0	3.7				

Intersection Summary

HCM 6th Ctrl Delay	112.4
HCM 6th LOS	F

Notes

User approved pedestrian interval to be less than phase max green.

Intersection						
Int Delay, s/veh	0.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↗		↗↗↗	↗↗↗	↗
Traffic Vol, veh/h	0	32	0	1616	813	26
Future Vol, veh/h	0	32	0	1616	813	26
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	175
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	2	1	2	3	6	4
Mvmt Flow	0	33	0	1649	830	27

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	-	415	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	7.12	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	3.91	-
Pot Cap-1 Maneuver	0	503	0
Stage 1	0	-	0
Stage 2	0	-	0
Platoon blocked, %			
Mov Cap-1 Maneuver	-	503	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	12.7	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT EBLn1	SBT	SBR
Capacity (veh/h)	- 503	-	-
HCM Lane V/C Ratio	- 0.065	-	-
HCM Control Delay (s)	- 12.7	-	-
HCM Lane LOS	- B	-	-
HCM 95th %tile Q(veh)	- 0.2	-	-

HCM 6th Signalized Intersection Summary

14: Milliken Ave & 7th St

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↑↑↑		↖	↑↑↑	
Traffic Volume (veh/h)	140	3	44	12	0	22	136	1455	9	8	800	37
Future Volume (veh/h)	140	3	44	12	0	22	136	1455	9	8	800	37
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1687	1786	1786	1382	1800	1800	1620	1758	1758	1687	1716	1716
Adj Flow Rate, veh/h	141	3	44	12	0	22	137	1470	9	8	808	37
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	1	1	1	24	0	0	6	3	3	1	6	6
Cap, veh/h	265	14	211	214	0	225	165	3446	21	13	2760	126
Arrive On Green	0.15	0.15	0.15	0.15	0.00	0.15	0.11	0.70	0.70	0.01	0.60	0.60
Sat Flow, veh/h	1323	98	1431	1059	0	1525	1543	4922	30	1606	4591	210
Grp Volume(v), veh/h	141	0	47	12	0	22	137	956	523	8	549	296
Grp Sat Flow(s),veh/h/ln	1323	0	1528	1059	0	1525	1543	1600	1752	1606	1561	1678
Q Serve(g_s), s	8.6	0.0	2.2	0.8	0.0	1.0	7.2	10.6	10.6	0.4	7.1	7.1
Cycle Q Clear(g_c), s	9.6	0.0	2.2	3.1	0.0	1.0	7.2	10.6	10.6	0.4	7.1	7.1
Prop In Lane	1.00		0.94	1.00		1.00	1.00		0.02	1.00		0.12
Lane Grp Cap(c), veh/h	265	0	225	214	0	225	165	2240	1227	13	1878	1009
VC Ratio(X)	0.53	0.00	0.21	0.06	0.00	0.10	0.83	0.43	0.43	0.61	0.29	0.29
Avail Cap(c_a), veh/h	977	0	1048	784	0	1046	204	2240	1227	77	1878	1009
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.8	0.0	31.2	32.5	0.0	30.7	36.4	5.3	5.3	41.1	8.0	8.0
Incr Delay (d2), s/veh	1.7	0.0	0.5	0.1	0.0	0.2	20.4	0.6	1.1	38.7	0.4	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.8	0.0	0.8	0.2	0.0	0.4	3.5	2.3	2.7	0.3	1.9	2.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	36.5	0.0	31.6	32.6	0.0	30.8	56.8	5.9	6.4	79.9	8.4	8.8
LnGrp LOS	D	A	C	C	A	C	E	A	A	E	A	A
Approach Vol, veh/h		188			34			1616			853	
Approach Delay, s/veh		35.3			31.5			10.4			9.2	
Approach LOS		D			C			B			A	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	4.7	62.2		16.3	12.9	54.0		16.3				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	4.0	57.0		57.0	11.0	50.0		57.0				
Max Q Clear Time (g_c+I1), s	2.4	12.6		11.6	9.2	9.1		5.1				
Green Ext Time (p_c), s	0.0	12.2		0.7	0.1	5.5		0.2				

Intersection Summary

HCM 6th Ctrl Delay	12.0
HCM 6th LOS	B

HCM 6th Signalized Intersection Summary
 15: Milliken Ave & I-10 WB Ramps/Ontario Mills Pkwy

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖↗	↑	↖	↖↗	↖↗	↖	↖↗	↑↑↑	↖	↖↗	↑↑↑	↖
Traffic Volume (veh/h)	115	188	61	631	163	95	358	1235	459	390	955	371
Future Volume (veh/h)	115	188	61	631	163	95	358	1235	459	390	955	371
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No		No		No		No		No		No
Adj Sat Flow, veh/h/ln	1563	1758	1786	1563	1786	1098	1425	1674	1491	1588	1702	1716
Adj Flow Rate, veh/h	139	227	73	760	196	114	431	1488	553	470	1151	447
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Percent Heavy Veh, %	3	3	1	3	1	50	14	9	22	1	7	6
Cap, veh/h	192	234	202	674	1019	279	505	2303	800	293	1805	545
Arrive On Green	0.07	0.13	0.13	0.23	0.30	0.30	0.06	0.13	0.13	0.10	0.31	0.31
Sat Flow, veh/h	2887	1758	1514	2887	3393	931	2633	5757	1264	2933	5854	1454
Grp Volume(v), veh/h	139	227	73	760	196	114	431	1488	553	470	1151	447
Grp Sat Flow(s),veh/h/ln	1444	1758	1514	1444	1697	931	1317	1439	1264	1467	1463	1454
Q Serve(g_s), s	5.7	15.4	5.3	28.0	5.1	8.9	19.4	29.4	20.5	12.0	20.3	21.8
Cycle Q Clear(g_c), s	5.7	15.4	5.3	28.0	5.1	8.9	19.4	29.4	20.5	12.0	20.3	21.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	192	234	202	674	1019	279	505	2303	800	293	1805	545
VC Ratio(X)	0.73	0.97	0.36	1.13	0.19	0.41	0.85	0.65	0.69	1.60	0.64	0.82
Avail Cap(c_a), veh/h	601	234	202	674	1019	279	505	2303	800	293	1805	545
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.88	0.88	0.88	1.00	1.00	1.00
Uniform Delay (d), s/veh	54.9	51.7	47.4	46.0	31.2	19.4	54.5	44.0	27.2	54.0	35.7	18.4
Incr Delay (d2), s/veh	5.2	49.8	1.1	75.6	0.1	1.0	12.0	1.2	4.3	286.5	1.7	13.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	10.0	2.1	17.0	2.1	2.0	7.7	11.6	7.5	16.1	7.4	8.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	60.1	101.5	48.4	121.6	31.3	20.4	66.5	45.3	31.5	340.5	37.5	31.4
LnGrp LOS	E	F	D	F	C	C	E	D	C	F	D	C
Approach Vol, veh/h		439			1070			2472			2068	
Approach Delay, s/veh		79.6			94.3			45.9			105.0	
Approach LOS		E			F			D			F	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	6.0	52.0	32.0	20.0	27.0	41.0	12.0	40.0				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	12.0	48.0	28.0	16.0	23.0	37.0	25.0	19.0				
Max Q Clear Time (g_c+14.0), s	14.0	31.4	30.0	17.4	21.4	23.8	7.7	10.9				
Green Ext Time (p_c), s	0.0	11.7	0.0	0.0	0.3	7.9	0.4	1.0				

Intersection Summary

HCM 6th Ctrl Delay	77.1
HCM 6th LOS	E

HCM 6th Signalized Intersection Summary
 16: Milliken Ave & I-10 EB Ramps

11/03/2021



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↖↗	↗	↖↗	↑↑↑	↑↑↑	↗
Traffic Volume (veh/h)	410	156	139	1641	908	738
Future Volume (veh/h)	410	156	139	1641	908	738
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1550	1617	1176	1646	1744	1491
Adj Flow Rate, veh/h	423	161	143	1692	936	761
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	4	13	34	11	4	22
Cap, veh/h	508	243	183	4279	3828	1031
Arrive On Green	0.18	0.18	0.08	0.76	0.21	0.21
Sat Flow, veh/h	2864	1371	2172	5891	6243	1264
Grp Volume(v), veh/h	423	161	143	1692	936	761
Grp Sat Flow(s),veh/h/ln	1432	1371	1086	1415	1500	1264
Q Serve(g_s), s	17.1	13.1	7.7	12.5	15.6	36.3
Cycle Q Clear(g_c), s	17.1	13.1	7.7	12.5	15.6	36.3
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	508	243	183	4279	3828	1031
VC Ratio(X)	0.83	0.66	0.78	0.40	0.24	0.74
Avail Cap(c_a), veh/h	1193	571	652	4279	3828	1031
HCM Platoon Ratio	1.00	1.00	1.00	1.00	0.33	0.33
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.47	0.47
Uniform Delay (d), s/veh	47.6	46.0	53.8	5.1	23.3	11.8
Incr Delay (d2), s/veh	3.6	3.1	7.0	0.3	0.1	2.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.3	10.0	2.3	3.2	6.3	24.8
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	51.3	49.1	60.8	5.4	23.4	14.0
LnGrp LOS	D	D	E	A	C	B
Approach Vol, veh/h	584			1835	1697	
Approach Delay, s/veh	50.6			9.7	19.2	
Approach LOS	D			A	B	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		94.7		25.3	14.1	80.6
Change Period (Y+Rc), s		4.0		4.0	4.0	4.0
Max Green Setting (Gmax), s		62.0		50.0	36.0	22.0
Max Q Clear Time (g_c+I1), s		14.5		19.1	9.7	38.3
Green Ext Time (p_c), s		20.5		2.2	0.5	0.0
Intersection Summary						
HCM 6th Ctrl Delay			19.4			
HCM 6th LOS			B			

HCM 6th Signalized Intersection Summary

1: Highway 395 & Joshua St

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗	↗	↖	↗	↗	↖	↗	↗
Traffic Volume (veh/h)	358	519	203	109	158	355	23	2047	13	40	515	100
Future Volume (veh/h)	358	519	203	109	158	355	23	2047	13	40	515	100
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1687	1786	1786	1528	1786	1519	1687	1716	1491	1395	1617	1716
Adj Flow Rate, veh/h	398	577	226	121	176	394	26	2274	14	44	572	111
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	1	1	1	13	1	20	1	6	22	23	13	6
Cap, veh/h	409	606	237	82	886	639	303	1213	470	51	682	323
Arrive On Green	0.50	0.50	0.50	0.50	0.50	0.50	0.19	0.37	0.37	0.04	0.22	0.22
Sat Flow, veh/h	801	1221	478	584	1786	1287	1606	3260	1264	1329	3073	1454
Grp Volume(v), veh/h	398	0	803	121	176	394	26	2274	14	44	572	111
Grp Sat Flow(s),veh/h/ln	801	0	1700	584	1786	1287	1606	1630	1264	1329	1537	1454
Q Serve(g_s), s	56.9	0.0	58.2	5.8	7.1	28.6	1.7	48.0	0.9	4.2	22.9	8.3
Cycle Q Clear(g_c), s	64.0	0.0	58.2	64.0	7.1	28.6	1.7	48.0	0.9	4.2	22.9	8.3
Prop In Lane	1.00		0.28	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	409	0	844	82	886	639	303	1213	470	51	682	323
VC Ratio(X)	0.97	0.00	0.95	1.47	0.20	0.62	0.09	1.87	0.03	0.86	0.84	0.34
Avail Cap(c_a), veh/h	409	0	844	82	886	639	303	1213	470	62	1144	541
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.2	0.0	31.0	63.5	18.1	23.6	43.1	40.5	25.7	61.7	47.9	42.2
Incr Delay (d2), s/veh	37.1	0.0	20.2	266.0	0.1	1.8	0.1	396.5	0.0	60.9	2.8	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	17.3	0.0	27.8	8.8	3.0	8.9	0.7	84.7	0.3	2.2	8.7	2.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	76.3	0.0	51.2	329.5	18.3	25.4	43.3	437.0	25.7	122.6	50.8	42.9
LnGrp LOS	E	A	D	F	B	C	D	F	C	F	D	D
Approach Vol, veh/h		1201			691			2314			727	
Approach Delay, s/veh		59.5			76.8			430.0			53.9	
Approach LOS		E			E			F			D	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.0	52.0		68.0	28.3	32.6		68.0				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	6.0	48.0		64.0	6.0	48.0		64.0				
Max Q Clear Time (g_c+I1), s	6.2	50.0		66.0	3.7	24.9		66.0				
Green Ext Time (p_c), s	0.0	0.0		0.0	0.0	3.7		0.0				
Intersection Summary												
HCM 6th Ctrl Delay			234.9									
HCM 6th LOS			F									

Intersection						
Int Delay, s/veh	2.6					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		∩	
Traffic Vol, veh/h	0	564	438	0	19	169
Future Vol, veh/h	0	564	438	0	19	169
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	0	25	23	0	1	22
Mvmt Flow	0	576	447	0	19	172

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	-	0	-	0	1023 447
Stage 1	-	-	-	-	447 -
Stage 2	-	-	-	-	576 -
Critical Hdwy	-	-	-	-	6.41 6.42
Critical Hdwy Stg 1	-	-	-	-	5.41 -
Critical Hdwy Stg 2	-	-	-	-	5.41 -
Follow-up Hdwy	-	-	-	-	3.509 3.498
Pot Cap-1 Maneuver	0	-	-	0	262 572
Stage 1	0	-	-	0	646 -
Stage 2	0	-	-	0	564 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	-	262 572
Mov Cap-2 Maneuver	-	-	-	-	262 -
Stage 1	-	-	-	-	646 -
Stage 2	-	-	-	-	564 -

Approach	EB	WB	SB
HCM Control Delay, s	0	0	16.2
HCM LOS			C

Minor Lane/Major Mvmt	EBT	WBT	SBLn1
Capacity (veh/h)	-	-	511
HCM Lane V/C Ratio	-	-	0.375
HCM Control Delay (s)	-	-	16.2
HCM Lane LOS	-	-	C
HCM 95th %tile Q(veh)	-	-	1.7

Intersection												
Int Delay, s/veh	2.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↗			↕				
Traffic Vol, veh/h	245	357	0	0	438	46	0	0	0	0	0	0
Future Vol, veh/h	245	357	0	0	438	46	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	16965	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	92	92	95	95	92	92	92	95	92	95
Heavy Vehicles, %	24	23	2	2	23	42	2	2	2	2	2	2
Mvmt Flow	258	376	0	0	461	48	0	0	0	0	0	0

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	509	0	-
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	4.34	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	2.416	-	-
Pot Cap-1 Maneuver	952	0	0
Stage 1	-	0	0
Stage 2	-	0	0
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	952	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	4.1	0	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	WBT	WBR
Capacity (veh/h)	-	952	-	-	-
HCM Lane V/C Ratio	-	0.271	-	-	-
HCM Control Delay (s)	0	10.2	0	-	-
HCM Lane LOS	A	B	A	-	-
HCM 95th %tile Q(veh)	-	1.1	-	-	-

Intersection						
Int Delay, s/veh	43					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	Y ^w			↑	↑	
Traffic Vol, veh/h	172	198	257	246	106	217
Future Vol, veh/h	172	198	257	246	106	217
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	6	10	20	48	38	19
Mvmt Flow	176	202	262	251	108	221

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	994	219	329	0	-	0
Stage 1	219	-	-	-	-	-
Stage 2	775	-	-	-	-	-
Critical Hdwy	6.46	6.3	4.3	-	-	-
Critical Hdwy Stg 1	5.46	-	-	-	-	-
Critical Hdwy Stg 2	5.46	-	-	-	-	-
Follow-up Hdwy	3.554	3.39	2.38	-	-	-
Pot Cap-1 Maneuver	267	801	1136	-	-	-
Stage 1	808	-	-	-	-	-
Stage 2	447	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	195	801	1136	-	-	-
Mov Cap-2 Maneuver	195	-	-	-	-	-
Stage 1	591	-	-	-	-	-
Stage 2	447	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	132.7	4.7	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1136	-	328	-	-
HCM Lane V/C Ratio	0.231	-	1.151	-	-
HCM Control Delay (s)	9.1	0	132.7	-	-
HCM Lane LOS	A	A	F	-	-
HCM 95th %tile Q(veh)	0.9	-	15.4	-	-

HCM 6th Signalized Intersection Summary

5: I-15 SB On-ramp/I-15 SB Off-ramp & Foothill Blvd/Foothill Blvd

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↗		↑↑↑	↗				↘	↕	↗
Traffic Volume (veh/h)	0	1384	816	0	1186	535	0	0	0	507	0	649
Future Volume (veh/h)	0	1384	816	0	1186	535	0	0	0	507	0	649
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1786	1786	0	1772	1772				1716	1772	1702
Adj Flow Rate, veh/h	0	1538	0	0	1318	0				812	0	454
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90				0.90	0.90	0.90
Percent Heavy Veh, %	0	1	1	0	2	2				6	2	7
Cap, veh/h	0	3088		0	3064					908	0	401
Arrive On Green	0.00	0.63	0.00	0.00	1.00	0.00				0.28	0.00	0.28
Sat Flow, veh/h	0	5036	1514	0	4997	1502				3268	0	1442
Grp Volume(v), veh/h	0	1538	0	0	1318	0				812	0	454
Grp Sat Flow(s),veh/h/ln	0	1625	1514	0	1612	1502				1634	0	1442
Q Serve(g_s), s	0.0	15.2	0.0	0.0	0.0	0.0				21.5	0.0	25.0
Cycle Q Clear(g_c), s	0.0	15.2	0.0	0.0	0.0	0.0				21.5	0.0	25.0
Prop In Lane	0.00		1.00	0.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	3088		0	3064					908	0	401
V/C Ratio(X)	0.00	0.50		0.00	0.43					0.89	0.00	1.13
Avail Cap(c_a), veh/h	0	3088		0	3064					908	0	401
HCM Platoon Ratio	1.00	1.00	1.00	1.00	2.00	2.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.00	0.00	0.24	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	8.8	0.0	0.0	0.0	0.0				31.2	0.0	32.5
Incr Delay (d2), s/veh	0.0	0.6	0.0	0.0	0.1	0.0				11.3	0.0	86.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	4.2	0.0	0.0	0.0	0.0				9.5	0.0	17.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	9.4	0.0	0.0	0.1	0.0				42.6	0.0	119.0
LnGrp LOS	A	A		A	A					D	A	F
Approach Vol, veh/h		1538	A		1318	A					1266	
Approach Delay, s/veh		9.4			0.1						70.0	
Approach LOS		A			A						E	
Timer - Assigned Phs		2		4		6						
Phs Duration (G+Y+Rc), s		61.0		29.0		61.0						
Change Period (Y+Rc), s		4.0		4.0		4.0						
Max Green Setting (Gmax), s		57.0		25.0		57.0						
Max Q Clear Time (g_c+I1), s		17.2		27.0		2.0						
Green Ext Time (p_c), s		13.7		0.0		11.4						

Intersection Summary

HCM 6th Ctrl Delay	25.0
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th Signalized Intersection Summary

6: I-15 NB Off-ramp/I-15 NB On-ramp & Foothill Blvd /Foothill Blvd

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↑		↑↑↑	↑	↑	↑	↑			
Traffic Volume (veh/h)	0	1620	270	0	1510	826	211	0	138	0	0	0
Future Volume (veh/h)	0	1620	270	0	1510	826	211	0	138	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No		No		No		No				
Adj Sat Flow, veh/h/ln	0	1786	1674	0	1772	1786	1772	1772	1744			
Adj Flow Rate, veh/h	0	1780	0	0	1659	0	279	0	101			
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91			
Percent Heavy Veh, %	0	1	9	0	2	1	2	2	4			
Cap, veh/h	0	3873		0	3842		394	0	173			
Arrive On Green	0.00	1.00	0.00	0.00	0.79	0.00	0.12	0.00	0.12			
Sat Flow, veh/h	0	5036	1418	0	4997	1514	3375	0	1478			
Grp Volume(v), veh/h	0	1780	0	0	1659	0	279	0	101			
Grp Sat Flow(s),veh/h/ln	0	1625	1418	0	1612	1514	1688	0	1478			
Q Serve(g_s), s	0.0	0.0	0.0	0.0	9.7	0.0	7.2	0.0	5.8			
Cycle Q Clear(g_c), s	0.0	0.0	0.0	0.0	9.7	0.0	7.2	0.0	5.8			
Prop In Lane	0.00		1.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	0	3873		0	3842		394	0	173			
V/C Ratio(X)	0.00	0.46		0.00	0.43		0.71	0.00	0.59			
Avail Cap(c_a), veh/h	0	3873		0	3842		1913	0	837			
HCM Platoon Ratio	1.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.00	0.74	0.00	0.00	1.00	0.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	0.0	0.0	0.0	0.0	2.9	0.0	38.3	0.0	37.7			
Incr Delay (d2), s/veh	0.0	0.3	0.0	0.0	0.4	0.0	2.3	0.0	3.1			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.0	0.1	0.0	0.0	2.0	0.0	3.0	0.0	2.2			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.3	0.0	0.0	3.3	0.0	40.6	0.0	40.8			
LnGrp LOS	A	A		A	A		D	A	D			
Approach Vol, veh/h		1780	A		1659	A		380				
Approach Delay, s/veh		0.3			3.3			40.7				
Approach LOS		A			A			D				
Timer - Assigned Phs		2			6			8				
Phs Duration (G+Y+Rc), s		75.5			75.5			14.5				
Change Period (Y+Rc), s		4.0			4.0			4.0				
Max Green Setting (Gmax), s		31.0			31.0			51.0				
Max Q Clear Time (g_c+I1), s		2.0			11.7			9.2				
Green Ext Time (p_c), s		17.0			12.1			1.3				

Intersection Summary

HCM 6th Ctrl Delay	5.6
HCM 6th LOS	A

Notes

User approved volume balancing among the lanes for turning movement.

Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th Signalized Intersection Summary

7: Ontario Mills Dr./I-15 SB Ramps & Fourth St

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔	↑↑↑	↗	↔↔	↑↑↑	↗	↔	↑↑	↗	↔	↑↑	↗
Traffic Volume (veh/h)	546	1684	76	99	1047	211	132	138	27	115	160	447
Future Volume (veh/h)	546	1684	76	99	1047	211	132	138	27	115	160	447
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1513	1730	1772	1588	1660	1589	1647	1786	1786	1342	1786	1758
Adj Flow Rate, veh/h	552	1701	77	100	1058	213	133	139	27	116	162	452
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	7	5	2	1	10	15	4	1	1	27	1	3
Cap, veh/h	618	2525	803	405	2047	609	161	222	99	197	209	1006
Arrive On Green	0.22	0.53	0.53	0.28	0.90	0.90	0.10	0.07	0.07	0.15	0.12	0.12
Sat Flow, veh/h	2795	4722	1502	2933	4531	1347	1569	3393	1514	1278	1786	2979
Grp Volume(v), veh/h	552	1701	77	100	1058	213	133	139	27	116	162	452
Grp Sat Flow(s),veh/h/ln	1397	1574	1502	1467	1510	1347	1569	1697	1514	1278	1786	1490
Q Serve(g_s), s	24.9	34.1	3.3	3.4	5.5	1.8	10.8	5.2	2.2	11.0	11.5	11.0
Cycle Q Clear(g_c), s	24.9	34.1	3.3	3.4	5.5	1.8	10.8	5.2	2.2	11.0	11.5	11.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	618	2525	803	405	2047	609	161	222	99	197	209	1006
V/C Ratio(X)	0.89	0.67	0.10	0.25	0.52	0.35	0.83	0.63	0.27	0.59	0.78	0.45
Avail Cap(c_a), veh/h	763	2525	803	405	2047	609	235	431	192	211	254	1082
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.85	0.85	0.85	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	49.2	22.0	14.8	41.8	3.7	1.3	57.2	59.2	57.8	51.1	55.8	18.5
Incr Delay (d2), s/veh	11.2	1.5	0.2	0.3	0.8	1.3	14.2	2.9	1.5	3.8	11.6	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/lrθ	3	11.7	1.2	1.2	1.2	0.9	4.9	2.3	0.9	3.7	5.8	3.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	60.4	23.5	15.1	42.1	4.5	2.7	71.4	62.1	59.3	54.9	67.4	18.8
LnGrp LOS	E	C	B	D	A	A	E	E	E	D	E	B
Approach Vol, veh/h	2330			1371			299			730		
Approach Delay, s/veh	31.9			7.0			66.0			35.3		
Approach LOS	C			A			E			D		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	31.5	73.0	16.9	18.7	32.2	62.2	23.5	12.0				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	69.0	69.0	19.0	18.0	35.0	42.0	21.0	16.0				
Max Q Clear Time (g_c+1/4), s	36.1	36.1	12.8	13.5	26.9	7.5	13.0	7.2				
Green Ext Time (p_c), s	0.1	14.9	0.2	1.2	1.3	8.6	0.2	0.5				

Intersection Summary

HCM 6th Ctrl Delay	27.4
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

HCM 6th Signalized Intersection Summary

8: Fourth St & I-15 NB Ramps

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔	↑↑↑	↗	↗	↑↑↑		↗	↑↑		↗	↖	↖↖
Traffic Volume (veh/h)	821	913	92	22	520	78	122	79	78	174	46	716
Future Volume (veh/h)	821	913	92	22	520	78	122	79	78	174	46	716
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No		No		No		No		No		No
Adj Sat Flow, veh/h/ln	1786	1575	1702	1702	1603	1603	1702	1786	1786	1421	1758	1702
Adj Flow Rate, veh/h	855	951	96	23	542	81	127	82	81	114	141	746
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	1	16	7	7	14	14	7	1	1	27	3	7
Cap, veh/h	1005	1687	566	444	1393	205	165	173	153	148	192	1193
Arrive On Green	0.51	0.66	0.66	0.27	0.36	0.36	0.10	0.10	0.10	0.11	0.11	0.11
Sat Flow, veh/h	3300	4301	1442	1621	3853	567	1621	1704	1507	1353	1758	2884
Grp Volume(v), veh/h	855	951	96	23	408	215	127	82	81	114	141	746
Grp Sat Flow(s),veh/h/ln	1650	1434	1442	1621	1459	1501	1621	1697	1515	1353	1758	1442
Q Serve(g_s), s	29.2	15.7	3.4	1.4	13.5	13.8	9.9	5.9	6.6	10.7	10.1	0.0
Cycle Q Clear(g_c), s	29.2	15.7	3.4	1.4	13.5	13.8	9.9	5.9	6.6	10.7	10.1	0.0
Prop In Lane	1.00		1.00	1.00		0.38	1.00		0.99	1.00		1.00
Lane Grp Cap(c), veh/h	1005	1687	566	444	1055	543	165	173	154	148	192	1193
VC Ratio(X)	0.85	0.56	0.17	0.05	0.39	0.40	0.77	0.47	0.53	0.77	0.73	0.63
Avail Cap(c_a), veh/h	1005	1687	566	444	1055	543	511	535	478	167	216	1233
HCM Platoon Ratio	1.67	1.67	1.67	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.77	0.77	0.77	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	29.4	16.3	14.2	34.8	30.8	30.9	56.9	55.1	55.4	56.3	56.1	30.1
Incr Delay (d2), s/veh	5.6	1.1	0.5	0.0	1.1	2.2	7.4	2.0	2.8	17.8	10.8	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	3.9	1.1	0.5	4.7	5.1	4.4	2.6	2.6	4.3	5.0	9.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	34.9	17.4	14.7	34.8	31.9	33.1	64.3	57.1	58.2	74.1	66.9	31.1
LnGrp LOS	C	B	B	C	C	C	E	E	E	E	E	C
Approach Vol, veh/h		1902			646			290			1001	
Approach Delay, s/veh		25.1			32.4			60.6			41.0	
Approach LOS		C			C			E			D	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	39.6	55.0		18.2	43.6	51.0		17.2				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	60.0	51.0		16.0	10.0	47.0		41.0				
Max Q Clear Time (g_c+1/3), s	13.4	17.7		12.7	31.2	15.8		11.9				
Green Ext Time (p_c), s	0.0	7.0		1.5	0.0	3.7		1.3				

Intersection Summary

HCM 6th Ctrl Delay	33.2
HCM 6th LOS	C

Notes

- User approved pedestrian interval to be less than phase max green.
- User approved volume balancing among the lanes for turning movement.

HCM 6th Signalized Intersection Summary
 9: Milliken Ave & I-210 WB On-ramp/I-210 WB Off-ramp

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↘ ↙	↔	↗	↘ ↙	↕			↕	
Traffic Volume (veh/h)	0	0	0	109	11	375	79	812	0	0	647	212
Future Volume (veh/h)	0	0	0	109	11	375	79	812	0	0	647	212
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach				No		No		No				No
Adj Sat Flow, veh/h/ln				1554	1786	1688	1500	1786	0	0	1786	1786
Adj Flow Rate, veh/h				80	0	435	82	846	0	0	674	221
Peak Hour Factor				0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %				11	1	8	8	1	0	0	1	1
Cap, veh/h				280	0	542	124	3519	0	0	2307	745
Arrive On Green				0.19	0.00	0.19	0.09	1.00	0.00	0.00	0.63	0.63
Sat Flow, veh/h				1480	0	2860	2772	5036	0	0	3808	1177
Grp Volume(v), veh/h				80	0	435	82	846	0	0	599	296
Grp Sat Flow(s),veh/h/ln				1480	0	1430	1386	1625	0	0	1625	1574
Q Serve(g_s), s				4.2	0.0	13.1	2.6	0.0	0.0	0.0	7.5	7.6
Cycle Q Clear(g_c), s				4.2	0.0	13.1	2.6	0.0	0.0	0.0	7.5	7.6
Prop In Lane				1.00		1.00	1.00		0.00	0.00		0.75
Lane Grp Cap(c), veh/h				280	0	542	124	3519	0	0	2056	996
V/C Ratio(X)				0.29	0.00	0.80	0.66	0.24	0.00	0.00	0.29	0.30
Avail Cap(c_a), veh/h				576	0	1112	228	3519	0	0	2056	996
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.88	0.88	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				31.3	0.0	34.9	40.3	0.0	0.0	0.0	7.4	7.5
Incr Delay (d2), s/veh				0.6	0.0	2.8	5.2	0.1	0.0	0.0	0.4	0.8
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				1.5	0.0	4.6	0.9	0.0	0.0	0.0	2.4	2.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				31.8	0.0	37.7	45.5	0.1	0.0	0.0	7.8	8.2
LnGrp LOS				C	A	D	D	A	A	A	A	A
Approach Vol, veh/h						515		928			895	
Approach Delay, s/veh						36.8		4.2			7.9	
Approach LOS						D		A			A	
Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		69.0			8.0	60.9		21.0				
Change Period (Y+Rc), s		4.0			4.0	4.0		4.0				
Max Green Setting (Gmax), s		47.0			7.4	35.6		35.0				
Max Q Clear Time (g_c+I1), s		2.0			4.6	9.6		15.1				
Green Ext Time (p_c), s		7.3			0.0	6.7		2.0				

Intersection Summary

HCM 6th Ctrl Delay	12.8
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

HCM 6th Signalized Intersection Summary
 10: Milliken Ave & I-210 EB Off-ramp/I-210 EB On-ramp

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	547	34	286	0	0	0	0	344	89	356	399	0
Future Volume (veh/h)	547	34	286	0	0	0	0	344	89	356	399	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No					No		No			
Adj Sat Flow, veh/h/ln	1660	1786	1702				0	1758	1758	1575	1758	0
Adj Flow Rate, veh/h	684	0	213				0	362	94	375	420	0
Peak Hour Factor	0.95	0.95	0.95				0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	1	7				0	3	3	2	3	0
Cap, veh/h	806	0	367				0	1404	350	714	3150	0
Arrive On Green	0.25	0.00	0.25				0.00	0.37	0.37	0.08	0.22	0.00
Sat Flow, veh/h	3162	0	1442				0	3987	956	2910	4957	0
Grp Volume(v), veh/h	684	0	213				0	300	156	375	420	0
Grp Sat Flow(s),veh/h/ln	1581	0	1442				0	1600	1586	1455	1600	0
Q Serve(g_s), s	18.5	0.0	11.6				0.0	5.9	6.2	11.1	6.4	0.0
Cycle Q Clear(g_c), s	18.5	0.0	11.6				0.0	5.9	6.2	11.1	6.4	0.0
Prop In Lane	1.00		1.00				0.00		0.60	1.00		0.00
Lane Grp Cap(c), veh/h	806	0	367				0	1173	581	714	3150	0
V/C Ratio(X)	0.85	0.00	0.58				0.00	0.26	0.27	0.53	0.13	0.00
Avail Cap(c_a), veh/h	1019	0	465				0	1173	581	714	3150	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	0.33	0.33	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	0.95	0.95	0.00
Uniform Delay (d), s/veh	31.9	0.0	29.3				0.0	19.9	20.0	36.3	14.6	0.0
Incr Delay (d2), s/veh	5.6	0.0	1.4				0.0	0.5	1.1	0.7	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.5	0.0	4.1				0.0	2.2	2.4	4.4	2.3	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	37.5	0.0	30.8				0.0	20.4	21.1	37.0	14.7	0.0
LnGrp LOS	D	A	C				A	C	C	D	B	A
Approach Vol, veh/h		897						456			795	
Approach Delay, s/veh		35.9						20.7			25.2	
Approach LOS		D						C			C	
Timer - Assigned Phs	1	2	4	6								
Phs Duration (G+Y+Rc), s	36.1	37.0	26.9	63.1								
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0								
Max Green Setting (Gmax), s	16.0	33.0	29.0	53.0								
Max Q Clear Time (g_c+1/3), s	13.5	8.2	20.5	8.4								
Green Ext Time (p_c), s	0.4	3.0	2.4	3.2								

Intersection Summary

HCM 6th Ctrl Delay	28.7
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

HCM 6th Signalized Intersection Summary

11: Milliken Ave & Foothill Blvd

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖↗	↑↑↑	↖	↖↗	↑↑↑	↖	↖↗	↑↑↑	↖	↖↗	↑↑↑	↖
Traffic Volume (veh/h)	447	1742	71	192	1788	315	42	260	34	318	463	195
Future Volume (veh/h)	447	1742	71	192	1788	315	42	260	34	318	463	195
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No		No		No		No		No		No
Adj Sat Flow, veh/h/ln	1588	1786	1758	1588	1786	1772	1575	1772	1758	1588	1744	1772
Adj Flow Rate, veh/h	491	1914	78	211	1965	346	46	286	37	349	509	214
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	1	1	3	1	1	2	2	2	3	1	4	2
Cap, veh/h	312	2679	819	156	2420	745	87	866	212	250	940	296
Arrive On Green	0.11	0.55	0.55	0.05	0.50	0.50	0.03	0.14	0.14	0.09	0.20	0.20
Sat Flow, veh/h	2933	4876	1490	2933	4876	1502	2910	6095	1490	2933	4761	1502
Grp Volume(v), veh/h	491	1914	78	211	1965	346	46	286	37	349	509	214
Grp Sat Flow(s),veh/h/ln	1467	1625	1490	1467	1625	1502	1455	1524	1490	1467	1587	1502
Q Serve(g_s), s	10.0	27.4	2.3	5.0	32.0	14.2	1.5	4.0	2.1	8.0	9.0	12.5
Cycle Q Clear(g_c), s	10.0	27.4	2.3	5.0	32.0	14.2	1.5	4.0	2.1	8.0	9.0	12.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	312	2679	819	156	2420	745	87	866	212	250	940	296
V/C Ratio(X)	1.57	0.71	0.10	1.35	0.81	0.46	0.53	0.33	0.17	1.40	0.54	0.72
Avail Cap(c_a), veh/h	312	2904	887	156	2645	815	155	2918	713	250	2431	767
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	42.0	15.7	10.1	44.5	20.0	15.5	45.0	36.3	35.5	43.0	33.9	35.3
Incr Delay (d2), s/veh	273.1	0.8	0.1	194.7	1.9	0.5	5.0	0.2	0.4	201.7	0.5	3.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.2	8.6	0.7	5.9	10.7	4.3	0.6	1.4	0.7	9.7	3.3	4.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	315.2	16.5	10.1	239.2	21.9	15.9	49.9	36.5	35.9	244.7	34.4	38.6
LnGrp LOS	F	B	B	F	C	B	D	D	D	F	C	D
Approach Vol, veh/h		2483			2522			369			1072	
Approach Delay, s/veh		75.3			39.2			38.1			103.7	
Approach LOS		E			D			D			F	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.0	55.7	6.8	22.6	14.0	50.7	12.0	17.4				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	5.0	56.0	5.0	48.0	10.0	51.0	8.0	45.0				
Max Q Clear Time (g_c+1/3), s	29.4	29.4	3.5	14.5	12.0	34.0	10.0	6.0				
Green Ext Time (p_c), s	0.0	15.9	0.0	4.0	0.0	12.7	0.0	1.9				

Intersection Summary

HCM 6th Ctrl Delay	63.8
HCM 6th LOS	E

HCM 6th Signalized Intersection Summary
 12: Milliken Ave & Fourth St

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔	↑↑↑	↗	↔↔	↑↑↑	↗	↔↔	↑↑↑	↗	↔↔	↑↑↑	↗
Traffic Volume (veh/h)	473	1610	563	140	1645	428	694	1536	214	206	817	60
Future Volume (veh/h)	473	1610	563	140	1645	428	694	1536	214	206	817	60
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No		No		No		No		No		No
Adj Sat Flow, veh/h/ln	1588	1730	1758	1575	1744	1730	1588	1660	1646	1550	1688	1688
Adj Flow Rate, veh/h	483	1643	574	143	1679	437	708	1567	218	210	834	61
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	1	5	3	2	4	5	1	10	11	4	8	8
Cap, veh/h	150	2048	646	99	1983	611	200	2066	552	98	1825	132
Arrive On Green	0.05	0.43	0.43	0.03	0.42	0.42	0.07	0.36	0.36	0.03	0.33	0.33
Sat Flow, veh/h	2933	4722	1490	2910	4761	1466	2933	5709	1395	2864	5566	403
Grp Volume(v), veh/h	483	1643	574	143	1679	437	708	1567	218	210	651	244
Grp Sat Flow(s),veh/h/ln	1467	1574	1490	1455	1587	1466	1467	1427	1395	1432	1451	1615
Q Serve(g_s), s	6.0	35.5	41.7	4.0	37.3	29.1	8.0	28.3	13.1	4.0	13.9	14.1
Cycle Q Clear(g_c), s	6.0	35.5	41.7	4.0	37.3	29.1	8.0	28.3	13.1	4.0	13.9	14.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.25
Lane Grp Cap(c), veh/h	150	2048	646	99	1983	611	200	2066	552	98	1428	530
V/C Ratio(X)	3.22	0.80	0.89	1.44	0.85	0.72	3.54	0.76	0.39	2.15	0.46	0.46
Avail Cap(c_a), veh/h	150	2132	673	99	2068	637	200	2578	677	98	1818	674
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	55.7	28.9	30.6	56.7	30.9	28.5	54.7	32.9	25.4	56.7	31.2	31.2
Incr Delay (d2), s/veh	1016.8	2.2	13.5	246.7	3.4	3.7	1156.2	1.0	0.5	550.7	0.2	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	28.3	12.5	15.9	4.8	13.6	10.0	35.0	9.3	4.1	8.9	4.6	5.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	1072.5	31.1	44.1	303.4	34.2	32.1	1210.9	34.0	25.8	607.4	31.4	31.9
LnGrp LOS	F	C	D	F	C	C	F	C	C	F	C	C
Approach Vol, veh/h		2700			2259			2493			1105	
Approach Delay, s/veh		220.2			50.9			367.5			141.0	
Approach LOS		F			D			F			F	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	8.0	46.5	8.0	54.9	12.0	42.5	10.0	52.9				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	4.0	53.0	4.0	53.0	8.0	49.0	6.0	51.0				
Max Q Clear Time (g_c+1/3), s	4.0	30.3	6.0	43.7	10.0	16.1	8.0	39.3				
Green Ext Time (p_c), s	0.0	12.1	0.0	7.2	0.0	5.9	0.0	8.5				

Intersection Summary

HCM 6th Ctrl Delay	208.2
HCM 6th LOS	F

Notes

User approved pedestrian interval to be less than phase max green.

Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↗		↑↑↑	↑↑↑	↗
Traffic Vol, veh/h	0	32	0	1915	897	30
Future Vol, veh/h	0	32	0	1915	897	30
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	175
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	2	1	2	3	6	4
Mvmt Flow	0	33	0	1954	915	31

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	-	458	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	7.12	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	3.91	-
Pot Cap-1 Maneuver	0	472	0
Stage 1	0	-	0
Stage 2	0	-	0
Platoon blocked, %			
Mov Cap-1 Maneuver	-	472	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

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

Minor Lane/Major Mvmt	NBT EBLn1	SBT	SBR
Capacity (veh/h)	- 472	-	-
HCM Lane V/C Ratio	- 0.069	-	-
HCM Control Delay (s)	- 13.2	-	-
HCM Lane LOS	- B	-	-
HCM 95th %tile Q(veh)	- 0.2	-	-

HCM 6th Signalized Intersection Summary

14: Milliken Ave & 7th St

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↑↑↑		↖	↑↑↑	
Traffic Volume (veh/h)	135	0	57	16	0	21	162	1760	11	15	754	161
Future Volume (veh/h)	135	0	57	16	0	21	162	1760	11	15	754	161
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1687	1786	1786	1382	1800	1800	1620	1758	1758	1687	1716	1716
Adj Flow Rate, veh/h	136	0	58	16	0	21	164	1778	11	15	762	163
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	1	1	1	24	0	0	6	3	3	1	6	6
Cap, veh/h	258	0	217	199	0	219	181	3454	21	23	2316	491
Arrive On Green	0.14	0.00	0.14	0.14	0.00	0.14	0.12	0.70	0.70	0.01	0.60	0.60
Sat Flow, veh/h	1324	0	1514	1049	0	1525	1543	4921	30	1606	3871	820
Grp Volume(v), veh/h	136	0	58	16	0	21	164	1156	633	15	613	312
Grp Sat Flow(s),veh/h/ln	1324	0	1514	1049	0	1525	1543	1600	1752	1606	1561	1568
Q Serve(g_s), s	8.5	0.0	2.9	1.2	0.0	1.0	8.9	14.4	14.4	0.8	8.4	8.5
Cycle Q Clear(g_c), s	9.5	0.0	2.9	4.1	0.0	1.0	8.9	14.4	14.4	0.8	8.4	8.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.02	1.00		0.52
Lane Grp Cap(c), veh/h	258	0	217	199	0	219	181	2245	1230	23	1869	938
VC Ratio(X)	0.53	0.00	0.27	0.08	0.00	0.10	0.91	0.51	0.51	0.67	0.33	0.33
Avail Cap(c_a), veh/h	954	0	1012	750	0	1020	181	2245	1230	75	1869	938
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.8	0.0	32.5	34.3	0.0	31.7	37.1	5.9	5.9	41.8	8.5	8.6
Incr Delay (d2), s/veh	1.7	0.0	0.7	0.2	0.0	0.2	41.2	0.8	1.5	28.8	0.5	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.8	0.0	1.1	0.3	0.0	0.4	5.2	3.2	3.8	0.5	2.3	2.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	37.5	0.0	33.2	34.5	0.0	31.9	78.4	6.8	7.5	70.6	9.0	9.5
LnGrp LOS	D	A	C	C	A	C	E	A	A	E	A	A
Approach Vol, veh/h		194			37			1953			940	
Approach Delay, s/veh		36.2			33.0			13.0			10.2	
Approach LOS		D			C			B			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.2	63.8		16.2	14.0	55.0		16.2				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	4.0	57.0		57.0	10.0	51.0		57.0				
Max Q Clear Time (g_c+I1), s	2.8	16.4		11.5	10.9	10.5		6.1				
Green Ext Time (p_c), s	0.0	16.2		0.8	0.0	6.3		0.2				

Intersection Summary

HCM 6th Ctrl Delay	13.8
HCM 6th LOS	B

HCM 6th Signalized Intersection Summary
 15: Milliken Ave & I-10 WB Ramps/Ontario Mills Pkwy

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔	↑	↗	↔↔	↕↕	↗	↔↔	↕↕↕	↗	↔↔	↕↕↕	↗
Traffic Volume (veh/h)	519	264	96	576	478	326	60	1870	134	455	1278	570
Future Volume (veh/h)	519	264	96	576	478	326	60	1870	134	455	1278	570
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No		No		No		No		No		No
Adj Sat Flow, veh/h/ln	1563	1758	1786	1563	1786	1098	1425	1674	1491	1588	1702	1716
Adj Flow Rate, veh/h	625	318	116	694	576	393	72	2253	161	548	1540	687
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Percent Heavy Veh, %	3	3	1	3	1	50	14	9	22	1	7	6
Cap, veh/h	489	270	233	555	600	165	104	2214	729	429	2875	960
Arrive On Green	0.17	0.15	0.15	0.19	0.18	0.18	0.03	0.26	0.26	0.15	0.49	0.49
Sat Flow, veh/h	2887	1758	1514	2887	3393	931	2633	5757	1264	2933	5854	1454
Grp Volume(v), veh/h	625	318	116	694	576	393	72	2253	161	548	1540	687
Grp Sat Flow(s),veh/h/ln	1444	1758	1514	1444	1697	931	1317	1439	1264	1467	1463	1454
Q Serve(g_s), s	22.0	20.0	9.1	25.0	21.9	23.0	3.5	50.0	9.2	19.0	23.6	39.5
Cycle Q Clear(g_c), s	22.0	20.0	9.1	25.0	21.9	23.0	3.5	50.0	9.2	19.0	23.6	39.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	489	270	233	555	600	165	104	2214	729	429	2875	960
V/C Ratio(X)	1.28	1.18	0.50	1.25	0.96	2.39	0.69	1.02	0.22	1.28	0.54	0.72
Avail Cap(c_a), veh/h	489	270	233	555	600	165	162	2214	729	429	2875	960
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	0.67	0.67	0.67	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.70	0.70	0.70	1.00	1.00	1.00
Uniform Delay (d), s/veh	54.0	55.0	50.4	52.5	53.0	53.5	62.5	48.3	16.4	55.5	22.8	14.2
Incr Delay (d2), s/veh	140.7	110.9	1.6	126.9	26.9	642.5	5.6	20.5	0.5	142.2	0.7	4.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.5	17.2	3.6	18.8	11.5	34.7	1.3	21.7	2.9	15.5	8.2	13.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	194.7	165.9	52.0	179.4	79.9	696.0	68.1	68.8	16.9	197.7	23.6	18.8
LnGrp LOS	F	F	D	F	E	F	E	F	B	F	C	B
Approach Vol, veh/h		1059			1663			2486			2775	
Approach Delay, s/veh		170.4			267.0			65.4			56.8	
Approach LOS		F			F			E			E	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	33.0	54.0	29.0	24.0	9.1	67.9	26.0	27.0				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	19.0	50.0	25.0	20.0	8.0	61.0	22.0	23.0				
Max Q Clear Time (g_c+Q), s	19.0	52.0	27.0	22.0	5.5	41.5	24.0	25.0				
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	14.0	0.0	0.0				

Intersection Summary

HCM 6th Ctrl Delay	118.3
HCM 6th LOS	F

HCM 6th Signalized Intersection Summary
 16: Milliken Ave & I-10 EB Ramps

11/03/2021



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↖↗	↖	↖↗	↑↑↑	↑↑↑	↖
Traffic Volume (veh/h)	1392	11	5	671	947	1003
Future Volume (veh/h)	1392	11	5	671	947	1003
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1550	1617	1176	1646	1744	1491
Adj Flow Rate, veh/h	1435	11	5	692	976	1034
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	4	13	34	11	4	22
Cap, veh/h	1536	735	11	2276	2197	1141
Arrive On Green	0.54	0.54	0.01	0.40	0.61	0.61
Sat Flow, veh/h	2864	1371	2172	5891	6243	1264
Grp Volume(v), veh/h	1435	11	5	692	976	1034
Grp Sat Flow(s),veh/h/ln	1432	1371	1086	1415	1500	1264
Q Serve(g_s), s	60.5	0.5	0.3	10.8	11.3	47.6
Cycle Q Clear(g_c), s	60.5	0.5	0.3	10.8	11.3	47.6
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	1536	735	11	2276	2197	1141
VC Ratio(X)	0.93	0.01	0.45	0.30	0.44	0.91
Avail Cap(c_a), veh/h	1961	938	67	2276	2197	1141
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.67	1.67
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.58	0.58
Uniform Delay (d), s/veh	28.0	14.1	64.5	26.5	18.2	1.8
Incr Delay (d2), s/veh	7.7	0.0	26.3	0.3	0.4	7.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	0.6	0.1	3.7	3.4	34.7
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	35.7	14.1	90.8	26.8	18.6	9.3
LnGrp LOS	D	B	F	C	B	A
Approach Vol, veh/h	1446			697	2010	
Approach Delay, s/veh	35.5			27.3	13.8	
Approach LOS	D			C	B	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		56.3		73.7	4.7	51.6
Change Period (Y+Rc), s		4.0		4.0	4.0	4.0
Max Green Setting (Gmax), s		33.0		89.0	4.0	25.0
Max Q Clear Time (g_c+I1), s		12.8		62.5	2.3	49.6
Green Ext Time (p_c), s		4.8		7.2	0.0	0.0
Intersection Summary						
HCM 6th Ctrl Delay			23.6			
HCM 6th LOS			C			

HCM 6th Signalized Intersection Summary

1: Highway 395 & Joshua St

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	116	193	66	111	169	367	19	1595	11	34	567	123
Future Volume (veh/h)	116	193	66	111	169	367	19	1595	11	34	567	123
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1687	1786	1786	1528	1786	1519	1687	1716	1491	1395	1617	1716
Adj Flow Rate, veh/h	129	214	73	123	188	408	21	1772	12	38	630	137
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	1	1	1	13	1	20	1	6	22	23	13	6
Cap, veh/h	266	435	148	255	610	439	52	1719	666	43	1620	767
Arrive On Green	0.34	0.34	0.34	0.34	0.34	0.34	0.03	0.53	0.53	0.03	0.53	0.53
Sat Flow, veh/h	782	1273	434	942	1786	1287	1606	3260	1264	1329	3073	1454
Grp Volume(v), veh/h	129	0	287	123	188	408	21	1772	12	38	630	137
Grp Sat Flow(s),veh/h/ln	782	0	1708	942	1786	1287	1606	1630	1264	1329	1537	1454
Q Serve(g_s), s	17.6	0.0	16.1	14.4	9.4	37.1	1.6	64.0	0.6	3.5	14.8	6.0
Cycle Q Clear(g_c), s	27.0	0.0	16.1	30.6	9.4	37.1	1.6	64.0	0.6	3.5	14.8	6.0
Prop In Lane	1.00		0.25	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	266	0	583	255	610	439	52	1719	666	43	1620	767
VC Ratio(X)	0.49	0.00	0.49	0.48	0.31	0.93	0.40	1.03	0.02	0.88	0.39	0.18
Avail Cap(c_a), veh/h	308	0	675	306	706	509	79	1719	666	66	1620	767
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.4	0.0	31.6	43.8	29.4	38.5	57.6	28.7	13.7	58.5	17.1	15.0
Incr Delay (d2), s/veh	1.4	0.0	0.6	1.4	0.3	21.8	4.9	30.1	0.0	52.6	0.7	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.5	0.0	6.8	3.5	4.1	14.2	0.7	28.9	0.2	1.7	4.9	1.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	40.8	0.0	32.3	45.2	29.7	60.3	62.5	58.7	13.7	111.1	17.8	15.5
LnGrp LOS	D	A	C	D	C	E	E	F	B	F	B	B
Approach Vol, veh/h		416			719			1805			805	
Approach Delay, s/veh		34.9			49.7			58.5			21.8	
Approach LOS		C			D			E			C	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.9	68.0		45.4	7.9	68.0		45.4				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	6.0	64.0		48.0	6.0	64.0		48.0				
Max Q Clear Time (g_c+I1), s	5.5	66.0		29.0	3.6	16.8		39.1				
Green Ext Time (p_c), s	0.0	0.0		2.5	0.0	4.6		2.3				

Intersection Summary

HCM 6th Ctrl Delay	46.3
HCM 6th LOS	D

Intersection						
Int Delay, s/veh	5.7					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		∩	
Traffic Vol, veh/h	0	238	383	0	35	264
Future Vol, veh/h	0	238	383	0	35	264
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	0	25	23	0	1	22
Mvmt Flow	0	243	391	0	36	269
Major/Minor	Major1	Major2	Minor2			
Conflicting Flow All	-	0	-	0	634	391
Stage 1	-	-	-	-	391	-
Stage 2	-	-	-	-	243	-
Critical Hdwy	-	-	-	-	6.41	6.42
Critical Hdwy Stg 1	-	-	-	-	5.41	-
Critical Hdwy Stg 2	-	-	-	-	5.41	-
Follow-up Hdwy	-	-	-	-	3.509	3.498
Pot Cap-1 Maneuver	0	-	-	0	445	616
Stage 1	0	-	-	0	686	-
Stage 2	0	-	-	0	800	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	-	445	616
Mov Cap-2 Maneuver	-	-	-	-	445	-
Stage 1	-	-	-	-	686	-
Stage 2	-	-	-	-	800	-
Approach	EB	WB	SB			
HCM Control Delay, s	0	0	17.5			
HCM LOS						C
Minor Lane/Major Mvmt	EBT	WBT	SBLn1			
Capacity (veh/h)	-	-	589			
HCM Lane V/C Ratio	-	-	0.518			
HCM Control Delay (s)	-	-	17.5			
HCM Lane LOS	-	-	C			
HCM 95th %tile Q(veh)	-	-	3			

Intersection												
Int Delay, s/veh	1.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↗			↕				
Traffic Vol, veh/h	132	141	0	0	383	36	0	0	0	0	0	0
Future Vol, veh/h	132	141	0	0	383	36	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	16965	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	92	92	95	95	92	92	92	95	92	95
Heavy Vehicles, %	24	23	2	2	23	42	2	2	2	2	2	2
Mvmt Flow	139	148	0	0	403	38	0	0	0	0	0	0

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	441	0	-
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	4.34	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	2.416	-	-
Pot Cap-1 Maneuver	1012	0	0
Stage 1	-	0	0
Stage 2	-	0	0
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1012	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	4.4	0	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	WBT	WBR
Capacity (veh/h)	-	1012	-	-	-
HCM Lane V/C Ratio	-	0.137	-	-	-
HCM Control Delay (s)	0	9.1	0	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	-	0.5	-	-	-

Intersection						
Int Delay, s/veh	14.9					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	Y			↑	↑	
Traffic Vol, veh/h	63	78	394	379	110	25
Future Vol, veh/h	63	78	394	379	110	25
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	9	3	7	35	19	2
Mvmt Flow	68	85	428	412	120	27

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1402	134	147	0	-	0
Stage 1	134	-	-	-	-	-
Stage 2	1268	-	-	-	-	-
Critical Hdwy	6.49	6.23	4.17	-	-	-
Critical Hdwy Stg 1	5.49	-	-	-	-	-
Critical Hdwy Stg 2	5.49	-	-	-	-	-
Follow-up Hdwy	3.581	3.327	2.263	-	-	-
Pot Cap-1 Maneuver	149	912	1405	-	-	-
Stage 1	875	-	-	-	-	-
Stage 2	256	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	90	912	1405	-	-	-
Mov Cap-2 Maneuver	90	-	-	-	-	-
Stage 1	529	-	-	-	-	-
Stage 2	256	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	86.5	4.4	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1405	-	179	-	-
HCM Lane V/C Ratio	0.305	-	0.856	-	-
HCM Control Delay (s)	8.7	0	86.5	-	-
HCM Lane LOS	A	A	F	-	-
HCM 95th %tile Q(veh)	1.3	-	6.1	-	-

HCM 6th Signalized Intersection Summary

5: I-15 SB On-ramp/I-15 SB Off-ramp & Foothill Blvd/Foothill Blvd

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↑		↑↑↑	↑				↑	↑↓	↑
Traffic Volume (veh/h)	0	1740	634	0	2022	304	0	0	0	190	0	364
Future Volume (veh/h)	0	1740	634	0	2022	304	0	0	0	190	0	364
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1786	1772	0	1786	1758				1702	1772	1716
Adj Flow Rate, veh/h	0	1794	0	0	2085	0				131	0	445
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97				0.97	0.97	0.97
Percent Heavy Veh, %	0	1	2	0	1	3				7	2	6
Cap, veh/h	0	3532		0	3532					302	0	543
Arrive On Green	0.00	0.72	0.00	0.00	0.72	0.00				0.19	0.00	0.19
Sat Flow, veh/h	0	5036	1502	0	5036	1490				1621	0	2908
Grp Volume(v), veh/h	0	1794	0	0	2085	0				131	0	445
Grp Sat Flow(s),veh/h/ln	0	1625	1502	0	1625	1490				1621	0	1454
Q Serve(g_s), s	0.0	14.4	0.0	0.0	18.5	0.0				6.4	0.0	13.2
Cycle Q Clear(g_c), s	0.0	14.4	0.0	0.0	18.5	0.0				6.4	0.0	13.2
Prop In Lane	0.00		1.00	0.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	3532		0	3532					302	0	543
V/C Ratio(X)	0.00	0.51		0.00	0.59					0.43	0.00	0.82
Avail Cap(c_a), veh/h	0	3532		0	3532					432	0	775
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.00	0.00	0.60	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	5.4	0.0	0.0	6.0	0.0				32.4	0.0	35.2
Incr Delay (d2), s/veh	0.0	0.5	0.0	0.0	0.4	0.0				1.0	0.0	4.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	3.1	0.0	0.0	3.9	0.0				2.5	0.0	4.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	5.9	0.0	0.0	6.4	0.0				33.4	0.0	39.9
LnGrp LOS	A	A		A	A					C	A	D
Approach Vol, veh/h		1794	A		2085	A					576	
Approach Delay, s/veh		5.9			6.4						38.4	
Approach LOS		A			A						D	
Timer - Assigned Phs		2		4		6						
Phs Duration (G+Y+Rc), s		69.2		20.8		69.2						
Change Period (Y+Rc), s		4.0		4.0		4.0						
Max Green Setting (Gmax), s		58.0		24.0		58.0						
Max Q Clear Time (g_c+I1), s		16.4		15.2		20.5						
Green Ext Time (p_c), s		17.7		1.6		21.2						

Intersection Summary

HCM 6th Ctrl Delay	10.4
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th Signalized Intersection Summary

6: I-15 NB Off-ramp/I-15 NB On-ramp & Foothill Blvd /Foothill Blvd

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↑		↑↑↑	↑	↑	↑↓	↑			
Traffic Volume (veh/h)	0	1455	474	0	1040	296	1286	0	646	0	0	0
Future Volume (veh/h)	0	1455	474	0	1040	296	1286	0	646	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No		No		No		No				
Adj Sat Flow, veh/h/ln	0	1772	1772	0	1772	1786	1772	1772	1786			
Adj Flow Rate, veh/h	0	1548	0	0	1106	0	1582	0	458			
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94			
Percent Heavy Veh, %	0	2	2	0	2	1	2	2	1			
Cap, veh/h	0	1868		0	1868		1772	0	795			
Arrive On Green	0.00	0.39	0.00	0.00	0.39	0.00	0.52	0.00	0.52			
Sat Flow, veh/h	0	4997	1502	0	4997	1514	3375	0	1514			
Grp Volume(v), veh/h	0	1548	0	0	1106	0	1582	0	458			
Grp Sat Flow(s),veh/h/ln	0	1612	1502	0	1612	1514	1688	0	1514			
Q Serve(g_s), s	0.0	26.0	0.0	0.0	16.4	0.0	37.7	0.0	18.6			
Cycle Q Clear(g_c), s	0.0	26.0	0.0	0.0	16.4	0.0	37.7	0.0	18.6			
Prop In Lane	0.00		1.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	0	1868		0	1868		1772	0	795			
VC Ratio(X)	0.00	0.83		0.00	0.59		0.89	0.00	0.58			
Avail Cap(c_a), veh/h	0	1868		0	1868		1988	0	891			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.00	0.81	0.00	0.00	1.00	0.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	0.0	24.9	0.0	0.0	22.0	0.0	19.1	0.0	14.6			
Incr Delay (d2), s/veh	0.0	3.6	0.0	0.0	1.4	0.0	5.2	0.0	0.7			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.0	10.1	0.0	0.0	6.2	0.0	14.3	0.0	5.9			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	28.5	0.0	0.0	23.4	0.0	24.3	0.0	15.3			
LnGrp LOS		A	C		A	C	C	A	B			
Approach Vol, veh/h		1548	A		1106	A		2040				
Approach Delay, s/veh		28.5			23.4			22.3				
Approach LOS		C			C			C				
Timer - Assigned Phs		2			6			8				
Phs Duration (G+Y+Rc), s		38.8			38.8			51.2				
Change Period (Y+Rc), s		4.0			4.0			4.0				
Max Green Setting (Gmax), s		29.0			29.0			53.0				
Max Q Clear Time (g_c+I1), s		28.0			18.4			39.7				
Green Ext Time (p_c), s		0.8			5.5			7.5				

Intersection Summary

HCM 6th Ctrl Delay	24.6
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.
 Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th Signalized Intersection Summary

7: Ontario Mills Dr./I-15 SB Ramps & Fourth St

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔	↑↑↑	↗	↔↔	↑↑↑	↗	↔	↑↑	↗	↔	↑↑	↗
Traffic Volume (veh/h)	404	938	51	174	838	88	198	221	89	124	239	540
Future Volume (veh/h)	404	938	51	174	838	88	198	221	89	124	239	540
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No		No		No		No		No		No
Adj Sat Flow, veh/h/ln	1588	1772	1786	1588	1758	1660	1687	1786	1786	1634	1786	1786
Adj Flow Rate, veh/h	416	967	53	179	864	91	204	228	92	128	246	557
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	1	2	1	1	3	10	1	1	1	5	1	1
Cap, veh/h	471	1823	570	484	1830	536	229	809	361	150	343	582
Arrive On Green	0.16	0.38	0.38	0.33	0.76	0.76	0.14	0.24	0.24	0.10	0.19	0.19
Sat Flow, veh/h	2933	4837	1514	2933	4799	1406	1606	3393	1514	1556	1786	3027
Grp Volume(v), veh/h	416	967	53	179	864	91	204	228	92	128	246	557
Grp Sat Flow(s),veh/h/ln	1467	1612	1514	1467	1600	1406	1606	1697	1514	1556	1786	1514
Q Serve(g_s), s	18.0	20.2	2.0	6.1	8.7	2.3	16.2	7.1	4.5	10.5	16.8	23.7
Cycle Q Clear(g_c), s	18.0	20.2	2.0	6.1	8.7	2.3	16.2	7.1	4.5	10.5	16.8	23.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	471	1823	570	484	1830	536	229	809	361	150	343	582
VC Ratio(X)	0.88	0.53	0.09	0.37	0.47	0.17	0.89	0.28	0.26	0.85	0.72	0.96
Avail Cap(c_a), veh/h	609	1823	570	484	1830	536	334	835	373	239	343	582
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00	0.76	0.76	0.76	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	53.4	31.5	11.8	38.4	10.6	9.8	54.7	40.4	19.8	57.8	49.2	52.0
Incr Delay (d2), s/veh	11.9	1.1	0.3	0.4	0.7	0.5	18.1	0.2	0.4	15.1	7.0	26.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.2	7.6	1.1	2.0	2.3	0.8	7.7	3.0	2.4	4.7	8.1	11.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	65.2	32.6	12.1	38.8	11.2	10.3	72.9	40.6	20.2	72.9	56.1	78.8
LnGrp LOS	E	C	B	D	B	B	E	D	C	E	E	E
Approach Vol, veh/h		1436			1134			524			931	
Approach Delay, s/veh		41.3			15.5			49.6			72.0	
Approach LOS		D			B			D			E	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	25.4	53.0	22.6	29.0	24.9	53.6	16.6	35.0				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	49.0	49.0	27.0	25.0	27.0	35.0	20.0	32.0				
Max Q Clear Time (g_c+10), s	22.2	22.2	18.2	25.7	20.0	10.7	12.5	9.1				
Green Ext Time (p_c), s	0.2	6.6	0.4	0.0	0.8	5.8	0.2	1.6				

Intersection Summary

HCM 6th Ctrl Delay	42.2
HCM 6th LOS	D

Notes

User approved volume balancing among the lanes for turning movement.

HCM 6th Signalized Intersection Summary

8: Fourth St & I-15 NB Ramps

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖ ↗	↑ ↑ ↑	↖	↖ ↗	↑ ↑ ↑		↖	↑ ↑		↖	↖	↖ ↗
Traffic Volume (veh/h)	639	406	107	5	200	15	79	32	32	50	27	821
Future Volume (veh/h)	639	406	107	5	200	15	79	32	32	50	27	821
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No		No		No		No		No		No
Adj Sat Flow, veh/h/ln	1758	1674	1758	1632	1674	1674	1786	1758	1758	1561	1716	1702
Adj Flow Rate, veh/h	666	423	111	5	208	16	82	33	33	41	45	855
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.90	0.96
Percent Heavy Veh, %	3	9	3	12	9	9	1	3	3	17	6	7
Cap, veh/h	1240	1863	607	522	1567	118	114	113	98	99	115	1294
Arrive On Green	0.13	0.13	0.13	0.34	0.36	0.36	0.07	0.07	0.07	0.07	0.07	0.07
Sat Flow, veh/h	3248	4569	1490	1554	4333	327	1701	1691	1472	1487	1716	2884
Grp Volume(v), veh/h	666	423	111	5	145	79	82	33	33	41	45	855
Grp Sat Flow(s),veh/h/ln	1624	1523	1490	1554	1523	1615	1701	1670	1493	1487	1716	1442
Q Serve(g_s), s	25.0	10.7	8.6	0.3	4.2	4.3	6.1	2.4	2.8	3.4	3.3	0.0
Cycle Q Clear(g_c), s	25.0	10.7	8.6	0.3	4.2	4.3	6.1	2.4	2.8	3.4	3.3	0.0
Prop In Lane	1.00		1.00	1.00		0.20	1.00		0.99	1.00		1.00
Lane Grp Cap(c), veh/h	1240	1863	607	522	1101	584	114	111	100	99	115	1294
VC Ratio(X)	0.54	0.23	0.18	0.01	0.13	0.14	0.72	0.29	0.34	0.41	0.39	0.66
Avail Cap(c_a), veh/h	1240	1863	607	522	1101	584	536	527	471	183	211	1456
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.89	0.89	0.89	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	46.0	38.0	37.0	28.8	27.8	27.9	59.5	57.7	57.9	58.2	58.1	28.1
Incr Delay (d2), s/veh	0.4	0.3	0.6	0.0	0.2	0.5	8.4	1.4	2.0	2.7	2.2	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	4.2	3.3	0.1	1.5	1.7	2.9	1.1	1.1	1.4	1.5	10.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	46.4	38.2	37.6	28.8	28.1	28.3	67.8	59.2	59.9	60.9	60.3	29.0
LnGrp LOS	D	D	D	C	C	C	E	E	E	E	E	C
Approach Vol, veh/h		1200			229			148			941	
Approach Delay, s/veh		42.7			28.2			64.1			31.9	
Approach LOS		D			C			E			C	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	47.6	57.0		12.7	53.6	51.0		12.7				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	4.0	53.0		16.0	10.0	47.0		41.0				
Max Q Clear Time (g_c+1/3), s	12.3	12.7		5.4	27.0	6.3		8.1				
Green Ext Time (p_c), s	0.0	3.0		3.2	0.0	1.2		0.6				

Intersection Summary

HCM 6th Ctrl Delay	38.6
HCM 6th LOS	D

Notes

User approved volume balancing among the lanes for turning movement.

HCM 6th Signalized Intersection Summary
 9: Milliken Ave & I-210 WB On-ramp/I-210 WB Off-ramp

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↘ ↙	↔	↗	↘ ↙	↕			↕	
Traffic Volume (veh/h)	0	0	0	168	7	80	158	553	0	0	266	36
Future Volume (veh/h)	0	0	0	168	7	80	158	553	0	0	266	36
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach				No		No		No				No
Adj Sat Flow, veh/h/ln				1554	1786	1688	1500	1786	0	0	1786	1786
Adj Flow Rate, veh/h				204	0	58	165	576	0	0	277	38
Peak Hour Factor				0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %				11	1	8	8	1	0	0	1	1
Cap, veh/h				390	0	188	420	3584	0	0	2248	300
Arrive On Green				0.13	0.00	0.13	0.30	1.00	0.00	0.00	0.52	0.52
Sat Flow, veh/h				2960	0	1430	2772	5036	0	0	4512	581
Grp Volume(v), veh/h				204	0	58	165	576	0	0	205	110
Grp Sat Flow(s),veh/h/ln				1480	0	1430	1386	1625	0	0	1625	1681
Q Serve(g_s), s				3.9	0.0	2.2	2.8	0.0	0.0	0.0	2.0	2.0
Cycle Q Clear(g_c), s				3.9	0.0	2.2	2.8	0.0	0.0	0.0	2.0	2.0
Prop In Lane				1.00		1.00	1.00		0.00	0.00		0.35
Lane Grp Cap(c), veh/h				390	0	188	420	3584	0	0	1679	869
V/C Ratio(X)				0.52	0.00	0.31	0.39	0.16	0.00	0.00	0.12	0.13
Avail Cap(c_a), veh/h				444	0	215	420	3584	0	0	1679	869
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.94	0.94	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				24.3	0.0	23.6	18.7	0.0	0.0	0.0	7.5	7.5
Incr Delay (d2), s/veh				1.1	0.0	0.9	0.6	0.1	0.0	0.0	0.1	0.3
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				1.3	0.0	0.7	0.8	0.0	0.0	0.0	0.6	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				25.4	0.0	24.5	19.3	0.1	0.0	0.0	7.6	7.8
LnGrp LOS				C	A	C	B	A	A	A	A	A
Approach Vol, veh/h						262		741			315	
Approach Delay, s/veh						25.2		4.4			7.7	
Approach LOS						C		A			A	
Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		48.1			13.1	35.0		11.9				
Change Period (Y+Rc), s		4.0			4.0	4.0		4.0				
Max Green Setting (Gmax), s		43.0			8.0	31.0		9.0				
Max Q Clear Time (g_c+I1), s		2.0			4.8	4.0		5.9				
Green Ext Time (p_c), s		4.5			0.1	2.0		0.3				

Intersection Summary

HCM 6th Ctrl Delay	9.3
HCM 6th LOS	A

Notes

User approved volume balancing among the lanes for turning movement.

HCM 6th Signalized Intersection Summary
 10: Milliken Ave & I-210 EB Off-ramp/I-210 EB On-ramp

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	153	11	328	0	0	0	0	558	227	87	288	0
Future Volume (veh/h)	153	11	328	0	0	0	0	558	227	87	288	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No						No			No		
Adj Sat Flow, veh/h/ln	1395	1786	1674				0	1688	1688	1176	1617	0
Adj Flow Rate, veh/h	110	0	402				0	581	236	91	300	0
Peak Hour Factor	0.96	0.96	0.96				0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	23	1	9				0	8	8	34	13	0
Cap, veh/h	230	0	491				0	1730	685	203	3062	0
Arrive On Green	0.17	0.00	0.17				0.00	0.53	0.53	0.19	1.00	0.00
Sat Flow, veh/h	1329	0	2837				0	3396	1284	2172	4561	0
Grp Volume(v), veh/h	110	0	402				0	549	268	91	300	0
Grp Sat Flow(s),veh/h/ln	1329	0	1418				0	1536	1456	1086	1472	0
Q Serve(g_s), s	4.5	0.0	8.2				0.0	6.1	6.3	2.2	0.0	0.0
Cycle Q Clear(g_c), s	4.5	0.0	8.2				0.0	6.1	6.3	2.2	0.0	0.0
Prop In Lane	1.00		1.00				0.00		0.88	1.00		0.00
Lane Grp Cap(c), veh/h	230	0	491				0	1638	777	203	3062	0
V/C Ratio(X)	0.48	0.00	0.82				0.00	0.34	0.34	0.45	0.10	0.00
Avail Cap(c_a), veh/h	244	0	520				0	1638	777	203	3062	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	0.99	0.99	0.00
Uniform Delay (d), s/veh	22.4	0.0	23.9				0.0	8.0	8.0	23.0	0.0	0.0
Incr Delay (d2), s/veh	1.5	0.0	9.5				0.0	0.6	1.2	1.5	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4	0.0	3.2				0.0	1.8	1.9	0.6	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.9	0.0	33.4				0.0	8.5	9.2	24.5	0.1	0.0
LnGrp LOS	C	A	C				A	A	A	C	A	A
Approach Vol, veh/h	512						817			391		
Approach Delay, s/veh	31.4						8.7			5.8		
Approach LOS	C						A			A		
Timer - Assigned Phs	1	2	4	6								
Phs Duration (G+Y+Rc), s	9.6	36.0	14.4	45.6								
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0								
Max Green Setting (Gmax), s	5.0	32.0	11.0	41.0								
Max Q Clear Time (g_c+14), s	14.2	8.3	10.2	2.0								
Green Ext Time (p_c), s	0.0	5.9	0.2	2.2								

Intersection Summary

HCM 6th Ctrl Delay	14.8
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

HCM 6th Signalized Intersection Summary

11: Milliken Ave & Foothill Blvd

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖↗	↑↑↑	↖	↖↗	↑↑↑	↖	↖↗	↑↑↑	↖	↖↗	↑↑↑	↖
Traffic Volume (veh/h)	144	1035	55	353	1463	126	249	598	205	196	319	56
Future Volume (veh/h)	144	1035	55	353	1463	126	249	598	205	196	319	56
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No		No		No		No		No		No
Adj Sat Flow, veh/h/ln	1488	1716	1421	1525	1716	1589	1538	1702	1702	1550	1674	1660
Adj Flow Rate, veh/h	153	1101	59	376	1556	134	265	636	218	209	339	60
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	9	6	27	6	6	15	5	7	7	4	9	10
Cap, veh/h	202	2300	591	266	2398	690	215	1210	298	162	858	264
Arrive On Green	0.07	0.49	0.49	0.09	0.51	0.51	0.08	0.21	0.21	0.06	0.19	0.19
Sat Flow, veh/h	2749	4684	1204	2818	4684	1347	2841	5854	1442	2864	4569	1406
Grp Volume(v), veh/h	153	1101	59	376	1556	134	265	636	218	209	339	60
Grp Sat Flow(s),veh/h/ln	1374	1561	1204	1409	1561	1347	1420	1463	1442	1432	1523	1406
Q Serve(g_s), s	5.8	16.6	2.8	10.0	25.7	5.7	8.0	10.2	15.0	6.0	6.9	3.8
Cycle Q Clear(g_c), s	5.8	16.6	2.8	10.0	25.7	5.7	8.0	10.2	15.0	6.0	6.9	3.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	202	2300	591	266	2398	690	215	1210	298	162	858	264
VC Ratio(X)	0.76	0.48	0.10	1.41	0.65	0.19	1.23	0.53	0.73	1.29	0.40	0.23
Avail Cap(c_a), veh/h	260	2300	591	266	2398	690	215	2543	626	162	1899	584
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	48.1	17.9	14.4	47.9	18.9	14.0	48.9	37.4	39.3	49.9	37.7	36.5
Incr Delay (d2), s/veh	9.1	0.7	0.3	206.6	1.4	0.6	139.1	0.4	3.5	167.8	0.3	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	5.5	0.7	11.0	8.5	1.7	6.9	3.5	5.3	5.8	2.5	1.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	57.3	18.6	14.8	254.6	20.3	14.6	188.0	37.7	42.7	217.8	38.0	36.9
LnGrp LOS	E	B	B	F	C	B	F	D	D	F	D	D
Approach Vol, veh/h		1313			2066			1119			608	
Approach Delay, s/veh		23.0			62.5			74.3			99.7	
Approach LOS		C			E			E			F	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	4.0	56.0	12.0	23.9	11.8	58.2	10.0	25.9				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	10.0	52.0	8.0	44.0	10.0	52.0	6.0	46.0				
Max Q Clear Time (g_c+1.2), s	10.0	18.6	10.0	8.9	7.8	27.7	8.0	17.0				
Green Ext Time (p_c), s	0.0	8.5	0.0	2.3	0.1	12.1	0.0	4.9				

Intersection Summary

HCM 6th Ctrl Delay	59.4
HCM 6th LOS	E

HCM 6th Signalized Intersection Summary
12: Milliken Ave & Fourth St

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔	↑↑↑	↗	↔↔	↑↑↑	↗	↔↔	↑↑↑	↗	↔↔	↑↑↑	↗
Traffic Volume (veh/h)	244	650	329	483	521	138	451	714	185	192	465	86
Future Volume (veh/h)	244	650	329	483	521	138	451	714	185	192	465	86
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No		No		No		No		No		No
Adj Sat Flow, veh/h/ln	1575	1716	1772	1588	1688	1758	1550	1716	1744	1588	1702	1702
Adj Flow Rate, veh/h	249	663	336	493	532	141	460	729	189	196	474	88
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	6	2	1	8	3	4	6	4	1	7	7
Cap, veh/h	136	1303	418	192	1368	442	188	2766	790	110	2218	395
Arrive On Green	0.05	0.28	0.28	0.07	0.30	0.30	0.07	0.47	0.47	0.04	0.44	0.44
Sat Flow, veh/h	2910	4684	1502	2933	4607	1490	2864	5902	1478	2933	5035	896
Grp Volume(v), veh/h	249	663	336	493	532	141	460	729	189	196	411	151
Grp Sat Flow(s),veh/h/ln	1455	1561	1502	1467	1536	1490	1432	1476	1478	1467	1463	1540
Q Serve(g_s), s	5.0	12.7	22.2	7.0	9.8	7.8	7.0	8.0	7.3	4.0	6.2	6.5
Cycle Q Clear(g_c), s	5.0	12.7	22.2	7.0	9.8	7.8	7.0	8.0	7.3	4.0	6.2	6.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.58
Lane Grp Cap(c), veh/h	136	1303	418	192	1368	442	188	2766	790	110	1934	679
VC Ratio(X)	1.83	0.51	0.80	2.56	0.39	0.32	2.45	0.26	0.24	1.78	0.21	0.22
Avail Cap(c_a), veh/h	136	2327	746	192	2375	768	188	2766	790	110	1934	679
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	50.8	32.4	35.8	49.8	29.8	29.1	49.8	17.2	13.3	51.3	18.4	18.5
Incr Delay (d2), s/veh	398.7	0.3	3.7	717.7	0.2	0.4	667.3	0.2	0.7	386.0	0.3	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	4.5	7.9	21.6	3.4	2.7	19.8	2.5	2.3	7.3	2.0	2.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	449.6	32.7	39.5	767.6	30.0	29.5	717.2	17.4	14.0	437.3	18.7	19.3
LnGrp LOS	F	C	D	F	C	C	F	B	B	F	B	B
Approach Vol, veh/h		1248			1166			1378			758	
Approach Delay, s/veh		117.7			341.8			250.5			127.0	
Approach LOS		F			F			F			F	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	8.0	54.0	11.0	33.7	11.0	51.0	9.0	35.7				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	4.0	50.0	7.0	53.0	7.0	47.0	5.0	55.0				
Max Q Clear Time (g_c+1/15), s	4.0	10.0	9.0	24.2	9.0	8.5	7.0	11.8				
Green Ext Time (p_c), s	0.0	5.8	0.0	5.5	0.0	3.6	0.0	3.9				

Intersection Summary

HCM 6th Ctrl Delay	216.9
HCM 6th LOS	F

Intersection						
Int Delay, s/veh	0.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↗		↑↑↑	↑↑↑	↗
Traffic Vol, veh/h	0	28	0	1105	645	22
Future Vol, veh/h	0	28	0	1105	645	22
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	175
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	2	1	2	3	6	4
Mvmt Flow	0	29	0	1128	658	22

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	-	329	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	7.12	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	3.91	-
Pot Cap-1 Maneuver	0	571	0
Stage 1	0	-	0
Stage 2	0	-	0
Platoon blocked, %			-
Mov Cap-1 Maneuver	-	571	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11.6	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT EBLn1	SBT	SBR
Capacity (veh/h)	-	571	-
HCM Lane V/C Ratio	-	0.05	-
HCM Control Delay (s)	-	11.6	-
HCM Lane LOS	-	B	-
HCM 95th %tile Q(veh)	-	0.2	-

HCM 6th Signalized Intersection Summary

14: Milliken Ave & 7th St

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↑↑↑		↖	↑↑↑	
Traffic Volume (veh/h)	97	0	42	7	0	15	93	994	7	7	633	35
Future Volume (veh/h)	97	0	42	7	0	15	93	994	7	7	633	35
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1687	1786	1786	1382	1800	1800	1620	1758	1758	1687	1716	1716
Adj Flow Rate, veh/h	98	0	42	7	0	15	94	1004	7	7	639	35
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	1	1	1	24	0	0	6	3	3	1	6	6
Cap, veh/h	226	0	166	182	0	167	116	3587	25	12	3008	164
Arrive On Green	0.11	0.00	0.11	0.11	0.00	0.11	0.08	0.73	0.73	0.01	0.66	0.66
Sat Flow, veh/h	1331	0	1514	1064	0	1525	1543	4917	34	1606	4546	248
Grp Volume(v), veh/h	98	0	42	7	0	15	94	653	358	7	438	236
Grp Sat Flow(s),veh/h/ln	1331	0	1514	1064	0	1525	1543	1600	1752	1606	1561	1671
Q Serve(g_s), s	5.6	0.0	2.0	0.5	0.0	0.7	4.7	5.4	5.4	0.3	4.3	4.3
Cycle Q Clear(g_c), s	6.3	0.0	2.0	2.5	0.0	0.7	4.7	5.4	5.4	0.3	4.3	4.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.02	1.00		0.15
Lane Grp Cap(c), veh/h	226	0	166	182	0	167	116	2334	1278	12	2066	1106
VC Ratio(X)	0.43	0.00	0.25	0.04	0.00	0.09	0.81	0.28	0.28	0.60	0.21	0.21
Avail Cap(c_a), veh/h	1052	0	1104	842	0	1113	217	2334	1278	82	2066	1106
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.1	0.0	31.9	33.0	0.0	31.3	35.6	3.6	3.6	38.7	5.2	5.2
Incr Delay (d2), s/veh	1.3	0.0	0.8	0.1	0.0	0.2	12.5	0.3	0.5	41.5	0.2	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	0.0	0.7	0.1	0.0	0.3	2.0	0.9	1.1	0.3	1.0	1.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	35.4	0.0	32.6	33.1	0.0	31.5	48.1	3.9	4.1	80.2	5.4	5.6
LnGrp LOS	D	A	C	C	A	C	D	A	A	F	A	A
Approach Vol, veh/h		140			22			1105			681	
Approach Delay, s/veh		34.6			32.0			7.7			6.3	
Approach LOS		C			C			A			A	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	4.6	61.0		12.6	9.9	55.7		12.6				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	4.0	57.0		57.0	11.0	50.0		57.0				
Max Q Clear Time (g_c+I1), s	2.3	7.4		8.3	6.7	6.3		4.5				
Green Ext Time (p_c), s	0.0	7.0		0.5	0.1	4.2		0.1				
Intersection Summary												
HCM 6th Ctrl Delay			9.4									
HCM 6th LOS			A									

HCM 6th Signalized Intersection Summary
 15: Milliken Ave & I-10 WB Ramps/Ontario Mills Pkwy

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔	↑	↗	↔↔	↕↕	↗	↔↔	↑↑↑	↗	↔↔	↑↑↑	↗
Traffic Volume (veh/h)	190	330	127	305	246	201	307	598	384	296	810	319
Future Volume (veh/h)	190	330	127	305	246	201	307	598	384	296	810	319
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No		No		No		No		No		No
Adj Sat Flow, veh/h/ln	1463	1730	1702	1550	1730	1772	1538	1716	1730	1550	1730	1716
Adj Flow Rate, veh/h	202	351	135	324	262	214	327	636	409	315	862	339
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	11	5	7	4	5	2	5	6	5	4	5	6
Cap, veh/h	439	346	288	365	542	248	389	2629	840	234	2323	804
Arrive On Green	0.16	0.20	0.20	0.13	0.16	0.16	0.05	0.15	0.15	0.08	0.39	0.39
Sat Flow, veh/h	2703	1730	1442	2864	3287	1502	2841	5902	1466	2864	5951	1454
Grp Volume(v), veh/h	202	351	135	324	262	214	327	636	409	315	862	339
Grp Sat Flow(s),veh/h/ln	1351	1730	1442	1432	1643	1502	1420	1476	1466	1432	1488	1454
Q Serve(g_s), s	7.4	22.0	6.7	12.2	8.0	15.3	12.6	10.5	13.4	9.0	11.4	5.8
Cycle Q Clear(g_c), s	7.4	22.0	6.7	12.2	8.0	15.3	12.6	10.5	13.4	9.0	11.4	5.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	439	346	288	365	542	248	389	2629	840	234	2323	804
VC Ratio(X)	0.46	1.01	0.47	0.89	0.48	0.86	0.84	0.24	0.49	1.34	0.37	0.42
Avail Cap(c_a), veh/h	439	346	288	365	627	287	491	2629	840	234	2323	804
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.96	0.96	0.96	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.7	44.0	21.2	47.2	41.7	44.7	51.3	30.5	25.5	50.5	23.9	5.1
Incr Delay (d2), s/veh	0.8	52.1	1.2	22.5	0.7	20.8	9.9	0.2	1.9	180.7	0.5	1.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.5	14.3	2.3	5.5	3.3	7.1	5.3	4.2	5.5	9.1	4.0	2.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	42.5	96.1	22.3	69.7	42.3	65.5	61.2	30.7	27.4	231.2	24.4	6.7
LnGrp LOS	D	F	C	E	D	E	E	C	C	F	C	A
Approach Vol, veh/h		688			800			1372			1516	
Approach Delay, s/veh		65.9			59.6			37.0			63.4	
Approach LOS		E			E			D			E	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	3.0	53.0	18.0	26.0	19.1	46.9	21.9	22.1				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	9.0	49.0	14.0	22.0	19.0	39.0	15.0	21.0				
Max Q Clear Time (g_c+I1), s	11.0	15.4	14.2	24.0	14.6	13.4	9.4	17.3				
Green Ext Time (p_c), s	0.0	6.9	0.0	0.0	0.5	8.2	0.3	0.9				

Intersection Summary

HCM 6th Ctrl Delay	54.8
HCM 6th LOS	D

HCM 6th Signalized Intersection Summary

16: Milliken Ave & I-10 EB Ramps

11/03/2021



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↖↖	↘	↖↖	↑↑↑	↑↑↑	↘
Traffic Volume (veh/h)	268	111	195	1020	664	578
Future Volume (veh/h)	268	111	195	1020	664	578
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1550	1617	1176	1646	1744	1491
Adj Flow Rate, veh/h	276	114	201	1052	685	596
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	4	13	34	11	4	22
Cap, veh/h	356	171	248	4545	3913	982
Arrive On Green	0.12	0.12	0.11	0.80	0.22	0.22
Sat Flow, veh/h	2864	1371	2172	5891	6243	1264
Grp Volume(v), veh/h	276	114	201	1052	685	596
Grp Sat Flow(s),veh/h/ln	1432	1371	1086	1415	1500	1264
Q Serve(g_s), s	10.3	8.7	9.9	4.9	10.2	31.0
Cycle Q Clear(g_c), s	10.3	8.7	9.9	4.9	10.2	31.0
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	356	171	248	4545	3913	982
VC Ratio(X)	0.77	0.67	0.81	0.23	0.18	0.61
Avail Cap(c_a), veh/h	1198	573	612	4545	3913	982
HCM Platoon Ratio	1.00	1.00	1.00	1.00	0.33	0.33
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.85	0.85
Uniform Delay (d), s/veh	46.7	46.0	47.6	2.6	19.0	14.0
Incr Delay (d2), s/veh	3.6	4.5	6.2	0.1	0.1	2.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.8	6.7	2.9	1.0	4.0	16.9
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	50.3	50.5	53.8	2.7	19.1	16.4
LnGrp LOS	D	D	D	A	B	B
Approach Vol, veh/h	390			1253	1281	
Approach Delay, s/veh	50.3			10.9	17.8	
Approach LOS	D			B	B	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		92.3		17.7	16.6	75.8
Change Period (Y+Rc), s		4.0		4.0	4.0	4.0
Max Green Setting (Gmax), s		56.0		46.0	31.0	21.0
Max Q Clear Time (g_c+I1), s		6.9		12.3	11.9	33.0
Green Ext Time (p_c), s		10.0		1.4	0.6	0.0
Intersection Summary						
HCM 6th Ctrl Delay			19.2			
HCM 6th LOS			B			

Appendix E.4 - 2025 Build Intersection Level of Service Calculation Worksheets

HCM 6th Signalized Intersection Summary

1: Highway 395 & Joshua St

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗	↗	↖	↗↗	↗	↖	↗↗	↗
Traffic Volume (veh/h)	13	16	1	148	16	95	3	433	47	142	960	9
Future Volume (veh/h)	13	16	1	148	16	95	3	433	47	142	960	9
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1209	1674	1674	1355	1674	1281	1037	1463	1632	1435	1547	1393
Adj Flow Rate, veh/h	14	18	1	163	18	104	3	476	52	156	1055	10
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	37	9	9	26	9	37	50	24	12	20	18	29
Cap, veh/h	268	315	18	306	336	218	3	1374	684	185	1842	739
Arrive On Green	0.20	0.20	0.20	0.20	0.20	0.20	0.00	0.49	0.49	0.14	0.63	0.63
Sat Flow, veh/h	866	1571	87	1066	1674	1085	988	2780	1383	1366	2940	1180
Grp Volume(v), veh/h	14	0	19	163	18	104	3	476	52	156	1055	10
Grp Sat Flow(s),veh/h/ln	866	0	1658	1066	1674	1085	988	1390	1383	1366	1470	1180
Q Serve(g_s), s	0.9	0.0	0.7	10.3	0.6	6.0	0.2	7.4	1.4	7.9	14.8	0.2
Cycle Q Clear(g_c), s	1.6	0.0	0.7	11.0	0.6	6.0	0.2	7.4	1.4	7.9	14.8	0.2
Prop In Lane	1.00		0.05	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	268	0	333	306	336	218	3	1374	684	185	1842	739
VC Ratio(X)	0.05	0.00	0.06	0.53	0.05	0.48	0.94	0.35	0.08	0.84	0.57	0.01
Avail Cap(c_a), veh/h	682	0	1124	814	1135	736	84	1374	684	290	1842	739
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.5	0.0	22.9	27.3	22.9	25.0	35.3	10.9	9.4	29.9	7.7	5.0
Incr Delay (d2), s/veh	0.1	0.0	0.1	1.4	0.1	1.6	213.2	0.7	0.2	12.4	1.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	0.3	2.6	0.2	1.6	0.2	1.8	0.4	2.9	3.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.6	0.0	22.9	28.8	22.9	26.6	248.5	11.6	9.6	42.2	9.0	5.0
LnGrp LOS	C	A	C	C	C	C	F	B	A	D	A	A
Approach Vol, veh/h		33			285			531			1221	
Approach Delay, s/veh		23.2			27.6			12.8			13.2	
Approach LOS		C			C			B			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	13.6	39.0		18.2	4.2	48.4		18.2				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	15.0	35.0		48.0	6.0	44.0		48.0				
Max Q Clear Time (g_c+I1), s	9.9	9.4		3.6	2.2	16.8		13.0				
Green Ext Time (p_c), s	0.2	3.0		0.2	0.0	7.4		1.3				

Intersection Summary

HCM 6th Ctrl Delay	15.2
HCM 6th LOS	B

Intersection						
Int Delay, s/veh	4.3					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		∩	
Traffic Vol, veh/h	0	112	116	0	43	112
Future Vol, veh/h	0	112	116	0	43	112
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	2	23	25	2	1	25
Mvmt Flow	0	129	133	0	49	129
Major/Minor	Major1	Major2	Minor2			
Conflicting Flow All	-	0	-	0	262	133
Stage 1	-	-	-	-	133	-
Stage 2	-	-	-	-	129	-
Critical Hdwy	-	-	-	-	6.41	6.45
Critical Hdwy Stg 1	-	-	-	-	5.41	-
Critical Hdwy Stg 2	-	-	-	-	5.41	-
Follow-up Hdwy	-	-	-	-	3.509	3.525
Pot Cap-1 Maneuver	0	-	-	0	729	858
Stage 1	0	-	-	0	896	-
Stage 2	0	-	-	0	899	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	-	729	858
Mov Cap-2 Maneuver	-	-	-	-	729	-
Stage 1	-	-	-	-	896	-
Stage 2	-	-	-	-	899	-
Approach	EB	WB	SB			
HCM Control Delay, s	0	0	10.6			
HCM LOS	B					
Minor Lane/Major Mvmt	EBT	WBT	SBLn1			
Capacity (veh/h)	-	-	818			
HCM Lane V/C Ratio	-	-	0.218			
HCM Control Delay (s)	-	-	10.6			
HCM Lane LOS	-	-	B			
HCM 95th %tile Q(veh)	-	-	0.8			

Intersection												
Int Delay, s/veh	1.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↗			↕				
Traffic Vol, veh/h	57	84	0	0	157	33	0	0	0	0	0	0
Future Vol, veh/h	57	84	0	0	157	33	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	16965	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	79	79	92	92	79	79	92	92	92	79	92	79
Heavy Vehicles, %	50	11	2	2	30	32	2	2	2	2	2	2
Mvmt Flow	72	106	0	0	199	42	0	0	0	0	0	0

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	241	0	0
Stage 1	-	-	250
Stage 2	-	-	220
Critical Hdwy	4.6	-	6.42
Critical Hdwy Stg 1	-	-	5.42
Critical Hdwy Stg 2	-	-	5.42
Follow-up Hdwy	2.65	-	3.518
Pot Cap-1 Maneuver	1090	0	552
Stage 1	-	0	792
Stage 2	-	0	817
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1090	-	513
Mov Cap-2 Maneuver	-	-	513
Stage 1	-	-	737
Stage 2	-	-	817

Approach	EB	WB	NB
HCM Control Delay, s	3.5	0	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	WBT	WBR
Capacity (veh/h)	-	1090	-	-	-
HCM Lane V/C Ratio	-	0.066	-	-	-
HCM Control Delay (s)	0	8.5	0	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	-	0.2	-	-	-

Intersection						
Int Delay, s/veh	5.6					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	Y			↑	↑	
Traffic Vol, veh/h	38	42	113	19	30	82
Future Vol, veh/h	38	42	113	19	30	82
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	82	82	82	82	82	82
Heavy Vehicles, %	19	4	29	23	12	21
Mvmt Flow	46	51	138	23	37	100

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	386	87	137	0	-	0
Stage 1	87	-	-	-	-	-
Stage 2	299	-	-	-	-	-
Critical Hdwy	6.59	6.24	4.39	-	-	-
Critical Hdwy Stg 1	5.59	-	-	-	-	-
Critical Hdwy Stg 2	5.59	-	-	-	-	-
Follow-up Hdwy	3.671	3.336	2.461	-	-	-
Pot Cap-1 Maneuver	585	966	1297	-	-	-
Stage 1	895	-	-	-	-	-
Stage 2	715	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	522	966	1297	-	-	-
Mov Cap-2 Maneuver	522	-	-	-	-	-
Stage 1	798	-	-	-	-	-
Stage 2	715	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11.1	6.9	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1297	-	688	-	-
HCM Lane V/C Ratio	0.106	-	0.142	-	-
HCM Control Delay (s)	8.1	0	11.1	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.4	-	0.5	-	-

HCM 6th Signalized Intersection Summary

5: I-15 SB On-ramp/I-15 SB Off-ramp & Foothill Blvd/Foothill Blvd

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↗		↑↑↑	↗				↘	↕	↗
Traffic Volume (veh/h)	0	732	697	0	997	536	0	0	0	334	0	833
Future Volume (veh/h)	0	732	697	0	997	536	0	0	0	334	0	833
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1702	1772	0	1772	1744				1646	1772	1702
Adj Flow Rate, veh/h	0	822	0	0	1120	0				250	0	1070
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89				0.89	0.89	0.89
Percent Heavy Veh, %	0	7	2	0	2	4				11	2	7
Cap, veh/h	0	2353		0	2450					634	0	1167
Arrive On Green	0.00	0.51	0.00	0.00	0.34	0.00				0.40	0.00	0.40
Sat Flow, veh/h	0	4799	1502	0	4997	1478				1567	0	2884
Grp Volume(v), veh/h	0	822	0	0	1120	0				250	0	1070
Grp Sat Flow(s),veh/h/ln	0	1549	1502	0	1612	1478				1567	0	1442
Q Serve(g_s), s	0.0	9.5	0.0	0.0	16.3	0.0				10.2	0.0	31.6
Cycle Q Clear(g_c), s	0.0	9.5	0.0	0.0	16.3	0.0				10.2	0.0	31.6
Prop In Lane	0.00		1.00	0.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2353		0	2450					634	0	1167
V/C Ratio(X)	0.00	0.35		0.00	0.46					0.39	0.00	0.92
Avail Cap(c_a), veh/h	0	2353		0	2450					679	0	1250
HCM Platoon Ratio	1.00	1.00	1.00	1.00	0.67	0.67				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.00	0.00	0.80	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	13.3	0.0	0.0	20.1	0.0				19.0	0.0	25.4
Incr Delay (d2), s/veh	0.0	0.4	0.0	0.0	0.5	0.0				0.4	0.0	10.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	2.9	0.0	0.0	6.3	0.0				3.6	0.0	11.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	13.7	0.0	0.0	20.5	0.0				19.4	0.0	35.7
LnGrp LOS	A	B		A	C					B	A	D
Approach Vol, veh/h		822	A		1120	A					1320	
Approach Delay, s/veh		13.7			20.5						32.6	
Approach LOS		B			C						C	
Timer - Assigned Phs		2		4		6						
Phs Duration (G+Y+Rc), s		49.6		40.4		49.6						
Change Period (Y+Rc), s		4.0		4.0		4.0						
Max Green Setting (Gmax), s		43.0		39.0		43.0						
Max Q Clear Time (g_c+I1), s		11.5		33.6		18.3						
Green Ext Time (p_c), s		5.6		2.8		7.7						

Intersection Summary

HCM 6th Ctrl Delay	23.7
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th Signalized Intersection Summary

6: I-15 NB Off-ramp/I-15 NB On-ramp & Foothill Blvd /Foothill Blvd

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↑		↑↑↑	↑	↑	↑	↑			
Traffic Volume (veh/h)	0	922	144	0	778	233	755	0	381	0	0	0
Future Volume (veh/h)	0	922	144	0	778	233	755	0	381	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No		No		No		No				
Adj Sat Flow, veh/h/ln	0	1772	1646	0	1674	1632	1758	1772	1730			
Adj Flow Rate, veh/h	0	1036	0	0	874	0	981	0	285			
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89			
Percent Heavy Veh, %	0	2	11	0	9	12	3	2	5			
Cap, veh/h	0	2708		0	2558		1176	0	515			
Arrive On Green	0.00	0.56	0.00	0.00	0.56	0.00	0.35	0.00	0.35			
Sat Flow, veh/h	0	4997	1395	0	4720	1383	3348	0	1466			
Grp Volume(v), veh/h	0	1036	0	0	874	0	981	0	285			
Grp Sat Flow(s),veh/h/ln	0	1612	1395	0	1523	1383	1674	0	1466			
Q Serve(g_s), s	0.0	10.8	0.0	0.0	9.4	0.0	24.2	0.0	14.1			
Cycle Q Clear(g_c), s	0.0	10.8	0.0	0.0	9.4	0.0	24.2	0.0	14.1			
Prop In Lane	0.00		1.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	0	2708		0	2558		1176	0	515			
V/C Ratio(X)	0.00	0.38		0.00	0.34		0.83	0.00	0.55			
Avail Cap(c_a), veh/h	0	2708		0	2558		2009	0	880			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.00	0.91	0.00	0.00	1.00	0.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	0.0	11.1	0.0	0.0	10.8	0.0	26.8	0.0	23.5			
Incr Delay (d2), s/veh	0.0	0.4	0.0	0.0	0.4	0.0	1.6	0.0	0.9			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.0	3.7	0.0	0.0	3.0	0.0	9.4	0.0	4.8			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	11.5	0.0	0.0	11.1	0.0	28.4	0.0	24.4			
LnGrp LOS	A	B		A	B		C	A	C			
Approach Vol, veh/h		1036	A		874	A		1266				
Approach Delay, s/veh		11.5			11.1			27.5				
Approach LOS		B			B			C				
Timer - Assigned Phs		2			6			8				
Phs Duration (G+Y+Rc), s		54.4			54.4			35.6				
Change Period (Y+Rc), s		4.0			4.0			4.0				
Max Green Setting (Gmax), s		28.0			28.0			54.0				
Max Q Clear Time (g_c+I1), s		12.8			11.4			26.2				
Green Ext Time (p_c), s		6.5			5.7			5.4				

Intersection Summary

HCM 6th Ctrl Delay 17.8
 HCM 6th LOS B

Notes

User approved volume balancing among the lanes for turning movement.
 Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th Signalized Intersection Summary
 7: Ontario Mills Dr./I-15 SB Ramps & Fourth St

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖↗	↑↑↑	↖	↖↗	↑↑↑	↖	↖	↑↑	↖	↖	↑↑	↖
Traffic Volume (veh/h)	229	241	72	164	968	177	79	63	43	143	178	353
Future Volume (veh/h)	229	241	72	164	968	177	79	63	43	143	178	353
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No		No		No		No		No	
Adj Sat Flow, veh/h/ln	1375	1561	1758	1538	1660	1238	1660	1617	1646	1315	1758	1758
Adj Flow Rate, veh/h	241	254	76	173	1019	186	83	66	45	151	187	372
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	18	17	3	5	10	40	3	13	11	29	3	3
Cap, veh/h	285	2489	870	218	2486	576	102	248	113	170	267	452
Arrive On Green	0.11	0.58	0.58	0.08	0.55	0.55	0.06	0.08	0.08	0.14	0.15	0.15
Sat Flow, veh/h	2541	4262	1490	2841	4531	1049	1581	3073	1395	1253	1758	2979
Grp Volume(v), veh/h	241	254	76	173	1019	186	83	66	45	151	187	372
Grp Sat Flow(s),veh/h/ln	1271	1421	1490	1420	1510	1049	1581	1537	1395	1253	1758	1490
Q Serve(g_s), s	12.1	3.4	2.9	7.8	17.0	12.6	6.7	2.6	4.0	15.4	13.1	15.7
Cycle Q Clear(g_c), s	12.1	3.4	2.9	7.8	17.0	12.6	6.7	2.6	4.0	15.4	13.1	15.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	285	2489	870	218	2486	576	102	248	113	170	267	452
VC Ratio(X)	0.85	0.10	0.09	0.79	0.41	0.32	0.81	0.27	0.40	0.89	0.70	0.82
Avail Cap(c_a), veh/h	430	2489	870	328	2486	576	195	378	172	279	392	665
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.78	0.78	0.78	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	56.6	12.0	11.9	59.0	17.1	16.1	60.0	56.1	56.8	55.2	52.3	53.4
Incr Delay (d2), s/veh	9.5	0.1	0.2	6.0	0.4	1.2	14.3	0.6	2.3	17.6	3.3	5.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.1	1.0	1.0	2.9	5.5	3.2	3.1	1.0	1.5	5.7	6.0	6.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	66.2	12.1	12.1	65.0	17.5	17.3	74.3	56.7	59.0	72.8	55.7	58.8
LnGrp LOS	E	B	B	E	B	B	E	E	E	E	E	E
Approach Vol, veh/h	571		1378		194		710					
Approach Delay, s/veh	34.9		23.4		64.8		60.9					
Approach LOS	C		C		E		E					
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	4.0	79.9	12.4	23.7	18.6	75.3	21.6	14.5				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	15.0	54.0	16.0	29.0	22.0	47.0	29.0	16.0				
Max Q Clear Time (g_c+19.8), s	19.8	5.4	8.7	17.7	14.1	19.0	17.4	6.0				
Green Ext Time (p_c), s	0.2	1.8	0.1	2.0	0.5	7.8	0.3	0.3				

Intersection Summary

HCM 6th Ctrl Delay	37.9
HCM 6th LOS	D

Notes

User approved volume balancing among the lanes for turning movement.

HCM 6th Signalized Intersection Summary

8: Fourth St & I-15 NB Ramps

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔	↑↑↑	↗	↗	↑↑↑		↗	↑↑		↗	↖	↖↖
Traffic Volume (veh/h)	147	254	28	15	283	62	53	23	34	324	55	942
Future Volume (veh/h)	147	254	28	15	283	62	53	23	34	324	55	942
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No		No		No		No		No		No
Adj Sat Flow, veh/h/ln	1688	1491	1295	958	1351	1351	761	1491	1491	1309	1281	1702
Adj Flow Rate, veh/h	156	270	30	16	301	66	56	24	36	387	0	1002
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	8	22	36	60	32	32	74	22	22	35	37	7
Cap, veh/h	860	2539	684	12	1103	232	68	132	118	364	0	1217
Arrive On Green	0.09	0.21	0.21	0.01	0.36	0.36	0.09	0.09	0.09	0.15	0.00	0.15
Sat Flow, veh/h	3118	4071	1097	912	3050	643	725	1417	1264	2493	0	2884
Grp Volume(v), veh/h	156	270	30	16	240	127	56	24	36	387	0	1002
Grp Sat Flow(s),veh/h/ln	1559	1357	1097	912	1229	1235	725	1417	1264	1246	0	1442
Q Serve(g_s), s	6.0	7.0	2.8	1.8	9.0	9.5	9.9	2.0	3.5	19.0	0.0	4.2
Cycle Q Clear(g_c), s	6.0	7.0	2.8	1.8	9.0	9.5	9.9	2.0	3.5	19.0	0.0	4.2
Prop In Lane	1.00		1.00	1.00		0.52	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	860	2539	684	12	889	446	68	132	118	364	0	1217
V/C Ratio(X)	0.18	0.11	0.04	1.30	0.27	0.28	0.83	0.18	0.30	1.06	0.00	0.82
Avail Cap(c_a), veh/h	860	2539	684	56	889	446	229	447	399	364	0	1217
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.96	0.96	0.96	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	45.5	22.2	20.6	64.1	29.4	29.5	57.9	54.3	55.0	55.5	0.0	33.3
Incr Delay (d2), s/veh	0.1	0.1	0.1	219.0	0.7	1.6	21.4	0.6	1.4	64.6	0.0	4.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	2.1	0.7	1.1	2.6	2.9	2.2	0.7	1.1	9.2	0.0	14.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	45.6	22.3	20.7	283.1	30.1	31.1	79.3	55.0	56.4	120.1	0.0	38.0
LnGrp LOS	D	C	C	F	C	C	E	D	E	F	A	D
Approach Vol, veh/h		456			383			116			1389	
Approach Delay, s/veh		30.2			41.0			67.2			60.9	
Approach LOS		C			D			E			E	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.8	85.1		23.0	39.8	51.0		16.2				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	46.0	46.0		19.0	7.0	47.0		41.0				
Max Q Clear Time (g_c+1), s	9.0	9.0		21.0	8.0	11.5		11.9				
Green Ext Time (p_c), s	0.0	1.7		0.0	0.0	2.1		0.5				

Intersection Summary

HCM 6th Ctrl Delay	52.0
HCM 6th LOS	D

Notes

- User approved pedestrian interval to be less than phase max green.
- User approved volume balancing among the lanes for turning movement.

HCM 6th Signalized Intersection Summary
 9: Milliken Ave & I-210 WB On-ramp/I-210 WB Off-ramp

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↘	↔	↗	↘↗	↑↑↑			↑↑↗	
Traffic Volume (veh/h)	0	0	0	135	4	56	261	205	0	0	463	99
Future Volume (veh/h)	0	0	0	135	4	56	261	205	0	0	463	99
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach				No		No		No				
Adj Sat Flow, veh/h/ln				1528	1786	1646	1538	1758	0	0	1772	1772
Adj Flow Rate, veh/h				159	0	40	269	211	0	0	477	102
Peak Hour Factor				0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %				13	1	11	5	3	0	0	2	2
Cap, veh/h				374	0	179	357	3542	0	0	2188	456
Arrive On Green				0.13	0.00	0.13	0.13	0.74	0.00	0.00	0.55	0.55
Sat Flow, veh/h				2910	0	1395	2841	4957	0	0	4170	836
Grp Volume(v), veh/h				159	0	40	269	211	0	0	381	198
Grp Sat Flow(s),veh/h/ln				1455	0	1395	1420	1600	0	0	1612	1621
Q Serve(g_s), s				3.0	0.0	1.5	5.5	0.7	0.0	0.0	3.7	3.8
Cycle Q Clear(g_c), s				3.0	0.0	1.5	5.5	0.7	0.0	0.0	3.7	3.8
Prop In Lane				1.00		1.00	1.00		0.00	0.00		0.52
Lane Grp Cap(c), veh/h				374	0	179	357	3542	0	0	1760	885
V/C Ratio(X)				0.43	0.00	0.22	0.75	0.06	0.00	0.00	0.22	0.22
Avail Cap(c_a), veh/h				388	0	186	426	3542	0	0	1760	885
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.98	0.98	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				24.1	0.0	23.5	25.3	2.2	0.0	0.0	7.0	7.1
Incr Delay (d2), s/veh				0.8	0.0	0.6	6.0	0.0	0.0	0.0	0.3	0.6
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				1.0	0.0	0.5	2.0	0.1	0.0	0.0	1.1	1.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				24.9	0.0	24.1	31.3	2.2	0.0	0.0	7.3	7.6
LnGrp LOS				C	A	C	C	A	A	A	A	A
Approach Vol, veh/h						199		480			579	
Approach Delay, s/veh						24.7		18.5			7.4	
Approach LOS						C		B			A	
Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		48.3			11.5	36.7		11.7				
Change Period (Y+Rc), s		4.0			4.0	4.0		4.0				
Max Green Setting (Gmax), s		44.0			9.0	31.0		8.0				
Max Q Clear Time (g_c+I1), s		2.7			7.5	5.8		5.0				
Green Ext Time (p_c), s		1.5			0.1	4.0		0.2				

Intersection Summary

HCM 6th Ctrl Delay	14.4
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

HCM 6th Signalized Intersection Summary
 10: Milliken Ave & I-210 EB Off-ramp/I-210 EB On-ramp

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↔	↗					↑↑↑		↘↗	↑↑↑	
Traffic Volume (veh/h)	64	7	166	0	0	0	0	401	288	109	498	0
Future Volume (veh/h)	64	7	166	0	0	0	0	401	288	109	498	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No						No			No		
Adj Sat Flow, veh/h/ln	1594	1786	1660				0	1772	1772	1475	1744	0
Adj Flow Rate, veh/h	49	0	207				0	436	313	118	541	0
Peak Hour Factor	0.92	0.92	0.92				0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	8	1	10				0	2	2	10	4	0
Cap, veh/h	200	0	370				0	1827	851	278	3500	0
Arrive On Green	0.13	0.00	0.13				0.00	0.57	0.57	0.20	1.00	0.00
Sat Flow, veh/h	1518	0	2813				0	3384	1502	2726	4918	0
Grp Volume(v), veh/h	49	0	207				0	436	313	118	541	0
Grp Sat Flow(s),veh/h/ln	1518	0	1406				0	1612	1502	1363	1587	0
Q Serve(g_s), s	1.7	0.0	4.1				0.0	4.1	6.8	2.3	0.0	0.0
Cycle Q Clear(g_c), s	1.7	0.0	4.1				0.0	4.1	6.8	2.3	0.0	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	200	0	370				0	1827	851	278	3500	0
V/C Ratio(X)	0.25	0.00	0.56				0.00	0.24	0.37	0.42	0.15	0.00
Avail Cap(c_a), veh/h	202	0	375				0	1827	851	278	3500	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	0.98	0.98	0.00
Uniform Delay (d), s/veh	23.4	0.0	24.4				0.0	6.5	7.1	22.4	0.0	0.0
Incr Delay (d2), s/veh	0.6	0.0	1.8				0.0	0.3	1.2	1.0	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.0	1.4				0.0	1.2	2.0	0.7	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	24.0	0.0	26.3				0.0	6.8	8.3	23.4	0.1	0.0
LnGrp LOS	C	A	C				A	A	A	C	A	A
Approach Vol, veh/h	256						749			659		
Approach Delay, s/veh	25.8						7.5			4.3		
Approach LOS	C						A			A		
Timer - Assigned Phs	1	2	4	6								
Phs Duration (G+Y+Rc), s	30.1	38.0	11.9	48.1								
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0								
Max Green Setting (Gmax), s	30.0	34.0	8.0	44.0								
Max Q Clear Time (g_c+I), s	14.3	8.8	6.1	2.0								
Green Ext Time (p_c), s	0.1	5.5	0.2	4.2								

Intersection Summary

HCM 6th Ctrl Delay	9.0
HCM 6th LOS	A

Notes

User approved volume balancing among the lanes for turning movement.

HCM 6th Signalized Intersection Summary

11: Milliken Ave & Foothill Blvd

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖↗	↑↑↑	↖	↖↗	↑↑↑	↖	↖↗	↑↑↑	↖	↖↗	↑↑↑	↖
Traffic Volume (veh/h)	40	364	61	129	670	82	83	176	94	123	375	139
Future Volume (veh/h)	40	364	61	129	670	82	83	176	94	123	375	139
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No		No		No		No		No		No
Adj Sat Flow, veh/h/ln	1563	1716	1786	1513	1758	1758	1500	1744	1702	1588	1744	1716
Adj Flow Rate, veh/h	42	379	64	134	698	85	86	183	98	128	391	145
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	3	6	1	7	3	3	8	4	7	1	4	6
Cap, veh/h	107	1195	386	215	1415	439	170	1185	285	221	1008	308
Arrive On Green	0.04	0.26	0.26	0.08	0.29	0.29	0.06	0.20	0.20	0.08	0.21	0.21
Sat Flow, veh/h	2887	4684	1514	2795	4799	1490	2772	5999	1442	2933	4761	1454
Grp Volume(v), veh/h	42	379	64	134	698	85	86	183	98	128	391	145
Grp Sat Flow(s),veh/h/ln	1444	1561	1514	1397	1600	1490	1386	1500	1442	1467	1587	1454
Q Serve(g_s), s	0.6	2.7	1.3	1.9	4.9	1.7	1.2	1.0	2.4	1.7	2.9	3.5
Cycle Q Clear(g_c), s	0.6	2.7	1.3	1.9	4.9	1.7	1.2	1.0	2.4	1.7	2.9	3.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	107	1195	386	215	1415	439	170	1185	285	221	1008	308
VC Ratio(X)	0.39	0.32	0.17	0.62	0.49	0.19	0.51	0.15	0.34	0.58	0.39	0.47
Avail Cap(c_a), veh/h	285	5898	1906	276	6043	1876	342	6665	1602	290	5172	1580
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	19.1	12.2	11.7	18.1	11.8	10.7	18.4	13.5	14.0	18.1	13.7	14.0
Incr Delay (d2), s/veh	2.3	0.2	0.2	2.9	0.3	0.2	2.3	0.1	0.7	2.4	0.2	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.6	0.3	0.5	1.2	0.4	0.4	0.3	0.6	0.5	0.7	0.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	21.4	12.4	11.9	21.1	12.0	10.9	20.7	13.5	14.7	20.5	14.0	15.1
LnGrp LOS	C	B	B	C	B	B	C	B	B	C	B	B
Approach Vol, veh/h		485			917			367			664	
Approach Delay, s/veh		13.1			13.3			15.5			15.5	
Approach LOS		B			B			B			B	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	7.1	14.3	6.5	12.6	5.5	15.9	7.1	12.0				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	4.0	51.0	5.0	44.0	4.0	51.0	4.0	45.0				
Max Q Clear Time (g_c+13), s	4.0	4.7	3.2	5.5	2.6	6.9	3.7	4.4				
Green Ext Time (p_c), s	0.0	2.6	0.0	2.9	0.0	5.1	0.0	1.4				

Intersection Summary

HCM 6th Ctrl Delay	14.2
HCM 6th LOS	B

HCM 6th Signalized Intersection Summary

12: Milliken Ave & Fourth St

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔	↑↑↑	↗	↔↔	↑↑↑	↗	↔↔	↑↑↑	↗	↔↔	↑↑↑	↗
Traffic Volume (veh/h)	80	289	117	229	385	85	78	613	83	92	598	78
Future Volume (veh/h)	80	289	117	229	385	85	78	613	83	92	598	78
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No		No		No		No		No		No
Adj Sat Flow, veh/h/ln	1550	1632	1772	1538	1632	1702	1550	1646	1688	1513	1547	1547
Adj Flow Rate, veh/h	89	321	130	254	428	94	87	681	92	102	664	87
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	4	12	2	5	12	7	4	11	8	7	18	18
Cap, veh/h	137	587	198	313	865	280	133	3011	918	127	2554	327
Arrive On Green	0.05	0.13	0.13	0.11	0.19	0.19	0.05	0.53	0.53	0.05	0.53	0.53
Sat Flow, veh/h	2864	4454	1502	2841	4454	1442	2864	5661	1430	2795	4812	616
Grp Volume(v), veh/h	89	321	130	254	428	94	87	681	92	102	548	203
Grp Sat Flow(s),veh/h/ln	1432	1485	1502	1420	1485	1442	1432	1415	1430	1397	1331	1436
Q Serve(g_s), s	2.7	6.0	7.3	7.7	7.6	5.0	2.6	5.7	2.2	3.2	6.6	6.8
Cycle Q Clear(g_c), s	2.7	6.0	7.3	7.7	7.6	5.0	2.6	5.7	2.2	3.2	6.6	6.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.43
Lane Grp Cap(c), veh/h	137	587	198	313	865	280	133	3011	918	127	2119	762
VC Ratio(X)	0.65	0.55	0.66	0.81	0.50	0.34	0.66	0.23	0.10	0.81	0.26	0.27
Avail Cap(c_a), veh/h	259	2671	901	321	2772	898	162	3011	918	127	2119	762
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.4	35.9	36.5	38.4	31.7	30.7	41.4	11.0	6.1	41.8	11.3	11.3
Incr Delay (d2), s/veh	5.1	0.8	3.7	14.3	0.4	0.7	6.8	0.2	0.2	30.5	0.3	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	2.0	2.7	3.1	2.5	1.6	1.0	1.5	0.5	1.6	1.7	2.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	46.5	36.7	40.1	52.7	32.2	31.4	48.2	11.2	6.3	72.3	11.6	12.2
LnGrp LOS	D	D	D	D	C	C	D	B	A	E	B	B
Approach Vol, veh/h		540			776			860			853	
Approach Delay, s/veh		39.1			38.8			14.4			19.0	
Approach LOS		D			D			B			B	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	8.0	51.0	13.7	15.6	8.1	50.9	8.2	21.2				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	4.0	47.0	10.0	53.0	5.0	46.0	8.0	55.0				
Max Q Clear Time (g_c+1/3), s	4.0	7.7	9.7	9.3	4.6	8.8	4.7	9.6				
Green Ext Time (p_c), s	0.0	5.0	0.0	2.4	0.0	5.0	0.1	3.0				

Intersection Summary

HCM 6th Ctrl Delay	26.4
HCM 6th LOS	C

Intersection						
Int Delay, s/veh	0.5					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↗		↑↑↑	↑↑↑	↗
Traffic Vol, veh/h	0	61	0	644	687	55
Future Vol, veh/h	0	61	0	644	687	55
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	175
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	1	2	9	9	1
Mvmt Flow	0	64	0	678	723	58

Major/Minor	Minor2	Major1	Major2		
Conflicting Flow All	-	362	-	0	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-
Critical Hdwy	-	7.12	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-
Follow-up Hdwy	-	3.91	-	-	-
Pot Cap-1 Maneuver	0	544	0	-	-
Stage 1	0	-	0	-	-
Stage 2	0	-	0	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	-	544	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-

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

Minor Lane/Major Mvmt	NBT EBLn1	SBT	SBR
Capacity (veh/h)	- 544	-	-
HCM Lane V/C Ratio	- 0.118	-	-
HCM Control Delay (s)	- 12.5	-	-
HCM Lane LOS	- B	-	-
HCM 95th %tile Q(veh)	- 0.4	-	-

HCM 6th Signalized Intersection Summary

14: Milliken Ave & 7th St

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↑↑↑		↖	↑↑↑	
Traffic Volume (veh/h)	65	3	87	10	2	6	122	478	11	23	717	11
Future Volume (veh/h)	65	3	87	10	2	6	122	478	11	23	717	11
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1475	1786	1786	1037	1098	1098	1673	1688	1688	1687	1674	1674
Adj Flow Rate, veh/h	68	3	91	10	2	6	127	498	11	24	747	11
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	17	1	1	50	50	50	2	8	8	1	9	9
Cap, veh/h	203	5	149	125	24	73	156	3354	74	33	2996	44
Arrive On Green	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.72	0.72	0.02	0.65	0.65
Sat Flow, veh/h	1171	49	1472	762	242	726	1594	4639	102	1606	4639	68
Grp Volume(v), veh/h	68	0	94	10	0	8	127	329	180	24	490	268
Grp Sat Flow(s),veh/h/ln	1171	0	1521	762	0	967	1594	1536	1669	1606	1523	1661
Q Serve(g_s), s	4.3	0.0	4.6	1.0	0.0	0.6	6.0	2.6	2.6	1.1	5.3	5.3
Cycle Q Clear(g_c), s	4.9	0.0	4.6	5.6	0.0	0.6	6.0	2.6	2.6	1.1	5.3	5.3
Prop In Lane	1.00		0.97	1.00		0.75	1.00		0.06	1.00		0.04
Lane Grp Cap(c), veh/h	203	0	154	125	0	98	156	2221	1207	33	1967	1073
VC Ratio(X)	0.34	0.00	0.61	0.08	0.00	0.08	0.81	0.15	0.15	0.72	0.25	0.25
Avail Cap(c_a), veh/h	946	0	1120	609	0	712	226	2221	1207	124	1967	1073
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.8	0.0	33.3	36.0	0.0	31.5	34.2	3.3	3.3	37.7	5.8	5.8
Incr Delay (d2), s/veh	1.0	0.0	3.9	0.3	0.0	0.4	13.4	0.1	0.3	24.7	0.3	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	0.0	1.8	0.2	0.0	0.1	2.7	0.4	0.5	0.7	1.2	1.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	34.7	0.0	37.2	36.3	0.0	31.9	47.7	3.5	3.6	62.4	6.1	6.3
LnGrp LOS	C	A	D	D	A	C	D	A	A	E	A	A
Approach Vol, veh/h		162			18			636			782	
Approach Delay, s/veh		36.2			34.3			12.3			7.9	
Approach LOS		D			C			B			A	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.6	60.0		11.8	11.6	54.0		11.8				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	6.0	55.0		57.0	11.0	50.0		57.0				
Max Q Clear Time (g_c+I1), s	3.1	4.6		6.9	8.0	7.3		7.6				
Green Ext Time (p_c), s	0.0	3.0		0.9	0.1	4.8		0.1				

Intersection Summary

HCM 6th Ctrl Delay	12.8
HCM 6th LOS	B

HCM 6th Signalized Intersection Summary
 15: Milliken Ave & I-10 WB Ramps/Ontario Mills Pkwy

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔	↑	↗	↔↔	↕↕	↗	↔↔	↑↑↑	↗	↔↔	↑↑↑	↗
Traffic Volume (veh/h)	51	34	24	215	47	173	95	411	161	80	364	217
Future Volume (veh/h)	51	34	24	215	47	173	95	411	161	80	364	217
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No		No		No		No		No		No
Adj Sat Flow, veh/h/ln	1425	1463	1730	1550	1786	1365	739	1632	1252	1588	1632	1561
Adj Flow Rate, veh/h	58	39	27	244	53	197	108	467	183	91	414	247
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	14	24	5	4	1	31	69	12	39	1	12	17
Cap, veh/h	90	230	230	191	644	219	210	3109	659	130	2494	633
Arrive On Green	0.03	0.16	0.16	0.07	0.19	0.19	0.05	0.18	0.18	0.04	0.44	0.44
Sat Flow, veh/h	2633	1463	1466	2864	3393	1157	1365	5612	1061	2933	5612	1323
Grp Volume(v), veh/h	58	39	27	244	53	197	108	467	183	91	414	247
Grp Sat Flow(s),veh/h/ln	1317	1463	1466	1432	1697	1157	683	1403	1061	1467	1403	1323
Q Serve(g_s), s	2.0	2.1	1.0	6.0	1.2	15.0	6.9	6.3	11.4	2.8	4.0	5.9
Cycle Q Clear(g_c), s	2.0	2.1	1.0	6.0	1.2	15.0	6.9	6.3	11.4	2.8	4.0	5.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	90	230	230	191	644	219	210	3109	659	130	2494	633
VC Ratio(X)	0.65	0.17	0.12	1.28	0.08	0.90	0.51	0.15	0.28	0.70	0.17	0.39
Avail Cap(c_a), veh/h	117	260	261	191	679	231	210	3109	659	130	2494	633
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	0.91	1.00	1.00	1.00
Uniform Delay (d), s/veh	42.9	32.8	16.5	42.0	30.0	35.6	39.4	19.0	15.8	42.4	15.0	6.5
Incr Delay (d2), s/veh	7.6	0.3	0.2	159.1	0.1	32.4	1.9	0.1	1.0	15.1	0.1	1.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.8	0.5	6.3	0.5	6.1	1.3	2.1	3.4	1.3	1.3	2.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	50.5	33.2	16.7	201.1	30.1	68.0	41.4	19.1	16.8	57.5	15.1	8.3
LnGrp LOS	D	C	B	F	C	E	D	B	B	E	B	A
Approach Vol, veh/h		124		494		758		752				
Approach Delay, s/veh		37.7		129.7		21.7		18.0				
Approach LOS		D		F		C		B				
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	8.0	53.9	10.0	18.1	17.9	44.0	7.1	21.1				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	4.0	48.0	6.0	16.0	12.0	40.0	4.0	18.0				
Max Q Clear Time (g_c+14), s	4.0	13.4	8.0	4.1	8.9	7.9	4.0	17.0				
Green Ext Time (p_c), s	0.0	4.3	0.0	0.1	0.1	4.1	0.0	0.1				

Intersection Summary

HCM 6th Ctrl Delay	46.4
HCM 6th LOS	D

HCM 6th Signalized Intersection Summary
 16: Milliken Ave & I-10 EB Ramps

11/03/2021



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↶↷	↷	↶↷	↑↑↑	↑↑↑	↷
Traffic Volume (veh/h)	361	229	179	307	420	184
Future Volume (veh/h)	361	229	179	307	420	184
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1475	1660	1051	1505	1519	958
Adj Flow Rate, veh/h	425	269	211	361	494	216
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	10	10	44	21	20	60
Cap, veh/h	624	322	260	3532	2632	595
Arrive On Green	0.23	0.23	0.13	0.68	0.17	0.17
Sat Flow, veh/h	2726	1406	1942	5388	5439	812
Grp Volume(v), veh/h	425	269	211	361	494	216
Grp Sat Flow(s),veh/h/ln	1363	1406	971	1294	1307	812
Q Serve(g_s), s	12.8	16.4	9.5	2.1	7.3	11.8
Cycle Q Clear(g_c), s	12.8	16.4	9.5	2.1	7.3	11.8
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	624	322	260	3532	2632	595
VC Ratio(X)	0.68	0.84	0.81	0.10	0.19	0.36
Avail Cap(c_a), veh/h	939	484	561	3532	2632	595
HCM Platoon Ratio	1.00	1.00	1.00	1.00	0.33	0.33
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.94	0.94
Uniform Delay (d), s/veh	31.7	33.1	37.9	4.9	21.7	8.1
Incr Delay (d2), s/veh	1.3	7.8	6.0	0.1	0.1	1.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.2	12.6	2.4	0.5	2.4	5.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	33.0	40.9	43.8	4.9	21.8	9.7
LnGrp LOS	C	D	D	A	C	A
Approach Vol, veh/h	694			572	710	
Approach Delay, s/veh	36.1			19.3	18.1	
Approach LOS	D			B	B	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		65.4		24.6	16.1	49.3
Change Period (Y+Rc), s		4.0		4.0	4.0	4.0
Max Green Setting (Gmax), s		51.0		31.0	26.0	21.0
Max Q Clear Time (g_c+I1), s		4.1		18.4	11.5	13.8
Green Ext Time (p_c), s		2.8		2.2	0.6	2.5
Intersection Summary						
HCM 6th Ctrl Delay			24.8			
HCM 6th LOS			C			

HCM 6th Signalized Intersection Summary

1: Highway 395 & Joshua St

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↶	↷		↶	↷	↷	↶	↷↷	↷	↶	↷↷	↷
Traffic Volume (veh/h)	29	86	13	33	19	141	21	1155	68	68	593	23
Future Volume (veh/h)	29	86	13	33	19	141	21	1155	68	68	593	23
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1687	1786	1786	1528	1786	1519	1687	1716	1491	1395	1617	1716
Adj Flow Rate, veh/h	32	96	14	37	21	157	23	1283	76	76	659	26
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	1	1	1	13	1	20	1	6	22	23	13	6
Cap, veh/h	273	240	35	215	281	203	60	1969	763	88	1944	920
Arrive On Green	0.16	0.16	0.16	0.16	0.16	0.16	0.04	0.60	0.60	0.07	0.63	0.63
Sat Flow, veh/h	1148	1524	222	1106	1786	1287	1606	3260	1264	1329	3073	1454
Grp Volume(v), veh/h	32	0	110	37	21	157	23	1283	76	76	659	26
Grp Sat Flow(s),veh/h/ln	1148	0	1746	1106	1786	1287	1606	1630	1264	1329	1537	1454
Q Serve(g_s), s	1.7	0.0	3.9	2.2	0.7	8.1	1.0	17.9	1.8	3.9	7.0	0.5
Cycle Q Clear(g_c), s	2.4	0.0	3.9	6.1	0.7	8.1	1.0	17.9	1.8	3.9	7.0	0.5
Prop In Lane	1.00		0.13	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	273	0	275	215	281	203	60	1969	763	88	1944	920
VC Ratio(X)	0.12	0.00	0.40	0.17	0.07	0.77	0.38	0.65	0.10	0.87	0.34	0.03
Avail Cap(c_a), veh/h	885	0	1205	804	1233	889	139	1969	763	153	1944	920
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.0	0.0	26.3	29.1	25.0	28.1	32.7	9.0	5.8	32.2	6.0	4.8
Incr Delay (d2), s/veh	0.2	0.0	0.9	0.4	0.1	6.2	4.0	1.7	0.3	21.3	0.5	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.0	1.6	0.6	0.3	2.7	0.4	4.3	0.3	1.6	1.4	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	26.2	0.0	27.3	29.5	25.1	34.3	36.7	10.7	6.1	53.4	6.4	4.8
LnGrp LOS	C	A	C	C	C	C	D	B	A	D	A	A
Approach Vol, veh/h		142			215			1382				761
Approach Delay, s/veh		27.0			32.6			10.9				11.1
Approach LOS		C			C			B				B
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.6	46.0		15.0	6.6	48.0		15.0				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	8.0	42.0		48.0	6.0	44.0		48.0				
Max Q Clear Time (g_c+I1), s	5.9	19.9		5.9	3.0	9.0		10.1				
Green Ext Time (p_c), s	0.0	9.0		0.8	0.0	4.3		0.8				

Intersection Summary

HCM 6th Ctrl Delay	13.7
HCM 6th LOS	B

Intersection						
Int Delay, s/veh	2.4					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		∩	
Traffic Vol, veh/h	0	179	129	0	18	77
Future Vol, veh/h	0	179	129	0	18	77
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	0	25	23	0	1	22
Mvmt Flow	0	183	132	0	18	79
Major/Minor	Major1	Major2	Minor2			
Conflicting Flow All	-	0	-	0	315	132
Stage 1	-	-	-	-	132	-
Stage 2	-	-	-	-	183	-
Critical Hdwy	-	-	-	-	6.41	6.42
Critical Hdwy Stg 1	-	-	-	-	5.41	-
Critical Hdwy Stg 2	-	-	-	-	5.41	-
Follow-up Hdwy	-	-	-	-	3.509	3.498
Pot Cap-1 Maneuver	0	-	-	0	680	867
Stage 1	0	-	-	0	897	-
Stage 2	0	-	-	0	851	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	-	680	867
Mov Cap-2 Maneuver	-	-	-	-	680	-
Stage 1	-	-	-	-	897	-
Stage 2	-	-	-	-	851	-
Approach	EB	WB	SB			
HCM Control Delay, s	0	0	10			
HCM LOS			B			
Minor Lane/Major Mvmt	EBT	WBT	SBLn1			
Capacity (veh/h)	-	-	824			
HCM Lane V/C Ratio	-	-	0.118			
HCM Control Delay (s)	-	-	10			
HCM Lane LOS	-	-	B			
HCM 95th %tile Q(veh)	-	-	0.4			

Intersection												
Int Delay, s/veh	3.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↗			↕				
Traffic Vol, veh/h	162	131	0	0	98	21	0	0	0	0	0	0
Future Vol, veh/h	162	131	0	0	98	21	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	16965	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	92	92	95	95	92	92	92	95	92	95
Heavy Vehicles, %	24	23	2	2	23	42	2	2	2	2	2	2
Mvmt Flow	171	138	0	0	103	22	0	0	0	0	0	0

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	125	0	-
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	4.34	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	2.416	-	-
Pot Cap-1 Maneuver	1336	0	0
Stage 1	-	0	0
Stage 2	-	0	0
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1336	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	4.5	0	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	WBT	WBR
Capacity (veh/h)	-	1336	-	-	-
HCM Lane V/C Ratio	-	0.128	-	-	-
HCM Control Delay (s)	0	8.1	0	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	-	0.4	-	-	-

Intersection						
Int Delay, s/veh	6					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	Y ^W			↑	↑	
Traffic Vol, veh/h	73	64	74	30	29	62
Future Vol, veh/h	73	64	74	30	29	62
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	6	10	20	48	38	19
Mvmt Flow	74	65	76	31	30	63

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	245	62	93	0	-	0
Stage 1	62	-	-	-	-	-
Stage 2	183	-	-	-	-	-
Critical Hdwy	6.46	6.3	4.3	-	-	-
Critical Hdwy Stg 1	5.46	-	-	-	-	-
Critical Hdwy Stg 2	5.46	-	-	-	-	-
Follow-up Hdwy	3.554	3.39	2.38	-	-	-
Pot Cap-1 Maneuver	735	981	1396	-	-	-
Stage 1	951	-	-	-	-	-
Stage 2	839	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	695	981	1396	-	-	-
Mov Cap-2 Maneuver	695	-	-	-	-	-
Stage 1	899	-	-	-	-	-
Stage 2	839	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10.4	5.5	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1396	-	805	-	-
HCM Lane V/C Ratio	0.054	-	0.174	-	-
HCM Control Delay (s)	7.7	0	10.4	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.2	-	0.6	-	-

HCM 6th Signalized Intersection Summary

5: I-15 SB On-ramp/I-15 SB Off-ramp & Foothill Blvd/Foothill Blvd

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↑		↑↑↑	↑				↑	↔	↑
Traffic Volume (veh/h)	0	2274	885	0	1845	472	0	0	0	167	0	515
Future Volume (veh/h)	0	2274	885	0	1845	472	0	0	0	167	0	515
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1786	1786	0	1772	1772				1716	1772	1702
Adj Flow Rate, veh/h	0	2527	0	0	2050	0				124	0	638
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90				0.90	0.90	0.90
Percent Heavy Veh, %	0	1	1	0	2	2				6	2	7
Cap, veh/h	0	3227		0	3201					407	0	719
Arrive On Green	0.00	0.66	0.00	0.00	1.00	0.00				0.25	0.00	0.25
Sat Flow, veh/h	0	5036	1514	0	4997	1502				1634	0	2884
Grp Volume(v), veh/h	0	2527	0	0	2050	0				124	0	638
Grp Sat Flow(s),veh/h/ln	0	1625	1514	0	1612	1502				1634	0	1442
Q Serve(g_s), s	0.0	32.7	0.0	0.0	0.0	0.0				5.5	0.0	19.2
Cycle Q Clear(g_c), s	0.0	32.7	0.0	0.0	0.0	0.0				5.5	0.0	19.2
Prop In Lane	0.00		1.00	0.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	3227		0	3201					407	0	719
V/C Ratio(X)	0.00	0.78		0.00	0.64					0.30	0.00	0.89
Avail Cap(c_a), veh/h	0	3227		0	3201					454	0	801
HCM Platoon Ratio	1.00	1.00	1.00	1.00	2.00	2.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.00	0.00	0.49	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	10.7	0.0	0.0	0.0	0.0				27.4	0.0	32.6
Incr Delay (d2), s/veh	0.0	2.0	0.0	0.0	0.5	0.0				0.4	0.0	11.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	8.8	0.0	0.0	0.1	0.0				2.1	0.0	7.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	12.7	0.0	0.0	0.5	0.0				27.9	0.0	43.6
LnGrp LOS	A	B		A	A					C	A	D
Approach Vol, veh/h		2527	A		2050	A					762	
Approach Delay, s/veh		12.7			0.5						41.0	
Approach LOS		B			A						D	
Timer - Assigned Phs		2		4		6						
Phs Duration (G+Y+Rc), s		63.6		26.4		63.6						
Change Period (Y+Rc), s		4.0		4.0		4.0						
Max Green Setting (Gmax), s		57.0		25.0		57.0						
Max Q Clear Time (g_c+I1), s		34.7		21.2		2.0						
Green Ext Time (p_c), s		18.1		1.2		24.7						

Intersection Summary

HCM 6th Ctrl Delay	12.0
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th Signalized Intersection Summary

6: I-15 NB Off-ramp/I-15 NB On-ramp & Foothill Blvd /Foothill Blvd

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↑		↑↑↑	↑	↑	↑↓	↑			
Traffic Volume (veh/h)	0	2114	327	0	1314	990	1003	0	477	0	0	0
Future Volume (veh/h)	0	2114	327	0	1314	990	1003	0	477	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No		No		No		No				
Adj Sat Flow, veh/h/ln	0	1786	1674	0	1772	1786	1772	1772	1744			
Adj Flow Rate, veh/h	0	2323	0	0	1444	0	1265	0	349			
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91			
Percent Heavy Veh, %	0	1	9	0	2	1	2	2	4			
Cap, veh/h	0	2318		0	2300		1470	0	644			
Arrive On Green	0.00	0.95	0.00	0.00	0.48	0.00	0.44	0.00	0.44			
Sat Flow, veh/h	0	5036	1418	0	4997	1514	3375	0	1478			
Grp Volume(v), veh/h	0	2323	0	0	1444	0	1265	0	349			
Grp Sat Flow(s),veh/h/ln	0	1625	1418	0	1612	1514	1688	0	1478			
Q Serve(g_s), s	0.0	42.8	0.0	0.0	20.1	0.0	30.5	0.0	15.7			
Cycle Q Clear(g_c), s	0.0	42.8	0.0	0.0	20.1	0.0	30.5	0.0	15.7			
Prop In Lane	0.00		1.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	0	2318		0	2300		1470	0	644			
V/C Ratio(X)	0.00	1.00		0.00	0.63		0.86	0.00	0.54			
Avail Cap(c_a), veh/h	0	2318		0	2300		1913	0	837			
HCM Platoon Ratio	1.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.00	0.51	0.00	0.00	1.00	0.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	0.0	2.2	0.0	0.0	17.6	0.0	22.9	0.0	18.8			
Incr Delay (d2), s/veh	0.0	13.8	0.0	0.0	1.3	0.0	3.4	0.0	0.7			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.0	3.7	0.0	0.0	7.3	0.0	11.8	0.0	5.1			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	16.0	0.0	0.0	19.0	0.0	26.3	0.0	19.5			
LnGrp LOS	A	F		A	B		C	A	B			
Approach Vol, veh/h		2323	A		1444	A		1614				
Approach Delay, s/veh		16.0			19.0			24.8				
Approach LOS		B			B			C				
Timer - Assigned Phs		2			6			8				
Phs Duration (G+Y+Rc), s		46.8			46.8			43.2				
Change Period (Y+Rc), s		4.0			4.0			4.0				
Max Green Setting (Gmax), s		31.0			31.0			51.0				
Max Q Clear Time (g_c+I1), s		44.8			22.1			32.5				
Green Ext Time (p_c), s		0.0			6.1			6.8				

Intersection Summary

HCM 6th Ctrl Delay 19.4
 HCM 6th LOS B

Notes

User approved volume balancing among the lanes for turning movement.
 Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th Signalized Intersection Summary
 7: Ontario Mills Dr./I-15 SB Ramps & Fourth St

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖↗	↑↑↑	↖	↖↗	↑↑↑	↖	↖	↑↑	↖	↖	↑↑	↖
Traffic Volume (veh/h)	671	998	67	94	734	264	129	220	42	82	180	403
Future Volume (veh/h)	671	998	67	94	734	264	129	220	42	82	180	403
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No		No		No		No		No		No
Adj Sat Flow, veh/h/ln	1513	1730	1772	1588	1660	1589	1647	1786	1786	1342	1786	1758
Adj Flow Rate, veh/h	678	1008	68	95	741	267	130	222	42	83	182	407
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	7	5	2	1	10	15	4	1	1	27	1	3
Cap, veh/h	748	2525	803	386	1806	537	158	308	137	173	224	1171
Arrive On Green	0.27	0.53	0.53	0.26	0.80	0.80	0.10	0.09	0.09	0.14	0.13	0.13
Sat Flow, veh/h	2795	4722	1502	2933	4531	1347	1569	3393	1514	1278	1786	2979
Grp Volume(v), veh/h	678	1008	68	95	741	267	130	222	42	83	182	407
Grp Sat Flow(s),veh/h/ln	1397	1574	1502	1467	1510	1347	1569	1697	1514	1278	1786	1490
Q Serve(g_s), s	30.5	16.4	2.9	3.3	6.4	5.8	10.6	8.3	3.4	7.8	12.9	8.7
Cycle Q Clear(g_c), s	30.5	16.4	2.9	3.3	6.4	5.8	10.6	8.3	3.4	7.8	12.9	8.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	748	2525	803	386	1806	537	158	308	137	173	224	1171
VC Ratio(X)	0.91	0.40	0.08	0.25	0.41	0.50	0.82	0.72	0.31	0.48	0.81	0.35
Avail Cap(c_a), veh/h	914	2525	803	386	1806	537	235	561	250	173	254	1222
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.90	0.90	0.90	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	46.0	17.9	14.7	42.8	8.6	4.0	57.3	57.5	55.3	52.0	55.4	14.5
Incr Delay (d2), s/veh	11.0	0.5	0.2	0.3	0.6	2.9	13.5	3.2	1.2	2.1	16.3	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	5.6	1.0	1.1	1.7	2.2	4.8	3.7	1.3	2.6	6.8	2.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	57.0	18.4	15.0	43.1	9.2	6.9	70.8	60.7	56.5	54.0	71.7	14.7
LnGrp LOS	E	B	B	D	A	A	E	E	E	D	E	B
Approach Vol, veh/h		1754			1103			394			672	
Approach Delay, s/veh		33.2			11.6			63.6			35.0	
Approach LOS		C			B			E			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	30.6	73.0	16.6	19.8	38.3	55.3	21.1	15.3				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	69.0	69.0	19.0	18.0	42.0	35.0	16.0	21.0				
Max Q Clear Time (g_c+1/3), s	18.4	18.4	12.6	14.9	32.5	8.4	9.8	10.3				
Green Ext Time (p_c), s	0.0	7.7	0.2	0.9	1.8	5.7	0.1	1.0				

Intersection Summary

HCM 6th Ctrl Delay	30.5
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

HCM 6th Signalized Intersection Summary

8: Fourth St & I-15 NB Ramps

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔	↑↑↑	↗	↗	↑↑↑		↗	↑↑		↗	↖	↖↖
Traffic Volume (veh/h)	615	460	47	30	409	170	57	58	49	144	43	626
Future Volume (veh/h)	615	460	47	30	409	170	57	58	49	144	43	626
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No		No		No		No		No		No
Adj Sat Flow, veh/h/ln	1786	1575	1702	1702	1603	1603	1702	1786	1786	1421	1758	1702
Adj Flow Rate, veh/h	641	479	49	31	426	177	59	60	51	98	118	652
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	1	16	7	7	14	14	7	1	1	27	3	7
Cap, veh/h	1170	1654	555	537	1113	442	100	113	86	135	175	1309
Arrive On Green	0.59	0.64	0.64	0.33	0.36	0.36	0.06	0.06	0.06	0.10	0.10	0.10
Sat Flow, veh/h	3300	4301	1442	1621	3079	1222	1621	1833	1398	1353	1758	2884
Grp Volume(v), veh/h	641	479	49	31	403	200	59	55	56	98	118	652
Grp Sat Flow(s),veh/h/ln	1650	1434	1442	1621	1459	1383	1621	1697	1534	1353	1758	1442
Q Serve(g_s), s	15.2	6.4	1.7	1.7	13.3	14.1	4.6	4.1	4.6	9.1	8.4	0.0
Cycle Q Clear(g_c), s	15.2	6.4	1.7	1.7	13.3	14.1	4.6	4.1	4.6	9.1	8.4	0.0
Prop In Lane	1.00		1.00	1.00		0.88	1.00		0.91	1.00		1.00
Lane Grp Cap(c), veh/h	1170	1654	555	537	1055	500	100	104	94	135	175	1309
VC Ratio(X)	0.55	0.29	0.09	0.06	0.38	0.40	0.59	0.53	0.59	0.73	0.68	0.50
Avail Cap(c_a), veh/h	1170	1654	555	537	1055	500	511	535	484	167	216	1378
HCM Platoon Ratio	1.67	1.67	1.67	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.94	0.94	0.94	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	20.2	15.4	14.6	29.6	30.7	31.0	59.4	59.2	59.4	56.8	56.5	25.0
Incr Delay (d2), s/veh	0.5	0.4	0.3	0.0	1.0	2.4	5.5	4.1	5.9	11.6	5.9	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.5	1.9	0.6	0.6	4.6	4.8	2.0	1.9	1.9	3.5	4.0	7.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	20.7	15.9	14.9	29.7	31.8	33.4	64.9	63.3	65.3	68.4	62.4	25.3
LnGrp LOS	C	B	B	C	C	C	E	E	E	E	E	C
Approach Vol, veh/h		1169			634			170			868	
Approach Delay, s/veh		18.5			32.2			64.5			35.2	
Approach LOS		B			C			E			D	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	47.1	54.0		16.9	50.1	51.0		12.0				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	50.0	50.0		16.0	10.0	47.0		41.0				
Max Q Clear Time (g_c+1), s	8.4	8.4		11.1	17.2	16.1		6.6				
Green Ext Time (p_c), s	0.0	3.2		1.8	0.0	3.6		0.8				

Intersection Summary

HCM 6th Ctrl Delay	29.4
HCM 6th LOS	C

Notes

- User approved pedestrian interval to be less than phase max green.
- User approved volume balancing among the lanes for turning movement.

HCM 6th Signalized Intersection Summary
 9: Milliken Ave & I-210 WB On-ramp/I-210 WB Off-ramp

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↘ ↙	↔	↗	↘ ↙	↕			↕	↘ ↙
Traffic Volume (veh/h)	0	0	0	185	7	83	207	601	0	0	521	74
Future Volume (veh/h)	0	0	0	185	7	83	207	601	0	0	521	74
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach				No		No		No				No
Adj Sat Flow, veh/h/ln				1554	1786	1688	1500	1786	0	0	1786	1786
Adj Flow Rate, veh/h				223	0	60	216	626	0	0	543	77
Peak Hour Factor				0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %				11	1	8	8	1	0	0	1	1
Cap, veh/h				391	0	189	373	3581	0	0	2306	322
Arrive On Green				0.13	0.00	0.13	0.27	1.00	0.00	0.00	0.53	0.53
Sat Flow, veh/h				2960	0	1430	2772	5036	0	0	4485	604
Grp Volume(v), veh/h				223	0	60	216	626	0	0	406	214
Grp Sat Flow(s),veh/h/ln				1480	0	1430	1386	1625	0	0	1625	1677
Q Serve(g_s), s				4.2	0.0	2.3	4.0	0.0	0.0	0.0	4.0	4.1
Cycle Q Clear(g_c), s				4.2	0.0	2.3	4.0	0.0	0.0	0.0	4.0	4.1
Prop In Lane				1.00		1.00	1.00		0.00	0.00		0.36
Lane Grp Cap(c), veh/h				391	0	189	373	3581	0	0	1734	895
V/C Ratio(X)				0.57	0.00	0.32	0.58	0.17	0.00	0.00	0.23	0.24
Avail Cap(c_a), veh/h				444	0	215	373	3581	0	0	1734	895
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.93	0.93	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				24.4	0.0	23.6	20.5	0.0	0.0	0.0	7.5	7.5
Incr Delay (d2), s/veh				1.3	0.0	1.0	2.1	0.1	0.0	0.0	0.3	0.6
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				1.4	0.0	0.8	1.2	0.0	0.0	0.0	1.2	1.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				25.8	0.0	24.5	22.5	0.1	0.0	0.0	7.8	8.1
LnGrp LOS				C	A	C	C	A	A	A	A	A
Approach Vol, veh/h						283		842			620	
Approach Delay, s/veh						25.5		5.9			7.9	
Approach LOS						C		A			A	
Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		48.1			12.1	36.0		11.9				
Change Period (Y+Rc), s		4.0			4.0	4.0		4.0				
Max Green Setting (Gmax), s		43.0			7.0	32.0		9.0				
Max Q Clear Time (g_c+I1), s		2.0			6.0	6.1		6.2				
Green Ext Time (p_c), s		5.0			0.1	4.3		0.3				

Intersection Summary

HCM 6th Ctrl Delay	9.8
HCM 6th LOS	A

Notes

User approved volume balancing among the lanes for turning movement.

HCM 6th Signalized Intersection Summary
 10: Milliken Ave & I-210 EB Off-ramp/I-210 EB On-ramp

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	171	10	117	0	0	0	0	675	440	123	585	0
Future Volume (veh/h)	171	10	117	0	0	0	0	675	440	123	585	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No					No		No			
Adj Sat Flow, veh/h/ln	1660	1786	1702				0	1758	1758	1575	1758	0
Adj Flow Rate, veh/h	223	0	86				0	711	463	129	616	0
Peak Hour Factor	0.95	0.95	0.95				0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	1	7				0	3	3	2	3	0
Cap, veh/h	419	0	191				0	1813	844	293	3523	0
Arrive On Green	0.13	0.00	0.13				0.00	0.57	0.57	0.20	1.00	0.00
Sat Flow, veh/h	3162	0	1442				0	3358	1490	2910	4957	0
Grp Volume(v), veh/h	223	0	86				0	711	463	129	616	0
Grp Sat Flow(s),veh/h/ln	1581	0	1442				0	1600	1490	1455	1600	0
Q Serve(g_s), s	3.9	0.0	3.3				0.0	7.4	11.7	2.3	0.0	0.0
Cycle Q Clear(g_c), s	3.9	0.0	3.3				0.0	7.4	11.7	2.3	0.0	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	419	0	191				0	1813	844	293	3523	0
V/C Ratio(X)	0.53	0.00	0.45				0.00	0.39	0.55	0.44	0.17	0.00
Avail Cap(c_a), veh/h	422	0	192				0	1813	844	293	3523	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	0.97	0.97	0.00
Uniform Delay (d), s/veh	24.3	0.0	24.0				0.0	7.2	8.2	22.5	0.0	0.0
Incr Delay (d2), s/veh	1.3	0.0	1.7				0.0	0.6	2.6	1.0	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	0.0	1.1				0.0	2.1	3.5	0.8	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	25.6	0.0	25.7				0.0	7.9	10.7	23.5	0.1	0.0
LnGrp LOS	C	A	C				A	A	B	C	A	A
Approach Vol, veh/h		309						1174			745	
Approach Delay, s/veh		25.6						9.0			4.2	
Approach LOS		C						A			A	
Timer - Assigned Phs	1	2	4	6								
Phs Duration (G+Y+Rc), s	30.0	38.0	12.0	48.0								
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0								
Max Green Setting (Gmax), s	30.0	34.0	8.0	44.0								
Max Q Clear Time (g_c+14), s	14.3	13.7	5.9	2.0								
Green Ext Time (p_c), s	0.1	8.5	0.2	4.9								

Intersection Summary

HCM 6th Ctrl Delay	9.7
HCM 6th LOS	A

Notes

User approved volume balancing among the lanes for turning movement.

HCM 6th Signalized Intersection Summary

11: Milliken Ave & Foothill Blvd

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖↗	↑↑↑	↖	↖↗	↑↑↑	↖	↖↗	↑↑↑	↖	↖↗	↑↑↑	↖
Traffic Volume (veh/h)	299	1561	148	268	822	123	264	669	325	156	269	115
Future Volume (veh/h)	299	1561	148	268	822	123	264	669	325	156	269	115
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No		No		No		No		No		No
Adj Sat Flow, veh/h/ln	1588	1786	1758	1588	1786	1772	1575	1772	1758	1588	1744	1772
Adj Flow Rate, veh/h	329	1715	163	295	903	135	290	735	357	171	296	126
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	1	1	3	1	1	2	2	2	3	1	4	2
Cap, veh/h	229	1908	583	206	1870	576	204	2140	523	183	1634	516
Arrive On Green	0.08	0.39	0.39	0.07	0.38	0.38	0.07	0.35	0.35	0.06	0.34	0.34
Sat Flow, veh/h	2933	4876	1490	2933	4876	1502	2910	6095	1490	2933	4761	1502
Grp Volume(v), veh/h	329	1715	163	295	903	135	290	735	357	171	296	126
Grp Sat Flow(s),veh/h/ln	1467	1625	1490	1467	1625	1502	1455	1524	1490	1467	1587	1502
Q Serve(g_s), s	10.0	42.3	9.6	9.0	18.0	7.8	9.0	11.4	26.2	7.4	5.6	7.7
Cycle Q Clear(g_c), s	10.0	42.3	9.6	9.0	18.0	7.8	9.0	11.4	26.2	7.4	5.6	7.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	229	1908	583	206	1870	576	204	2140	523	183	1634	516
VC Ratio(X)	1.44	0.90	0.28	1.43	0.48	0.23	1.42	0.34	0.68	0.93	0.18	0.24
Avail Cap(c_a), veh/h	229	1978	604	206	1940	598	204	2140	523	183	1634	516
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	59.1	36.6	26.7	59.6	29.9	26.8	59.6	30.7	35.5	59.8	29.5	30.2
Incr Delay (d2), s/veh	220.0	5.9	0.3	220.1	0.2	0.2	214.8	0.4	7.0	47.8	0.2	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	16.8	3.3	9.5	6.7	2.7	9.3	4.1	10.1	3.9	2.1	2.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	279.1	42.5	26.9	279.6	30.1	27.0	274.3	31.1	42.5	107.6	29.7	31.3
LnGrp LOS	F	D	C	F	C	C	F	C	D	F	C	C
Approach Vol, veh/h		2207			1333			1382			593	
Approach Delay, s/veh		76.6			85.0			85.1			52.5	
Approach LOS		E			F			F			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	3.0	54.2	13.0	48.0	14.0	53.2	12.0	49.0				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	3.0	52.0	9.0	44.0	10.0	51.0	8.0	45.0				
Max Q Clear Time (g_c+I), s	3.0	44.3	11.0	9.7	12.0	20.0	9.4	28.2				
Green Ext Time (p_c), s	0.0	5.8	0.0	2.2	0.0	6.8	0.0	5.4				

Intersection Summary

HCM 6th Ctrl Delay	78.2
HCM 6th LOS	E

HCM 6th Signalized Intersection Summary
 12: Milliken Ave & Fourth St

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔	↑↑↑	↗	↔↔	↑↑↑	↗	↔↔	↑↑↑	↗	↔↔	↑↑↑	↗
Traffic Volume (veh/h)	237	654	173	297	522	171	283	1005	100	271	770	69
Future Volume (veh/h)	237	654	173	297	522	171	283	1005	100	271	770	69
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No		No		No		No		No		No
Adj Sat Flow, veh/h/ln	1588	1730	1758	1575	1744	1730	1588	1660	1646	1550	1688	1688
Adj Flow Rate, veh/h	242	667	177	303	533	174	289	1026	102	277	786	70
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	1	5	3	2	4	5	1	10	11	4	8	8
Cap, veh/h	328	1114	351	319	1112	342	276	1768	585	269	1695	149
Arrive On Green	0.11	0.24	0.24	0.11	0.23	0.23	0.09	0.31	0.31	0.09	0.31	0.31
Sat Flow, veh/h	2933	4722	1490	2910	4761	1466	2933	5709	1395	2864	5474	481
Grp Volume(v), veh/h	242	667	177	303	533	174	289	1026	102	277	623	233
Grp Sat Flow(s),veh/h/ln	1467	1574	1490	1455	1587	1466	1467	1427	1395	1432	1451	1601
Q Serve(g_s), s	5.1	8.0	6.6	6.6	6.2	6.6	6.0	9.6	2.9	6.0	7.4	7.5
Cycle Q Clear(g_c), s	5.1	8.0	6.6	6.6	6.2	6.6	6.0	9.6	2.9	6.0	7.4	7.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.30
Lane Grp Cap(c), veh/h	328	1114	351	319	1112	342	276	1768	585	269	1348	496
VC Ratio(X)	0.74	0.60	0.50	0.95	0.48	0.51	1.05	0.58	0.17	1.03	0.46	0.47
Avail Cap(c_a), veh/h	414	3923	1238	319	3805	1172	276	4295	1202	269	3276	1205
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.4	21.7	21.1	28.2	21.1	21.3	28.9	18.5	11.6	28.9	17.7	17.8
Incr Delay (d2), s/veh	5.1	0.5	1.1	37.0	0.3	1.2	67.2	0.3	0.1	62.4	0.2	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	2.5	2.0	3.6	1.9	2.0	4.4	2.7	0.7	4.2	2.1	2.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	32.6	22.2	22.3	65.2	21.4	22.4	96.1	18.8	11.7	91.3	18.0	18.5
LnGrp LOS	C	C	C	E	C	C	F	B	B	F	B	B
Approach Vol, veh/h		1086			1010			1417			1133	
Approach Delay, s/veh		24.5			34.7			34.1			36.0	
Approach LOS		C			C			C			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	40.0	23.8	11.0	19.0	10.0	23.8	11.1	18.9				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	48.0	48.0	7.0	53.0	6.0	48.0	9.0	51.0				
Max Q Clear Time (g_c+1/3), s	11.6	11.6	8.6	10.0	8.0	9.5	7.1	8.6				
Green Ext Time (p_c), s	0.0	8.1	0.0	5.0	0.0	5.8	0.1	4.0				

Intersection Summary

HCM 6th Ctrl Delay	32.5
HCM 6th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

Intersection						
Int Delay, s/veh	0.4					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↗		↑↑↑	↑↑↑	↗
Traffic Vol, veh/h	0	85	0	1790	807	74
Future Vol, veh/h	0	85	0	1790	807	74
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	175
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	2	1	2	3	6	4
Mvmt Flow	0	87	0	1827	823	76

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	-	412	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	7.12	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	3.91	-
Pot Cap-1 Maneuver	0	506	0
Stage 1	0	-	0
Stage 2	0	-	0
Platoon blocked, %			-
Mov Cap-1 Maneuver	-	506	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	13.6	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT EBLn1	SBT	SBR
Capacity (veh/h)	-	506	-
HCM Lane V/C Ratio	-	0.171	-
HCM Control Delay (s)	-	13.6	-
HCM Lane LOS	-	B	-
HCM 95th %tile Q(veh)	-	0.6	-

HCM 6th Signalized Intersection Summary

14: Milliken Ave & 7th St

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↑↑↑		↖	↑↑↑	
Traffic Volume (veh/h)	177	3	106	16	0	19	209	1537	11	7	861	26
Future Volume (veh/h)	177	3	106	16	0	19	209	1537	11	7	861	26
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1687	1786	1786	1382	1800	1800	1620	1758	1758	1687	1716	1716
Adj Flow Rate, veh/h	179	3	107	16	0	19	211	1553	11	7	870	26
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	1	1	1	24	0	0	6	3	3	1	6	6
Cap, veh/h	302	7	262	194	0	270	174	3346	24	11	2687	80
Arrive On Green	0.18	0.18	0.18	0.18	0.00	0.18	0.11	0.68	0.68	0.01	0.57	0.57
Sat Flow, veh/h	1326	41	1478	1001	0	1525	1543	4916	35	1606	4674	139
Grp Volume(v), veh/h	179	0	110	16	0	19	211	1011	553	7	581	315
Grp Sat Flow(s),veh/h/ln	1326	0	1520	1001	0	1525	1543	1600	1752	1606	1561	1691
Q Serve(g_s), s	11.5	0.0	5.7	1.3	0.0	0.9	10.0	13.1	13.1	0.4	8.6	8.6
Cycle Q Clear(g_c), s	12.5	0.0	5.7	7.0	0.0	0.9	10.0	13.1	13.1	0.4	8.6	8.6
Prop In Lane	1.00		0.97	1.00		1.00	1.00		0.02	1.00		0.08
Lane Grp Cap(c), veh/h	302	0	269	194	0	270	174	2177	1192	11	1795	972
VC Ratio(X)	0.59	0.00	0.41	0.08	0.00	0.07	1.21	0.46	0.46	0.61	0.32	0.32
Avail Cap(c_a), veh/h	920	0	977	660	0	980	174	2177	1192	72	1795	972
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.6	0.0	32.4	35.5	0.0	30.4	39.4	6.6	6.6	43.9	9.8	9.8
Incr Delay (d2), s/veh	1.9	0.0	1.0	0.2	0.0	0.1	137.0	0.7	1.3	42.6	0.5	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.8	0.0	2.1	0.3	0.0	0.3	10.2	3.2	3.7	0.3	2.5	2.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	37.5	0.0	33.4	35.7	0.0	30.5	176.3	7.3	7.9	86.5	10.3	10.7
LnGrp LOS	D	A	C	D	A	C	F	A	A	F	B	B
Approach Vol, veh/h		289			35			1775			903	
Approach Delay, s/veh		35.9			32.9			27.6			11.1	
Approach LOS		D			C			C			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	4.6	64.4		19.7	14.0	55.0		19.7				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	4.0	57.0		57.0	10.0	51.0		57.0				
Max Q Clear Time (g_c+I1), s	2.4	15.1		14.5	12.0	10.6		9.0				
Green Ext Time (p_c), s	0.0	13.1		1.3	0.0	5.9		0.2				

Intersection Summary

HCM 6th Ctrl Delay	23.5
HCM 6th LOS	C

HCM 6th Signalized Intersection Summary
 15: Milliken Ave & I-10 WB Ramps/Ontario Mills Pkwy

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔	↑	↗	↔↔	↕↕	↗	↔↔	↑↑↑	↗	↔↔	↑↑↑	↗
Traffic Volume (veh/h)	207	158	71	505	205	119	335	989	239	292	827	623
Future Volume (veh/h)	207	158	71	505	205	119	335	989	239	292	827	623
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No		No		No		No		No		No
Adj Sat Flow, veh/h/ln	1563	1758	1786	1563	1786	1098	1425	1674	1491	1588	1702	1716
Adj Flow Rate, veh/h	249	190	86	608	247	143	404	1192	288	352	996	751
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Percent Heavy Veh, %	3	3	1	3	1	50	14	9	22	1	7	6
Cap, veh/h	554	218	188	653	537	147	452	2303	791	341	2017	780
Arrive On Green	0.19	0.12	0.12	0.23	0.16	0.16	0.12	0.27	0.27	0.12	0.34	0.34
Sat Flow, veh/h	2887	1758	1514	2887	3393	931	2633	5757	1264	2933	5854	1454
Grp Volume(v), veh/h	249	190	86	608	247	143	404	1192	288	352	996	751
Grp Sat Flow(s),veh/h/ln	1444	1758	1514	1444	1697	931	1317	1439	1264	1467	1463	1454
Q Serve(g_s), s	9.2	12.7	6.3	24.8	7.9	18.3	18.2	21.1	6.2	14.0	16.1	27.8
Cycle Q Clear(g_c), s	9.2	12.7	6.3	24.8	7.9	18.3	18.2	21.1	6.2	14.0	16.1	27.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	554	218	188	653	537	147	452	2303	791	341	2017	780
VC Ratio(X)	0.45	0.87	0.46	0.93	0.46	0.97	0.89	0.52	0.36	1.03	0.49	0.96
Avail Cap(c_a), veh/h	601	234	202	674	537	147	505	2303	791	341	2017	780
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	0.67	0.67	0.67	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.93	0.93	0.93	1.00	1.00	1.00
Uniform Delay (d), s/veh	42.9	51.6	48.8	45.5	45.8	50.2	52.0	34.1	4.7	53.0	31.1	10.4
Incr Delay (d2), s/veh	0.6	26.7	1.7	19.5	0.6	65.0	16.0	0.8	1.2	57.0	0.9	24.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.3	7.2	2.5	10.6	3.4	6.9	7.2	7.9	2.2	7.8	5.8	12.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	43.4	78.3	50.5	65.0	46.5	115.3	68.0	34.9	5.9	110.0	31.9	34.7
LnGrp LOS	D	E	D	E	D	F	E	C	A	F	C	C
Approach Vol, veh/h		525		998		1884		2099				
Approach Delay, s/veh		57.2		67.6		37.5		46.0				
Approach LOS		E		E		D		D				
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	48.0	52.0	31.1	18.9	24.6	45.4	27.0	23.0				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	48.0	48.0	28.0	16.0	23.0	37.0	25.0	19.0				
Max Q Clear Time (g_c+1/3), s	23.1	23.1	26.8	14.7	20.2	29.8	11.2	20.3				
Green Ext Time (p_c), s	0.0	11.2	0.4	0.2	0.5	5.2	0.7	0.0				

Intersection Summary

HCM 6th Ctrl Delay	48.1
HCM 6th LOS	D

HCM 6th Signalized Intersection Summary
 16: Milliken Ave & I-10 EB Ramps

11/03/2021



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↶↷	↷	↶↷	↑↑↑	↑↑↑	↷
Traffic Volume (veh/h)	483	220	328	1082	688	716
Future Volume (veh/h)	483	220	328	1082	688	716
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1550	1617	1176	1646	1744	1491
Adj Flow Rate, veh/h	498	227	338	1115	709	738
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	4	13	34	11	4	22
Cap, veh/h	592	283	386	4113	3093	913
Arrive On Green	0.21	0.21	0.18	0.73	0.17	0.17
Sat Flow, veh/h	2864	1371	2172	5891	6243	1264
Grp Volume(v), veh/h	498	227	338	1115	709	738
Grp Sat Flow(s),veh/h/ln	1432	1371	1086	1415	1500	1264
Q Serve(g_s), s	20.0	18.9	18.2	8.0	12.2	41.3
Cycle Q Clear(g_c), s	20.0	18.9	18.2	8.0	12.2	41.3
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	592	283	386	4113	3093	913
VC Ratio(X)	0.84	0.80	0.88	0.27	0.23	0.81
Avail Cap(c_a), veh/h	1193	571	652	4113	3093	913
HCM Platoon Ratio	1.00	1.00	1.00	1.00	0.33	0.33
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.71	0.71
Uniform Delay (d), s/veh	45.7	45.2	48.1	5.6	29.2	17.7
Incr Delay (d2), s/veh	3.3	5.2	7.2	0.2	0.1	5.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.4	14.0	5.3	2.2	5.0	25.3
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	49.0	50.5	55.2	5.7	29.3	23.3
LnGrp LOS	D	D	E	A	C	C
Approach Vol, veh/h	725			1453	1447	
Approach Delay, s/veh	49.5			17.3	26.2	
Approach LOS	D			B	C	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		91.2		28.8	25.3	65.9
Change Period (Y+Rc), s		4.0		4.0	4.0	4.0
Max Green Setting (Gmax), s		62.0		50.0	36.0	22.0
Max Q Clear Time (g_c+I1), s		10.0		22.0	20.2	43.3
Green Ext Time (p_c), s		10.9		2.8	1.1	0.0
Intersection Summary						
HCM 6th Ctrl Delay			27.3			
HCM 6th LOS			C			

HCM 6th Signalized Intersection Summary

1: Highway 395 & Joshua St

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗	↗	↖	↗↗	↗	↖	↗↗	↗
Traffic Volume (veh/h)	43	125	20	41	24	149	33	1848	110	65	552	22
Future Volume (veh/h)	43	125	20	41	24	149	33	1848	110	65	552	22
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1687	1786	1786	1528	1786	1519	1687	1716	1491	1395	1617	1716
Adj Flow Rate, veh/h	48	139	22	46	27	166	37	2053	122	72	613	24
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	1	1	1	13	1	20	1	6	22	23	13	6
Cap, veh/h	279	253	40	191	301	217	54	1951	756	83	1926	911
Arrive On Green	0.17	0.17	0.17	0.17	0.17	0.17	0.03	0.60	0.60	0.06	0.63	0.63
Sat Flow, veh/h	1133	1505	238	1056	1786	1287	1606	3260	1264	1329	3073	1454
Grp Volume(v), veh/h	48	0	161	46	27	166	37	2053	122	72	613	24
Grp Sat Flow(s),veh/h/ln	1133	0	1743	1056	1786	1287	1606	1630	1264	1329	1537	1454
Q Serve(g_s), s	2.6	0.0	5.9	2.9	0.9	8.6	1.6	42.0	3.0	3.8	6.5	0.4
Cycle Q Clear(g_c), s	3.5	0.0	5.9	8.9	0.9	8.6	1.6	42.0	3.0	3.8	6.5	0.4
Prop In Lane	1.00		0.14	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	279	0	294	191	301	217	54	1951	756	83	1926	911
VC Ratio(X)	0.17	0.00	0.55	0.24	0.09	0.77	0.68	1.05	0.16	0.87	0.32	0.03
Avail Cap(c_a), veh/h	863	0	1192	735	1221	880	137	1951	756	151	1926	911
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.1	0.0	26.7	30.8	24.6	27.9	33.5	14.1	6.3	32.6	6.1	5.0
Incr Delay (d2), s/veh	0.3	0.0	1.6	0.6	0.1	5.6	14.0	35.8	0.5	22.7	0.4	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.0	2.5	0.8	0.4	2.9	0.8	19.0	0.6	1.6	1.4	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	26.4	0.0	28.3	31.4	24.8	33.4	47.5	49.9	6.7	55.3	6.5	5.0
LnGrp LOS	C	A	C	C	C	C	D	F	A	E	A	A
Approach Vol, veh/h		209			239			2212				709
Approach Delay, s/veh		27.9			32.1			47.5				11.4
Approach LOS		C			C			D				B
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.4	46.0		15.8	6.4	48.0		15.8				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	8.0	42.0		48.0	6.0	44.0		48.0				
Max Q Clear Time (g_c+I1), s	5.8	44.0		7.9	3.6	8.5		10.9				
Green Ext Time (p_c), s	0.0	0.0		1.2	0.0	4.0		1.0				

Intersection Summary

HCM 6th Ctrl Delay	37.6
HCM 6th LOS	D

Intersection						
Int Delay, s/veh	1.9					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		∩	
Traffic Vol, veh/h	0	262	134	0	18	71
Future Vol, veh/h	0	262	134	0	18	71
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	0	25	23	0	1	22
Mvmt Flow	0	267	137	0	18	72

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	-	0	-	0	404 137
Stage 1	-	-	-	-	137 -
Stage 2	-	-	-	-	267 -
Critical Hdwy	-	-	-	-	6.41 6.42
Critical Hdwy Stg 1	-	-	-	-	5.41 -
Critical Hdwy Stg 2	-	-	-	-	5.41 -
Follow-up Hdwy	-	-	-	-	3.509 3.498
Pot Cap-1 Maneuver	0	-	-	0	605 861
Stage 1	0	-	-	0	892 -
Stage 2	0	-	-	0	780 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	-	605 861
Mov Cap-2 Maneuver	-	-	-	-	605 -
Stage 1	-	-	-	-	892 -
Stage 2	-	-	-	-	780 -

Approach	EB	WB	SB
HCM Control Delay, s	0	0	10.1
HCM LOS			B

Minor Lane/Major Mvmt	EBT	WBT	SBLn1
Capacity (veh/h)	-	-	793
HCM Lane V/C Ratio	-	-	0.115
HCM Control Delay (s)	-	-	10.1
HCM Lane LOS	-	-	B
HCM 95th %tile Q(veh)	-	-	0.4

Intersection												
Int Delay, s/veh	3.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↗			↕				
Traffic Vol, veh/h	220	164	0	0	118	34	0	0	0	0	0	0
Future Vol, veh/h	220	164	0	0	118	34	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	16965	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	92	92	95	95	92	92	92	95	92	95
Heavy Vehicles, %	24	23	2	2	23	42	2	2	2	2	2	2
Mvmt Flow	232	173	0	0	124	36	0	0	0	0	0	0

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	160	0	- - - 0 779 797 173
Stage 1	-	-	- - - 637 637 -
Stage 2	-	-	- - - 142 160 -
Critical Hdwy	4.34	-	- - - 6.42 6.52 6.22
Critical Hdwy Stg 1	-	-	- - - 5.42 5.52 -
Critical Hdwy Stg 2	-	-	- - - 5.42 5.52 -
Follow-up Hdwy	2.416	-	- - - 3.518 4.018 3.318
Pot Cap-1 Maneuver	1296	- 0 0	- - 364 319 871
Stage 1	-	- 0 0	- - 527 471 -
Stage 2	-	- 0 0	- - 885 766 -
Platoon blocked, %	-	-	- -
Mov Cap-1 Maneuver	1296	- - -	- - 292 0 871
Mov Cap-2 Maneuver	-	- - -	- - 292 0 -
Stage 1	-	- - -	- - 423 0 -
Stage 2	-	- - -	- - 885 0 -

Approach	EB	WB	NB
HCM Control Delay, s	4.8	0	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	WBT	WBR
Capacity (veh/h)	-	1296	-	-	-
HCM Lane V/C Ratio	-	0.179	-	-	-
HCM Control Delay (s)	0	8.4	0	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	-	0.7	-	-	-

Intersection						
Int Delay, s/veh	6.3					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	Y			↑	↑	
Traffic Vol, veh/h	71	95	85	28	28	77
Future Vol, veh/h	71	95	85	28	28	77
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	6	10	20	48	38	19
Mvmt Flow	72	97	87	29	29	79

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	272	69	108	0	0
Stage 1	69	-	-	-	-
Stage 2	203	-	-	-	-
Critical Hdwy	6.46	6.3	4.3	-	-
Critical Hdwy Stg 1	5.46	-	-	-	-
Critical Hdwy Stg 2	5.46	-	-	-	-
Follow-up Hdwy	3.554	3.39	2.38	-	-
Pot Cap-1 Maneuver	709	972	1378	-	-
Stage 1	944	-	-	-	-
Stage 2	822	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	664	972	1378	-	-
Mov Cap-2 Maneuver	664	-	-	-	-
Stage 1	884	-	-	-	-
Stage 2	822	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10.6	5.9	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1378	-	811	-	-
HCM Lane V/C Ratio	0.063	-	0.209	-	-
HCM Control Delay (s)	7.8	0	10.6	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.2	-	0.8	-	-

HCM 6th Signalized Intersection Summary

5: I-15 SB On-ramp/I-15 SB Off-ramp & Foothill Blvd/Foothill Blvd

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↗		↑↑↑	↗				↘	↕	↗
Traffic Volume (veh/h)	0	1203	822	0	1211	539	0	0	0	380	0	672
Future Volume (veh/h)	0	1203	822	0	1211	539	0	0	0	380	0	672
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1786	1786	0	1772	1772				1716	1772	1702
Adj Flow Rate, veh/h	0	1337	0	0	1346	0				281	0	898
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90				0.90	0.90	0.90
Percent Heavy Veh, %	0	1	1	0	2	2				6	2	7
Cap, veh/h	0	3088		0	3064					454	0	801
Arrive On Green	0.00	0.63	0.00	0.00	1.00	0.00				0.28	0.00	0.28
Sat Flow, veh/h	0	5036	1514	0	4997	1502				1634	0	2884
Grp Volume(v), veh/h	0	1337	0	0	1346	0				281	0	898
Grp Sat Flow(s),veh/h/ln	0	1625	1514	0	1612	1502				1634	0	1442
Q Serve(g_s), s	0.0	12.5	0.0	0.0	0.0	0.0				13.5	0.0	25.0
Cycle Q Clear(g_c), s	0.0	12.5	0.0	0.0	0.0	0.0				13.5	0.0	25.0
Prop In Lane	0.00		1.00	0.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	3088		0	3064					454	0	801
V/C Ratio(X)	0.00	0.43		0.00	0.44					0.62	0.00	1.12
Avail Cap(c_a), veh/h	0	3088		0	3064					454	0	801
HCM Platoon Ratio	1.00	1.00	1.00	1.00	2.00	2.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.00	0.00	0.61	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	8.3	0.0	0.0	0.0	0.0				28.3	0.0	32.5
Incr Delay (d2), s/veh	0.0	0.4	0.0	0.0	0.3	0.0				2.6	0.0	70.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	3.4	0.0	0.0	0.1	0.0				5.4	0.0	16.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	8.8	0.0	0.0	0.3	0.0				30.9	0.0	103.0
LnGrp LOS	A	A		A	A					C	A	F
Approach Vol, veh/h		1337	A		1346	A					1179	
Approach Delay, s/veh		8.8			0.3						85.8	
Approach LOS		A			A						F	
Timer - Assigned Phs		2		4		6						
Phs Duration (G+Y+Rc), s		61.0		29.0		61.0						
Change Period (Y+Rc), s		4.0		4.0		4.0						
Max Green Setting (Gmax), s		57.0		25.0		57.0						
Max Q Clear Time (g_c+I1), s		14.5		27.0		2.0						
Green Ext Time (p_c), s		11.2		0.0		11.8						

Intersection Summary

HCM 6th Ctrl Delay	29.3
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.
 Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th Signalized Intersection Summary

6: I-15 NB Off-ramp/I-15 NB On-ramp & Foothill Blvd /Foothill Blvd

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↗		↑↑↑	↗	↖	↕	↗			
Traffic Volume (veh/h)	0	1291	292	0	1233	939	517	0	357	0	0	0
Future Volume (veh/h)	0	1291	292	0	1233	939	517	0	357	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No		No		No		No				
Adj Sat Flow, veh/h/ln	0	1786	1674	0	1772	1786	1772	1772	1744			
Adj Flow Rate, veh/h	0	1419	0	0	1355	0	690	0	261			
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91			
Percent Heavy Veh, %	0	1	9	0	2	1	2	2	4			
Cap, veh/h	0	3197		0	3172		862	0	377			
Arrive On Green	0.00	1.00	0.00	0.00	0.66	0.00	0.26	0.00	0.26			
Sat Flow, veh/h	0	5036	1418	0	4997	1514	3375	0	1478			
Grp Volume(v), veh/h	0	1419	0	0	1355	0	690	0	261			
Grp Sat Flow(s),veh/h/ln	0	1625	1418	0	1612	1514	1688	0	1478			
Q Serve(g_s), s	0.0	0.0	0.0	0.0	12.1	0.0	17.2	0.0	14.4			
Cycle Q Clear(g_c), s	0.0	0.0	0.0	0.0	12.1	0.0	17.2	0.0	14.4			
Prop In Lane	0.00		1.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	0	3197		0	3172		862	0	377			
VC Ratio(X)	0.00	0.44		0.00	0.43		0.80	0.00	0.69			
Avail Cap(c_a), veh/h	0	3197		0	3172		1913	0	837			
HCM Platoon Ratio	1.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(l)	0.00	0.83	0.00	0.00	1.00	0.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	0.0	0.0	0.0	0.0	7.4	0.0	31.4	0.0	30.3			
Incr Delay (d2), s/veh	0.0	0.4	0.0	0.0	0.4	0.0	1.8	0.0	2.3			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.0	0.1	0.0	0.0	3.7	0.0	6.9	0.0	5.2			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.4	0.0	0.0	7.8	0.0	33.1	0.0	32.6			
LnGrp LOS	A	A		A	A		C	A	C			
Approach Vol, veh/h		1419	A		1355	A		951				
Approach Delay, s/veh		0.4			7.8			33.0				
Approach LOS		A			A			C				
Timer - Assigned Phs		2			6			8				
Phs Duration (G+Y+Rc), s		63.0			63.0			27.0				
Change Period (Y+Rc), s		4.0			4.0			4.0				
Max Green Setting (Gmax), s		31.0			31.0			51.0				
Max Q Clear Time (g_c+I1), s		2.0			14.1			19.2				
Green Ext Time (p_c), s		12.8			9.1			3.8				

Intersection Summary

HCM 6th Ctrl Delay	11.4
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th Signalized Intersection Summary
 7: Ontario Mills Dr./I-15 SB Ramps & Fourth St

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔	↑↑↑	↗	↔↔	↑↑↑	↗	↔	↑↑	↗	↔	↑↑	↗
Traffic Volume (veh/h)	698	1290	91	104	861	233	121	152	22	80	154	357
Future Volume (veh/h)	698	1290	91	104	861	233	121	152	22	80	154	357
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No		No		No		No		No		No
Adj Sat Flow, veh/h/ln	1513	1730	1772	1588	1660	1589	1647	1786	1786	1342	1786	1758
Adj Flow Rate, veh/h	705	1303	92	105	870	235	122	154	22	81	156	361
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	7	5	2	1	10	15	4	1	1	27	1	3
Cap, veh/h	777	2597	826	402	1853	551	150	232	104	175	196	1156
Arrive On Green	0.28	0.55	0.55	0.27	0.82	0.82	0.10	0.07	0.07	0.14	0.11	0.11
Sat Flow, veh/h	2795	4722	1502	2933	4531	1347	1569	3393	1514	1278	1786	2979
Grp Volume(v), veh/h	705	1303	92	105	870	235	122	154	22	81	156	361
Grp Sat Flow(s),veh/h/ln	1397	1574	1502	1467	1510	1347	1569	1697	1514	1278	1786	1490
Q Serve(g_s), s	31.7	22.3	3.8	3.6	7.4	4.2	9.9	5.8	1.8	7.6	11.1	7.7
Cycle Q Clear(g_c), s	31.7	22.3	3.8	3.6	7.4	4.2	9.9	5.8	1.8	7.6	11.1	7.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	777	2597	826	402	1853	551	150	232	104	175	196	1156
VC Ratio(X)	0.91	0.50	0.11	0.26	0.47	0.43	0.82	0.66	0.21	0.46	0.79	0.31
Avail Cap(c_a), veh/h	957	2597	826	402	1853	551	223	509	227	175	227	1206
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.89	0.89	0.89	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.3	18.2	14.0	42.1	7.7	3.3	57.7	59.1	57.2	51.7	56.4	14.8
Incr Delay (d2), s/veh	10.6	0.7	0.3	0.3	0.8	2.1	13.2	3.2	1.0	1.9	15.5	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	7.5	1.3	1.3	1.8	1.7	4.5	2.6	0.7	2.5	5.8	2.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	56.0	18.9	14.3	42.4	8.4	5.5	70.9	62.3	58.3	53.6	71.9	15.0
LnGrp LOS	E	B	B	D	A	A	E	E	E	D	E	B
Approach Vol, veh/h		2100			1210			298			598	
Approach Delay, s/veh		31.1			10.8			65.5			35.1	
Approach LOS		C			B			E			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	11.3	75.0	15.9	17.8	39.6	56.7	21.3	12.4				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	9.0	71.0	18.0	16.0	44.0	36.0	15.0	19.0				
Max Q Clear Time (g_c+1/5), s	15.6	24.3	11.9	13.1	33.7	9.4	9.6	7.8				
Green Ext Time (p_c), s	0.1	11.1	0.1	0.7	2.0	6.6	0.1	0.6				

Intersection Summary

HCM 6th Ctrl Delay	28.3
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

HCM 6th Signalized Intersection Summary

8: Fourth St & I-15 NB Ramps

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖ ↗	↑ ↑ ↑	↖	↖ ↗	↑ ↑ ↑		↖	↑ ↑		↖	↖	↖ ↗
Traffic Volume (veh/h)	755	569	68	34	454	151	91	74	58	173	63	653
Future Volume (veh/h)	755	569	68	34	454	151	91	74	58	173	63	653
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1786	1575	1702	1702	1603	1603	1702	1786	1786	1421	1758	1702
Adj Flow Rate, veh/h	786	593	71	35	473	157	95	77	60	123	146	680
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	1	16	7	7	14	14	7	1	1	27	3	7
Cap, veh/h	1063	1654	555	485	1186	380	131	153	108	153	198	1254
Arrive On Green	0.54	0.64	0.64	0.30	0.36	0.36	0.08	0.08	0.08	0.11	0.11	0.11
Sat Flow, veh/h	3300	4301	1442	1621	3280	1052	1621	1896	1345	1353	1758	2884
Grp Volume(v), veh/h	786	593	71	35	419	211	95	68	69	123	146	680
Grp Sat Flow(s),veh/h/ln	1650	1434	1442	1621	1459	1414	1621	1697	1544	1353	1758	1442
Q Serve(g_s), s	23.8	8.3	2.5	2.0	13.9	14.6	7.4	5.0	5.6	11.5	10.4	0.0
Cycle Q Clear(g_c), s	23.8	8.3	2.5	2.0	13.9	14.6	7.4	5.0	5.6	11.5	10.4	0.0
Prop In Lane	1.00		1.00	1.00		0.74	1.00		0.87	1.00		1.00
Lane Grp Cap(c), veh/h	1063	1654	555	485	1055	511	131	137	124	153	198	1254
VC Ratio(X)	0.74	0.36	0.13	0.07	0.40	0.41	0.73	0.50	0.55	0.81	0.74	0.54
Avail Cap(c_a), veh/h	1063	1654	555	485	1055	511	511	535	487	167	216	1284
HCM Platoon Ratio	1.67	1.67	1.67	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.89	0.89	0.89	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.9	15.8	14.8	32.6	30.9	31.1	58.4	57.2	57.5	56.3	55.8	27.2
Incr Delay (d2), s/veh	2.5	0.5	0.4	0.1	1.1	2.5	7.5	2.8	3.8	22.9	11.4	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.9	2.4	0.8	0.8	4.8	5.1	3.3	2.2	2.3	4.9	5.2	7.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	28.3	16.3	15.2	32.7	32.1	33.6	65.9	60.0	61.3	79.2	67.2	27.6
LnGrp LOS	C	B	B	C	C	C	E	E	E	E	E	C
Approach Vol, veh/h		1450			665			232			949	
Approach Delay, s/veh		22.8			32.6			62.8			40.4	
Approach LOS		C			C			E			D	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	42.9	54.0		18.7	45.9	51.0		14.5				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	7.0	50.0		16.0	10.0	47.0		41.0				
Max Q Clear Time (g_c+14), s	14.0	10.3		13.5	25.8	16.6		9.4				
Green Ext Time (p_c), s	0.0	4.1		1.1	0.0	3.8		1.0				

Intersection Summary

HCM 6th Ctrl Delay	32.6
HCM 6th LOS	C

Notes

- User approved pedestrian interval to be less than phase max green.
- User approved volume balancing among the lanes for turning movement.

HCM 6th Signalized Intersection Summary
 9: Milliken Ave & I-210 WB On-ramp/I-210 WB Off-ramp

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↘	↔	↗	↘↗	↑↑↑			↑↑↗	
Traffic Volume (veh/h)	0	0	0	196	8	89	222	638	0	0	371	52
Future Volume (veh/h)	0	0	0	196	8	89	222	638	0	0	371	52
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach				No		No		No				No
Adj Sat Flow, veh/h/ln				1554	1786	1688	1500	1786	0	0	1786	1786
Adj Flow Rate, veh/h				236	0	65	231	665	0	0	386	54
Peak Hour Factor				0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %				11	1	8	8	1	0	0	1	1
Cap, veh/h				392	0	189	372	3580	0	0	2313	316
Arrive On Green				0.13	0.00	0.13	0.27	1.00	0.00	0.00	0.53	0.53
Sat Flow, veh/h				2960	0	1430	2772	5036	0	0	4497	593
Grp Volume(v), veh/h				236	0	65	231	665	0	0	287	153
Grp Sat Flow(s),veh/h/ln				1480	0	1430	1386	1625	0	0	1625	1679
Q Serve(g_s), s				4.5	0.0	2.5	4.4	0.0	0.0	0.0	2.7	2.8
Cycle Q Clear(g_c), s				4.5	0.0	2.5	4.4	0.0	0.0	0.0	2.7	2.8
Prop In Lane				1.00		1.00	1.00		0.00	0.00		0.35
Lane Grp Cap(c), veh/h				392	0	189	372	3580	0	0	1734	896
V/C Ratio(X)				0.60	0.00	0.34	0.62	0.19	0.00	0.00	0.17	0.17
Avail Cap(c_a), veh/h				444	0	215	372	3580	0	0	1734	896
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.92	0.92	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				24.5	0.0	23.7	20.6	0.0	0.0	0.0	7.2	7.2
Incr Delay (d2), s/veh				1.8	0.0	1.1	2.9	0.1	0.0	0.0	0.2	0.4
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				1.6	0.0	0.8	1.4	0.0	0.0	0.0	0.8	0.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				26.4	0.0	24.7	23.5	0.1	0.0	0.0	7.4	7.6
LnGrp LOS				C	A	C	C	A	A	A	A	A
Approach Vol, veh/h						301		896			440	
Approach Delay, s/veh						26.0		6.1			7.5	
Approach LOS						C		A			A	
Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		48.1			12.1	36.0		11.9				
Change Period (Y+Rc), s		4.0			4.0	4.0		4.0				
Max Green Setting (Gmax), s		43.0			7.0	32.0		9.0				
Max Q Clear Time (g_c+I1), s		2.0			6.4	4.8		6.5				
Green Ext Time (p_c), s		5.3			0.1	2.9		0.3				

Intersection Summary

HCM 6th Ctrl Delay	10.1
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

HCM 6th Signalized Intersection Summary
 10: Milliken Ave & I-210 EB Off-ramp/I-210 EB On-ramp

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	111	12	327	0	0	0	0	771	359	115	387	0
Future Volume (veh/h)	111	12	327	0	0	0	0	771	359	115	387	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No						No			No		
Adj Sat Flow, veh/h/ln	1660	1786	1702				0	1758	1758	1575	1758	0
Adj Flow Rate, veh/h	82	0	390				0	812	378	121	407	0
Peak Hour Factor	0.95	0.95	0.95				0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	1	7				0	3	3	2	3	0
Cap, veh/h	211	0	385				0	1816	841	291	3519	0
Arrive On Green	0.13	0.00	0.13				0.00	0.57	0.57	0.20	1.00	0.00
Sat Flow, veh/h	1581	0	2884				0	3364	1485	2910	4957	0
Grp Volume(v), veh/h	82	0	390				0	810	380	121	407	0
Grp Sat Flow(s),veh/h/ln	1581	0	1442				0	1600	1491	1455	1600	0
Q Serve(g_s), s	2.8	0.0	8.0				0.0	8.8	8.9	2.2	0.0	0.0
Cycle Q Clear(g_c), s	2.8	0.0	8.0				0.0	8.8	8.9	2.2	0.0	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	211	0	385				0	1813	845	291	3519	0
V/C Ratio(X)	0.39	0.00	1.01				0.00	0.45	0.45	0.42	0.12	0.00
Avail Cap(c_a), veh/h	211	0	385				0	1813	845	291	3519	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	0.98	0.98	0.00
Uniform Delay (d), s/veh	23.8	0.0	26.0				0.0	7.5	7.6	22.5	0.0	0.0
Incr Delay (d2), s/veh	1.2	0.0	49.5				0.0	0.8	1.7	0.9	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	0.0	5.2				0.0	2.5	2.6	0.7	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	24.9	0.0	75.5				0.0	8.3	9.3	23.4	0.1	0.0
LnGrp LOS	C	A	F				A	A	A	C	A	A
Approach Vol, veh/h	472						1190			528		
Approach Delay, s/veh	66.7						8.6			5.4		
Approach LOS	E						A			A		
Timer - Assigned Phs	1	2	4	6								
Phs Duration (G+Y+Rc), s	30.0	38.0	12.0	48.0								
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0								
Max Green Setting (Gmax), s	30.0	34.0	8.0	44.0								
Max Q Clear Time (g_c+14), s	14.2	10.9	10.0	2.0								
Green Ext Time (p_c), s	0.1	9.2	0.0	3.1								

Intersection Summary

HCM 6th Ctrl Delay	20.4
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

HCM 6th Signalized Intersection Summary

11: Milliken Ave & Foothill Blvd

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖↗	↑↑↑	↖	↖↗	↑↑↑	↖	↖↗	↑↑↑	↖	↖↗	↑↑↑	↖
Traffic Volume (veh/h)	227	1604	129	228	1408	97	327	784	205	221	486	196
Future Volume (veh/h)	227	1604	129	228	1408	97	327	784	205	221	486	196
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No		No		No		No		No		No
Adj Sat Flow, veh/h/ln	1588	1786	1758	1588	1786	1772	1575	1772	1758	1588	1744	1772
Adj Flow Rate, veh/h	249	1763	142	251	1547	107	359	862	225	243	534	215
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	1	1	3	1	1	2	2	2	3	1	4	2
Cap, veh/h	291	2185	668	233	2089	643	288	1370	335	262	1023	323
Arrive On Green	0.10	0.45	0.45	0.08	0.43	0.43	0.10	0.22	0.22	0.09	0.21	0.21
Sat Flow, veh/h	2933	4876	1490	2933	4876	1502	2910	6095	1490	2933	4761	1502
Grp Volume(v), veh/h	249	1763	142	251	1547	107	359	862	225	243	534	215
Grp Sat Flow(s),veh/h/ln	1467	1625	1490	1467	1625	1502	1455	1524	1490	1467	1587	1502
Q Serve(g_s), s	8.4	31.5	5.9	8.0	26.8	4.4	10.0	12.9	13.9	8.3	10.0	13.2
Cycle Q Clear(g_c), s	8.4	31.5	5.9	8.0	26.8	4.4	10.0	12.9	13.9	8.3	10.0	13.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	291	2185	668	233	2089	643	288	1370	335	262	1023	323
VC Ratio(X)	0.86	0.81	0.21	1.08	0.74	0.17	1.24	0.63	0.67	0.93	0.52	0.67
Avail Cap(c_a), veh/h	291	2513	768	233	2416	744	288	2718	664	262	2076	655
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	44.7	24.1	17.0	46.5	24.1	17.8	45.5	35.3	35.7	45.6	35.0	36.3
Incr Delay (d2), s/veh	21.5	1.8	0.2	81.7	1.1	0.1	135.9	0.5	2.3	37.0	0.4	2.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.8	11.1	1.9	5.4	9.4	1.4	8.9	4.5	5.0	4.2	3.7	4.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	66.3	25.9	17.1	128.2	25.2	17.9	181.4	35.8	38.1	82.7	35.4	38.7
LnGrp LOS	E	C	B	F	C	B	F	D	D	F	D	D
Approach Vol, veh/h		2154			1905			1446			992	
Approach Delay, s/veh		30.0			38.4			72.3			47.7	
Approach LOS		C			D			E			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	42.0	49.2	14.0	25.7	14.0	47.2	13.0	26.7				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	4.0	52.0	10.0	44.0	10.0	50.0	9.0	45.0				
Max Q Clear Time (g_c+10), s	4.0	33.5	12.0	15.2	10.4	28.8	10.3	15.9				
Green Ext Time (p_c), s	0.0	11.7	0.0	4.1	0.0	11.0	0.0	6.8				

Intersection Summary

HCM 6th Ctrl Delay	44.6
HCM 6th LOS	D

HCM 6th Signalized Intersection Summary
 12: Milliken Ave & Fourth St

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔	↑↑↑	↗	↔↔	↑↑↑	↗	↔↔	↑↑↑	↗	↔↔	↑↑↑	↗
Traffic Volume (veh/h)	175	1372	177	199	1239	191	212	1220	189	202	909	160
Future Volume (veh/h)	175	1372	177	199	1239	191	212	1220	189	202	909	160
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No		No		No		No		No		No
Adj Sat Flow, veh/h/ln	1588	1730	1758	1575	1744	1730	1588	1660	1646	1550	1688	1688
Adj Flow Rate, veh/h	179	1400	181	203	1264	195	216	1245	193	206	928	163
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	1	5	3	2	4	5	1	10	11	4	8	8
Cap, veh/h	219	1709	539	169	1644	506	146	2271	636	142	1996	345
Arrive On Green	0.07	0.36	0.36	0.06	0.35	0.35	0.05	0.40	0.40	0.05	0.40	0.40
Sat Flow, veh/h	2933	4722	1490	2910	4761	1466	2933	5709	1395	2864	5018	868
Grp Volume(v), veh/h	179	1400	181	203	1264	195	216	1245	193	206	803	288
Grp Sat Flow(s),veh/h/ln	1467	1574	1490	1455	1587	1466	1467	1427	1395	1432	1451	1531
Q Serve(g_s), s	7.3	32.4	10.6	7.0	28.6	12.1	6.0	20.3	10.6	6.0	16.4	16.8
Cycle Q Clear(g_c), s	7.3	32.4	10.6	7.0	28.6	12.1	6.0	20.3	10.6	6.0	16.4	16.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.57
Lane Grp Cap(c), veh/h	219	1709	539	169	1644	506	146	2271	636	142	1732	609
V/C Ratio(X)	0.82	0.82	0.34	1.20	0.77	0.39	1.48	0.55	0.30	1.45	0.46	0.47
Avail Cap(c_a), veh/h	219	2074	654	169	2012	620	146	2271	636	142	1732	609
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	55.0	34.9	28.0	56.8	35.2	29.8	57.3	28.0	20.7	57.3	26.8	26.9
Incr Delay (d2), s/veh	21.1	2.3	0.4	134.2	1.5	0.5	249.5	1.0	1.2	235.9	0.9	2.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.2	11.9	3.6	5.6	10.5	4.1	7.2	6.7	3.4	6.8	5.5	6.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	76.1	37.2	28.3	191.0	36.7	30.3	306.8	28.9	22.0	293.3	27.7	29.6
LnGrp LOS	E	D	C	F	D	C	F	C	C	F	C	C
Approach Vol, veh/h		1760			1662			1654			1297	
Approach Delay, s/veh		40.2			54.8			64.4			70.3	
Approach LOS		D			D			E			E	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	40.0	52.0	11.0	47.7	10.0	52.0	13.0	45.7				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	48.0	48.0	7.0	53.0	6.0	48.0	9.0	51.0				
Max Q Clear Time (g_c+10), s	22.3	22.3	9.0	34.4	8.0	18.8	9.3	30.6				
Green Ext Time (p_c), s	0.0	9.8	0.0	9.2	0.0	7.5	0.0	8.8				

Intersection Summary

HCM 6th Ctrl Delay	56.4
HCM 6th LOS	E

Notes

User approved pedestrian interval to be less than phase max green.

Intersection						
Int Delay, s/veh	0.5					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↗		↑↑↑	↑↑↑	↗
Traffic Vol, veh/h	0	98	0	2129	918	76
Future Vol, veh/h	0	98	0	2129	918	76
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	175
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	2	1	2	3	6	4
Mvmt Flow	0	100	0	2172	937	78

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	-	469	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	7.12	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	3.91	-
Pot Cap-1 Maneuver	0	465	0
Stage 1	0	-	0
Stage 2	0	-	0
Platoon blocked, %			-
Mov Cap-1 Maneuver	-	465	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	14.9	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT EBLn1	SBT	SBR
Capacity (veh/h)	-	465	-
HCM Lane V/C Ratio	-	0.215	-
HCM Control Delay (s)	-	14.9	-
HCM Lane LOS	-	B	-
HCM 95th %tile Q(veh)	-	0.8	-

HCM 6th Signalized Intersection Summary

14: Milliken Ave & 7th St

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↑↑↑		↖	↑↑↑	
Traffic Volume (veh/h)	204	0	119	17	0	22	211	1829	13	8	985	27
Future Volume (veh/h)	204	0	119	17	0	22	211	1829	13	8	985	27
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1687	1786	1786	1382	1800	1800	1620	1758	1758	1687	1716	1716
Adj Flow Rate, veh/h	206	0	120	17	0	22	213	1847	13	8	995	27
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	1	1	1	24	0	0	6	3	3	1	6	6
Cap, veh/h	327	0	301	208	0	304	169	3251	23	13	2623	71
Arrive On Green	0.20	0.00	0.20	0.20	0.00	0.20	0.11	0.66	0.66	0.01	0.56	0.56
Sat Flow, veh/h	1323	0	1514	992	0	1525	1543	4916	35	1606	4688	127
Grp Volume(v), veh/h	206	0	120	17	0	22	213	1202	658	8	662	360
Grp Sat Flow(s),veh/h/ln	1323	0	1514	992	0	1525	1543	1600	1752	1606	1561	1693
Q Serve(g_s), s	13.7	0.0	6.3	1.4	0.0	1.1	10.0	18.6	18.6	0.5	10.8	10.8
Cycle Q Clear(g_c), s	14.7	0.0	6.3	7.7	0.0	1.1	10.0	18.6	18.6	0.5	10.8	10.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.02	1.00		0.08
Lane Grp Cap(c), veh/h	327	0	301	208	0	304	169	2115	1158	13	1747	947
VC Ratio(X)	0.63	0.00	0.40	0.08	0.00	0.07	1.26	0.57	0.57	0.62	0.38	0.38
Avail Cap(c_a), veh/h	891	0	946	631	0	954	169	2115	1158	70	1747	947
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.6	0.0	31.8	35.1	0.0	29.7	40.6	8.4	8.4	45.1	11.2	11.2
Incr Delay (d2), s/veh	2.0	0.0	0.9	0.2	0.0	0.1	154.9	1.1	2.0	39.7	0.6	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.4	0.0	2.3	0.3	0.0	0.4	10.9	4.9	5.7	0.3	3.2	3.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	37.6	0.0	32.6	35.3	0.0	29.8	195.5	9.5	10.4	84.7	11.9	12.4
LnGrp LOS	D	A	C	D	A	C	F	A	B	F	B	B
Approach Vol, veh/h		326			39			2073			1030	
Approach Delay, s/veh		35.8			32.2			28.9			12.6	
Approach LOS		D			C			C			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	4.7	64.3		22.1	14.0	55.0		22.1				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	4.0	57.0		57.0	10.0	51.0		57.0				
Max Q Clear Time (g_c+I1), s	2.5	20.6		16.7	12.0	12.8		9.7				
Green Ext Time (p_c), s	0.0	16.5		1.4	0.0	7.0		0.2				
Intersection Summary												
HCM 6th Ctrl Delay			24.7									
HCM 6th LOS			C									

HCM 6th Signalized Intersection Summary
 15: Milliken Ave & I-10 WB Ramps/Ontario Mills Pkwy

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖↗	↑	↖	↖↗	↖↗	↖	↖↗	↑↑↑	↖	↖↗	↑↑↑	↖
Traffic Volume (veh/h)	206	210	192	557	173	178	309	1208	243	248	801	497
Future Volume (veh/h)	206	210	192	557	173	178	309	1208	243	248	801	497
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No		No		No		No		No		No
Adj Sat Flow, veh/h/ln	1563	1758	1786	1563	1786	1098	1425	1674	1491	1588	1702	1716
Adj Flow Rate, veh/h	248	253	231	671	208	214	372	1455	293	299	965	599
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Percent Heavy Veh, %	3	3	1	3	1	50	14	9	22	1	7	6
Cap, veh/h	601	234	202	674	537	147	421	2303	800	293	1992	798
Arrive On Green	0.21	0.13	0.13	0.23	0.16	0.16	0.16	0.40	0.40	0.10	0.34	0.34
Sat Flow, veh/h	2887	1758	1514	2887	3393	931	2633	5757	1264	2933	5854	1454
Grp Volume(v), veh/h	248	253	231	671	208	214	372	1455	293	299	965	599
Grp Sat Flow(s),veh/h/ln	1444	1758	1514	1444	1697	931	1317	1439	1264	1467	1463	1454
Q Serve(g_s), s	8.9	16.0	16.0	27.9	6.6	19.0	16.6	24.3	6.0	12.0	15.6	16.2
Cycle Q Clear(g_c), s	8.9	16.0	16.0	27.9	6.6	19.0	16.6	24.3	6.0	12.0	15.6	16.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	601	234	202	674	537	147	421	2303	800	293	1992	798
VC Ratio(X)	0.41	1.08	1.14	1.00	0.39	1.45	0.88	0.63	0.37	1.02	0.48	0.75
Avail Cap(c_a), veh/h	601	234	202	674	537	147	505	2303	800	293	1992	798
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.86	0.86	0.86	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.1	52.0	52.0	45.9	45.3	50.5	49.3	28.9	3.6	54.0	31.3	7.6
Incr Delay (d2), s/veh	0.5	81.5	107.7	33.6	0.5	237.3	13.2	1.1	1.1	57.6	0.8	6.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.2	12.3	12.1	13.1	2.8	14.1	6.2	8.5	1.9	6.8	5.6	5.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	41.6	133.5	159.7	79.6	45.7	287.8	62.5	30.1	4.7	111.6	32.1	14.0
LnGrp LOS	D	F	F	E	D	F	E	C	A	F	C	B
Approach Vol, veh/h		732		1093				2120			1863	
Approach Delay, s/veh		110.6		113.9				32.2			39.0	
Approach LOS		F		F				C			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	6.0	52.0	32.0	20.0	23.2	44.8	29.0	23.0				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	12.0	48.0	28.0	16.0	23.0	37.0	25.0	19.0				
Max Q Clear Time (g_c+14.0), s	14.0	26.3	29.9	18.0	18.6	18.2	10.9	21.0				
Green Ext Time (p_c), s	0.0	12.7	0.0	0.0	0.6	9.3	0.7	0.0				

Intersection Summary

HCM 6th Ctrl Delay	59.7
HCM 6th LOS	E

HCM 6th Signalized Intersection Summary
 16: Milliken Ave & I-10 EB Ramps

11/03/2021



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↖↗	↖	↖↗	↑↑↑	↑↑↑	↖
Traffic Volume (veh/h)	763	198	490	998	780	771
Future Volume (veh/h)	763	198	490	998	780	771
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1550	1617	1176	1646	1744	1491
Adj Flow Rate, veh/h	787	204	505	1029	804	795
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	4	13	34	11	4	22
Cap, veh/h	885	424	549	3534	2028	818
Arrive On Green	0.31	0.31	0.25	0.62	0.11	0.11
Sat Flow, veh/h	2864	1371	2172	5891	6243	1264
Grp Volume(v), veh/h	787	204	505	1029	804	795
Grp Sat Flow(s),veh/h/ln	1432	1371	1086	1415	1500	1264
Q Serve(g_s), s	31.4	14.5	27.2	10.0	14.9	40.6
Cycle Q Clear(g_c), s	31.4	14.5	27.2	10.0	14.9	40.6
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	885	424	549	3534	2028	818
VC Ratio(X)	0.89	0.48	0.92	0.29	0.40	0.97
Avail Cap(c_a), veh/h	1193	571	652	3534	2028	818
HCM Platoon Ratio	1.00	1.00	1.00	1.00	0.33	0.33
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.65	0.65
Uniform Delay (d), s/veh	39.5	33.7	43.6	10.3	41.9	19.6
Incr Delay (d2), s/veh	6.7	0.9	16.6	0.2	0.4	19.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	11.6	8.5	3.1	6.1	30.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	46.2	34.5	60.2	10.6	42.3	39.2
LnGrp LOS	D	C	E	B	D	D
Approach Vol, veh/h	991			1534	1599	
Approach Delay, s/veh	43.8			26.9	40.8	
Approach LOS	D			C	D	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		78.9		41.1	34.3	44.6
Change Period (Y+Rc), s		4.0		4.0	4.0	4.0
Max Green Setting (Gmax), s		62.0		50.0	36.0	22.0
Max Q Clear Time (g_c+I1), s		12.0		33.4	29.2	42.6
Green Ext Time (p_c), s		9.7		3.7	1.2	0.0
Intersection Summary						
HCM 6th Ctrl Delay			36.3			
HCM 6th LOS			D			

HCM 6th Signalized Intersection Summary

1: Highway 395 & Joshua St

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↶	↷		↶	↷	↷	↶	↷↷	↷	↶	↷↷	↷
Traffic Volume (veh/h)	33	95	16	36	21	115	25	1422	85	67	623	24
Future Volume (veh/h)	33	95	16	36	21	115	25	1422	85	67	623	24
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1687	1786	1786	1528	1786	1519	1687	1716	1491	1395	1617	1716
Adj Flow Rate, veh/h	37	106	18	40	23	128	28	1580	94	74	692	27
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	1	1	1	13	1	20	1	6	22	23	13	6
Cap, veh/h	254	208	35	183	250	180	103	2039	790	85	1922	909
Arrive On Green	0.14	0.14	0.14	0.14	0.14	0.14	0.06	0.63	0.63	0.06	0.63	0.63
Sat Flow, veh/h	1177	1488	253	1092	1786	1287	1606	3260	1264	1329	3073	1454
Grp Volume(v), veh/h	37	0	124	40	23	128	28	1580	94	74	692	27
Grp Sat Flow(s),veh/h/ln	1177	0	1740	1092	1786	1287	1606	1630	1264	1329	1537	1454
Q Serve(g_s), s	2.0	0.0	4.6	2.5	0.8	6.7	1.2	24.8	2.1	3.9	7.7	0.5
Cycle Q Clear(g_c), s	2.8	0.0	4.6	7.1	0.8	6.7	1.2	24.8	2.1	3.9	7.7	0.5
Prop In Lane	1.00		0.15	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	254	0	244	183	250	180	103	2039	790	85	1922	909
VC Ratio(X)	0.15	0.00	0.51	0.22	0.09	0.71	0.27	0.77	0.12	0.87	0.36	0.03
Avail Cap(c_a), veh/h	892	0	1187	776	1218	878	137	2039	790	113	1922	909
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.6	0.0	28.0	31.3	26.4	28.9	31.4	9.6	5.3	32.6	6.4	5.0
Incr Delay (d2), s/veh	0.3	0.0	1.6	0.6	0.2	5.1	1.4	3.0	0.3	39.0	0.5	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.0	2.0	0.7	0.3	2.2	0.4	5.9	0.4	2.0	1.6	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	27.8	0.0	29.6	31.9	26.5	34.0	32.8	12.5	5.6	71.6	6.9	5.1
LnGrp LOS	C	A	C	C	C	C	C	B	A	E	A	A
Approach Vol, veh/h		161			191			1702				793
Approach Delay, s/veh		29.2			32.6			12.5				12.9
Approach LOS		C			C			B				B
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.5	48.0		13.9	8.5	48.0		13.9				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	6.0	44.0		48.0	6.0	44.0		48.0				
Max Q Clear Time (g_c+I1), s	5.9	26.8		6.6	3.2	9.7		9.1				
Green Ext Time (p_c), s	0.0	10.1		0.9	0.0	4.6		0.7				

Intersection Summary

HCM 6th Ctrl Delay	14.9
HCM 6th LOS	B

Intersection						
Int Delay, s/veh	2.3					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		∩	
Traffic Vol, veh/h	0	200	101	0	15	81
Future Vol, veh/h	0	200	101	0	15	81
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	0	25	23	0	1	22
Mvmt Flow	0	204	103	0	15	83

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	-	0	-	0	307 103
Stage 1	-	-	-	-	103 -
Stage 2	-	-	-	-	204 -
Critical Hdwy	-	-	-	-	6.41 6.42
Critical Hdwy Stg 1	-	-	-	-	5.41 -
Critical Hdwy Stg 2	-	-	-	-	5.41 -
Follow-up Hdwy	-	-	-	-	3.509 3.498
Pot Cap-1 Maneuver	0	-	-	0	687 900
Stage 1	0	-	-	0	924 -
Stage 2	0	-	-	0	833 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	-	687 900
Mov Cap-2 Maneuver	-	-	-	-	687 -
Stage 1	-	-	-	-	924 -
Stage 2	-	-	-	-	833 -

Approach	EB	WB	SB
HCM Control Delay, s	0	0	9.7
HCM LOS			A

Minor Lane/Major Mvmt	EBT	WBT	SBLn1
Capacity (veh/h)	-	-	858
HCM Lane V/C Ratio	-	-	0.114
HCM Control Delay (s)	-	-	9.7
HCM Lane LOS	-	-	A
HCM 95th %tile Q(veh)	-	-	0.4

Intersection												
Int Delay, s/veh	3.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↗			↕				
Traffic Vol, veh/h	155	114	0	0	101	26	0	0	0	0	0	0
Future Vol, veh/h	155	114	0	0	101	26	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	16965	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	92	92	95	95	92	92	92	95	92	95
Heavy Vehicles, %	24	23	2	2	23	42	2	2	2	2	2	2
Mvmt Flow	163	120	0	0	106	27	0	0	0	0	0	0

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	133	0	0
Stage 1	-	-	446
Stage 2	-	-	120
Critical Hdwy	4.34	-	6.42
Critical Hdwy Stg 1	-	-	5.42
Critical Hdwy Stg 2	-	-	5.42
Follow-up Hdwy	2.416	-	3.518
Pot Cap-1 Maneuver	1327	0	486
Stage 1	-	0	645
Stage 2	-	0	905
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1327	-	422
Mov Cap-2 Maneuver	-	-	422
Stage 1	-	-	560
Stage 2	-	-	905

Approach	EB	WB	NB
HCM Control Delay, s	4.7	0	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	WBT	WBR
Capacity (veh/h)	-	1327	-	-	-
HCM Lane V/C Ratio	-	0.123	-	-	-
HCM Control Delay (s)	0	8.1	0	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	-	0.4	-	-	-

Intersection						
Int Delay, s/veh	5.7					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	Y			↑	↑	
Traffic Vol, veh/h	52	64	74	39	28	46
Future Vol, veh/h	52	64	74	39	28	46
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	9	3	7	35	19	2
Mvmt Flow	57	70	80	42	30	50

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	257	55	80	0	0
Stage 1	55	-	-	-	-
Stage 2	202	-	-	-	-
Critical Hdwy	6.49	6.23	4.17	-	-
Critical Hdwy Stg 1	5.49	-	-	-	-
Critical Hdwy Stg 2	5.49	-	-	-	-
Follow-up Hdwy	3.581	3.327	2.263	-	-
Pot Cap-1 Maneuver	717	1009	1487	-	-
Stage 1	950	-	-	-	-
Stage 2	815	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	678	1009	1487	-	-
Mov Cap-2 Maneuver	678	-	-	-	-
Stage 1	898	-	-	-	-
Stage 2	815	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10.1	5	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1487	-	828	-	-
HCM Lane V/C Ratio	0.054	-	0.152	-	-
HCM Control Delay (s)	7.6	0	10.1	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.2	-	0.5	-	-

HCM 6th Signalized Intersection Summary

5: I-15 SB On-ramp/I-15 SB Off-ramp & Foothill Blvd/Foothill Blvd

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↗		↑↑↑	↗				↘	↕	↗
Traffic Volume (veh/h)	0	1582	639	0	2195	306	0	0	0	143	0	383
Future Volume (veh/h)	0	1582	639	0	2195	306	0	0	0	143	0	383
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1786	1772	0	1786	1758				1702	1772	1716
Adj Flow Rate, veh/h	0	1631	0	0	2263	0				98	0	447
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97				0.97	0.97	0.97
Percent Heavy Veh, %	0	1	2	0	1	3				7	2	6
Cap, veh/h	0	3533		0	3533					302	0	542
Arrive On Green	0.00	0.72	0.00	0.00	0.49	0.00				0.19	0.00	0.19
Sat Flow, veh/h	0	5036	1502	0	5036	1490				1621	0	2908
Grp Volume(v), veh/h	0	1631	0	0	2263	0				98	0	447
Grp Sat Flow(s),veh/h/ln	0	1625	1502	0	1625	1490				1621	0	1454
Q Serve(g_s), s	0.0	12.5	0.0	0.0	31.2	0.0				4.7	0.0	13.3
Cycle Q Clear(g_c), s	0.0	12.5	0.0	0.0	31.2	0.0				4.7	0.0	13.3
Prop In Lane	0.00		1.00	0.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	3533		0	3533					302	0	542
V/C Ratio(X)	0.00	0.46		0.00	0.64					0.32	0.00	0.82
Avail Cap(c_a), veh/h	0	3533		0	3533					432	0	775
HCM Platoon Ratio	1.00	1.00	1.00	1.00	0.67	0.67				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.00	0.00	0.51	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	5.1	0.0	0.0	14.4	0.0				31.7	0.0	35.2
Incr Delay (d2), s/veh	0.0	0.4	0.0	0.0	0.5	0.0				0.6	0.0	4.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	2.7	0.0	0.0	11.5	0.0				1.8	0.0	4.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	5.6	0.0	0.0	14.9	0.0				32.3	0.0	40.1
LnGrp LOS	A	A		A	B					C	A	D
Approach Vol, veh/h		1631	A		2263	A					545	
Approach Delay, s/veh		5.6			14.9						38.7	
Approach LOS		A			B						D	
Timer - Assigned Phs		2		4		6						
Phs Duration (G+Y+Rc), s		69.2		20.8		69.2						
Change Period (Y+Rc), s		4.0		4.0		4.0						
Max Green Setting (Gmax), s		58.0		24.0		58.0						
Max Q Clear Time (g_c+I1), s		14.5		15.3		33.2						
Green Ext Time (p_c), s		15.4		1.5		17.9						

Intersection Summary

HCM 6th Ctrl Delay	14.4
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th Signalized Intersection Summary

6: I-15 NB Off-ramp/I-15 NB On-ramp & Foothill Blvd /Foothill Blvd

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↑		↑↑↑	↑	↑	↑↓	↑			
Traffic Volume (veh/h)	0	1197	497	0	1164	350	1332	0	539	0	0	0
Future Volume (veh/h)	0	1197	497	0	1164	350	1332	0	539	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No		No		No		No				
Adj Sat Flow, veh/h/ln	0	1772	1772	0	1772	1786	1772	1772	1786			
Adj Flow Rate, veh/h	0	1273	0	0	1238	0	1595	0	382			
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94			
Percent Heavy Veh, %	0	2	2	0	2	1	2	2	1			
Cap, veh/h	0	1862		0	1862		1776	0	796			
Arrive On Green	0.00	0.38	0.00	0.00	0.38	0.00	0.53	0.00	0.53			
Sat Flow, veh/h	0	4997	1502	0	4997	1514	3375	0	1514			
Grp Volume(v), veh/h	0	1273	0	0	1238	0	1595	0	382			
Grp Sat Flow(s),veh/h/ln	0	1612	1502	0	1612	1514	1688	0	1514			
Q Serve(g_s), s	0.0	19.8	0.0	0.0	19.0	0.0	38.2	0.0	14.4			
Cycle Q Clear(g_c), s	0.0	19.8	0.0	0.0	19.0	0.0	38.2	0.0	14.4			
Prop In Lane	0.00		1.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	0	1862		0	1862		1776	0	796			
VC Ratio(X)	0.00	0.68		0.00	0.66		0.90	0.00	0.48			
Avail Cap(c_a), veh/h	0	1862		0	1862		1988	0	891			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(l)	0.00	0.85	0.00	0.00	1.00	0.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	0.0	23.1	0.0	0.0	22.9	0.0	19.2	0.0	13.5			
Incr Delay (d2), s/veh	0.0	1.8	0.0	0.0	1.9	0.0	5.5	0.0	0.4			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/lnr0.0	0.0	7.5	0.0	0.0	7.3	0.0	14.6	0.0	4.6			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	24.9	0.0	0.0	24.8	0.0	24.7	0.0	14.0			
LnGrp LOS		A	C		A	C		C	A	B		
Approach Vol, veh/h		1273	A		1238	A		1977				
Approach Delay, s/veh		24.9			24.8			22.6				
Approach LOS		C			C			C				
Timer - Assigned Phs		2			6			8				
Phs Duration (G+Y+Rc), s		38.6			38.6			51.4				
Change Period (Y+Rc), s		4.0			4.0			4.0				
Max Green Setting (Gmax), s		29.0			29.0			53.0				
Max Q Clear Time (g_c+I1), s		21.8			21.0			40.2				
Green Ext Time (p_c), s		4.7			4.9			7.2				

Intersection Summary

HCM 6th Ctrl Delay 23.8
 HCM 6th LOS C

Notes

User approved volume balancing among the lanes for turning movement.
 Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th Signalized Intersection Summary
 7: Ontario Mills Dr./I-15 SB Ramps & Fourth St

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖↗	↑↑↑	↖	↖↗	↑↑↑	↖	↖	↑↑	↖	↖	↑↑	↖
Traffic Volume (veh/h)	515	720	54	184	722	109	113	179	45	93	242	453
Future Volume (veh/h)	515	720	54	184	722	109	113	179	45	93	242	453
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No		No		No		No		No		No
Adj Sat Flow, veh/h/ln	1588	1772	1786	1588	1758	1660	1687	1786	1786	1634	1786	1786
Adj Flow Rate, veh/h	531	742	56	190	744	112	116	185	46	96	249	467
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	1	2	1	1	3	10	1	1	1	5	1	1
Cap, veh/h	595	2636	825	236	2028	594	139	601	268	116	295	500
Arrive On Green	0.20	0.54	0.54	0.11	0.56	0.56	0.09	0.18	0.18	0.07	0.17	0.17
Sat Flow, veh/h	2933	4837	1514	2933	4799	1406	1606	3393	1514	1556	1786	3027
Grp Volume(v), veh/h	531	742	56	190	744	112	116	185	46	96	249	467
Grp Sat Flow(s),veh/h/ln	1467	1612	1514	1467	1600	1406	1606	1697	1514	1556	1786	1514
Q Serve(g_s), s	22.9	10.7	1.5	8.2	11.1	5.1	9.2	6.2	3.4	7.9	17.6	13.5
Cycle Q Clear(g_c), s	22.9	10.7	1.5	8.2	11.1	5.1	9.2	6.2	3.4	7.9	17.6	13.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	595	2636	825	236	2028	594	139	601	268	116	295	500
VC Ratio(X)	0.89	0.28	0.07	0.81	0.37	0.19	0.84	0.31	0.17	0.83	0.84	0.93
Avail Cap(c_a), veh/h	812	2636	825	338	2028	594	235	757	338	191	357	605
HCM Platoon Ratio	1.00	1.00	1.00	1.33	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.82	0.82	0.82	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	50.4	15.9	6.4	57.1	18.9	17.5	58.5	46.6	45.4	59.3	52.6	25.0
Incr Delay (d2), s/veh	9.6	0.3	0.2	7.5	0.4	0.6	12.3	0.3	0.3	13.8	14.3	19.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.8	3.7	0.8	3.1	3.7	1.7	4.2	2.6	1.3	3.5	9.0	6.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	60.1	16.2	6.5	64.6	19.3	18.1	70.8	46.9	45.7	73.1	67.0	44.6
LnGrp LOS	E	B	A	E	B	B	E	D	D	E	E	D
Approach Vol, veh/h		1329			1046			347			812	
Approach Delay, s/veh		33.3			27.4			54.7			54.8	
Approach LOS		C			C			D			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	4.4	74.8	15.2	25.5	30.4	58.9	13.7	27.0				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	15.0	54.0	19.0	26.0	36.0	33.0	16.0	29.0				
Max Q Clear Time (g_c+10), s	10.2	12.7	11.2	19.6	24.9	13.1	9.9	8.2				
Green Ext Time (p_c), s	0.2	5.1	0.1	1.9	1.4	4.7	0.1	1.2				

Intersection Summary

HCM 6th Ctrl Delay	38.6
HCM 6th LOS	D

Notes

User approved volume balancing among the lanes for turning movement.

HCM 6th Signalized Intersection Summary

8: Fourth St & I-15 NB Ramps

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖ ↗	↑ ↑ ↑	↗	↖ ↗	↑ ↑ ↑		↖ ↗	↑ ↑		↖ ↗	↖ ↗	↖ ↗
Traffic Volume (veh/h)	557	232	80	9	193	35	73	54	41	58	48	707
Future Volume (veh/h)	557	232	80	9	193	35	73	54	41	58	48	707
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No		No		No		No		No		No
Adj Sat Flow, veh/h/ln	1758	1674	1758	1632	1674	1674	1786	1758	1758	1561	1716	1702
Adj Flow Rate, veh/h	580	242	83	9	201	36	76	56	43	56	58	736
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.90	0.96
Percent Heavy Veh, %	3	9	3	12	9	9	1	3	3	17	6	7
Cap, veh/h	1229	1863	607	516	1418	244	110	122	85	108	124	1300
Arrive On Green	0.12	0.13	0.13	0.33	0.36	0.36	0.06	0.06	0.06	0.07	0.07	0.07
Sat Flow, veh/h	3248	4569	1490	1554	3923	675	1701	1884	1308	1487	1716	2884
Grp Volume(v), veh/h	580	242	83	9	154	83	76	49	50	56	58	736
Grp Sat Flow(s),veh/h/ln	1624	1523	1490	1554	1523	1552	1701	1670	1522	1487	1716	1442
Q Serve(g_s), s	21.6	6.1	6.4	0.5	4.4	4.7	5.7	3.7	4.1	4.7	4.2	0.0
Cycle Q Clear(g_c), s	21.6	6.1	6.4	0.5	4.4	4.7	5.7	3.7	4.1	4.7	4.2	0.0
Prop In Lane	1.00		1.00	1.00		0.43	1.00		0.86	1.00		1.00
Lane Grp Cap(c), veh/h	1229	1863	607	516	1101	561	110	108	99	108	124	1300
VC Ratio(X)	0.47	0.13	0.14	0.02	0.14	0.15	0.69	0.45	0.51	0.52	0.47	0.57
Avail Cap(c_a), veh/h	1229	1863	607	516	1101	561	536	527	480	183	211	1446
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	44.8	35.9	36.1	29.2	27.9	28.0	59.5	58.6	58.8	58.1	57.9	26.3
Incr Delay (d2), s/veh	0.3	0.1	0.4	0.0	0.3	0.6	7.4	2.9	4.0	3.9	2.7	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	2.2	2.4	0.2	1.6	1.7	2.7	1.6	1.7	1.9	1.9	8.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	45.1	36.1	36.5	29.2	28.2	28.5	67.0	61.5	62.8	62.0	60.6	26.8
LnGrp LOS	D	D	D	C	C	C	E	E	E	E	E	C
Approach Vol, veh/h		905			246			175			850	
Approach Delay, s/veh		41.9			28.3			64.2			31.4	
Approach LOS		D			C			E			C	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	47.2	57.0		13.4	53.2	51.0		12.4				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	4.0	53.0		16.0	10.0	47.0		41.0				
Max Q Clear Time (g_c+I), s	4.0	8.4		6.7	23.6	6.7		7.7				
Green Ext Time (p_c), s	0.0	1.7		2.7	0.0	1.3		0.8				

Intersection Summary

HCM 6th Ctrl Delay	38.1
HCM 6th LOS	D

Notes

User approved volume balancing among the lanes for turning movement.

HCM 6th Signalized Intersection Summary
 9: Milliken Ave & I-210 WB On-ramp/I-210 WB Off-ramp

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↘	↔	↗	↘↗	↑↑↑			↑↑↔	
Traffic Volume (veh/h)	0	0	0	168	7	76	169	476	0	0	261	37
Future Volume (veh/h)	0	0	0	168	7	76	169	476	0	0	261	37
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach				No		No		No				No
Adj Sat Flow, veh/h/ln				1554	1786	1688	1500	1786	0	0	1786	1786
Adj Flow Rate, veh/h				202	0	55	176	496	0	0	272	39
Peak Hour Factor				0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %				11	1	8	8	1	0	0	1	1
Cap, veh/h				389	0	188	421	3584	0	0	2235	311
Arrive On Green				0.13	0.00	0.13	0.30	1.00	0.00	0.00	0.52	0.52
Sat Flow, veh/h				2960	0	1430	2772	5036	0	0	4486	603
Grp Volume(v), veh/h				202	0	55	176	496	0	0	202	109
Grp Sat Flow(s),veh/h/ln				1480	0	1430	1386	1625	0	0	1625	1677
Q Serve(g_s), s				3.8	0.0	2.1	3.0	0.0	0.0	0.0	1.9	2.0
Cycle Q Clear(g_c), s				3.8	0.0	2.1	3.0	0.0	0.0	0.0	1.9	2.0
Prop In Lane				1.00		1.00	1.00		0.00	0.00		0.36
Lane Grp Cap(c), veh/h				389	0	188	421	3584	0	0	1679	867
V/C Ratio(X)				0.52	0.00	0.29	0.42	0.14	0.00	0.00	0.12	0.13
Avail Cap(c_a), veh/h				444	0	215	421	3584	0	0	1679	867
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.96	0.96	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				24.3	0.0	23.5	18.8	0.0	0.0	0.0	7.5	7.5
Incr Delay (d2), s/veh				1.1	0.0	0.9	0.6	0.1	0.0	0.0	0.1	0.3
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				1.3	0.0	0.7	0.9	0.0	0.0	0.0	0.6	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				25.4	0.0	24.4	19.4	0.1	0.0	0.0	7.6	7.8
LnGrp LOS				C	A	C	B	A	A	A	A	A
Approach Vol, veh/h						257		672			311	
Approach Delay, s/veh						25.2		5.1			7.7	
Approach LOS						C		A			A	
Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		48.1			13.1	35.0		11.9				
Change Period (Y+Rc), s		4.0			4.0	4.0		4.0				
Max Green Setting (Gmax), s		43.0			8.0	31.0		9.0				
Max Q Clear Time (g_c+I1), s		2.0			5.0	4.0		5.8				
Green Ext Time (p_c), s		3.8			0.1	2.0		0.3				

Intersection Summary

HCM 6th Ctrl Delay	9.9
HCM 6th LOS	A

Notes

User approved volume balancing among the lanes for turning movement.

HCM 6th Signalized Intersection Summary
 10: Milliken Ave & I-210 EB Off-ramp/I-210 EB On-ramp

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	86	7	363	0	0	0	0	519	251	63	292	0
Future Volume (veh/h)	86	7	363	0	0	0	0	519	251	63	292	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No						No			No		
Adj Sat Flow, veh/h/ln	1395	1786	1674				0	1688	1688	1176	1617	0
Adj Flow Rate, veh/h	62	0	412				0	541	261	66	304	0
Peak Hour Factor	0.96	0.96	0.96				0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	23	1	9				0	8	8	34	13	0
Cap, veh/h	233	0	498				0	1638	763	198	3051	0
Arrive On Green	0.18	0.00	0.18				0.00	0.53	0.53	0.18	1.00	0.00
Sat Flow, veh/h	1329	0	2837				0	3223	1430	2172	4561	0
Grp Volume(v), veh/h	62	0	412				0	541	261	66	304	0
Grp Sat Flow(s),veh/h/ln	1329	0	1418				0	1536	1430	1086	1472	0
Q Serve(g_s), s	2.4	0.0	8.4				0.0	6.0	6.3	1.6	0.0	0.0
Cycle Q Clear(g_c), s	2.4	0.0	8.4				0.0	6.0	6.3	1.6	0.0	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	233	0	498				0	1638	763	198	3051	0
V/C Ratio(X)	0.27	0.00	0.83				0.00	0.33	0.34	0.33	0.10	0.00
Avail Cap(c_a), veh/h	244	0	520				0	1638	763	198	3051	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	0.99	0.99	0.00
Uniform Delay (d), s/veh	21.4	0.0	23.8				0.0	7.9	8.0	23.0	0.0	0.0
Incr Delay (d2), s/veh	0.6	0.0	10.3				0.0	0.5	1.2	1.0	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.0	3.3				0.0	1.7	1.8	0.4	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	22.0	0.0	34.1				0.0	8.5	9.2	23.9	0.1	0.0
LnGrp LOS	C	A	C				A	A	A	C	A	A
Approach Vol, veh/h	474						802			370		
Approach Delay, s/veh	32.5						8.7			4.3		
Approach LOS	C						A			A		
Timer - Assigned Phs	1	2	4	6								
Phs Duration (G+Y+Rc), s	9.5	36.0	14.5	45.5								
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0								
Max Green Setting (Gmax), s	5.0	32.0	11.0	41.0								
Max Q Clear Time (g_c+I), s	13.6	8.3	10.4	2.0								
Green Ext Time (p_c), s	0.0	5.8	0.1	2.3								

Intersection Summary

HCM 6th Ctrl Delay	14.6
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

HCM 6th Signalized Intersection Summary

11: Milliken Ave & Foothill Blvd

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔	↑↑↑	↗	↔↔	↑↑↑	↗	↔↔	↑↑↑	↗	↔↔	↑↑↑	↗
Traffic Volume (veh/h)	192	1024	93	380	1331	108	285	625	177	182	390	78
Future Volume (veh/h)	192	1024	93	380	1331	108	285	625	177	182	390	78
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No		No		No		No		No		No
Adj Sat Flow, veh/h/ln	1488	1716	1421	1525	1716	1589	1538	1702	1702	1550	1674	1660
Adj Flow Rate, veh/h	204	1089	99	404	1416	115	303	665	188	194	415	83
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	9	6	27	6	6	15	5	7	7	4	9	10
Cap, veh/h	272	1842	473	351	1962	564	283	1217	300	214	836	257
Arrive On Green	0.10	0.39	0.39	0.12	0.42	0.42	0.10	0.21	0.21	0.07	0.18	0.18
Sat Flow, veh/h	2749	4684	1204	2818	4684	1347	2841	5854	1442	2864	4569	1406
Grp Volume(v), veh/h	204	1089	99	404	1416	115	303	665	188	194	415	83
Grp Sat Flow(s),veh/h/ln	1374	1561	1204	1409	1561	1347	1420	1463	1442	1432	1523	1406
Q Serve(g_s), s	5.8	14.7	4.4	10.0	20.2	4.4	8.0	8.1	9.5	5.4	6.5	4.1
Cycle Q Clear(g_c), s	5.8	14.7	4.4	10.0	20.2	4.4	8.0	8.1	9.5	5.4	6.5	4.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	272	1842	473	351	1962	564	283	1217	300	214	836	257
VC Ratio(X)	0.75	0.59	0.21	1.15	0.72	0.20	1.07	0.55	0.63	0.91	0.50	0.32
Avail Cap(c_a), veh/h	411	3037	781	351	2920	840	283	3357	827	214	2506	771
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.2	19.2	16.1	35.1	19.4	14.8	36.1	28.4	28.9	36.8	29.4	28.5
Incr Delay (d2), s/veh	4.1	0.3	0.2	95.3	0.5	0.2	73.1	0.4	2.2	36.8	0.5	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	4.7	1.1	7.8	6.3	1.2	5.4	2.6	3.2	2.8	2.2	1.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	39.3	19.5	16.3	130.4	19.9	15.0	109.2	28.8	31.1	73.6	29.9	29.2
LnGrp LOS	D	B	B	F	B	B	F	C	C	E	C	C
Approach Vol, veh/h		1392			1935			1156			692	
Approach Delay, s/veh		22.2			42.7			50.2			42.1	
Approach LOS		C			D			D			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	4.0	35.5	12.0	18.7	11.9	37.6	10.0	20.7				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	10.0	52.0	8.0	44.0	12.0	50.0	6.0	46.0				
Max Q Clear Time (g_c+1.2), s	10.0	16.7	10.0	8.5	7.8	22.2	7.4	11.5				
Green Ext Time (p_c), s	0.0	8.7	0.0	2.9	0.2	11.4	0.0	5.2				

Intersection Summary

HCM 6th Ctrl Delay	38.8
HCM 6th LOS	D

HCM 6th Signalized Intersection Summary

12: Milliken Ave & Fourth St

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔	↑↑↑	↗	↔↔	↑↑↑	↗	↔↔	↑↑↑	↗	↔↔	↑↑↑	↔↔
Traffic Volume (veh/h)	187	441	188	443	501	177	241	608	116	275	575	106
Future Volume (veh/h)	187	441	188	443	501	177	241	608	116	275	575	106
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No		No		No		No		No		No
Adj Sat Flow, veh/h/ln	1575	1716	1772	1588	1688	1758	1550	1716	1744	1588	1702	1702
Adj Flow Rate, veh/h	191	450	192	452	511	181	246	620	118	281	587	108
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	6	2	1	8	3	4	6	4	1	7	7
Cap, veh/h	288	1030	330	397	1182	382	277	1292	524	341	1200	213
Arrive On Green	0.10	0.22	0.22	0.14	0.26	0.26	0.10	0.22	0.22	0.12	0.24	0.24
Sat Flow, veh/h	2910	4684	1502	2933	4607	1490	2864	5902	1478	2933	5036	895
Grp Volume(v), veh/h	191	450	192	452	511	181	246	620	118	281	509	186
Grp Sat Flow(s),veh/h/ln	1455	1561	1502	1467	1536	1490	1432	1476	1478	1467	1463	1541
Q Serve(g_s), s	3.3	4.3	5.9	7.0	4.8	5.3	4.4	4.7	2.9	4.8	5.2	5.4
Cycle Q Clear(g_c), s	3.3	4.3	5.9	7.0	4.8	5.3	4.4	4.7	2.9	4.8	5.2	5.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.58
Lane Grp Cap(c), veh/h	288	1030	330	397	1182	382	277	1292	524	341	1046	367
V/C Ratio(X)	0.66	0.44	0.58	1.14	0.43	0.47	0.89	0.48	0.23	0.83	0.49	0.51
Avail Cap(c_a), veh/h	507	4803	1540	397	4547	1470	277	5482	1573	341	4163	1461
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.5	17.4	18.0	22.3	16.1	16.3	23.1	17.6	11.7	22.3	17.0	17.1
Incr Delay (d2), s/veh	2.6	0.3	1.6	88.3	0.3	0.9	27.5	0.3	0.2	15.2	0.4	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0	1.2	1.7	6.8	1.3	1.5	2.3	1.3	0.7	2.1	1.4	1.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	25.1	17.7	19.6	110.6	16.3	17.2	50.5	17.9	11.9	37.5	17.3	18.1
LnGrp LOS	C	B	B	F	B	B	D	B	B	D	B	B
Approach Vol, veh/h		833		1144		984		976				
Approach Delay, s/veh		19.8		53.7		25.3		23.3				
Approach LOS		B		D		C		C				
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	10.0	15.3	11.0	15.4	9.0	16.3	9.1	17.3				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	4.0	48.0	7.0	53.0	5.0	49.0	9.0	51.0				
Max Q Clear Time (g_c+1/3), s	4.0	6.7	9.0	7.9	6.4	7.4	5.3	7.3				
Green Ext Time (p_c), s	0.0	4.6	0.0	3.5	0.0	4.6	0.2	3.9				

Intersection Summary

HCM 6th Ctrl Delay	31.9
HCM 6th LOS	C

Intersection						
Int Delay, s/veh	0.6					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↗		↑↑↑	↑↑↑	↗
Traffic Vol, veh/h	0	97	0	1200	662	63
Future Vol, veh/h	0	97	0	1200	662	63
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	175
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	2	1	2	3	6	4
Mvmt Flow	0	99	0	1224	676	64

Major/Minor	Minor2	Major1	Major2		
Conflicting Flow All	-	338	-	0	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-
Critical Hdwy	-	7.12	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-
Follow-up Hdwy	-	3.91	-	-	-
Pot Cap-1 Maneuver	0	564	0	-	-
Stage 1	0	-	0	-	-
Stage 2	0	-	0	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	-	564	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	12.7	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT EBLn1	SBT	SBR
Capacity (veh/h)	- 564	-	-
HCM Lane V/C Ratio	- 0.175	-	-
HCM Control Delay (s)	- 12.7	-	-
HCM Lane LOS	- B	-	-
HCM 95th %tile Q(veh)	- 0.6	-	-

HCM 6th Signalized Intersection Summary

14: Milliken Ave & 7th St

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↑↑↑		↖	↑↑↑	
Traffic Volume (veh/h)	144	0	112	16	0	13	159	1047	9	6	725	22
Future Volume (veh/h)	144	0	112	16	0	13	159	1047	9	6	725	22
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1687	1786	1786	1382	1800	1800	1620	1758	1758	1687	1716	1716
Adj Flow Rate, veh/h	145	0	113	16	0	13	161	1058	9	6	732	22
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	1	1	1	24	0	0	6	3	3	1	6	6
Cap, veh/h	273	0	225	164	0	227	180	3460	29	10	2779	83
Arrive On Green	0.15	0.00	0.15	0.15	0.00	0.15	0.12	0.71	0.71	0.01	0.59	0.59
Sat Flow, veh/h	1334	0	1514	998	0	1525	1543	4908	42	1606	4673	140
Grp Volume(v), veh/h	145	0	113	16	0	13	161	690	377	6	489	265
Grp Sat Flow(s),veh/h/ln	1334	0	1514	998	0	1525	1543	1600	1750	1606	1561	1691
Q Serve(g_s), s	9.0	0.0	5.9	1.3	0.0	0.6	8.8	6.9	7.0	0.3	6.4	6.5
Cycle Q Clear(g_c), s	9.6	0.0	5.9	7.2	0.0	0.6	8.8	6.9	7.0	0.3	6.4	6.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.02	1.00		0.08
Lane Grp Cap(c), veh/h	273	0	225	164	0	227	180	2256	1234	10	1857	1005
VC Ratio(X)	0.53	0.00	0.50	0.10	0.00	0.06	0.89	0.31	0.31	0.60	0.26	0.26
Avail Cap(c_a), veh/h	961	0	1006	679	0	1014	180	2256	1234	75	1857	1005
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.5	0.0	33.6	36.9	0.0	31.3	37.4	4.8	4.8	42.5	8.4	8.4
Incr Delay (d2), s/veh	1.6	0.0	1.7	0.3	0.0	0.1	38.9	0.4	0.6	46.6	0.3	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.9	0.0	2.2	0.3	0.0	0.2	5.0	1.5	1.8	0.2	1.8	2.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	37.1	0.0	35.3	37.1	0.0	31.4	76.3	5.1	5.4	89.1	8.7	9.0
LnGrp LOS	D	A	D	D	A	C	E	A	A	F	A	A
Approach Vol, veh/h		258			29			1228			760	
Approach Delay, s/veh		36.3			34.6			14.5			9.4	
Approach LOS		D			C			B			A	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	4.5	64.5		16.8	14.0	55.0		16.8				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	4.0	57.0		57.0	10.0	51.0		57.0				
Max Q Clear Time (g_c+I1), s	2.3	9.0		11.6	10.8	8.5		9.2				
Green Ext Time (p_c), s	0.0	7.5		1.2	0.0	4.8		0.1				

Intersection Summary

HCM 6th Ctrl Delay	15.6
HCM 6th LOS	B

HCM 6th Signalized Intersection Summary
 15: Milliken Ave & I-10 WB Ramps/Ontario Mills Pkwy

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔	↑	↗	↔↔	↕↕	↗	↔↔	↑↑↑	↗	↔↔	↑↑↑	↗
Traffic Volume (veh/h)	408	267	127	275	331	301	338	535	234	160	672	431
Future Volume (veh/h)	408	267	127	275	331	301	338	535	234	160	672	431
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No		No		No		No		No		No
Adj Sat Flow, veh/h/ln	1463	1730	1702	1550	1730	1772	1538	1716	1730	1550	1730	1716
Adj Flow Rate, veh/h	434	284	135	293	352	320	360	569	249	170	715	459
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	11	5	7	4	5	2	5	6	5	4	5	6
Cap, veh/h	369	317	264	412	627	287	420	2629	864	234	2258	750
Arrive On Green	0.14	0.18	0.18	0.14	0.19	0.19	0.05	0.15	0.15	0.08	0.38	0.38
Sat Flow, veh/h	2703	1730	1442	2864	3287	1502	2841	5902	1466	2864	5951	1454
Grp Volume(v), veh/h	434	284	135	293	352	320	360	569	249	170	715	459
Grp Sat Flow(s),veh/h/ln	1351	1730	1442	1432	1643	1502	1420	1476	1466	1432	1488	1454
Q Serve(g_s), s	15.0	17.6	6.8	10.7	10.7	21.0	13.8	9.3	0.1	6.4	9.3	9.3
Cycle Q Clear(g_c), s	15.0	17.6	6.8	10.7	10.7	21.0	13.8	9.3	0.1	6.4	9.3	9.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	369	317	264	412	627	287	420	2629	864	234	2258	750
VC Ratio(X)	1.18	0.90	0.51	0.71	0.56	1.12	0.86	0.22	0.29	0.73	0.32	0.61
Avail Cap(c_a), veh/h	369	346	288	412	627	287	491	2629	864	234	2258	750
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.93	0.93	0.93	1.00	1.00	1.00
Uniform Delay (d), s/veh	47.5	43.9	21.6	44.9	40.3	44.5	51.2	30.0	19.3	49.3	24.1	6.9
Incr Delay (d2), s/veh	104.7	23.4	1.5	5.6	1.1	88.1	11.8	0.2	0.8	10.6	0.4	3.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	9.6	2.4	4.1	4.4	14.7	6.0	3.6	5.2	2.6	3.3	3.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	152.2	67.3	23.1	50.5	41.5	132.6	62.9	30.2	20.1	59.9	24.4	10.6
LnGrp LOS	F	E	C	D	D	F	E	C	C	E	C	B
Approach Vol, veh/h		853			965			1178			1344	
Approach Delay, s/veh		103.5			74.4			38.1			24.2	
Approach LOS		F			E			D			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	3.0	53.0	19.8	24.2	20.3	45.7	19.0	25.0				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	9.0	49.0	14.0	22.0	19.0	39.0	15.0	21.0				
Max Q Clear Time (g_c+10), s	10.4	11.3	12.7	19.6	15.8	11.3	17.0	23.0				
Green Ext Time (p_c), s	0.0	5.5	0.1	0.5	0.4	7.7	0.0	0.0				

Intersection Summary

HCM 6th Ctrl Delay	54.7
HCM 6th LOS	D

HCM 6th Signalized Intersection Summary
 16: Milliken Ave & I-10 EB Ramps

11/03/2021



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↶↶	↷	↶↶	↑↑↑	↑↑↑	↷
Traffic Volume (veh/h)	459	159	230	650	512	564
Future Volume (veh/h)	459	159	230	650	512	564
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1550	1617	1176	1646	1744	1491
Adj Flow Rate, veh/h	473	164	237	670	528	581
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	4	13	34	11	4	22
Cap, veh/h	568	272	285	4126	3366	960
Arrive On Green	0.20	0.20	0.13	0.73	0.19	0.19
Sat Flow, veh/h	2864	1371	2172	5891	6243	1264
Grp Volume(v), veh/h	473	164	237	670	528	581
Grp Sat Flow(s),veh/h/ln	1432	1371	1086	1415	1500	1264
Q Serve(g_s), s	17.4	12.0	11.7	4.0	8.1	26.6
Cycle Q Clear(g_c), s	17.4	12.0	11.7	4.0	8.1	26.6
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	568	272	285	4126	3366	960
VC Ratio(X)	0.83	0.60	0.83	0.16	0.16	0.61
Avail Cap(c_a), veh/h	1198	573	612	4126	3366	960
HCM Platoon Ratio	1.00	1.00	1.00	1.00	0.33	0.33
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.90	0.90
Uniform Delay (d), s/veh	42.3	40.1	46.6	4.6	23.0	11.8
Incr Delay (d2), s/veh	3.3	2.1	6.2	0.1	0.1	2.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.4	9.2	3.4	1.1	3.1	17.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	45.6	42.3	52.7	4.7	23.1	14.4
LnGrp LOS	D	D	D	A	C	B
Approach Vol, veh/h	637			907	1109	
Approach Delay, s/veh	44.7			17.2	18.5	
Approach LOS	D			B	B	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		84.2		25.8	18.5	65.7
Change Period (Y+Rc), s		4.0		4.0	4.0	4.0
Max Green Setting (Gmax), s		56.0		46.0	31.0	21.0
Max Q Clear Time (g_c+I1), s		6.0		19.4	13.7	28.6
Green Ext Time (p_c), s		5.6		2.4	0.8	0.0
Intersection Summary						
HCM 6th Ctrl Delay			24.4			
HCM 6th LOS			C			

Appendix E.5 - 2045 Build Intersection Level of Service Calculation Worksheets

HCM 6th Signalized Intersection Summary

1: Highway 395 & Joshua St

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↖	↗	↖	↖↗	↗	↖	↖↗	↗
Traffic Volume (veh/h)	70	13	1	39	135	149	13	437	7	252	1454	528
Future Volume (veh/h)	70	13	1	39	135	149	13	437	7	252	1454	528
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1209	1674	1674	1355	1674	1281	1037	1463	1632	1435	1547	1393
Adj Flow Rate, veh/h	77	14	1	43	148	164	14	480	8	277	1598	580
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	37	9	9	26	9	37	50	24	12	20	18	29
Cap, veh/h	190	327	23	311	355	230	13	1236	615	260	1828	734
Arrive On Green	0.21	0.21	0.21	0.21	0.21	0.21	0.01	0.44	0.44	0.19	0.62	0.62
Sat Flow, veh/h	729	1544	110	1070	1674	1085	988	2780	1383	1366	2940	1180
Grp Volume(v), veh/h	77	0	15	43	148	164	14	480	8	277	1598	580
Grp Sat Flow(s),veh/h/ln	729	0	1654	1070	1674	1085	988	1390	1383	1366	1470	1180
Q Serve(g_s), s	8.0	0.0	0.6	2.6	6.0	11.0	1.1	9.1	0.3	15.0	35.4	28.7
Cycle Q Clear(g_c), s	14.1	0.0	0.6	3.2	6.0	11.0	1.1	9.1	0.3	15.0	35.4	28.7
Prop In Lane	1.00		0.07	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	190	0	351	311	355	230	13	1236	615	260	1828	734
VC Ratio(X)	0.40	0.00	0.04	0.14	0.42	0.71	1.06	0.39	0.01	1.06	0.87	0.79
Avail Cap(c_a), veh/h	480	0	1009	736	1021	662	75	1236	615	260	1828	734
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	32.9	0.0	24.6	25.9	26.8	28.8	38.8	14.7	12.2	31.8	12.3	11.1
Incr Delay (d2), s/veh	1.4	0.0	0.0	0.2	0.8	4.1	132.0	0.9	0.0	73.5	6.2	8.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	0.0	0.2	0.7	2.4	3.0	0.7	2.5	0.1	9.7	9.0	6.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	34.2	0.0	24.7	26.1	27.6	32.8	170.8	15.6	12.2	105.4	18.5	19.5
LnGrp LOS	C	A	C	C	C	C	F	B	B	F	B	B
Approach Vol, veh/h		92			355			502			2455	
Approach Delay, s/veh		32.7			29.8			19.9			28.5	
Approach LOS		C			C			B			C	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	19.0	39.0		20.7	5.1	52.9		20.7				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	15.0	35.0		48.0	6.0	44.0		48.0				
Max Q Clear Time (g_c+I1), s	17.0	11.1		16.1	3.1	37.4		13.0				
Green Ext Time (p_c), s	0.0	2.8		0.6	0.0	5.4		1.7				

Intersection Summary

HCM 6th Ctrl Delay	27.5
HCM 6th LOS	C

Intersection						
Int Delay, s/veh	4.4					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		∩	
Traffic Vol, veh/h	0	162	162	0	95	87
Future Vol, veh/h	0	162	162	0	95	87
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	2	23	25	2	1	25
Mvmt Flow	0	186	186	0	109	100

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	-	0	-	0	372 186
Stage 1	-	-	-	-	186 -
Stage 2	-	-	-	-	186 -
Critical Hdwy	-	-	-	-	6.41 6.45
Critical Hdwy Stg 1	-	-	-	-	5.41 -
Critical Hdwy Stg 2	-	-	-	-	5.41 -
Follow-up Hdwy	-	-	-	-	3.509 3.525
Pot Cap-1 Maneuver	0	-	-	0	631 801
Stage 1	0	-	-	0	848 -
Stage 2	0	-	-	0	848 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	-	631 801
Mov Cap-2 Maneuver	-	-	-	-	631 -
Stage 1	-	-	-	-	848 -
Stage 2	-	-	-	-	848 -

Approach	EB	WB	SB
HCM Control Delay, s	0	0	12.3
HCM LOS			B

Minor Lane/Major Mvmt	EBT	WBT	SBLn1
Capacity (veh/h)	-	-	702
HCM Lane V/C Ratio	-	-	0.298
HCM Control Delay (s)	-	-	12.3
HCM Lane LOS	-	-	B
HCM 95th %tile Q(veh)	-	-	1.2

Intersection												
Int Delay, s/veh	1.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↗			↕				
Traffic Vol, veh/h	64	156	0	0	212	21	0	0	0	0	0	0
Future Vol, veh/h	64	156	0	0	212	21	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	16965	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	79	79	92	92	79	79	92	92	92	79	92	79
Heavy Vehicles, %	50	11	2	2	30	32	2	2	2	2	2	2
Mvmt Flow	81	197	0	0	268	27	0	0	0	0	0	0

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	295	0	0
Stage 1	-	-	359
Stage 2	-	-	282
Critical Hdwy	4.6	-	6.42
Critical Hdwy Stg 1	-	-	5.42
Critical Hdwy Stg 2	-	-	5.42
Follow-up Hdwy	2.65	-	3.518
Pot Cap-1 Maneuver	1037	0	439
Stage 1	-	0	707
Stage 2	-	0	766
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1037	-	400
Mov Cap-2 Maneuver	-	-	400
Stage 1	-	-	645
Stage 2	-	-	766

Approach	EB	WB	NB
HCM Control Delay, s	2.6	0	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	WBT	WBR
Capacity (veh/h)	-	1037	-	-	-
HCM Lane V/C Ratio	-	0.078	-	-	-
HCM Control Delay (s)	0	8.8	0	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	-	0.3	-	-	-

Intersection						
Int Delay, s/veh	5.3					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	Y			↑	↑	
Traffic Vol, veh/h	20	138	152	63	310	67
Future Vol, veh/h	20	138	152	63	310	67
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	82	82	82	82	82	82
Heavy Vehicles, %	19	4	29	23	12	21
Mvmt Flow	24	168	185	77	378	82

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	866	419	460	0	-	0
Stage 1	419	-	-	-	-	-
Stage 2	447	-	-	-	-	-
Critical Hdwy	6.59	6.24	4.39	-	-	-
Critical Hdwy Stg 1	5.59	-	-	-	-	-
Critical Hdwy Stg 2	5.59	-	-	-	-	-
Follow-up Hdwy	3.671	3.336	2.461	-	-	-
Pot Cap-1 Maneuver	303	630	973	-	-	-
Stage 1	629	-	-	-	-	-
Stage 2	610	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	243	630	973	-	-	-
Mov Cap-2 Maneuver	243	-	-	-	-	-
Stage 1	504	-	-	-	-	-
Stage 2	610	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	15.8	6.8	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	973	-	524	-	-
HCM Lane V/C Ratio	0.191	-	0.368	-	-
HCM Control Delay (s)	9.6	0	15.8	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0.7	-	1.7	-	-

HCM 6th Signalized Intersection Summary

5: I-15 SB On-ramp/I-15 SB Off-ramp & Foothill Blvd/Foothill Blvd

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↗		↑↑↑	↗				↘	↕	↗
Traffic Volume (veh/h)	0	1208	692	0	1288	532	0	0	0	497	0	439
Future Volume (veh/h)	0	1208	692	0	1288	532	0	0	0	497	0	439
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1702	1772	0	1772	1744				1646	1772	1702
Adj Flow Rate, veh/h	0	1357	0	0	1447	0				711	0	329
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89				0.89	0.89	0.89
Percent Heavy Veh, %	0	7	2	0	2	4				11	2	7
Cap, veh/h	0	2940		0	3061					872	0	401
Arrive On Green	0.00	0.63	0.00	0.00	0.42	0.00				0.28	0.00	0.28
Sat Flow, veh/h	0	4799	1502	0	4997	1478				3134	0	1442
Grp Volume(v), veh/h	0	1357	0	0	1447	0				711	0	329
Grp Sat Flow(s),veh/h/ln	0	1549	1502	0	1612	1478				1567	0	1442
Q Serve(g_s), s	0.0	13.6	0.0	0.0	19.4	0.0				19.1	0.0	19.2
Cycle Q Clear(g_c), s	0.0	13.6	0.0	0.0	19.4	0.0				19.1	0.0	19.2
Prop In Lane	0.00		1.00	0.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2940		0	3061					872	0	401
V/C Ratio(X)	0.00	0.46		0.00	0.47					0.81	0.00	0.82
Avail Cap(c_a), veh/h	0	2940		0	3061					1358	0	625
HCM Platoon Ratio	1.00	1.00	1.00	1.00	0.67	0.67				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.00	0.00	0.09	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	8.6	0.0	0.0	15.1	0.0				30.3	0.0	30.4
Incr Delay (d2), s/veh	0.0	0.5	0.0	0.0	0.0	0.0				2.2	0.0	4.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	3.6	0.0	0.0	7.2	0.0				7.1	0.0	6.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	9.1	0.0	0.0	15.2	0.0				32.5	0.0	35.3
LnGrp LOS	A	A		A	B					C	A	D
Approach Vol, veh/h		1357	A		1447	A					1040	
Approach Delay, s/veh		9.1			15.2						33.4	
Approach LOS		A			B						C	
Timer - Assigned Phs		2		4		6						
Phs Duration (G+Y+Rc), s		60.9		29.1		60.9						
Change Period (Y+Rc), s		4.0		4.0		4.0						
Max Green Setting (Gmax), s		43.0		39.0		43.0						
Max Q Clear Time (g_c+I1), s		15.6		21.2		21.4						
Green Ext Time (p_c), s		10.2		3.9		9.9						

Intersection Summary

HCM 6th Ctrl Delay	18.0
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.
 Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th Signalized Intersection Summary

6: I-15 NB Off-ramp/I-15 NB On-ramp & Foothill Blvd /Foothill Blvd

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↑		↑↑↑	↑	↑	↑↓	↑			
Traffic Volume (veh/h)	0	1541	163	0	1478	200	343	0	182	0	0	0
Future Volume (veh/h)	0	1541	163	0	1478	200	343	0	182	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No		No		No		No				
Adj Sat Flow, veh/h/ln	0	1772	1646	0	1674	1632	1758	1772	1730			
Adj Flow Rate, veh/h	0	1731	0	0	1661	0	448	0	136			
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89			
Percent Heavy Veh, %	0	2	11	0	9	12	3	2	5			
Cap, veh/h	0	3566		0	3369		582	0	255			
Arrive On Green	0.00	0.98	0.00	0.00	0.74	0.00	0.17	0.00	0.17			
Sat Flow, veh/h	0	4997	1395	0	4720	1383	3348	0	1466			
Grp Volume(v), veh/h	0	1731	0	0	1661	0	448	0	136			
Grp Sat Flow(s),veh/h/ln	0	1612	1395	0	1523	1383	1674	0	1466			
Q Serve(g_s), s	0.0	1.2	0.0	0.0	13.5	0.0	11.5	0.0	7.6			
Cycle Q Clear(g_c), s	0.0	1.2	0.0	0.0	13.5	0.0	11.5	0.0	7.6			
Prop In Lane	0.00		1.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	0	3566		0	3369		582	0	255			
V/C Ratio(X)	0.00	0.49		0.00	0.49		0.77	0.00	0.53			
Avail Cap(c_a), veh/h	0	3566		0	3369		2009	0	880			
HCM Platoon Ratio	1.00	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.00	0.76	0.00	0.00	1.00	0.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	0.0	0.2	0.0	0.0	4.9	0.0	35.5	0.0	33.9			
Incr Delay (d2), s/veh	0.0	0.4	0.0	0.0	0.5	0.0	2.2	0.0	1.7			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.0	0.3	0.0	0.0	3.4	0.0	4.7	0.0	2.8			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.6	0.0	0.0	5.4	0.0	37.6	0.0	35.6			
LnGrp LOS	A	A		A	A		D	A	D			
Approach Vol, veh/h		1731	A		1661	A		584				
Approach Delay, s/veh		0.6			5.4			37.2				
Approach LOS		A			A			D				
Timer - Assigned Phs		2			6			8				
Phs Duration (G+Y+Rc), s		70.4			70.4			19.6				
Change Period (Y+Rc), s		4.0			4.0			4.0				
Max Green Setting (Gmax), s		28.0			28.0			54.0				
Max Q Clear Time (g_c+I1), s		3.2			15.5			13.5				
Green Ext Time (p_c), s		14.9			8.9			2.2				

Intersection Summary

HCM 6th Ctrl Delay	8.0
HCM 6th LOS	A

Notes

User approved volume balancing among the lanes for turning movement.

Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th Signalized Intersection Summary
 7: Ontario Mills Dr./I-15 SB Ramps & Fourth St

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖↗	↑↑↑	↖	↖↗	↑↑↑	↖	↖	↑↑	↖	↖	↑↑	↖
Traffic Volume (veh/h)	336	381	56	88	1030	173	111	97	63	151	153	367
Future Volume (veh/h)	336	381	56	88	1030	173	111	97	63	151	153	367
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No		No		No		No		No		No
Adj Sat Flow, veh/h/ln	1375	1561	1758	1538	1660	1238	1660	1617	1646	1315	1758	1758
Adj Flow Rate, veh/h	354	401	59	93	1084	182	117	102	66	159	161	386
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	18	17	3	5	10	40	3	13	11	29	3	3
Cap, veh/h	400	2512	878	131	2167	502	139	306	139	178	270	457
Arrive On Green	0.16	0.59	0.59	0.05	0.48	0.48	0.09	0.10	0.10	0.14	0.15	0.15
Sat Flow, veh/h	2541	4262	1490	2841	4531	1049	1581	3073	1395	1253	1758	2979
Grp Volume(v), veh/h	354	401	59	93	1084	182	117	102	66	159	161	386
Grp Sat Flow(s),veh/h/ln	1271	1421	1490	1420	1510	1049	1581	1537	1395	1253	1758	1490
Q Serve(g_s), s	17.7	5.5	2.2	4.2	21.3	14.2	9.5	4.0	5.8	16.2	11.1	16.4
Cycle Q Clear(g_c), s	17.7	5.5	2.2	4.2	21.3	14.2	9.5	4.0	5.8	16.2	11.1	16.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	400	2512	878	131	2167	502	139	306	139	178	270	457
V/C Ratio(X)	0.89	0.16	0.07	0.71	0.50	0.36	0.84	0.33	0.48	0.89	0.60	0.84
Avail Cap(c_a), veh/h	528	2512	878	175	2167	502	219	378	172	270	352	596
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.81	0.81	0.81	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	53.6	12.1	11.4	61.1	23.3	21.4	58.4	54.5	55.3	54.8	51.3	53.5
Incr Delay (d2), s/veh	13.4	0.1	0.1	6.8	0.7	1.6	15.3	0.6	2.5	21.2	2.1	8.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.2	1.6	0.8	1.6	7.2	3.7	4.4	1.6	2.1	6.1	5.0	6.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	67.0	12.2	11.6	67.9	23.9	23.1	73.6	55.2	57.8	76.0	53.4	62.1
LnGrp LOS	E	B	B	E	C	C	E	E	E	E	D	E
Approach Vol, veh/h		814			1359			285			706	
Approach Delay, s/veh		36.0			26.8			63.4			63.2	
Approach LOS		D			C			E			E	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	40.0	80.6	15.4	23.9	24.5	66.2	22.4	16.9				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	4.0	62.0	18.0	26.0	27.0	43.0	28.0	16.0				
Max Q Clear Time (g_c+1/3), s	4.0	7.5	11.5	18.4	19.7	23.3	18.2	7.8				
Green Ext Time (p_c), s	0.0	2.7	0.1	1.6	0.7	7.3	0.3	0.4				

Intersection Summary

HCM 6th Ctrl Delay	40.6
HCM 6th LOS	D

Notes

User approved volume balancing among the lanes for turning movement.

HCM 6th Signalized Intersection Summary

8: Fourth St & I-15 NB Ramps

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔	↑↑↑	↗	↖	↑↑↑		↖	↑↑		↖	↖	↗↗
Traffic Volume (veh/h)	132	425	38	20	413	54	130	41	89	272	37	747
Future Volume (veh/h)	132	425	38	20	413	54	130	41	89	272	37	747
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No		No		No		No		No		No
Adj Sat Flow, veh/h/ln	1688	1491	1295	958	1351	1351	761	1491	1491	1309	1281	1702
Adj Flow Rate, veh/h	140	452	40	21	439	57	138	44	95	317	0	795
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	8	22	36	60	32	32	74	22	22	35	37	7
Cap, veh/h	507	2062	556	16	1197	153	152	297	265	358	0	883
Arrive On Green	0.05	0.17	0.17	0.02	0.36	0.36	0.21	0.21	0.21	0.14	0.00	0.14
Sat Flow, veh/h	3118	4071	1097	912	3311	422	725	1417	1264	2493	0	2884
Grp Volume(v), veh/h	140	452	40	21	324	172	138	44	95	317	0	795
Grp Sat Flow(s),veh/h/ln	1559	1357	1097	912	1229	1275	725	1417	1264	1246	0	1442
Q Serve(g_s), s	5.6	12.5	4.0	2.3	12.6	13.0	24.2	3.3	8.4	16.2	0.0	13.2
Cycle Q Clear(g_c), s	5.6	12.5	4.0	2.3	12.6	13.0	24.2	3.3	8.4	16.2	0.0	13.2
Prop In Lane	1.00		1.00	1.00		0.33	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	507	2062	556	16	889	461	152	297	265	358	0	883
VC Ratio(X)	0.28	0.22	0.07	1.32	0.36	0.37	0.91	0.15	0.36	0.89	0.00	0.90
Avail Cap(c_a), veh/h	507	2062	556	56	889	461	229	447	399	364	0	890
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	54.2	31.9	28.4	63.9	30.5	30.6	50.2	41.9	43.9	54.6	0.0	43.2
Incr Delay (d2), s/veh	0.3	0.2	0.2	210.5	1.2	2.3	27.1	0.2	0.8	21.8	0.0	12.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	4.4	1.0	1.4	3.7	4.1	5.5	1.2	2.7	6.1	0.0	5.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	54.5	32.1	28.6	274.4	31.7	32.9	77.2	42.2	44.8	76.5	0.0	55.3
LnGrp LOS	D	C	C	F	C	C	E	D	D	E	A	E
Approach Vol, veh/h		632			517			277			1112	
Approach Delay, s/veh		36.9			42.0			60.5			61.4	
Approach LOS		D			D			E			E	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.3	69.8		22.7	25.1	51.0		31.2				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	46.0			19.0	7.0	47.0		41.0				
Max Q Clear Time (g_c+14), s	14.5			18.2	7.6	15.0		26.2				
Green Ext Time (p_c), s	0.0	2.9		0.4	0.0	2.9		1.1				

Intersection Summary

HCM 6th Ctrl Delay	51.2
HCM 6th LOS	D

Notes

- User approved pedestrian interval to be less than phase max green.
- User approved volume balancing among the lanes for turning movement.

HCM 6th Signalized Intersection Summary
 9: Milliken Ave & I-210 WB On-ramp/I-210 WB Off-ramp

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↘	↔	↗	↘↗	↑↑↑			↑↑↗	
Traffic Volume (veh/h)	0	0	0	119	5	94	237	241	0	0	751	182
Future Volume (veh/h)	0	0	0	119	5	94	237	241	0	0	751	182
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach				No		No		No				No
Adj Sat Flow, veh/h/ln				1528	1786	1646	1538	1758	0	0	1772	1772
Adj Flow Rate, veh/h				155	0	66	244	248	0	0	774	188
Peak Hour Factor				0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %				13	1	11	5	3	0	0	2	2
Cap, veh/h				328	0	157	320	3710	0	0	2348	565
Arrive On Green				0.11	0.00	0.11	0.23	1.00	0.00	0.00	0.60	0.60
Sat Flow, veh/h				2910	0	1395	2841	4957	0	0	4051	937
Grp Volume(v), veh/h				155	0	66	244	248	0	0	640	322
Grp Sat Flow(s),veh/h/ln				1455	0	1395	1420	1600	0	0	1612	1603
Q Serve(g_s), s				3.5	0.0	3.1	5.6	0.0	0.0	0.0	6.9	7.0
Cycle Q Clear(g_c), s				3.5	0.0	3.1	5.6	0.0	0.0	0.0	6.9	7.0
Prop In Lane				1.00		1.00	1.00		0.00	0.00		0.58
Lane Grp Cap(c), veh/h				328	0	157	320	3710	0	0	1945	967
V/C Ratio(X)				0.47	0.00	0.42	0.76	0.07	0.00	0.00	0.33	0.33
Avail Cap(c_a), veh/h				457	0	219	487	3710	0	0	1945	967
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.98	0.98	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				29.1	0.0	28.9	26.2	0.0	0.0	0.0	6.9	6.9
Incr Delay (d2), s/veh				1.1	0.0	1.8	3.7	0.0	0.0	0.0	0.5	0.9
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				1.2	0.0	1.1	1.8	0.0	0.0	0.0	2.1	2.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				30.2	0.0	30.7	30.0	0.0	0.0	0.0	7.3	7.8
LnGrp LOS				C	A	C	C	A	A	A	A	A
Approach Vol, veh/h						221		492			962	
Approach Delay, s/veh						30.3		14.9			7.5	
Approach LOS						C		B			A	
Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		58.1			11.9	46.2		11.9				
Change Period (Y+Rc), s		4.0			4.0	4.0		4.0				
Max Green Setting (Gmax), s		51.0			12.0	35.0		11.0				
Max Q Clear Time (g_c+I1), s		2.0			7.6	9.0		5.5				
Green Ext Time (p_c), s		1.8			0.3	7.3		0.3				

Intersection Summary

HCM 6th Ctrl Delay	12.7
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

HCM 6th Signalized Intersection Summary
 10: Milliken Ave & I-210 EB Off-ramp/I-210 EB On-ramp

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	149	8	120	0	0	0	0	329	76	308	562	0
Future Volume (veh/h)	149	8	120	0	0	0	0	329	76	308	562	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No						No			No		
Adj Sat Flow, veh/h/ln	1594	1786	1660				0	1772	1772	1475	1744	0
Adj Flow Rate, veh/h	206	0	90				0	358	83	335	611	0
Peak Hour Factor	0.92	0.92	0.92				0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	8	1	10				0	2	2	10	4	0
Cap, veh/h	346	0	160				0	1807	404	702	3674	0
Arrive On Green	0.11	0.00	0.11				0.00	0.46	0.46	0.52	1.00	0.00
Sat Flow, veh/h	3036	0	1406				0	4113	884	2726	4918	0
Grp Volume(v), veh/h	206	0	90				0	290	151	335	611	0
Grp Sat Flow(s),veh/h/ln	1518	0	1406				0	1612	1613	1363	1587	0
Q Serve(g_s), s	4.5	0.0	4.2				0.0	3.7	3.9	5.5	0.0	0.0
Cycle Q Clear(g_c), s	4.5	0.0	4.2				0.0	3.7	3.9	5.5	0.0	0.0
Prop In Lane	1.00		1.00				0.00		0.55	1.00		0.00
Lane Grp Cap(c), veh/h	346	0	160				0	1474	737	702	3674	0
V/C Ratio(X)	0.60	0.00	0.56				0.00	0.20	0.21	0.48	0.17	0.00
Avail Cap(c_a), veh/h	477	0	221				0	1474	737	702	3674	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	0.94	0.94	0.00
Uniform Delay (d), s/veh	29.5	0.0	29.4				0.0	11.3	11.4	13.9	0.0	0.0
Incr Delay (d2), s/veh	1.6	0.0	3.1				0.0	0.3	0.6	0.5	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	0.0	1.5				0.0	1.3	1.4	1.4	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	31.1	0.0	32.4				0.0	11.6	12.0	14.4	0.1	0.0
LnGrp LOS	C	A	C				A	B	B	B	A	A
Approach Vol, veh/h	296						441			946		
Approach Delay, s/veh	31.5						11.8			5.2		
Approach LOS	C						B			A		
Timer - Assigned Phs	1	2	4	6								
Phs Duration (G+Y+Rc), s	32.0	36.0	12.0	58.0								
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0								
Max Green Setting (Gmax), s	15.0	32.0	11.0	51.0								
Max Q Clear Time (g_c+I1), s	5.9	5.9	6.5	2.0								
Green Ext Time (p_c), s	0.7	2.9	0.4	4.9								

Intersection Summary

HCM 6th Ctrl Delay	11.5
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

HCM 6th Signalized Intersection Summary

11: Milliken Ave & Foothill Blvd

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖↗	↑↑↑	↖	↖↗	↑↑↑	↖	↖↗	↑↑↑	↖	↖↗	↑↑↑	↖
Traffic Volume (veh/h)	54	560	79	191	785	123	71	193	129	184	479	134
Future Volume (veh/h)	54	560	79	191	785	123	71	193	129	184	479	134
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No		No		No		No		No		No
Adj Sat Flow, veh/h/ln	1563	1716	1786	1513	1758	1758	1500	1744	1702	1588	1744	1716
Adj Flow Rate, veh/h	56	583	82	199	818	128	74	201	134	192	499	140
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	3	6	1	7	3	3	8	4	7	1	4	6
Cap, veh/h	129	1308	423	250	1555	483	149	1100	264	263	1043	319
Arrive On Green	0.04	0.28	0.28	0.09	0.32	0.32	0.05	0.18	0.18	0.09	0.22	0.22
Sat Flow, veh/h	2887	4684	1514	2795	4799	1490	2772	5999	1442	2933	4761	1454
Grp Volume(v), veh/h	56	583	82	199	818	128	74	201	134	192	499	140
Grp Sat Flow(s),veh/h/ln	1444	1561	1514	1397	1600	1490	1386	1500	1442	1467	1587	1454
Q Serve(g_s), s	0.8	4.6	1.8	3.1	6.2	2.8	1.2	1.3	3.7	2.8	4.1	3.7
Cycle Q Clear(g_c), s	0.8	4.6	1.8	3.1	6.2	2.8	1.2	1.3	3.7	2.8	4.1	3.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	129	1308	423	250	1555	483	149	1100	264	263	1043	319
VC Ratio(X)	0.43	0.45	0.19	0.80	0.53	0.27	0.50	0.18	0.51	0.73	0.48	0.44
Avail Cap(c_a), veh/h	388	5349	1728	250	5265	1634	310	6044	1453	263	4690	1432
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	20.8	13.2	12.3	19.9	12.3	11.2	20.5	15.4	16.4	19.8	15.2	15.1
Incr Delay (d2), s/veh	2.3	0.2	0.2	16.1	0.3	0.3	2.5	0.1	1.5	9.9	0.3	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	1.2	0.5	1.4	1.5	0.7	0.4	0.3	1.0	1.1	1.1	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.0	13.5	12.5	36.0	12.6	11.5	23.1	15.5	17.9	29.7	15.6	16.0
LnGrp LOS	C	B	B	D	B	B	C	B	B	C	B	B
Approach Vol, veh/h		721			1145			409			831	
Approach Delay, s/veh		14.1			16.5			17.7			18.9	
Approach LOS		B			B			B			B	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	8.0	16.5	6.4	13.8	6.0	18.5	8.0	12.2				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	4.0	51.0	5.0	44.0	6.0	49.0	4.0	45.0				
Max Q Clear Time (g_c+1/3), s	4.0	6.6	3.2	6.1	2.8	8.2	4.8	5.7				
Green Ext Time (p_c), s	0.0	4.2	0.0	3.7	0.0	6.3	0.0	1.6				

Intersection Summary

HCM 6th Ctrl Delay	16.8
HCM 6th LOS	B

Notes

User approved pedestrian interval to be less than phase max green.

HCM 6th Signalized Intersection Summary

12: Milliken Ave & Fourth St

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔	↑↑↑	↗	↔↔	↑↑↑	↗	↔↔	↑↑↑	↗	↔↔	↑↑↑	↔↔
Traffic Volume (veh/h)	215	298	213	300	358	168	19	327	20	116	1074	94
Future Volume (veh/h)	215	298	213	300	358	168	19	327	20	116	1074	94
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1550	1632	1772	1538	1632	1702	1550	1646	1688	1513	1547	1547
Adj Flow Rate, veh/h	239	331	237	333	398	187	21	363	22	129	1193	104
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	4	12	2	5	12	7	4	11	8	7	18	18
Cap, veh/h	296	890	300	295	893	289	51	2765	847	116	2573	223
Arrive On Green	0.10	0.20	0.20	0.10	0.20	0.20	0.02	0.49	0.49	0.04	0.51	0.51
Sat Flow, veh/h	2864	4454	1502	2841	4454	1442	2864	5661	1430	2795	5025	436
Grp Volume(v), veh/h	239	331	237	333	398	187	21	363	22	129	947	350
Grp Sat Flow(s),veh/h/ln	1432	1485	1502	1420	1485	1442	1432	1415	1430	1397	1331	1469
Q Serve(g_s), s	7.9	6.2	14.4	10.0	7.5	11.5	0.7	3.4	0.6	4.0	14.6	14.7
Cycle Q Clear(g_c), s	7.9	6.2	14.4	10.0	7.5	11.5	0.7	3.4	0.6	4.0	14.6	14.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.30
Lane Grp Cap(c), veh/h	296	890	300	295	893	289	51	2765	847	116	2044	752
V/C Ratio(X)	0.81	0.37	0.79	1.13	0.45	0.65	0.41	0.13	0.03	1.11	0.46	0.47
Avail Cap(c_a), veh/h	327	2453	827	295	2407	779	119	2765	847	116	2044	752
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	42.2	33.3	36.6	43.1	33.8	35.3	46.8	13.5	8.1	46.1	15.0	15.0
Incr Delay (d2), s/veh	12.9	0.3	4.6	91.4	0.3	2.4	5.2	0.1	0.1	116.3	0.8	2.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.1	2.1	5.3	7.0	2.6	3.9	0.3	1.0	0.2	3.2	4.0	4.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	55.1	33.5	41.2	134.5	34.1	37.8	52.0	13.6	8.2	162.4	15.8	17.1
LnGrp LOS	E	C	D	F	C	D	D	B	A	F	B	B
Approach Vol, veh/h	807			918			406			1426		
Approach Delay, s/veh	42.2			71.3			15.2			29.4		
Approach LOS	D			E			B			C		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	8.0	51.0	14.0	23.2	5.7	53.3	13.9	23.3				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	47.0	10.0	53.0	4.0	47.0	11.0	52.0					
Max Q Clear Time (g_c+1/3), s	5.4	12.0	16.4	2.7	16.7	9.9	13.5					
Green Ext Time (p_c), s	0.0	2.4	0.0	2.8	0.0	9.5	0.1	3.1				

Intersection Summary

HCM 6th Ctrl Delay	41.5
HCM 6th LOS	D

Intersection						
Int Delay, s/veh	1.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↗		↑↑↑	↑↑↑	↗
Traffic Vol, veh/h	0	127	0	722	775	62
Future Vol, veh/h	0	127	0	722	775	62
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	175
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	1	2	9	9	1
Mvmt Flow	0	134	0	760	816	65

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	-	408	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	7.12	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	3.91	-
Pot Cap-1 Maneuver	0	509	0
Stage 1	0	-	0
Stage 2	0	-	0
Platoon blocked, %			
Mov Cap-1 Maneuver	-	509	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	14.6	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT EBLn1	SBT	SBR
Capacity (veh/h)	-	509	-
HCM Lane V/C Ratio	-	0.263	-
HCM Control Delay (s)	-	14.6	-
HCM Lane LOS	-	B	-
HCM 95th %tile Q(veh)	-	1	-

HCM 6th Signalized Intersection Summary

14: Milliken Ave & 7th St

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↑↑↑		↖	↑↑↑	
Traffic Volume (veh/h)	344	3	145	2	4	16	122	365	1	30	780	93
Future Volume (veh/h)	344	3	145	2	4	16	122	365	1	30	780	93
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1475	1786	1786	1037	1098	1098	1673	1688	1688	1687	1674	1674
Adj Flow Rate, veh/h	358	3	151	2	4	17	127	380	1	31	812	97
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	17	1	1	50	50	50	2	8	8	1	9	9
Cap, veh/h	455	10	523	266	64	273	86	2456	6	37	2014	239
Arrive On Green	0.35	0.35	0.35	0.35	0.35	0.35	0.05	0.52	0.52	0.02	0.49	0.49
Sat Flow, veh/h	1157	30	1488	722	183	776	1594	4745	12	1606	4139	492
Grp Volume(v), veh/h	358	0	154	2	0	21	127	246	135	31	596	313
Grp Sat Flow(s),veh/h/ln	1157	0	1518	722	0	958	1594	1536	1685	1606	1523	1585
Q Serve(g_s), s	33.0	0.0	8.1	0.2	0.0	1.6	6.0	4.7	4.7	2.1	13.9	14.0
Cycle Q Clear(g_c), s	34.6	0.0	8.1	8.4	0.0	1.6	6.0	4.7	4.7	2.1	13.9	14.0
Prop In Lane	1.00		0.98	1.00		0.81	1.00		0.01	1.00		0.31
Lane Grp Cap(c), veh/h	455	0	533	266	0	337	86	1590	872	37	1482	771
VC Ratio(X)	0.79	0.00	0.29	0.01	0.00	0.06	1.47	0.15	0.15	0.84	0.40	0.41
Avail Cap(c_a), veh/h	653	0	793	389	0	501	86	1590	872	101	1482	771
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.3	0.0	26.0	29.0	0.0	23.9	52.5	14.0	14.0	54.0	18.2	18.2
Incr Delay (d2), s/veh	4.1	0.0	0.3	0.0	0.0	0.1	265.5	0.2	0.4	36.7	0.8	1.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.5	0.0	2.9	0.0	0.0	0.4	8.7	1.5	1.7	1.2	4.6	5.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	39.4	0.0	26.3	29.0	0.0	24.0	318.0	14.2	14.4	90.8	19.0	19.8
LnGrp LOS	D	A	C	C	A	C	F	B	B	F	B	B
Approach Vol, veh/h		512			23			508			940	
Approach Delay, s/veh		35.5			24.4			90.2			21.6	
Approach LOS		D			C			F			C	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.5	61.5		43.0	10.0	58.0		43.0				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	7.0	53.0		58.0	6.0	54.0		58.0				
Max Q Clear Time (g_c+I1), s	4.1	6.7		36.6	8.0	16.0		10.4				
Green Ext Time (p_c), s	0.0	2.2		2.4	0.0	6.1		0.1				

Intersection Summary

HCM 6th Ctrl Delay	42.8
HCM 6th LOS	D

HCM 6th Signalized Intersection Summary
 15: Milliken Ave & I-10 WB Ramps/Ontario Mills Pkwy

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔	↑	↗	↔↔	↕↕	↗	↔↔	↕↕↕	↗	↔↔	↕↕↕	↗
Traffic Volume (veh/h)	74	39	37	450	39	238	65	464	92	92	935	305
Future Volume (veh/h)	74	39	37	450	39	238	65	464	92	92	935	305
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1425	1463	1730	1550	1786	1365	739	1632	1252	1588	1632	1561
Adj Flow Rate, veh/h	84	44	42	511	44	270	74	527	105	105	1062	347
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	14	24	5	4	1	31	69	12	39	1	12	17
Cap, veh/h	123	117	117	458	656	224	232	2694	679	352	2413	631
Arrive On Green	0.05	0.08	0.08	0.16	0.19	0.19	0.34	0.96	0.96	0.12	0.43	0.43
Sat Flow, veh/h	2633	1463	1466	2864	3393	1157	1365	5612	1061	2933	5612	1323
Grp Volume(v), veh/h	84	44	42	511	44	270	74	527	105	105	1062	347
Grp Sat Flow(s),veh/h/ln	1317	1463	1466	1432	1697	1157	683	1403	1061	1467	1403	1323
Q Serve(g_s), s	3.1	2.9	2.7	16.0	1.1	14.5	4.0	0.5	0.0	3.3	13.3	11.1
Cycle Q Clear(g_c), s	3.1	2.9	2.7	16.0	1.1	14.5	4.0	0.5	0.0	3.3	13.3	11.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	123	117	117	458	656	224	232	2694	679	352	2413	631
V/C Ratio(X)	0.68	0.38	0.36	1.12	0.07	1.21	0.32	0.20	0.15	0.30	0.44	0.55
Avail Cap(c_a), veh/h	184	234	235	458	848	289	232	2694	679	352	2413	631
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.88	0.88	0.88	1.00	1.00	1.00
Uniform Delay (d), s/veh	46.9	43.6	43.6	42.0	33.0	22.8	28.7	1.0	0.5	40.2	20.0	9.2
Incr Delay (d2), s/veh	6.5	2.0	1.8	77.3	0.0	124.9	0.7	0.1	0.4	0.5	0.6	3.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	1.1	1.0	10.5	0.4	11.6	0.6	0.1	0.1	1.2	4.3	3.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	53.4	45.6	45.4	119.3	33.0	147.7	29.4	1.2	0.9	40.6	20.6	12.6
LnGrp LOS	D	D	D	F	C	F	C	A	A	D	C	B
Approach Vol, veh/h		170			825			706			1514	
Approach Delay, s/veh		49.4			124.0			4.1			20.2	
Approach LOS		D			F			A			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	6.0	52.0	20.0	12.0	21.0	47.0	8.7	23.3				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	4.0	48.0	16.0	16.0	9.0	43.0	7.0	25.0				
Max Q Clear Time (g_c+1/3), s	4.0	2.5	18.0	4.9	6.0	15.3	5.1	16.5				
Green Ext Time (p_c), s	0.0	4.6	0.0	0.2	0.0	10.7	0.0	0.8				

Intersection Summary

HCM 6th Ctrl Delay	44.8
HCM 6th LOS	D

HCM 6th Signalized Intersection Summary
 16: Milliken Ave & I-10 EB Ramps

11/03/2021



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↖↗	↖	↖↗	↑↑↑	↑↑↑	↖
Traffic Volume (veh/h)	382	293	93	238	1118	306
Future Volume (veh/h)	382	293	93	238	1118	306
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1475	1660	1051	1505	1519	958
Adj Flow Rate, veh/h	449	345	109	280	1315	360
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	10	10	44	21	20	60
Cap, veh/h	753	389	376	3332	2143	557
Arrive On Green	0.28	0.28	0.19	0.64	0.82	0.82
Sat Flow, veh/h	2726	1406	1942	5388	5439	812
Grp Volume(v), veh/h	449	345	109	280	1315	360
Grp Sat Flow(s),veh/h/ln	1363	1406	971	1294	1307	812
Q Serve(g_s), s	14.3	23.5	4.8	2.0	9.1	37.6
Cycle Q Clear(g_c), s	14.3	23.5	4.8	2.0	9.1	37.6
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	753	389	376	3332	2143	557
VC Ratio(X)	0.60	0.89	0.29	0.08	0.61	0.65
Avail Cap(c_a), veh/h	927	478	376	3332	2143	557
HCM Platoon Ratio	1.00	1.00	1.00	1.00	2.00	2.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.85	0.85
Uniform Delay (d), s/veh	31.3	34.7	34.4	6.7	6.1	3.3
Incr Delay (d2), s/veh	0.8	15.7	0.4	0.0	1.1	4.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.7	18.2	1.1	0.5	1.6	2.5
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	32.1	50.4	34.9	6.8	7.3	8.2
LnGrp LOS	C	D	C	A	A	A
Approach Vol, veh/h	794			389	1675	
Approach Delay, s/veh	40.1			14.6	7.5	
Approach LOS	D			B	A	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		68.4		31.6	23.4	45.0
Change Period (Y+Rc), s		4.0		4.0	4.0	4.0
Max Green Setting (Gmax), s		58.0		34.0	13.0	41.0
Max Q Clear Time (g_c+I1), s		4.0		25.5	6.8	39.6
Green Ext Time (p_c), s		2.2		2.1	0.1	1.1
Intersection Summary						
HCM 6th Ctrl Delay			17.5			
HCM 6th LOS			B			

HCM 6th Signalized Intersection Summary

1: Highway 395 & Joshua St

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↖	↖	↖	↖↖	↖	↖	↖↖	↖
Traffic Volume (veh/h)	241	351	137	101	154	418	19	1309	9	51	537	82
Future Volume (veh/h)	241	351	137	101	154	418	19	1309	9	51	537	82
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1687	1786	1786	1528	1786	1519	1687	1716	1491	1395	1617	1716
Adj Flow Rate, veh/h	268	390	152	112	171	464	21	1454	10	57	597	91
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	1	1	1	13	1	20	1	6	22	23	13	6
Cap, veh/h	314	489	191	149	714	515	427	1467	569	66	721	341
Arrive On Green	0.40	0.40	0.40	0.40	0.40	0.40	0.27	0.45	0.45	0.05	0.23	0.23
Sat Flow, veh/h	755	1223	477	745	1786	1287	1606	3260	1264	1329	3073	1454
Grp Volume(v), veh/h	268	0	542	112	171	464	21	1454	10	57	597	91
Grp Sat Flow(s),veh/h/ln	755	0	1700	745	1786	1287	1606	1630	1264	1329	1537	1454
Q Serve(g_s), s	40.4	0.0	33.7	14.3	7.6	40.6	1.2	53.1	0.5	5.1	22.1	6.1
Cycle Q Clear(g_c), s	48.0	0.0	33.7	48.0	7.6	40.6	1.2	53.1	0.5	5.1	22.1	6.1
Prop In Lane	1.00		0.28	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	314	0	680	149	714	515	427	1467	569	66	721	341
VC Ratio(X)	0.85	0.00	0.80	0.75	0.24	0.90	0.05	0.99	0.02	0.86	0.83	0.27
Avail Cap(c_a), veh/h	314	0	680	149	714	515	427	1467	569	66	1383	654
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.9	0.0	31.7	54.3	23.9	33.8	32.8	32.8	18.3	56.6	43.6	37.5
Incr Delay (d2), s/veh	19.8	0.0	6.6	19.2	0.2	18.9	0.0	21.3	0.0	63.7	2.5	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.7	0.0	14.9	4.2	3.3	15.1	0.4	23.1	0.1	2.8	8.2	2.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	60.7	0.0	38.3	73.6	24.1	52.6	32.8	54.1	18.3	120.3	46.2	37.9
LnGrp LOS	E	A	D	E	C	D	C	D	B	F	D	D
Approach Vol, veh/h		810			747			1485				745
Approach Delay, s/veh		45.7			49.2			53.5				50.8
Approach LOS		D			D			D				D
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.0	58.0		52.0	35.9	32.1		52.0				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	6.0	54.0		48.0	6.0	54.0		48.0				
Max Q Clear Time (g_c+I1), s	7.1	55.1		50.0	3.2	24.1		50.0				
Green Ext Time (p_c), s	0.0	0.0		0.0	0.0	4.0		0.0				

Intersection Summary

HCM 6th Ctrl Delay	50.5
HCM 6th LOS	D

Intersection						
Int Delay, s/veh	4.4					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		∩	
Traffic Vol, veh/h	0	389	448	0	31	225
Future Vol, veh/h	0	389	448	0	31	225
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	0	25	23	0	1	22
Mvmt Flow	0	397	457	0	32	230

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	-	0	-	0	854 457
Stage 1	-	-	-	-	457 -
Stage 2	-	-	-	-	397 -
Critical Hdwy	-	-	-	-	6.41 6.42
Critical Hdwy Stg 1	-	-	-	-	5.41 -
Critical Hdwy Stg 2	-	-	-	-	5.41 -
Follow-up Hdwy	-	-	-	-	3.509 3.498
Pot Cap-1 Maneuver	0	-	-	0	330 564
Stage 1	0	-	-	0	640 -
Stage 2	0	-	-	0	681 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	-	330 564
Mov Cap-2 Maneuver	-	-	-	-	330 -
Stage 1	-	-	-	-	640 -
Stage 2	-	-	-	-	681 -

Approach	EB	WB	SB
HCM Control Delay, s	0	0	18.8
HCM LOS			C

Minor Lane/Major Mvmt	EBT	WBT	SBLn1
Capacity (veh/h)	-	-	519
HCM Lane V/C Ratio	-	-	0.503
HCM Control Delay (s)	-	-	18.8
HCM Lane LOS	-	-	C
HCM 95th %tile Q(veh)	-	-	2.8

Intersection												
Int Delay, s/veh	2.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↗			↕				
Traffic Vol, veh/h	232	317	0	0	385	31	0	0	0	0	0	0
Future Vol, veh/h	232	317	0	0	385	31	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	16965	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	92	92	95	95	92	92	92	95	92	95
Heavy Vehicles, %	24	23	2	2	23	42	2	2	2	2	2	2
Mvmt Flow	244	334	0	0	405	33	0	0	0	0	0	0

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	438	0	0
Stage 1	-	-	822
Stage 2	-	-	422
Critical Hdwy	4.34	-	6.42
Critical Hdwy Stg 1	-	-	5.42
Critical Hdwy Stg 2	-	-	5.42
Follow-up Hdwy	2.416	-	3.518
Pot Cap-1 Maneuver	1014	0	192
Stage 1	-	0	432
Stage 2	-	0	662
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1014	-	135
Mov Cap-2 Maneuver	-	-	135
Stage 1	-	-	305
Stage 2	-	-	662

Approach	EB	WB	NB
HCM Control Delay, s	4.1	0	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	WBT	WBR
Capacity (veh/h)	-	1014	-	-	-
HCM Lane V/C Ratio	-	0.241	-	-	-
HCM Control Delay (s)	0	9.7	0	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	-	0.9	-	-	-

Intersection						
Int Delay, s/veh	78.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	Y ^w			↑	↑	
Traffic Vol, veh/h	169	150	359	337	92	60
Future Vol, veh/h	169	150	359	337	92	60
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	6	10	20	48	38	19
Mvmt Flow	172	153	366	344	94	61

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	1201	125	155	0	0
Stage 1	125	-	-	-	-
Stage 2	1076	-	-	-	-
Critical Hdwy	6.46	6.3	4.3	-	-
Critical Hdwy Stg 1	5.46	-	-	-	-
Critical Hdwy Stg 2	5.46	-	-	-	-
Follow-up Hdwy	3.554	3.39	2.38	-	-
Pot Cap-1 Maneuver	200	905	1322	-	-
Stage 1	891	-	-	-	-
Stage 2	322	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	~ 132	905	1322	-	-
Mov Cap-2 Maneuver	~ 132	-	-	-	-
Stage 1	586	-	-	-	-
Stage 2	322	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	276.4	4.5	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1322	-	221	-	-
HCM Lane V/C Ratio	0.277	-	1.473	-	-
HCM Control Delay (s)	8.8	0	276.4	-	-
HCM Lane LOS	A	A	F	-	-
HCM 95th %tile Q(veh)	1.1	-	19.4	-	-

Notes
 ~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

HCM 6th Signalized Intersection Summary

5: I-15 SB On-ramp/I-15 SB Off-ramp & Foothill Blvd/Foothill Blvd

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↗		↑↑↑	↗				↘	↕	↗
Traffic Volume (veh/h)	0	2642	879	0	2030	469	0	0	0	212	0	558
Future Volume (veh/h)	0	2642	879	0	2030	469	0	0	0	212	0	558
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1786	1786	0	1772	1772				1716	1772	1702
Adj Flow Rate, veh/h	0	2936	0	0	2256	0				157	0	704
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90				0.90	0.90	0.90
Percent Heavy Veh, %	0	1	1	0	2	2				6	2	7
Cap, veh/h	0	3295		0	3269					429	0	757
Arrive On Green	0.00	0.68	0.00	0.00	0.90	0.00				0.26	0.00	0.26
Sat Flow, veh/h	0	5036	1514	0	4997	1502				1634	0	2884
Grp Volume(v), veh/h	0	2936	0	0	2256	0				157	0	704
Grp Sat Flow(s),veh/h/ln	0	1625	1514	0	1612	1502				1634	0	1442
Q Serve(g_s), s	0.0	63.8	0.0	0.0	16.1	0.0				10.2	0.0	31.0
Cycle Q Clear(g_c), s	0.0	63.8	0.0	0.0	16.1	0.0				10.2	0.0	31.0
Prop In Lane	0.00		1.00	0.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	3295		0	3269					429	0	757
V/C Ratio(X)	0.00	0.89		0.00	0.69					0.37	0.00	0.93
Avail Cap(c_a), veh/h	0	3295		0	3269					453	0	799
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.33	1.33				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.00	0.00	0.62	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	17.2	0.0	0.0	2.9	0.0				39.1	0.0	46.8
Incr Delay (d2), s/veh	0.0	4.1	0.0	0.0	0.8	0.0				0.5	0.0	16.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	20.7	0.0	0.0	2.4	0.0				4.1	0.0	12.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	21.3	0.0	0.0	3.7	0.0				39.6	0.0	63.5
LnGrp LOS	A	C		A	A					D	A	E
Approach Vol, veh/h		2936	A		2256	A					861	
Approach Delay, s/veh		21.3			3.7						59.1	
Approach LOS		C			A						E	
Timer - Assigned Phs		2		4		6						
Phs Duration (G+Y+Rc), s		91.9		38.1		91.9						
Change Period (Y+Rc), s		4.0		4.0		4.0						
Max Green Setting (Gmax), s		86.0		36.0		86.0						
Max Q Clear Time (g_c+I1), s		65.8		33.0		18.1						
Green Ext Time (p_c), s		18.4		1.2		32.3						

Intersection Summary

HCM 6th Ctrl Delay	20.1
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th Signalized Intersection Summary

6: I-15 NB Off-ramp/I-15 NB On-ramp & Foothill Blvd /Foothill Blvd

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↑		↑↑↑	↑	↑	↑↓	↑			
Traffic Volume (veh/h)	0	2486	367	0	1442	869	1058	0	627	0	0	0
Future Volume (veh/h)	0	2486	367	0	1442	869	1058	0	627	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No		No		No		No				
Adj Sat Flow, veh/h/ln	0	1786	1674	0	1772	1786	1772	1772	1744			
Adj Flow Rate, veh/h	0	2732	0	0	1585	0	1377	0	459			
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91			
Percent Heavy Veh, %	0	1	9	0	2	1	2	2	4			
Cap, veh/h	0	2663		0	2642		1324	0	580			
Arrive On Green	0.00	0.55	0.00	0.00	0.55	0.00	0.39	0.00	0.39			
Sat Flow, veh/h	0	5036	1418	0	4997	1514	3375	0	1478			
Grp Volume(v), veh/h	0	2732	0	0	1585	0	1377	0	459			
Grp Sat Flow(s),veh/h/ln	0	1625	1418	0	1612	1514	1688	0	1478			
Q Serve(g_s), s	0.0	71.0	0.0	0.0	28.8	0.0	51.0	0.0	35.6			
Cycle Q Clear(g_c), s	0.0	71.0	0.0	0.0	28.8	0.0	51.0	0.0	35.6			
Prop In Lane	0.00		1.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	0	2663		0	2642		1324	0	580			
VC Ratio(X)	0.00	1.03		0.00	0.60		1.04	0.00	0.79			
Avail Cap(c_a), veh/h	0	2663		0	2642		1324	0	580			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.00	0.34	0.00	0.00	1.00	0.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	0.0	29.5	0.0	0.0	19.9	0.0	39.5	0.0	34.8			
Incr Delay (d2), s/veh	0.0	17.7	0.0	0.0	1.0	0.0	35.8	0.0	7.4			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.0	30.7	0.0	0.0	10.8	0.0	27.1	0.0	13.7			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	47.2	0.0	0.0	20.9	0.0	75.3	0.0	42.2			
LnGrp LOS	A	F		A	C		F	A	D			
Approach Vol, veh/h		2732	A		1585	A		1836				
Approach Delay, s/veh		47.2			20.9			67.0				
Approach LOS		D			C			E				
Timer - Assigned Phs		2			6			8				
Phs Duration (G+Y+Rc), s		75.0			75.0			55.0				
Change Period (Y+Rc), s		4.0			4.0			4.0				
Max Green Setting (Gmax), s		71.0			71.0			51.0				
Max Q Clear Time (g_c+I1), s		73.0			30.8			53.0				
Green Ext Time (p_c), s		0.0			17.1			0.0				

Intersection Summary

HCM 6th Ctrl Delay 46.3
 HCM 6th LOS D

Notes

User approved volume balancing among the lanes for turning movement.
 Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th Signalized Intersection Summary
 7: Ontario Mills Dr./I-15 SB Ramps & Fourth St

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖↗	↑↑↑	↖	↖↗	↑↑↑	↖	↖	↑↑	↖	↖	↑↑	↖
Traffic Volume (veh/h)	503	1313	56	89	977	223	186	240	77	103	150	405
Future Volume (veh/h)	503	1313	56	89	977	223	186	240	77	103	150	405
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No		No		No		No		No		No
Adj Sat Flow, veh/h/ln	1513	1730	1772	1588	1660	1589	1647	1786	1786	1342	1786	1758
Adj Flow Rate, veh/h	508	1326	57	90	987	225	188	242	78	104	152	409
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	7	5	2	1	10	15	4	1	1	27	1	3
Cap, veh/h	573	2416	768	391	1994	593	217	331	148	191	194	934
Arrive On Green	0.20	0.51	0.51	0.27	0.88	0.88	0.14	0.10	0.10	0.15	0.11	0.11
Sat Flow, veh/h	2795	4722	1502	2933	4531	1347	1569	3393	1514	1278	1786	2979
Grp Volume(v), veh/h	508	1326	57	90	987	225	188	242	78	104	152	409
Grp Sat Flow(s),veh/h/ln	1397	1574	1502	1467	1510	1347	1569	1697	1514	1278	1786	1490
Q Serve(g_s), s	23.0	24.8	2.5	3.1	6.0	2.4	15.2	9.0	6.4	9.8	10.8	9.6
Cycle Q Clear(g_c), s	23.0	24.8	2.5	3.1	6.0	2.4	15.2	9.0	6.4	9.8	10.8	9.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	573	2416	768	391	1994	593	217	331	148	191	194	934
VC Ratio(X)	0.89	0.55	0.07	0.23	0.50	0.38	0.86	0.73	0.53	0.54	0.78	0.44
Avail Cap(c_a), veh/h	720	2416	768	391	1994	593	308	561	250	202	227	989
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.87	0.87	0.87	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	50.2	21.6	16.1	42.4	4.7	1.8	54.8	57.0	55.8	51.2	56.4	18.1
Incr Delay (d2), s/veh	10.9	0.9	0.2	0.3	0.8	1.6	16.3	3.1	2.9	2.7	14.1	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.5	8.6	0.9	1.1	1.3	1.1	7.0	4.0	2.5	3.3	5.6	3.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	61.1	22.5	16.3	42.7	5.5	3.4	71.1	60.1	58.7	53.8	70.6	18.5
LnGrp LOS	E	C	B	D	A	A	E	E	E	D	E	B
Approach Vol, veh/h		1891			1302			508			665	
Approach Delay, s/veh		32.7			7.7			63.9			35.9	
Approach LOS		C			A			E			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	30.9	70.0	21.5	17.6	30.1	60.7	23.0	16.2				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	7.0	66.0	25.0	16.0	33.0	40.0	20.0	21.0				
Max Q Clear Time (g_c+1/3), s	15.0	26.8	17.2	12.8	25.0	8.0	11.8	11.0				
Green Ext Time (p_c), s	0.0	10.9	0.3	0.8	1.2	7.9	0.1	1.2				

Intersection Summary

HCM 6th Ctrl Delay	29.4
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

HCM 6th Signalized Intersection Summary

8: Fourth St & I-15 NB Ramps

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔	↑↑↑	↗	↗	↑↑↑		↗	↑↑		↗	↖	↖↖
Traffic Volume (veh/h)	699	731	64	21	466	96	60	43	44	145	32	762
Future Volume (veh/h)	699	731	64	21	466	96	60	43	44	145	32	762
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No		No		No		No		No		No
Adj Sat Flow, veh/h/ln	1786	1575	1702	1702	1603	1603	1702	1786	1786	1421	1758	1702
Adj Flow Rate, veh/h	728	761	67	22	485	100	62	45	46	175	0	794
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	1	16	7	7	14	14	7	1	1	27	3	7
Cap, veh/h	1184	1687	566	532	1321	266	99	104	93	258	0	1310
Arrive On Green	0.60	0.66	0.66	0.33	0.36	0.36	0.06	0.06	0.06	0.10	0.00	0.10
Sat Flow, veh/h	3300	4301	1442	1621	3654	736	1621	1697	1514	2707	0	2884
Grp Volume(v), veh/h	728	761	67	22	385	200	62	45	46	175	0	794
Grp Sat Flow(s),veh/h/ln	1650	1434	1442	1621	1459	1471	1621	1697	1514	1353	0	1442
Q Serve(g_s), s	18.2	11.3	2.3	1.2	12.6	13.1	4.9	3.3	3.8	8.1	0.0	0.0
Cycle Q Clear(g_c), s	18.2	11.3	2.3	1.2	12.6	13.1	4.9	3.3	3.8	8.1	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.50	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	1184	1687	566	532	1055	532	99	104	93	258	0	1310
V/C Ratio(X)	0.61	0.45	0.12	0.04	0.36	0.38	0.62	0.43	0.50	0.68	0.00	0.61
Avail Cap(c_a), veh/h	1184	1687	566	532	1055	532	511	535	477	333	0	1390
HCM Platoon Ratio	1.67	1.67	1.67	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.87	0.87	0.87	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	20.4	15.6	14.0	29.8	30.5	30.7	59.6	58.8	59.1	56.9	0.0	26.7
Incr Delay (d2), s/veh	0.8	0.8	0.4	0.0	1.0	2.0	6.3	2.8	4.1	3.7	0.0	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.2	3.0	0.8	0.5	4.4	4.7	2.2	1.5	1.6	2.9	0.0	9.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	21.2	16.3	14.4	29.8	31.5	32.7	65.8	61.7	63.1	60.6	0.0	27.4
LnGrp LOS	C	B	B	C	C	C	E	E	E	E	A	C
Approach Vol, veh/h		1556			607			153			969	
Approach Delay, s/veh		18.5			31.8			63.8			33.4	
Approach LOS		B			C			E			C	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	46.6	55.0		16.4	50.6	51.0		12.0				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	60.0	51.0		16.0	10.0	47.0		41.0				
Max Q Clear Time (g_c+1/3), s	13.3	13.3		10.1	20.2	15.1		6.9				
Green Ext Time (p_c), s	0.0	5.4		2.3	0.0	3.4		0.7				

Intersection Summary

HCM 6th Ctrl Delay	27.5
HCM 6th LOS	C

Notes

- User approved pedestrian interval to be less than phase max green.
- User approved volume balancing among the lanes for turning movement.

HCM 6th Signalized Intersection Summary
 9: Milliken Ave & I-210 WB On-ramp/I-210 WB Off-ramp

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↘	↔	↗	↘↗	↑↑↑			↑↑↗	
Traffic Volume (veh/h)	0	0	0	179	7	87	217	696	0	0	529	75
Future Volume (veh/h)	0	0	0	179	7	87	217	696	0	0	529	75
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach				No		No		No				No
Adj Sat Flow, veh/h/ln				1554	1786	1688	1500	1786	0	0	1786	1786
Adj Flow Rate, veh/h				217	0	63	226	725	0	0	551	78
Peak Hour Factor				0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %				11	1	8	8	1	0	0	1	1
Cap, veh/h				391	0	189	373	3582	0	0	2307	322
Arrive On Green				0.13	0.00	0.13	0.27	1.00	0.00	0.00	0.53	0.53
Sat Flow, veh/h				2960	0	1430	2772	5036	0	0	4485	603
Grp Volume(v), veh/h				217	0	63	226	725	0	0	412	217
Grp Sat Flow(s),veh/h/ln				1480	0	1430	1386	1625	0	0	1625	1677
Q Serve(g_s), s				4.1	0.0	2.4	4.3	0.0	0.0	0.0	4.1	4.2
Cycle Q Clear(g_c), s				4.1	0.0	2.4	4.3	0.0	0.0	0.0	4.1	4.2
Prop In Lane				1.00		1.00	1.00		0.00	0.00		0.36
Lane Grp Cap(c), veh/h				391	0	189	373	3582	0	0	1734	895
V/C Ratio(X)				0.56	0.00	0.33	0.61	0.20	0.00	0.00	0.24	0.24
Avail Cap(c_a), veh/h				444	0	215	373	3582	0	0	1734	895
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.92	0.92	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				24.4	0.0	23.6	20.5	0.0	0.0	0.0	7.5	7.5
Incr Delay (d2), s/veh				1.2	0.0	1.0	2.6	0.1	0.0	0.0	0.3	0.6
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				1.4	0.0	0.8	1.3	0.0	0.0	0.0	1.2	1.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				25.6	0.0	24.7	23.1	0.1	0.0	0.0	7.8	8.1
LnGrp LOS				C	A	C	C	A	A	A	A	A
Approach Vol, veh/h						280		951			629	
Approach Delay, s/veh						25.4		5.6			7.9	
Approach LOS						C		A			A	
Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		48.1			12.1	36.0		11.9				
Change Period (Y+Rc), s		4.0			4.0	4.0		4.0				
Max Green Setting (Gmax), s		43.0			7.0	32.0		9.0				
Max Q Clear Time (g_c+I1), s		2.0			6.3	6.2		6.1				
Green Ext Time (p_c), s		5.9			0.1	4.3		0.3				

Intersection Summary

HCM 6th Ctrl Delay	9.4
HCM 6th LOS	A

Notes

User approved volume balancing among the lanes for turning movement.

HCM 6th Signalized Intersection Summary
 10: Milliken Ave & I-210 EB Off-ramp/I-210 EB On-ramp

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	212	9	214	0	0	0	0	701	293	131	577	0
Future Volume (veh/h)	212	9	214	0	0	0	0	701	293	131	577	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No						No			No		
Adj Sat Flow, veh/h/ln	1660	1786	1702				0	1758	1758	1575	1758	0
Adj Flow Rate, veh/h	297	0	153				0	738	308	138	607	0
Peak Hour Factor	0.95	0.95	0.95				0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	1	7				0	3	3	2	3	0
Cap, veh/h	422	0	192				0	1889	780	291	3519	0
Arrive On Green	0.13	0.00	0.13				0.00	0.57	0.57	0.20	1.00	0.00
Sat Flow, veh/h	3162	0	1442				0	3492	1376	2910	4957	0
Grp Volume(v), veh/h	297	0	153				0	708	338	138	607	0
Grp Sat Flow(s),veh/h/ln	1581	0	1442				0	1600	1510	1455	1600	0
Q Serve(g_s), s	5.4	0.0	6.2				0.0	7.4	7.5	2.5	0.0	0.0
Cycle Q Clear(g_c), s	5.4	0.0	6.2				0.0	7.4	7.5	2.5	0.0	0.0
Prop In Lane	1.00		1.00				0.00		0.91	1.00		0.00
Lane Grp Cap(c), veh/h	422	0	192				0	1813	856	291	3519	0
V/C Ratio(X)	0.70	0.00	0.80				0.00	0.39	0.39	0.47	0.17	0.00
Avail Cap(c_a), veh/h	422	0	192				0	1813	856	291	3519	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	0.97	0.97	0.00
Uniform Delay (d), s/veh	24.9	0.0	25.2				0.0	7.2	7.3	22.6	0.0	0.0
Incr Delay (d2), s/veh	5.3	0.0	20.3				0.0	0.6	1.4	1.2	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	0.0	3.1				0.0	2.1	2.2	0.8	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	30.1	0.0	45.5				0.0	7.9	8.6	23.8	0.1	0.0
LnGrp LOS	C	A	D				A	A	A	C	A	A
Approach Vol, veh/h	450						1046			745		
Approach Delay, s/veh	35.4						8.1			4.5		
Approach LOS	D						A			A		
Timer - Assigned Phs	1	2	4	6								
Phs Duration (G+Y+Rc), s	30.0	38.0	12.0	48.0								
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0								
Max Green Setting (Gmax), s	30.0	34.0	8.0	44.0								
Max Q Clear Time (g_c+14), s	14.5	9.5	8.2	2.0								
Green Ext Time (p_c), s	0.1	8.0	0.0	4.8								

Intersection Summary

HCM 6th Ctrl Delay	12.4
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

HCM 6th Signalized Intersection Summary

11: Milliken Ave & Foothill Blvd

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖↗	↑↑↑	↖	↖↗	↑↑↑	↖	↖↗	↑↑↑	↖	↖↗	↑↑↑	↖
Traffic Volume (veh/h)	234	1590	110	300	928	143	244	660	422	163	264	87
Future Volume (veh/h)	234	1590	110	300	928	143	244	660	422	163	264	87
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No		No		No		No		No		No
Adj Sat Flow, veh/h/ln	1588	1786	1758	1588	1786	1772	1575	1772	1758	1588	1744	1772
Adj Flow Rate, veh/h	257	1747	121	330	1020	157	268	725	464	179	290	96
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	1	1	3	1	1	2	2	2	3	1	4	2
Cap, veh/h	274	1918	586	228	1842	567	181	2133	521	160	1629	514
Arrive On Green	0.09	0.39	0.39	0.08	0.38	0.38	0.06	0.35	0.35	0.05	0.34	0.34
Sat Flow, veh/h	2933	4876	1490	2933	4876	1502	2910	6095	1490	2933	4761	1502
Grp Volume(v), veh/h	257	1747	121	330	1020	157	268	725	464	179	290	96
Grp Sat Flow(s),veh/h/ln	1467	1625	1490	1467	1625	1502	1455	1524	1490	1467	1587	1502
Q Serve(g_s), s	11.2	43.6	6.9	10.0	21.2	9.3	8.0	11.3	37.8	7.0	5.5	5.8
Cycle Q Clear(g_c), s	11.2	43.6	6.9	10.0	21.2	9.3	8.0	11.3	37.8	7.0	5.5	5.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	274	1918	586	228	1842	567	181	2133	521	160	1629	514
VC Ratio(X)	0.94	0.91	0.21	1.45	0.55	0.28	1.48	0.34	0.89	1.12	0.18	0.19
Avail Cap(c_a), veh/h	274	1972	602	228	1896	584	181	2133	521	160	1629	514
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	57.9	36.9	25.7	59.3	31.5	27.8	60.3	30.8	39.5	60.8	29.6	29.7
Incr Delay (d2), s/veh	38.2	6.7	0.2	224.0	0.3	0.3	243.3	0.4	19.9	107.4	0.2	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.5	17.5	2.4	10.7	8.0	3.3	9.0	4.1	16.0	4.9	2.1	2.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	96.2	43.6	25.9	283.3	31.8	28.1	303.6	31.3	59.4	168.2	29.9	30.5
LnGrp LOS	F	D	C	F	C	C	F	C	E	F	C	C
Approach Vol, veh/h		2125			1507			1457			565	
Approach Delay, s/veh		49.0			86.5			90.3			73.8	
Approach LOS		D			F			F			E	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	4.0	54.6	12.0	48.0	16.0	52.6	11.0	49.0				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	4.0	52.0	8.0	44.0	12.0	50.0	7.0	45.0				
Max Q Clear Time (g_c+1.2), s	4.0	45.6	10.0	7.8	13.2	23.2	9.0	39.8				
Green Ext Time (p_c), s	0.0	5.0	0.0	2.1	0.0	7.7	0.0	2.7				

Intersection Summary

HCM 6th Ctrl Delay	72.1
HCM 6th LOS	E

Notes

User approved pedestrian interval to be less than phase max green.

HCM 6th Signalized Intersection Summary

12: Milliken Ave & Fourth St

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔	↑↑↑	↔	↔↔	↑↑↑	↔	↔↔	↑↑↑	↔	↔↔	↑↑↑	↔
Traffic Volume (veh/h)	286	931	325	350	514	145	542	1484	167	189	855	56
Future Volume (veh/h)	286	931	325	350	514	145	542	1484	167	189	855	56
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No		No		No		No		No		No
Adj Sat Flow, veh/h/ln	1588	1730	1758	1575	1744	1730	1588	1660	1646	1550	1688	1688
Adj Flow Rate, veh/h	292	950	332	357	524	148	553	1514	170	193	872	57
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	1	5	3	2	4	5	1	10	11	4	8	8
Cap, veh/h	223	1453	458	252	1516	467	223	2158	648	155	2000	130
Arrive On Green	0.08	0.31	0.31	0.09	0.32	0.32	0.08	0.38	0.38	0.05	0.36	0.36
Sat Flow, veh/h	2933	4722	1490	2910	4761	1466	2933	5709	1395	2864	5613	364
Grp Volume(v), veh/h	292	950	332	357	524	148	553	1514	170	193	675	254
Grp Sat Flow(s),veh/h/ln	1467	1574	1490	1455	1587	1466	1467	1427	1395	1432	1451	1622
Q Serve(g_s), s	7.0	16.1	18.3	8.0	7.8	7.1	7.0	20.7	6.9	5.0	10.9	11.0
Cycle Q Clear(g_c), s	7.0	16.1	18.3	8.0	7.8	7.1	7.0	20.7	6.9	5.0	10.9	11.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.22
Lane Grp Cap(c), veh/h	223	1453	458	252	1516	467	223	2158	648	155	1552	578
VC Ratio(X)	1.31	0.65	0.72	1.41	0.35	0.32	2.48	0.70	0.26	1.24	0.43	0.44
Avail Cap(c_a), veh/h	223	2713	856	252	2787	858	223	2970	846	155	2171	809
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	42.6	27.7	28.5	42.1	24.1	23.8	42.6	24.3	15.1	43.6	22.6	22.7
Incr Delay (d2), s/veh	168.7	0.5	2.2	208.4	0.1	0.4	681.4	0.5	0.2	152.2	0.2	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.6	5.5	6.1	10.0	2.7	2.3	23.5	6.3	1.9	5.0	3.4	3.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	211.4	28.2	30.6	250.5	24.2	24.2	724.1	24.7	15.3	195.8	22.8	23.2
LnGrp LOS	F	C	C	F	C	C	F	C	B	F	C	C
Approach Vol, veh/h		1574			1029			2237			1122	
Approach Delay, s/veh		62.7			102.7			196.9			52.7	
Approach LOS		E			F			F			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.0	38.9	12.0	32.4	11.0	36.9	11.0	33.4				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	5.0	48.0	8.0	53.0	7.0	46.0	7.0	54.0				
Max Q Clear Time (g_c+11), s	5.0	22.7	10.0	20.3	9.0	13.0	9.0	9.8				
Green Ext Time (p_c), s	0.0	12.2	0.0	8.1	0.0	6.2	0.0	3.8				

Intersection Summary

HCM 6th Ctrl Delay	118.1
HCM 6th LOS	F

Notes

User approved pedestrian interval to be less than phase max green.

Intersection						
Int Delay, s/veh	0.7					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↗		↑↑↑	↑↑↑	↗
Traffic Vol, veh/h	0	136	0	1705	842	118
Future Vol, veh/h	0	136	0	1705	842	118
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	175
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	2	1	2	3	6	4
Mvmt Flow	0	139	0	1740	859	120

Major/Minor	Minor2	Major1	Major2		
Conflicting Flow All	-	430	-	0	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-
Critical Hdwy	-	7.12	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-
Follow-up Hdwy	-	3.91	-	-	-
Pot Cap-1 Maneuver	0	492	0	-	-
Stage 1	0	-	0	-	-
Stage 2	0	-	0	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	-	492	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-

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

Minor Lane/Major Mvmt	NBT EBLn1	SBT	SBR
Capacity (veh/h)	- 492	-	-
HCM Lane V/C Ratio	- 0.282	-	-
HCM Control Delay (s)	- 15.2	-	-
HCM Lane LOS	- C	-	-
HCM 95th %tile Q(veh)	- 1.1	-	-

HCM 6th Signalized Intersection Summary

14: Milliken Ave & 7th St

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↑↑↑		↖	↑↑↑	
Traffic Volume (veh/h)	229	3	148	12	0	22	453	1455	9	8	904	66
Future Volume (veh/h)	229	3	148	12	0	22	453	1455	9	8	904	66
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1687	1786	1786	1382	1800	1800	1620	1758	1758	1687	1716	1716
Adj Flow Rate, veh/h	231	3	149	12	0	22	458	1470	9	8	913	67
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	1	1	1	24	0	0	6	3	3	1	6	6
Cap, veh/h	352	7	326	204	0	334	165	3173	19	13	2430	178
Arrive On Green	0.22	0.22	0.22	0.22	0.00	0.22	0.11	0.64	0.64	0.01	0.55	0.55
Sat Flow, veh/h	1323	30	1488	963	0	1525	1543	4922	30	1606	4454	326
Grp Volume(v), veh/h	231	0	152	12	0	22	458	956	523	8	639	341
Grp Sat Flow(s),veh/h/ln	1323	0	1518	963	0	1525	1543	1600	1752	1606	1561	1657
Q Serve(g_s), s	15.7	0.0	8.1	1.0	0.0	1.1	10.0	14.1	14.1	0.5	10.9	11.0
Cycle Q Clear(g_c), s	16.7	0.0	8.1	9.1	0.0	1.1	10.0	14.1	14.1	0.5	10.9	11.0
Prop In Lane	1.00		0.98	1.00		1.00	1.00		0.02	1.00		0.20
Lane Grp Cap(c), veh/h	352	0	332	204	0	334	165	2062	1130	13	1704	904
VC Ratio(X)	0.66	0.00	0.46	0.06	0.00	0.07	2.77	0.46	0.46	0.62	0.38	0.38
Avail Cap(c_a), veh/h	869	0	926	581	0	930	165	2062	1130	69	1704	904
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.6	0.0	31.7	35.6	0.0	28.9	41.7	8.4	8.4	46.2	12.1	12.1
Incr Delay (d2), s/veh	2.1	0.0	1.0	0.1	0.0	0.1	814.9	0.8	1.4	40.0	0.6	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.1	0.0	3.0	0.2	0.0	0.4	41.0	3.9	4.5	0.3	3.4	3.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	37.7	0.0	32.7	35.8	0.0	29.0	856.6	9.2	9.8	86.2	12.8	13.3
LnGrp LOS	D	A	C	D	A	C	F	A	A	F	B	B
Approach Vol, veh/h		383			34			1937			988	
Approach Delay, s/veh		35.7			31.4			209.7			13.6	
Approach LOS		D			C			F			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	4.8	64.2		24.5	14.0	55.0		24.5				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	4.0	57.0		57.0	10.0	51.0		57.0				
Max Q Clear Time (g_c+I1), s	2.5	16.1		18.7	12.0	13.0		11.1				
Green Ext Time (p_c), s	0.0	11.9		1.7	0.0	6.6		0.2				

Intersection Summary

HCM 6th Ctrl Delay	130.0
HCM 6th LOS	F

HCM 6th Signalized Intersection Summary
 15: Milliken Ave & I-10 WB Ramps/Ontario Mills Pkwy

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖↗	↑	↖	↖↗	↖↗	↖	↖↗	↑↑↑	↖	↖↗	↑↑↑	↖
Traffic Volume (veh/h)	207	188	61	631	163	95	358	1382	459	390	1049	460
Future Volume (veh/h)	207	188	61	631	163	95	358	1382	459	390	1049	460
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No		No		No		No		No		No
Adj Sat Flow, veh/h/ln	1563	1758	1786	1563	1786	1098	1425	1674	1491	1588	1702	1716
Adj Flow Rate, veh/h	249	227	73	760	196	114	431	1665	553	470	1264	554
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Percent Heavy Veh, %	3	3	1	3	1	50	14	9	22	1	7	6
Cap, veh/h	308	234	202	674	882	242	505	2303	800	293	1805	603
Arrive On Green	0.11	0.13	0.13	0.23	0.26	0.26	0.06	0.13	0.13	0.10	0.31	0.31
Sat Flow, veh/h	2887	1758	1514	2887	3393	931	2633	5757	1264	2933	5854	1454
Grp Volume(v), veh/h	249	227	73	760	196	114	431	1665	553	470	1264	554
Grp Sat Flow(s),veh/h/ln	1444	1758	1514	1444	1697	931	1317	1439	1264	1467	1463	1454
Q Serve(g_s), s	10.1	15.4	5.3	28.0	5.4	9.6	19.4	33.3	20.5	12.0	22.9	25.5
Cycle Q Clear(g_c), s	10.1	15.4	5.3	28.0	5.4	9.6	19.4	33.3	20.5	12.0	22.9	25.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	308	234	202	674	882	242	505	2303	800	293	1805	603
VC Ratio(X)	0.81	0.97	0.36	1.13	0.22	0.47	0.85	0.72	0.69	1.60	0.70	0.92
Avail Cap(c_a), veh/h	601	234	202	674	882	242	505	2303	800	293	1805	603
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.83	0.83	0.83	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.4	51.7	47.4	46.0	34.9	22.5	54.5	45.7	27.2	54.0	36.6	16.2
Incr Delay (d2), s/veh	5.1	49.8	1.1	75.6	0.1	1.4	11.4	1.7	4.1	286.5	2.3	21.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.9	10.0	2.1	17.0	2.3	2.2	7.7	13.1	7.5	16.1	8.4	11.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	57.5	101.5	48.4	121.6	35.0	23.9	65.9	47.4	31.3	340.5	38.9	37.4
LnGrp LOS	E	F	D	F	C	C	E	D	C	F	D	D
Approach Vol, veh/h		549		1070		1070		2649		2649		2288
Approach Delay, s/veh		74.5		95.3		95.3		47.0		47.0		100.5
Approach LOS		E		F		F		D		D		F
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	6.0	52.0	32.0	20.0	27.0	41.0	16.8	35.2				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	12.0	48.0	28.0	16.0	23.0	37.0	25.0	19.0				
Max Q Clear Time (g_c+14.0), s	14.0	35.3	30.0	17.4	21.4	27.5	12.1	11.6				
Green Ext Time (p_c), s	0.0	10.1	0.0	0.0	0.3	6.8	0.7	0.9				

Intersection Summary

HCM 6th Ctrl Delay	75.9
HCM 6th LOS	E

HCM 6th Signalized Intersection Summary
 16: Milliken Ave & I-10 EB Ramps

11/03/2021



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↖↗	↗	↖↗	↑↑↑	↑↑↑	↗
Traffic Volume (veh/h)	548	156	139	1653	915	827
Future Volume (veh/h)	548	156	139	1653	915	827
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1550	1617	1176	1646	1744	1491
Adj Flow Rate, veh/h	565	161	143	1704	943	853
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	4	13	34	11	4	22
Cap, veh/h	656	314	183	3986	3518	1031
Arrive On Green	0.23	0.23	0.08	0.70	0.19	0.19
Sat Flow, veh/h	2864	1371	2172	5891	6243	1264
Grp Volume(v), veh/h	565	161	143	1704	943	853
Grp Sat Flow(s),veh/h/ln	1432	1371	1086	1415	1500	1264
Q Serve(g_s), s	22.7	12.3	7.7	15.3	16.0	37.5
Cycle Q Clear(g_c), s	22.7	12.3	7.7	15.3	16.0	37.5
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	656	314	183	3986	3518	1031
VC Ratio(X)	0.86	0.51	0.78	0.43	0.27	0.83
Avail Cap(c_a), veh/h	1193	571	652	3986	3518	1031
HCM Platoon Ratio	1.00	1.00	1.00	1.00	0.33	0.33
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.42	0.42
Uniform Delay (d), s/veh	44.4	40.4	53.8	7.5	26.5	10.7
Incr Delay (d2), s/veh	3.5	1.3	7.0	0.3	0.1	3.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.4	9.6	2.3	4.3	6.5	28.6
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	47.9	41.7	60.8	7.8	26.6	14.1
LnGrp LOS	D	D	E	A	C	B
Approach Vol, veh/h	726			1847	1796	
Approach Delay, s/veh	46.5			12.0	20.6	
Approach LOS	D			B	C	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		88.5		31.5	14.1	74.4
Change Period (Y+Rc), s		4.0		4.0	4.0	4.0
Max Green Setting (Gmax), s		62.0		50.0	36.0	22.0
Max Q Clear Time (g_c+I1), s		17.3		24.7	9.7	39.5
Green Ext Time (p_c), s		20.2		2.8	0.5	0.0
Intersection Summary						
HCM 6th Ctrl Delay			21.3			
HCM 6th LOS			C			

HCM 6th Signalized Intersection Summary

1: Highway 395 & Joshua St

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗	↗	↖	↗	↗	↖	↗	↗
Traffic Volume (veh/h)	358	519	203	109	158	431	23	2047	13	62	515	100
Future Volume (veh/h)	358	519	203	109	158	431	23	2047	13	62	515	100
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1687	1786	1786	1528	1786	1519	1687	1716	1491	1395	1617	1716
Adj Flow Rate, veh/h	398	577	226	121	176	479	26	2274	14	69	572	111
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	1	1	1	13	1	20	1	6	22	23	13	6
Cap, veh/h	379	601	236	77	879	634	311	1204	467	61	681	322
Arrive On Green	0.49	0.49	0.49	0.49	0.49	0.49	0.19	0.37	0.37	0.05	0.22	0.22
Sat Flow, veh/h	741	1221	478	584	1786	1287	1606	3260	1264	1329	3073	1454
Grp Volume(v), veh/h	398	0	803	121	176	479	26	2274	14	69	572	111
Grp Sat Flow(s),veh/h/ln	741	0	1700	584	1786	1287	1606	1630	1264	1329	1537	1454
Q Serve(g_s), s	56.8	0.0	59.1	4.9	7.2	39.1	1.7	48.0	0.9	6.0	23.1	8.4
Cycle Q Clear(g_c), s	64.0	0.0	59.1	64.0	7.2	39.1	1.7	48.0	0.9	6.0	23.1	8.4
Prop In Lane	1.00		0.28	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	379	0	837	77	879	634	311	1204	467	61	681	322
VC Ratio(X)	1.05	0.00	0.96	1.56	0.20	0.76	0.08	1.89	0.03	1.13	0.84	0.34
Avail Cap(c_a), veh/h	379	0	837	77	879	634	311	1204	467	61	1135	537
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.8	0.0	31.8	64.3	18.6	26.7	43.0	41.0	26.2	62.0	48.4	42.6
Incr Delay (d2), s/veh	60.1	0.0	21.8	306.5	0.1	5.2	0.1	403.3	0.0	153.3	3.0	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	18.9	0.0	28.5	9.2	3.0	12.7	0.7	85.3	0.3	4.6	8.7	2.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	100.8	0.0	53.5	370.8	18.7	31.9	43.1	444.3	26.2	215.3	51.3	43.3
LnGrp LOS	F	A	D	F	B	C	D	F	C	F	D	D
Approach Vol, veh/h		1201			776			2314			752	
Approach Delay, s/veh		69.2			81.7			437.3			65.2	
Approach LOS		E			F			F			E	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.0	52.0		68.0	29.2	32.8		68.0				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	6.0	48.0		64.0	6.0	48.0		64.0				
Max Q Clear Time (g_c+I1), s	8.0	50.0		66.0	3.7	25.1		66.0				
Green Ext Time (p_c), s	0.0	0.0		0.0	0.0	3.7		0.0				

Intersection Summary

HCM 6th Ctrl Delay	239.4
HCM 6th LOS	F

Intersection						
Int Delay, s/veh	3.6					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		∩	
Traffic Vol, veh/h	0	564	514	0	41	169
Future Vol, veh/h	0	564	514	0	41	169
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	0	25	23	0	1	22
Mvmt Flow	0	576	524	0	42	172

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	-	0	-	0	1100 524
Stage 1	-	-	-	-	524 -
Stage 2	-	-	-	-	576 -
Critical Hdwy	-	-	-	-	6.41 6.42
Critical Hdwy Stg 1	-	-	-	-	5.41 -
Critical Hdwy Stg 2	-	-	-	-	5.41 -
Follow-up Hdwy	-	-	-	-	3.509 3.498
Pot Cap-1 Maneuver	0	-	-	0	236 516
Stage 1	0	-	-	0	596 -
Stage 2	0	-	-	0	564 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	-	236 516
Mov Cap-2 Maneuver	-	-	-	-	236 -
Stage 1	-	-	-	-	596 -
Stage 2	-	-	-	-	564 -

Approach	EB	WB	SB
HCM Control Delay, s	0	0	22.2
HCM LOS			C

Minor Lane/Major Mvmt	EBT	WBT	SBLn1
Capacity (veh/h)	-	-	419
HCM Lane V/C Ratio	-	-	0.511
HCM Control Delay (s)	-	-	22.2
HCM Lane LOS	-	-	C
HCM 95th %tile Q(veh)	-	-	2.8

Intersection												
Int Delay, s/veh	2.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↗			↕				
Traffic Vol, veh/h	321	421	0	0	457	46	0	0	0	0	0	0
Future Vol, veh/h	321	421	0	0	457	46	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	16965	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	92	92	95	95	92	92	92	95	92	95
Heavy Vehicles, %	24	23	2	2	23	42	2	2	2	2	2	2
Mvmt Flow	338	443	0	0	481	48	0	0	0	0	0	0

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	529	0	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	4.34	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	2.416	-	-
Pot Cap-1 Maneuver	936	0	0
Stage 1	-	0	0
Stage 2	-	0	0
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	936	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	4.8	0	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	WBT	WBR
Capacity (veh/h)	-	936	-	-	-
HCM Lane V/C Ratio	-	0.361	-	-	-
HCM Control Delay (s)	0	11	0	-	-
HCM Lane LOS	A	B	A	-	-
HCM 95th %tile Q(veh)	-	1.7	-	-	-

Intersection						
Int Delay, s/veh	90.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	Y			↑	↑	
Traffic Vol, veh/h	216	221	265	246	106	231
Future Vol, veh/h	216	221	265	246	106	231
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	6	10	20	48	38	19
Mvmt Flow	220	226	270	251	108	236

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1017	226	344	0	-	0
Stage 1	226	-	-	-	-	-
Stage 2	791	-	-	-	-	-
Critical Hdwy	6.46	6.3	4.3	-	-	-
Critical Hdwy Stg 1	5.46	-	-	-	-	-
Critical Hdwy Stg 2	5.46	-	-	-	-	-
Follow-up Hdwy	3.554	3.39	2.38	-	-	-
Pot Cap-1 Maneuver	259	794	1121	-	-	-
Stage 1	802	-	-	-	-	-
Stage 2	440	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 186	794	1121	-	-	-
Mov Cap-2 Maneuver	~ 186	-	-	-	-	-
Stage 1	577	-	-	-	-	-
Stage 2	440	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	259.2	4.8	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1121	-	304	-	-
HCM Lane V/C Ratio	0.241	-	1.467	-	-
HCM Control Delay (s)	9.2	0	259.2	-	-
HCM Lane LOS	A	A	F	-	-
HCM 95th %tile Q(veh)	0.9	-	24.6	-	-

Notes
 ~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

HCM 6th Signalized Intersection Summary

5: I-15 SB On-ramp/I-15 SB Off-ramp & Foothill Blvd/Foothill Blvd

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↗		↑↑↑	↗				↘	↕	↗
Traffic Volume (veh/h)	0	1438	816	0	1203	535	0	0	0	507	0	727
Future Volume (veh/h)	0	1438	816	0	1203	535	0	0	0	507	0	727
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1786	1786	0	1772	1772				1716	1772	1702
Adj Flow Rate, veh/h	0	1598	0	0	1337	0				852	0	498
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90				0.90	0.90	0.90
Percent Heavy Veh, %	0	1	1	0	2	2				6	2	7
Cap, veh/h	0	3088		0	3064					908	0	401
Arrive On Green	0.00	0.63	0.00	0.00	1.00	0.00				0.28	0.00	0.28
Sat Flow, veh/h	0	5036	1514	0	4997	1502				3268	0	1442
Grp Volume(v), veh/h	0	1598	0	0	1337	0				852	0	498
Grp Sat Flow(s),veh/h/ln	0	1625	1514	0	1612	1502				1634	0	1442
Q Serve(g_s), s	0.0	16.1	0.0	0.0	0.0	0.0				22.9	0.0	25.0
Cycle Q Clear(g_c), s	0.0	16.1	0.0	0.0	0.0	0.0				22.9	0.0	25.0
Prop In Lane	0.00		1.00	0.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	3088		0	3064					908	0	401
V/C Ratio(X)	0.00	0.52		0.00	0.44					0.94	0.00	1.24
Avail Cap(c_a), veh/h	0	3088		0	3064					908	0	401
HCM Platoon Ratio	1.00	1.00	1.00	1.00	2.00	2.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.00	0.00	0.21	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	9.0	0.0	0.0	0.0	0.0				31.7	0.0	32.5
Incr Delay (d2), s/veh	0.0	0.6	0.0	0.0	0.1	0.0				17.0	0.0	128.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	4.4	0.0	0.0	0.0	0.0				10.7	0.0	22.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	9.6	0.0	0.0	0.1	0.0				48.7	0.0	161.4
LnGrp LOS	A	A		A	A					D	A	F
Approach Vol, veh/h		1598	A		1337	A					1350	
Approach Delay, s/veh		9.6			0.1						90.3	
Approach LOS		A			A						F	
Timer - Assigned Phs		2		4		6						
Phs Duration (G+Y+Rc), s		61.0		29.0		61.0						
Change Period (Y+Rc), s		4.0		4.0		4.0						
Max Green Setting (Gmax), s		57.0		25.0		57.0						
Max Q Clear Time (g_c+I1), s		18.1		27.0		2.0						
Green Ext Time (p_c), s		14.4		0.0		11.7						

Intersection Summary

HCM 6th Ctrl Delay	32.1
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th Signalized Intersection Summary

6: I-15 NB Off-ramp/I-15 NB On-ramp & Foothill Blvd /Foothill Blvd

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↑		↑↑↑	↑	↑	↑↓	↑			
Traffic Volume (veh/h)	0	1630	314	0	1527	826	211	0	138	0	0	0
Future Volume (veh/h)	0	1630	314	0	1527	826	211	0	138	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No		No		No		No				
Adj Sat Flow, veh/h/ln	0	1786	1674	0	1772	1786	1772	1772	1744			
Adj Flow Rate, veh/h	0	1791	0	0	1678	0	279	0	101			
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91			
Percent Heavy Veh, %	0	1	9	0	2	1	2	2	4			
Cap, veh/h	0	3873		0	3842		394	0	173			
Arrive On Green	0.00	1.00	0.00	0.00	0.79	0.00	0.12	0.00	0.12			
Sat Flow, veh/h	0	5036	1418	0	4997	1514	3375	0	1478			
Grp Volume(v), veh/h	0	1791	0	0	1678	0	279	0	101			
Grp Sat Flow(s),veh/h/ln	0	1625	1418	0	1612	1514	1688	0	1478			
Q Serve(g_s), s	0.0	0.0	0.0	0.0	9.8	0.0	7.2	0.0	5.8			
Cycle Q Clear(g_c), s	0.0	0.0	0.0	0.0	9.8	0.0	7.2	0.0	5.8			
Prop In Lane	0.00		1.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	0	3873		0	3842		394	0	173			
VC Ratio(X)	0.00	0.46		0.00	0.44		0.71	0.00	0.59			
Avail Cap(c_a), veh/h	0	3873		0	3842		1913	0	837			
HCM Platoon Ratio	1.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(l)	0.00	0.70	0.00	0.00	1.00	0.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	0.0	0.0	0.0	0.0	2.9	0.0	38.3	0.0	37.7			
Incr Delay (d2), s/veh	0.0	0.3	0.0	0.0	0.4	0.0	2.3	0.0	3.1			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.0	0.1	0.0	0.0	2.1	0.0	3.0	0.0	2.2			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.3	0.0	0.0	3.3	0.0	40.6	0.0	40.8			
LnGrp LOS	A	A		A	A		D	A	D			
Approach Vol, veh/h		1791	A		1678	A		380				
Approach Delay, s/veh		0.3			3.3			40.7				
Approach LOS		A			A			D				
Timer - Assigned Phs		2			6			8				
Phs Duration (G+Y+Rc), s		75.5			75.5			14.5				
Change Period (Y+Rc), s		4.0			4.0			4.0				
Max Green Setting (Gmax), s		31.0			31.0			51.0				
Max Q Clear Time (g_c+I1), s		2.0			11.8			9.2				
Green Ext Time (p_c), s		17.1			12.2			1.3				

Intersection Summary

HCM 6th Ctrl Delay	5.6
HCM 6th LOS	A

Notes

User approved volume balancing among the lanes for turning movement.

Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th Signalized Intersection Summary
 7: Ontario Mills Dr./I-15 SB Ramps & Fourth St

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖↗	↑↑↑	↖	↖↗	↑↑↑	↖	↖	↑↑	↖	↖	↑↑	↖
Traffic Volume (veh/h)	566	1691	76	99	1090	211	132	138	27	115	160	447
Future Volume (veh/h)	566	1691	76	99	1090	211	132	138	27	115	160	447
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No		No		No		No		No		No
Adj Sat Flow, veh/h/ln	1513	1730	1772	1588	1660	1589	1647	1786	1786	1342	1786	1758
Adj Flow Rate, veh/h	572	1708	77	100	1101	213	133	139	27	116	162	452
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	7	5	2	1	10	15	4	1	1	27	1	3
Cap, veh/h	636	2525	803	405	2016	599	161	222	99	197	209	1027
Arrive On Green	0.23	0.53	0.53	0.14	0.45	0.45	0.10	0.07	0.07	0.15	0.12	0.12
Sat Flow, veh/h	2795	4722	1502	2933	4531	1347	1569	3393	1514	1278	1786	2979
Grp Volume(v), veh/h	572	1708	77	100	1101	213	133	139	27	116	162	452
Grp Sat Flow(s),veh/h/ln	1397	1574	1502	1467	1510	1347	1569	1697	1514	1278	1786	1490
Q Serve(g_s), s	25.8	34.3	3.3	4.0	23.2	8.3	10.8	5.2	2.2	11.0	11.5	10.9
Cycle Q Clear(g_c), s	25.8	34.3	3.3	4.0	23.2	8.3	10.8	5.2	2.2	11.0	11.5	10.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	636	2525	803	405	2016	599	161	222	99	197	209	1027
VC Ratio(X)	0.90	0.68	0.10	0.25	0.55	0.36	0.83	0.63	0.27	0.59	0.78	0.44
Avail Cap(c_a), veh/h	763	2525	803	405	2016	599	235	431	192	211	254	1103
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.83	0.83	0.83	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	48.7	22.1	14.8	50.0	26.4	8.9	57.2	59.2	57.8	51.1	55.8	18.0
Incr Delay (d2), s/veh	12.1	1.5	0.2	0.3	0.9	1.4	14.2	2.9	1.5	3.8	11.6	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.6	11.8	1.2	1.4	7.9	2.5	4.9	2.3	0.9	3.7	5.8	3.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	60.8	23.5	15.1	50.2	27.3	10.3	71.4	62.1	59.3	54.9	67.4	18.3
LnGrp LOS	E	C	B	D	C	B	E	E	E	D	E	B
Approach Vol, veh/h		2357			1414			299			730	
Approach Delay, s/veh		32.3			26.4			66.0			35.0	
Approach LOS		C			C			E			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	31.5	73.0	16.9	18.7	33.1	61.4	23.5	12.0				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	69.0	69.0	19.0	18.0	35.0	42.0	21.0	16.0				
Max Q Clear Time (g_c+1/3g), s	36.3	36.3	12.8	13.5	27.8	25.2	13.0	7.2				
Green Ext Time (p_c), s	0.0	14.9	0.2	1.2	1.3	7.0	0.2	0.5				

Intersection Summary

HCM 6th Ctrl Delay	33.1
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

HCM 6th Signalized Intersection Summary

8: Fourth St & I-15 NB Ramps

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔	↑↑↑	↗	↗	↑↑↑		↗	↑↑		↗	↖	↖↖
Traffic Volume (veh/h)	821	920	92	22	529	78	122	79	78	174	46	751
Future Volume (veh/h)	821	920	92	22	529	78	122	79	78	174	46	751
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No		No		No		No		No		No
Adj Sat Flow, veh/h/ln	1786	1575	1702	1702	1603	1603	1702	1786	1786	1421	1758	1702
Adj Flow Rate, veh/h	855	958	96	23	551	81	127	82	81	114	141	782
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	1	16	7	7	14	14	7	1	1	27	3	7
Cap, veh/h	1004	1687	566	443	1396	202	165	173	153	148	193	1193
Arrive On Green	0.51	0.66	0.66	0.27	0.36	0.36	0.10	0.10	0.10	0.11	0.11	0.11
Sat Flow, veh/h	3300	4301	1442	1621	3862	559	1621	1704	1507	1353	1758	2884
Grp Volume(v), veh/h	855	958	96	23	414	218	127	82	81	114	141	782
Grp Sat Flow(s),veh/h/ln	1650	1434	1442	1621	1459	1503	1621	1697	1515	1353	1758	1442
Q Serve(g_s), s	29.2	15.9	3.4	1.4	13.7	14.1	9.9	5.9	6.6	10.6	10.1	0.0
Cycle Q Clear(g_c), s	29.2	15.9	3.4	1.4	13.7	14.1	9.9	5.9	6.6	10.6	10.1	0.0
Prop In Lane	1.00		1.00	1.00		0.37	1.00		0.99	1.00		1.00
Lane Grp Cap(c), veh/h	1004	1687	566	443	1055	543	165	173	154	148	193	1193
V/C Ratio(X)	0.85	0.57	0.17	0.05	0.39	0.40	0.77	0.47	0.53	0.77	0.73	0.66
Avail Cap(c_a), veh/h	1004	1687	566	443	1055	543	511	535	478	167	216	1232
HCM Platoon Ratio	1.67	1.67	1.67	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.76	0.76	0.76	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	29.4	16.4	14.2	34.8	30.9	31.0	56.9	55.1	55.4	56.3	56.0	30.7
Incr Delay (d2), s/veh	5.6	1.1	0.5	0.0	1.1	2.2	7.4	2.0	2.8	17.5	10.7	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	3.9	1.1	0.5	4.8	5.2	4.4	2.6	2.6	4.3	5.0	9.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	35.0	17.4	14.7	34.9	32.0	33.2	64.3	57.1	58.2	73.8	66.7	31.9
LnGrp LOS	C	B	B	C	C	C	E	E	E	E	E	C
Approach Vol, veh/h		1909			655			290			1037	
Approach Delay, s/veh		25.2			32.5			60.6			41.2	
Approach LOS		C			C			E			D	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	39.5	55.0		18.2	43.5	51.0		17.2				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	60.0	51.0		16.0	10.0	47.0		41.0				
Max Q Clear Time (g_c+1/3), s	13.4	17.9		12.6	31.2	16.1		11.9				
Green Ext Time (p_c), s	0.0	7.1		1.6	0.0	3.7		1.3				

Intersection Summary

HCM 6th Ctrl Delay	33.3
HCM 6th LOS	C

Notes

- User approved pedestrian interval to be less than phase max green.
- User approved volume balancing among the lanes for turning movement.

HCM 6th Signalized Intersection Summary
 9: Milliken Ave & I-210 WB On-ramp/I-210 WB Off-ramp

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↘	↔	↗	↘↗	↕			↕↗	
Traffic Volume (veh/h)	0	0	0	126	11	375	113	812	0	0	647	212
Future Volume (veh/h)	0	0	0	126	11	375	113	812	0	0	647	212
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach				No		No		No			No	
Adj Sat Flow, veh/h/ln				1554	1786	1688	1500	1786	0	0	1786	1786
Adj Flow Rate, veh/h				91	0	441	118	846	0	0	674	221
Peak Hour Factor				0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %				11	1	8	8	1	0	0	1	1
Cap, veh/h				284	0	549	167	3507	0	0	2241	723
Arrive On Green				0.19	0.00	0.19	0.12	1.00	0.00	0.00	0.61	0.61
Sat Flow, veh/h				1480	0	2860	2772	5036	0	0	3808	1177
Grp Volume(v), veh/h				91	0	441	118	846	0	0	599	296
Grp Sat Flow(s),veh/h/ln				1480	0	1430	1386	1625	0	0	1625	1574
Q Serve(g_s), s				4.8	0.0	13.3	3.7	0.0	0.0	0.0	7.8	8.0
Cycle Q Clear(g_c), s				4.8	0.0	13.3	3.7	0.0	0.0	0.0	7.8	8.0
Prop In Lane				1.00		1.00	1.00		0.00	0.00		0.75
Lane Grp Cap(c), veh/h				284	0	549	167	3507	0	0	1997	967
V/C Ratio(X)				0.32	0.00	0.80	0.71	0.24	0.00	0.00	0.30	0.31
Avail Cap(c_a), veh/h				576	0	1112	228	3507	0	0	1997	967
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.88	0.88	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				31.3	0.0	34.7	38.8	0.0	0.0	0.0	8.2	8.2
Incr Delay (d2), s/veh				0.6	0.0	2.8	5.3	0.1	0.0	0.0	0.4	0.8
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				1.7	0.0	4.7	1.3	0.0	0.0	0.0	2.6	2.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				32.0	0.0	37.6	44.1	0.1	0.0	0.0	8.6	9.1
LnGrp LOS				C	A	D	D	A	A	A	A	A
Approach Vol, veh/h						532		964			895	
Approach Delay, s/veh						36.6		5.5			8.7	
Approach LOS						D		A			A	
Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		68.7			9.4	59.3		21.3				
Change Period (Y+Rc), s		4.0			4.0	4.0		4.0				
Max Green Setting (Gmax), s		47.0			7.4	35.6		35.0				
Max Q Clear Time (g_c+I1), s		2.0			5.7	10.0		15.3				
Green Ext Time (p_c), s		7.3			0.0	6.7		2.0				

Intersection Summary

HCM 6th Ctrl Delay	13.6
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

HCM 6th Signalized Intersection Summary
 10: Milliken Ave & I-210 EB Off-ramp/I-210 EB On-ramp

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	547	34	342	0	0	0	0	378	99	356	416	0
Future Volume (veh/h)	547	34	342	0	0	0	0	378	99	356	416	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No					No		No			
Adj Sat Flow, veh/h/ln	1660	1786	1702				0	1758	1758	1575	1758	0
Adj Flow Rate, veh/h	703	0	252				0	398	104	375	438	0
Peak Hour Factor	0.95	0.95	0.95				0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	1	7				0	3	3	2	3	0
Cap, veh/h	826	0	377				0	1401	353	695	3119	0
Arrive On Green	0.26	0.00	0.26				0.00	0.37	0.37	0.08	0.21	0.00
Sat Flow, veh/h	3162	0	1442				0	3979	963	2910	4957	0
Grp Volume(v), veh/h	703	0	252				0	331	171	375	438	0
Grp Sat Flow(s),veh/h/ln	1581	0	1442				0	1600	1585	1455	1600	0
Q Serve(g_s), s	19.0	0.0	14.1				0.0	6.6	6.9	11.2	6.7	0.0
Cycle Q Clear(g_c), s	19.0	0.0	14.1				0.0	6.6	6.9	11.2	6.7	0.0
Prop In Lane	1.00		1.00				0.00		0.61	1.00		0.00
Lane Grp Cap(c), veh/h	826	0	377				0	1173	581	695	3119	0
V/C Ratio(X)	0.85	0.00	0.67				0.00	0.28	0.29	0.54	0.14	0.00
Avail Cap(c_a), veh/h	1019	0	465				0	1173	581	695	3119	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	0.33	0.33	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	0.95	0.95	0.00
Uniform Delay (d), s/veh	31.6	0.0	29.8				0.0	20.1	20.2	36.7	15.0	0.0
Incr Delay (d2), s/veh	5.9	0.0	2.7				0.0	0.6	1.3	0.8	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.7	0.0	5.0				0.0	2.5	2.7	4.4	2.4	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	37.5	0.0	32.4				0.0	20.7	21.5	37.5	15.1	0.0
LnGrp LOS	D	A	C				A	C	C	D	B	A
Approach Vol, veh/h		955						502			813	
Approach Delay, s/veh		36.2						21.0			25.4	
Approach LOS		D						C			C	
Timer - Assigned Phs	1	2	4	6								
Phs Duration (G+Y+Rc), s	35.5	37.0	27.5	62.5								
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0								
Max Green Setting (Gmax), s	16.0	33.0	29.0	53.0								
Max Q Clear Time (g_c+1/3), s	13.2	8.9	21.0	8.7								
Green Ext Time (p_c), s	0.4	3.4	2.5	3.4								

Intersection Summary

HCM 6th Ctrl Delay	29.0
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

HCM 6th Signalized Intersection Summary

11: Milliken Ave & Foothill Blvd

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖↗	↑↑↑	↖	↖↗	↑↑↑	↖	↖↗	↑↑↑	↖	↖↗	↑↑↑	↖
Traffic Volume (veh/h)	447	1742	93	283	1788	315	56	301	88	318	532	195
Future Volume (veh/h)	447	1742	93	283	1788	315	56	301	88	318	532	195
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No		No		No		No		No		No
Adj Sat Flow, veh/h/ln	1588	1786	1758	1588	1786	1772	1575	1772	1758	1588	1744	1772
Adj Flow Rate, veh/h	491	1914	102	311	1965	346	62	331	97	349	585	214
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	1	1	3	1	1	2	2	2	3	1	4	2
Cap, veh/h	307	2501	764	246	2399	739	99	925	226	246	959	303
Arrive On Green	0.10	0.51	0.51	0.08	0.49	0.49	0.03	0.15	0.15	0.08	0.20	0.20
Sat Flow, veh/h	2933	4876	1490	2933	4876	1502	2910	6095	1490	2933	4761	1502
Grp Volume(v), veh/h	491	1914	102	311	1965	346	62	331	97	349	585	214
Grp Sat Flow(s),veh/h/ln	1467	1625	1490	1467	1625	1502	1455	1524	1490	1467	1587	1502
Q Serve(g_s), s	10.0	30.0	3.4	8.0	32.7	14.5	2.0	4.6	5.6	8.0	10.7	12.7
Cycle Q Clear(g_c), s	10.0	30.0	3.4	8.0	32.7	14.5	2.0	4.6	5.6	8.0	10.7	12.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	307	2501	764	246	2399	739	99	925	226	246	959	303
VC Ratio(X)	1.60	0.77	0.13	1.27	0.82	0.47	0.63	0.36	0.43	1.42	0.61	0.71
Avail Cap(c_a), veh/h	307	2707	827	246	2605	802	183	2873	702	246	2344	739
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	42.7	18.6	12.2	43.7	20.6	16.0	45.5	36.3	36.7	43.7	34.7	35.5
Incr Delay (d2), s/veh	284.0	1.3	0.1	147.6	2.0	0.5	6.3	0.2	1.3	211.1	0.6	3.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.5	9.9	1.0	7.8	11.1	4.4	0.8	1.6	2.0	10.0	3.9	4.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	326.7	19.9	12.2	191.3	22.7	16.5	51.8	36.6	38.0	254.8	35.3	38.5
LnGrp LOS	F	B	B	F	C	B	D	D	D	F	D	D
Approach Vol, veh/h		2507			2622			490			1148	
Approach Delay, s/veh		79.7			41.9			38.8			102.7	
Approach LOS		E			D			D			F	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	42.0	53.0	7.2	23.2	14.0	51.0	12.0	18.5				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	42.0	53.0	6.0	47.0	10.0	51.0	8.0	45.0				
Max Q Clear Time (g_c+10), s	10.0	32.0	4.0	14.7	12.0	34.7	10.0	7.6				
Green Ext Time (p_c), s	0.0	13.7	0.0	4.6	0.0	12.2	0.0	2.4				

Intersection Summary

HCM 6th Ctrl Delay	66.0
HCM 6th LOS	E

Notes

User approved pedestrian interval to be less than phase max green.

HCM 6th Signalized Intersection Summary

12: Milliken Ave & Fourth St

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔	↑↑↑	↗	↔↔	↑↑↑	↗	↔↔	↑↑↑	↗	↔↔	↑↑↑	↗
Traffic Volume (veh/h)	490	1610	563	140	1645	471	694	1959	214	233	1068	70
Future Volume (veh/h)	490	1610	563	140	1645	471	694	1959	214	233	1068	70
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No		No		No		No		No		No
Adj Sat Flow, veh/h/ln	1588	1730	1758	1575	1744	1730	1588	1660	1646	1550	1688	1688
Adj Flow Rate, veh/h	500	1643	574	143	1679	481	708	1999	218	238	1090	71
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	1	5	3	2	4	5	1	10	11	4	8	8
Cap, veh/h	160	1930	609	113	1872	576	183	2221	597	111	2052	133
Arrive On Green	0.05	0.41	0.41	0.04	0.39	0.39	0.06	0.39	0.39	0.04	0.37	0.37
Sat Flow, veh/h	2933	4722	1490	2910	4761	1466	2933	5709	1395	2864	5613	364
Grp Volume(v), veh/h	500	1643	574	143	1679	481	708	1999	218	238	844	317
Grp Sat Flow(s),veh/h/ln	1467	1574	1490	1455	1587	1466	1467	1427	1395	1432	1451	1622
Q Serve(g_s), s	7.0	40.5	47.6	5.0	42.5	38.1	8.0	42.3	13.6	5.0	19.6	19.8
Cycle Q Clear(g_c), s	7.0	40.5	47.6	5.0	42.5	38.1	8.0	42.3	13.6	5.0	19.6	19.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.22
Lane Grp Cap(c), veh/h	160	1930	609	113	1872	576	183	2221	597	111	1592	593
VC Ratio(X)	3.13	0.85	0.94	1.26	0.90	0.83	3.88	0.90	0.37	2.14	0.53	0.53
Avail Cap(c_a), veh/h	160	1947	614	113	1889	582	183	2265	608	111	1626	606
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	60.8	34.5	36.6	61.8	36.6	35.2	60.3	36.9	24.9	61.8	32.1	32.1
Incr Delay (d2), s/veh	974.8	3.8	23.0	171.2	6.1	10.1	1308.3	5.3	0.4	540.0	0.3	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.1	15.0	19.9	4.5	16.3	14.3	36.1	14.7	4.3	10.1	6.6	7.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	1035.5	38.3	59.6	233.0	42.7	45.3	1368.5	42.2	25.3	601.8	32.4	33.0
LnGrp LOS	F	D	E	F	D	D	F	D	C	F	C	C
Approach Vol, veh/h		2717			2303			2925			1399	
Approach Delay, s/veh		226.3			55.0			362.0			129.4	
Approach LOS		F			E			F			F	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.0	54.0	9.0	56.5	12.0	51.0	11.0	54.5				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	5.0	51.0	5.0	53.0	8.0	48.0	7.0	51.0				
Max Q Clear Time (g_c+1/3), s	4.0	44.3	7.0	49.6	10.0	21.8	9.0	44.5				
Green Ext Time (p_c), s	0.0	5.7	0.0	2.9	0.0	7.8	0.0	5.3				

Intersection Summary

HCM 6th Ctrl Delay 212.1
 HCM 6th LOS F

Notes

User approved pedestrian interval to be less than phase max green.

Intersection						
Int Delay, s/veh	0.9					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↗		↑↑↑	↑↑↑	↗
Traffic Vol, veh/h	0	175	0	2037	940	168
Future Vol, veh/h	0	175	0	2037	940	168
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	175
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	2	1	2	3	6	4
Mvmt Flow	0	179	0	2079	959	171

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	-	480	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	7.12	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	3.91	-
Pot Cap-1 Maneuver	0	457	0
Stage 1	0	-	0
Stage 2	0	-	0
Platoon blocked, %			-
Mov Cap-1 Maneuver	-	457	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	17.8	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBT EBLn1	SBT	SBR
Capacity (veh/h)	-	457	-
HCM Lane V/C Ratio	-	0.391	-
HCM Control Delay (s)	-	17.8	-
HCM Lane LOS	-	C	-
HCM 95th %tile Q(veh)	-	1.8	-

HCM 6th Signalized Intersection Summary

14: Milliken Ave & 7th St

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↑↑↑		↖	↑↑↑	
Traffic Volume (veh/h)	257	0	200	16	0	21	637	1760	11	15	897	204
Future Volume (veh/h)	257	0	200	16	0	21	637	1760	11	15	897	204
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1687	1786	1786	1382	1800	1800	1620	1758	1758	1687	1716	1716
Adj Flow Rate, veh/h	260	0	202	16	0	21	643	1778	11	15	906	206
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	1	1	1	24	0	0	6	3	3	1	6	6
Cap, veh/h	442	0	393	246	0	396	241	2652	16	23	1518	344
Arrive On Green	0.26	0.00	0.26	0.26	0.00	0.26	0.16	0.54	0.54	0.01	0.40	0.40
Sat Flow, veh/h	1324	0	1514	920	0	1525	1543	4921	30	1606	3818	865
Grp Volume(v), veh/h	260	0	202	16	0	21	643	1156	633	15	740	372
Grp Sat Flow(s),veh/h/ln	1324	0	1514	920	0	1525	1543	1600	1752	1606	1561	1560
Q Serve(g_s), s	11.8	0.0	7.3	1.0	0.0	0.7	10.0	16.7	16.7	0.6	12.0	12.1
Cycle Q Clear(g_c), s	12.4	0.0	7.3	8.3	0.0	0.7	10.0	16.7	16.7	0.6	12.0	12.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.02	1.00		0.55
Lane Grp Cap(c), veh/h	442	0	393	246	0	396	241	1724	944	23	1241	620
VC Ratio(X)	0.59	0.00	0.51	0.07	0.00	0.05	2.67	0.67	0.67	0.64	0.60	0.60
Avail Cap(c_a), veh/h	1275	0	1345	825	0	1356	241	2844	1558	100	2483	1241
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.5	0.0	20.3	23.8	0.0	17.8	27.1	10.7	10.7	31.4	15.3	15.3
Incr Delay (d2), s/veh	1.2	0.0	1.0	0.1	0.0	0.1	764.1	0.5	0.8	25.3	0.5	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.5	0.0	2.5	0.2	0.0	0.2	54.3	4.1	4.6	0.4	3.4	3.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.7	0.0	21.3	23.9	0.0	17.9	791.2	11.1	11.5	56.7	15.7	16.2
LnGrp LOS	C	A	C	C	A	B	F	B	B	E	B	B
Approach Vol, veh/h		462			37			2432			1127	
Approach Delay, s/veh		22.7			20.5			217.5			16.4	
Approach LOS		C			C			F			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	4.9	38.6		20.6	14.0	29.5		20.6				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	4.0	57.0		57.0	10.0	51.0		57.0				
Max Q Clear Time (g_c+I1), s	2.6	18.7		14.4	12.0	14.1		10.3				
Green Ext Time (p_c), s	0.0	15.8		2.2	0.0	8.0		0.2				

Intersection Summary

HCM 6th Ctrl Delay	137.7
HCM 6th LOS	F

HCM 6th Signalized Intersection Summary
 15: Milliken Ave & I-10 WB Ramps/Ontario Mills Pkwy

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔	↑	↗	↔↔	↕↕	↗	↔↔	↑↑↑	↗	↔↔	↑↑↑	↗
Traffic Volume (veh/h)	657	264	96	576	478	326	60	2090	134	455	1407	692
Future Volume (veh/h)	657	264	96	576	478	326	60	2090	134	455	1407	692
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No		No		No		No		No		No
Adj Sat Flow, veh/h/ln	1563	1758	1786	1563	1786	1098	1425	1674	1491	1588	1702	1716
Adj Flow Rate, veh/h	792	318	116	694	576	393	72	2518	161	548	1695	834
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Percent Heavy Veh, %	3	3	1	3	1	50	14	9	22	1	7	6
Cap, veh/h	511	297	256	466	522	143	104	2392	729	384	2965	994
Arrive On Green	0.18	0.17	0.17	0.16	0.15	0.15	0.01	0.14	0.14	0.13	0.51	0.51
Sat Flow, veh/h	2887	1758	1514	2887	3393	931	2633	5757	1264	2933	5854	1454
Grp Volume(v), veh/h	792	318	116	694	576	393	72	2518	161	548	1695	834
Grp Sat Flow(s),veh/h/ln	1444	1758	1514	1444	1697	931	1317	1439	1264	1467	1463	1454
Q Serve(g_s), s	23.0	22.0	9.0	21.0	20.0	20.0	3.5	54.0	10.8	17.0	26.1	55.4
Cycle Q Clear(g_c), s	23.0	22.0	9.0	21.0	20.0	20.0	3.5	54.0	10.8	17.0	26.1	55.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	511	297	256	466	522	143	104	2392	729	384	2965	994
V/C Ratio(X)	1.55	1.07	0.45	1.49	1.10	2.75	0.69	1.05	0.22	1.43	0.57	0.84
Avail Cap(c_a), veh/h	511	297	256	466	522	143	162	2392	729	384	2965	994
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.59	0.59	0.59	1.00	1.00	1.00
Uniform Delay (d), s/veh	53.5	54.0	48.6	54.5	55.0	55.0	63.4	56.1	20.5	56.5	22.3	15.3
Incr Delay (d2), s/veh	257.3	71.7	1.3	230.8	70.7	804.7	4.7	30.7	0.4	207.5	0.8	8.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	26.6	15.6	3.5	22.6	13.7	36.7	1.3	26.0	3.7	17.3	9.1	19.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	310.8	125.7	49.8	285.3	125.7	859.7	68.1	86.8	21.0	264.0	23.1	23.7
LnGrp LOS	F	F	D	F	F	F	E	F	C	F	C	C
Approach Vol, veh/h		1226			1663			2751			3077	
Approach Delay, s/veh		238.1			365.8			82.4			66.2	
Approach LOS		F			F			F			E	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	31.0	58.0	25.0	26.0	9.2	69.8	27.0	24.0				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	17.0	54.0	21.0	22.0	8.0	63.0	23.0	20.0				
Max Q Clear Time (g_c+19.0), s	19.0	56.0	23.0	24.0	5.5	57.4	25.0	22.0				
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	5.1	0.0	0.0				

Intersection Summary

HCM 6th Ctrl Delay	152.6
HCM 6th LOS	F

HCM 6th Signalized Intersection Summary

16: Milliken Ave & I-10 EB Ramps

11/03/2021



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↶↶	↶	↶↶	↑↑↑	↑↑↑	↶
Traffic Volume (veh/h)	1599	11	5	688	957	1125
Future Volume (veh/h)	1599	11	5	688	957	1125
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1550	1617	1176	1646	1744	1491
Adj Flow Rate, veh/h	1648	11	5	709	987	1160
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	4	13	34	11	4	22
Cap, veh/h	1742	834	11	1870	1767	1141
Arrive On Green	0.61	0.61	0.01	0.33	0.10	0.10
Sat Flow, veh/h	2864	1371	2172	5891	6243	1264
Grp Volume(v), veh/h	1648	11	5	709	987	1160
Grp Sat Flow(s),veh/h/ln	1432	1371	1086	1415	1500	1264
Q Serve(g_s), s	69.0	0.4	0.3	12.5	20.4	20.8
Cycle Q Clear(g_c), s	69.0	0.4	0.3	12.5	20.4	20.8
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	1742	834	11	1870	1767	1141
VC Ratio(X)	0.95	0.01	0.45	0.38	0.56	1.02
Avail Cap(c_a), veh/h	2005	960	67	1870	1767	1141
HCM Platoon Ratio	1.00	1.00	1.00	1.00	0.33	0.33
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.46	0.46
Uniform Delay (d), s/veh	23.5	10.1	64.5	33.3	50.6	2.1
Incr Delay (d2), s/veh	9.4	0.0	26.3	0.6	0.6	22.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.2	0.6	0.1	4.4	8.3	47.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	32.9	10.1	90.8	33.9	51.2	24.5
LnGrp LOS	C	B	F	C	D	F
Approach Vol, veh/h	1659			714	2147	
Approach Delay, s/veh	32.8			34.3	36.8	
Approach LOS	C			C	D	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		46.9		83.1	4.7	42.3
Change Period (Y+Rc), s		4.0		4.0	4.0	4.0
Max Green Setting (Gmax), s		31.0		91.0	4.0	23.0
Max Q Clear Time (g_c+I1), s		14.5		71.0	2.3	22.8
Green Ext Time (p_c), s		4.6		8.0	0.0	0.2
Intersection Summary						
HCM 6th Ctrl Delay			34.9			
HCM 6th LOS			C			

HCM 6th Signalized Intersection Summary

1: Highway 395 & Joshua St

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗	↗	↖	↗	↗	↖	↗	↗
Traffic Volume (veh/h)	116	193	66	111	169	377	19	1595	11	44	567	123
Future Volume (veh/h)	116	193	66	111	169	377	19	1595	11	44	567	123
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1687	1786	1786	1528	1786	1519	1687	1716	1491	1395	1617	1716
Adj Flow Rate, veh/h	129	214	73	123	188	419	21	1772	12	49	630	137
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	1	1	1	13	1	20	1	6	22	23	13	6
Cap, veh/h	267	442	151	260	620	447	69	1674	649	57	1578	747
Arrive On Green	0.35	0.35	0.35	0.35	0.35	0.35	0.04	0.51	0.51	0.04	0.51	0.51
Sat Flow, veh/h	774	1273	434	942	1786	1287	1606	3260	1264	1329	3073	1454
Grp Volume(v), veh/h	129	0	287	123	188	419	21	1772	12	49	630	137
Grp Sat Flow(s),veh/h/ln	774	0	1708	942	1786	1287	1606	1630	1264	1329	1537	1454
Q Serve(g_s), s	18.2	0.0	16.4	14.7	9.6	39.3	1.6	64.0	0.6	4.6	15.6	6.3
Cycle Q Clear(g_c), s	27.7	0.0	16.4	31.1	9.6	39.3	1.6	64.0	0.6	4.6	15.6	6.3
Prop In Lane	1.00		0.25	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	267	0	593	260	620	447	69	1674	649	57	1578	747
VC Ratio(X)	0.48	0.00	0.48	0.47	0.30	0.94	0.30	1.06	0.02	0.86	0.40	0.18
Avail Cap(c_a), veh/h	297	0	658	296	688	496	77	1674	649	64	1578	747
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.8	0.0	31.9	44.1	29.7	39.4	57.8	30.3	14.9	59.2	18.5	16.3
Incr Delay (d2), s/veh	1.4	0.0	0.6	1.3	0.3	24.5	2.4	39.3	0.1	61.2	0.8	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.6	0.0	6.9	3.5	4.2	15.3	0.7	31.2	0.2	2.5	5.2	2.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	41.2	0.0	32.5	45.5	30.0	63.8	60.3	69.6	14.9	120.5	19.3	16.8
LnGrp LOS	D	A	C	D	C	E	E	F	B	F	B	B
Approach Vol, veh/h		416			730			1805				816
Approach Delay, s/veh		35.2			52.0			69.2				25.0
Approach LOS		D			D			E				C
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.4	68.0		47.3	9.4	68.0		47.3				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	6.0	64.0		48.0	6.0	64.0		48.0				
Max Q Clear Time (g_c+I1), s	6.6	66.0		29.7	3.6	17.6		41.3				
Green Ext Time (p_c), s	0.0	0.0		2.5	0.0	4.6		2.0				

Intersection Summary

HCM 6th Ctrl Delay	52.5
HCM 6th LOS	D

Intersection						
Int Delay, s/veh	6.1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		∩	
Traffic Vol, veh/h	0	238	393	0	45	264
Future Vol, veh/h	0	238	393	0	45	264
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	0	25	23	0	1	22
Mvmt Flow	0	243	401	0	46	269
Major/Minor	Major1	Major2	Minor2			
Conflicting Flow All	-	0	-	0	644	401
Stage 1	-	-	-	-	401	-
Stage 2	-	-	-	-	243	-
Critical Hdwy	-	-	-	-	6.41	6.42
Critical Hdwy Stg 1	-	-	-	-	5.41	-
Critical Hdwy Stg 2	-	-	-	-	5.41	-
Follow-up Hdwy	-	-	-	-	3.509	3.498
Pot Cap-1 Maneuver	0	-	-	0	439	608
Stage 1	0	-	-	0	678	-
Stage 2	0	-	-	0	800	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	-	439	608
Mov Cap-2 Maneuver	-	-	-	-	439	-
Stage 1	-	-	-	-	678	-
Stage 2	-	-	-	-	800	-
Approach	EB	WB	SB			
HCM Control Delay, s	0	0	18.5			
HCM LOS						C
Minor Lane/Major Mvmt	EBT	WBT	SBLn1			
Capacity (veh/h)	-	-	576			
HCM Lane V/C Ratio	-	-	0.547			
HCM Control Delay (s)	-	-	18.5			
HCM Lane LOS	-	-	C			
HCM 95th %tile Q(veh)	-	-	3.3			

Intersection												
Int Delay, s/veh	1.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↗			↕				
Traffic Vol, veh/h	142	149	0	0	392	36	0	0	0	0	0	0
Future Vol, veh/h	142	149	0	0	392	36	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	16965	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	92	92	95	95	92	92	92	95	92	95
Heavy Vehicles, %	24	23	2	2	23	42	2	2	2	2	2	2
Mvmt Flow	149	157	0	0	413	38	0	0	0	0	0	0

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	451	0	-
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	4.34	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	2.416	-	-
Pot Cap-1 Maneuver	1003	0	0
Stage 1	-	0	0
Stage 2	-	0	0
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1003	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	4.5	0	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	WBT	WBR
Capacity (veh/h)	-	1003	-	-	-
HCM Lane V/C Ratio	-	0.149	-	-	-
HCM Control Delay (s)	0	9.2	0	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	-	0.5	-	-	-

Intersection						
Int Delay, s/veh	19.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	Y			↑	↑	
Traffic Vol, veh/h	69	81	398	379	110	31
Future Vol, veh/h	69	81	398	379	110	31
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	9	3	7	35	19	2
Mvmt Flow	75	88	433	412	120	34

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1415	137	154	0	-	0
Stage 1	137	-	-	-	-	-
Stage 2	1278	-	-	-	-	-
Critical Hdwy	6.49	6.23	4.17	-	-	-
Critical Hdwy Stg 1	5.49	-	-	-	-	-
Critical Hdwy Stg 2	5.49	-	-	-	-	-
Follow-up Hdwy	3.581	3.327	2.263	-	-	-
Pot Cap-1 Maneuver	146	909	1396	-	-	-
Stage 1	873	-	-	-	-	-
Stage 2	253	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	87	909	1396	-	-	-
Mov Cap-2 Maneuver	87	-	-	-	-	-
Stage 1	522	-	-	-	-	-
Stage 2	253	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	113	4.5	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1396	-	170	-	-
HCM Lane V/C Ratio	0.31	-	0.959	-	-
HCM Control Delay (s)	8.7	0	113	-	-
HCM Lane LOS	A	A	F	-	-
HCM 95th %tile Q(veh)	1.3	-	7.4	-	-

HCM 6th Signalized Intersection Summary

5: I-15 SB On-ramp/I-15 SB Off-ramp & Foothill Blvd/Foothill Blvd

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↗		↑↑↑	↗				↘	↕	↗
Traffic Volume (veh/h)	0	1810	634	0	2032	304	0	0	0	190	0	411
Future Volume (veh/h)	0	1810	634	0	2032	304	0	0	0	190	0	411
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1786	1772	0	1786	1758				1702	1772	1716
Adj Flow Rate, veh/h	0	1866	0	0	2095	0				131	0	494
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97				0.97	0.97	0.97
Percent Heavy Veh, %	0	1	2	0	1	3				7	2	6
Cap, veh/h	0	3454		0	3454					329	0	589
Arrive On Green	0.00	0.71	0.00	0.00	0.71	0.00				0.20	0.00	0.20
Sat Flow, veh/h	0	5036	1502	0	5036	1490				1621	0	2908
Grp Volume(v), veh/h	0	1866	0	0	2095	0				131	0	494
Grp Sat Flow(s),veh/h/ln	0	1625	1502	0	1625	1490				1621	0	1454
Q Serve(g_s), s	0.0	16.3	0.0	0.0	19.8	0.0				6.3	0.0	14.7
Cycle Q Clear(g_c), s	0.0	16.3	0.0	0.0	19.8	0.0				6.3	0.0	14.7
Prop In Lane	0.00		1.00	0.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	3454		0	3454					432	0	775
V/C Ratio(X)	0.00	0.54		0.00	0.61					0.40	0.00	0.84
Avail Cap(c_a), veh/h	0	3454		0	3454					432	0	775
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.00	0.00	0.59	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	6.2	0.0	0.0	6.7	0.0				31.1	0.0	34.5
Incr Delay (d2), s/veh	0.0	0.6	0.0	0.0	0.5	0.0				0.8	0.0	6.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	3.7	0.0	0.0	4.4	0.0				2.5	0.0	5.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	6.8	0.0	0.0	7.2	0.0				31.9	0.0	40.7
LnGrp LOS	A	A		A	A					C	A	D
Approach Vol, veh/h		1866	A		2095	A					625	
Approach Delay, s/veh		6.8			7.2						38.9	
Approach LOS		A			A						D	
Timer - Assigned Phs		2		4		6						
Phs Duration (G+Y+Rc), s		67.8		22.2		67.8						
Change Period (Y+Rc), s		4.0		4.0		4.0						
Max Green Setting (Gmax), s		58.0		24.0		58.0						
Max Q Clear Time (g_c+I1), s		18.3		16.7		21.8						
Green Ext Time (p_c), s		18.5		1.6		20.9						

Intersection Summary

HCM 6th Ctrl Delay	11.3
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th Signalized Intersection Summary

6: I-15 NB Off-ramp/I-15 NB On-ramp & Foothill Blvd /Foothill Blvd

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↑		↑↑↑	↑	↑	↑↓	↑			
Traffic Volume (veh/h)	0	1468	531	0	1050	296	1286	0	646	0	0	0
Future Volume (veh/h)	0	1468	531	0	1050	296	1286	0	646	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No		No		No		No				
Adj Sat Flow, veh/h/ln	0	1772	1772	0	1772	1786	1772	1772	1786			
Adj Flow Rate, veh/h	0	1562	0	0	1117	0	1582	0	458			
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94			
Percent Heavy Veh, %	0	2	2	0	2	1	2	2	1			
Cap, veh/h	0	1868		0	1868		1772	0	795			
Arrive On Green	0.00	0.39	0.00	0.00	0.39	0.00	0.52	0.00	0.52			
Sat Flow, veh/h	0	4997	1502	0	4997	1514	3375	0	1514			
Grp Volume(v), veh/h	0	1562	0	0	1117	0	1582	0	458			
Grp Sat Flow(s),veh/h/ln	0	1612	1502	0	1612	1514	1688	0	1514			
Q Serve(g_s), s	0.0	26.3	0.0	0.0	16.6	0.0	37.7	0.0	18.6			
Cycle Q Clear(g_c), s	0.0	26.3	0.0	0.0	16.6	0.0	37.7	0.0	18.6			
Prop In Lane	0.00		1.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	0	1868		0	1868		1772	0	795			
VC Ratio(X)	0.00	0.84		0.00	0.60		0.89	0.00	0.58			
Avail Cap(c_a), veh/h	0	1868		0	1868		1988	0	891			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.00	0.79	0.00	0.00	1.00	0.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	0.0	25.0	0.0	0.0	22.0	0.0	19.1	0.0	14.6			
Incr Delay (d2), s/veh	0.0	3.7	0.0	0.0	1.4	0.0	5.2	0.0	0.7			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.0	10.2	0.0	0.0	6.3	0.0	14.3	0.0	5.9			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	28.7	0.0	0.0	23.5	0.0	24.3	0.0	15.3			
LnGrp LOS		A	C		A	C		C	A		B	
Approach Vol, veh/h		1562	A		1117	A		2040				
Approach Delay, s/veh		28.7			23.5			22.3				
Approach LOS		C			C			C				
Timer - Assigned Phs		2			6			8				
Phs Duration (G+Y+Rc), s		38.8			38.8			51.2				
Change Period (Y+Rc), s		4.0			4.0			4.0				
Max Green Setting (Gmax), s		29.0			29.0			53.0				
Max Q Clear Time (g_c+I1), s		28.3			18.6			39.7				
Green Ext Time (p_c), s		0.6			5.5			7.5				

Intersection Summary

HCM 6th Ctrl Delay	24.7
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.
 Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th Signalized Intersection Summary
7: Ontario Mills Dr./I-15 SB Ramps & Fourth St

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖↗	↑↑↑	↖	↖↗	↑↑↑	↖	↖	↑↑	↖	↖	↑↑	↖
Traffic Volume (veh/h)	430	947	51	174	864	88	198	221	89	124	239	540
Future Volume (veh/h)	430	947	51	174	864	88	198	221	89	124	239	540
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No		No		No		No		No		No
Adj Sat Flow, veh/h/ln	1588	1772	1786	1588	1758	1660	1687	1786	1786	1634	1786	1786
Adj Flow Rate, veh/h	443	976	53	179	891	91	204	228	92	128	246	557
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	1	2	1	1	3	10	1	1	1	5	1	1
Cap, veh/h	498	1823	570	484	1785	523	229	809	361	150	343	582
Arrive On Green	0.17	0.38	0.38	0.33	0.74	0.74	0.14	0.24	0.24	0.10	0.19	0.19
Sat Flow, veh/h	2933	4837	1514	2933	4799	1406	1606	3393	1514	1556	1786	3027
Grp Volume(v), veh/h	443	976	53	179	891	91	204	228	92	128	246	557
Grp Sat Flow(s),veh/h/ln	1467	1612	1514	1467	1600	1406	1606	1697	1514	1556	1786	1514
Q Serve(g_s), s	19.2	20.5	2.0	6.1	9.8	2.5	16.2	7.1	4.5	10.5	16.8	23.7
Cycle Q Clear(g_c), s	19.2	20.5	2.0	6.1	9.8	2.5	16.2	7.1	4.5	10.5	16.8	23.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	498	1823	570	484	1785	523	229	809	361	150	343	582
V/C Ratio(X)	0.89	0.54	0.09	0.37	0.50	0.17	0.89	0.28	0.26	0.85	0.72	0.96
Avail Cap(c_a), veh/h	632	1823	570	484	1785	523	334	835	373	239	343	582
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.75	0.75	0.75	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.8	31.6	11.8	38.4	11.7	10.8	54.7	40.4	19.8	57.8	49.2	52.0
Incr Delay (d2), s/veh	12.3	1.1	0.3	0.4	0.8	0.5	18.1	0.2	0.4	15.1	7.0	26.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.6	7.7	1.1	2.0	2.6	0.8	7.7	3.0	2.4	4.7	8.1	11.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	65.1	32.7	12.1	38.8	12.5	11.3	72.9	40.6	20.2	72.9	56.1	78.8
LnGrp LOS	E	C	B	D	B	B	E	D	C	E	E	E
Approach Vol, veh/h		1472			1161			524			931	
Approach Delay, s/veh		41.7			16.4			49.6			72.0	
Approach LOS		D			B			D			E	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	25.4	53.0	22.6	29.0	26.1	52.4	16.6	35.0				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	49.0	49.0	27.0	25.0	28.0	34.0	20.0	32.0				
Max Q Clear Time (g_c+10), s	22.5	22.5	18.2	25.7	21.2	11.8	12.5	9.1				
Green Ext Time (p_c), s	0.2	6.6	0.4	0.0	0.9	5.8	0.2	1.6				

Intersection Summary

HCM 6th Ctrl Delay	42.4
HCM 6th LOS	D

Notes

User approved volume balancing among the lanes for turning movement.

HCM 6th Signalized Intersection Summary

8: Fourth St & I-15 NB Ramps

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↶↷	↑↑↑	↷	↶	↑↑↑		↶	↑↑		↶	↑	↷↶
Traffic Volume (veh/h)	639	415	107	5	205	15	79	32	32	50	27	842
Future Volume (veh/h)	639	415	107	5	205	15	79	32	32	50	27	842
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No		No		No		No		No		No
Adj Sat Flow, veh/h/ln	1758	1674	1758	1632	1674	1674	1786	1758	1758	1561	1716	1702
Adj Flow Rate, veh/h	666	432	111	5	214	16	82	33	33	41	45	877
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.90	0.96
Percent Heavy Veh, %	3	9	3	12	9	9	1	3	3	17	6	7
Cap, veh/h	1238	1863	607	521	1570	115	114	113	98	100	116	1294
Arrive On Green	0.13	0.13	0.13	0.34	0.36	0.36	0.07	0.07	0.07	0.07	0.07	0.07
Sat Flow, veh/h	3248	4569	1490	1554	4343	319	1701	1691	1472	1487	1716	2884
Grp Volume(v), veh/h	666	432	111	5	149	81	82	33	33	41	45	877
Grp Sat Flow(s),veh/h/ln	1624	1523	1490	1554	1523	1616	1701	1670	1493	1487	1716	1442
Q Serve(g_s), s	25.0	11.0	8.6	0.3	4.3	4.4	6.1	2.4	2.8	3.4	3.3	0.0
Cycle Q Clear(g_c), s	25.0	11.0	8.6	0.3	4.3	4.4	6.1	2.4	2.8	3.4	3.3	0.0
Prop In Lane	1.00		1.00	1.00		0.20	1.00		0.99	1.00		1.00
Lane Grp Cap(c), veh/h	1238	1863	607	521	1101	584	114	111	100	100	116	1294
VC Ratio(X)	0.54	0.23	0.18	0.01	0.14	0.14	0.72	0.29	0.34	0.41	0.39	0.68
Avail Cap(c_a), veh/h	1238	1863	607	521	1101	584	536	527	471	183	211	1455
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.89	0.89	0.89	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	46.1	38.1	37.0	28.8	27.9	27.9	59.5	57.7	57.9	58.1	58.1	28.4
Incr Delay (d2), s/veh	0.4	0.3	0.6	0.0	0.3	0.5	8.4	1.4	2.0	2.7	2.1	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	4.3	3.3	0.1	1.5	1.7	2.9	1.1	1.1	1.4	1.5	10.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	46.5	38.3	37.6	28.8	28.1	28.4	67.8	59.2	59.9	60.8	60.2	29.5
LnGrp LOS	D	D	D	C	C	C	E	E	E	E	E	C
Approach Vol, veh/h		1209			235			148			963	
Approach Delay, s/veh		42.8			28.2			64.1			32.3	
Approach LOS		D			C			E			C	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	47.6	57.0		12.8	53.6	51.0		12.7				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	4.0	53.0		16.0	10.0	47.0		41.0				
Max Q Clear Time (g_c+1), s	12.3	13.0		5.4	27.0	6.4		8.1				
Green Ext Time (p_c), s	0.0	3.0		3.3	0.0	1.2		0.6				

Intersection Summary

HCM 6th Ctrl Delay	38.7
HCM 6th LOS	D

Notes

User approved volume balancing among the lanes for turning movement.

HCM 6th Signalized Intersection Summary
 9: Milliken Ave & I-210 WB On-ramp/I-210 WB Off-ramp

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↘ ↙	↔	↗	↘ ↙	↕			↕	
Traffic Volume (veh/h)	0	0	0	178	7	80	202	553	0	0	266	36
Future Volume (veh/h)	0	0	0	178	7	80	202	553	0	0	266	36
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach				No		No		No				
Adj Sat Flow, veh/h/ln				1554	1786	1688	1500	1786	0	0	1786	1786
Adj Flow Rate, veh/h				214	0	58	210	576	0	0	277	38
Peak Hour Factor				0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %				11	1	8	8	1	0	0	1	1
Cap, veh/h				390	0	189	420	3582	0	0	2248	300
Arrive On Green				0.13	0.00	0.13	0.30	1.00	0.00	0.00	0.52	0.52
Sat Flow, veh/h				2960	0	1430	2772	5036	0	0	4512	581
Grp Volume(v), veh/h				214	0	58	210	576	0	0	205	110
Grp Sat Flow(s),veh/h/ln				1480	0	1430	1386	1625	0	0	1625	1681
Q Serve(g_s), s				4.1	0.0	2.2	3.7	0.0	0.0	0.0	2.0	2.0
Cycle Q Clear(g_c), s				4.1	0.0	2.2	3.7	0.0	0.0	0.0	2.0	2.0
Prop In Lane				1.00		1.00	1.00		0.00	0.00		0.35
Lane Grp Cap(c), veh/h				390	0	189	420	3582	0	0	1679	869
V/C Ratio(X)				0.55	0.00	0.31	0.50	0.16	0.00	0.00	0.12	0.13
Avail Cap(c_a), veh/h				444	0	215	420	3582	0	0	1679	869
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.93	0.93	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				24.4	0.0	23.6	19.0	0.0	0.0	0.0	7.5	7.5
Incr Delay (d2), s/veh				1.2	0.0	0.9	0.9	0.1	0.0	0.0	0.1	0.3
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				1.4	0.0	0.7	1.1	0.0	0.0	0.0	0.6	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				25.6	0.0	24.5	19.9	0.1	0.0	0.0	7.6	7.8
LnGrp LOS				C	A	C	B	A	A	A	A	A
Approach Vol, veh/h						272		786			315	
Approach Delay, s/veh						25.3		5.4			7.7	
Approach LOS						C		A			A	
Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		48.1			13.1	35.0		11.9				
Change Period (Y+Rc), s		4.0			4.0	4.0		4.0				
Max Green Setting (Gmax), s		43.0			8.0	31.0		9.0				
Max Q Clear Time (g_c+I1), s		2.0			5.7	4.0		6.1				
Green Ext Time (p_c), s		4.5			0.2	2.0		0.3				

Intersection Summary

HCM 6th Ctrl Delay	9.9
HCM 6th LOS	A

Notes

User approved volume balancing among the lanes for turning movement.

HCM 6th Signalized Intersection Summary
 10: Milliken Ave & I-210 EB Off-ramp/I-210 EB On-ramp

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	153	11	362	0	0	0	0	602	240	87	298	0
Future Volume (veh/h)	153	11	362	0	0	0	0	602	240	87	298	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No						No			No		
Adj Sat Flow, veh/h/ln	1395	1786	1674				0	1688	1688	1176	1617	0
Adj Flow Rate, veh/h	110	0	437				0	627	250	91	310	0
Peak Hour Factor	0.96	0.96	0.96				0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	23	1	9				0	8	8	34	13	0
Cap, veh/h	242	0	518				0	1737	679	183	3021	0
Arrive On Green	0.18	0.00	0.18				0.00	0.53	0.53	0.17	1.00	0.00
Sat Flow, veh/h	1329	0	2837				0	3410	1272	2172	4561	0
Grp Volume(v), veh/h	110	0	437				0	590	287	91	310	0
Grp Sat Flow(s),veh/h/ln	1329	0	1418				0	1536	1459	1086	1472	0
Q Serve(g_s), s	4.4	0.0	8.9				0.0	6.7	6.8	2.3	0.0	0.0
Cycle Q Clear(g_c), s	4.4	0.0	8.9				0.0	6.7	6.8	2.3	0.0	0.0
Prop In Lane	1.00		1.00				0.00		0.87	1.00		0.00
Lane Grp Cap(c), veh/h	242	0	518				0	1638	778	183	3021	0
V/C Ratio(X)	0.45	0.00	0.84				0.00	0.36	0.37	0.50	0.10	0.00
Avail Cap(c_a), veh/h	244	0	520				0	1638	778	183	3021	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	0.99	0.99	0.00
Uniform Delay (d), s/veh	21.9	0.0	23.7				0.0	8.1	8.1	23.8	0.0	0.0
Incr Delay (d2), s/veh	1.3	0.0	12.0				0.0	0.6	1.3	2.1	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4	0.0	3.6				0.0	1.9	2.0	0.6	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.2	0.0	35.7				0.0	8.7	9.5	25.9	0.1	0.0
LnGrp LOS	C	A	D				A	A	A	C	A	A
Approach Vol, veh/h	547						877			401		
Approach Delay, s/veh	33.2						9.0			5.9		
Approach LOS	C						A			A		
Timer - Assigned Phs	1	2	4	6								
Phs Duration (G+Y+Rc), s	9.0	36.0	15.0	45.0								
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0								
Max Green Setting (Gmax), s	5.0	32.0	11.0	41.0								
Max Q Clear Time (g_c+I), s	14.3	8.8	10.9	2.0								
Green Ext Time (p_c), s	0.0	6.4	0.0	2.3								

Intersection Summary

HCM 6th Ctrl Delay	15.6
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

HCM 6th Signalized Intersection Summary

11: Milliken Ave & Foothill Blvd

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖↗	↑↑↑	↖	↖↗	↑↑↑	↖	↖↗	↑↑↑	↖	↖↗	↑↑↑	↖
Traffic Volume (veh/h)	144	1035	68	407	1463	126	266	650	275	196	360	56
Future Volume (veh/h)	144	1035	68	407	1463	126	266	650	275	196	360	56
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No		No		No		No		No		No
Adj Sat Flow, veh/h/ln	1488	1716	1421	1525	1716	1589	1538	1702	1702	1550	1674	1660
Adj Flow Rate, veh/h	153	1101	72	433	1556	134	283	691	293	209	383	60
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	9	6	27	6	6	15	5	7	7	4	9	10
Cap, veh/h	207	1875	482	294	2012	579	207	1556	383	179	1167	359
Arrive On Green	0.08	0.40	0.40	0.10	0.43	0.43	0.07	0.27	0.27	0.06	0.26	0.26
Sat Flow, veh/h	2749	4684	1204	2818	4684	1347	2841	5854	1442	2864	4569	1406
Grp Volume(v), veh/h	153	1101	72	433	1556	134	283	691	293	209	383	60
Grp Sat Flow(s),veh/h/ln	1374	1561	1204	1409	1561	1347	1420	1463	1442	1432	1523	1406
Q Serve(g_s), s	5.2	17.7	3.7	10.0	27.2	6.0	7.0	9.4	17.9	6.0	6.5	3.2
Cycle Q Clear(g_c), s	5.2	17.7	3.7	10.0	27.2	6.0	7.0	9.4	17.9	6.0	6.5	3.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	207	1875	482	294	2012	579	207	1556	383	179	1167	359
VC Ratio(X)	0.74	0.59	0.15	1.47	0.77	0.23	1.36	0.44	0.76	1.17	0.33	0.17
Avail Cap(c_a), veh/h	287	2590	666	294	2590	745	207	2748	677	179	2098	646
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.4	22.5	18.3	42.9	23.4	17.3	44.4	29.3	32.4	44.9	29.0	27.8
Incr Delay (d2), s/veh	6.3	0.3	0.1	230.4	1.1	0.2	191.6	0.2	3.2	118.9	0.2	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	5.9	0.9	12.7	9.1	1.7	7.9	3.1	6.1	5.0	2.2	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	49.7	22.8	18.5	273.3	24.5	17.5	236.0	29.5	35.6	163.8	29.2	28.0
LnGrp LOS	D	C	B	F	C	B	F	C	D	F	C	C
Approach Vol, veh/h		1326			2123			1267			652	
Approach Delay, s/veh		25.7			74.8			77.0			72.2	
Approach LOS		C			E			E			E	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	4.0	42.4	11.0	28.5	11.2	45.2	10.0	29.5				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	4.0	53.0	7.0	44.0	10.0	53.0	6.0	45.0				
Max Q Clear Time (g_c+1.2), s	4.0	19.7	9.0	8.5	7.2	29.2	8.0	19.9				
Green Ext Time (p_c), s	0.0	8.5	0.0	2.6	0.1	12.0	0.0	5.5				

Intersection Summary

HCM 6th Ctrl Delay	62.9
HCM 6th LOS	E

HCM 6th Signalized Intersection Summary

12: Milliken Ave & Fourth St

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔	↑↑↑	↗	↔↔	↑↑↑	↗	↔↔	↑↑↑	↗	↔↔	↑↑↑	↗
Traffic Volume (veh/h)	254	650	329	483	521	164	451	967	185	227	787	99
Future Volume (veh/h)	254	650	329	483	521	164	451	967	185	227	787	99
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1575	1716	1772	1588	1688	1758	1550	1716	1744	1588	1702	1702
Adj Flow Rate, veh/h	259	663	336	493	532	167	460	987	189	232	803	101
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	6	2	1	8	3	4	6	4	1	7	7
Cap, veh/h	136	1303	418	192	1368	442	188	2766	790	110	2342	290
Arrive On Green	0.05	0.28	0.28	0.07	0.30	0.30	0.07	0.47	0.47	0.04	0.44	0.44
Sat Flow, veh/h	2910	4684	1502	2933	4607	1490	2864	5902	1478	2933	5316	658
Grp Volume(v), veh/h	259	663	336	493	532	167	460	987	189	232	661	243
Grp Sat Flow(s),veh/h/ln	1455	1561	1502	1467	1536	1490	1432	1476	1478	1467	1463	1583
Q Serve(g_s), s	5.0	12.7	22.2	7.0	9.8	9.5	7.0	11.4	7.3	4.0	10.6	10.8
Cycle Q Clear(g_c), s	5.0	12.7	22.2	7.0	9.8	9.5	7.0	11.4	7.3	4.0	10.6	10.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.42
Lane Grp Cap(c), veh/h	136	1303	418	192	1368	442	188	2766	790	110	1934	698
VC Ratio(X)	1.90	0.51	0.80	2.56	0.39	0.38	2.45	0.36	0.24	2.11	0.34	0.35
Avail Cap(c_a), veh/h	136	2327	746	192	2375	768	188	2766	790	110	1934	698
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	50.8	32.4	35.8	49.8	29.8	29.7	49.8	18.1	13.3	51.3	19.7	19.7
Incr Delay (d2), s/veh	430.7	0.3	3.7	717.7	0.2	0.5	667.3	0.4	0.7	528.7	0.5	1.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	4.5	7.9	21.6	3.4	3.2	19.8	3.6	2.3	9.5	3.4	3.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	481.5	32.7	39.5	767.6	30.0	30.2	717.2	18.4	14.0	580.0	20.1	21.1
LnGrp LOS	F	C	D	F	C	C	F	B	B	F	C	C
Approach Vol, veh/h	1258			1192			1636			1136		
Approach Delay, s/veh	126.9			335.1			214.4			134.7		
Approach LOS	F			F			F			F		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	8.0	54.0	11.0	33.7	11.0	51.0	9.0	35.7				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	50.0	50.0	7.0	53.0	7.0	47.0	5.0	55.0				
Max Q Clear Time (g_c+11), s	13.4	13.4	9.0	24.2	9.0	12.8	7.0	11.8				
Green Ext Time (p_c), s	0.0	8.1	0.0	5.5	0.0	6.1	0.0	4.0				

Intersection Summary

HCM 6th Ctrl Delay	203.5
HCM 6th LOS	F

Intersection						
Int Delay, s/veh	1.4					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↗		↑↑↑	↑↑↑	↗
Traffic Vol, veh/h	0	211	0	1262	671	105
Future Vol, veh/h	0	211	0	1262	671	105
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	175
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	2	1	2	3	6	4
Mvmt Flow	0	215	0	1288	685	107

Major/Minor	Minor2	Major1	Major2		
Conflicting Flow All	-	343	-	0	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-
Critical Hdwy	-	7.12	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-
Follow-up Hdwy	-	3.91	-	-	-
Pot Cap-1 Maneuver	0	560	0	-	-
Stage 1	0	-	0	-	-
Stage 2	0	-	0	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	-	560	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	15.4	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBT EBLn1	SBT	SBR
Capacity (veh/h)	- 560	-	-
HCM Lane V/C Ratio	- 0.384	-	-
HCM Control Delay (s)	- 15.4	-	-
HCM Lane LOS	- C	-	-
HCM 95th %tile Q(veh)	- 1.8	-	-

HCM 6th Signalized Intersection Summary

14: Milliken Ave & 7th St

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↑↑↑		↖	↑↑↑	
Traffic Volume (veh/h)	254	0	225	7	0	15	377	994	7	7	816	61
Future Volume (veh/h)	254	0	225	7	0	15	377	994	7	7	816	61
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1687	1786	1786	1382	1800	1800	1620	1758	1758	1687	1716	1716
Adj Flow Rate, veh/h	257	0	227	7	0	15	381	1004	7	7	824	62
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	1	1	1	24	0	0	6	3	3	1	6	6
Cap, veh/h	381	0	359	168	0	362	161	3098	22	11	2368	178
Arrive On Green	0.24	0.00	0.24	0.24	0.00	0.24	0.10	0.63	0.63	0.01	0.53	0.53
Sat Flow, veh/h	1331	0	1514	900	0	1525	1543	4917	34	1606	4445	333
Grp Volume(v), veh/h	257	0	227	7	0	15	381	653	358	7	578	308
Grp Sat Flow(s),veh/h/ln	1331	0	1514	900	0	1525	1543	1600	1752	1606	1561	1656
Q Serve(g_s), s	17.6	0.0	12.9	0.7	0.0	0.7	10.0	9.1	9.1	0.4	10.2	10.2
Cycle Q Clear(g_c), s	18.4	0.0	12.9	13.6	0.0	0.7	10.0	9.1	9.1	0.4	10.2	10.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.02	1.00		0.20
Lane Grp Cap(c), veh/h	381	0	359	168	0	362	161	2016	1104	11	1664	882
VC Ratio(X)	0.67	0.00	0.63	0.04	0.00	0.04	2.36	0.32	0.32	0.61	0.35	0.35
Avail Cap(c_a), veh/h	858	0	901	490	0	908	161	2016	1104	67	1664	882
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.2	0.0	32.7	38.8	0.0	28.1	42.9	8.2	8.2	47.4	12.8	12.8
Incr Delay (d2), s/veh	2.1	0.0	1.8	0.1	0.0	0.0	632.2	0.4	0.8	43.4	0.6	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.8	0.0	4.8	0.2	0.0	0.3	31.9	2.6	3.0	0.3	3.2	3.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	37.3	0.0	34.6	38.9	0.0	28.2	675.1	8.7	9.0	90.8	13.4	13.9
LnGrp LOS	D	A	C	D	A	C	F	A	A	F	B	B
Approach Vol, veh/h		484			22			1392			893	
Approach Delay, s/veh		36.0			31.6			191.1			14.2	
Approach LOS		D			C			F			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	4.7	64.3		26.7	14.0	55.0		26.7				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	4.0	57.0		57.0	10.0	51.0		57.0				
Max Q Clear Time (g_c+I1), s	2.4	11.1		20.4	12.0	12.2		15.6				
Green Ext Time (p_c), s	0.0	6.9		2.4	0.0	5.8		0.1				
Intersection Summary												
HCM 6th Ctrl Delay			106.4									
HCM 6th LOS			F									

HCM 6th Signalized Intersection Summary
 15: Milliken Ave & I-10 WB Ramps/Ontario Mills Pkwy

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔	↑	↗	↔↔	↕↕	↗	↔↔	↕↕↕	↗	↔↔	↕↕↕	↗
Traffic Volume (veh/h)	273	330	127	305	246	201	307	730	384	296	976	476
Future Volume (veh/h)	273	330	127	305	246	201	307	730	384	296	976	476
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1463	1730	1702	1550	1730	1772	1538	1716	1730	1550	1730	1716
Adj Flow Rate, veh/h	290	351	135	324	262	214	327	777	409	315	1038	506
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	11	5	7	4	5	2	5	6	5	4	5	6
Cap, veh/h	439	346	288	365	542	248	389	2629	840	234	2323	804
Arrive On Green	0.16	0.20	0.20	0.13	0.16	0.16	0.05	0.15	0.15	0.08	0.39	0.39
Sat Flow, veh/h	2703	1730	1442	2864	3287	1502	2841	5902	1466	2864	5951	1454
Grp Volume(v), veh/h	290	351	135	324	262	214	327	777	409	315	1038	506
Grp Sat Flow(s),veh/h/ln	1351	1730	1442	1432	1643	1502	1420	1476	1466	1432	1488	1454
Q Serve(g_s), s	11.1	22.0	6.7	12.2	8.0	15.3	12.6	12.9	13.4	9.0	14.2	10.2
Cycle Q Clear(g_c), s	11.1	22.0	6.7	12.2	8.0	15.3	12.6	12.9	13.4	9.0	14.2	10.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	439	346	288	365	542	248	389	2629	840	234	2323	804
VC Ratio(X)	0.66	1.01	0.47	0.89	0.48	0.86	0.84	0.30	0.49	1.34	0.45	0.63
Avail Cap(c_a), veh/h	439	346	288	365	627	287	491	2629	840	234	2323	804
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.94	0.94	0.94	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.2	44.0	21.2	47.2	41.7	44.7	51.3	31.5	25.5	50.5	24.8	5.9
Incr Delay (d2), s/veh	3.7	52.1	1.2	22.5	0.7	20.8	9.7	0.3	1.9	180.7	0.6	3.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.9	14.3	2.3	5.5	3.3	7.1	5.3	5.1	5.5	9.1	5.0	3.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	46.9	96.1	22.3	69.7	42.3	65.5	61.0	31.8	27.4	231.2	25.4	9.7
LnGrp LOS	D	F	C	E	D	E	E	C	C	F	C	A
Approach Vol, veh/h		776			800			1513			1859	
Approach Delay, s/veh		64.9			59.6			36.9			56.0	
Approach LOS		E			E			D			E	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	3.0	53.0	18.0	26.0	19.1	46.9	21.9	22.1				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	9.0	49.0	14.0	22.0	19.0	39.0	15.0	21.0				
Max Q Clear Time (g_c+I1), s	11.0	15.4	14.2	24.0	14.6	16.2	13.1	17.3				
Green Ext Time (p_c), s	0.0	8.4	0.0	0.0	0.5	10.4	0.2	0.9				

Intersection Summary

HCM 6th Ctrl Delay	52.1
HCM 6th LOS	D

HCM 6th Signalized Intersection Summary

16: Milliken Ave & I-10 EB Ramps

11/03/2021



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↶↷	↷	↶↷	↑↑↑	↑↑↑	↷
Traffic Volume (veh/h)	392	111	195	1030	677	735
Future Volume (veh/h)	392	111	195	1030	677	735
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1550	1617	1176	1646	1744	1491
Adj Flow Rate, veh/h	404	114	201	1062	698	758
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	4	13	34	11	4	22
Cap, veh/h	492	235	248	4278	3630	982
Arrive On Green	0.17	0.17	0.11	0.76	0.20	0.20
Sat Flow, veh/h	2864	1371	2172	5891	6243	1264
Grp Volume(v), veh/h	404	114	201	1062	698	758
Grp Sat Flow(s),veh/h/ln	1432	1371	1086	1415	1500	1264
Q Serve(g_s), s	15.0	8.3	9.9	6.2	10.7	37.2
Cycle Q Clear(g_c), s	15.0	8.3	9.9	6.2	10.7	37.2
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	492	235	248	4278	3630	982
VC Ratio(X)	0.82	0.48	0.81	0.25	0.19	0.77
Avail Cap(c_a), veh/h	1198	573	612	4278	3630	982
HCM Platoon Ratio	1.00	1.00	1.00	1.00	0.33	0.33
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.81	0.81
Uniform Delay (d), s/veh	43.9	41.2	47.6	4.0	21.6	14.0
Incr Delay (d2), s/veh	3.5	1.5	6.2	0.1	0.1	4.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.5	6.5	2.9	1.5	4.3	23.5
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	47.4	42.7	53.8	4.2	21.7	18.8
LnGrp LOS	D	D	D	A	C	B
Approach Vol, veh/h	518			1263	1456	
Approach Delay, s/veh	46.4			12.1	20.2	
Approach LOS	D			B	C	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		87.1		22.9	16.6	70.6
Change Period (Y+Rc), s		4.0		4.0	4.0	4.0
Max Green Setting (Gmax), s		56.0		46.0	31.0	21.0
Max Q Clear Time (g_c+I1), s		8.2		17.0	11.9	39.2
Green Ext Time (p_c), s		10.1		1.9	0.6	0.0
Intersection Summary						
HCM 6th Ctrl Delay			21.2			
HCM 6th LOS			C			

Appendix E.6 - 2045 Build with Mitigation Intersection Level of Service
Calculation Worksheets

HCM 6th Signalized Intersection Summary

4: Mariposa Rd & Joshua St

11/03/2021



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↶		↶	↷	↷	
Traffic Volume (veh/h)	20	138	152	63	310	67
Future Volume (veh/h)	20	138	152	63	310	67
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1800	1800	1393	1477	1632	1632
Adj Flow Rate, veh/h	24	168	185	77	378	82
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82
Percent Heavy Veh, %	0	0	29	23	12	12
Cap, veh/h	29	205	480	784	690	150
Arrive On Green	0.18	0.18	0.53	0.53	0.53	0.53
Sat Flow, veh/h	164	1148	732	1477	1299	282
Grp Volume(v), veh/h	193	0	185	77	0	460
Grp Sat Flow(s),veh/h/ln	1318	0	732	1477	0	1581
Q Serve(g_s), s	4.4	0.0	6.9	0.8	0.0	6.0
Cycle Q Clear(g_c), s	4.4	0.0	12.9	0.8	0.0	6.0
Prop In Lane	0.12	0.87	1.00			0.18
Lane Grp Cap(c), veh/h	235	0	480	784	0	839
V/C Ratio(X)	0.82	0.00	0.39	0.10	0.00	0.55
Avail Cap(c_a), veh/h	771	0	870	1569	0	1679
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	12.2	0.0	9.1	3.6	0.0	4.8
Incr Delay (d2), s/veh	6.9	0.0	0.5	0.1	0.0	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	0.0	0.5	0.0	0.0	0.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	19.2	0.0	9.6	3.6	0.0	5.4
LnGrp LOS	B	A	A	A	A	A
Approach Vol, veh/h	193			262	460	
Approach Delay, s/veh	19.2			7.8	5.4	
Approach LOS	B			A	A	
Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		20.9		10.0		20.9
Change Period (Y+Rc), s		4.5		4.5		4.5
Max Green Setting (Gmax), s		32.9		18.1		32.9
Max Q Clear Time (g_c+I1), s		14.9		6.4		8.0
Green Ext Time (p_c), s		1.6		0.5		2.5

Intersection Summary

HCM 6th Ctrl Delay	9.0
HCM 6th LOS	A

Notes

User approved volume balancing among the lanes for turning movement.

Intersection						
Int Delay, s/veh	1.4					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↗	↘	↑↑↑	↑↑↑	↗
Traffic Vol, veh/h	0	127	43	722	775	62
Future Vol, veh/h	0	127	43	722	775	62
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	120	-	-	175
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	1	2	9	9	1
Mvmt Flow	0	134	45	760	816	65

Major/Minor	Minor2	Major1	Major2		
Conflicting Flow All	-	408	881	0	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-
Critical Hdwy	-	7.12	5.34	-	-
Critical Hdwy Stg 1	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-
Follow-up Hdwy	-	3.91	3.12	-	-
Pot Cap-1 Maneuver	0	509	447	-	-
Stage 1	0	-	-	-	-
Stage 2	0	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	-	509	447	-	-
Mov Cap-2 Maneuver	-	-	-	-	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	14.6	0.8	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	447	-	509	-	-
HCM Lane V/C Ratio	0.101	-	0.263	-	-
HCM Control Delay (s)	14	-	14.6	-	-
HCM Lane LOS	B	-	B	-	-
HCM 95th %tile Q(veh)	0.3	-	1	-	-

HCM 6th Signalized Intersection Summary

14: Milliken Ave & 7th St

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↑↑↑		↖	↑↑↑	
Traffic Volume (veh/h)	344	3	145	2	4	16	79	444	1	30	780	93
Future Volume (veh/h)	344	3	145	2	4	16	79	444	1	30	780	93
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1475	1786	1786	1037	1098	1098	1673	1688	1688	1687	1674	1674
Adj Flow Rate, veh/h	358	3	151	2	4	17	82	462	1	31	812	97
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	17	1	1	50	50	50	2	8	8	1	9	9
Cap, veh/h	458	10	524	268	64	273	101	2439	5	37	1958	233
Arrive On Green	0.35	0.35	0.35	0.35	0.35	0.35	0.06	0.51	0.51	0.02	0.47	0.47
Sat Flow, veh/h	1157	30	1488	722	183	776	1594	4747	10	1606	4139	492
Grp Volume(v), veh/h	358	0	154	2	0	21	82	299	164	31	596	313
Grp Sat Flow(s),veh/h/ln	1157	0	1518	722	0	958	1594	1536	1686	1606	1523	1585
Q Serve(g_s), s	32.0	0.0	7.9	0.2	0.0	1.6	5.5	5.7	5.7	2.1	13.8	14.0
Cycle Q Clear(g_c), s	33.6	0.0	7.9	8.1	0.0	1.6	5.5	5.7	5.7	2.1	13.8	14.0
Prop In Lane	1.00		0.98	1.00		0.81	1.00		0.01	1.00		0.31
Lane Grp Cap(c), veh/h	458	0	535	268	0	337	101	1578	866	37	1441	750
VC Ratio(X)	0.78	0.00	0.29	0.01	0.00	0.06	0.81	0.19	0.19	0.84	0.41	0.42
Avail Cap(c_a), veh/h	662	0	802	395	0	507	148	1578	866	104	1441	750
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.3	0.0	25.2	28.1	0.0	23.1	49.8	14.1	14.1	52.5	18.6	18.7
Incr Delay (d2), s/veh	3.8	0.0	0.3	0.0	0.0	0.1	18.6	0.3	0.5	37.2	0.9	1.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.2	0.0	2.8	0.0	0.0	0.4	2.6	1.8	2.1	1.2	4.6	5.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	38.1	0.0	25.5	28.1	0.0	23.2	68.4	14.4	14.6	89.7	19.5	20.4
LnGrp LOS	D	A	C	C	A	C	E	B	B	F	B	C
Approach Vol, veh/h		512			23			545			940	
Approach Delay, s/veh		34.3			23.6			22.6			22.1	
Approach LOS		C			C			C			C	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.5	59.4		42.0	10.9	55.0		42.0				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	7.0	54.0		57.0	10.0	51.0		57.0				
Max Q Clear Time (g_c+I1), s	4.1	7.7		35.6	7.5	16.0		10.1				
Green Ext Time (p_c), s	0.0	2.7		2.4	0.0	6.0		0.1				
Intersection Summary												
HCM 6th Ctrl Delay			25.3									
HCM 6th LOS			C									

HCM 6th AWSC
104: Mariposa Rd & Joshua St MIT

Intersection

Intersection Delay, s/veh 15.2

Intersection LOS C

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↙	↗	↙	↑	↗	
Traffic Vol, veh/h	20	138	152	63	310	67
Future Vol, veh/h	20	138	152	63	310	67
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.92
Heavy Vehicles, %	19	4	29	23	12	21
Mvmt Flow	24	168	185	77	378	73
Number of Lanes	1	1	1	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	2
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	2	0
Conflicting Approach Right		NB	EB
Conflicting Lanes Right	2	0	2
HCM Control Delay	10.7	11.8	19
HCM LOS	B	B	C

Lane	NBLn1	NBLn2	EBLn1	EBLn2	SBLn1
Vol Left, %	100%	0%	100%	0%	0%
Vol Thru, %	0%	100%	0%	0%	82%
Vol Right, %	0%	0%	0%	100%	18%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	152	63	20	138	377
LT Vol	152	0	20	0	0
Through Vol	0	63	0	0	310
RT Vol	0	0	0	138	67
Lane Flow Rate	185	77	24	168	451
Geometry Grp	7	7	7	7	4
Degree of Util (X)	0.34	0.128	0.049	0.271	0.678
Departure Headway (Hd)	6.606	5.997	7.271	5.795	5.412
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	545	598	493	621	672
Service Time	4.333	3.724	5.005	3.528	3.412
HCM Lane V/C Ratio	0.339	0.129	0.049	0.271	0.671
HCM Control Delay	12.7	9.6	10.4	10.7	19
HCM Lane LOS	B	A	B	B	C
HCM 95th-tile Q	1.5	0.4	0.2	1.1	5.3

HCM 6th Signalized Intersection Summary

4: Mariposa Rd & Joshua St

11/03/2021



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↶		↶	↷	↷	
Traffic Volume (veh/h)	169	150	359	337	92	60
Future Volume (veh/h)	169	150	359	337	92	60
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1800	1800	1519	1126	1266	1266
Adj Flow Rate, veh/h	172	153	366	344	94	61
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	20	48	38	38
Cap, veh/h	212	189	644	573	365	237
Arrive On Green	0.26	0.26	0.51	0.51	0.51	0.51
Sat Flow, veh/h	815	725	1056	1126	717	465
Grp Volume(v), veh/h	326	0	366	344	0	155
Grp Sat Flow(s),veh/h/ln	1545	0	1056	1126	0	1183
Q Serve(g_s), s	7.7	0.0	11.7	8.4	0.0	2.9
Cycle Q Clear(g_c), s	7.7	0.0	14.6	8.4	0.0	2.9
Prop In Lane	0.53	0.47	1.00			0.39
Lane Grp Cap(c), veh/h	402	0	644	573	0	601
V/C Ratio(X)	0.81	0.00	0.57	0.60	0.00	0.26
Avail Cap(c_a), veh/h	735	0	989	941	0	988
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	13.5	0.0	9.5	6.8	0.0	5.4
Incr Delay (d2), s/veh	4.0	0.0	0.8	1.0	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.6	0.0	1.3	0.8	0.0	0.3
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	17.5	0.0	10.3	7.8	0.0	5.6
LnGrp LOS	B	A	B	A	A	A
Approach Vol, veh/h				710	155	
Approach Delay, s/veh				9.1	5.6	
Approach LOS				A	A	
Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		24.3		14.6		24.3
Change Period (Y+Rc), s		4.5		4.5		4.5
Max Green Setting (Gmax), s		32.5		18.5		32.5
Max Q Clear Time (g_c+I1), s		16.6		9.7		4.9
Green Ext Time (p_c), s		3.2		0.7		0.8

Intersection Summary

HCM 6th Ctrl Delay	10.9
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

Intersection						
Int Delay, s/veh	1.8					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↗	↘	↑↑↑	↑↑↑	↗
Traffic Vol, veh/h	0	136	158	1705	842	118
Future Vol, veh/h	0	136	158	1705	842	118
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	200	-	-	175
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	2	1	2	3	6	4
Mvmt Flow	0	139	161	1740	859	120

Major/Minor	Minor2	Major1	Major2		
Conflicting Flow All	-	430	979	0	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-
Critical Hdwy	-	7.12	5.34	-	-
Critical Hdwy Stg 1	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-
Follow-up Hdwy	-	3.91	3.12	-	-
Pot Cap-1 Maneuver	0	492	401	-	-
Stage 1	0	-	-	-	-
Stage 2	0	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	-	492	401	-	-
Mov Cap-2 Maneuver	-	-	-	-	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	15.2	1.7	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	401	-	492	-	-
HCM Lane V/C Ratio	0.402	-	0.282	-	-
HCM Control Delay (s)	19.9	-	15.2	-	-
HCM Lane LOS	C	-	C	-	-
HCM 95th %tile Q(veh)	1.9	-	1.1	-	-

HCM 6th Signalized Intersection Summary

14: Milliken Ave & 7th St

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↑↑↑		↖	↑↑↑	
Traffic Volume (veh/h)	229	3	148	12	0	22	295	1750	9	8	904	66
Future Volume (veh/h)	229	3	148	12	0	22	295	1750	9	8	904	66
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1687	1786	1786	1382	1800	1800	1620	1758	1758	1687	1716	1716
Adj Flow Rate, veh/h	231	3	149	12	0	22	298	1768	9	8	913	67
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	1	1	1	24	0	0	6	3	3	1	6	6
Cap, veh/h	352	7	326	204	0	334	182	3177	16	13	2383	174
Arrive On Green	0.22	0.22	0.22	0.22	0.00	0.22	0.12	0.64	0.64	0.01	0.53	0.53
Sat Flow, veh/h	1323	30	1488	963	0	1525	1543	4928	25	1606	4454	326
Grp Volume(v), veh/h	231	0	152	12	0	22	298	1148	629	8	639	341
Grp Sat Flow(s),veh/h/ln	1323	0	1518	963	0	1525	1543	1600	1753	1606	1561	1657
Q Serve(g_s), s	15.7	0.0	8.1	1.0	0.0	1.1	11.0	18.6	18.6	0.5	11.2	11.2
Cycle Q Clear(g_c), s	16.7	0.0	8.1	9.1	0.0	1.1	11.0	18.6	18.6	0.5	11.2	11.2
Prop In Lane	1.00		0.98	1.00		1.00	1.00		0.01	1.00		0.20
Lane Grp Cap(c), veh/h	352	0	332	204	0	334	182	2062	1130	13	1671	886
VC Ratio(X)	0.66	0.00	0.46	0.06	0.00	0.07	1.64	0.56	0.56	0.62	0.38	0.38
Avail Cap(c_a), veh/h	869	0	926	581	0	930	182	2062	1130	69	1671	886
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.6	0.0	31.7	35.6	0.0	28.9	41.2	9.2	9.2	46.2	12.7	12.7
Incr Delay (d2), s/veh	2.1	0.0	1.0	0.1	0.0	0.1	311.8	1.1	2.0	40.0	0.7	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.1	0.0	3.0	0.2	0.0	0.4	19.7	5.2	6.0	0.3	3.5	3.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	37.7	0.0	32.7	35.8	0.0	29.0	353.0	10.3	11.2	86.2	13.4	14.0
LnGrp LOS	D	A	C	D	A	C	F	B	B	F	B	B
Approach Vol, veh/h		383			34			2075			988	
Approach Delay, s/veh		35.7			31.4			59.8			14.2	
Approach LOS		D			C			E			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	4.8	64.2		24.5	15.0	54.0		24.5				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	4.0	57.0		57.0	11.0	50.0		57.0				
Max Q Clear Time (g_c+I1), s	2.5	20.6		18.7	13.0	13.2		11.1				
Green Ext Time (p_c), s	0.0	15.4		1.7	0.0	6.6		0.2				

Intersection Summary

HCM 6th Ctrl Delay	43.9
HCM 6th LOS	D

Intersection

Intersection Delay, s/veh 17.9

Intersection LOS C

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↘	↗	↘	↗	↗	↘
Traffic Vol, veh/h	169	150	359	337	92	60
Future Vol, veh/h	169	150	359	337	92	60
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles, %	6	10	20	48	38	13
Mvmt Flow	172	153	366	344	94	61
Number of Lanes	1	1	1	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	2
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	2	0
Conflicting Approach Right		NB	EB
Conflicting Lanes Right	2	0	2
HCM Control Delay	12.9	21.4	12.4
HCM LOS	B	C	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	SBLn1
Vol Left, %	100%	0%	100%	0%	0%
Vol Thru, %	0%	100%	0%	0%	61%
Vol Right, %	0%	0%	0%	100%	39%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	359	337	169	150	152
LT Vol	359	0	169	0	0
Through Vol	0	337	0	0	92
RT Vol	0	0	0	150	60
Lane Flow Rate	366	344	172	153	155
Geometry Grp	7	7	7	7	4
Degree of Util (X)	0.68	0.636	0.357	0.268	0.287
Departure Headway (Hd)	6.683	6.659	7.448	6.299	6.668
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	542	543	483	571	540
Service Time	4.415	4.39	5.188	4.039	4.705
HCM Lane V/C Ratio	0.675	0.634	0.356	0.268	0.287
HCM Control Delay	22.5	20.3	14.3	11.3	12.4
HCM Lane LOS	C	C	B	B	B
HCM 95th-tile Q	5.1	4.4	1.6	1.1	1.2

HCM 6th Signalized Intersection Summary

4: Mariposa Rd & Joshua St

11/03/2021



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔		↔	↑	↓	↔
Traffic Volume (veh/h)	216	221	265	246	106	231
Future Volume (veh/h)	216	221	265	246	106	231
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1800	1800	1519	1126	1266	1266
Adj Flow Rate, veh/h	220	226	270	251	108	236
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	20	48	38	38
Cap, veh/h	242	249	405	591	186	406
Arrive On Green	0.32	0.32	0.52	0.52	0.52	0.52
Sat Flow, veh/h	757	778	889	1126	354	773
Grp Volume(v), veh/h	447	0	270	251	0	344
Grp Sat Flow(s),veh/h/ln	1538	0	889	1126	0	1127
Q Serve(g_s), s	16.1	0.0	17.3	7.9	0.0	12.1
Cycle Q Clear(g_c), s	16.1	0.0	29.4	7.9	0.0	12.1
Prop In Lane	0.49	0.51	1.00			0.69
Lane Grp Cap(c), veh/h	493	0	405	591	0	591
V/C Ratio(X)	0.91	0.00	0.67	0.43	0.00	0.58
Avail Cap(c_a), veh/h	547	0	405	591	0	591
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	18.9	0.0	19.5	8.4	0.0	9.4
Incr Delay (d2), s/veh	17.9	0.0	4.1	0.5	0.0	1.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.5	0.0	3.2	1.3	0.0	2.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	36.8	0.0	23.7	8.9	0.0	10.9
LnGrp LOS	D	A	C	A	A	B
Approach Vol, veh/h	447			521	344	
Approach Delay, s/veh	36.8			16.6	10.9	
Approach LOS	D			B	B	
Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		34.9		23.1		34.9
Change Period (Y+Rc), s		4.5		4.5		4.5
Max Green Setting (Gmax), s		30.4		20.6		30.4
Max Q Clear Time (g_c+I1), s		31.4		18.1		14.1
Green Ext Time (p_c), s		0.0		0.4		1.7
Intersection Summary						
HCM 6th Ctrl Delay			22.0			
HCM 6th LOS			C			

Notes

User approved volume balancing among the lanes for turning movement.

Intersection						
Int Delay, s/veh	3					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↗	↘	↑↑↑	↑↑↑	↗
Traffic Vol, veh/h	0	175	223	2037	940	168
Future Vol, veh/h	0	175	223	2037	940	168
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	200	-	-	175
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	2	1	2	3	6	4
Mvmt Flow	0	179	228	2079	959	171

Major/Minor	Minor2	Major1	Major2		
Conflicting Flow All	-	480	1130	0	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-
Critical Hdwy	-	7.12	5.34	-	-
Critical Hdwy Stg 1	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-
Follow-up Hdwy	-	3.91	3.12	-	-
Pot Cap-1 Maneuver	0	457	339	-	-
Stage 1	0	-	-	-	-
Stage 2	0	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	-	457	339	-	-
Mov Cap-2 Maneuver	-	-	-	-	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-

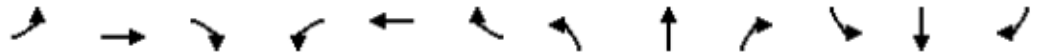
Approach	EB	NB	SB
HCM Control Delay, s	17.8	3.4	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	339	-	457	-	-
HCM Lane V/C Ratio	0.671	-	0.391	-	-
HCM Control Delay (s)	34.8	-	17.8	-	-
HCM Lane LOS	D	-	C	-	-
HCM 95th %tile Q(veh)	4.6	-	1.8	-	-

HCM 6th Signalized Intersection Summary

14: Milliken Ave & 7th St

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	257	0	200	16	0	21	414	1983	11	15	897	204
Future Volume (veh/h)	257	0	200	16	0	21	414	1983	11	15	897	204
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1687	1786	1786	1382	1800	1800	1620	1758	1758	1687	1716	1716
Adj Flow Rate, veh/h	260	0	202	16	0	21	418	2003	11	15	906	206
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	1	1	1	24	0	0	6	3	3	1	6	6
Cap, veh/h	426	0	386	232	0	389	242	2756	15	23	1593	361
Arrive On Green	0.25	0.00	0.25	0.25	0.00	0.25	0.16	0.56	0.56	0.01	0.42	0.42
Sat Flow, veh/h	1324	0	1514	920	0	1525	1543	4925	27	1606	3818	865
Grp Volume(v), veh/h	260	0	202	16	0	21	418	1301	713	15	740	372
Grp Sat Flow(s),veh/h/ln	1324	0	1514	920	0	1525	1543	1600	1753	1606	1561	1560
Q Serve(g_s), s	13.0	0.0	8.1	1.1	0.0	0.7	11.0	21.2	21.2	0.7	12.7	12.8
Cycle Q Clear(g_c), s	13.7	0.0	8.1	9.1	0.0	0.7	11.0	21.2	21.2	0.7	12.7	12.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.02	1.00		0.55
Lane Grp Cap(c), veh/h	426	0	386	232	0	389	242	1790	981	23	1303	651
VC Ratio(X)	0.61	0.00	0.52	0.07	0.00	0.05	1.73	0.73	0.73	0.65	0.57	0.57
Avail Cap(c_a), veh/h	1164	0	1230	745	0	1239	242	2325	1274	229	2225	1112
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.9	0.0	22.5	26.4	0.0	19.7	29.6	11.5	11.5	34.4	15.6	15.6
Incr Delay (d2), s/veh	1.4	0.0	1.1	0.1	0.0	0.1	344.2	0.8	1.5	26.3	0.4	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.9	0.0	2.8	0.2	0.0	0.2	26.8	5.5	6.2	0.4	3.7	3.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	26.3	0.0	23.6	26.5	0.0	19.8	373.8	12.3	13.0	60.7	16.0	16.4
LnGrp LOS	C	A	C	C	A	B	F	B	B	E	B	B
Approach Vol, veh/h		462			37			2432			1127	
Approach Delay, s/veh		25.1			22.7			74.6			16.7	
Approach LOS		C			C			E			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.0	43.3		21.9	15.0	33.3		21.9				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	10.0	51.0		57.0	11.0	50.0		57.0				
Max Q Clear Time (g_c+I1), s	2.7	23.2		15.7	13.0	14.8		11.1				
Green Ext Time (p_c), s	0.0	16.1		2.2	0.0	8.0		0.2				

Intersection Summary

HCM 6th Ctrl Delay	52.4
HCM 6th LOS	D

Intersection	
Intersection Delay, s/veh	18
Intersection LOS	C

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↘	↗	↘	↗	↗	↘
Traffic Vol, veh/h	216	221	265	245	106	231
Future Vol, veh/h	216	221	265	245	106	231
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles, %	6	10	20	48	38	19
Mvmt Flow	220	226	270	250	108	236
Number of Lanes	1	1	1	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	2
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	2	0
Conflicting Approach Right			EB
Conflicting Lanes Right	2	0	2
HCM Control Delay	15.2	18.3	21.1
HCM LOS	C	C	C

Lane	NBLn1	NBLn2	EBLn1	EBLn2	SBLn1
Vol Left, %	100%	0%	100%	0%	0%
Vol Thru, %	0%	100%	0%	0%	31%
Vol Right, %	0%	0%	0%	100%	69%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	265	245	216	221	337
LT Vol	265	0	216	0	0
Through Vol	0	245	0	0	106
RT Vol	0	0	0	221	231
Lane Flow Rate	270	250	220	226	344
Geometry Grp	7	7	7	7	4
Degree of Util (X)	0.554	0.511	0.466	0.404	0.642
Departure Headway (Hd)	7.381	7.356	7.607	6.453	6.716
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	487	490	472	555	536
Service Time	5.146	5.122	5.372	4.217	4.774
HCM Lane V/C Ratio	0.554	0.51	0.466	0.407	0.642
HCM Control Delay	19	17.6	16.9	13.6	21.1
HCM Lane LOS	C	C	C	B	C
HCM 95th-tile Q	3.3	2.9	2.4	1.9	4.5

HCM 6th Signalized Intersection Summary

4: Mariposa Rd & Joshua St

11/03/2021



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	69	81	398	379	110	31
Future Volume (veh/h)	69	81	398	379	110	31
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1800	1800	1702	1309	1533	1533
Adj Flow Rate, veh/h	75	88	433	412	120	34
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	7	35	19	19
Cap, veh/h	94	111	838	718	631	179
Arrive On Green	0.14	0.14	0.55	0.55	0.55	0.55
Sat Flow, veh/h	684	802	1184	1309	1149	326
Grp Volume(v), veh/h	164	0	433	412	0	154
Grp Sat Flow(s),veh/h/ln	1495	0	1184	1309	0	1475
Q Serve(g_s), s	3.1	0.0	8.3	6.0	0.0	1.5
Cycle Q Clear(g_c), s	3.1	0.0	9.9	6.0	0.0	1.5
Prop In Lane	0.46	0.54	1.00			0.22
Lane Grp Cap(c), veh/h	206	0	838	718	0	809
V/C Ratio(X)	0.80	0.00	0.52	0.57	0.00	0.19
Avail Cap(c_a), veh/h	937	0	1549	1503	0	1694
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	12.0	0.0	5.7	4.3	0.0	3.3
Incr Delay (d2), s/veh	6.9	0.0	0.5	0.7	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	0.0	0.1	0.1	0.0	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	18.9	0.0	6.2	5.0	0.0	3.4
LnGrp LOS	B	A	A	A	A	A
Approach Vol, veh/h	164			845	154	
Approach Delay, s/veh	18.9			5.6	3.4	
Approach LOS	B			A	A	
Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		20.3		8.5		20.3
Change Period (Y+Rc), s		4.5		4.5		4.5
Max Green Setting (Gmax), s		33.0		18.0		33.0
Max Q Clear Time (g_c+I1), s		11.9		5.1		3.5
Green Ext Time (p_c), s		3.9		0.4		0.7

Intersection Summary

HCM 6th Ctrl Delay	7.2
HCM 6th LOS	A

Notes

User approved volume balancing among the lanes for turning movement.

Intersection						
Int Delay, s/veh	2.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↗	↘	↑↑↑	↑↑↑	↗
Traffic Vol, veh/h	0	211	132	1262	671	105
Future Vol, veh/h	0	211	132	1262	671	105
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	200	-	-	175
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	2	1	2	3	6	4
Mvmt Flow	0	215	135	1288	685	107

Major/Minor	Minor2	Major1	Major2		
Conflicting Flow All	-	343	792	0	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-
Critical Hdwy	-	7.12	5.34	-	-
Critical Hdwy Stg 1	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-
Follow-up Hdwy	-	3.91	3.12	-	-
Pot Cap-1 Maneuver	0	560	493	-	-
Stage 1	0	-	-	-	-
Stage 2	0	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	-	560	493	-	-
Mov Cap-2 Maneuver	-	-	-	-	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	15.4	1.4	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	493	-	560	-	-
HCM Lane V/C Ratio	0.273	-	0.384	-	-
HCM Control Delay (s)	15	-	15.4	-	-
HCM Lane LOS	C	-	C	-	-
HCM 95th %tile Q(veh)	1.1	-	1.8	-	-

HCM 6th Signalized Intersection Summary

14: Milliken Ave & 7th St

11/03/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↑↑↑		↖	↑↑↑	
Traffic Volume (veh/h)	254	0	225	7	0	15	245	1238	7	7	816	61
Future Volume (veh/h)	254	0	225	7	0	15	245	1238	7	7	816	61
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1687	1786	1786	1382	1800	1800	1620	1758	1758	1687	1716	1716
Adj Flow Rate, veh/h	257	0	227	7	0	15	247	1251	7	7	824	62
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	1	1	1	24	0	0	6	3	3	1	6	6
Cap, veh/h	381	0	359	168	0	362	161	3103	17	11	2368	178
Arrive On Green	0.24	0.00	0.24	0.24	0.00	0.24	0.10	0.63	0.63	0.01	0.53	0.53
Sat Flow, veh/h	1331	0	1514	900	0	1525	1543	4925	28	1606	4445	333
Grp Volume(v), veh/h	257	0	227	7	0	15	247	813	445	7	578	308
Grp Sat Flow(s),veh/h/ln	1331	0	1514	900	0	1525	1543	1600	1753	1606	1561	1656
Q Serve(g_s), s	17.6	0.0	12.9	0.7	0.0	0.7	10.0	12.1	12.1	0.4	10.2	10.2
Cycle Q Clear(g_c), s	18.4	0.0	12.9	13.6	0.0	0.7	10.0	12.1	12.1	0.4	10.2	10.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.02	1.00		0.20
Lane Grp Cap(c), veh/h	381	0	359	168	0	362	161	2016	1105	11	1664	882
VC Ratio(X)	0.67	0.00	0.63	0.04	0.00	0.04	1.53	0.40	0.40	0.61	0.35	0.35
Avail Cap(c_a), veh/h	858	0	901	490	0	908	161	2016	1105	67	1664	882
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.2	0.0	32.7	38.8	0.0	28.1	42.9	8.8	8.8	47.4	12.8	12.8
Incr Delay (d2), s/veh	2.1	0.0	1.8	0.1	0.0	0.0	268.1	0.6	1.1	43.4	0.6	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.8	0.0	4.8	0.2	0.0	0.3	15.6	3.5	3.9	0.3	3.2	3.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	37.3	0.0	34.6	38.9	0.0	28.2	311.0	9.4	9.9	90.8	13.4	13.9
LnGrp LOS	D	A	C	D	A	C	F	A	A	F	B	B
Approach Vol, veh/h		484			22			1505			893	
Approach Delay, s/veh		36.0			31.6			59.0			14.2	
Approach LOS		D			C			E			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	4.7	64.3		26.7	14.0	55.0		26.7				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	4.0	57.0		57.0	10.0	51.0		57.0				
Max Q Clear Time (g_c+I1), s	2.4	14.1		20.4	12.0	12.2		15.6				
Green Ext Time (p_c), s	0.0	9.4		2.4	0.0	5.8		0.1				
Intersection Summary												
HCM 6th Ctrl Delay				41.2								
HCM 6th LOS				D								

Intersection						
Intersection Delay, s/veh 17.6						
Intersection LOS C						

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↙	↗	↙	↑	↗	
Traffic Vol, veh/h	69	81	398	379	110	31
Future Vol, veh/h	69	81	398	379	110	31
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	9	3	7	35	19	2
Mvmt Flow	75	88	433	412	120	34
Number of Lanes	1	1	1	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	2
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	2	0
Conflicting Approach Right		NB	EB
Conflicting Lanes Right	2	0	2
HCM Control Delay	10.7	20.1	10.8
HCM LOS	B	C	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	SBLn1
Vol Left, %	100%	0%	100%	0%	0%
Vol Thru, %	0%	100%	0%	0%	78%
Vol Right, %	0%	0%	0%	100%	22%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	398	379	69	81	141
LT Vol	398	0	69	0	0
Through Vol	0	379	0	0	110
RT Vol	0	0	0	81	31
Lane Flow Rate	433	412	75	88	153
Geometry Grp	7	7	7	7	4
Degree of Util (X)	0.696	0.66	0.155	0.15	0.247
Departure Headway (Hd)	5.792	5.768	7.436	6.116	5.808
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	619	622	479	581	612
Service Time	3.575	3.551	5.236	3.914	3.903
HCM Lane V/C Ratio	0.7	0.662	0.157	0.151	0.25
HCM Control Delay	20.9	19.2	11.6	10	10.8
HCM Lane LOS	C	C	B	A	B
HCM 95th-tile Q	5.5	4.9	0.5	0.5	1

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Appendix F

95th Percentile Queuing Reports

See next page for notes on this appendix.

Appendix Note:

For the content in this appendix, refer to the table below for corresponding intersection numbers presented in the report.

Intersection Number in Appendix	Intersection Name	Intersection Number in Report
1	Highway 395 / Joshua St	1
2	Interstate 15 SB off-ramp / Joshua St	2
3	Interstate 15 NB on-ramp / Joshua St	3
4	Mariposa Rd / Joshua St	4
5	Interstate 15 SB ramps / Foothill Blvd	13
6	Interstate 15 NB ramps / Foothill Blvd	14
7	Interstate 15 SB ramps / Fourth St	15
8	Interstate 15 NB ramps / Fourth St	16
9	Milliken Ave / State Route 210 WB Ramps	5
10	Milliken Ave / State Route 210 EB Ramps	6
11	Milliken Ave / Foothill Blvd	7
12	Milliken Ave / Fourth St	10
13	Milliken Ave / Azusa Ct	8
14	Milliken Ave / 7th St	9
15	Milliken Ave / Interstate 10 WB Ramps	11
16	Milliken Ave / Interstate 10 EB Ramps	12

Appendix F.1 - 2025 No Build 95th Percentile Queueing Reports

Queues

5: I-15 SB On-ramp/I-15 SB Off-ramp & Foothill Blvd/Foothill Blvd

11/04/2021



Lane Group	EBT	EBR	WBT	WBR	SBL	SBT	SBR
Lane Group Flow (vph)	798	783	1118	602	337	483	482
v/c Ratio	0.36	0.52	0.49	0.41	0.53	0.81	0.78
Control Delay	15.5	1.3	18.7	1.0	22.6	33.1	30.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.5	1.3	18.7	1.0	22.6	33.1	30.6
Queue Length 50th (ft)	100	0	151	8	144	234	218
Queue Length 95th (ft)	128	0	202	11	228	#425	#391
Internal Link Dist (ft)	771		756			1518	
Turn Bay Length (ft)					160		160
Base Capacity (vph)	2194	1500	2301	1471	634	594	615
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.36	0.52	0.49	0.41	0.53	0.81	0.78

Intersection Summary

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

Queue shown is maximum after two cycles.

Queues

6: I-15 NB Off-ramp/I-15 NB On-ramp & Foothill Blvd /Foothill Blvd

11/04/2021



Lane Group	EBT	EBR	WBT	WBR	NBL	NBT	NBR
Lane Group Flow (vph)	1031	142	872	262	449	442	385
v/c Ratio	0.69	0.10	0.62	0.19	0.47	0.49	0.46
Control Delay	24.4	0.1	28.8	0.3	12.2	12.2	11.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	24.4	0.1	28.8	0.3	12.2	12.2	11.8
Queue Length 50th (ft)	205	0	154	0	137	138	112
Queue Length 95th (ft)	249	m0	194	0	209	216	180
Internal Link Dist (ft)	756		538			1373	
Turn Bay Length (ft)				290			430
Base Capacity (vph)	1498	1378	1402	1366	946	902	835
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.69	0.10	0.62	0.19	0.47	0.49	0.46

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Queues

7: Ontario Mills Dr./I-15 SB Ramps & Fourth St

11/04/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	233	251	76	173	1015	186	83	66	45	151	373	186
v/c Ratio	0.70	0.11	0.09	0.60	0.43	0.29	0.57	0.32	0.20	0.71	0.70	0.56
Control Delay	65.0	16.0	1.6	65.7	21.9	8.0	70.5	61.9	2.0	68.1	34.3	13.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	65.0	16.0	1.6	65.7	21.9	8.0	70.5	61.9	2.0	68.1	34.3	13.3
Queue Length 50th (ft)	97	35	0	73	196	12	68	28	0	123	85	0
Queue Length 95th (ft)	137	64	13	m96	309	m87	120	52	0	187	136	74
Internal Link Dist (ft)		794			836			429			292	
Turn Bay Length (ft)	675		250	260		120	250		275	160		160
Base Capacity (vph)	424	2326	871	368	2336	640	205	395	304	288	818	455
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.55	0.11	0.09	0.47	0.43	0.29	0.40	0.17	0.15	0.52	0.46	0.41

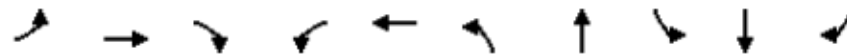
Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Queues

8: Fourth St & I-15 NB Ramps

11/04/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	156	267	30	16	366	56	60	200	204	998
v/c Ratio	0.95	0.10	0.04	0.26	0.17	0.57	0.20	1.14	1.15	0.74
Control Delay	122.1	13.4	1.9	67.5	11.8	75.9	26.2	160.6	161.0	6.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	122.1	13.4	1.9	67.5	11.8	75.9	26.2	160.6	161.0	6.3
Queue Length 50th (ft)	70	36	1	13	44	46	10	~206	~211	0
Queue Length 95th (ft)	#142	52	m6	38	70	89	30	#372	#380	57
Internal Link Dist (ft)		836			507		161		492	
Turn Bay Length (ft)	200		125	245				300		200
Base Capacity (vph)	165	2564	743	71	2134	310	861	175	178	1348
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.95	0.10	0.04	0.23	0.17	0.18	0.07	1.14	1.15	0.74

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Queues

9: Milliken Ave & I-210 WB On-ramp/I-210 WB Off-ramp

11/04/2021



Lane Group	WBL	WBT	WBR	NBL	NBT	SBT
Lane Group Flow (vph)	74	73	52	255	211	579
v/c Ratio	0.41	0.39	0.21	0.63	0.06	0.22
Control Delay	31.3	28.8	4.6	26.7	1.5	6.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	31.3	28.8	4.6	26.7	1.5	6.3
Queue Length 50th (ft)	26	25	0	36	5	31
Queue Length 95th (ft)	63	62	13	57	6	47
Internal Link Dist (ft)		663			397	318
Turn Bay Length (ft)	550		260	150		
Base Capacity (vph)	181	189	253	421	3753	2645
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.41	0.39	0.21	0.61	0.06	0.22

Intersection Summary

Queues

10: Milliken Ave & I-210 EB Off-ramp/I-210 EB On-ramp

11/04/2021



Lane Group	EBL	EBT	EBR	NBT	SBL	SBT
Lane Group Flow (vph)	63	95	94	730	118	539
v/c Ratio	0.33	0.39	0.37	0.24	0.45	0.15
Control Delay	29.0	13.9	10.9	3.6	27.6	1.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	29.0	13.9	10.9	3.6	27.6	1.8
Queue Length 50th (ft)	22	5	0	23	22	12
Queue Length 95th (ft)	55	45	36	39	44	17
Internal Link Dist (ft)		584		352		397
Turn Bay Length (ft)	500		420		125	
Base Capacity (vph)	189	243	257	3056	268	3717
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.33	0.39	0.37	0.24	0.44	0.15
Intersection Summary						

Queues

15: Milliken Ave & I-10 WB Ramps/Ontario Mills Pkwy

11/04/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	42	39	27	244	53	197	108	442	183	91	353	190
v/c Ratio	0.37	0.26	0.09	0.77	0.13	0.64	0.51	0.13	0.21	0.37	0.11	0.22
Control Delay	51.1	40.6	0.6	61.5	34.9	15.3	33.0	4.1	0.6	43.5	10.7	1.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	51.1	40.6	0.6	61.5	34.9	15.3	33.0	4.1	0.6	43.5	10.7	1.5
Queue Length 50th (ft)	12	21	0	~92	14	0	27	14	0	25	27	0
Queue Length 95th (ft)	28	48	0	#162	29	56	47	21	0	49	44	14
Internal Link Dist (ft)		362			601			826			499	
Turn Bay Length (ft)	490		290	200		245	600		175	500		100
Base Capacity (vph)	114	258	388	315	677	391	232	3311	883	245	3110	878
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.37	0.15	0.07	0.77	0.08	0.50	0.47	0.13	0.21	0.37	0.11	0.22

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

Queues

16: Milliken Ave & I-10 EB Ramps

11/04/2021



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	400	269	211	359	489	158
v/c Ratio	0.68	0.52	0.64	0.10	0.20	0.21
Control Delay	37.8	7.3	43.6	5.3	13.6	1.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	37.8	7.3	43.6	5.3	13.6	1.2
Queue Length 50th (ft)	108	0	58	16	41	0
Queue Length 95th (ft)	131	45	83	29	62	m0
Internal Link Dist (ft)	1479			496	826	
Turn Bay Length (ft)		700	300			90
Base Capacity (vph)	923	655	591	3540	2504	855
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.43	0.41	0.36	0.10	0.20	0.18

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Queues

5: I-15 SB On-ramp/I-15 SB Off-ramp & Foothill Blvd/Foothill Blvd

11/04/2021



Lane Group	EBT	EBR	WBT	WBR	SBL	SBT	SBR
Lane Group Flow (vph)	2503	983	2043	524	167	279	282
v/c Ratio	0.81	0.65	0.67	0.35	0.39	0.75	0.73
Control Delay	15.3	2.2	10.3	0.4	29.7	42.3	40.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.3	2.2	10.3	0.4	29.7	42.3	40.9
Queue Length 50th (ft)	354	0	207	0	81	151	146
Queue Length 95th (ft)	424	0	268	m0	142	#284	#268
Internal Link Dist (ft)	771		756			1518	
Turn Bay Length (ft)					160		160
Base Capacity (vph)	3081	1515	3051	1500	425	374	386
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.81	0.65	0.67	0.35	0.39	0.75	0.73

Intersection Summary

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

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Queues

6: I-15 NB Off-ramp/I-15 NB On-ramp & Foothill Blvd /Foothill Blvd

11/04/2021



Lane Group	EBT	EBR	WBT	WBR	NBL	NBT	NBR
Lane Group Flow (vph)	2319	341	1437	1088	584	570	472
v/c Ratio	1.38	0.24	0.87	0.72	0.65	0.66	0.59
Control Delay	198.2	0.2	34.4	3.0	17.6	17.9	16.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	198.2	0.2	34.4	3.0	17.6	17.9	16.2
Queue Length 50th (ft)	~641	0	276	0	223	224	167
Queue Length 95th (ft)	#738	m0	337	0	344	354	269
Internal Link Dist (ft)	756		538			1373	
Turn Bay Length (ft)				290			430
Base Capacity (vph)	1675	1404	1659	1515	902	862	797
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	1.38	0.24	0.87	0.72	0.65	0.66	0.59

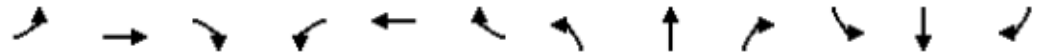
Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.

Queues

7: Ontario Mills Dr./I-15 SB Ramps & Fourth St

11/04/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	670	1005	68	95	726	267	130	222	42	83	386	203
v/c Ratio	0.84	0.36	0.07	0.50	0.44	0.43	0.68	0.60	0.16	0.52	0.78	0.32
Control Delay	53.7	15.1	2.8	68.0	34.0	12.2	72.4	61.5	1.3	64.0	40.1	5.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	53.7	15.1	2.8	68.0	34.0	12.2	72.4	61.5	1.3	64.0	40.1	5.4
Queue Length 50th (ft)	271	157	0	40	176	46	106	95	0	66	91	23
Queue Length 95th (ft)	327	211	19	m69	252	131	172	134	0	119	148	46
Internal Link Dist (ft)		794			836			429			292	
Turn Bay Length (ft)	675		250	260		120	250		275	160		160
Base Capacity (vph)	922	2767	918	190	1645	628	232	559	341	178	577	683
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.73	0.36	0.07	0.50	0.44	0.43	0.56	0.40	0.12	0.47	0.67	0.30

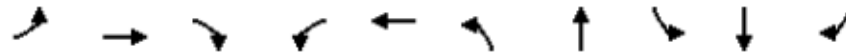
Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Queues

8: Fourth St & I-15 NB Ramps

11/04/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	641	476	49	31	600	59	111	96	99	640
v/c Ratio	2.54	0.17	0.05	0.32	0.23	0.45	0.37	0.72	0.66	0.62
Control Delay	728.1	1.6	0.1	66.0	10.2	67.4	34.3	84.4	76.4	5.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	728.1	1.6	0.1	66.0	10.2	67.4	34.3	84.4	76.4	5.9
Queue Length 50th (ft)	~477	14	0	26	67	48	25	83	85	0
Queue Length 95th (ft)	#601	19	0	58	97	93	54	#155	149	52
Internal Link Dist (ft)		836			507		161		492	
Turn Bay Length (ft)	200		125	245				300		200
Base Capacity (vph)	252	2795	969	103	2583	503	1011	157	176	1039
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	2.54	0.17	0.05	0.30	0.23	0.12	0.11	0.61	0.56	0.62

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

Queues

9: Milliken Ave & I-210 WB On-ramp/I-210 WB Off-ramp

11/04/2021



Lane Group	WBL	WBT	WBR	NBL	NBT	SBT
Lane Group Flow (vph)	100	102	77	202	626	620
v/c Ratio	0.51	0.49	0.28	0.64	0.17	0.22
Control Delay	33.3	30.9	8.1	34.2	1.0	6.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	33.3	30.9	8.1	34.2	1.0	6.3
Queue Length 50th (ft)	35	35	0	38	6	35
Queue Length 95th (ft)	78	80	27	#76	7	52
Internal Link Dist (ft)		663			397	318
Turn Bay Length (ft)	550		260	150		
Base Capacity (vph)	207	217	279	318	3778	2789
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.48	0.47	0.28	0.64	0.17	0.22

Intersection Summary

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

Queues

10: Milliken Ave & I-210 EB Off-ramp/I-210 EB On-ramp

11/04/2021



Lane Group	EBL	EBT	EBR	NBT	SBL	SBT
Lane Group Flow (vph)	103	101	90	1156	129	609
v/c Ratio	0.52	0.49	0.35	0.37	0.45	0.16
Control Delay	34.8	30.8	10.6	4.2	28.9	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	34.8	30.8	10.6	4.2	28.9	0.3
Queue Length 50th (ft)	36	34	0	42	24	1
Queue Length 95th (ft)	#89	79	35	63	48	1
Internal Link Dist (ft)		584		352		397
Turn Bay Length (ft)	500		420		125	
Base Capacity (vph)	198	208	259	3088	289	3753
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.52	0.49	0.35	0.37	0.45	0.16

Intersection Summary

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

Queue shown is maximum after two cycles.

Queues

15: Milliken Ave & I-10 WB Ramps/Ontario Mills Pkwy

11/04/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	192	190	86	608	247	143	404	1100	288	352	936	694
v/c Ratio	0.28	0.85	0.26	0.93	0.61	0.55	0.86	0.47	0.34	1.21	0.49	0.81
Control Delay	39.2	82.6	1.9	67.2	56.3	14.4	63.8	32.3	4.3	166.0	33.9	19.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	39.2	82.6	1.9	67.2	56.3	14.4	63.8	32.3	4.3	166.0	33.9	19.2
Queue Length 50th (ft)	61	145	0	237	97	0	141	206	79	~171	173	192
Queue Length 95th (ft)	91	#233	0	#294	124	37	188	222	27	#237	189	259
Internal Link Dist (ft)		362			601			826			499	
Turn Bay Length (ft)	490		290	200		245	600		175	500		100
Base Capacity (vph)	678	233	336	668	536	291	495	2329	842	292	1903	859
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.28	0.82	0.26	0.91	0.46	0.49	0.82	0.47	0.34	1.21	0.49	0.81

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

Queues

16: Milliken Ave & I-10 EB Ramps

11/04/2021



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	424	227	338	1109	705	690
v/c Ratio	0.46	0.38	0.78	0.33	0.31	0.70
Control Delay	32.3	4.8	57.6	13.5	20.4	21.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	32.3	4.8	57.6	13.5	20.4	21.9
Queue Length 50th (ft)	123	0	128	130	115	534
Queue Length 95th (ft)	156	48	170	172	m155	m614
Internal Link Dist (ft)	1479			496	826	
Turn Bay Length (ft)		700	300			90
Base Capacity (vph)	1181	696	660	3394	2244	1068
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.36	0.33	0.51	0.33	0.31	0.65

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Queues

5: I-15 SB On-ramp/I-15 SB Off-ramp & Foothill Blvd/Foothill Blvd

11/04/2021



Lane Group	EBT	EBR	WBT	WBR	SBL	SBT	SBR
Lane Group Flow (vph)	1309	913	1339	599	380	379	381
v/c Ratio	0.42	0.60	0.44	0.40	0.89	0.92	0.90
Control Delay	8.8	1.8	8.0	0.9	56.9	55.8	52.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	8.8	1.8	8.0	0.9	56.9	55.8	52.2
Queue Length 50th (ft)	123	0	91	0	217	194	185
Queue Length 95th (ft)	151	0	149	m6	#392	#387	#367
Internal Link Dist (ft)	771		756			1518	
Turn Bay Length (ft)					160		160
Base Capacity (vph)	3081	1515	3051	1500	425	413	424
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.42	0.60	0.44	0.40	0.89	0.92	0.90

Intersection Summary

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

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Queues

6: I-15 NB Off-ramp/I-15 NB On-ramp & Foothill Blvd /Foothill Blvd

11/04/2021



Lane Group	EBT	EBR	WBT	WBR	NBL	NBT	NBR
Lane Group Flow (vph)	1413	299	1348	1032	329	329	302
v/c Ratio	0.84	0.21	0.81	0.68	0.36	0.39	0.38
Control Delay	28.1	0.3	31.6	2.5	12.1	12.1	12.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	28.1	0.3	31.6	2.5	12.1	12.1	12.0
Queue Length 50th (ft)	285	0	252	0	100	102	88
Queue Length 95th (ft)	m339	m0	310	0	158	165	147
Internal Link Dist (ft)	756		538			1373	
Turn Bay Length (ft)				290			430
Base Capacity (vph)	1675	1404	1659	1515	902	842	797
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.84	0.21	0.81	0.68	0.36	0.39	0.38

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Queues

7: Ontario Mills Dr./I-15 SB Ramps & Fourth St

11/04/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	696	1300	92	105	856	235	122	154	22	81	337	180
v/c Ratio	0.85	0.46	0.10	0.49	0.51	0.39	0.67	0.41	0.08	0.52	0.74	0.29
Control Delay	53.3	15.6	2.9	64.0	32.1	11.5	72.4	58.2	0.6	63.9	36.0	5.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	53.3	15.6	2.9	64.0	32.1	11.5	72.4	58.2	0.6	63.9	36.0	5.4
Queue Length 50th (ft)	281	213	0	45	213	49	99	66	0	64	69	20
Queue Length 95th (ft)	339	280	25	m75	296	138	164	100	0	116	123	45
Internal Link Dist (ft)		794			836			429			292	
Turn Bay Length (ft)	675		250	260		120	250		275	160		160
Base Capacity (vph)	943	2821	941	213	1692	607	221	519	324	175	532	667
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.74	0.46	0.10	0.49	0.51	0.39	0.55	0.30	0.07	0.46	0.63	0.27

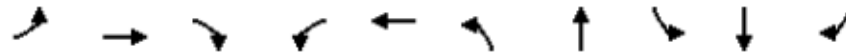
Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Queues

8: Fourth St & I-15 NB Ramps

11/04/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	786	590	71	35	627	95	137	121	125	669
v/c Ratio	3.12	0.22	0.08	0.43	0.25	0.59	0.37	0.82	0.75	0.62
Control Delay	982.6	2.3	0.2	75.6	12.5	69.7	32.4	94.9	81.6	5.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	982.6	2.3	0.2	75.6	12.5	69.7	32.4	94.9	81.6	5.7
Queue Length 50th (ft)	~613	14	0	29	80	78	32	105	108	0
Queue Length 95th (ft)	#743	17	0	66	115	131	62	#212	#203	52
Internal Link Dist (ft)		836			507		161		492	
Turn Bay Length (ft)	200		125	245				300		200
Base Capacity (vph)	252	2713	943	86	2466	503	1021	157	179	1080
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	3.12	0.22	0.08	0.41	0.25	0.19	0.13	0.77	0.70	0.62

Intersection Summary

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

Queues

9: Milliken Ave & I-210 WB On-ramp/I-210 WB Off-ramp

11/04/2021



Lane Group	WBL	WBT	WBR	NBL	NBT	SBT
Lane Group Flow (vph)	107	108	84	215	665	440
v/c Ratio	0.54	0.52	0.31	0.68	0.18	0.16
Control Delay	34.7	32.1	9.1	34.3	0.9	6.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	34.7	32.1	9.1	34.3	0.9	6.0
Queue Length 50th (ft)	37	37	0	40	6	23
Queue Length 95th (ft)	#87	84	31	#82	6	36
Internal Link Dist (ft)		663			397	318
Turn Bay Length (ft)	550		260	150		
Base Capacity (vph)	207	216	279	318	3775	2784
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.52	0.50	0.30	0.68	0.18	0.16

Intersection Summary

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

Queues

10: Milliken Ave & I-210 EB Off-ramp/I-210 EB On-ramp

11/04/2021



Lane Group	EBL	EBT	EBR	NBT	SBL	SBT
Lane Group Flow (vph)	67	105	282	1168	121	401
v/c Ratio	0.34	0.46	0.66	0.41	0.42	0.11
Control Delay	28.9	23.2	12.8	5.3	30.1	0.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	28.9	23.2	12.8	5.3	30.1	0.4
Queue Length 50th (ft)	23	23	0	52	23	1
Queue Length 95th (ft)	57	68	#84	75	m46	1
Internal Link Dist (ft)		584		352		397
Turn Bay Length (ft)	500		420		125	
Base Capacity (vph)	198	228	425	2855	289	3498
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.34	0.46	0.66	0.41	0.42	0.11

Intersection Summary

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

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Queues

15: Milliken Ave & I-10 WB Ramps/Ontario Mills Pkwy

11/04/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	193	253	231	671	208	214	372	1367	293	299	893	531
v/c Ratio	0.26	1.09	0.57	1.00	0.55	0.70	0.82	0.60	0.36	1.02	0.47	0.60
Control Delay	38.0	132.4	12.2	82.0	55.4	19.5	65.2	32.5	4.4	112.0	33.7	9.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	38.0	132.4	12.2	82.0	55.4	19.5	65.2	32.5	4.4	112.0	33.7	9.6
Queue Length 50th (ft)	61	~220	0	~271	82	0	131	234	19	~127	162	98
Queue Length 95th (ft)	92	#343	53	#345	106	55	173	237	27	#192	179	136
Internal Link Dist (ft)		362			601			826			499	
Turn Bay Length (ft)	490		290	200		245	600		175	500		100
Base Capacity (vph)	729	233	402	668	536	341	495	2272	815	292	1882	892
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.26	1.09	0.57	1.00	0.39	0.63	0.75	0.60	0.36	1.02	0.47	0.60

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

Queues

16: Milliken Ave & I-10 EB Ramps

11/04/2021



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	716	204	505	1023	799	737
v/c Ratio	0.65	0.31	0.87	0.34	0.55	0.84
Control Delay	32.4	4.3	58.3	16.3	34.0	35.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	32.4	4.3	58.3	16.3	34.0	35.8
Queue Length 50th (ft)	219	0	190	131	149	569
Queue Length 95th (ft)	283	46	250	156	m175	m654
Internal Link Dist (ft)	1479			496	826	
Turn Bay Length (ft)		700	300			90
Base Capacity (vph)	1181	683	660	3025	1461	908
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.61	0.30	0.77	0.34	0.55	0.81

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Queues

5: I-15 SB On-ramp/I-15 SB Off-ramp & Foothill Blvd/Foothill Blvd

11/04/2021



Lane Group	EBT	EBR	WBT	WBR	SBL	SBT	SBR
Lane Group Flow (vph)	1606	659	2258	315	132	194	194
v/c Ratio	0.51	0.44	0.72	0.21	0.33	0.54	0.52
Control Delay	9.2	0.9	9.2	0.2	29.3	32.8	32.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	9.2	0.9	9.2	0.2	29.3	32.8	32.1
Queue Length 50th (ft)	158	0	234	0	63	96	92
Queue Length 95th (ft)	193	0	272	m0	116	173	164
Internal Link Dist (ft)	771		756			1518	
Turn Bay Length (ft)					160		160
Base Capacity (vph)	3135	1500	3135	1485	404	362	374
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.51	0.44	0.72	0.21	0.33	0.54	0.52

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Queues

6: I-15 NB Off-ramp/I-15 NB On-ramp & Foothill Blvd /Foothill Blvd

11/04/2021



Lane Group	EBT	EBR	WBT	WBR	NBL	NBT	NBR
Lane Group Flow (vph)	1268	507	1233	372	737	737	516
v/c Ratio	0.82	0.34	0.79	0.25	0.79	0.82	0.61
Control Delay	25.9	0.6	32.4	0.4	21.8	24.1	15.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	25.9	0.6	32.4	0.4	21.8	24.1	15.3
Queue Length 50th (ft)	245	0	231	0	311	332	177
Queue Length 95th (ft)	301	0	286	0	490	#572	283
Internal Link Dist (ft)	756		538			1373	
Turn Bay Length (ft)				290			430
Base Capacity (vph)	1552	1500	1552	1515	938	898	852
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.82	0.34	0.79	0.25	0.79	0.82	0.61

Intersection Summary

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

Queues

7: Ontario Mills Dr./I-15 SB Ramps & Fourth St

11/04/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	522	739	56	190	732	112	116	185	46	96	483	233
v/c Ratio	0.82	0.30	0.07	0.64	0.39	0.18	0.66	0.32	0.13	0.64	0.79	0.56
Control Delay	58.9	20.7	0.2	67.3	29.2	2.3	72.3	47.6	0.8	74.4	43.5	11.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	58.9	20.7	0.2	67.3	29.2	2.3	72.3	47.6	0.8	74.4	43.5	11.1
Queue Length 50th (ft)	217	132	0	82	156	0	95	72	0	79	143	0
Queue Length 95th (ft)	265	191	0	m120	254	m10	155	103	0	137	202	80
Internal Link Dist (ft)		794			836			429			292	
Turn Bay Length (ft)	675		250	260		120	250		275	160		160
Base Capacity (vph)	808	2441	821	338	1857	628	233	755	422	189	733	462
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.65	0.30	0.07	0.56	0.39	0.18	0.50	0.25	0.11	0.51	0.66	0.50

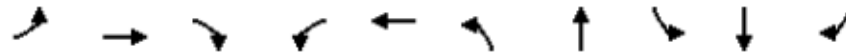
Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Queues

8: Fourth St & I-15 NB Ramps

11/04/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	580	239	83	9	235	76	99	54	59	727
v/c Ratio	2.35	0.07	0.07	0.20	0.08	0.51	0.33	0.47	0.45	0.70
Control Delay	646.3	1.4	0.7	71.2	8.7	67.8	34.5	69.2	66.6	7.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	646.3	1.4	0.7	71.2	8.7	67.8	34.5	69.2	66.6	7.0
Queue Length 50th (ft)	~425	1	0	8	22	62	23	46	50	0
Queue Length 95th (ft)	#544	2	0	27	41	111	51	91	96	54
Internal Link Dist (ft)		836			507		161		492	
Turn Bay Length (ft)	200		125	245				300		200
Base Capacity (vph)	247	3344	1123	46	2879	533	972	170	195	1035
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	2.35	0.07	0.07	0.20	0.08	0.14	0.10	0.32	0.30	0.70

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

Queues

9: Milliken Ave & I-210 WB On-ramp/I-210 WB Off-ramp

11/04/2021



Lane Group	WBL	WBT	WBR	NBL	NBT	SBT
Lane Group Flow (vph)	93	92	71	160	496	311
v/c Ratio	0.47	0.44	0.26	0.46	0.13	0.11
Control Delay	32.0	29.3	7.1	26.7	1.2	6.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	32.0	29.3	7.1	26.7	1.2	6.1
Queue Length 50th (ft)	32	30	0	28	4	16
Queue Length 95th (ft)	74	73	24	54	5	28
Internal Link Dist (ft)		663			397	318
Turn Bay Length (ft)	550		260	150		
Base Capacity (vph)	207	217	279	364	3778	2950
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.45	0.42	0.25	0.44	0.13	0.11

Intersection Summary

Queues

10: Milliken Ave & I-210 EB Off-ramp/I-210 EB On-ramp

11/04/2021



Lane Group	EBL	EBT	EBR	NBT	SBL	SBT
Lane Group Flow (vph)	81	190	189	781	66	299
v/c Ratio	0.41	0.54	0.51	0.28	0.36	0.10
Control Delay	29.2	11.7	9.6	4.5	31.6	0.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	29.2	11.7	9.6	4.5	31.6	0.7
Queue Length 50th (ft)	28	5	0	30	12	1
Queue Length 95th (ft)	64	58	48	52	m30	1
Internal Link Dist (ft)		584		352		397
Turn Bay Length (ft)	500		420		125	
Base Capacity (vph)	228	378	398	2745	183	3084
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.36	0.50	0.47	0.28	0.36	0.10

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Queues

15: Milliken Ave & I-10 WB Ramps/Ontario Mills Pkwy

11/04/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	395	284	135	293	3	320	360	506	249	170	653	400
v/c Ratio	0.65	0.88	0.36	0.76	0.01	0.75	0.80	0.19	0.26	0.74	0.30	0.39
Control Delay	45.2	70.6	9.2	60.1	41.7	17.2	54.1	13.0	1.8	68.7	25.4	1.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	45.2	70.6	9.2	60.1	41.7	17.2	54.1	13.0	1.8	68.7	25.4	1.8
Queue Length 50th (ft)	126	194	0	105	1	5	125	54	5	61	96	0
Queue Length 95th (ft)	#231	#335	51	#173	5	88	#186	62	24	#112	122	21
Internal Link Dist (ft)		362			601			826			499	
Turn Bay Length (ft)	490		290	200		245	600		175	500		100
Base Capacity (vph)	608	342	394	385	621	539	485	2614	955	231	2175	1023
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.65	0.83	0.34	0.76	0.00	0.59	0.74	0.19	0.26	0.74	0.30	0.39

Intersection Summary

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

Queues

16: Milliken Ave & I-10 EB Ramps

11/04/2021



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	415	164	237	665	523	525
v/c Ratio	0.69	0.39	0.69	0.17	0.17	0.50
Control Delay	45.5	7.8	54.0	5.7	8.5	8.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	45.5	7.8	54.0	5.7	8.5	8.3
Queue Length 50th (ft)	140	0	82	38	42	126
Queue Length 95th (ft)	176	51	118	63	59	180
Internal Link Dist (ft)	1479			496	826	
Turn Bay Length (ft)		700	300			90
Base Capacity (vph)	1185	661	620	3984	3105	1211
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.35	0.25	0.38	0.17	0.17	0.43
Intersection Summary						

Appendix F.2 - 2045 No Build 95th Percentile Queueing Reports

Queues

5: I-15 SB On-ramp/I-15 SB Off-ramp & Foothill Blvd/Foothill Blvd

11/04/2021



Lane Group	EBT	EBR	WBT	WBR	SBL	SBT	SBR
Lane Group Flow (vph)	1304	778	1444	598	357	349	328
v/c Ratio	0.59	0.52	0.63	0.41	0.56	0.58	0.55
Control Delay	18.5	1.3	28.8	2.2	23.4	23.0	22.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	18.5	1.3	28.8	2.2	23.4	23.0	22.1
Queue Length 50th (ft)	190	0	226	16	155	151	133
Queue Length 95th (ft)	231	0	m202	m0	244	246	217
Internal Link Dist (ft)	771		756			1518	
Turn Bay Length (ft)					160		160
Base Capacity (vph)	2194	1500	2301	1471	634	600	598
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.59	0.52	0.63	0.41	0.56	0.58	0.55

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Queues

6: I-15 NB Off-ramp/I-15 NB On-ramp & Foothill Blvd /Foothill Blvd

11/04/2021



Lane Group	EBT	EBR	WBT	WBR	NBL	NBT	NBR
Lane Group Flow (vph)	1721	140	1657	225	204	201	184
v/c Ratio	1.15	0.10	1.18	0.16	0.22	0.22	0.22
Control Delay	98.7	0.1	119.6	0.3	9.0	8.5	8.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	98.7	0.1	119.6	0.3	9.0	8.5	8.5
Queue Length 50th (ft)	~433	0	~418	0	51	49	43
Queue Length 95th (ft)	#520	0	#503	0	86	85	75
Internal Link Dist (ft)	756		538			1373	
Turn Bay Length (ft)				290			430
Base Capacity (vph)	1498	1378	1402	1366	946	902	835
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	1.15	0.10	1.18	0.16	0.22	0.22	0.22

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

Queues

7: Ontario Mills Dr./I-15 SB Ramps & Fourth St

11/04/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	335	395	59	93	1075	182	117	102	66	159	354	193
v/c Ratio	0.68	0.16	0.07	0.56	0.55	0.33	0.55	0.44	0.28	0.76	0.73	0.61
Control Delay	56.0	14.4	0.2	72.2	24.3	5.9	61.8	63.0	2.9	73.8	33.8	15.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	56.0	14.4	0.2	72.2	24.3	5.9	61.8	63.0	2.9	73.8	33.8	15.4
Queue Length 50th (ft)	135	54	0	41	200	2	94	44	0	129	71	0
Queue Length 95th (ft)	189	89	2	m64	266	m54	153	73	0	195	122	78
Internal Link Dist (ft)		794			836			429			292	
Turn Bay Length (ft)	675		250	260		120	250		275	160		160
Base Capacity (vph)	499	2412	899	172	1946	557	231	372	295	273	738	424
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.67	0.16	0.07	0.54	0.55	0.33	0.51	0.27	0.22	0.58	0.48	0.46

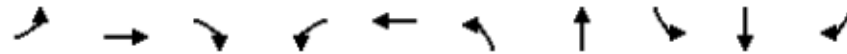
Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Queues

8: Fourth St & I-15 NB Ramps

11/04/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	140	446	40	21	494	138	139	162	166	787
v/c Ratio	0.85	0.21	0.06	0.36	0.27	0.77	0.25	0.93	0.94	0.69
Control Delay	96.1	10.5	1.2	75.8	20.1	76.2	15.8	106.9	109.2	8.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	96.1	10.5	1.2	75.8	20.1	76.2	15.8	106.9	109.2	8.4
Queue Length 50th (ft)	62	57	1	17	83	112	16	144	147	23
Queue Length 95th (ft)	#123	74	m5	47	128	173	42	#289	#296	91
Internal Link Dist (ft)		836			507		161		492	
Turn Bay Length (ft)	200		125	245				300		200
Base Capacity (vph)	165	2112	626	65	1803	310	895	175	177	1138
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.85	0.21	0.06	0.32	0.27	0.45	0.16	0.93	0.94	0.69

Intersection Summary

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

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Queues

9: Milliken Ave & I-210 WB On-ramp/I-210 WB Off-ramp

11/04/2021



Lane Group	WBL	WBT	WBR	NBL	NBT	SBT
Lane Group Flow (vph)	77	75	70	214	248	962
v/c Ratio	0.42	0.37	0.29	0.52	0.07	0.35
Control Delay	34.8	24.4	9.7	21.5	1.7	8.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	34.8	24.4	9.7	21.5	1.7	8.2
Queue Length 50th (ft)	32	20	0	31	3	68
Queue Length 95th (ft)	71	59	30	47	8	104
Internal Link Dist (ft)		663			397	318
Turn Bay Length (ft)	550		260	150		
Base Capacity (vph)	213	235	271	481	3800	2729
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.36	0.32	0.26	0.44	0.07	0.35

Intersection Summary

Queues

10: Milliken Ave & I-210 EB Off-ramp/I-210 EB On-ramp

11/04/2021



Lane Group	EBL	EBT	EBR	NBT	SBL	SBT
Lane Group Flow (vph)	100	98	91	399	335	608
v/c Ratio	0.51	0.46	0.35	0.16	0.58	0.16
Control Delay	37.1	28.8	10.8	8.6	23.9	2.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	37.1	28.8	10.8	8.6	23.9	2.1
Queue Length 50th (ft)	42	32	0	27	69	19
Queue Length 95th (ft)	88	79	38	45	99	27
Internal Link Dist (ft)		584		352		397
Turn Bay Length (ft)	500		420		125	
Base Capacity (vph)	223	241	284	2425	574	3745
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.45	0.41	0.32	0.16	0.58	0.16

Intersection Summary

Queues

15: Milliken Ave & I-10 WB Ramps/Ontario Mills Pkwy

11/04/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	52	44	42	511	44	270	74	477	105	105	935	226
v/c Ratio	0.30	0.33	0.16	0.74	0.05	0.55	0.51	0.18	0.12	0.91	0.36	0.28
Control Delay	49.2	48.8	1.3	44.0	28.8	8.7	53.4	6.1	0.3	110.8	18.6	1.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	49.2	48.8	1.3	44.0	28.8	8.7	53.4	6.1	0.3	110.8	18.6	1.9
Queue Length 50th (ft)	16	27	0	157	11	0	25	18	0	35	115	0
Queue Length 95th (ft)	35	59	0	#247	24	61	48	22	0	#84	139	21
Internal Link Dist (ft)		362			601			826			499	
Turn Bay Length (ft)	490		290	200		245	600		175	500		100
Base Capacity (vph)	181	232	352	686	849	495	157	2708	873	116	2576	815
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.29	0.19	0.12	0.74	0.05	0.55	0.47	0.18	0.12	0.91	0.36	0.28

Intersection Summary

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

Queues

16: Milliken Ave & I-10 EB Ramps

11/04/2021



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	401	345	109	276	1305	235
v/c Ratio	0.70	0.67	0.41	0.08	0.47	0.29
Control Delay	42.4	15.0	45.2	5.3	6.5	0.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	42.4	15.0	45.2	5.3	6.5	0.9
Queue Length 50th (ft)	123	38	33	13	66	0
Queue Length 95th (ft)	147	102	57	24	101	m0
Internal Link Dist (ft)	1479			496	826	
Turn Bay Length (ft)		700	300			90
Base Capacity (vph)	911	653	266	3609	2762	804
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.44	0.53	0.41	0.08	0.47	0.29

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Queues

5: I-15 SB On-ramp/I-15 SB Off-ramp & Foothill Blvd/Foothill Blvd

11/04/2021



Lane Group	EBT	EBR	WBT	WBR	SBL	SBT	SBR
Lane Group Flow (vph)	2891	977	2242	521	212	294	292
v/c Ratio	0.90	0.64	0.70	0.35	0.50	0.79	0.76
Control Delay	23.3	2.1	8.4	0.4	44.3	58.7	55.9
Queue Delay	3.9	0.0	0.1	0.0	0.0	0.0	0.0
Total Delay	27.2	2.1	8.5	0.4	44.3	58.7	55.9
Queue Length 50th (ft)	689	0	249	0	157	245	230
Queue Length 95th (ft)	771	0	m258	m0	244	#402	#370
Internal Link Dist (ft)	771		756			1518	
Turn Bay Length (ft)					160		160
Base Capacity (vph)	3218	1515	3187	1500	424	371	383
Starvation Cap Reductn	0	0	131	0	0	0	0
Spillback Cap Reductn	263	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.98	0.64	0.73	0.35	0.50	0.79	0.76

Intersection Summary

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

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Queues

6: I-15 NB Off-ramp/I-15 NB On-ramp & Foothill Blvd /Foothill Blvd

11/04/2021



Lane Group	EBT	EBR	WBT	WBR	NBL	NBT	NBR
Lane Group Flow (vph)	2724	368	1571	955	640	633	579
v/c Ratio	1.03	0.26	0.60	0.63	1.03	1.07	1.05
Control Delay	35.9	0.2	21.1	2.0	81.8	95.2	89.4
Queue Delay	2.8	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	38.7	0.2	21.1	2.0	81.8	95.2	89.4
Queue Length 50th (ft)	~897	0	314	0	~603	~645	~553
Queue Length 95th (ft)	#971	m0	361	0	#848	#904	#794
Internal Link Dist (ft)	756		538			1373	
Turn Bay Length (ft)				290			430
Base Capacity (vph)	2657	1404	2631	1515	624	591	553
Starvation Cap Reductn	20	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	1.03	0.26	0.60	0.63	1.03	1.07	1.05

Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.

Queues

7: Ontario Mills Dr./I-15 SB Ramps & Fourth St

11/04/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	493	1321	57	90	958	225	188	242	78	104	357	204
v/c Ratio	0.82	0.49	0.06	0.54	0.52	0.35	0.76	0.62	0.29	0.57	0.75	0.39
Control Delay	60.0	18.2	0.1	68.8	29.5	10.6	70.5	61.4	6.2	63.4	34.2	8.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	60.0	18.2	0.1	68.8	29.5	10.6	70.5	61.4	6.2	63.4	34.2	8.0
Queue Length 50th (ft)	204	233	0	39	227	44	152	103	0	82	68	29
Queue Length 95th (ft)	260	319	0	m62	323	137	227	144	22	139	123	57
Internal Link Dist (ft)		794			836			429			292	
Turn Bay Length (ft)	675		250	260		120	250		275	160		160
Base Capacity (vph)	689	2692	908	168	1852	639	316	586	352	212	550	559
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.72	0.49	0.06	0.54	0.52	0.35	0.59	0.41	0.22	0.49	0.65	0.36

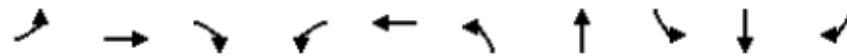
Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Queues

8: Fourth St & I-15 NB Ramps

11/04/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	728	756	67	22	579	63	91	91	93	770
v/c Ratio	2.89	0.26	0.07	0.31	0.22	0.47	0.31	0.70	0.65	0.68
Control Delay	881.0	2.2	0.1	71.3	11.3	67.8	31.7	82.7	76.6	6.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	881.0	2.2	0.1	71.3	11.3	67.8	31.7	82.7	76.6	6.2
Queue Length 50th (ft)	~559	23	0	18	71	52	18	78	80	0
Queue Length 95th (ft)	#685	30	0	48	103	97	45	141	141	54
Internal Link Dist (ft)		836			507		161		492	
Turn Bay Length (ft)	200		125	245				300		200
Base Capacity (vph)	252	2861	990	73	2604	503	998	157	172	1136
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	2.89	0.26	0.07	0.30	0.22	0.13	0.09	0.58	0.54	0.68

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

Queues

9: Milliken Ave & I-210 WB On-ramp/I-210 WB Off-ramp

11/04/2021



Lane Group	WBL	WBT	WBR	NBL	NBT	SBT
Lane Group Flow (vph)	94	96	82	200	725	629
v/c Ratio	0.47	0.46	0.30	0.63	0.19	0.23
Control Delay	32.2	29.9	8.8	33.8	0.9	6.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	32.2	29.9	8.8	33.8	0.9	6.3
Queue Length 50th (ft)	33	32	0	38	5	35
Queue Length 95th (ft)	74	75	30	m#73	6	52
Internal Link Dist (ft)		663			397	318
Turn Bay Length (ft)	550		260	150		
Base Capacity (vph)	207	217	279	318	3778	2789
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.45	0.44	0.29	0.63	0.19	0.23

Intersection Summary

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

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Queues

10: Milliken Ave & I-210 EB Off-ramp/I-210 EB On-ramp

11/04/2021



Lane Group	EBL	EBT	EBR	NBT	SBL	SBT
Lane Group Flow (vph)	127	129	161	1013	138	595
v/c Ratio	0.64	0.61	0.50	0.36	0.48	0.17
Control Delay	42.3	36.2	11.0	5.0	29.3	0.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	42.3	36.2	11.0	5.0	29.3	0.5
Queue Length 50th (ft)	46	42	0	43	26	1
Queue Length 95th (ft)	#118	#115	48	64	51	1
Internal Link Dist (ft)		584		352		397
Turn Bay Length (ft)	500		420		125	
Base Capacity (vph)	198	211	320	2850	289	3498
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.64	0.61	0.50	0.36	0.48	0.17

Intersection Summary

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

Queue shown is maximum after two cycles.

Queues

15: Milliken Ave & I-10 WB Ramps/Ontario Mills Pkwy

11/04/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	139	227	73	760	196	114	431	1488	553	470	1151	447
v/c Ratio	0.37	0.97	0.22	1.14	0.25	0.32	0.87	0.65	0.64	1.61	0.65	0.63
Control Delay	49.1	104.9	1.5	121.3	39.7	4.9	63.6	26.7	12.9	324.7	37.9	12.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	49.1	104.9	1.5	121.3	39.7	4.9	63.6	26.7	12.9	324.7	37.9	12.8
Queue Length 50th (ft)	51	178	0	~354	64	0	171	288	163	~269	223	89
Queue Length 95th (ft)	71	#297	0	#418	98	13	#222	159	188	#337	237	99
Internal Link Dist (ft)		362			601			826			499	
Turn Bay Length (ft)	490		290	200		245	600		175	500		100
Base Capacity (vph)	596	233	336	668	795	358	495	2272	858	292	1784	810
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.23	0.97	0.22	1.14	0.25	0.32	0.87	0.65	0.64	1.61	0.65	0.55

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

Queues

16: Milliken Ave & I-10 EB Ramps

11/04/2021



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	423	161	143	1692	936	761
v/c Ratio	0.60	0.35	0.59	0.44	0.29	0.67
Control Delay	41.9	6.0	60.5	10.7	3.0	12.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	41.9	6.0	60.5	10.7	3.0	12.2
Queue Length 50th (ft)	156	0	55	138	3	196
Queue Length 95th (ft)	155	41	86	292	m98	m547
Internal Link Dist (ft)	1479			496	826	
Turn Bay Length (ft)		700	300			90
Base Capacity (vph)	1181	658	660	3808	3213	1219
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.36	0.24	0.22	0.44	0.29	0.62

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Queues

5: I-15 SB On-ramp/I-15 SB Off-ramp & Foothill Blvd/Foothill Blvd

11/04/2021



Lane Group	EBT	EBR	WBT	WBR	SBL	SBT	SBR
Lane Group Flow (vph)	1538	907	1318	594	445	428	411
v/c Ratio	0.50	0.60	0.43	0.40	1.05	1.01	0.96
Control Delay	9.5	1.8	9.3	2.1	90.4	76.2	64.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	9.5	1.8	9.3	2.1	90.4	76.2	64.5
Queue Length 50th (ft)	154	0	104	2	~291	~237	208
Queue Length 95th (ft)	188	0	m107	m12	#484	#452	#408
Internal Link Dist (ft)	771		756			1518	
Turn Bay Length (ft)					160		160
Base Capacity (vph)	3081	1515	3051	1500	425	423	426
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.50	0.60	0.43	0.40	1.05	1.01	0.96

Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.

Queues

6: I-15 NB Off-ramp/I-15 NB On-ramp & Foothill Blvd /Foothill Blvd

11/04/2021



Lane Group	EBT	EBR	WBT	WBR	NBL	NBT	NBR
Lane Group Flow (vph)	1780	297	1659	908	132	132	120
v/c Ratio	1.06	0.21	1.00	0.60	0.15	0.16	0.15
Control Delay	64.7	0.3	52.6	1.8	9.8	9.0	8.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	64.7	0.3	52.6	1.8	9.8	9.0	8.9
Queue Length 50th (ft)	~419	0	341	0	34	32	28
Queue Length 95th (ft)	m#482	m0	#457	0	64	63	55
Internal Link Dist (ft)	756		538			1373	
Turn Bay Length (ft)				290			430
Base Capacity (vph)	1675	1404	1659	1515	902	846	797
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	1.06	0.21	1.00	0.60	0.15	0.16	0.15

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Queues

7: Ontario Mills Dr./I-15 SB Ramps & Fourth St

11/04/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	552	1701	77	100	1058	213	133	139	27	116	388	226
v/c Ratio	0.83	0.61	0.08	0.53	0.56	0.33	0.69	0.48	0.12	0.64	0.77	0.41
Control Delay	58.4	18.6	3.2	67.4	29.9	11.8	72.8	61.7	1.0	68.3	33.4	9.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	58.4	18.6	3.2	67.4	29.9	11.8	72.8	61.7	1.0	68.3	33.4	9.6
Queue Length 50th (ft)	226	319	0	43	267	55	108	60	0	93	72	46
Queue Length 95th (ft)	286	425	24	m69	359	142	176	93	0	154	128	78
Internal Link Dist (ft)		794			836			429			292	
Turn Bay Length (ft)	675		250	260		120	250		275	160		160
Base Capacity (vph)	752	2802	928	190	1893	638	232	429	287	218	610	586
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.73	0.61	0.08	0.53	0.56	0.33	0.57	0.32	0.09	0.53	0.64	0.39

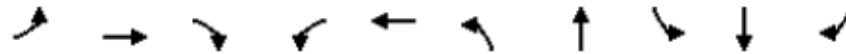
Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Queues

8: Fourth St & I-15 NB Ramps

11/04/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	855	951	96	23	623	127	163	114	115	746
v/c Ratio	3.39	0.36	0.10	0.32	0.26	0.66	0.37	0.80	0.72	0.69
Control Delay	1102.5	2.2	0.2	72.0	14.8	69.9	27.6	91.6	80.6	9.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	1102.5	2.2	0.2	72.0	14.8	69.9	27.6	91.6	80.6	9.0
Queue Length 50th (ft)	~678	24	0	19	91	104	33	98	98	26
Queue Length 95th (ft)	#809	29	m0	50	130	165	65	#195	#183	93
Internal Link Dist (ft)		836			507		161		492	
Turn Bay Length (ft)	200		125	245				300		200
Base Capacity (vph)	252	2660	926	73	2412	503	1024	157	174	1081
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	3.39	0.36	0.10	0.32	0.26	0.25	0.16	0.73	0.66	0.69

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Queues

9: Milliken Ave & I-210 WB On-ramp/I-210 WB Off-ramp

11/04/2021



Lane Group	WBL	WBT	WBR	NBL	NBT	SBT
Lane Group Flow (vph)	62	102	352	82	846	895
v/c Ratio	0.18	0.27	0.81	0.35	0.26	0.34
Control Delay	24.1	16.8	33.9	51.1	2.0	12.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	24.1	16.8	33.9	51.1	2.0	12.2
Queue Length 50th (ft)	29	30	127	21	10	89
Queue Length 95th (ft)	52	62	201	m32	47	154
Internal Link Dist (ft)		663			397	318
Turn Bay Length (ft)	550		260	150		
Base Capacity (vph)	537	562	602	245	3219	2629
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.12	0.18	0.58	0.33	0.26	0.34

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Queues

10: Milliken Ave & I-210 EB Off-ramp/I-210 EB On-ramp

11/04/2021



Lane Group	EBL	EBT	EBR	NBT	SBL	SBT
Lane Group Flow (vph)	328	323	262	456	375	420
v/c Ratio	0.79	0.76	0.46	0.24	0.73	0.14
Control Delay	43.5	40.6	5.9	15.3	38.1	2.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	43.5	40.6	5.9	15.3	38.1	2.6
Queue Length 50th (ft)	172	171	0	51	103	6
Queue Length 95th (ft)	270	272	55	77	#158	14
Internal Link Dist (ft)		584		352		397
Turn Bay Length (ft)	500		420		125	
Base Capacity (vph)	480	488	615	1939	513	3012
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.68	0.66	0.43	0.24	0.73	0.14

Intersection Summary

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

Queues

15: Milliken Ave & I-10 WB Ramps/Ontario Mills Pkwy

11/04/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	625	318	116	694	576	393	72	2253	161	548	1540	687
v/c Ratio	1.29	1.19	0.36	1.26	0.96	1.21	0.48	1.03	0.20	1.29	0.55	0.68
Control Delay	188.7	162.0	13.2	174.7	81.5	143.1	65.1	60.5	8.9	189.5	24.6	15.1
Queue Delay	0.0	0.0	0.2	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	188.7	162.0	13.4	175.4	81.5	143.1	65.1	60.5	8.9	189.5	24.6	15.1
Queue Length 50th (ft)	~345	~321	4	~377	256	~271	29	~462	37	~302	267	293
Queue Length 95th (ft)	#411	#451	48	#441	#323	#407	m45	#471	m62	#369	271	364
Internal Link Dist (ft)		362			601			826			499	
Turn Bay Length (ft)	490		290	200		245	600		175	500		100
Base Capacity (vph)	484	268	326	550	599	326	159	2185	791	426	2823	1016
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	23	44	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.29	1.19	0.38	1.37	0.96	1.21	0.45	1.03	0.20	1.29	0.55	0.68

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Queues

16: Milliken Ave & I-10 EB Ramps

11/04/2021



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	1435	11	5	692	976	1034
v/c Ratio	0.77	0.01	0.06	0.44	0.61	0.83
Control Delay	18.4	3.1	63.0	40.4	36.4	19.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.9
Total Delay	18.4	3.1	63.0	40.4	36.4	20.5
Queue Length 50th (ft)	364	0	2	145	194	903
Queue Length 95th (ft)	452	6	9	178	m245	m870
Internal Link Dist (ft)	1479			496	826	
Turn Bay Length (ft)		700	300			90
Base Capacity (vph)	1940	930	77	1559	1592	1247
Starvation Cap Reductn	0	0	0	0	0	61
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.74	0.01	0.06	0.44	0.61	0.87

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Queues

5: I-15 SB On-ramp/I-15 SB Off-ramp & Foothill Blvd/Foothill Blvd

11/04/2021



Lane Group	EBT	EBR	WBT	WBR	SBL	SBT	SBR
Lane Group Flow (vph)	1794	654	2085	313	176	200	195
v/c Ratio	0.57	0.44	0.67	0.21	0.44	0.55	0.52
Control Delay	9.9	0.9	8.2	0.2	31.5	33.2	32.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	9.9	0.9	8.2	0.2	31.5	33.2	32.0
Queue Length 50th (ft)	188	0	221	0	87	100	92
Queue Length 95th (ft)	227	0	211	m0	152	178	164
Internal Link Dist (ft)	771		756			1518	
Turn Bay Length (ft)					160		160
Base Capacity (vph)	3135	1500	3135	1485	404	363	375
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.57	0.44	0.67	0.21	0.44	0.55	0.52

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Queues

6: I-15 NB Off-ramp/I-15 NB On-ramp & Foothill Blvd /Foothill Blvd

11/04/2021



Lane Group	EBT	EBR	WBT	WBR	NBL	NBT	NBR
Lane Group Flow (vph)	1548	504	1106	315	725	712	618
v/c Ratio	1.00	0.34	0.71	0.21	0.77	0.79	0.73
Control Delay	45.4	0.5	29.9	0.3	21.1	22.3	19.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	45.4	0.5	29.9	0.3	21.1	22.3	19.2
Queue Length 50th (ft)	323	0	200	0	302	312	240
Queue Length 95th (ft)	#435	0	251	0	475	504	389
Internal Link Dist (ft)	756		538			1373	
Turn Bay Length (ft)				290			430
Base Capacity (vph)	1552	1500	1552	1515	938	897	852
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	1.00	0.34	0.71	0.21	0.77	0.79	0.73

Intersection Summary

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

Queues

7: Ontario Mills Dr./I-15 SB Ramps & Fourth St

11/04/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	416	967	53	179	864	91	204	228	92	128	525	278
v/c Ratio	0.80	0.45	0.07	0.61	0.49	0.16	0.78	0.32	0.23	0.70	0.80	0.61
Control Delay	63.4	27.0	0.2	62.9	33.3	4.2	71.7	43.9	6.0	73.9	42.1	11.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	63.4	27.0	0.2	62.9	33.3	4.2	71.7	43.9	6.0	73.9	42.1	11.1
Queue Length 50th (ft)	174	206	0	76	215	0	166	85	0	105	150	0
Queue Length 95th (ft)	226	275	0	m107	300	m8	244	120	32	169	214	89
Internal Link Dist (ft)		794			836			429			292	
Turn Bay Length (ft)	675		250	260		120	250		275	160		160
Base Capacity (vph)	606	2160	739	292	1769	584	332	834	455	236	735	491
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.69	0.45	0.07	0.61	0.49	0.16	0.61	0.27	0.20	0.54	0.71	0.57

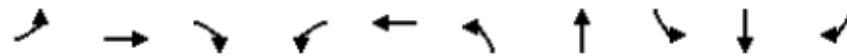
Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Queues

8: Fourth St & I-15 NB Ramps

11/04/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	666	423	111	5	224	82	66	40	42	855
v/c Ratio	2.70	0.13	0.10	0.11	0.08	0.53	0.22	0.38	0.36	0.76
Control Delay	797.7	1.6	0.6	66.4	9.2	68.1	31.5	67.3	65.3	7.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	797.7	1.6	0.6	66.4	9.2	68.1	31.5	67.3	65.3	7.8
Queue Length 50th (ft)	~504	2	0	4	23	67	13	34	35	0
Queue Length 95th (ft)	#628	16	1	19	41	118	36	74	75	57
Internal Link Dist (ft)		836			507		161		492	
Turn Bay Length (ft)	200		125	245				300		200
Base Capacity (vph)	247	3367	1137	46	2918	533	950	170	190	1128
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	2.70	0.13	0.10	0.11	0.08	0.15	0.07	0.24	0.22	0.76

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

Queues

9: Milliken Ave & I-210 WB On-ramp/I-210 WB Off-ramp

11/04/2021



Lane Group	WBL	WBT	WBR	NBL	NBT	SBT
Lane Group Flow (vph)	94	96	75	165	576	315
v/c Ratio	0.47	0.46	0.28	0.47	0.15	0.11
Control Delay	32.2	30.2	7.8	27.1	0.8	6.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	32.2	30.2	7.8	27.1	0.8	6.2
Queue Length 50th (ft)	33	32	0	30	4	17
Queue Length 95th (ft)	74	76	26	m55	4	28
Internal Link Dist (ft)		663			397	318
Turn Bay Length (ft)	550		260	150		
Base Capacity (vph)	207	216	279	364	3778	2953
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.45	0.44	0.27	0.45	0.15	0.11

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Queues

10: Milliken Ave & I-210 EB Off-ramp/I-210 EB On-ramp

11/04/2021



Lane Group	EBL	EBT	EBR	NBT	SBL	SBT
Lane Group Flow (vph)	143	188	181	817	91	300
v/c Ratio	0.67	0.53	0.48	0.32	0.50	0.10
Control Delay	41.0	12.1	8.9	5.5	36.0	0.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	41.0	12.1	8.9	5.5	36.0	0.8
Queue Length 50th (ft)	50	8	0	37	18	1
Queue Length 95th (ft)	#124	62	47	57	#41	1
Internal Link Dist (ft)		584		352		397
Turn Bay Length (ft)	500		420		125	
Base Capacity (vph)	228	369	392	2581	183	3026
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.63	0.51	0.46	0.32	0.50	0.10

Intersection Summary

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

Queues

15: Milliken Ave & I-10 WB Ramps/Ontario Mills Pkwy

11/04/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	202	351	135	324	262	214	327	636	409	315	862	339
v/c Ratio	0.40	1.03	0.34	0.90	0.60	0.55	0.76	0.24	0.45	1.36	0.39	0.39
Control Delay	42.7	99.7	9.0	75.8	50.1	11.3	53.8	15.8	9.0	227.9	26.3	5.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	42.7	99.7	9.0	75.8	50.1	11.3	53.8	15.8	9.0	227.9	26.3	5.6
Queue Length 50th (ft)	64	~265	0	118	92	0	98	75	79	~151	130	33
Queue Length 95th (ft)	107	#446	51	#200	129	65	173	86	128	#241	162	64
Internal Link Dist (ft)		362			601			826			499	
Turn Bay Length (ft)	490		290	200		245	600		175	500		100
Base Capacity (vph)	511	342	394	360	621	459	485	2602	917	231	2200	875
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.40	1.03	0.34	0.90	0.42	0.47	0.67	0.24	0.45	1.36	0.39	0.39

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

Queues

16: Milliken Ave & I-10 EB Ramps

11/04/2021



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	276	114	201	1052	685	596
v/c Ratio	0.52	0.33	0.65	0.25	0.20	0.55
Control Delay	42.3	8.1	54.5	5.8	6.6	8.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	42.3	8.1	54.5	5.8	6.6	8.2
Queue Length 50th (ft)	94	0	70	52	24	162
Queue Length 95th (ft)	105	38	104	127	m67	m223
Internal Link Dist (ft)	1479			496	826	
Turn Bay Length (ft)		700	300			90
Base Capacity (vph)	1185	632	620	4128	3357	1223
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.23	0.18	0.32	0.25	0.20	0.49

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Appendix F.3 - 2025 Build 95th Percentile Queueing Reports

Queues

5: I-15 SB On-ramp/I-15 SB Off-ramp & Foothill Blvd/Foothill Blvd

11/04/2021



Lane Group	EBT	EBR	WBT	WBR	SBL	SBT	SBR
Lane Group Flow (vph)	822	783	1120	602	337	487	487
v/c Ratio	0.37	0.52	0.49	0.41	0.53	0.82	0.79
Control Delay	15.6	1.3	18.7	1.0	22.6	33.6	31.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.6	1.3	18.7	1.0	22.6	33.6	31.1
Queue Length 50th (ft)	104	0	152	7	144	237	222
Queue Length 95th (ft)	132	0	202	11	228	#430	#398
Internal Link Dist (ft)	771		756			1518	
Turn Bay Length (ft)					160		160
Base Capacity (vph)	2194	1500	2301	1471	634	594	615
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.37	0.52	0.49	0.41	0.53	0.82	0.79

Intersection Summary

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

Queues

6: I-15 NB Off-ramp/I-15 NB On-ramp & Foothill Blvd /Foothill Blvd

11/04/2021



Lane Group	EBT	EBR	WBT	WBR	NBL	NBT	NBR
Lane Group Flow (vph)	1036	162	874	262	449	442	385
v/c Ratio	0.69	0.12	0.62	0.19	0.47	0.49	0.46
Control Delay	24.2	0.2	28.9	0.3	12.2	12.2	11.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	24.2	0.2	28.9	0.3	12.2	12.2	11.8
Queue Length 50th (ft)	206	0	154	0	137	138	112
Queue Length 95th (ft)	250	m0	195	0	209	216	180
Internal Link Dist (ft)	756		538			1373	
Turn Bay Length (ft)				290			430
Base Capacity (vph)	1498	1378	1402	1366	946	902	835
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.69	0.12	0.62	0.19	0.47	0.49	0.46

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Queues

7: Ontario Mills Dr./I-15 SB Ramps & Fourth St

11/04/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	241	254	76	173	1019	186	83	66	45	151	373	186
v/c Ratio	0.71	0.11	0.09	0.60	0.44	0.29	0.58	0.32	0.20	0.71	0.70	0.56
Control Delay	64.8	15.9	1.6	63.6	20.0	6.2	71.7	61.9	2.0	68.3	34.4	13.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	64.8	15.9	1.6	63.6	20.0	6.2	71.7	61.9	2.0	68.3	34.4	13.2
Queue Length 50th (ft)	101	35	0	74	160	10	68	28	0	123	86	0
Queue Length 95th (ft)	141	65	13	m101	268	m59	121	52	0	187	136	73
Internal Link Dist (ft)		794			836			429			292	
Turn Bay Length (ft)	675		250	260		120	250		275	160		160
Base Capacity (vph)	426	2328	871	334	2323	637	192	372	295	279	795	446
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.57	0.11	0.09	0.52	0.44	0.29	0.43	0.18	0.15	0.54	0.47	0.42

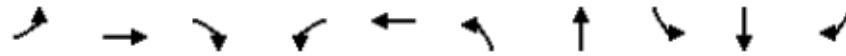
Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Queues

8: Fourth St & I-15 NB Ramps

11/04/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	156	270	30	16	367	56	60	200	204	1002
v/c Ratio	0.95	0.11	0.04	0.26	0.17	0.57	0.20	1.14	1.15	0.74
Control Delay	108.7	7.0	3.4	67.5	11.8	75.9	26.2	160.6	161.0	6.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	108.7	7.0	3.4	67.5	11.8	75.9	26.2	160.6	161.0	6.3
Queue Length 50th (ft)	71	28	0	13	44	46	10	~206	~211	0
Queue Length 95th (ft)	#137	57	m3	38	70	89	30	#372	#380	57
Internal Link Dist (ft)		836			507		161		492	
Turn Bay Length (ft)	200		125	245				300		200
Base Capacity (vph)	165	2564	743	71	2134	310	861	175	178	1351
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.95	0.11	0.04	0.23	0.17	0.18	0.07	1.14	1.15	0.74

Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.

Queues

9: Milliken Ave & I-210 WB On-ramp/I-210 WB Off-ramp

11/04/2021



Lane Group	WBL	WBT	WBR	NBL	NBT	SBT
Lane Group Flow (vph)	75	74	52	269	211	579
v/c Ratio	0.41	0.39	0.21	0.66	0.06	0.22
Control Delay	31.5	29.0	4.6	27.9	1.5	6.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	31.5	29.0	4.6	27.9	1.5	6.3
Queue Length 50th (ft)	26	25	0	38	5	31
Queue Length 95th (ft)	64	63	13	#62	5	47
Internal Link Dist (ft)		663			397	318
Turn Bay Length (ft)	550		260	150		
Base Capacity (vph)	181	189	253	421	3753	2641
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.41	0.39	0.21	0.64	0.06	0.22

Intersection Summary

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

Queues

10: Milliken Ave & I-210 EB Off-ramp/I-210 EB On-ramp

11/04/2021



Lane Group	EBL	EBT	EBR	NBT	SBL	SBT
Lane Group Flow (vph)	63	98	97	749	118	541
v/c Ratio	0.33	0.40	0.37	0.25	0.45	0.15
Control Delay	29.0	13.9	10.9	3.7	27.5	1.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	29.0	13.9	10.9	3.7	27.5	1.8
Queue Length 50th (ft)	22	5	0	24	22	12
Queue Length 95th (ft)	55	46	37	40	44	17
Internal Link Dist (ft)		584		352		397
Turn Bay Length (ft)	500		420		125	
Base Capacity (vph)	189	245	260	3057	268	3717
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.33	0.40	0.37	0.25	0.44	0.15

Intersection Summary

Queues

15: Milliken Ave & I-10 WB Ramps/Ontario Mills Pkwy

11/04/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	58	39	27	244	53	197	108	467	183	91	414	247
v/c Ratio	0.51	0.26	0.09	0.77	0.13	0.64	0.51	0.14	0.21	0.37	0.13	0.27
Control Delay	58.1	40.6	0.6	61.5	34.9	15.3	33.5	4.4	0.6	43.5	10.8	1.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	58.1	40.6	0.6	61.5	34.9	15.3	33.5	4.4	0.6	43.5	10.8	1.6
Queue Length 50th (ft)	17	21	0	~92	14	0	28	14	0	25	32	0
Queue Length 95th (ft)	#39	48	0	#162	29	56	50	25	0	49	51	16
Internal Link Dist (ft)		362			601			826			499	
Turn Bay Length (ft)	490		290	200		245	600		175	500		100
Base Capacity (vph)	114	258	388	315	677	391	232	3311	883	245	3110	900
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.51	0.15	0.07	0.77	0.08	0.50	0.47	0.14	0.21	0.37	0.13	0.27

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

Queues

16: Milliken Ave & I-10 EB Ramps

11/04/2021



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	425	269	211	361	494	216
v/c Ratio	0.69	0.51	0.64	0.10	0.20	0.28
Control Delay	37.2	7.0	43.6	5.6	14.9	2.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	37.2	7.0	43.6	5.6	14.9	2.5
Queue Length 50th (ft)	114	0	58	17	45	0
Queue Length 95th (ft)	138	45	83	31	67	m1
Internal Link Dist (ft)	1479			496	826	
Turn Bay Length (ft)		700	300			90
Base Capacity (vph)	923	655	591	3485	2449	854
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.46	0.41	0.36	0.10	0.20	0.25

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Queues

5: I-15 SB On-ramp/I-15 SB Off-ramp & Foothill Blvd/Foothill Blvd

11/04/2021



Lane Group	EBT	EBR	WBT	WBR	SBL	SBT	SBR
Lane Group Flow (vph)	2527	983	2050	524	167	299	292
v/c Ratio	0.82	0.65	0.67	0.35	0.39	0.80	0.76
Control Delay	15.5	2.2	10.4	0.4	29.7	46.7	42.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.5	2.2	10.4	0.4	29.7	46.7	42.7
Queue Length 50th (ft)	361	0	209	0	81	165	152
Queue Length 95th (ft)	434	0	268	m0	142	#315	#284
Internal Link Dist (ft)	771		756			1518	
Turn Bay Length (ft)					160		160
Base Capacity (vph)	3081	1515	3051	1500	425	374	386
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.82	0.65	0.67	0.35	0.39	0.80	0.76

Intersection Summary

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

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Queues

6: I-15 NB Off-ramp/I-15 NB On-ramp & Foothill Blvd /Foothill Blvd

11/04/2021



Lane Group	EBT	EBR	WBT	WBR	NBL	NBT	NBR
Lane Group Flow (vph)	2323	359	1444	1088	584	570	472
v/c Ratio	1.39	0.26	0.87	0.72	0.65	0.66	0.59
Control Delay	199.3	0.3	34.7	3.0	17.6	17.9	16.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	199.3	0.3	34.7	3.0	17.6	17.9	16.2
Queue Length 50th (ft)	~639	0	278	0	223	224	167
Queue Length 95th (ft)	#741	m0	339	0	344	354	269
Internal Link Dist (ft)	756		538			1373	
Turn Bay Length (ft)				290			430
Base Capacity (vph)	1675	1404	1659	1515	902	862	797
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	1.39	0.26	0.87	0.72	0.65	0.66	0.59

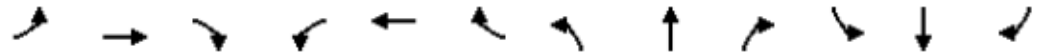
Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.

Queues

7: Ontario Mills Dr./I-15 SB Ramps & Fourth St

11/04/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	678	1008	68	95	741	267	130	222	42	83	386	203
v/c Ratio	0.85	0.36	0.07	0.50	0.45	0.43	0.68	0.60	0.16	0.52	0.78	0.32
Control Delay	54.6	15.1	2.8	66.4	32.6	9.9	72.4	61.5	1.3	64.0	40.1	5.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	54.6	15.1	2.8	66.4	32.6	9.9	72.4	61.5	1.3	64.0	40.1	5.5
Queue Length 50th (ft)	275	158	0	40	181	42	106	95	0	66	91	24
Queue Length 95th (ft)	336	212	19	m69	255	131	172	134	0	119	148	48
Internal Link Dist (ft)		794			836			429			292	
Turn Bay Length (ft)	675		250	260		120	250		275	160		160
Base Capacity (vph)	901	2767	918	190	1645	627	232	559	341	178	577	672
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.75	0.36	0.07	0.50	0.45	0.43	0.56	0.40	0.12	0.47	0.67	0.30

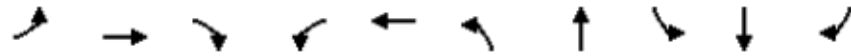
Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Queues

8: Fourth St & I-15 NB Ramps

11/04/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	641	479	49	31	603	59	111	96	99	652
v/c Ratio	2.54	0.17	0.05	0.38	0.23	0.45	0.37	0.72	0.66	0.62
Control Delay	730.3	2.2	0.1	73.1	10.3	67.4	34.3	84.4	76.4	5.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	730.3	2.2	0.1	73.1	10.3	67.4	34.3	84.4	76.4	5.9
Queue Length 50th (ft)	~478	15	0	26	67	48	25	83	85	0
Queue Length 95th (ft)	#603	19	0	60	98	93	54	#155	149	52
Internal Link Dist (ft)		836			507		161		492	
Turn Bay Length (ft)	200		125	245				300		200
Base Capacity (vph)	252	2840	983	86	2583	503	1011	157	176	1048
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	2.54	0.17	0.05	0.36	0.23	0.12	0.11	0.61	0.56	0.62

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

Queues

9: Milliken Ave & I-210 WB On-ramp/I-210 WB Off-ramp

11/04/2021



Lane Group	WBL	WBT	WBR	NBL	NBT	SBT
Lane Group Flow (vph)	104	105	77	216	626	620
v/c Ratio	0.53	0.50	0.28	0.68	0.17	0.22
Control Delay	34.0	31.4	8.1	36.3	1.0	6.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	34.0	31.4	8.1	36.3	1.0	6.3
Queue Length 50th (ft)	36	36	0	40	6	35
Queue Length 95th (ft)	#84	82	27	#83	7	52
Internal Link Dist (ft)		663			397	318
Turn Bay Length (ft)	550		260	150		
Base Capacity (vph)	207	217	279	318	3776	2787
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.50	0.48	0.28	0.68	0.17	0.22

Intersection Summary

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

Queues

10: Milliken Ave & I-210 EB Off-ramp/I-210 EB On-ramp

11/04/2021



Lane Group	EBL	EBT	EBR	NBT	SBL	SBT
Lane Group Flow (vph)	103	104	107	1174	129	616
v/c Ratio	0.52	0.50	0.39	0.38	0.45	0.16
Control Delay	34.8	30.4	10.7	4.3	29.1	0.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	34.8	30.4	10.7	4.3	29.1	0.4
Queue Length 50th (ft)	36	34	0	43	24	1
Queue Length 95th (ft)	#89	#81	40	65	48	1
Internal Link Dist (ft)		584		352		397
Turn Bay Length (ft)	500		420		125	
Base Capacity (vph)	198	210	273	3089	289	3753
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.52	0.50	0.39	0.38	0.45	0.16

Intersection Summary

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

Queues

15: Milliken Ave & I-10 WB Ramps/Ontario Mills Pkwy

11/04/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	249	190	86	608	247	143	404	1192	288	352	996	751
v/c Ratio	0.37	0.85	0.26	0.93	0.61	0.55	0.86	0.51	0.34	1.21	0.52	0.87
Control Delay	40.5	82.6	1.9	67.2	56.3	14.4	64.5	32.6	3.8	166.0	34.4	24.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	40.5	82.6	1.9	67.2	56.3	14.4	64.5	32.6	3.8	166.0	34.4	24.6
Queue Length 50th (ft)	81	145	0	237	97	0	140	225	15	~171	187	228
Queue Length 95th (ft)	116	#233	0	#294	124	37	190	233	25	#237	202	#400
Internal Link Dist (ft)		362			601			826			499	
Turn Bay Length (ft)	490		290	200		245	600		175	500		100
Base Capacity (vph)	678	233	336	668	536	291	495	2329	842	292	1903	859
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.37	0.82	0.26	0.91	0.46	0.49	0.82	0.51	0.34	1.21	0.52	0.87

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

Queues

16: Milliken Ave & I-10 EB Ramps

11/04/2021



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	498	227	338	1115	709	738
v/c Ratio	0.49	0.36	0.78	0.35	0.34	0.75
Control Delay	31.0	4.5	57.6	15.1	21.8	26.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	31.0	4.5	57.6	15.1	21.8	26.7
Queue Length 50th (ft)	139	0	128	144	122	568
Queue Length 95th (ft)	185	48	170	173	m157	m659
Internal Link Dist (ft)	1479			496	826	
Turn Bay Length (ft)		700	300			90
Base Capacity (vph)	1181	696	660	3224	2064	1044
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.42	0.33	0.51	0.35	0.34	0.71

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Queues

5: I-15 SB On-ramp/I-15 SB Off-ramp & Foothill Blvd/Foothill Blvd

11/04/2021



Lane Group	EBT	EBR	WBT	WBR	SBL	SBT	SBR
Lane Group Flow (vph)	1337	913	1346	599	380	393	396
v/c Ratio	0.43	0.60	0.44	0.40	0.89	0.95	0.94
Control Delay	8.9	1.8	8.1	0.9	56.9	63.0	59.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	8.9	1.8	8.1	0.9	56.9	63.0	59.0
Queue Length 50th (ft)	126	0	91	0	217	206	198
Queue Length 95th (ft)	155	0	150	m4	#392	#408	#389
Internal Link Dist (ft)	771		756			1518	
Turn Bay Length (ft)					160		160
Base Capacity (vph)	3081	1515	3051	1500	425	412	423
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.43	0.60	0.44	0.40	0.89	0.95	0.94

Intersection Summary

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

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Queues

6: I-15 NB Off-ramp/I-15 NB On-ramp & Foothill Blvd /Foothill Blvd

11/04/2021



Lane Group	EBT	EBR	WBT	WBR	NBL	NBT	NBR
Lane Group Flow (vph)	1419	321	1355	1032	329	329	302
v/c Ratio	0.85	0.23	0.82	0.68	0.36	0.39	0.38
Control Delay	28.2	0.3	31.8	2.5	12.1	12.1	12.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	28.2	0.3	31.8	2.5	12.1	12.1	12.0
Queue Length 50th (ft)	287	0	254	0	100	102	88
Queue Length 95th (ft)	m341	m0	312	0	158	165	147
Internal Link Dist (ft)	756		538			1373	
Turn Bay Length (ft)				290			430
Base Capacity (vph)	1675	1404	1659	1515	902	842	797
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.85	0.23	0.82	0.68	0.36	0.39	0.38

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Queues

7: Ontario Mills Dr./I-15 SB Ramps & Fourth St

11/04/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	705	1303	92	105	870	235	122	154	22	81	337	180
v/c Ratio	0.85	0.46	0.10	0.49	0.52	0.39	0.67	0.41	0.08	0.52	0.74	0.29
Control Delay	53.5	15.7	2.9	63.9	32.6	11.8	72.4	58.2	0.6	63.9	36.0	5.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	53.5	15.7	2.9	63.9	32.6	11.8	72.4	58.2	0.6	63.9	36.0	5.3
Queue Length 50th (ft)	285	213	0	44	218	49	99	66	0	64	69	20
Queue Length 95th (ft)	345	281	25	m75	302	140	164	100	0	116	123	45
Internal Link Dist (ft)		794			836			429			292	
Turn Bay Length (ft)	675		250	260		120	250		275	160		160
Base Capacity (vph)	943	2821	941	213	1681	603	221	519	324	175	532	667
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.75	0.46	0.10	0.49	0.52	0.39	0.55	0.30	0.07	0.46	0.63	0.27

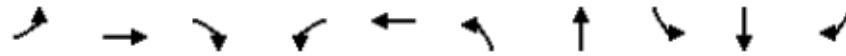
Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Queues

8: Fourth St & I-15 NB Ramps

11/04/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	786	593	71	35	630	95	137	121	125	680
v/c Ratio	3.12	0.22	0.08	0.43	0.26	0.59	0.37	0.82	0.75	0.62
Control Delay	982.6	2.3	0.2	75.6	12.5	69.7	32.4	94.9	81.6	5.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	982.6	2.3	0.2	75.6	12.5	69.7	32.4	94.9	81.6	5.8
Queue Length 50th (ft)	~614	14	0	29	80	78	32	105	108	0
Queue Length 95th (ft)	#744	17	0	66	115	131	62	#212	#203	52
Internal Link Dist (ft)		836			507		161		492	
Turn Bay Length (ft)	200		125	245				300		200
Base Capacity (vph)	252	2713	943	86	2468	503	1021	157	179	1089
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	3.12	0.22	0.08	0.41	0.26	0.19	0.13	0.77	0.70	0.62

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

Queues

9: Milliken Ave & I-210 WB On-ramp/I-210 WB Off-ramp

11/04/2021



Lane Group	WBL	WBT	WBR	NBL	NBT	SBT
Lane Group Flow (vph)	110	111	84	231	665	440
v/c Ratio	0.55	0.53	0.31	0.73	0.18	0.16
Control Delay	35.5	32.6	9.1	37.2	0.9	6.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	35.5	32.6	9.1	37.2	0.9	6.0
Queue Length 50th (ft)	38	38	0	43	5	23
Queue Length 95th (ft)	#95	#90	31	#91	6	36
Internal Link Dist (ft)		663			397	318
Turn Bay Length (ft)	550		260	150		
Base Capacity (vph)	207	216	279	318	3773	2782
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.53	0.51	0.30	0.73	0.18	0.16

Intersection Summary

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

Queues

10: Milliken Ave & I-210 EB Off-ramp/I-210 EB On-ramp

11/04/2021



Lane Group	EBL	EBT	EBR	NBT	SBL	SBT
Lane Group Flow (vph)	67	108	299	1190	121	407
v/c Ratio	0.34	0.47	0.68	0.42	0.42	0.12
Control Delay	28.9	23.0	13.0	5.4	30.2	0.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	28.9	23.0	13.0	5.4	30.2	0.4
Queue Length 50th (ft)	23	23	0	54	23	1
Queue Length 95th (ft)	57	68	#89	78	m45	1
Internal Link Dist (ft)		584		352		397
Turn Bay Length (ft)	500		420		125	
Base Capacity (vph)	198	230	440	2854	289	3498
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.34	0.47	0.68	0.42	0.42	0.12

Intersection Summary

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

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Queues

15: Milliken Ave & I-10 WB Ramps/Ontario Mills Pkwy

11/04/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	248	253	231	671	208	214	372	1455	293	299	965	599
v/c Ratio	0.34	1.09	0.57	1.00	0.55	0.70	0.82	0.64	0.36	1.02	0.51	0.67
Control Delay	39.1	132.4	12.2	82.0	55.4	19.5	65.8	32.0	4.0	112.0	34.3	11.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	39.1	132.4	12.2	82.0	55.4	19.5	65.8	32.0	4.0	112.0	34.3	11.6
Queue Length 50th (ft)	80	~220	0	~271	82	0	132	247	18	~127	178	126
Queue Length 95th (ft)	116	#343	53	#345	106	55	174	247	26	#192	195	170
Internal Link Dist (ft)		362			601			826			499	
Turn Bay Length (ft)	490		290	200		245	600		175	500		100
Base Capacity (vph)	729	233	402	668	536	341	495	2272	815	292	1882	892
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.34	1.09	0.57	1.00	0.39	0.63	0.75	0.64	0.36	1.02	0.51	0.67

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

Queues

16: Milliken Ave & I-10 EB Ramps

11/04/2021



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	787	204	505	1029	804	795
v/c Ratio	0.68	0.30	0.87	0.35	0.60	0.91
Control Delay	32.2	4.2	58.3	17.3	35.1	43.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	32.2	4.2	58.3	17.3	35.1	43.6
Queue Length 50th (ft)	249	0	190	132	152	621
Queue Length 95th (ft)	320	46	250	158	m179	m#746
Internal Link Dist (ft)	1479			496	826	
Turn Bay Length (ft)		700	300			90
Base Capacity (vph)	1181	683	660	2913	1341	885
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.67	0.30	0.77	0.35	0.60	0.90

Intersection Summary

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

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Queues

5: I-15 SB On-ramp/I-15 SB Off-ramp & Foothill Blvd/Foothill Blvd

11/04/2021



Lane Group	EBT	EBR	WBT	WBR	SBL	SBT	SBR
Lane Group Flow (vph)	1631	659	2263	315	132	205	205
v/c Ratio	0.52	0.44	0.72	0.21	0.33	0.57	0.55
Control Delay	9.3	0.9	9.2	0.2	29.3	34.0	33.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	9.3	0.9	9.2	0.2	29.3	34.0	33.1
Queue Length 50th (ft)	162	0	235	0	63	104	98
Queue Length 95th (ft)	196	0	273	m0	116	184	174
Internal Link Dist (ft)	771		756			1518	
Turn Bay Length (ft)					160		160
Base Capacity (vph)	3135	1500	3135	1485	404	361	374
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.52	0.44	0.72	0.21	0.33	0.57	0.55

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Queues

6: I-15 NB Off-ramp/I-15 NB On-ramp & Foothill Blvd /Foothill Blvd

11/04/2021



Lane Group	EBT	EBR	WBT	WBR	NBL	NBT	NBR
Lane Group Flow (vph)	1273	529	1238	372	737	737	516
v/c Ratio	0.82	0.35	0.80	0.25	0.79	0.82	0.61
Control Delay	25.9	0.7	32.5	0.4	21.8	24.1	15.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	25.9	0.7	32.5	0.4	21.8	24.1	15.3
Queue Length 50th (ft)	247	0	233	0	311	332	177
Queue Length 95th (ft)	303	0	289	0	490	#572	283
Internal Link Dist (ft)	756		538			1373	
Turn Bay Length (ft)				290			430
Base Capacity (vph)	1552	1500	1552	1515	938	898	852
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.82	0.35	0.80	0.25	0.79	0.82	0.61

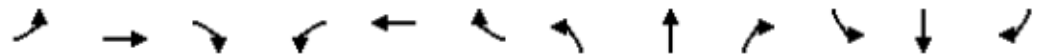
Intersection Summary

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

Queues

7: Ontario Mills Dr./I-15 SB Ramps & Fourth St

11/04/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	531	742	56	190	744	112	116	185	46	96	483	233
v/c Ratio	0.82	0.30	0.07	0.64	0.40	0.18	0.66	0.32	0.13	0.64	0.79	0.56
Control Delay	58.8	20.7	0.2	67.2	29.6	2.3	72.3	47.6	0.8	74.4	43.5	11.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	58.8	20.7	0.2	67.2	29.6	2.3	72.3	47.6	0.8	74.4	43.5	11.1
Queue Length 50th (ft)	221	133	0	82	159	0	95	72	0	79	143	0
Queue Length 95th (ft)	269	191	0	m119	260	m9	155	103	0	137	202	80
Internal Link Dist (ft)		794			836			429			292	
Turn Bay Length (ft)	675		250	260		120	250		275	160		160
Base Capacity (vph)	808	2441	821	338	1843	625	233	755	422	189	733	462
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.66	0.30	0.07	0.56	0.40	0.18	0.50	0.25	0.11	0.51	0.66	0.50

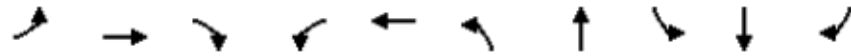
Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Queues

8: Fourth St & I-15 NB Ramps

11/04/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	580	242	83	9	237	76	99	54	59	736
v/c Ratio	2.35	0.07	0.07	0.20	0.08	0.51	0.33	0.47	0.45	0.71
Control Delay	646.3	1.4	0.7	71.2	8.8	67.8	34.5	69.2	66.6	7.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	646.3	1.4	0.7	71.2	8.8	67.8	34.5	69.2	66.6	7.1
Queue Length 50th (ft)	~423	1	0	8	22	62	23	46	50	0
Queue Length 95th (ft)	#543	2	0	27	41	111	51	91	96	54
Internal Link Dist (ft)		836			507		161		492	
Turn Bay Length (ft)	200		125	245				300		200
Base Capacity (vph)	247	3344	1123	46	2878	533	972	170	195	1043
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	2.35	0.07	0.07	0.20	0.08	0.14	0.10	0.32	0.30	0.71

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

Queues

9: Milliken Ave & I-210 WB On-ramp/I-210 WB Off-ramp

11/04/2021



Lane Group	WBL	WBT	WBR	NBL	NBT	SBT
Lane Group Flow (vph)	94	96	71	176	496	311
v/c Ratio	0.47	0.46	0.26	0.50	0.13	0.11
Control Delay	32.2	30.2	7.1	27.5	1.2	6.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	32.2	30.2	7.1	27.5	1.2	6.1
Queue Length 50th (ft)	33	32	0	31	4	16
Queue Length 95th (ft)	74	76	24	58	5	28
Internal Link Dist (ft)		663			397	318
Turn Bay Length (ft)	550		260	150		
Base Capacity (vph)	207	216	279	364	3778	2950
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.45	0.44	0.25	0.48	0.13	0.11

Intersection Summary

Queues

10: Milliken Ave & I-210 EB Off-ramp/I-210 EB On-ramp

11/04/2021



Lane Group	EBL	EBT	EBR	NBT	SBL	SBT
Lane Group Flow (vph)	81	197	197	802	66	304
v/c Ratio	0.41	0.55	0.52	0.29	0.36	0.10
Control Delay	28.7	11.6	9.5	4.6	31.6	0.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	28.7	11.6	9.5	4.6	31.6	0.7
Queue Length 50th (ft)	27	5	0	33	12	1
Queue Length 95th (ft)	64	58	49	54	m29	1
Internal Link Dist (ft)		584		352		397
Turn Bay Length (ft)	500		420		125	
Base Capacity (vph)	228	384	405	2735	183	3071
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.36	0.51	0.49	0.29	0.36	0.10

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Queues

15: Milliken Ave & I-10 WB Ramps/Ontario Mills Pkwy

11/04/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	434	284	135	293	352	320	360	569	249	170	715	459
v/c Ratio	0.99	0.88	0.36	0.75	0.67	0.67	0.80	0.22	0.26	0.74	0.33	0.57
Control Delay	88.7	70.6	9.2	59.2	49.3	14.6	56.9	12.6	1.6	68.7	25.9	11.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	88.7	70.6	9.2	59.2	49.3	14.6	56.9	12.6	1.6	68.7	25.9	11.2
Queue Length 50th (ft)	~171	194	0	105	123	22	137	58	3	61	106	76
Queue Length 95th (ft)	#292	#335	51	#173	169	110	186	67	21	#112	134	147
Internal Link Dist (ft)		362			601			826			499	
Turn Bay Length (ft)	490		290	200		245	600		175	500		100
Base Capacity (vph)	437	342	394	390	621	515	485	2602	955	231	2163	805
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.99	0.83	0.34	0.75	0.57	0.62	0.74	0.22	0.26	0.74	0.33	0.57

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

Queues

16: Milliken Ave & I-10 EB Ramps

11/04/2021



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	473	164	237	670	528	581
v/c Ratio	0.68	0.36	0.69	0.18	0.18	0.55
Control Delay	41.8	6.5	54.0	7.3	9.8	9.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	41.8	6.5	54.0	7.3	9.8	9.7
Queue Length 50th (ft)	157	0	82	43	41	162
Queue Length 95th (ft)	183	46	118	78	58	229
Internal Link Dist (ft)	1479			496	826	
Turn Bay Length (ft)		700	300			90
Base Capacity (vph)	1185	661	620	3796	2904	1190
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.40	0.25	0.38	0.18	0.18	0.49
Intersection Summary						

Appendix F.4 - 2045 Build 95th Percentile Queueing Reports

Queues

5: I-15 SB On-ramp/I-15 SB Off-ramp & Foothill Blvd/Foothill Blvd

11/04/2021



Lane Group	EBT	EBR	WBT	WBR	SBL	SBT	SBR
Lane Group Flow (vph)	1357	778	1447	598	363	353	335
v/c Ratio	0.62	0.52	0.63	0.41	0.57	0.59	0.56
Control Delay	19.0	1.3	28.8	2.2	23.7	23.3	22.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	19.0	1.3	28.8	2.2	23.7	23.3	22.5
Queue Length 50th (ft)	201	0	226	16	158	154	137
Queue Length 95th (ft)	243	0	m202	m0	249	250	224
Internal Link Dist (ft)	771		756			1518	
Turn Bay Length (ft)					160		160
Base Capacity (vph)	2194	1500	2301	1471	634	599	598
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.62	0.52	0.63	0.41	0.57	0.59	0.56

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Queues

6: I-15 NB Off-ramp/I-15 NB On-ramp & Foothill Blvd /Foothill Blvd

11/04/2021



Lane Group	EBT	EBR	WBT	WBR	NBL	NBT	NBR
Lane Group Flow (vph)	1731	183	1661	225	204	201	184
v/c Ratio	1.16	0.13	1.18	0.16	0.22	0.22	0.22
Control Delay	101.0	0.2	120.8	0.3	9.0	8.5	8.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	101.0	0.2	120.8	0.3	9.0	8.5	8.5
Queue Length 50th (ft)	~437	0	~420	0	51	49	43
Queue Length 95th (ft)	#525	0	#505	0	86	85	75
Internal Link Dist (ft)	756		538			1373	
Turn Bay Length (ft)				290			430
Base Capacity (vph)	1498	1378	1402	1366	946	902	835
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	1.16	0.13	1.18	0.16	0.22	0.22	0.22

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

Queues

7: Ontario Mills Dr./I-15 SB Ramps & Fourth St

11/04/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	354	401	59	93	1084	182	117	102	66	159	354	193
v/c Ratio	0.79	0.17	0.07	0.46	0.53	0.32	0.68	0.44	0.28	0.78	0.65	0.56
Control Delay	63.3	15.2	0.3	63.5	22.9	5.6	74.4	63.0	2.9	76.3	29.3	13.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	63.3	15.2	0.3	63.5	22.9	5.6	74.4	63.0	2.9	76.3	29.3	13.2
Queue Length 50th (ft)	148	57	0	40	182	3	96	44	0	129	70	0
Queue Length 95th (ft)	192	93	2	m62	280	m52	159	73	0	199	119	75
Internal Link Dist (ft)		794			836			429			292	
Turn Bay Length (ft)	675		250	260		120	250		275	160		160
Base Capacity (vph)	529	2371	886	209	2039	576	217	372	295	269	738	424
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.67	0.17	0.07	0.44	0.53	0.32	0.54	0.27	0.22	0.59	0.48	0.46

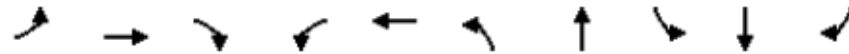
Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Queues

8: Fourth St & I-15 NB Ramps

11/04/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	140	452	40	21	496	138	139	162	166	795
v/c Ratio	0.85	0.22	0.06	0.31	0.28	0.77	0.25	0.93	0.94	0.69
Control Delay	93.9	16.6	7.2	69.3	20.1	76.2	15.8	106.9	109.2	8.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	93.9	16.6	7.2	69.3	20.1	76.2	15.8	106.9	109.2	8.3
Queue Length 50th (ft)	61	76	0	17	83	112	16	144	147	22
Queue Length 95th (ft)	#122	126	m14	45	128	173	42	#289	#296	89
Internal Link Dist (ft)		836			507		161		492	
Turn Bay Length (ft)	200		125	245				300		200
Base Capacity (vph)	165	2081	617	74	1803	310	895	175	177	1146
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.85	0.22	0.06	0.28	0.28	0.45	0.16	0.93	0.94	0.69

Intersection Summary

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

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Queues

9: Milliken Ave & I-210 WB On-ramp/I-210 WB Off-ramp

11/04/2021



Lane Group	WBL	WBT	WBR	NBL	NBT	SBT
Lane Group Flow (vph)	77	77	71	244	248	962
v/c Ratio	0.42	0.38	0.29	0.57	0.07	0.36
Control Delay	34.8	25.2	9.9	22.5	1.6	8.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	34.8	25.2	9.9	22.5	1.6	8.4
Queue Length 50th (ft)	32	21	0	37	3	69
Queue Length 95th (ft)	71	61	30	54	7	104
Internal Link Dist (ft)		663			397	318
Turn Bay Length (ft)	550		260	150		
Base Capacity (vph)	213	234	271	482	3800	2704
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.36	0.33	0.26	0.51	0.07	0.36

Intersection Summary

Queues

10: Milliken Ave & I-210 EB Off-ramp/I-210 EB On-ramp

11/04/2021



Lane Group	EBL	EBT	EBR	NBT	SBL	SBT
Lane Group Flow (vph)	104	102	95	441	335	611
v/c Ratio	0.52	0.46	0.36	0.18	0.58	0.16
Control Delay	37.7	26.8	10.8	8.6	23.8	2.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	37.7	26.8	10.8	8.6	23.8	2.1
Queue Length 50th (ft)	44	29	0	31	69	19
Queue Length 95th (ft)	91	76	38	49	99	27
Internal Link Dist (ft)		584		352		397
Turn Bay Length (ft)	500		420		125	
Base Capacity (vph)	223	246	287	2422	574	3739
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.47	0.41	0.33	0.18	0.58	0.16
Intersection Summary						

Queues

15: Milliken Ave & I-10 WB Ramps/Ontario Mills Pkwy

11/04/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	84	44	42	511	44	270	74	527	105	105	1063	347
v/c Ratio	0.48	0.33	0.16	0.74	0.05	0.55	0.51	0.19	0.12	0.91	0.41	0.40
Control Delay	54.2	48.8	1.3	44.0	28.8	8.7	52.1	5.7	0.3	110.8	19.2	2.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	54.2	48.8	1.3	44.0	28.8	8.7	52.1	5.7	0.3	110.8	19.2	2.3
Queue Length 50th (ft)	27	27	0	157	11	0	25	18	0	35	135	0
Queue Length 95th (ft)	50	59	0	#247	24	61	48	23	0	#84	161	25
Internal Link Dist (ft)		362			601			826			499	
Turn Bay Length (ft)	490		290	200		245	600		175	500		100
Base Capacity (vph)	181	232	352	686	846	494	157	2708	873	116	2576	869
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.46	0.19	0.12	0.74	0.05	0.55	0.47	0.19	0.12	0.91	0.41	0.40

Intersection Summary

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

Queues

16: Milliken Ave & I-10 EB Ramps

11/04/2021



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	449	345	109	280	1315	360
v/c Ratio	0.70	0.64	0.41	0.08	0.50	0.43
Control Delay	40.5	13.2	45.2	6.2	7.6	2.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	40.5	13.2	45.2	6.2	7.6	2.7
Queue Length 50th (ft)	135	37	33	15	83	19
Queue Length 95th (ft)	157	96	57	27	112	39
Internal Link Dist (ft)	1479			496	826	
Turn Bay Length (ft)		700	300			90
Base Capacity (vph)	911	653	266	3488	2640	828
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.49	0.53	0.41	0.08	0.50	0.43
Intersection Summary						

Queues

5: I-15 SB On-ramp/I-15 SB Off-ramp & Foothill Blvd/Foothill Blvd

11/04/2021



Lane Group	EBT	EBR	WBT	WBR	SBL	SBT	SBR
Lane Group Flow (vph)	2936	977	2256	521	212	322	322
v/c Ratio	0.91	0.64	0.71	0.35	0.50	0.87	0.84
Control Delay	24.4	2.1	8.4	0.4	44.3	67.1	63.2
Queue Delay	6.7	0.0	0.1	0.0	0.0	0.0	0.0
Total Delay	31.1	2.1	8.5	0.4	44.3	67.1	63.2
Queue Length 50th (ft)	716	0	251	0	157	276	263
Queue Length 95th (ft)	801	0	m261	m0	244	#462	#431
Internal Link Dist (ft)	771		756			1518	
Turn Bay Length (ft)					160		160
Base Capacity (vph)	3218	1515	3187	1500	424	371	383
Starvation Cap Reductn	0	0	130	0	0	0	0
Spillback Cap Reductn	272	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	1.00	0.64	0.74	0.35	0.50	0.87	0.84

Intersection Summary

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

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Queues

6: I-15 NB Off-ramp/I-15 NB On-ramp & Foothill Blvd /Foothill Blvd

11/04/2021



Lane Group	EBT	EBR	WBT	WBR	NBL	NBT	NBR
Lane Group Flow (vph)	2732	403	1585	955	640	633	579
v/c Ratio	1.03	0.29	0.60	0.63	1.03	1.07	1.05
Control Delay	36.3	0.2	21.2	2.0	81.8	95.2	89.4
Queue Delay	3.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	39.3	0.2	21.2	2.0	81.8	95.2	89.4
Queue Length 50th (ft)	~903	0	318	0	~603	~645	~553
Queue Length 95th (ft)	#977	m0	365	0	#848	#904	#794
Internal Link Dist (ft)	756		538			1373	
Turn Bay Length (ft)				290			430
Base Capacity (vph)	2657	1404	2631	1515	624	591	553
Starvation Cap Reductn	21	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	1.04	0.29	0.60	0.63	1.03	1.07	1.05

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Queues

7: Ontario Mills Dr./I-15 SB Ramps & Fourth St

11/04/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	508	1326	57	90	987	225	188	242	78	104	357	204
v/c Ratio	0.82	0.49	0.06	0.54	0.54	0.36	0.76	0.62	0.29	0.58	0.75	0.39
Control Delay	59.5	18.0	0.1	68.8	30.2	11.3	71.5	61.4	6.2	64.0	34.2	8.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	59.5	18.0	0.1	68.8	30.2	11.3	71.5	61.4	6.2	64.0	34.2	8.6
Queue Length 50th (ft)	210	234	0	38	238	47	152	103	0	82	68	34
Queue Length 95th (ft)	265	315	0	m62	334	141	230	144	22	141	123	61
Internal Link Dist (ft)		794			836			429			292	
Turn Bay Length (ft)	675		250	260		120	250		275	160		160
Base Capacity (vph)	710	2699	911	168	1833	631	304	559	341	210	550	562
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.72	0.49	0.06	0.54	0.54	0.36	0.62	0.43	0.23	0.50	0.65	0.36

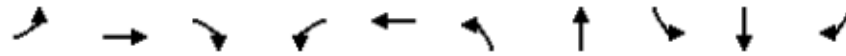
Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Queues

8: Fourth St & I-15 NB Ramps

11/04/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	728	761	67	22	585	63	91	91	93	794
v/c Ratio	2.89	0.27	0.07	0.31	0.22	0.47	0.31	0.70	0.65	0.69
Control Delay	881.0	2.2	0.1	71.3	11.3	67.8	31.7	82.7	76.6	6.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	881.0	2.2	0.1	71.3	11.3	67.8	31.7	82.7	76.6	6.2
Queue Length 50th (ft)	~558	23	0	18	71	52	18	78	80	0
Queue Length 95th (ft)	#685	30	0	48	104	97	45	141	141	55
Internal Link Dist (ft)		836			507		161		492	
Turn Bay Length (ft)	200		125	245				300		200
Base Capacity (vph)	252	2861	990	73	2603	503	998	157	172	1155
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	2.89	0.27	0.07	0.30	0.22	0.13	0.09	0.58	0.54	0.69

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

Queues

9: Milliken Ave & I-210 WB On-ramp/I-210 WB Off-ramp

11/04/2021



Lane Group	WBL	WBT	WBR	NBL	NBT	SBT
Lane Group Flow (vph)	100	102	82	226	725	629
v/c Ratio	0.51	0.49	0.30	0.71	0.19	0.23
Control Delay	33.3	30.9	8.8	38.0	0.9	6.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	33.3	30.9	8.8	38.0	0.9	6.3
Queue Length 50th (ft)	35	35	0	43	5	35
Queue Length 95th (ft)	78	80	30	m#87	6	52
Internal Link Dist (ft)		663			397	318
Turn Bay Length (ft)	550		260	150		
Base Capacity (vph)	207	217	279	318	3778	2789
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.48	0.47	0.29	0.71	0.19	0.23

Intersection Summary

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

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Queues

10: Milliken Ave & I-210 EB Off-ramp/I-210 EB On-ramp

11/04/2021



Lane Group	EBL	EBT	EBR	NBT	SBL	SBT
Lane Group Flow (vph)	127	134	196	1046	138	607
v/c Ratio	0.64	0.63	0.56	0.37	0.48	0.17
Control Delay	42.3	36.7	11.3	5.1	29.5	0.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	42.3	36.7	11.3	5.1	29.5	0.5
Queue Length 50th (ft)	46	43	0	46	26	1
Queue Length 95th (ft)	#118	#119	52	67	51	1
Internal Link Dist (ft)		584		352		397
Turn Bay Length (ft)	500		420		125	
Base Capacity (vph)	198	213	350	2852	289	3498
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.64	0.63	0.56	0.37	0.48	0.17

Intersection Summary

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

Queues

15: Milliken Ave & I-10 WB Ramps/Ontario Mills Pkwy

11/04/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	249	227	73	760	196	114	431	1665	553	470	1264	554
v/c Ratio	0.52	0.97	0.22	1.14	0.29	0.35	0.87	0.73	0.64	1.61	0.71	0.73
Control Delay	48.7	104.9	1.5	121.3	43.7	5.6	61.5	26.3	11.7	324.7	39.4	15.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	48.7	104.9	1.5	121.3	43.7	5.6	61.5	26.3	11.7	324.7	39.4	15.4
Queue Length 50th (ft)	90	178	0	~354	69	0	172	320	162	~269	251	109
Queue Length 95th (ft)	117	#297	0	#418	100	13	#222	192	174	#337	264	146
Internal Link Dist (ft)		362			601			826			499	
Turn Bay Length (ft)	490		290	200		245	600		175	500		100
Base Capacity (vph)	596	233	336	668	673	327	495	2272	858	292	1784	810
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.42	0.97	0.22	1.14	0.29	0.35	0.87	0.73	0.64	1.61	0.71	0.68

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

Queues

16: Milliken Ave & I-10 EB Ramps

11/04/2021



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	565	161	143	1704	943	853
v/c Ratio	0.62	0.30	0.59	0.50	0.34	0.75
Control Delay	36.6	4.8	60.5	15.2	4.4	17.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.2
Total Delay	36.6	4.8	60.5	15.2	4.4	18.1
Queue Length 50th (ft)	190	0	55	202	31	652
Queue Length 95th (ft)	213	41	86	295	m94	m629
Internal Link Dist (ft)	1479			496	826	
Turn Bay Length (ft)		700	300			90
Base Capacity (vph)	1181	658	660	3416	2794	1189
Starvation Cap Reductn	0	0	0	0	0	44
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.48	0.24	0.22	0.50	0.34	0.74

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Queues

5: I-15 SB On-ramp/I-15 SB Off-ramp & Foothill Blvd/Foothill Blvd

11/04/2021



Lane Group	EBT	EBR	WBT	WBR	SBL	SBT	SBR
Lane Group Flow (vph)	1598	907	1337	594	479	448	444
v/c Ratio	0.52	0.60	0.44	0.40	1.13	1.07	1.05
Control Delay	9.8	1.8	9.4	2.1	115.6	94.5	86.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	9.8	1.8	9.4	2.1	115.6	94.5	86.0
Queue Length 50th (ft)	163	0	106	1	~334	~283	~261
Queue Length 95th (ft)	198	0	m108	m9	#532	#489	#457
Internal Link Dist (ft)	771		756			1518	
Turn Bay Length (ft)					160		160
Base Capacity (vph)	3081	1515	3051	1500	425	417	424
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.52	0.60	0.44	0.40	1.13	1.07	1.05

Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.

Queues

6: I-15 NB Off-ramp/I-15 NB On-ramp & Foothill Blvd /Foothill Blvd

11/04/2021



Lane Group	EBT	EBR	WBT	WBR	NBL	NBT	NBR
Lane Group Flow (vph)	1791	345	1678	908	132	132	120
v/c Ratio	1.07	0.25	1.01	0.60	0.15	0.16	0.15
Control Delay	66.5	0.3	55.4	1.8	9.8	9.0	8.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	66.5	0.3	55.4	1.8	9.8	9.0	8.9
Queue Length 50th (ft)	~423	0	~353	0	34	32	28
Queue Length 95th (ft)	m#474	m0	#465	0	64	63	55
Internal Link Dist (ft)	756		538			1373	
Turn Bay Length (ft)				290			430
Base Capacity (vph)	1675	1404	1659	1515	902	846	797
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	1.07	0.25	1.01	0.60	0.15	0.16	0.15

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Queues

7: Ontario Mills Dr./I-15 SB Ramps & Fourth St

11/04/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	572	1708	77	100	1101	213	133	139	27	116	388	226
v/c Ratio	0.84	0.61	0.08	0.53	0.59	0.34	0.69	0.48	0.12	0.64	0.77	0.41
Control Delay	58.8	18.7	3.2	68.4	32.2	13.6	72.8	61.7	1.0	68.3	33.4	9.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	58.8	18.7	3.2	68.4	32.2	13.6	72.8	61.7	1.0	68.3	33.4	9.5
Queue Length 50th (ft)	234	321	0	43	286	60	108	60	0	93	72	46
Queue Length 95th (ft)	297	427	24	m67	376	m142	176	93	0	154	128	79
Internal Link Dist (ft)		794			836			429			292	
Turn Bay Length (ft)	675		250	260		120	250		275	160		160
Base Capacity (vph)	755	2802	928	190	1869	629	232	429	287	218	610	586
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.76	0.61	0.08	0.53	0.59	0.34	0.57	0.32	0.09	0.53	0.64	0.39

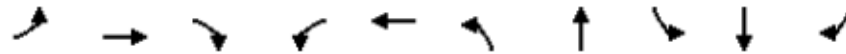
Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Queues

8: Fourth St & I-15 NB Ramps

11/04/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	855	958	96	23	632	127	163	114	115	782
v/c Ratio	3.39	0.36	0.10	0.32	0.26	0.66	0.37	0.80	0.72	0.73
Control Delay	1102.3	2.1	0.2	72.0	14.9	69.9	27.6	91.6	80.6	11.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	1102.3	2.1	0.2	72.0	14.9	69.9	27.6	91.6	80.6	11.3
Queue Length 50th (ft)	~678	26	0	19	93	104	33	98	98	42
Queue Length 95th (ft)	#809	31	m0	50	133	165	65	#195	#183	121
Internal Link Dist (ft)		836			507		161		492	
Turn Bay Length (ft)	200		125	245				300		200
Base Capacity (vph)	252	2660	926	73	2414	503	1024	157	174	1077
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	3.39	0.36	0.10	0.32	0.26	0.25	0.16	0.73	0.66	0.73

Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.

Queues

9: Milliken Ave & I-210 WB On-ramp/I-210 WB Off-ramp

11/04/2021



Lane Group	WBL	WBT	WBR	NBL	NBT	SBT
Lane Group Flow (vph)	71	110	352	118	846	895
v/c Ratio	0.21	0.30	0.81	0.46	0.26	0.36
Control Delay	24.7	18.1	33.9	52.4	2.1	13.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	24.7	18.1	33.9	52.4	2.1	13.0
Queue Length 50th (ft)	33	36	127	29	10	92
Queue Length 95th (ft)	57	70	201	m47	45	154
Internal Link Dist (ft)		663			397	318
Turn Bay Length (ft)	550		260	150		
Base Capacity (vph)	537	560	602	264	3219	2489
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.13	0.20	0.58	0.45	0.26	0.36

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Queues

10: Milliken Ave & I-210 EB Off-ramp/I-210 EB On-ramp

11/04/2021



Lane Group	EBL	EBT	EBR	NBT	SBL	SBT
Lane Group Flow (vph)	328	331	313	502	375	438
v/c Ratio	0.78	0.77	0.52	0.26	0.73	0.15
Control Delay	43.0	41.2	6.1	15.8	37.3	2.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	43.0	41.2	6.1	15.8	37.3	2.6
Queue Length 50th (ft)	172	175	0	58	101	7
Queue Length 95th (ft)	270	279	60	86	#157	17
Internal Link Dist (ft)		584		352		397
Turn Bay Length (ft)	500		420		125	
Base Capacity (vph)	480	488	649	1931	513	3003
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.68	0.68	0.48	0.26	0.73	0.15

Intersection Summary

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

Queue shown is maximum after two cycles.

Queues

15: Milliken Ave & I-10 WB Ramps/Ontario Mills Pkwy

11/04/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	792	318	116	694	576	393	72	2518	161	548	1695	834
v/c Ratio	1.57	1.08	0.34	1.50	1.11	1.38	0.48	1.07	0.20	1.44	0.58	0.80
Control Delay	299.5	125.1	12.6	274.6	122.3	218.6	66.8	73.2	7.6	251.7	24.2	19.4
Queue Delay	0.0	0.0	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	299.5	125.1	12.8	274.8	122.3	218.6	66.8	73.2	7.6	251.7	24.2	19.4
Queue Length 50th (ft)	~486	~298	5	~417	~290	~326	32	~688	21	~322	295	419
Queue Length 95th (ft)	#547	#427	47	#481	#360	#462	m44	#647	m39	#389	297	512
Internal Link Dist (ft)		362			601			826			499	
Turn Bay Length (ft)	490		290	200		245	600		175	500		100
Base Capacity (vph)	506	295	346	462	520	284	159	2359	791	381	2912	1046
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	23	10	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.57	1.08	0.36	1.54	1.11	1.38	0.45	1.07	0.20	1.44	0.58	0.80

Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.

Queues

16: Milliken Ave & I-10 EB Ramps

11/04/2021



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	1648	11	5	709	987	1160
v/c Ratio	0.84	0.01	0.06	0.52	0.71	0.93
Control Delay	19.5	2.8	63.0	44.3	35.9	28.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.2
Total Delay	19.5	2.8	63.0	44.3	35.9	28.5
Queue Length 50th (ft)	464	0	2	152	187	801
Queue Length 95th (ft)	581	6	9	186	m227	m744
Internal Link Dist (ft)	1479			496	826	
Turn Bay Length (ft)		700	300			90
Base Capacity (vph)	1984	951	77	1363	1381	1245
Starvation Cap Reductn	0	0	0	0	0	3
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.83	0.01	0.06	0.52	0.71	0.93

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Queues

5: I-15 SB On-ramp/I-15 SB Off-ramp & Foothill Blvd/Foothill Blvd

11/04/2021



Lane Group	EBT	EBR	WBT	WBR	SBL	SBT	SBR
Lane Group Flow (vph)	1866	654	2095	313	176	224	220
v/c Ratio	0.60	0.44	0.67	0.21	0.44	0.62	0.59
Control Delay	10.2	0.9	8.2	0.2	31.5	35.8	34.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	10.2	0.9	8.2	0.2	31.5	35.8	34.3
Queue Length 50th (ft)	200	0	221	0	87	115	107
Queue Length 95th (ft)	241	0	215	m0	152	202	187
Internal Link Dist (ft)	771		756			1518	
Turn Bay Length (ft)					160		160
Base Capacity (vph)	3135	1500	3135	1485	404	363	375
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.60	0.44	0.67	0.21	0.44	0.62	0.59

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Queues

6: I-15 NB Off-ramp/I-15 NB On-ramp & Foothill Blvd /Foothill Blvd

11/04/2021



Lane Group	EBT	EBR	WBT	WBR	NBL	NBT	NBR
Lane Group Flow (vph)	1562	565	1117	315	725	712	618
v/c Ratio	1.01	0.38	0.72	0.21	0.77	0.79	0.73
Control Delay	47.2	0.6	30.1	0.3	21.1	22.3	19.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	47.2	0.6	30.1	0.3	21.1	22.3	19.2
Queue Length 50th (ft)	~330	0	203	0	302	312	240
Queue Length 95th (ft)	#441	0	254	0	475	504	389
Internal Link Dist (ft)	756		538			1373	
Turn Bay Length (ft)				290			430
Base Capacity (vph)	1552	1500	1552	1515	938	897	852
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	1.01	0.38	0.72	0.21	0.77	0.79	0.73

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

Queues

7: Ontario Mills Dr./I-15 SB Ramps & Fourth St

11/04/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	443	976	53	179	891	91	204	228	92	128	525	278
v/c Ratio	0.81	0.45	0.07	0.61	0.52	0.16	0.78	0.32	0.23	0.70	0.80	0.61
Control Delay	63.1	27.0	0.2	63.0	34.5	4.4	71.7	43.9	6.0	73.9	42.1	11.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	63.1	27.0	0.2	63.0	34.5	4.4	71.7	43.9	6.0	73.9	42.1	11.1
Queue Length 50th (ft)	185	208	0	76	226	0	166	85	0	105	150	0
Queue Length 95th (ft)	239	278	0	m106	312	m8	244	120	32	169	214	89
Internal Link Dist (ft)		794			836			429			292	
Turn Bay Length (ft)	675		250	260		120	250		275	160		160
Base Capacity (vph)	628	2160	739	292	1727	573	332	834	455	236	735	491
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.71	0.45	0.07	0.61	0.52	0.16	0.61	0.27	0.20	0.54	0.71	0.57

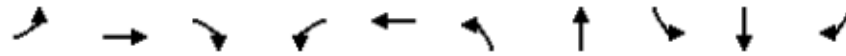
Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Queues

8: Fourth St & I-15 NB Ramps

11/04/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	666	432	111	5	230	82	66	40	42	877
v/c Ratio	2.70	0.13	0.10	0.11	0.08	0.53	0.22	0.38	0.36	0.77
Control Delay	797.7	1.6	0.6	66.4	9.2	68.1	31.5	67.3	65.3	7.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	797.7	1.6	0.6	66.4	9.2	68.1	31.5	67.3	65.3	7.8
Queue Length 50th (ft)	~504	2	0	4	24	67	13	34	35	0
Queue Length 95th (ft)	#629	16	1	19	42	118	36	74	75	57
Internal Link Dist (ft)		836			507		161		492	
Turn Bay Length (ft)	200		125	245				300		200
Base Capacity (vph)	247	3367	1137	46	2920	533	950	170	190	1146
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	2.70	0.13	0.10	0.11	0.08	0.15	0.07	0.24	0.22	0.77

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

Queues

9: Milliken Ave & I-210 WB On-ramp/I-210 WB Off-ramp

11/04/2021



Lane Group	WBL	WBT	WBR	NBL	NBT	SBT
Lane Group Flow (vph)	100	100	75	210	576	315
v/c Ratio	0.51	0.48	0.28	0.58	0.15	0.12
Control Delay	33.3	30.9	7.8	29.1	0.8	6.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	33.3	30.9	7.8	29.1	0.8	6.3
Queue Length 50th (ft)	35	35	0	39	4	17
Queue Length 95th (ft)	78	79	26	m68	4	28
Internal Link Dist (ft)		663			397	318
Turn Bay Length (ft)	550		260	150		
Base Capacity (vph)	207	216	279	364	3778	2701
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.48	0.46	0.27	0.58	0.15	0.12

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Queues

10: Milliken Ave & I-210 EB Off-ramp/I-210 EB On-ramp

11/04/2021



Lane Group	EBL	EBT	EBR	NBT	SBL	SBT
Lane Group Flow (vph)	143	204	200	877	91	310
v/c Ratio	0.67	0.56	0.51	0.34	0.50	0.10
Control Delay	41.0	12.2	9.1	5.6	36.1	0.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	41.0	12.2	9.1	5.6	36.1	0.8
Queue Length 50th (ft)	50	8	0	41	18	1
Queue Length 95th (ft)	#124	64	50	61	m#41	1
Internal Link Dist (ft)		584		352		397
Turn Bay Length (ft)	500		420		125	
Base Capacity (vph)	228	381	407	2587	183	3026
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.63	0.54	0.49	0.34	0.50	0.10

Intersection Summary

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

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Queues

15: Milliken Ave & I-10 WB Ramps/Ontario Mills Pkwy

11/04/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	290	351	135	324	262	214	327	777	409	315	1038	506
v/c Ratio	0.57	1.03	0.34	0.90	0.60	0.55	0.76	0.30	0.45	1.36	0.47	0.58
Control Delay	46.3	99.7	9.0	75.8	50.1	11.3	59.8	19.3	12.1	227.9	27.4	9.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	46.3	99.7	9.0	75.8	50.1	11.3	59.8	19.3	12.1	227.9	27.4	9.3
Queue Length 50th (ft)	96	~265	0	118	92	0	124	90	69	~151	162	70
Queue Length 95th (ft)	#158	#446	51	#200	129	65	172	136	224	#241	199	141
Internal Link Dist (ft)		362			601			826			499	
Turn Bay Length (ft)	490		290	200		245	600		175	500		100
Base Capacity (vph)	511	342	394	360	621	459	485	2602	917	231	2200	875
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.57	1.03	0.34	0.90	0.42	0.47	0.67	0.30	0.45	1.36	0.47	0.58

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

Queues

16: Milliken Ave & I-10 EB Ramps

11/04/2021



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	404	114	201	1062	698	758
v/c Ratio	0.48	0.24	0.65	0.30	0.26	0.70
Control Delay	32.1	5.0	54.5	11.4	10.4	13.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	32.1	5.0	54.5	11.4	10.4	13.5
Queue Length 50th (ft)	117	0	70	96	48	292
Queue Length 95th (ft)	136	34	104	153	m63	m347
Internal Link Dist (ft)	1479			496	826	
Turn Bay Length (ft)		700	300			90
Base Capacity (vph)	1185	632	620	3517	2705	1156
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.34	0.18	0.32	0.30	0.26	0.66

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.