

October 5, 2021

Oakwood Homes
4908 Tower Road
Denver, CO 80249



Re: Traffic Letter for Reunion Ridge Filing No.'s 2 and 3, a Supplement to Reunion Ridge South Traffic Impact Study in Commerce City, CO dated July 31, 2020

To Whom It May Concern:

This Traffic Letter has been prepared to provide a supplement to the submitted *Reunion Ridge South Traffic Impact Study* (TIS) dated July 31, 2020, prepared by JR Engineering. The scope of this letter will be limited to the road network for Filings 2 and 3 and the effects of the anticipated trip generation.

The Reunion Ridge South development is located within the northeast quarter of Section 16 of Township 2 South, Range 66 West, 6th Principal Meridian, City of Commerce City, County of Adams, and State of Colorado.

As the latest site plan, Filings 2 and 3 are shown as Phase II in the *Reunion Ridge South Village Plan*, prepared by Terracina Design on June 26, 2020. The Phasing Plan and Transportation Plan figures are included in **Appendix C**.

Roadway improvements include the extension of Vaughn Way from E 100th Place to Reunion Ridge Way and the construction of Reunion Ridge Way (a major collector) from Vaughn Way to Revere Street/Peoria Parkway. Three accesses to Filings 2 and 3 will be built along Reunion Ridge Way. Residents will need to use Vaughn Way, Revere Street, Peoria Parkway, and Peoria Street until future filings of Reunion Ridge South are constructed. It is anticipated that construction will start in 2022, with an anticipated buildout date in the Year 2023. The intersection of E 104th Avenue and Vaughn Way was signalized with Reunion Ridge Filing 1.

It was assumed that the adjacent Turnberry South development will be complete by the Year 2023 as well. According to the *Turnberry Parcels P, Q, R, S, & T Traffic Impact Report*, prepared by Harris Kocher Smith (HKS) dated July 13, 2020, Revere Street/Peoria Parkway will be improved to a major collector between Peoria Street and E 104th Avenue with a posted speed of 30 mph. The intersection of 104th Avenue & Revere Street was recently signalized. Peoria Street will remain a two-lane gravel road with a posted speed of 40 mph.

This traffic letter will address the following:

- Trip Generation from Reunion Ridge Filings 2 and 3
- Level of Service at intersections:
 - E 104th Avenue and Revere Street (E1)
 - E 104th Avenue and Vaughn Way (E2)
 - E 104th Avenue and Potomac Street (E3)
 - E 96th Avenue and Peoria Street (E4)
 - Reunion Ridge Way and Revere Street/Peoria Parkway (P1)

Background Traffic Summary

The Year 2022 traffic from the *Turnberry Parcels P, Q, R, S, & T Traffic Impact Report* was used as part of the Year 2022 existing traffic for Reunion Ridge Filings 2 and 3. Additionally, the Year 2022 traffic was used from the *Reunion Ridge – Phase 1 TIS* by JR Engineering dated March 18, 2020. It should be noted that Reunion Ridge “Phase 1” is also known as Reunion Ridge “Filing 1”. Growth rates were applied at 4.0% for E 104th Avenue thru movements and 2.0% for all other movements to estimate the Year 2023 Background Traffic.

Trip Generation Summary

Site generated traffic has been calculated from the latest data contained within the Institute of Transportation Engineers' (ITE) *Trip Generation Manual, 10th Edition*. Based on the land use and the guidelines within Volume 1 of the *Trip Generation Manual*, JR used the fitted equations for the AM and PM peak hours of adjacent street traffic.

The Carriage House, American Dream, and Porchlight lots were collectively studied as ITE Code 210 (Single-Family Detached Housing) with 147 dwelling units in Filing 2 and 105 dwelling units in Filing 3.

Filings 2 and 3 are expected to generate the approximate following number of trips:

- 2570 weekday trips
- 188 AM peak hour vehicle trips, split 47 entering (25%) and 141 exiting (75%)
- 253 PM peak hour vehicle trips, split 160 entering (63%) and 93 exiting (37%)

The trip generation reports are included in **Appendix A**. The reports show a summary of land use, trip generation rates, and the total volume added to the adjacent streets. No adjustments were made for internal capture trips or pass-by trips.

Based on the projected traffic volumes, the Year 2023 Background Traffic, Assignment of Site Generated Traffic, and Year 2023 Opening Day Traffic are shown in **Figure 1**, **Figure 2**, and **Figure 3**, respectively. Lane geometry is shown in **Figures 1 and 3**, while directional distribution of site generated traffic is shown in **Figure 2**.

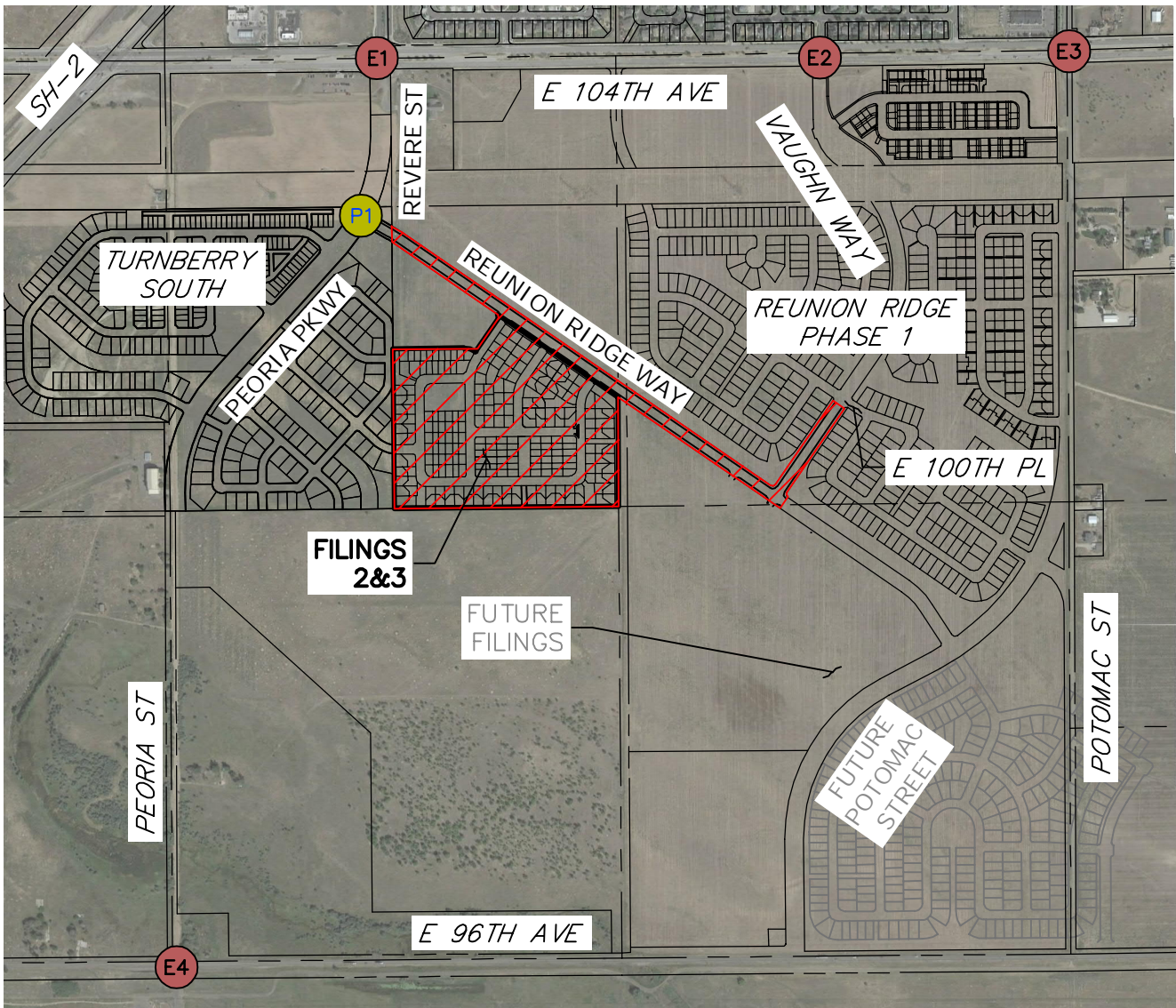
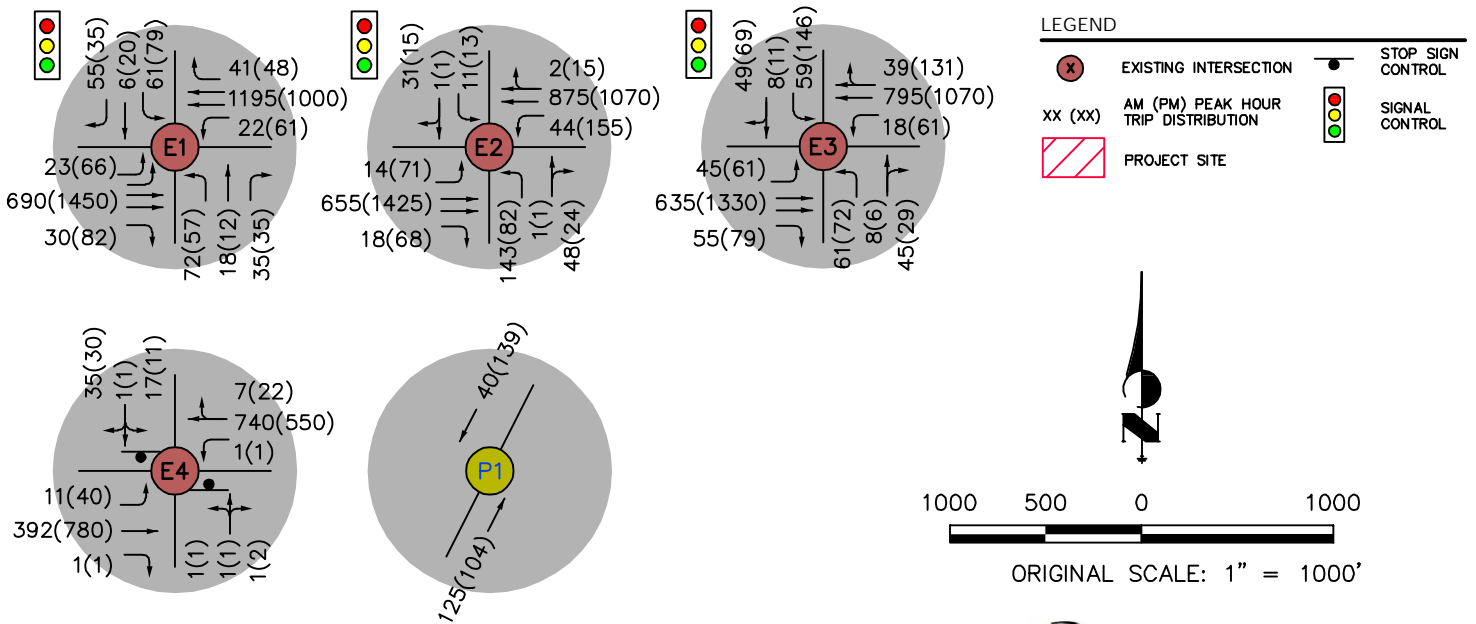


Figure 1 - Year 2023 Background Traffic



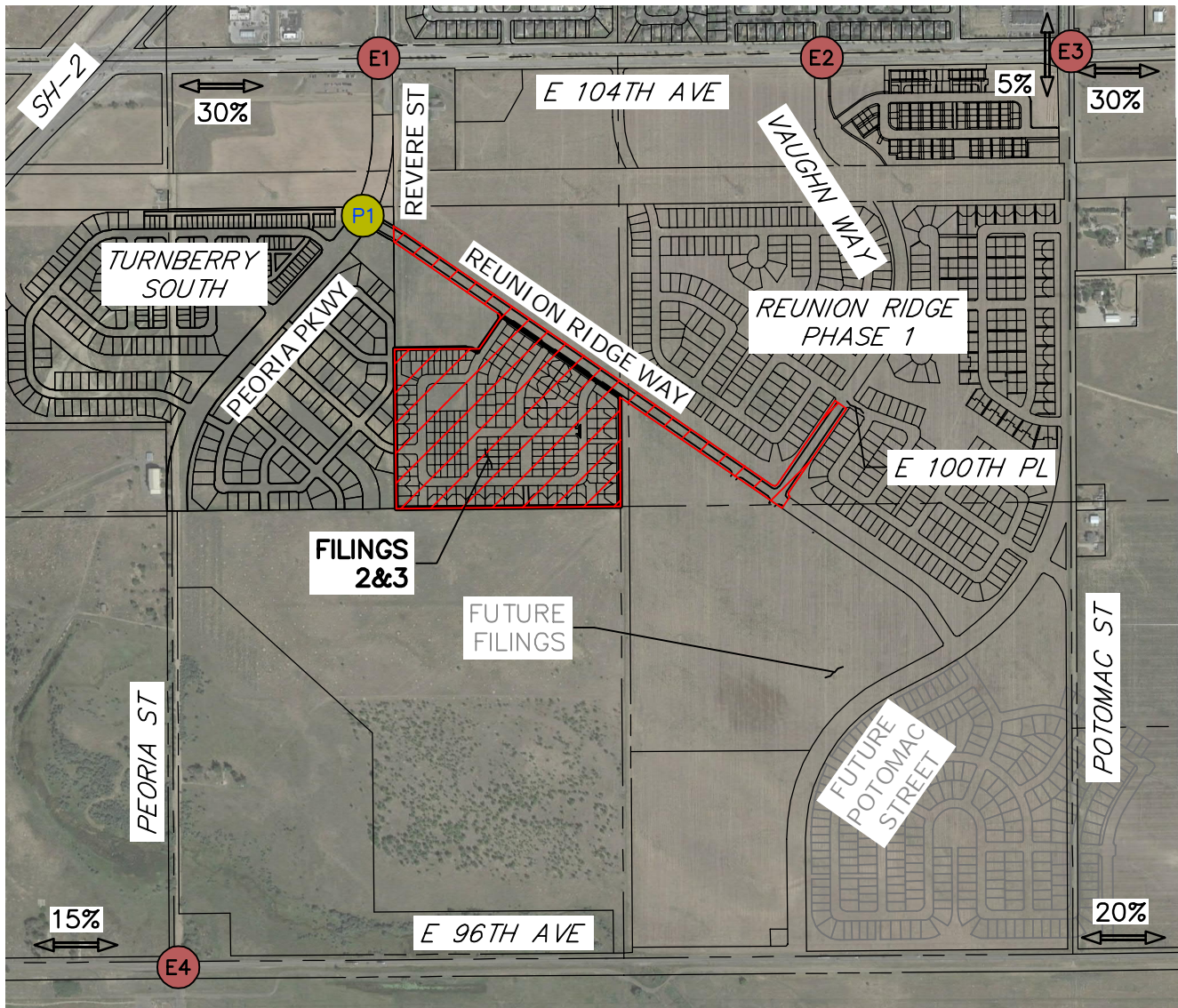
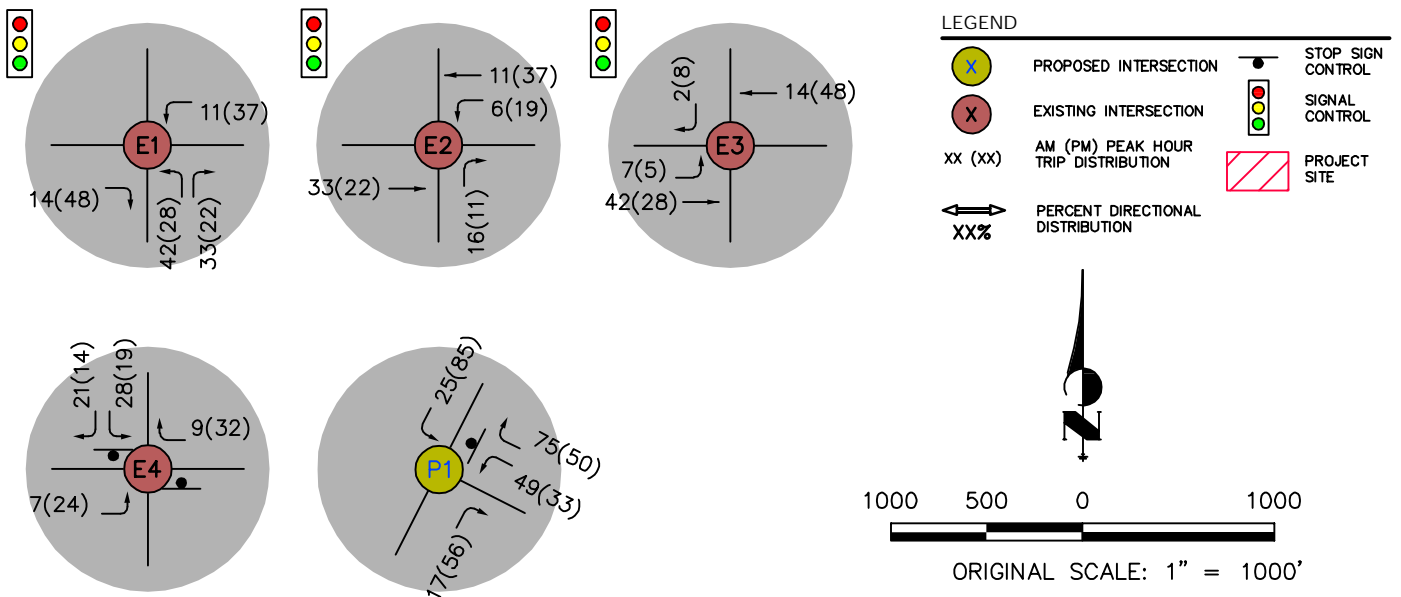


Figure 2 - Assignment of Site Generated Traffic



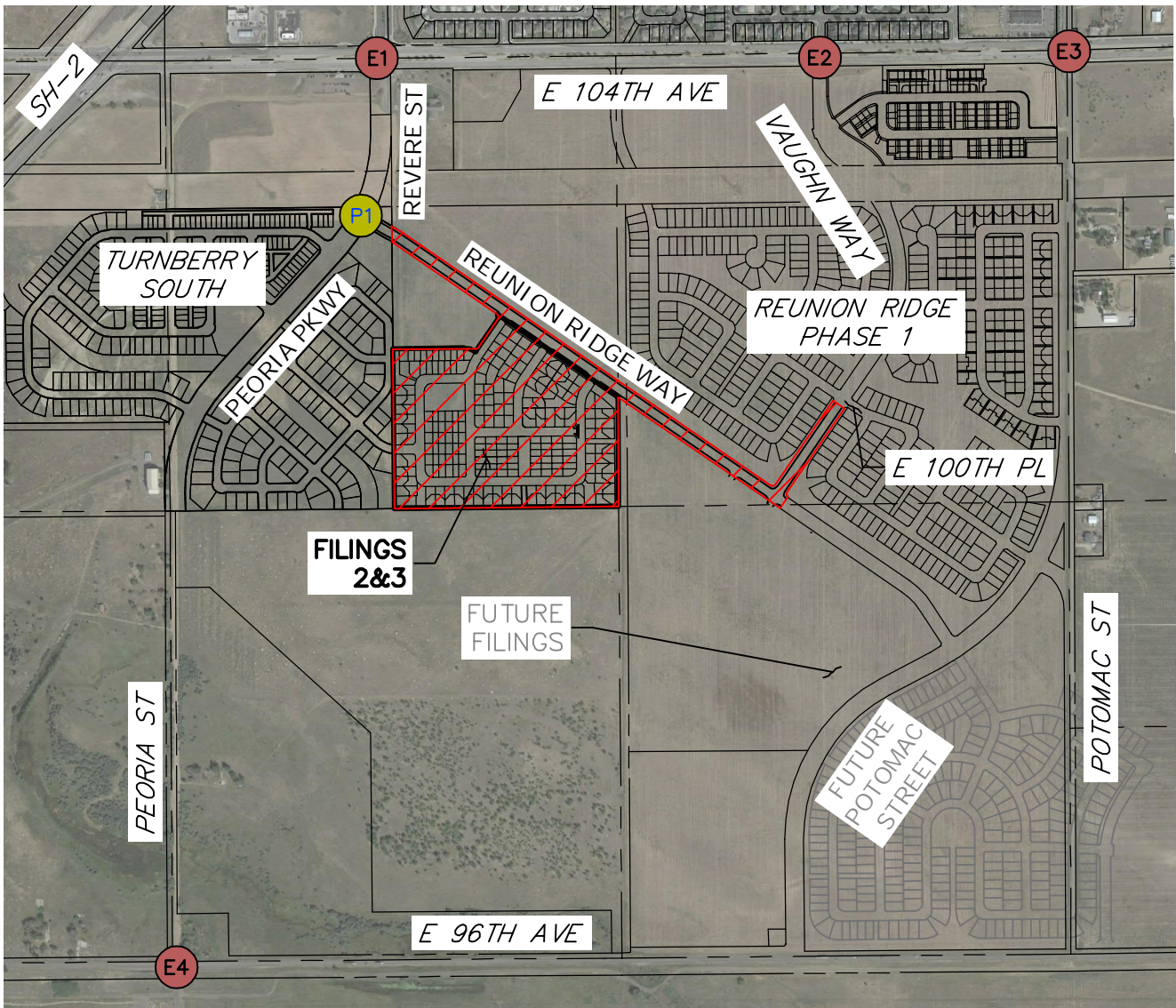
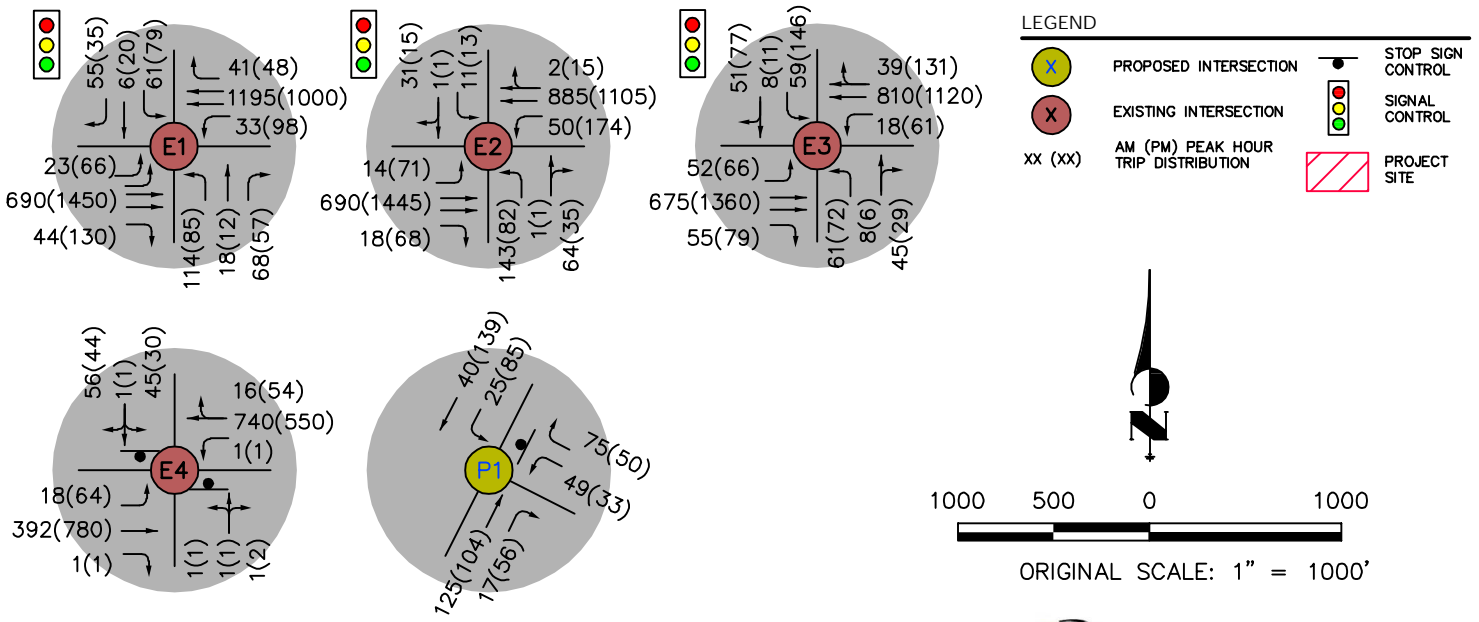


Figure 3 - Year 2023 Opening Day Traffic



Level of Service Results

Operational analyses were conducted in the Year 2023 AM and PM peak hours to determine the levels of service (LOS). The projected traffic volumes were input into *Synchro* software, along with the current signal timing received from the City along 104th Avenue. The intersections at Revere Street, Vaughn Way, and Potomac Street were signalized and coordinated. The level of service results are summarized in **Table 1** below.

Table 1 – LOS for Year 2023 Traffic

Signalized Intersections	Movement	Background Traffic LOS		Opening Day Traffic LOS	
		AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour
E1 - 104th Ave & Revere St	EBL	C	E	C	E
	EBT	B	B	B	B
	EBR	A	A	A	A
	WBL	C	B	C	B
	WBT	C	C	C	C
	WBR	A	A	A	A
	NBL	D	D	D	D
	NBT	D	D	D	D
	NBR	D	D	D	D
	SBL	D	D	D	D
	SBT	D	D	D	D
	SBR	D	D	D	D
OVERALL		C	C	C	C
E2 - 104th Ave & Vaughn Way	EBL	C	C	C	C
	EBT	E	C	E	C
	EBR	D	A	D	A
	WBL	A	C	A	C
	WBT	D	A	D	A
	WBR	D	A	D	A
	NBL	E	D	E	D
	NBTR	D	D	E	E
	SBL	D	D	D	D
	SBTR	D	D	D	D
	OVERALL		D	B	D
E3 - 104th Ave & Potomac St	EBL	B	C	B	C
	EBT	A	A	A	A
	EBR	A	A	A	A
	WBL	C	C	C	C
	WBTR	E	E	D	E
	NBL	D	E	D	E
	NBTR	D	D	D	D
	SBL	D	E	D	D
	SBTR	D	E	D	E
	OVERALL		C	C	C

TWSC Intersections	Movement	Background Traffic LOS		Opening Day Traffic LOS	
		AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour
A1 - Revere St & Reunion Ridge Way	WBL	N/A	N/A	B	B
	WBR	N/A	N/A	A	A
	SBL	N/A	N/A	A	A
E4 - 96th Ave & Peoria St	EBL	A	A	A	A
	WBL	A	A	A	A
	NBLTR	C	D	D	E
	SBLTR	D	D	E	F

Notes:

1. EB=Eastbound, WB=Westbound, NB=Northbound, SB=Southbound, N/A=Not Applicable
2. L=Left, R=Right, T=Through
3. Yellow highlight exceeds Established Threshold of LOS D

As shown in **Table 1**, movements are not expected to degrade to failure due to site generated traffic, except for the following:

- (E2) E 104th Avenue and Vaughn Way
 - AM and PM Peak Hours: NBTR
- (E4) E 96th Avenue and Peoria Street
 - AM and PM Peak Hours: SBTLR
 - PM Peak Hour: NBLTR

The 95th percentile queue lengths for the northbound lane at 104th & Vaughn (E2) are 33 feet and 28 feet in the AM and PM peak hours, respectively. Because no upstream driveways are expected to be impeded, JR recommends the City accept this failing LOS.

The 95th percentile queue lengths for the southbound lane at 96th & Peoria (E4) are 93 feet and 90 feet in the AM and PM peak hours, respectively. The 95th percentile queue length for the northbound lane is 3 feet in the PM peak hour. Because no upstream driveways are expected to be impeded along this gravel road, JR recommends the City accept this failing LOS.

The *HCM 6th Edition* Level of Service reports are shown in **Appendix B**.

Preliminary Traffic Signal Warrant

Additionally, the southbound left-turn volumes at E 96th Avenue and Peoria Street do not meet peak hour warrants for a traffic signal per MUTCD Figure 4C-4: Warrant 3, Peak Hour (70% Factor), since E 96th Avenue posted speed limit is 45mph. Peoria Street is planned as a major collector, indicating a traffic signal would be planned at this intersection. JR recommends analyzing the signalization when Peoria Street is paved in the future.

Conclusion

This Traffic Letter has been prepared as a supplement to the *Reunion Ridge South Traffic Impact Study*, dated July 31, 2020 and prepared by JR Engineering. Based on the development described herein and the anticipated trip generation, JR Engineering is of the opinion that the adjacent and proposed roadway network will function satisfactorily with the development of Filings 2 and 3 within Reunion Ridge.

If you have any questions or comments, please feel free to contact me at efarney@jrengineering.com or 303-267-6183.

Sincerely,
JR Engineering, LLC



Eli Farney, PE, PTOE
Director of Public Works

Attachments: Appendix A: Trip Generation and Land Use Summary Reports
Appendix B: *HCM 6th Edition* Level of Service Reports
Appendix C: Figures from *Reunion Ridge South Village Plan*



APPENDIX A

TRIP GENERATION AND LAND USE SUMMARY REPORTS

Trip Generation Summary

Alternative: Filings 2 and 3

Phase:

Open Date: 2/16/2021

Project: Reunion Ridge South

Analysis Date: 2/16/2023

ITE	Land Use	Weekday Average Daily Trips			Weekday AM Peak Hour of Adjacent Street Traffic			Weekday PM Peak Hour of Adjacent Street Traffic					
		*	Enter	Exit	Total	*	Enter	Exit	Total	*	Enter	Exit	Total
210	Filing 3 105 Dwelling Units		544	544	1088		20	59	79		67	39	106
210	Filing 2 147 Dwelling Units		741	741	1482		27	82	109		93	54	147
Unadjusted Volume			1285	1285	2570		47	141	188		160	93	253
Internal Capture Trips			0	0	0		0	0	0		0	0	0
Pass-By Trips			0	0	0		0	0	0		0	0	0
Volume Added to Adjacent Streets			1285	1285	2570		47	141	188		160	93	253

Total Weekday Average Daily Trips Internal Capture = 0 Percent

Total Weekday AM Peak Hour of Adjacent Street Traffic Internal Capture = 0 Percent

Total Weekday PM Peak Hour of Adjacent Street Traffic Internal Capture = 0 Percent

* - Custom rate used for selected time period.

Source: Institute of Transportation Engineers, Trip Generation Manual 10th Edition

TRIP GENERATION 10, TRAFFICWARE, LLC

Detailed Land Use Data
 For 147 Dwelling Units of Filing 2
 (210) Single-Family Detached Housing

Project: Reunion Ridge South

Open Date: 2/16/2021
 Analysis Date: 2/16/2023

Day / Period	Total Trips	Pass-By Trips	Avg Rate	Min Rate	Max Rate	Std Dev	Avg Size	% Enter	% Exit	Use Eq.	Equation	R2
Weekday Average Daily Trips Source : Trip Generation Manual 10th Edition	1482	0	9.44	4.81	19.39	2.1	264	50	50	True	$\ln(T) = 0.92 \ln(X) + 2.71$	0.95
Weekday AM Peak Hour of Adjacent Street Traffic Source : Trip Generation Manual 10th Edition	109	0	0.74	0.33	2.27	0.27	219	25	75	True	$T = 0.71(X) + 4.8$	0.89
Weekday PM Peak Hour of Adjacent Street Traffic Source : Trip Generation Manual 10th Edition	147	0	0.99	0.44	2.98	0.31	242	63	37	True	$\ln(T) = 0.96 \ln(X) + 0.2$	0.92

Detailed Land Use Data
 For 105 Dwelling Units of Filing 3
 (210) Single-Family Detached Housing

Project: Reunion Ridge South

Open Date: 2/16/2021
 Analysis Date: 2/16/2023




























Day / Period	Total Trips	Pass-By Trips	Avg Rate	Min Rate	Max Rate	Std Dev	Avg Size	% Enter	% Exit	Use Eq.	Equation	R2
Weekday Average Daily Trips Source : Trip Generation Manual 10th Edition	1088	0	9.44	4.81	19.39	2.1	264	50	50	True	$\ln(T) = 0.92 \ln(X) + 2.71$	0.95
Weekday AM Peak Hour of Adjacent Street Traffic Source : Trip Generation Manual 10th Edition	79	0	0.74	0.33	2.27	0.27	219	25	75	True	$T = 0.71(X) + 4.8$	0.89
Weekday PM Peak Hour of Adjacent Street Traffic Source : Trip Generation Manual 10th Edition	106	0	0.99	0.44	2.98	0.31	242	63	37	True	$\ln(T) = 0.96 \ln(X) + 0.2$	0.92

APPENDIX B

HCM 6TH EDITION LEVEL OF SERVICE REPORTS



Lanes, Volumes, Timings
1: Revere Street & 104th Avenue

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 	 			 							
Traffic Volume (vph)	23	690	30	22	1195	41	72	18	35	61	6	55
Future Volume (vph)	23	690	30	22	1195	41	72	18	35	61	6	55
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	300		300	300		300	200		200	150		0
Storage Lanes	2		1	1		1	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	3539	1583	1770	3539	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.950			0.299			0.752			0.742		
Satd. Flow (perm)	3433	3539	1583	557	3539	1583	1401	1863	1583	1382	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			152			152			217			217
Link Speed (mph)		45			45			30				30
Link Distance (ft)		798			2575			954				614
Travel Time (s)		12.1			39.0			21.7				14.0
Peak Hour Factor	0.78	0.92	0.78	0.78	0.93	0.78	0.80	0.78	0.78	0.78	0.78	0.78
Adj. Flow (vph)	29	750	38	28	1285	53	90	23	45	78	8	71
Shared Lane Traffic (%)												
Lane Group Flow (vph)	29	750	38	28	1285	53	90	23	45	78	8	71
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1	1	1	1	1	1	1	1	1	1	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	40	40	40	40	40	40	40	40	40	40	40	40
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	40	40	40	40	40	40	40	40	40	40	40	40
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Turn Type	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2	6		6	8		8	4		4
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	4
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	8.0	8.0	8.0	8.0	8.0	8.0
Minimum Split (s)	12.0	20.0	20.0	12.0	20.0	20.0	14.0	14.0	14.0	14.0	14.0	14.0
Total Split (s)	15.0	50.0	50.0	15.0	50.0	50.0	20.0	25.0	25.0	20.0	25.0	25.0

Lanes, Volumes, Timings
1: Revere Street & 104th Avenue

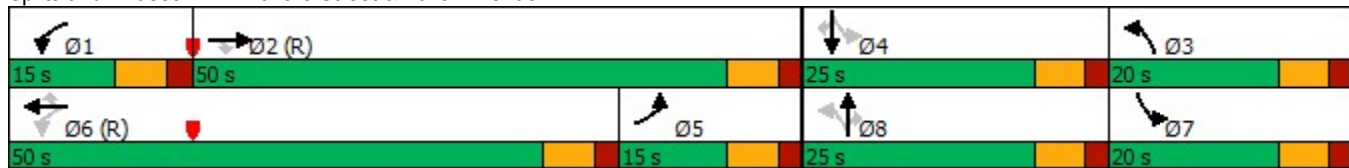


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Split (%)	13.6%	45.5%	45.5%	13.6%	45.5%	45.5%	18.2%	22.7%	22.7%	18.2%	22.7%	22.7%
Maximum Green (s)	8.7	43.7	43.7	8.7	43.7	43.7	14.0	19.0	19.0	14.0	19.0	19.0
Yellow Time (s)	4.3	4.3	4.3	4.3	4.3	4.3	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	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 Lost Time (s)	6.3	6.3	6.3	6.3	6.3	6.3	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lag	Lag	Lag	Lead	Lead	Lead	Lag	Lead	Lead	Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Min	C-Min	None	C-Min	C-Min	None	None	None	None	None	None
Act Effct Green (s)	6.5	74.3	74.3	73.0	74.2	74.2	14.9	8.2	8.2	14.6	8.0	8.0
Actuated g/C Ratio	0.06	0.68	0.68	0.66	0.67	0.67	0.14	0.07	0.07	0.13	0.07	0.07
v/c Ratio	0.14	0.31	0.03	0.06	0.54	0.05	0.41	0.17	0.14	0.37	0.06	0.22
Control Delay	50.3	10.8	0.1	6.0	7.4	0.1	44.7	50.6	0.9	43.5	48.7	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	50.3	10.8	0.1	6.0	7.4	0.1	44.7	50.6	0.9	43.5	48.7	1.6
LOS	D	B	A	A	A	A	D	D	A	D	D	A
Approach Delay		11.7			7.1			33.1			24.9	
Approach LOS		B			A			C			C	

Intersection Summary

Area Type: Other
 Cycle Length: 110
 Actuated Cycle Length: 110
 Offset: 36 (33%), Referenced to phase 2:EBT and 6:WBTL, Start of Green
 Natural Cycle: 75
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.54
 Intersection Signal Delay: 11.3 Intersection LOS: B
 Intersection Capacity Utilization 61.6% ICU Level of Service B
 Analysis Period (min) 15

Splits and Phases: 1: Revere Street & 104th Avenue



Queues
1: Revere Street & 104th Avenue



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	29	750	38	28	1285	53	90	23	45	78	8	71
v/c Ratio	0.14	0.31	0.03	0.06	0.54	0.05	0.41	0.17	0.14	0.37	0.06	0.22
Control Delay	50.3	10.8	0.1	6.0	7.4	0.1	44.7	50.6	0.9	43.5	48.7	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	50.3	10.8	0.1	6.0	7.4	0.1	44.7	50.6	0.9	43.5	48.7	1.6
Queue Length 50th (ft)	10	142	0	6	188	0	54	16	0	46	5	0
Queue Length 95th (ft)	21	191	0	m9	165	m0	88	36	0	76	18	0
Internal Link Dist (ft)		718			2495			874			534	
Turn Bay Length (ft)	300		300	300		300	200		200	150		
Base Capacity (vph)	271	2391	1119	465	2387	1117	309	321	452	305	321	452
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	0.11	0.31	0.03	0.06	0.54	0.05	0.29	0.07	0.10	0.26	0.02	0.16

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

HCM 6th Signalized Intersection Summary
1: Revere Street & 104th Avenue

JR Engineering
09/30/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖↗	↕	↖	↖	↕	↖	↖	↕	↖	↖	↕	↖
Traffic Volume (veh/h)	23	690	30	22	1195	41	72	18	35	61	6	55
Future Volume (veh/h)	23	690	30	22	1195	41	72	18	35	61	6	55
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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	29	750	0	28	1285	0	90	23	45	78	8	71
Peak Hour Factor	0.78	0.92	0.78	0.78	0.93	0.78	0.80	0.78	0.78	0.78	0.78	0.78
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	905	2166		244	1328		277	136	115	268	136	115
Arrive On Green	0.26	0.61	0.00	0.05	0.75	0.00	0.07	0.07	0.07	0.07	0.07	0.07
Sat Flow, veh/h	3456	3554	1585	1781	3554	1585	1781	1870	1585	1781	1870	1585
Grp Volume(v), veh/h	29	750	0	28	1285	0	90	23	45	78	8	71
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1781	1777	1585	1781	1870	1585	1781	1870	1585
Q Serve(g_s), s	0.7	11.5	0.0	1.2	36.3	0.0	0.0	1.3	2.5	0.0	0.4	4.8
Cycle Q Clear(g_c), s	0.7	11.5	0.0	1.2	36.3	0.0	0.0	1.3	2.5	0.0	0.4	4.8
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	905	2166		244	1328		277	136	115	268	136	115
V/C Ratio(X)	0.03	0.35		0.11	0.97		0.32	0.17	0.39	0.29	0.06	0.62
Avail Cap(c_a), veh/h	905	2166		339	1412		383	323	274	374	323	274
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	0.00	0.90	0.90	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.2	10.6	0.0	24.9	13.3	0.0	44.0	47.9	35.3	44.3	47.5	49.5
Incr Delay (d2), s/veh	0.0	0.4	0.0	0.2	16.9	0.0	0.7	0.6	2.1	0.6	0.2	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	0.3	4.1	0.0	0.5	7.8	0.0	2.3	0.6	1.2	2.0	0.2	2.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	30.2	11.1	0.0	25.1	30.1	0.0	44.7	48.5	37.4	44.9	47.7	54.8
LnGrp LOS	C	B		C	C		D	D	D	D	D	D
Approach Vol, veh/h		779	A		1313	A		158				157
Approach Delay, s/veh		11.8			30.0			43.2				49.5
Approach LOS		B			C			D				D
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.2	73.3	13.5	14.0	35.1	47.4	13.5	14.0				
Change Period (Y+Rc), s	6.3	6.3	6.0	6.0	6.3	6.3	6.0	6.0				
Max Green Setting (Gmax), s	8.7	43.7	14.0	19.0	8.7	43.7	14.0	19.0				
Max Q Clear Time (g_c+I1), s	3.2	13.5	2.0	6.8	2.7	38.3	2.0	4.5				
Green Ext Time (p_c), s	0.0	3.2	0.2	0.2	0.0	2.8	0.1	0.1				

Intersection Summary

HCM 6th Ctrl Delay	26.3
HCM 6th LOS	C

Notes

Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

Lanes, Volumes, Timings
2: Vaughn Way & 104th Avenue

JR Engineering
09/30/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	14	655	18	44	875	2	143	1	48	11	1	31
Future Volume (vph)	14	655	18	44	875	2	143	1	48	11	1	31
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		150	150		0	150		0	100		0
Storage Lanes	1		1	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850					0.852			0.854	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3539	1583	1770	3539	0	1770	1587	0	1770	1591	0
Flt Permitted	0.245			0.340			0.730			0.800		
Satd. Flow (perm)	456	3539	1583	633	3539	0	1360	1587	0	1490	1591	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			149					62			40	
Link Speed (mph)		45			45			30			30	
Link Distance (ft)		2575			1450			2620			567	
Travel Time (s)		39.0			22.0			59.5			12.9	
Peak Hour Factor	0.78	0.92	0.78	0.78	0.92	0.78	0.84	0.78	0.78	0.78	0.78	0.78
Adj. Flow (vph)	18	712	23	56	951	3	170	1	62	14	1	40
Shared Lane Traffic (%)												
Lane Group Flow (vph)	18	712	23	56	954	0	170	63	0	14	41	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1	1	1	1		1	1		1	1	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	40	40	40	40	40		40	40		40	40	
Trailing Detector (ft)	0	0	0	0	0		0	0		0	0	
Detector 1 Position(ft)	0	0	0	0	0		0	0		0	0	
Detector 1 Size(ft)	40	40	40	40	40		40	40		40	40	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6			8			4		
Detector Phase	5	2	2	1	6		3	8		7	4	
Switch Phase												
Minimum Initial (s)	5.0	8.0	8.0	5.0	8.0		6.0	8.0		6.0	8.0	
Minimum Split (s)	12.0	20.0	20.0	12.0	20.0		12.0	14.0		12.0	14.0	
Total Split (s)	15.0	61.0	61.0	15.0	61.0		16.0	18.0		16.0	18.0	

Lanes, Volumes, Timings
2: Vaughn Way & 104th Avenue



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Split (%)	13.6%	55.5%	55.5%	13.6%	55.5%		14.5%	16.4%		14.5%	16.4%	
Maximum Green (s)	9.0	54.2	54.2	9.0	54.2		10.0	12.0		10.0	12.0	
Yellow Time (s)	4.0	4.8	4.8	4.0	4.8		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.8	6.8	6.0	6.8		6.0	6.0		6.0	6.0	
Lead/Lag	Lag	Lead	Lead	Lag	Lead		Lag	Lead		Lag	Lead	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Min	C-Min	None	C-Min		None	None		None	None	
Act Effct Green (s)	72.5	66.1	66.1	80.0	73.4		18.1	15.5		12.2	8.2	
Actuated g/C Ratio	0.66	0.60	0.60	0.73	0.67		0.16	0.14		0.11	0.07	
v/c Ratio	0.05	0.34	0.02	0.10	0.40		0.65	0.23		0.08	0.27	
Control Delay	11.8	14.2	0.7	1.9	3.8		53.5	13.6		35.9	19.8	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	11.8	14.2	0.7	1.9	3.8		53.5	13.6		35.9	19.8	
LOS	B	B	A	A	A		D	B		D	B	
Approach Delay		13.8			3.7			42.7			23.9	
Approach LOS		B			A			D			C	

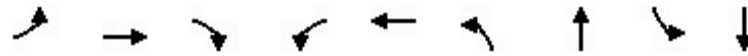
Intersection Summary

Area Type: Other
 Cycle Length: 110
 Actuated Cycle Length: 110
 Offset: 106 (96%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.65
 Intersection Signal Delay: 12.4
 Intersection LOS: B
 Intersection Capacity Utilization 58.7%
 ICU Level of Service B
 Analysis Period (min) 15

Splits and Phases: 2: Vaughn Way & 104th Avenue



Queues
2: Vaughn Way & 104th Avenue



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	18	712	23	56	954	170	63	14	41
v/c Ratio	0.05	0.34	0.02	0.10	0.40	0.65	0.23	0.08	0.27
Control Delay	11.8	14.2	0.7	1.9	3.8	53.5	13.6	35.9	19.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	11.8	14.2	0.7	1.9	3.8	53.5	13.6	35.9	19.8
Queue Length 50th (ft)	4	155	0	2	26	110	1	8	1
Queue Length 95th (ft)	21	285	2	9	77	151	31	21	26
Internal Link Dist (ft)		2495			1370		2540		487
Turn Bay Length (ft)	150		150	150		150		100	
Base Capacity (vph)	422	2151	1020	580	2360	277	290	234	209
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.04	0.33	0.02	0.10	0.40	0.61	0.22	0.06	0.20

Intersection Summary

HCM 6th Signalized Intersection Summary
2: Vaughn Way & 104th Avenue

JR Engineering
09/30/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	14	655	18	44	875	2	143	1	48	11	1	31
Future Volume (veh/h)	14	655	18	44	875	2	143	1	48	11	1	31
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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	18	712	23	56	951	3	170	1	62	14	1	40
Peak Hour Factor	0.78	0.92	0.78	0.78	0.92	0.78	0.84	0.78	0.78	0.78	0.78	0.78
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	719	867	387	822	1039	3	225	2	114	202	3	110
Arrive On Green	0.12	0.08	0.08	0.81	0.57	0.57	0.05	0.07	0.07	0.05	0.07	0.07
Sat Flow, veh/h	1781	3554	1585	1781	3634	11	1781	25	1564	1781	39	1552
Grp Volume(v), veh/h	18	712	23	56	465	489	170	0	63	14	0	41
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1868	1781	0	1589	1781	0	1591
Q Serve(g_s), s	0.0	21.7	1.5	0.0	25.9	25.9	2.2	0.0	4.2	0.0	0.0	2.7
Cycle Q Clear(g_c), s	0.0	21.7	1.5	0.0	25.9	25.9	2.2	0.0	4.2	0.0	0.0	2.7
Prop In Lane	1.00		1.00	1.00		0.01	1.00		0.98	1.00		0.98
Lane Grp Cap(c), veh/h	719	867	387	822	508	534	225	0	116	202	0	113
V/C Ratio(X)	0.03	0.82	0.06	0.07	0.92	0.92	0.76	0.00	0.55	0.07	0.00	0.36
Avail Cap(c_a), veh/h	719	1751	781	822	875	921	290	0	173	271	0	174
HCM Platoon Ratio	0.33	0.33	0.33	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	0.96	0.96	0.96	0.92	0.92	0.92	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	30.7	48.2	38.9	5.4	22.4	22.4	48.5	0.0	49.2	46.6	0.0	48.7
Incr Delay (d2), s/veh	0.0	8.3	0.3	0.0	22.3	21.5	8.0	0.0	4.0	0.1	0.0	2.0
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	11.3	0.6	0.2	9.2	9.5	5.0	0.0	1.8	0.4	0.0	1.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	30.7	56.5	39.2	5.4	44.7	43.9	56.5	0.0	53.2	46.7	0.0	50.7
LnGrp LOS	C	E	D	A	D	D	E	A	D	D	A	D
Approach Vol, veh/h		753			1010			233				55
Approach Delay, s/veh		55.4			42.1			55.6				49.7
Approach LOS		E			D			E				D
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	50.6	33.6	12.0	13.8	46.0	38.2	11.8	14.0				
Change Period (Y+Rc), s	6.0	6.8	6.0	6.0	6.0	6.8	6.0	6.0				
Max Green Setting (Gmax), s	9.0	54.2	10.0	12.0	9.0	54.2	10.0	12.0				
Max Q Clear Time (g_c+I1), s	2.0	23.7	4.2	4.7	2.0	27.9	2.0	6.2				
Green Ext Time (p_c), s	0.1	3.1	0.3	0.0	0.0	3.6	0.0	0.1				
Intersection Summary												
HCM 6th Ctrl Delay			48.7									
HCM 6th LOS			D									

Lanes, Volumes, Timings
3: Potomac Street & 104th Avenue



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	45	635	55	18	795	39	61	8	45	59	8	49
Future Volume (vph)	45	635	55	18	795	39	61	8	45	59	8	49
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		150	150		0	150		0	150		0
Storage Lanes	1		1	1		0	2		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	0.97	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.992			0.872			0.871	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3539	1583	1770	3511	0	3433	1624	0	1770	1622	0
Flt Permitted	0.308			0.315			0.950			0.713		
Satd. Flow (perm)	574	3539	1583	587	3511	0	3433	1624	0	1328	1622	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			168		7			58			63	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1450			363			490			446	
Travel Time (s)		33.0			8.3			11.1			10.1	
Peak Hour Factor	0.78	0.92	0.78	0.78	0.92	0.78	0.79	0.78	0.78	0.78	0.78	0.78
Adj. Flow (vph)	58	690	71	23	864	50	77	10	58	76	10	63
Shared Lane Traffic (%)												
Lane Group Flow (vph)	58	690	71	23	914	0	77	68	0	76	73	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	60		60	60		60	60		60	60		60
Number of Detectors	1	1	1	1	1		1	1		1	1	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	40	40	40	40	40		40	40		40	40	
Trailing Detector (ft)	0	0	0	0	0		0	0		0	0	
Detector 1 Position(ft)	0	0	0	0	0		0	0		0	0	
Detector 1 Size(ft)	40	40	40	40	40		40	40		40	40	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA		Prot	NA		pm+pt	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6						4		
Detector Phase	5	2	2	1	6		3	8		7	4	
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0		8.0	9.0		8.0	9.0	
Minimum Split (s)	13.0	20.0	20.0	13.0	20.0		15.0	17.0		15.0	17.0	
Total Split (s)	15.0	53.0	53.0	15.0	53.0		25.0	17.0		25.0	17.0	

Lanes, Volumes, Timings
3: Potomac Street & 104th Avenue

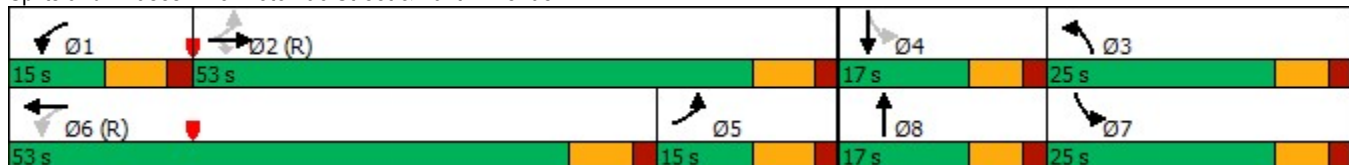


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Split (%)	13.6%	48.2%	48.2%	13.6%	48.2%		22.7%	15.5%		22.7%	15.5%	
Maximum Green (s)	7.9	45.9	45.9	7.9	45.9		18.6	10.6		18.6	10.6	
Yellow Time (s)	5.1	5.1	5.1	5.1	5.1		4.4	4.4		4.4	4.4	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	7.1	7.1	7.1	7.1	7.1		6.4	6.4		6.4	6.4	
Lead/Lag	Lag	Lag	Lag	Lead	Lead		Lag	Lead		Lag	Lead	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Min	C-Min	None	C-Min		None	None		None	None	
Act Effct Green (s)	74.1	74.1	74.1	68.2	69.6		8.5	9.2		16.1	9.3	
Actuated g/C Ratio	0.67	0.67	0.67	0.62	0.63		0.08	0.08		0.15	0.08	
v/c Ratio	0.13	0.29	0.06	0.05	0.41		0.29	0.36		0.33	0.38	
Control Delay	9.1	6.9	0.4	12.4	14.2		50.7	21.2		40.2	20.9	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	9.1	6.9	0.4	12.4	14.2		50.7	21.2		40.2	20.9	
LOS	A	A	A	B	B		D	C		D	C	
Approach Delay		6.5			14.2			36.9			30.7	
Approach LOS		A			B			D			C	

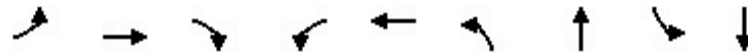
Intersection Summary

Area Type:	Other
Cycle Length:	110
Actuated Cycle Length:	110
Offset:	0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green, Master Intersection
Natural Cycle:	70
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.41
Intersection Signal Delay:	13.9
Intersection LOS:	B
Intersection Capacity Utilization	54.5%
ICU Level of Service	A
Analysis Period (min)	15

Splits and Phases: 3: Potomac Street & 104th Avenue



Queues
3: Potomac Street & 104th Avenue



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	58	690	71	23	914	77	68	76	73
v/c Ratio	0.13	0.29	0.06	0.05	0.41	0.29	0.36	0.33	0.38
Control Delay	9.1	6.9	0.4	12.4	14.2	50.7	21.2	40.2	20.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	9.1	6.9	0.4	12.4	14.2	50.7	21.2	40.2	20.9
Queue Length 50th (ft)	8	52	0	7	194	27	7	44	7
Queue Length 95th (ft)	21	92	0	18	265	44	38	71	38
Internal Link Dist (ft)		1370			283		410		366
Turn Bay Length (ft)	150		150	150		150		150	
Base Capacity (vph)	474	2383	1121	448	2224	580	208	389	213
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.12	0.29	0.06	0.05	0.41	0.13	0.33	0.20	0.34

Intersection Summary

HCM 6th Signalized Intersection Summary
3: Potomac Street & 104th Avenue

JR Engineering
09/30/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↶	↶↶	↶	↶	↶↶		↶↶	↶		↶	↶	
Traffic Volume (veh/h)	45	635	55	18	795	39	61	8	45	59	8	49
Future Volume (veh/h)	45	635	55	18	795	39	61	8	45	59	8	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	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	58	690	71	23	864	50	77	10	58	76	10	63
Peak Hour Factor	0.78	0.92	0.78	0.78	0.92	0.78	0.79	0.78	0.78	0.78	0.78	0.78
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	649	2076	926	259	990	57	227	19	113	238	18	114
Arrive On Green	0.63	1.00	1.00	0.02	0.29	0.29	0.07	0.08	0.08	0.07	0.08	0.08
Sat Flow, veh/h	1781	3554	1585	1781	3414	198	3456	238	1383	1781	222	1397
Grp Volume(v), veh/h	58	690	71	23	450	464	77	0	68	76	0	73
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1835	1728	0	1621	1781	0	1619
Q Serve(g_s), s	0.0	0.0	0.0	1.1	26.5	26.5	2.3	0.0	4.4	0.0	0.0	4.8
Cycle Q Clear(g_c), s	0.0	0.0	0.0	1.1	26.5	26.5	2.3	0.0	4.4	0.0	0.0	4.8
Prop In Lane	1.00		1.00	1.00		0.11	1.00		0.85	1.00		0.86
Lane Grp Cap(c), veh/h	649	2076	926	259	515	532	227	0	132	238	0	132
V/C Ratio(X)	0.09	0.33	0.08	0.09	0.87	0.87	0.34	0.00	0.51	0.32	0.00	0.55
Avail Cap(c_a), veh/h	649	2076	926	346	741	766	584	0	156	422	0	156
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	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	13.2	0.0	0.0	31.9	37.1	37.1	49.1	0.0	48.4	46.3	0.0	48.6
Incr Delay (d2), s/veh	0.1	0.4	0.2	0.1	18.1	17.7	0.9	0.0	3.1	0.8	0.0	3.6
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	0.6	0.1	0.0	0.5	13.9	14.3	1.0	0.0	1.9	2.0	0.0	2.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	13.2	0.4	0.2	32.0	55.2	54.8	50.0	0.0	51.5	47.1	0.0	52.1
LnGrp LOS	B	A	A	C	E	D	D	A	D	D	A	D
Approach Vol, veh/h		819			937			145				149
Approach Delay, s/veh		1.3			54.4			50.7				49.6
Approach LOS		A			D			D				D
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.6	71.3	13.6	15.4	42.0	39.0	13.6	15.4				
Change Period (Y+Rc), s	7.1	7.1	6.4	6.4	7.1	7.1	6.4	6.4				
Max Green Setting (Gmax), s	7.9	45.9	18.6	10.6	7.9	45.9	18.6	10.6				
Max Q Clear Time (g_c+I1), s	3.1	2.0	4.3	6.8	2.0	28.5	2.0	6.4				
Green Ext Time (p_c), s	0.0	3.6	0.2	0.1	0.1	3.5	0.2	0.1				
Intersection Summary												
HCM 6th Ctrl Delay				32.6								
HCM 6th LOS				C								

Lanes, Volumes, Timings
4: Peoria Street & 96th Ave

JR Engineering
09/30/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	11	392	1	1	740	7	1	1	1	17	1	35
Future Volume (vph)	11	392	1	1	740	7	1	1	1	17	1	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		150	150		0	0		0	0		0
Storage Lanes	1		1	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.998			0.955			0.911	
Flt Protected	0.950			0.950				0.984			0.984	
Satd. Flow (prot)	1770	1863	1583	1770	1859	0	0	1750	0	0	1670	0
Flt Permitted	0.950			0.950				0.984			0.984	
Satd. Flow (perm)	1770	1863	1583	1770	1859	0	0	1750	0	0	1670	0
Link Speed (mph)		45			45			40			40	
Link Distance (ft)		563			5275			411			2833	
Travel Time (s)		8.5			79.9			7.0			48.3	
Peak Hour Factor	0.78	0.90	0.78	0.78	0.92	0.78	0.78	0.78	0.78	0.78	0.78	0.78
Adj. Flow (vph)	14	436	1	1	804	9	1	1	1	22	1	45
Shared Lane Traffic (%)												
Lane Group Flow (vph)	14	436	1	1	813	0	0	3	0	0	68	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	50.1%
ICU Level of Service	A
Analysis Period (min)	15

























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	11	392	1	1	740	7	1	1	1	17	1	35
Future Vol, veh/h	11	392	1	1	740	7	1	1	1	17	1	35
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	150	-	150	150	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	78	90	78	78	92	78	78	78	78	78	78	78
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	14	436	1	1	804	9	1	1	1	22	1	45

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	813	0	0	437	0	0	1298	1279	436	1277	1276	809
Stage 1	-	-	-	-	-	-	464	464	-	811	811	-
Stage 2	-	-	-	-	-	-	834	815	-	466	465	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	814	-	-	1123	-	-	139	166	620	143	167	380
Stage 1	-	-	-	-	-	-	578	564	-	373	393	-
Stage 2	-	-	-	-	-	-	362	391	-	577	563	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	814	-	-	1123	-	-	120	163	620	140	164	380
Mov Cap-2 Maneuver	-	-	-	-	-	-	120	163	-	140	164	-
Stage 1	-	-	-	-	-	-	568	554	-	367	393	-
Stage 2	-	-	-	-	-	-	318	391	-	565	553	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.3			0			24.7			25.7		
HCM LOS							C			D		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	187	814	-	-	1123	-	-	241
HCM Lane V/C Ratio	0.021	0.017	-	-	0.001	-	-	0.282
HCM Control Delay (s)	24.7	9.5	-	-	8.2	-	-	25.7
HCM Lane LOS	C	A	-	-	A	-	-	D
HCM 95th %tile Q(veh)	0.1	0.1	-	-	0	-	-	1.1

Lanes, Volumes, Timings
1: Revere Street & 104th Avenue

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	66	1450	82	61	1000	48	57	12	35	79	20	35
Future Volume (vph)	66	1450	82	61	1000	48	57	12	35	79	20	35
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	300		300	300		300	200		200	150		0
Storage Lanes	2		1	1		1	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	3539	1583	1770	3539	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.950			0.094			0.740			0.748		
Satd. Flow (perm)	3433	3539	1583	175	3539	1583	1378	1863	1583	1393	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			139			139			142			142
Link Speed (mph)		45			45			30				30
Link Distance (ft)		798			2575			954				614
Travel Time (s)		12.1			39.0			21.7				14.0
Peak Hour Factor	0.78	0.93	0.81	0.79	0.93	0.78	0.78	0.78	0.78	0.80	0.78	0.78
Adj. Flow (vph)	85	1559	101	77	1075	62	73	15	45	99	26	45
Shared Lane Traffic (%)												
Lane Group Flow (vph)	85	1559	101	77	1075	62	73	15	45	99	26	45
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1	1	1	1	1	1	1	1	1	1	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	40	40	40	40	40	40	40	40	40	40	40	40
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	40	40	40	40	40	40	40	40	40	40	40	40
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Turn Type	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2	6		6	8		8	4		4
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	4
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	8.0	8.0	8.0	8.0	8.0	8.0
Minimum Split (s)	12.0	20.0	20.0	12.0	20.0	20.0	14.0	14.0	14.0	14.0	14.0	14.0
Total Split (s)	15.0	62.0	62.0	15.0	62.0	62.0	23.0	20.0	20.0	23.0	20.0	20.0

Lanes, Volumes, Timings
1: Revere Street & 104th Avenue

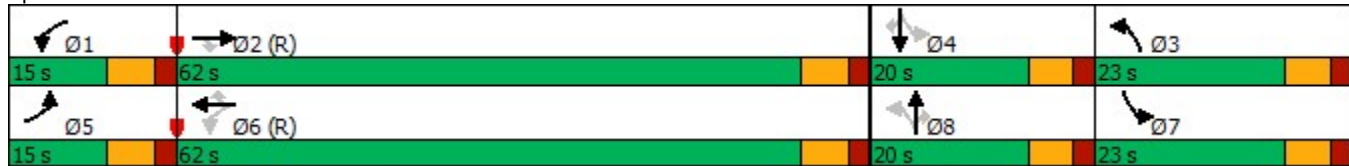


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Split (%)	12.5%	51.7%	51.7%	12.5%	51.7%	51.7%	19.2%	16.7%	16.7%	19.2%	16.7%	16.7%
Maximum Green (s)	8.7	55.7	55.7	8.7	55.7	55.7	17.0	14.0	14.0	17.0	14.0	14.0
Yellow Time (s)	4.3	4.3	4.3	4.3	4.3	4.3	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	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 Lost Time (s)	6.3	6.3	6.3	6.3	6.3	6.3	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lag	Lead	Lead	Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Min	C-Min	None	C-Min	C-Min	None	None	None	None	None	None
Act Effct Green (s)	8.3	76.8	76.8	82.4	76.1	76.1	14.4	8.0	8.0	14.9	8.3	8.3
Actuated g/C Ratio	0.07	0.64	0.64	0.69	0.63	0.63	0.12	0.07	0.07	0.12	0.07	0.07
v/c Ratio	0.36	0.69	0.10	0.35	0.48	0.06	0.38	0.12	0.19	0.50	0.20	0.19
Control Delay	57.0	18.0	0.9	15.6	9.0	0.5	49.4	55.0	1.7	53.6	56.5	1.7
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	57.0	18.0	0.9	15.6	9.0	0.5	49.4	55.0	1.7	53.6	56.5	1.7
LOS	E	B	A	B	A	A	D	D	A	D	E	A
Approach Delay		18.9			9.0			33.9			40.3	
Approach LOS		B			A			C			D	

Intersection Summary

Area Type:	Other
Cycle Length:	120
Actuated Cycle Length:	120
Offset:	50 (42%), Referenced to phase 2:EBT and 6:WBTL, Start of Green
Natural Cycle:	80
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.69
Intersection Signal Delay:	17.0
Intersection LOS:	B
Intersection Capacity Utilization	70.8%
ICU Level of Service	C
Analysis Period (min)	15

Splits and Phases: 1: Revere Street & 104th Avenue



Queues
1: Revere Street & 104th Avenue

JR Engineering
09/30/2021































Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	85	1559	101	77	1075	62	73	15	45	99	26	45
v/c Ratio	0.36	0.69	0.10	0.35	0.48	0.06	0.38	0.12	0.19	0.50	0.20	0.19
Control Delay	57.0	18.0	0.9	15.6	9.0	0.5	49.4	55.0	1.7	53.6	56.5	1.7
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	57.0	18.0	0.9	15.6	9.0	0.5	49.4	55.0	1.7	53.6	56.5	1.7
Queue Length 50th (ft)	32	423	0	12	297	0	49	11	0	67	19	0
Queue Length 95th (ft)	50	570	6	24	277	5	79	29	0	104	42	0
Internal Link Dist (ft)		718			2495			874			534	
Turn Bay Length (ft)	300		300	300		300	200		200	150		
Base Capacity (vph)	263	2264	1063	241	2243	1054	324	217	310	328	217	310
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	0.32	0.69	0.10	0.32	0.48	0.06	0.23	0.07	0.15	0.30	0.12	0.15

Intersection Summary

HCM 6th Signalized Intersection Summary
1: Revere Street & 104th Avenue

JR Engineering
09/30/2021

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 	 			 						 	
Traffic Volume (veh/h)	66	1450	82	61	1000	48	57	12	35	79	20	35
Future Volume (veh/h)	66	1450	82	61	1000	48	57	12	35	79	20	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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	85	1559	0	77	1075	0	73	15	45	99	26	45
Peak Hour Factor	0.78	0.93	0.81	0.79	0.93	0.78	0.78	0.78	0.78	0.80	0.78	0.78
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	136	2224		239	2221		245	125	106	254	125	106
Arrive On Green	0.04	0.63	0.00	0.01	0.21	0.00	0.06	0.07	0.07	0.06	0.07	0.07
Sat Flow, veh/h	3456	3554	1585	1781	3554	1585	1781	1870	1585	1781	1870	1585
Grp Volume(v), veh/h	85	1559	0	77	1075	0	73	15	45	99	26	45
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1781	1777	1585	1781	1870	1585	1781	1870	1585
Q Serve(g_s), s	2.9	35.1	0.0	1.8	32.0	0.0	0.0	0.9	2.8	0.0	1.6	2.8
Cycle Q Clear(g_c), s	2.9	35.1	0.0	1.8	32.0	0.0	0.0	0.9	2.8	0.0	1.6	2.8
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	136	2224		239	2221		245	125	106	254	125	106
V/C Ratio(X)	0.63	0.70		0.32	0.48		0.30	0.12	0.43	0.39	0.21	0.43
Avail Cap(c_a), veh/h	251	2224		299	2221		383	218	185	392	218	185
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	0.00	0.85	0.85	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	56.8	15.0	0.0	14.2	30.6	0.0	49.4	52.7	38.8	49.7	53.0	38.7
Incr Delay (d2), s/veh	4.7	1.9	0.0	0.7	0.6	0.0	0.7	0.4	2.7	1.0	0.8	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	1.3	13.0	0.0	0.7	15.3	0.0	2.1	0.4	1.4	2.9	0.8	1.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	61.5	16.8	0.0	14.8	31.2	0.0	50.1	53.1	41.5	50.7	53.8	41.4
LnGrp LOS	E	B		B	C		D	D	D	D	D	D
Approach Vol, veh/h		1644	A		1152	A		133			170	
Approach Delay, s/veh		19.2			30.1			47.5			48.7	
Approach LOS		B			C			D			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	10.9	81.4	13.7	14.0	11.0	81.3	13.7	14.0				
Change Period (Y+Rc), s	6.3	6.3	6.0	6.0	6.3	6.3	6.0	6.0				
Max Green Setting (Gmax), s	8.7	55.7	17.0	14.0	8.7	55.7	17.0	14.0				
Max Q Clear Time (g_c+I1), s	3.8	37.1	2.0	4.8	4.9	34.0	2.0	4.8				
Green Ext Time (p_c), s	0.1	7.5	0.1	0.1	0.1	4.8	0.2	0.1				

Intersection Summary

HCM 6th Ctrl Delay	26.1
HCM 6th LOS	C

Notes

Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

Lanes, Volumes, Timings
2: Vaughn Way & 104th Avenue

JR Engineering
09/30/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	71	1425	68	155	1070	15	82	1	24	13	1	15
Future Volume (vph)	71	1425	68	155	1070	15	82	1	24	13	1	15
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		150	150		0	150		0	100		0
Storage Lanes	1		1	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.998			0.855				0.857
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3539	1583	1770	3532	0	1770	1593	0	1770	1596	0
Flt Permitted	0.155			0.120			0.744					
Satd. Flow (perm)	289	3539	1583	224	3532	0	1386	1593	0	1863	1596	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			144		2			31				19
Link Speed (mph)		45			45			30				30
Link Distance (ft)		2575			1450			2620				567
Travel Time (s)		39.0			22.0			59.5				12.9
Peak Hour Factor	0.80	0.93	0.79	0.85	0.93	0.78	0.81	0.78	0.78	0.78	0.78	0.78
Adj. Flow (vph)	89	1532	86	182	1151	19	101	1	31	17	1	19
Shared Lane Traffic (%)												
Lane Group Flow (vph)	89	1532	86	182	1170	0	101	32	0	17	20	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1	1	1	1		1	1		1	1	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	40	40	40	40	40		40	40		40	40	
Trailing Detector (ft)	0	0	0	0	0		0	0		0	0	
Detector 1 Position(ft)	0	0	0	0	0		0	0		0	0	
Detector 1 Size(ft)	40	40	40	40	40		40	40		40	40	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6			8			4		
Detector Phase	5	2	2	1	6		3	8		7	4	
Switch Phase												
Minimum Initial (s)	5.0	8.0	8.0	5.0	8.0		6.0	8.0		6.0	8.0	
Minimum Split (s)	12.0	20.0	20.0	12.0	20.0		12.0	14.0		12.0	14.0	
Total Split (s)	15.0	69.0	69.0	15.0	69.0		16.0	20.0		16.0	20.0	

Lanes, Volumes, Timings
2: Vaughn Way & 104th Avenue



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Split (%)	12.5%	57.5%	57.5%	12.5%	57.5%		13.3%	16.7%		13.3%	16.7%	
Maximum Green (s)	9.0	62.2	62.2	9.0	62.2		10.0	14.0		10.0	14.0	
Yellow Time (s)	4.0	4.8	4.8	4.0	4.8		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.8	6.8	6.0	6.8		6.0	6.0		6.0	6.0	
Lead/Lag	Lead	Lead	Lead	Lag	Lag		Lag	Lead		Lag	Lead	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Min	C-Min	None	C-Min		None	None		None	None	
Act Effct Green (s)	76.1	75.3	75.3	78.9	78.1		12.8	9.1		10.5	8.0	
Actuated g/C Ratio	0.63	0.63	0.63	0.66	0.65		0.11	0.08		0.09	0.07	
v/c Ratio	0.32	0.69	0.08	0.64	0.51		0.57	0.21		0.11	0.16	
Control Delay	5.6	10.6	0.5	26.1	4.7		60.7	21.9		44.4	25.2	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	5.6	10.6	0.5	26.1	4.7		60.7	21.9		44.4	25.2	
LOS	A	B	A	C	A		E	C		D	C	
Approach Delay		9.8			7.6			51.4			34.0	
Approach LOS		A			A			D			C	

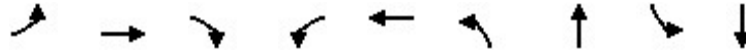
Intersection Summary

Area Type: Other
 Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 111 (93%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
 Natural Cycle: 80
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.69
 Intersection Signal Delay: 10.9
 Intersection LOS: B
 Intersection Capacity Utilization 74.9%
 ICU Level of Service D
 Analysis Period (min) 15

Splits and Phases: 2: Vaughn Way & 104th Avenue



Queues
2: Vaughn Way & 104th Avenue



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	89	1532	86	182	1170	101	32	17	20
v/c Ratio	0.32	0.69	0.08	0.64	0.51	0.57	0.21	0.11	0.16
Control Delay	5.6	10.6	0.5	26.1	4.7	60.7	21.9	44.4	25.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	5.6	10.6	0.5	26.1	4.7	60.7	21.9	44.4	25.2
Queue Length 50th (ft)	5	47	0	40	66	76	1	13	1
Queue Length 95th (ft)	m18	675	m5	#135	79	106	25	27	21
Internal Link Dist (ft)		2495			1370		2540		487
Turn Bay Length (ft)	150		150	150		150		100	
Base Capacity (vph)	298	2221	1047	291	2299	191	213	197	202
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.30	0.69	0.08	0.63	0.51	0.53	0.15	0.09	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.

HCM 6th Signalized Intersection Summary
 2: Vaughn Way & 104th Avenue

JR Engineering
 09/30/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗	↘	↖	↗		↖	↗		↖	↗	
Traffic Volume (veh/h)	71	1425	68	155	1070	15	82	1	24	13	1	15
Future Volume (veh/h)	71	1425	68	155	1070	15	82	1	24	13	1	15
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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	89	1532	86	182	1151	19	101	1	31	17	1	19
Peak Hour Factor	0.80	0.93	0.79	0.85	0.93	0.78	0.81	0.78	0.78	0.78	0.78	0.78
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	304	1561	696	501	2284	38	213	3	102	191	5	91
Arrive On Green	0.09	0.88	0.88	0.48	1.00	1.00	0.05	0.07	0.07	0.04	0.06	0.06
Sat Flow, veh/h	1781	3554	1585	1781	3578	59	1781	50	1543	1781	80	1517
Grp Volume(v), veh/h	89	1532	86	182	572	598	101	0	32	17	0	20
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1860	1781	0	1593	1781	0	1597
Q Serve(g_s), s	3.8	45.6	0.9	1.6	0.0	0.0	0.0	0.0	2.3	0.0	0.0	1.4
Cycle Q Clear(g_c), s	3.8	45.6	0.9	1.6	0.0	0.0	0.0	0.0	2.3	0.0	0.0	1.4
Prop In Lane	1.00		1.00	1.00		0.03	1.00		0.97	1.00		0.95
Lane Grp Cap(c), veh/h	304	1561	696	501	1134	1187	213	0	106	191	0	96
V/C Ratio(X)	0.29	0.98	0.12	0.36	0.50	0.50	0.47	0.00	0.30	0.09	0.00	0.21
Avail Cap(c_a), veh/h	355	1842	822	501	1134	1187	275	0	186	265	0	186
HCM Platoon Ratio	2.00	2.00	2.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	0.70	0.70	0.70	0.74	0.74	0.74	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	21.2	6.8	4.1	23.7	0.0	0.0	52.4	0.0	53.4	51.1	0.0	53.7
Incr Delay (d2), s/veh	0.4	15.1	0.3	0.3	1.2	1.1	1.6	0.0	1.6	0.2	0.0	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	1.5	6.0	0.3	2.8	0.4	0.4	3.0	0.0	1.0	0.5	0.0	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	21.6	22.0	4.4	24.0	1.2	1.1	54.1	0.0	55.0	51.3	0.0	54.8
LnGrp LOS	C	C	A	C	A	A	D	A	D	D	A	D
Approach Vol, veh/h		1707			1352			133				37
Approach Delay, s/veh		21.1			4.2			54.3				53.2
Approach LOS		C			A			D				D
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	34.6	60.4	11.8	13.2	11.6	83.5	11.0	14.0				
Change Period (Y+Rc), s	6.8	* 6.8	6.0	6.0	6.0	6.8	6.0	6.0				
Max Green Setting (Gmax), s	9.0	* 62	10.0	14.0	9.0	62.2	10.0	14.0				
Max Q Clear Time (g_c+l1), s	3.6	47.6	2.0	3.4	5.8	2.0	2.0	4.3				
Green Ext Time (p_c), s	0.2	6.9	0.2	0.0	0.1	5.0	0.0	0.0				

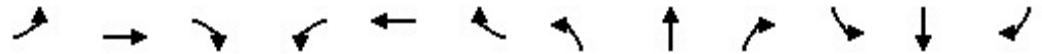
Intersection Summary

HCM 6th Ctrl Delay	15.8
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lanes, Volumes, Timings
3: Potomac Street & 104th Avenue



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	61	1330	79	61	1070	131	72	6	29	146	11	69
Future Volume (vph)	61	1330	79	61	1070	131	72	6	29	146	11	69
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		150	150		0	150		0	150		0
Storage Lanes	1		1	1		0	2		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	0.97	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.982			0.877			0.871	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3539	1583	1770	3476	0	3433	1634	0	1770	1622	0
Flt Permitted	0.168			0.067			0.950			0.728		
Satd. Flow (perm)	313	3539	1583	125	3476	0	3433	1634	0	1356	1622	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			154		14			37			87	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1450			363			490			446	
Travel Time (s)		33.0			8.3			11.1			10.1	
Peak Hour Factor	0.79	0.93	0.80	0.79	0.93	0.84	0.80	0.78	0.78	0.84	0.78	0.79
Adj. Flow (vph)	77	1430	99	77	1151	156	90	8	37	174	14	87
Shared Lane Traffic (%)												
Lane Group Flow (vph)	77	1430	99	77	1307	0	90	45	0	174	101	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	60		60	60		60	60		60	60		60
Number of Detectors	1	1	1	1	1		1	1		1	1	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	40	40	40	40	40		40	40		40	40	
Trailing Detector (ft)	0	0	0	0	0		0	0		0	0	
Detector 1 Position(ft)	0	0	0	0	0		0	0		0	0	
Detector 1 Size(ft)	40	40	40	40	40		40	40		40	40	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA		Prot	NA		pm+pt	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6						4		
Detector Phase	5	2	2	1	6		3	8		7	4	
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0		8.0	9.0		8.0	9.0	
Minimum Split (s)	13.0	20.0	20.0	13.0	20.0		15.0	17.0		15.0	17.0	
Total Split (s)	13.0	53.0	53.0	13.0	53.0		34.0	20.0		34.0	20.0	

Lanes, Volumes, Timings
3: Potomac Street & 104th Avenue

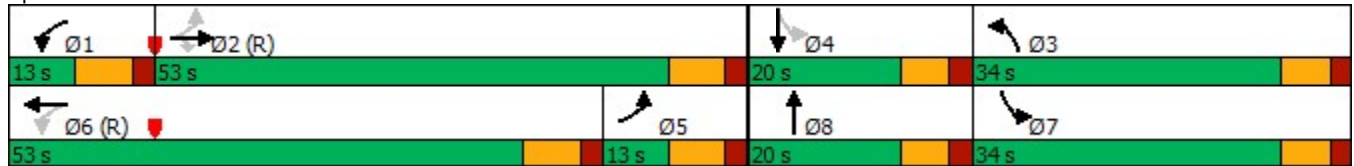


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Split (%)	10.8%	44.2%	44.2%	10.8%	44.2%		28.3%	16.7%		28.3%	16.7%	
Maximum Green (s)	5.9	45.9	45.9	5.9	45.9		27.6	13.6		27.6	13.6	
Yellow Time (s)	5.1	5.1	5.1	5.1	5.1		4.4	4.4		4.4	4.4	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	7.1	7.1	7.1	7.1	7.1		6.4	6.4		6.4	6.4	
Lead/Lag	Lag	Lag	Lag	Lead	Lead		Lag	Lead		Lag	Lead	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Min	C-Min	None	C-Min		None	None		None	None	
Act Effct Green (s)	67.8	67.8	67.8	69.3	69.3		10.3	9.1		21.6	9.6	
Actuated g/C Ratio	0.56	0.56	0.56	0.58	0.58		0.09	0.08		0.18	0.08	
v/c Ratio	0.30	0.72	0.10	0.43	0.65		0.31	0.29		0.60	0.48	
Control Delay	13.3	11.5	1.4	21.6	20.0		53.7	25.3		52.2	22.4	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	13.3	11.5	1.4	21.6	20.0		53.7	25.3		52.2	22.4	
LOS	B	B	A	C	B		D	C		D	C	
Approach Delay		10.9			20.1			44.3			41.3	
Approach LOS		B			C			D			D	

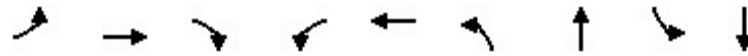
Intersection Summary

Area Type: Other
 Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green, Master Intersection
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.72
 Intersection Signal Delay: 18.4
 Intersection LOS: B
 Intersection Capacity Utilization 72.9%
 ICU Level of Service C
 Analysis Period (min) 15

Splits and Phases: 3: Potomac Street & 104th Avenue



Queues
3: Potomac Street & 104th Avenue



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	77	1430	99	77	1307	90	45	174	101
v/c Ratio	0.30	0.72	0.10	0.43	0.65	0.31	0.29	0.60	0.48
Control Delay	13.3	11.5	1.4	21.6	20.0	53.7	25.3	52.2	22.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	13.3	11.5	1.4	21.6	20.0	53.7	25.3	52.2	22.4
Queue Length 50th (ft)	6	107	1	26	349	34	6	118	10
Queue Length 95th (ft)	m31	233	m10	47	466	53	34	166	47
Internal Link Dist (ft)		1370			283		410		366
Turn Bay Length (ft)	150		150	150		150		150	
Base Capacity (vph)	255	1998	961	181	2012	789	217	494	260
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.30	0.72	0.10	0.43	0.65	0.11	0.21	0.35	0.39

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

HCM 6th Signalized Intersection Summary
 3: Potomac Street & 104th Avenue





















JR Engineering
 09/30/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	61	1330	79	61	1070	131	72	6	29	146	11	69
Future Volume (veh/h)	61	1330	79	61	1070	131	72	6	29	146	11	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	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	77	1430	99	77	1151	156	90	8	37	174	14	87
Peak Hour Factor	0.79	0.93	0.80	0.79	0.93	0.84	0.80	0.78	0.78	0.84	0.78	0.79
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	512	2096	935	241	1196	162	219	22	100	246	18	110
Arrive On Green	0.51	1.00	1.00	0.04	0.38	0.38	0.06	0.07	0.07	0.07	0.08	0.08
Sat Flow, veh/h	1781	3554	1585	1781	3146	425	3456	290	1340	1781	224	1395
Grp Volume(v), veh/h	77	1430	99	77	649	658	90	0	45	174	0	101
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1794	1728	0	1629	1781	0	1619
Q Serve(g_s), s	0.0	0.0	0.0	3.6	42.8	43.1	3.0	0.0	3.2	2.7	0.0	7.4
Cycle Q Clear(g_c), s	0.0	0.0	0.0	3.6	42.8	43.1	3.0	0.0	3.2	2.7	0.0	7.4
Prop In Lane	1.00		1.00	1.00		0.24	1.00		0.82	1.00		0.86
Lane Grp Cap(c), veh/h	512	2096	935	241	675	682	219	0	122	246	0	128
V/C Ratio(X)	0.15	0.68	0.11	0.32	0.96	0.97	0.41	0.00	0.37	0.71	0.00	0.79
Avail Cap(c_a), veh/h	512	2096	935	252	680	686	795	0	185	536	0	184
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(l)	0.67	0.67	0.67	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	22.2	0.0	0.0	27.5	36.3	36.4	54.0	0.0	52.8	51.4	0.0	54.3
Incr Delay (d2), s/veh	0.1	1.2	0.2	0.8	26.2	26.9	1.2	0.0	1.8	3.7	0.0	13.8
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	1.1	0.4	0.0	1.6	23.1	23.6	1.3	0.0	1.4	5.2	0.0	3.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	22.3	1.2	0.2	28.3	62.5	63.3	55.3	0.0	54.6	55.1	0.0	68.1
LnGrp LOS	C	A	A	C	E	E	E	A	D	E	A	E
Approach Vol, veh/h		1606			1384			135				275
Approach Delay, s/veh		2.2			61.0			55.1				59.9
Approach LOS		A			E			E				E
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	12.3	77.9	14.0	15.9	37.4	52.7	14.5	15.4				
Change Period (Y+Rc), s	7.1	7.1	6.4	6.4	7.1	7.1	6.4	6.4				
Max Green Setting (Gmax), s	5.9	45.9	27.6	13.6	5.9	45.9	27.6	13.6				
Max Q Clear Time (g_c+I1), s	5.6	2.0	5.0	9.4	2.0	45.1	4.7	5.2				
Green Ext Time (p_c), s	0.0	9.8	0.3	0.1	0.1	0.5	0.6	0.0				
Intersection Summary												
HCM 6th Ctrl Delay												32.9
HCM 6th LOS												C

Lanes, Volumes, Timings
4: Peoria Street & 96th Ave

JR Engineering
09/30/2021

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	40	780	1	1	550	22	1	1	2	11	1	30
Future Volume (vph)	40	780	1	1	550	22	1	1	2	11	1	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		150	150		0	0		0	0		0
Storage Lanes	1		1	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.993			0.919			0.903	
Flt Protected	0.950			0.950				0.990			0.987	
Satd. Flow (prot)	1770	1863	1583	1770	1850	0	0	1695	0	0	1660	0
Flt Permitted	0.950			0.950				0.990			0.987	
Satd. Flow (perm)	1770	1863	1583	1770	1850	0	0	1695	0	0	1660	0
Link Speed (mph)		45			45			40			40	
Link Distance (ft)		563			5275			411			2833	
Travel Time (s)		8.5			79.9			7.0			48.3	
Peak Hour Factor	0.78	0.92	0.78	0.78	0.92	0.78	0.78	0.78	0.78	0.78	0.78	0.78
Adj. Flow (vph)	51	848	1	1	598	28	1	1	3	14	1	38
Shared Lane Traffic (%)												
Lane Group Flow (vph)	51	848	1	1	626	0	0	5	0	0	53	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	51.1%
ICU Level of Service	A
Analysis Period (min)	15

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	40	780	1	1	550	22	1	1	2	11	1	30
Future Vol, veh/h	40	780	1	1	550	22	1	1	2	11	1	30
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	150	-	150	150	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	78	92	78	78	92	78	78	78	78	78	78	78
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	51	848	1	1	598	28	1	1	3	14	1	38

























Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	626	0	0	849	0	0	1584	1578	848	1567	1565	612
Stage 1	-	-	-	-	-	-	950	950	-	614	614	-
Stage 2	-	-	-	-	-	-	634	628	-	953	951	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	956	-	-	789	-	-	88	109	361	90	111	493
Stage 1	-	-	-	-	-	-	312	339	-	479	483	-
Stage 2	-	-	-	-	-	-	467	476	-	311	338	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	956	-	-	789	-	-	77	103	361	85	105	493
Mov Cap-2 Maneuver	-	-	-	-	-	-	77	103	-	85	105	-
Stage 1	-	-	-	-	-	-	295	321	-	454	483	-
Stage 2	-	-	-	-	-	-	429	476	-	291	320	-

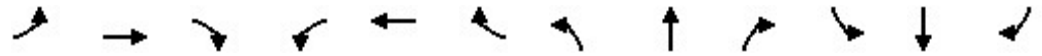
Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	0	31.3	28
HCM LOS			D	D

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	142	956	-	-	789	-	-	210
HCM Lane V/C Ratio	0.036	0.054	-	-	0.002	-	-	0.256
HCM Control Delay (s)	31.3	9	-	-	9.6	-	-	28
HCM Lane LOS	D	A	-	-	A	-	-	D
HCM 95th %tile Q(veh)	0.1	0.2	-	-	0	-	-	1

Lanes, Volumes, Timings
1: Revere Street & 104th Avenue

JR Engineering
09/30/2021

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	23	690	44	33	1195	41	114	18	68	61	6	55
Future Volume (vph)	23	690	44	33	1195	41	114	18	68	61	6	55
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	300		300	300		300	200		200	150		0
Storage Lanes	2		1	1		1	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	3539	1583	1770	3539	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.950			0.290			0.752			0.742		
Satd. Flow (perm)	3433	3539	1583	540	3539	1583	1401	1863	1583	1382	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			152			152			217			217
Link Speed (mph)		45			45			30				30
Link Distance (ft)		798			2575			954				614
Travel Time (s)		12.1			39.0			21.7				14.0
Peak Hour Factor	0.78	0.92	0.78	0.78	0.93	0.78	0.83	0.78	0.79	0.79	0.78	0.78
Adj. Flow (vph)	29	750	56	42	1285	53	137	23	86	77	8	71
Shared Lane Traffic (%)												
Lane Group Flow (vph)	29	750	56	42	1285	53	137	23	86	77	8	71
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1	1	1	1	1	1	1	1	1	1	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	40	40	40	40	40	40	40	40	40	40	40	40
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	40	40	40	40	40	40	40	40	40	40	40	40
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Turn Type	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2	6		6	8		8	4		4
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	4
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	8.0	8.0	8.0	8.0	8.0	8.0
Minimum Split (s)	12.0	20.0	20.0	12.0	20.0	20.0	14.0	14.0	14.0	14.0	14.0	14.0
Total Split (s)	15.0	50.0	50.0	15.0	50.0	50.0	20.0	25.0	25.0	20.0	25.0	25.0

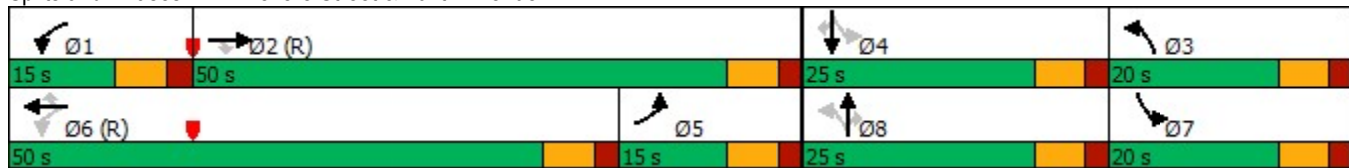


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Split (%)	13.6%	45.5%	45.5%	13.6%	45.5%	45.5%	18.2%	22.7%	22.7%	18.2%	22.7%	22.7%
Maximum Green (s)	8.7	43.7	43.7	8.7	43.7	43.7	14.0	19.0	19.0	14.0	19.0	19.0
Yellow Time (s)	4.3	4.3	4.3	4.3	4.3	4.3	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	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 Lost Time (s)	6.3	6.3	6.3	6.3	6.3	6.3	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lag	Lag	Lag	Lead	Lead	Lead	Lag	Lead	Lead	Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Min	C-Min	None	C-Min	C-Min	None	None	None	None	None	None
Act Effct Green (s)	6.5	68.4	68.4	68.7	68.7	68.7	16.4	8.2	8.2	16.1	8.0	8.0
Actuated g/C Ratio	0.06	0.62	0.62	0.62	0.62	0.62	0.15	0.07	0.07	0.15	0.07	0.07
v/c Ratio	0.14	0.34	0.05	0.10	0.58	0.05	0.57	0.17	0.27	0.33	0.06	0.22
Control Delay	50.3	12.4	0.1	6.9	9.0	0.1	49.2	50.6	2.1	40.4	48.7	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	50.3	12.4	0.1	6.9	9.0	0.1	49.2	50.6	2.1	40.4	48.7	1.6
LOS	D	B	A	A	A	A	D	D	A	D	D	A
Approach Delay		12.9			8.6			32.9			23.2	
Approach LOS		B			A			C			C	

Intersection Summary

Area Type: Other
 Cycle Length: 110
 Actuated Cycle Length: 110
 Offset: 36 (33%), Referenced to phase 2:EBT and 6:WBTL, Start of Green
 Natural Cycle: 75
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.58
 Intersection Signal Delay: 13.1 Intersection LOS: B
 Intersection Capacity Utilization 61.6% ICU Level of Service B
 Analysis Period (min) 15

Splits and Phases: 1: Revere Street & 104th Avenue



Queues
1: Revere Street & 104th Avenue































Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	29	750	56	42	1285	53	137	23	86	77	8	71
v/c Ratio	0.14	0.34	0.05	0.10	0.58	0.05	0.57	0.17	0.27	0.33	0.06	0.22
Control Delay	50.3	12.4	0.1	6.9	9.0	0.1	49.2	50.6	2.1	40.4	48.7	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	50.3	12.4	0.1	6.9	9.0	0.1	49.2	50.6	2.1	40.4	48.7	1.6
Queue Length 50th (ft)	10	143	0	8	188	0	85	16	0	46	5	0
Queue Length 95th (ft)	21	212	0	m14	170	m0	125	36	0	73	18	0
Internal Link Dist (ft)		718			2495			874			534	
Turn Bay Length (ft)	300		300	300		300	200		200	150		
Base Capacity (vph)	271	2201	1042	434	2209	1045	309	321	452	305	321	452
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	0.11	0.34	0.05	0.10	0.58	0.05	0.44	0.07	0.19	0.25	0.02	0.16

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

HCM 6th Signalized Intersection Summary
1: Revere Street & 104th Avenue

JR Engineering
09/30/2021

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 	 			 						 	
Traffic Volume (veh/h)	23	690	44	33	1195	41	114	18	68	61	6	55
Future Volume (veh/h)	23	690	44	33	1195	41	114	18	68	61	6	55
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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	29	750	0	42	1285	0	137	23	86	77	8	71
Peak Hour Factor	0.78	0.92	0.78	0.78	0.93	0.78	0.83	0.78	0.79	0.79	0.78	0.78
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	893	2129		250	1328		284	136	115	272	136	115
Arrive On Green	0.26	0.60	0.00	0.07	0.75	0.00	0.07	0.07	0.07	0.07	0.07	0.07
Sat Flow, veh/h	3456	3554	1585	1781	3554	1585	1781	1870	1585	1781	1870	1585
Grp Volume(v), veh/h	29	750	0	42	1285	0	137	23	86	77	8	71
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1781	1777	1585	1781	1870	1585	1781	1870	1585
Q Serve(g_s), s	0.7	11.8	0.0	1.7	36.3	0.0	0.0	1.3	4.9	0.0	0.4	4.8
Cycle Q Clear(g_c), s	0.7	11.8	0.0	1.7	36.3	0.0	0.0	1.3	4.9	0.0	0.4	4.8
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	893	2129		250	1328		284	136	115	272	136	115
V/C Ratio(X)	0.03	0.35		0.17	0.97		0.48	0.17	0.75	0.28	0.06	0.62
Avail Cap(c_a), veh/h	893	2129		332	1412		383	323	274	371	323	274
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	0.00	0.90	0.90	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.5	11.2	0.0	25.0	13.3	0.0	44.9	47.9	35.6	44.0	47.5	49.5
Incr Delay (d2), s/veh	0.0	0.5	0.0	0.3	16.9	0.0	1.3	0.6	9.2	0.6	0.2	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	0.3	4.3	0.0	0.7	7.8	0.0	3.6	0.6	2.6	2.0	0.2	2.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	30.5	11.7	0.0	25.3	30.1	0.0	46.2	48.5	44.8	44.6	47.7	54.8
LnGrp LOS	C	B		C	C		D	D	D	D	D	D
Approach Vol, veh/h		779	A		1327	A		246			156	
Approach Delay, s/veh		12.4			30.0			45.9			49.4	
Approach LOS		B			C			D			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.9	72.2	13.9	14.0	34.7	47.4	13.9	14.0				
Change Period (Y+Rc), s	6.3	6.3	6.0	6.0	6.3	6.3	6.0	6.0				
Max Green Setting (Gmax), s	8.7	43.7	14.0	19.0	8.7	43.7	14.0	19.0				
Max Q Clear Time (g_c+I1), s	3.7	13.8	2.0	6.8	2.7	38.3	2.0	6.9				
Green Ext Time (p_c), s	0.0	3.2	0.3	0.2	0.0	2.8	0.1	0.2				

Intersection Summary

HCM 6th Ctrl Delay	27.3
HCM 6th LOS	C

Notes

Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

Lanes, Volumes, Timings
2: Vaughn Way & 104th Avenue

JR Engineering
09/30/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	14	690	18	50	885	2	143	1	64	11	1	31
Future Volume (vph)	14	690	18	50	885	2	143	1	64	11	1	31
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		150	150		0	150		0	100		0
Storage Lanes	1		1	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850					0.852			0.854	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3539	1583	1770	3539	0	1770	1587	0	1770	1591	0
Flt Permitted	0.241			0.323			0.730			0.800		
Satd. Flow (perm)	449	3539	1583	602	3539	0	1360	1587	0	1490	1591	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			149					81			40	
Link Speed (mph)		45			45			30			30	
Link Distance (ft)		2575			1450			2620			567	
Travel Time (s)		39.0			22.0			59.5			12.9	
Peak Hour Factor	0.78	0.92	0.78	0.78	0.92	0.78	0.84	0.78	0.79	0.78	0.78	0.78
Adj. Flow (vph)	18	750	23	64	962	3	170	1	81	14	1	40
Shared Lane Traffic (%)												
Lane Group Flow (vph)	18	750	23	64	965	0	170	82	0	14	41	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1	1	1	1		1	1		1	1	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	40	40	40	40	40		40	40		40	40	
Trailing Detector (ft)	0	0	0	0	0		0	0		0	0	
Detector 1 Position(ft)	0	0	0	0	0		0	0		0	0	
Detector 1 Size(ft)	40	40	40	40	40		40	40		40	40	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6			8			4		
Detector Phase	5	2	2	1	6		3	8		7	4	
Switch Phase												
Minimum Initial (s)	5.0	8.0	8.0	5.0	8.0		6.0	8.0		6.0	8.0	
Minimum Split (s)	12.0	20.0	20.0	12.0	20.0		12.0	14.0		12.0	14.0	
Total Split (s)	15.0	61.0	61.0	15.0	61.0		16.0	18.0		16.0	18.0	

Lanes, Volumes, Timings
2: Vaughn Way & 104th Avenue

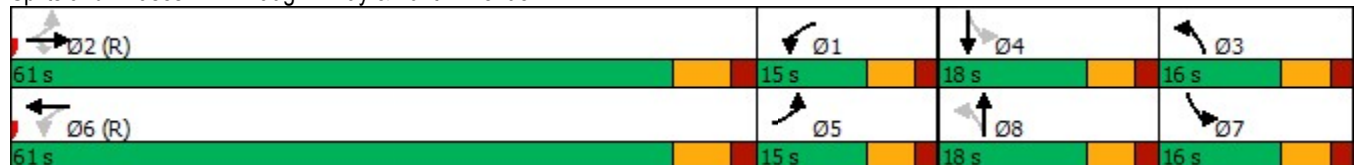


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Split (%)	13.6%	55.5%	55.5%	13.6%	55.5%		14.5%	16.4%		14.5%	16.4%	
Maximum Green (s)	9.0	54.2	54.2	9.0	54.2		10.0	12.0		10.0	12.0	
Yellow Time (s)	4.0	4.8	4.8	4.0	4.8		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.8	6.8	6.0	6.8		6.0	6.0		6.0	6.0	
Lead/Lag	Lag	Lead	Lead	Lag	Lead		Lag	Lead		Lag	Lead	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Min	C-Min	None	C-Min		None	None		None	None	
Act Effct Green (s)	72.9	66.5	66.5	80.0	73.5		18.1	15.6		11.9	8.2	
Actuated g/C Ratio	0.66	0.60	0.60	0.73	0.67		0.16	0.14		0.11	0.07	
v/c Ratio	0.05	0.35	0.02	0.12	0.41		0.65	0.28		0.08	0.27	
Control Delay	10.3	13.3	0.7	2.0	3.7		53.7	12.4		36.3	19.8	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	10.3	13.3	0.7	2.0	3.7		53.7	12.4		36.3	19.8	
LOS	B	B	A	A	A		D	B		D	B	
Approach Delay		12.8			3.6			40.3			24.0	
Approach LOS		B			A			D			C	

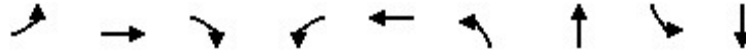
Intersection Summary

Area Type: Other
 Cycle Length: 110
 Actuated Cycle Length: 110
 Offset: 106 (96%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.65
 Intersection Signal Delay: 11.9
 Intersection LOS: B
 Intersection Capacity Utilization 58.9%
 ICU Level of Service B
 Analysis Period (min) 15

Splits and Phases: 2: Vaughn Way & 104th Avenue



Queues
2: Vaughn Way & 104th Avenue



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	18	750	23	64	965	170	82	14	41
v/c Ratio	0.05	0.35	0.02	0.12	0.41	0.65	0.28	0.08	0.27
Control Delay	10.3	13.3	0.7	2.0	3.7	53.7	12.4	36.3	19.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	10.3	13.3	0.7	2.0	3.7	53.7	12.4	36.3	19.8
Queue Length 50th (ft)	4	166	0	3	24	110	1	8	1
Queue Length 95th (ft)	21	292	2	10	77	153	33	21	26
Internal Link Dist (ft)		2495			1370		2540		487
Turn Bay Length (ft)	150		150	150		150		100	
Base Capacity (vph)	419	2155	1022	556	2365	276	306	230	209
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.04	0.35	0.02	0.12	0.41	0.62	0.27	0.06	0.20

Intersection Summary

HCM 6th Signalized Intersection Summary
2: Vaughn Way & 104th Avenue

JR Engineering
09/30/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	14	690	18	50	885	2	143	1	64	11	1	31
Future Volume (veh/h)	14	690	18	50	885	2	143	1	64	11	1	31
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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	18	750	23	64	962	3	170	1	81	14	1	40
Peak Hour Factor	0.78	0.92	0.78	0.78	0.92	0.78	0.84	0.78	0.79	0.78	0.78	0.78
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	717	910	406	799	1049	3	226	1	114	188	3	111
Arrive On Green	0.12	0.08	0.08	0.79	0.58	0.58	0.05	0.07	0.07	0.05	0.07	0.07
Sat Flow, veh/h	1781	3554	1585	1781	3634	11	1781	19	1569	1781	39	1552
Grp Volume(v), veh/h	18	750	23	64	470	495	170	0	82	14	0	41
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1868	1781	0	1588	1781	0	1591
Q Serve(g_s), s	0.0	22.8	1.5	0.0	26.1	26.1	2.1	0.0	5.6	0.0	0.0	2.7
Cycle Q Clear(g_c), s	0.0	22.8	1.5	0.0	26.1	26.1	2.1	0.0	5.6	0.0	0.0	2.7
Prop In Lane	1.00		1.00	1.00		0.01	1.00		0.99	1.00		0.98
Lane Grp Cap(c), veh/h	717	910	406	799	513	539	226	0	115	188	0	114
V/C Ratio(X)	0.03	0.82	0.06	0.08	0.92	0.92	0.75	0.00	0.71	0.07	0.00	0.36
Avail Cap(c_a), veh/h	717	1751	781	799	875	921	292	0	173	255	0	174
HCM Platoon Ratio	0.33	0.33	0.33	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.95	0.95	0.95	0.92	0.92	0.92	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	30.4	47.9	38.1	6.3	22.1	22.1	48.4	0.0	49.9	47.6	0.0	48.7
Incr Delay (d2), s/veh	0.0	8.0	0.3	0.0	22.3	21.5	7.8	0.0	7.8	0.2	0.0	1.9
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	0.4	11.8	0.6	0.3	9.2	9.6	5.0	0.0	2.5	0.4	0.0	1.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	30.4	55.9	38.4	6.3	44.3	43.5	56.2	0.0	57.7	47.8	0.0	50.6
LnGrp LOS	C	E	D	A	D	D	E	A	E	D	A	D
Approach Vol, veh/h		791			1029			252				55
Approach Delay, s/veh		54.8			41.6			56.7				49.9
Approach LOS		D			D			E				D
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	49.2	35.0	12.0	13.9	45.6	38.6	11.8	14.0				
Change Period (Y+Rc), s	6.0	6.8	6.0	6.0	6.0	6.8	6.0	6.0				
Max Green Setting (Gmax), s	9.0	54.2	10.0	12.0	9.0	54.2	10.0	12.0				
Max Q Clear Time (g_c+I1), s	2.0	24.8	4.1	4.7	2.0	28.1	2.0	7.6				
Green Ext Time (p_c), s	0.1	3.3	0.3	0.0	0.0	3.6	0.0	0.1				
Intersection Summary												
HCM 6th Ctrl Delay			48.5									
HCM 6th LOS			D									

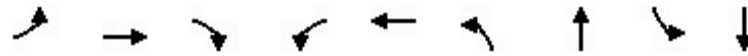
Lanes, Volumes, Timings
3: Potomac Street & 104th Avenue

JR Engineering
09/30/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	52	675	55	18	810	39	61	8	45	59	8	51
Future Volume (vph)	52	675	55	18	810	39	61	8	45	59	8	51
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		150	150		0	150		0	150		0
Storage Lanes	1		1	1		0	2		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	0.97	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.992			0.872			0.870	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3539	1583	1770	3511	0	3433	1624	0	1770	1621	0
Flt Permitted	0.301			0.296			0.950			0.713		
Satd. Flow (perm)	561	3539	1583	551	3511	0	3433	1624	0	1328	1621	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			168		6			58			65	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1450			363			490			446	
Travel Time (s)		33.0			8.3			11.1			10.1	
Peak Hour Factor	0.78	0.92	0.78	0.78	0.92	0.78	0.79	0.78	0.78	0.79	0.78	0.78
Adj. Flow (vph)	67	734	71	23	880	50	77	10	58	75	10	65
Shared Lane Traffic (%)												
Lane Group Flow (vph)	67	734	71	23	930	0	77	68	0	75	75	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	60		60	60		60	60		60	60		60
Number of Detectors	1	1	1	1	1		1	1		1	1	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	40	40	40	40	40		40	40		40	40	
Trailing Detector (ft)	0	0	0	0	0		0	0		0	0	
Detector 1 Position(ft)	0	0	0	0	0		0	0		0	0	
Detector 1 Size(ft)	40	40	40	40	40		40	40		40	40	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA		Prot	NA		pm+pt	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6						4		
Detector Phase	5	2	2	1	6		3	8		7	4	
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0		8.0	9.0		8.0	9.0	
Minimum Split (s)	13.0	20.0	20.0	13.0	20.0		15.0	17.0		15.0	17.0	
Total Split (s)	15.0	53.0	53.0	15.0	53.0		25.0	17.0		25.0	17.0	

Queues
3: Potomac Street & 104th Avenue



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	67	734	71	23	930	77	68	75	75
v/c Ratio	0.15	0.31	0.06	0.06	0.42	0.29	0.36	0.33	0.38
Control Delay	9.3	7.2	0.4	12.5	14.4	50.7	21.2	40.1	20.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	9.3	7.2	0.4	12.5	14.4	50.7	21.2	40.1	20.7
Queue Length 50th (ft)	9	55	0	7	200	27	7	44	7
Queue Length 95th (ft)	23	107	0	18	271	44	38	71	38
Internal Link Dist (ft)		1370			283		410		366
Turn Bay Length (ft)	150		150	150		150		150	
Base Capacity (vph)	467	2383	1121	428	2223	580	208	389	214
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.14	0.31	0.06	0.05	0.42	0.13	0.33	0.19	0.35
Intersection Summary									

HCM 6th Signalized Intersection Summary
 3: Potomac Street & 104th Avenue





















JR Engineering
 09/30/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗	↘	↖	↗		↖	↗		↖	↗	
Traffic Volume (veh/h)	52	675	55	18	810	39	61	8	45	59	8	51
Future Volume (veh/h)	52	675	55	18	810	39	61	8	45	59	8	51
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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	67	734	71	23	880	50	77	10	58	75	10	65
Peak Hour Factor	0.78	0.92	0.78	0.78	0.92	0.78	0.79	0.78	0.78	0.79	0.78	0.78
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	641	2076	926	256	1007	57	227	19	113	238	18	115
Arrive On Green	0.62	1.00	1.00	0.02	0.29	0.29	0.07	0.08	0.08	0.07	0.08	0.08
Sat Flow, veh/h	1781	3554	1585	1781	3418	194	3456	238	1383	1781	216	1402
Grp Volume(v), veh/h	67	734	71	23	457	473	77	0	68	75	0	75
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1835	1728	0	1621	1781	0	1618
Q Serve(g_s), s	0.0	0.0	0.0	1.1	26.9	26.9	2.3	0.0	4.4	0.0	0.0	4.9
Cycle Q Clear(g_c), s	0.0	0.0	0.0	1.1	26.9	26.9	2.3	0.0	4.4	0.0	0.0	4.9
Prop In Lane	1.00		1.00	1.00		0.11	1.00		0.85	1.00		0.87
Lane Grp Cap(c), veh/h	641	2076	926	256	523	541	227	0	133	238	0	132
V/C Ratio(X)	0.10	0.35	0.08	0.09	0.87	0.87	0.34	0.00	0.51	0.32	0.00	0.57
Avail Cap(c_a), veh/h	641	2076	926	343	741	766	584	0	156	422	0	156
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	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	13.7	0.0	0.0	31.5	36.9	36.9	49.1	0.0	48.4	46.3	0.0	48.6
Incr Delay (d2), s/veh	0.1	0.5	0.2	0.1	18.1	17.6	0.9	0.0	3.1	0.7	0.0	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	0.7	0.1	0.0	0.5	14.1	14.5	1.0	0.0	1.9	2.0	0.0	2.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	13.8	0.5	0.2	31.7	54.9	54.5	50.0	0.0	51.5	47.1	0.0	52.4
LnGrp LOS	B	A	A	C	D	D	D	A	D	D	A	D
Approach Vol, veh/h		872			953			145				150
Approach Delay, s/veh		1.4			54.1			50.7				49.7
Approach LOS		A			D			D				D
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.6	71.3	13.6	15.4	41.5	39.5	13.6	15.4				
Change Period (Y+Rc), s	7.1	7.1	6.4	6.4	7.1	7.1	6.4	6.4				
Max Green Setting (Gmax), s	7.9	45.9	18.6	10.6	7.9	45.9	18.6	10.6				
Max Q Clear Time (g_c+I1), s	3.1	2.0	4.3	6.9	2.0	28.9	2.0	6.4				
Green Ext Time (p_c), s	0.0	3.9	0.2	0.1	0.1	3.5	0.2	0.1				
Intersection Summary												
HCM 6th Ctrl Delay				31.9								
HCM 6th LOS				C								

Lanes, Volumes, Timings
4: Peoria Street & 96th Ave

JR Engineering
09/30/2021

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	18	395	1	1	740	16	1	1	1	45	1	56
Future Volume (vph)	18	395	1	1	740	16	1	1	1	45	1	56
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		150	150		0	0		0	0		0
Storage Lanes	1		1	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.996			0.955				0.926
Flt Protected	0.950			0.950				0.984				0.978
Satd. Flow (prot)	1770	1863	1583	1770	1855	0	0	1750	0	0	1687	0
Flt Permitted	0.950			0.950				0.984				0.978
Satd. Flow (perm)	1770	1863	1583	1770	1855	0	0	1750	0	0	1687	0
Link Speed (mph)		45			45			40				40
Link Distance (ft)		563			5275			411				2833
Travel Time (s)		8.5			79.9			7.0				48.3
Peak Hour Factor	0.78	0.90	0.78	0.78	0.92	0.78	0.78	0.78	0.78	0.78	0.78	0.78
Adj. Flow (vph)	23	439	1	1	804	21	1	1	1	58	1	72
Shared Lane Traffic (%)												
Lane Group Flow (vph)	23	439	1	1	825	0	0	3	0	0	131	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0				0
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop				Stop

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	55.4%
ICU Level of Service	B
Analysis Period (min)	15

Intersection												
Int Delay, s/veh	4.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↑	↗	↖	↑	↗		↕			↕	
Traffic Vol, veh/h	18	395	1	1	740	16	1	1	1	45	1	56
Future Vol, veh/h	18	395	1	1	740	16	1	1	1	45	1	56
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	150	-	150	150	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	78	90	78	78	92	78	78	78	78	78	78	78
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	23	439	1	1	804	21	1	1	1	58	1	72

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	825	0	0	440	0	0	1338	1312	439	1304	1303	815
Stage 1	-	-	-	-	-	-	485	485	-	817	817	-
Stage 2	-	-	-	-	-	-	853	827	-	487	486	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	805	-	-	1120	-	-	130	159	618	137	161	377
Stage 1	-	-	-	-	-	-	563	552	-	370	390	-
Stage 2	-	-	-	-	-	-	354	386	-	562	551	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	805	-	-	1120	-	-	102	154	618	133	156	377
Mov Cap-2 Maneuver	-	-	-	-	-	-	102	154	-	133	156	-
Stage 1	-	-	-	-	-	-	547	536	-	359	390	-
Stage 2	-	-	-	-	-	-	285	386	-	544	535	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.5			0			27.1			48.2		
HCM LOS							D			E		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	167	805	-	-	1120	-	-	207
HCM Lane V/C Ratio	0.023	0.029	-	-	0.001	-	-	0.632
HCM Control Delay (s)	27.1	9.6	-	-	8.2	-	-	48.2
HCM Lane LOS		D	A	-	-	A	-	E
HCM 95th %tile Q(veh)	0.1	0.1	-	-	0	-	-	3.7

Lanes, Volumes, Timings
 11: Peoria Parkway/Revere Street & Reunion Ridge Way



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	49	75	125	17	25	40
Future Volume (vph)	49	75	125	17	25	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200	0		150	200	
Storage Lanes	1	1		1	1	
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850		0.850		
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1770	1583	1863	1583	1770	1863
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1770	1583	1863	1583	1770	1863
Link Speed (mph)	30		30		30	
Link Distance (ft)	2931		2350		954	
Travel Time (s)	66.6		53.4		21.7	
Peak Hour Factor	0.78	0.80	0.84	0.78	0.78	0.78
Adj. Flow (vph)	63	94	149	22	32	51
Shared Lane Traffic (%)						
Lane Group Flow (vph)	63	94	149	22	32	51
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		12		12	
Link Offset(ft)	0		0		0	
Crosswalk Width(ft)	16		16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free		Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	23.2%
ICU Level of Service	A
Analysis Period (min)	15

























Intersection						
Int Delay, s/veh	4.4					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↘	↗	↑	↗	↘	↑
Traffic Vol, veh/h	49	75	125	17	25	40
Future Vol, veh/h	49	75	125	17	25	40
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	200	0	-	150	200	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	78	80	84	78	78	78
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	63	94	149	22	32	51

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	264	149	0	0	171
Stage 1	149	-	-	-	-
Stage 2	115	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218
Pot Cap-1 Maneuver	725	898	-	-	1406
Stage 1	879	-	-	-	-
Stage 2	910	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	708	898	-	-	1406
Mov Cap-2 Maneuver	708	-	-	-	-
Stage 1	879	-	-	-	-
Stage 2	889	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.9	0	2.9
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	708	898	1406
HCM Lane V/C Ratio	-	-	0.089	0.104	0.023
HCM Control Delay (s)	-	-	10.6	9.5	7.6
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.3	0.3	0.1

Lanes, Volumes, Timings
1: Revere Street & 104th Avenue

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	66	1450	130	98	1000	48	85	12	57	79	20	35
Future Volume (vph)	66	1450	130	98	1000	48	85	12	57	79	20	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	300		300	300		300	200		200	150		0
Storage Lanes	2		1	1		1	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	3539	1583	1770	3539	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.950			0.079			0.740			0.748		
Satd. Flow (perm)	3433	3539	1583	147	3539	1583	1378	1863	1583	1393	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			139			139			142			142
Link Speed (mph)		45			45			30			30	
Link Distance (ft)		798			2575			954			614	
Travel Time (s)		12.1			39.0			21.7			14.0	
Peak Hour Factor	0.79	0.93	0.84	0.83	0.93	0.78	0.81	0.78	0.78	0.80	0.78	0.78
Adj. Flow (vph)	84	1559	155	118	1075	62	105	15	73	99	26	45
Shared Lane Traffic (%)												
Lane Group Flow (vph)	84	1559	155	118	1075	62	105	15	73	99	26	45
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1	1	1	1	1	1	1	1	1	1	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	40	40	40	40	40	40	40	40	40	40	40	40
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	40	40	40	40	40	40	40	40	40	40	40	40
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Turn Type	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2	6		6	8		8	4		4
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	4
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	8.0	8.0	8.0	8.0	8.0	8.0
Minimum Split (s)	12.0	20.0	20.0	12.0	20.0	20.0	14.0	14.0	14.0	14.0	14.0	14.0
Total Split (s)	15.0	62.0	62.0	15.0	62.0	62.0	23.0	20.0	20.0	23.0	20.0	20.0

Lanes, Volumes, Timings
1: Revere Street & 104th Avenue

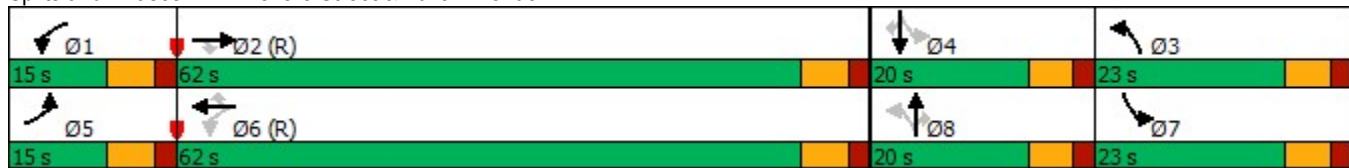


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Split (%)	12.5%	51.7%	51.7%	12.5%	51.7%	51.7%	19.2%	16.7%	16.7%	19.2%	16.7%	16.7%
Maximum Green (s)	8.7	55.7	55.7	8.7	55.7	55.7	17.0	14.0	14.0	17.0	14.0	14.0
Yellow Time (s)	4.3	4.3	4.3	4.3	4.3	4.3	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	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 Lost Time (s)	6.3	6.3	6.3	6.3	6.3	6.3	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lag	Lead	Lead	Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Min	C-Min	None	C-Min	C-Min	None	None	None	None	None	None
Act Effct Green (s)	8.3	71.7	71.7	83.8	75.4	75.4	15.1	8.0	8.0	15.6	8.3	8.3
Actuated g/C Ratio	0.07	0.60	0.60	0.70	0.63	0.63	0.13	0.07	0.07	0.13	0.07	0.07
v/c Ratio	0.35	0.74	0.15	0.51	0.48	0.06	0.52	0.12	0.31	0.47	0.20	0.19
Control Delay	57.0	21.9	3.4	28.2	8.6	0.6	54.1	55.0	3.3	51.4	56.5	1.7
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	57.0	21.9	3.4	28.2	8.6	0.6	54.1	55.0	3.3	51.4	56.5	1.7
LOS	E	C	A	C	A	A	D	D	A	D	E	A
Approach Delay		21.9			10.0			35.0			39.0	
Approach LOS		C			B			C			D	

Intersection Summary

Area Type:	Other
Cycle Length:	120
Actuated Cycle Length:	120
Offset:	50 (42%), Referenced to phase 2:EBT and 6:WBTL, Start of Green
Natural Cycle:	80
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.74
Intersection Signal Delay:	19.1
Intersection LOS:	B
Intersection Capacity Utilization	72.4%
ICU Level of Service	C
Analysis Period (min)	15

Splits and Phases: 1: Revere Street & 104th Avenue



Queues
1: Revere Street & 104th Avenue

JR Engineering
09/30/2021



























Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	84	1559	155	118	1075	62	105	15	73	99	26	45
v/c Ratio	0.35	0.74	0.15	0.51	0.48	0.06	0.52	0.12	0.31	0.47	0.20	0.19
Control Delay	57.0	21.9	3.4	28.2	8.6	0.6	54.1	55.0	3.3	51.4	56.5	1.7
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	57.0	21.9	3.4	28.2	8.6	0.6	54.1	55.0	3.3	51.4	56.5	1.7
Queue Length 50th (ft)	32	445	5	23	273	1	71	11	0	67	19	0
Queue Length 95th (ft)	51	655	33	48	328	7	107	29	0	100	42	0
Internal Link Dist (ft)		718			2495			874			534	
Turn Bay Length (ft)	300		300	300		300	200		200	150		
Base Capacity (vph)	261	2114	1001	242	2224	1046	324	217	310	328	217	310
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	0.32	0.74	0.15	0.49	0.48	0.06	0.32	0.07	0.24	0.30	0.12	0.15

Intersection Summary

HCM 6th Signalized Intersection Summary
1: Revere Street & 104th Avenue

JR Engineering
09/30/2021

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	66	1450	130	98	1000	48	85	12	57	79	20	35
Future Volume (veh/h)	66	1450	130	98	1000	48	85	12	57	79	20	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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	84	1559	0	118	1075	0	105	15	73	99	26	45
Peak Hour Factor	0.79	0.93	0.84	0.83	0.93	0.78	0.81	0.78	0.78	0.80	0.78	0.78
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	135	2213		241	2219		246	125	106	253	125	106
Arrive On Green	0.04	0.62	0.00	0.01	0.21	0.00	0.06	0.07	0.07	0.06	0.07	0.07
Sat Flow, veh/h	3456	3554	1585	1781	3554	1585	1781	1870	1585	1781	1870	1585
Grp Volume(v), veh/h	84	1559	0	118	1075	0	105	15	73	99	26	45
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1781	1777	1585	1781	1870	1585	1781	1870	1585
Q Serve(g_s), s	2.9	35.4	0.0	2.8	32.0	0.0	0.0	0.9	4.6	0.0	1.6	2.8
Cycle Q Clear(g_c), s	2.9	35.4	0.0	2.8	32.0	0.0	0.0	0.9	4.6	0.0	1.6	2.8
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	135	2213		241	2219		246	125	106	253	125	106
V/C Ratio(X)	0.62	0.70		0.49	0.48		0.43	0.12	0.69	0.39	0.21	0.43
Avail Cap(c_a), veh/h	251	2213		298	2219		383	218	185	390	218	185
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	0.00	0.84	0.84	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	56.8	15.2	0.0	15.9	30.6	0.0	50.3	52.7	39.3	49.7	53.0	38.7
Incr Delay (d2), s/veh	4.6	1.9	0.0	1.3	0.6	0.0	1.2	0.4	7.8	1.0	0.8	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	1.3	13.1	0.0	1.3	15.3	0.0	3.1	0.4	2.4	2.9	0.8	1.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	61.4	17.1	0.0	17.2	31.2	0.0	51.5	53.1	47.0	50.7	53.8	41.4
LnGrp LOS	E	B		B	C		D	D	D	D	D	D
Approach Vol, veh/h		1643	A		1193	A		193			170	
Approach Delay, s/veh		19.4			29.8			49.9			48.7	
Approach LOS		B			C			D			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	11.2	81.0	13.8	14.0	11.0	81.2	13.8	14.0				
Change Period (Y+Rc), s	6.3	6.3	6.0	6.0	6.3	6.3	6.0	6.0				
Max Green Setting (Gmax), s	8.7	55.7	17.0	14.0	8.7	55.7	17.0	14.0				
Max Q Clear Time (g_c+I1), s	4.8	37.4	2.0	4.8	4.9	34.0	2.0	6.6				
Green Ext Time (p_c), s	0.1	7.5	0.2	0.1	0.1	4.8	0.2	0.1				

Intersection Summary

HCM 6th Ctrl Delay	26.7
HCM 6th LOS	C

Notes

Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

Lanes, Volumes, Timings
2: Vaughn Way & 104th Avenue

JR Engineering
09/30/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	71	1445	68	174	1105	15	82	1	35	13	1	15
Future Volume (vph)	71	1445	68	174	1105	15	82	1	35	13	1	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		150	150		0	150		0	100		0
Storage Lanes	1		1	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.998			0.853				0.857
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3539	1583	1770	3532	0	1770	1589	0	1770	1596	0
Flt Permitted	0.141			0.107			0.744					
Satd. Flow (perm)	263	3539	1583	199	3532	0	1386	1589	0	1863	1596	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			144		2			45			19	
Link Speed (mph)		45			45			30			30	
Link Distance (ft)		2575			1450			2620			567	
Travel Time (s)		39.0			22.0			59.5			12.9	
Peak Hour Factor	0.80	0.93	0.79	0.86	0.93	0.78	0.81	0.78	0.78	0.78	0.78	0.78
Adj. Flow (vph)	89	1554	86	202	1188	19	101	1	45	17	1	19
Shared Lane Traffic (%)												
Lane Group Flow (vph)	89	1554	86	202	1207	0	101	46	0	17	20	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1	1	1	1		1	1		1	1	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	40	40	40	40	40		40	40		40	40	
Trailing Detector (ft)	0	0	0	0	0		0	0		0	0	
Detector 1 Position(ft)	0	0	0	0	0		0	0		0	0	
Detector 1 Size(ft)	40	40	40	40	40		40	40		40	40	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6			8			4		
Detector Phase	5	2	2	1	6		3	8		7	4	
Switch Phase												
Minimum Initial (s)	5.0	8.0	8.0	5.0	8.0		6.0	8.0		6.0	8.0	
Minimum Split (s)	12.0	20.0	20.0	12.0	20.0		12.0	14.0		12.0	14.0	
Total Split (s)	15.0	69.0	69.0	15.0	69.0		16.0	20.0		16.0	20.0	

Lanes, Volumes, Timings
2: Vaughn Way & 104th Avenue



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Split (%)	12.5%	57.5%	57.5%	12.5%	57.5%		13.3%	16.7%		13.3%	16.7%	
Maximum Green (s)	9.0	62.2	62.2	9.0	62.2		10.0	14.0		10.0	14.0	
Yellow Time (s)	4.0	4.8	4.8	4.0	4.8		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.8	6.8	6.0	6.8		6.0	6.0		6.0	6.0	
Lead/Lag	Lead	Lead	Lead	Lag	Lag		Lag	Lead		Lag	Lead	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Min	C-Min	None	C-Min		None	None		None	None	
Act Effct Green (s)	73.6	72.8	72.8	78.8	78.0		12.9	9.3		10.3	8.0	
Actuated g/C Ratio	0.61	0.61	0.61	0.66	0.65		0.11	0.08		0.09	0.07	
v/c Ratio	0.34	0.72	0.08	0.66	0.53		0.56	0.28		0.11	0.16	
Control Delay	5.6	8.9	0.3	28.9	4.4		60.5	20.4		44.7	25.2	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	5.6	8.9	0.3	28.9	4.4		60.5	20.4		44.7	25.2	
LOS	A	A	A	C	A		E	C		D	C	
Approach Delay		8.3			7.9			47.9			34.2	
Approach LOS		A			A			D			C	

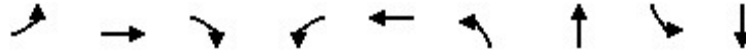
Intersection Summary

Area Type: Other
 Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 111 (93%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.72
 Intersection Signal Delay: 10.2
 Intersection LOS: B
 Intersection Capacity Utilization 76.5%
 ICU Level of Service D
 Analysis Period (min) 15

Splits and Phases: 2: Vaughn Way & 104th Avenue



Queues
2: Vaughn Way & 104th Avenue



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	89	1554	86	202	1207	101	46	17	20
v/c Ratio	0.34	0.72	0.08	0.66	0.53	0.56	0.28	0.11	0.16
Control Delay	5.6	8.9	0.3	28.9	4.4	60.5	20.4	44.7	25.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	5.6	8.9	0.3	28.9	4.4	60.5	20.4	44.7	25.2
Queue Length 50th (ft)	6	58	0	57	54	76	1	13	1
Queue Length 95th (ft)	m5	311	m0	#194	80	107	28	27	21
Internal Link Dist (ft)		2495			1370		2540		487
Turn Bay Length (ft)	150		150	150		150		100	
Base Capacity (vph)	278	2145	1016	305	2297	191	225	197	202
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.32	0.72	0.08	0.66	0.53	0.53	0.20	0.09	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.

HCM 6th Signalized Intersection Summary
2: Vaughn Way & 104th Avenue

JR Engineering
09/30/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↶	↶↶	↶	↶	↶↶		↶	↶		↶	↶	
Traffic Volume (veh/h)	71	1445	68	174	1105	15	82	1	35	13	1	15
Future Volume (veh/h)	71	1445	68	174	1105	15	82	1	35	13	1	15
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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	89	1554	86	202	1188	19	101	1	45	17	1	19
Peak Hour Factor	0.80	0.93	0.79	0.86	0.93	0.78	0.81	0.78	0.78	0.78	0.78	0.78
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	298	1555	693	500	2276	36	216	2	103	186	5	95
Arrive On Green	0.09	0.87	0.87	0.48	1.00	1.00	0.05	0.07	0.07	0.04	0.06	0.06
Sat Flow, veh/h	1781	3554	1585	1781	3580	57	1781	35	1556	1781	80	1517
Grp Volume(v), veh/h	89	1554	86	202	590	617	101	0	46	17	0	20
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1860	1781	0	1590	1781	0	1597
Q Serve(g_s), s	3.8	52.3	0.9	2.6	0.0	0.0	0.0	0.0	3.3	0.0	0.0	1.4
Cycle Q Clear(g_c), s	3.8	52.3	0.9	2.6	0.0	0.0	0.0	0.0	3.3	0.0	0.0	1.4
Prop In Lane	1.00		1.00	1.00		0.03	1.00		0.98	1.00		0.95
Lane Grp Cap(c), veh/h	298	1555	693	500	1130	1183	216	0	106	186	0	100
V/C Ratio(X)	0.30	1.00	0.12	0.40	0.52	0.52	0.47	0.00	0.44	0.09	0.00	0.20
Avail Cap(c_a), veh/h	349	1842	822	500	1130	1183	279	0	186	256	0	186
HCM Platoon Ratio	2.00	2.00	2.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.64	0.64	0.64	0.72	0.72	0.72	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	21.4	7.5	4.3	23.9	0.0	0.0	52.2	0.0	53.9	51.5	0.0	53.4
Incr Delay (d2), s/veh	0.4	18.2	0.2	0.4	1.2	1.2	1.6	0.0	2.8	0.2	0.0	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	1.5	6.8	0.4	3.1	0.4	0.4	3.0	0.0	1.4	0.5	0.0	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	21.7	25.7	4.5	24.2	1.2	1.2	53.8	0.0	56.7	51.7	0.0	54.4
LnGrp LOS	C	C	A	C	A	A	D	A	E	D	A	D
Approach Vol, veh/h		1729			1409			147				37
Approach Delay, s/veh		24.4			4.5			54.7				53.2
Approach LOS		C			A			D				D
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	32.2	62.5	11.8	13.5	11.6	83.1	11.3	14.0				
Change Period (Y+Rc), s	6.8	* 6.8	6.0	6.0	6.0	6.8	6.0	6.0				
Max Green Setting (Gmax), s	9.0	* 62	10.0	14.0	9.0	62.2	10.0	14.0				
Max Q Clear Time (g_c+I1), s	4.6	54.3	2.0	3.4	5.8	2.0	2.0	5.3				
Green Ext Time (p_c), s	0.2	4.7	0.2	0.0	0.1	5.2	0.0	0.1				

Intersection Summary

HCM 6th Ctrl Delay	17.6
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lanes, Volumes, Timings
3: Potomac Street & 104th Avenue

JR Engineering
09/30/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	66	1360	79	61	1120	131	72	6	29	146	11	77
Future Volume (vph)	66	1360	79	61	1120	131	72	6	29	146	11	77
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		150	150		0	150		0	150		0
Storage Lanes	1		1	1		0	2		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	0.97	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.983			0.877			0.869	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3539	1583	1770	3479	0	3433	1634	0	1770	1619	0
Flt Permitted	0.154			0.066			0.950			0.728		
Satd. Flow (perm)	287	3539	1583	123	3479	0	3433	1634	0	1356	1619	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			154		14			37			96	
Link Speed (mph)		45			45			40			40	
Link Distance (ft)		1450			363			490			446	
Travel Time (s)		22.0			5.5			8.4			7.6	
Peak Hour Factor	0.79	0.93	0.80	0.79	0.93	0.84	0.80	0.78	0.78	0.84	0.78	0.80
Adj. Flow (vph)	84	1462	99	77	1204	156	90	8	37	174	14	96
Shared Lane Traffic (%)												
Lane Group Flow (vph)	84	1462	99	77	1360	0	90	45	0	174	110	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1	1	1	1		1	1		1	1	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	40	40	40	40	40		40	40		40	40	
Trailing Detector (ft)	0	0	0	0	0		0	0		0	0	
Detector 1 Position(ft)	0	0	0	0	0		0	0		0	0	
Detector 1 Size(ft)	40	40	40	40	40		40	40		40	40	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA		Prot	NA		pm+pt	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6						4		
Detector Phase	5	2	2	1	6		3	8		7	4	
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0		8.0	9.0		8.0	9.0	
Minimum Split (s)	13.0	20.0	20.0	13.0	20.0		15.0	17.0		15.0	17.0	
Total Split (s)	13.0	53.0	53.0	13.0	53.0		34.0	20.0		34.0	20.0	

Lanes, Volumes, Timings
3: Potomac Street & 104th Avenue

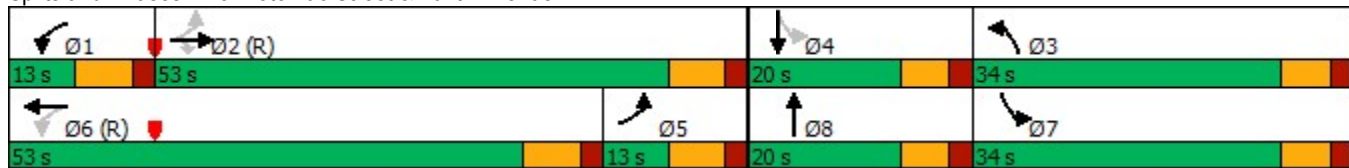


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Split (%)	10.8%	44.2%	44.2%	10.8%	44.2%		28.3%	16.7%		28.3%	16.7%	
Maximum Green (s)	5.9	45.9	45.9	5.9	45.9		27.6	13.6		27.6	13.6	
Yellow Time (s)	5.1	5.1	5.1	5.1	5.1		4.4	4.4		4.4	4.4	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	7.1	7.1	7.1	7.1	7.1		6.4	6.4		6.4	6.4	
Lead/Lag	Lag	Lag	Lag	Lead	Lead		Lag	Lead		Lag	Lead	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Min	C-Min	None	C-Min		None	None		None	None	
Act Effct Green (s)	67.9	67.9	67.9	69.9	69.9		10.1	9.1		21.6	9.6	
Actuated g/C Ratio	0.57	0.57	0.57	0.58	0.58		0.08	0.08		0.18	0.08	
v/c Ratio	0.36	0.73	0.10	0.43	0.67		0.31	0.29		0.60	0.50	
Control Delay	8.8	8.3	0.3	21.7	20.1		54.1	25.3		52.4	21.9	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	8.8	8.3	0.3	21.7	20.1		54.1	25.3		52.4	21.9	
LOS	A	A	A	C	C		D	C		D	C	
Approach Delay		7.8			20.2			44.5			40.6	
Approach LOS		A			C			D			D	

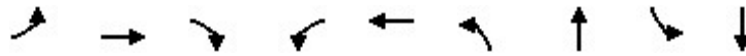
Intersection Summary

Area Type: Other
 Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green, Master Intersection
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.73
 Intersection Signal Delay: 17.0
 Intersection LOS: B
 Intersection Capacity Utilization 73.7%
 ICU Level of Service D
 Analysis Period (min) 15

Splits and Phases: 3: Potomac Street & 104th Avenue



Queues
3: Potomac Street & 104th Avenue



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	84	1462	99	77	1360	90	45	174	110
v/c Ratio	0.36	0.73	0.10	0.43	0.67	0.31	0.29	0.60	0.50
Control Delay	8.8	8.3	0.3	21.7	20.1	54.1	25.3	52.4	21.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	8.8	8.3	0.3	21.7	20.1	54.1	25.3	52.4	21.9
Queue Length 50th (ft)	6	281	0	26	372	34	6	118	10
Queue Length 95th (ft)	m16	118	m0	46	492	53	34	167	46
Internal Link Dist (ft)		1370			283		410		366
Turn Bay Length (ft)	150		150	150		150		150	
Base Capacity (vph)	235	2002	962	180	2033	789	217	495	268
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.36	0.73	0.10	0.43	0.67	0.11	0.21	0.35	0.41

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

HCM 6th Signalized Intersection Summary
3: Potomac Street & 104th Avenue





















JR Engineering
09/30/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	66	1360	79	61	1120	131	72	6	29	146	11	77
Future Volume (veh/h)	66	1360	79	61	1120	131	72	6	29	146	11	77
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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	84	1462	99	77	1204	156	90	8	37	174	14	96
Peak Hour Factor	0.79	0.93	0.80	0.79	0.93	0.84	0.80	0.78	0.78	0.84	0.78	0.80
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	496	2077	926	229	1211	156	219	22	100	256	17	119
Arrive On Green	0.49	1.00	1.00	0.04	0.38	0.38	0.06	0.07	0.07	0.07	0.08	0.08
Sat Flow, veh/h	1781	3554	1585	1781	3165	409	3456	290	1340	1781	206	1411
Grp Volume(v), veh/h	84	1462	99	77	674	686	90	0	45	174	0	110
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1797	1728	0	1629	1781	0	1616
Q Serve(g_s), s	0.0	0.0	0.0	3.6	45.3	45.8	3.0	0.0	3.2	2.6	0.0	8.0
Cycle Q Clear(g_c), s	0.0	0.0	0.0	3.6	45.3	45.8	3.0	0.0	3.2	2.6	0.0	8.0
Prop In Lane	1.00		1.00	1.00		0.23	1.00		0.82	1.00		0.87
Lane Grp Cap(c), veh/h	496	2077	926	229	680	687	219	0	122	256	0	136
V/C Ratio(X)	0.17	0.70	0.11	0.34	0.99	1.00	0.41	0.00	0.37	0.68	0.00	0.81
Avail Cap(c_a), veh/h	496	2077	926	240	680	687	795	0	185	536	0	183
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(l)	0.63	0.63	0.63	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	23.1	0.0	0.0	27.3	36.9	37.0	54.0	0.0	52.8	50.7	0.0	54.0
Incr Delay (d2), s/veh	0.1	1.3	0.1	0.9	32.6	33.9	1.2	0.0	1.8	3.2	0.0	17.2
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	0.4	0.0	1.5	24.6	25.3	1.3	0.0	1.3	5.1	0.0	3.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.2	1.3	0.1	28.2	69.5	70.9	55.3	0.0	54.6	53.9	0.0	71.2
LnGrp LOS	C	A	A	C	E	E	E	A	D	D	A	E
Approach Vol, veh/h		1645			1437			135				284
Approach Delay, s/veh		2.3			67.9			55.1				60.6
Approach LOS		A			E			E				E
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	12.3	77.2	14.0	16.5	36.5	53.0	15.1	15.4				
Change Period (Y+Rc), s	7.1	7.1	6.4	6.4	7.1	7.1	6.4	6.4				
Max Green Setting (Gmax), s	5.9	45.9	27.6	13.6	5.9	45.9	27.6	13.6				
Max Q Clear Time (g_c+I1), s	5.6	2.0	5.0	10.0	2.0	47.8	4.6	5.2				
Green Ext Time (p_c), s	0.0	9.2	0.3	0.1	0.1	0.0	0.5	0.0				
Intersection Summary												
HCM 6th Ctrl Delay			36.0									
HCM 6th LOS			D									

Lanes, Volumes, Timings
4: Peoria Street & 96th Ave

JR Engineering
09/30/2021

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	64	780	1	1	550	54	1	1	2	30	1	44
Future Volume (vph)	64	780	1	1	550	54	1	1	2	30	1	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		150	150		0	0		0	0		0
Storage Lanes	1		1	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.984			0.919				0.920
Flt Protected	0.950			0.950				0.990				0.980
Satd. Flow (prot)	1770	1863	1583	1770	1833	0	0	1695	0	0	1679	0
Flt Permitted	0.950			0.950				0.990				0.980
Satd. Flow (perm)	1770	1863	1583	1770	1833	0	0	1695	0	0	1679	0
Link Speed (mph)		45			45			40				40
Link Distance (ft)		563			5275			411				2833
Travel Time (s)		8.5			79.9			7.0				48.3
Peak Hour Factor	0.79	0.92	0.78	0.78	0.92	0.78	0.78	0.78	0.78	0.78	0.78	0.78
Adj. Flow (vph)	81	848	1	1	598	69	1	1	3	38	1	56
Shared Lane Traffic (%)												
Lane Group Flow (vph)	81	848	1	1	667	0	0	5	0	0	95	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0				0
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop				Stop

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	61.6%
ICU Level of Service	B
Analysis Period (min)	15

Intersection												
Int Delay, s/veh	4.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↑	↗	↖	↑	↗		↕			↕	
Traffic Vol, veh/h	64	780	1	1	550	54	1	1	2	30	1	44
Future Vol, veh/h	64	780	1	1	550	54	1	1	2	30	1	44
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	150	-	150	150	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	79	92	78	78	92	78	78	78	78	78	78	78
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	81	848	1	1	598	69	1	1	3	38	1	56

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	667	0	0	849	0	0	1673	1679	848	1648	1646	633
Stage 1	-	-	-	-	-	-	1010	1010	-	635	635	-
Stage 2	-	-	-	-	-	-	663	669	-	1013	1011	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	923	-	-	789	-	-	76	95	361	79	99	480
Stage 1	-	-	-	-	-	-	289	317	-	467	472	-
Stage 2	-	-	-	-	-	-	450	456	-	288	317	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	923	-	-	789	-	-	62	87	361	72	90	480
Mov Cap-2 Maneuver	-	-	-	-	-	-	62	87	-	72	90	-
Stage 1	-	-	-	-	-	-	264	289	-	426	472	-
Stage 2	-	-	-	-	-	-	396	456	-	260	289	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.8			0			36.1			69.7		
HCM LOS							E			F		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	121	923	-	-	789	-	-	144
HCM Lane V/C Ratio	0.042	0.088	-	-	0.002	-	-	0.668
HCM Control Delay (s)	36.1	9.3	-	-	9.6	-	-	69.7
HCM Lane LOS	E	A	-	-	A	-	-	F
HCM 95th %tile Q(veh)	0.1	0.3	-	-	0	-	-	3.7

Lanes, Volumes, Timings
 11: Peoria Parkway/Revere Street & Reunion Ridge Way



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	33	50	104	56	85	139
Future Volume (vph)	33	50	104	56	85	139
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200	0		150	200	
Storage Lanes	1	1		1	1	
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850		0.850		
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1770	1583	1863	1583	1770	1863
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1770	1583	1863	1583	1770	1863
Link Speed (mph)	30		30		30	
Link Distance (ft)	2931		2350		954	
Travel Time (s)	66.6		53.4		21.7	
Peak Hour Factor	0.78	0.78	0.83	0.78	0.81	0.84
Adj. Flow (vph)	42	64	125	72	105	165
Shared Lane Traffic (%)						
Lane Group Flow (vph)	42	64	125	72	105	165
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		12		12	
Link Offset(ft)	0		0		0	
Crosswalk Width(ft)	16		16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free		Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	21.4%
ICU Level of Service	A
Analysis Period (min)	15

Intersection						
Int Delay, s/veh	3.4					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↘	↗	↑	↗	↘	↑
Traffic Vol, veh/h	33	50	104	56	85	139
Future Vol, veh/h	33	50	104	56	85	139
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	200	0	-	150	200	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	78	78	83	78	81	84
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	42	64	125	72	105	165

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	500	125	0	0	197
Stage 1	125	-	-	-	-
Stage 2	375	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218
Pot Cap-1 Maneuver	530	926	-	-	1376
Stage 1	901	-	-	-	-
Stage 2	695	-	-	-	-
Platoon blocked, %					
Mov Cap-1 Maneuver	490	926	-	-	1376
Mov Cap-2 Maneuver	490	-	-	-	-
Stage 1	901	-	-	-	-
Stage 2	642	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.7	0	3
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	490	926	1376
HCM Lane V/C Ratio	-	-	0.086	0.069	0.076
HCM Control Delay (s)	-	-	13	9.2	7.8
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.3	0.2	0.2

APPENDIX C

FIGURES FROM *REUNION RIDGE SOUTH VILLAGE PLAN*



DEVELOPMENT SUMMARY					
LAND USE	ACRES	% ACRES	UNITS	% UNITS	DU/AC
FILING #2 / PHASE II					
CARRIAGE HOUSE			150	50.0%	
AMERICAN DREAM			100	33.3%	
PORCHLIGHT			50	16.7%	
SUBTOTAL	28.5	18.9%	300	100.0%	10.5
FILING #3 / PHASE III					
46' x 110'			50	33.3%	
51' x 110'			100	66.7%	
SUBTOTAL	31.0	20.6%	150	100.0%	4.8
FILING #4 / PHASE IV					
46' x 110'			75	37.5%	
51' x 110'			125	62.5%	
SUBTOTAL	48.3	32.1%	200	100.0%	4.1
FILING #5 / PHASE V & VI					
46' x 110'			100	50.0%	
51' x 110'			100	50.0%	
SUBTOTAL	42.8	28.4%	200	100.0%	4.7
TOTAL	150.6	100.0%	850		5.6



CITY STAFF CERTIFICATE
 APPROVED BY THE DEPARTMENT OF COMMUNITY DEVELOPMENT OF THE CITY OF COMMERCE CITY, THIS _____ DAY OF _____, 2020.

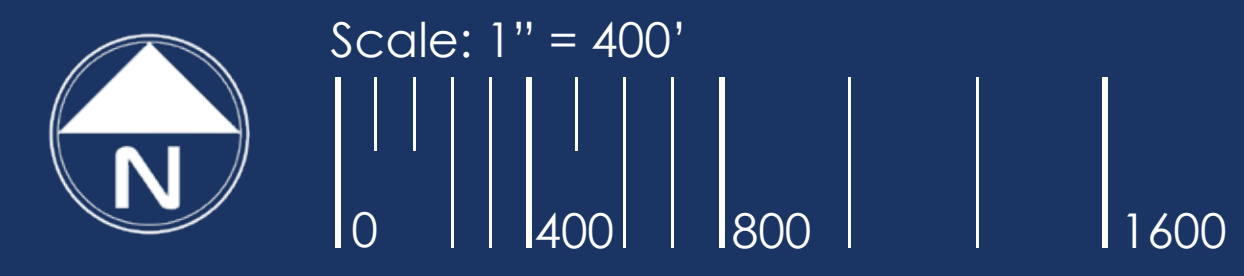
DEPARTMENT OF COMMUNITY DEVELOPMENT



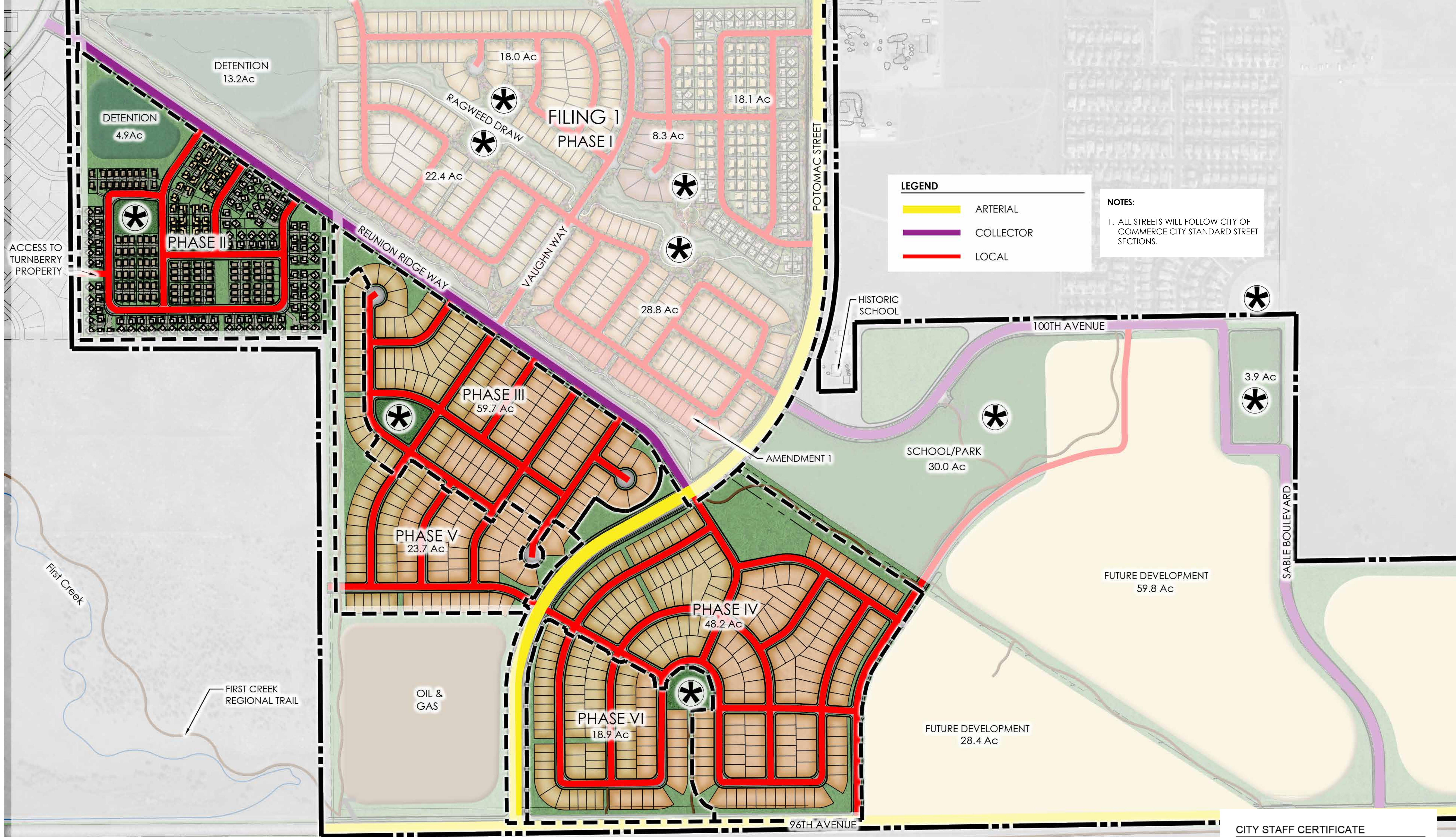
REUNION

REAL HOMETOWN

REUNION RIDGE SOUTH - PHASING PLAN



JUNE 26, 2020



LEGEND

- ARTERIAL
- COLLECTOR
- LOCAL

NOTES:

1. ALL STREETS WILL FOLLOW CITY OF COMMERCE CITY STANDARD STREET SECTIONS.

CITY STAFF CERTIFICATE
 APPROVED BY THE DEPARTMENT OF COMMUNITY DEVELOPMENT OF THE CITY OF COMMERCE CITY, THIS ____ DAY OF _____, 2020.
 DEPARTMENT OF COMMUNITY DEVELOPMENT



REUNION
 REAL HOMETOWN
 REUNION RIDGE SOUTH - TRANSPORTATION PLAN
 P. 6

Scale: 1" = 400'

JUNE 26, 2020