May 16, 2022

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RENAISSANCE RANCH FOCUSED TRAFFIC ASSESSMENT

Mr. Brian Hardy,

Urban Crossroads, Inc. is pleased to provide the following Focused Traffic Assessment for Renaissance Ranch development which is located east of Horsethief Canyon Road and south of the I-15 Freeway in the County of Riverside. The peak hour intersection operations analysis has been re-evaluated at the following intersections in order to assess the effects of sending 100% of the Project passenger car traffic to Temescal Canyon Road via Street A at Horsethief Canyon road as opposed to Bolo Court which was evaluated in the Renaissance Ranch Specific Plan (SP00333A01) Traffic Analysis (prepared by Urban Crossroads, Inc. dated March 1, 2022, referred to as 2022 Traffic Study):

- Horsethief Canyon Road & Temescal Canyon Road (#5)
- Horsethief Canyon Road & De Palma Road (#6)
- Horsethief Canyon Road & Street A (#7)

The 2022 Traffic Study distributed 25% of the passenger car traffic to the southeast to Bolo Court. All other study area intersections are anticipated to have any changes from those disclosed in the 2022 Traffic Study.

EXHIBIT 1: STUDY AREA

PROPOSED PROJECT

The proposed Project is to consist of the following land uses, which is consistent with the 2022 Traffic Study (no changes):

- 423,403 square feet of high-cube cold storage warehousing use within the Light Industrial area (20% of the light industrial square footage, calculated assuming 0.5 floor-to-area ratio)
- 740,956 square feet of high-cube fulfillment center warehousing use within the Light Industrial area (35% of the light industrial square footage, calculated assuming 0.5 floor-to-area ratio)
- 740,956 square feet of high-cube transload/short-term storage warehousing use within the Light Industrial area (35% of the light industrial square footage, calculated assuming 0.5 floor-to-area ratio)
- 211,702 square feet of manufacturing use within the Light Industrial area (10% of the light industrial square footage, calculated assuming 0.5 floor-to-area ratio)
- 156,816 square feet of warehousing use within the Business Park area (40% of the Business Park square footage, calculated assuming 0.5 floor-to-area ratio)
- 235,224 square feet of industrial park use within the Business Park area (60% of the Business Park square footage, calculated assuming 0.5 floor-to-area ratio)

TRIP GENERATION ASSESSMENT

As noted, there are no proposed changes to the trip generation evaluated in the 2022 Traffic Study. Table 1 summarizes the total trip generation from the 2022 Traffic Study:

TABLE 1: PROJECT TRIP GENERATION SUMMARY FROM 2022 TRAFFIC STUDY

Land Use	Quantity	Units[1]	AM Peak Hour In	AM Peak Hour Out	AM Peak Hour Total	PM Peak Hour In	PM Peak Hour Out	PM Peak Hour Total	Daily
Industrial Uses	2,509.056	TSF							
Passenger Cars/Light Trucks:			300	86	386	124	327	451	4,378
Truck Trips (2-Axle):			12	5	17	4	11	15	276
Truck Trips (3-Axle):			23	7	30	9	25	34	496
Truck Trips (4+-Axle):			89	26	115	29	79	108	1,824
Total Trips (PCE)[2]			**424**	**124**	**548**	**166**	**442**	**608**	**6,974**

[1] TSF = thousand square feet

[2] Total Trips = Passenger Cars + Truck Trips.

PROJECT TRIP DISTRIBUTION

The distribution patterns for the passenger cars have been modified to send 100% out to Horsethief Canyon Road via Street A with 10% heading southbound on Horsethief Canyon Road and 90% to the north towards Temescal Canyon Road. There are no changes proposed to the truck trip distribution patterns from that previously evaluated in the 2022 Traffic Study. Exhibit 2 illustrates the Project passenger car trip distribution patterns from the 2022 Traffic Study and Exhibit 3 illustrates the proposed changes to the Project passenger car trip distribution patterns.

EXHIBIT 2: PROJECT (PASSENGER CAR) TRIP DISTRIBUTION FROM 2022 TRAFFIC STUDY

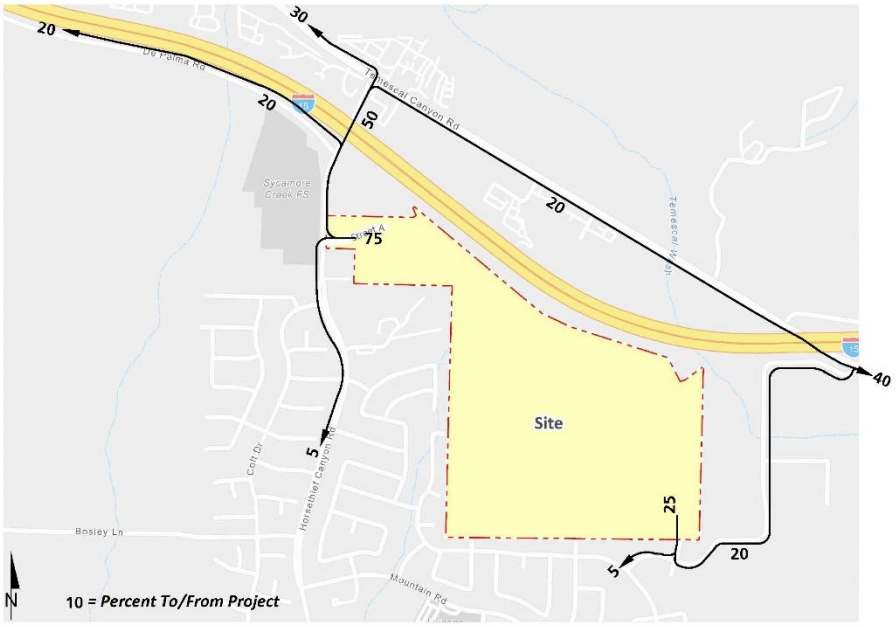


EXHIBIT 3: PROPOSED PROJECT (PASSENGER CAR) TRIP DISTRIBUTION

INTERSECTION OPERATIONS ANALYSIS

The applicable study area intersections have been evaluated for the following analysis scenarios, which are consistent with the 2022 Traffic Study to compare and determine the net effect of reallocating the Project passenger car traffic:

- Existing plus Ambient Growth plus Project (EAP) Conditions
- Existing plus Ambient Growth plus Project plus Cumulative (EAPC) Conditions
- Horizon Year (2040) With Project Conditions

EAP, EAPC, and Horizon Year (2040) traffic volumes from the 2022 Traffic Study have been utilized with the exception the Project traffic has been modified per the proposed distribution changes identified previously.

EAP CONDITIONS

Table 2 summarizes the intersection operations analysis results for EAP traffic conditions from the 2022 Traffic Study along with the proposed Project distribution changes. There are no changes to the findings as compared to the 2022 Traffic Study as all of the study area intersections are anticipated to operate at acceptable levels of service (LOS) with the addition of Project traffic. Peak hour operations analysis results for EAP traffic conditions are included in Attachment A.

TABLE 2: INTERSECTION ANALYSIS FOR EAP (2025) CONDITIONS

#	Intersection	Traffic Control[2]	EAP - Traffic Study Delay[1] (secs.) AM	EAP - Traffic Study Delay[1] (secs.) PM	EAP - Traffic Study Level of Service AM	EAP - Traffic Study Level of Service PM	EAP (2025) Delay[1] (secs.) AM	EAP (2025) Delay[1] (secs.) PM	EAP (2025) Level of Service AM	EAP (2025) Level of Service PM
5	Horsethief Canyon Rd. & Temescal Canyon Rd.	CSS	26.7	24.5	D	C	33.5	29.2	D	D
6	Horsethief Canyon Rd. & De Palma Rd.	AWS	16.7	19.8	C	C	19.9	25.8	C	D
7	Horsethief Canyon Rd. & Street A	CSS	13.1	16.1	B	C	14.6	21.9	B	C

[1] Per the Highway Capacity Manual (6th Edition), overall average intersection delay and level of service are shown for intersections with a traffic signal or all way stop control. For intersections with cross street stop control, the delay and LOS for the worst individual movement (or movements sharing a single lane) are shown.

[2] CSS = Cross-street Stop; AWS = All-Way Stop; CSS = Improvement

EAPC CONDITIONS

Table 3 summarizes the intersection operations analysis results for EAPC traffic conditions form the 2022 Traffic Study along with the proposed Project distribution changes. As shown on Table 3, the intersection of Horsethief Canyon Road at Temescal Canyon Road is anticipated to experience a deficiency during the AM and PM peak hour with the proposed distribution change as compared to the 2022 Traffic Study. The peak hour deficiency at the intersection of Horsethief Canyon Road and Street is consistent with the 2022 Traffic Study (not a new deficiency). Peak hour operations analysis results for EAPC (2025) traffic conditions are included in Attachment B.

TABLE 3: INTERSECTION ANALYSIS FOR EAPC (2025) CONDITIONS

#	Intersection	Traffic Control[2]	EAPC - Traffic Study Delay[1] (secs.) AM	EAPC - Traffic Study Delay[1] (secs.) PM	EAPC - Traffic Study Level of Service AM	EAPC - Traffic Study Level of Service PM	EAPC (2025) Delay[1] (secs.) AM	EAPC (2025) Delay[1] (secs.) PM	EAPC (2025) Level of Service AM	EAPC (2025) Level of Service PM
5	Horsethief Canyon Rd. & Temescal Canyon Rd.	CSS	31.0	34.7	D	D	**50.0**	**44.6**	**F**	**E**
6	Horsethief Canyon Rd. & De Palma Rd.	AWS	18.9	23.9	C	C	23.4	32.6	C	D
7	Horsethief Canyon Rd. & Street A	CSS	**99.6**	**92.5**	**F**	**F**	**185.0**	**171.0**	**F**	**F**

* **BOLD** = Level of Service (LOS) does not meet the applicable jurisdictional requirements (i.e., unacceptable LOS).

[1] Per the Highway Capacity Manual (6th Edition), overall average intersection delay and level of service are shown for intersections with a traffic signal or all way stop control. For intersections with cross street stop control, the delay and LOS for the worst individual movement (or movements sharing a single lane) are shown.

[2] CSS = Cross-street Stop; AWS = All-Way Stop; CSS = Improvement

HORIZON YEAR WITH PROJECT CONDITIONS

Table 4 summarizes the intersection operations analysis results for EAPC traffic conditions form the 2022 Traffic Study along with the proposed Project distribution changes. As shown on Table 4, there are no changes to the findings as compared to the 2022 Traffic Study as all 3 intersections are anticipated to operate at an unacceptable LOS during the peak hours. Peak hour operations analysis results for Horizon Year With Project traffic conditions are included in Attachment C.

TABLE 4: INTERSECTION ANALYSIS FOR HORIZON YEAR (2040) CONDITIONS

			2040 WP - Traffic Study				2040 WP			
			Delay[1] (secs.)		Level of Service		Delay[1] (secs.)		Level of Service	
#	Intersection	Traffic Control[2]	AM	PM	AM	PM	AM	PM	AM	PM
5	Horsethief Canyon Rd. & Temescal Canyon Rd.	CSS	**>100.0**	**>100.0**	**F**	**F**	**>100.0**	**>100.0**	**F**	**F**
6	Horsethief Canyon Rd. & De Palma Rd.	AWS	**80.5**	**>100.0**	**F**	**F**	**>100.0**	**>100.0**	**F**	**F**
7	Horsethief Canyon Rd. & Street A	CSS	17.1	**93.8**	C	**F**	**>100.0**	**>100.0**	**F**	**F**

* **BOLD** = Level of Service (LOS) does not meet the applicable jurisdictional requirements (i.e., unacceptable LOS).

[1] Per the Highway Capacity Manual (6th Edition), overall average intersection delay and level of service are shown for intersections with a traffic signal or all way stop control. For intersections with cross street stop control, the delay and LOS for the worst individual movement (or movements sharing a single lane) are shown.

[2] CSS = Cross-street Stop; AWS = All-Way Stop; CSS = Improvement

INTERSECTION IMPROVEMENTS

Improvement strategies have been recommended at the intersection that has been identified as deficient under EAPC and Horizon Year traffic conditions in an effort to achieve an acceptable LOS. The effectiveness of the recommended improvement strategies to address traffic deficiencies are presented in Table 5. Intersection operations worksheets, with improvements, are provided in Attachment D. The improvements

TABLE 5: INTERSECTION ANALYSIS WITH IMPROVEMENTS

#	Intersection	Traffic Control[3]	Intersection Approach Lanes[1] Northbound L	T	R	Southbound L	T	R	Eastbound L	T	R	Westbound L	T	R	Delay[2] (secs.) AM	PM	Level of Service AM	PM
5	Horsethief Canyon Rd. & Temescal Canyon Rd.																	
	- EAPC Conditions	TS	1	0	d	0	0	0	0	1	0	1	1	0	13.0	9.6	B	A
	- Horizon Year With Project	TS	2	0	1	0	0	0	0	2	0	2	2	0	13.5	12.0	B	B
6	Horsethief Canyon Rd. & De Palma Rd.																	
	- EAPC Conditions		Not Applicable															
	- Horizon Year With Project	TS	1	2	0	0	2	0	1	0	1	0	0	0	33.8	47.6	C	D
7	Horsethief Canyon Rd. & Street A																	
	- EAPC Conditions	CSS	1	2	0	1	2	0	0	1	0	0	1	0	33.1	21.5	D	C
	- Horizon Year With Project	TS	1	2	0	1	2	0	0	1	0	0	1	0	18.6	23.0	B	C

[1] When a right turn is designated, the lane can either be striped or unstriped. To function as a right turn lane there must be sufficient width for right turning vehicles to travel outside the through lanes.

L = Left; T = Through; R = Right; > = Right-Turn Overlap Phasing; 1 = Improvement

[2] Per the Highway Capacity Manual (6th Edition), overall average intersection delay and level of service are shown for intersections with a traffic signal or all way stop control. For intersections with cross street stop control, the delay and level of service for the worst individual movement (or movements sharing a single lane) are shown.

[3] CSS = Cross-street Stop; AWS = All-Way Stop; TS = Traffic Signal; CSS = Improvement

Improvements shown in Table 5 are consistent with the 2022 Traffic Study (no additional improvements are needed to address the deficiencies), with the exception of the following improvements which are needed under EAPC traffic conditions at Horsethief Canyon Road at Temescal Canyon Road:

- Installation of a Traffic Signal
- Westbound left turn lane

Since the recommendations for Horizon Year (2040) traffic conditions are consistent with the 2022 Traffic Study, only updated Project fair share calculations have been calculated for the applicable study area intersections. Detailed fair share calculations are shown on Table 6.

TABLE 6: PROJECT FAIR SHARE

#	Intersection		Existing	Project	2040 With Project Volume	Total New Traffic	Project % of New Traffic
5	Horsethief Canyon Rd. & Temescal Canyon Rd.						
		AM:	486	433	1,728	1,242	**34.9%**
		PM:	453	473	1,903	1,450	32.6%
6	Horsethief Canyon Rd. & De Palma Rd.						
		AM:	623	509	1,916	1,293	**39.4%**
		PM:	774	563	2,651	1,877	30.0%
7	Horsethief Canyon Rd. & Street A						
		AM:	575	548	1,944	1,369	**40.0%**
		PM:	732	608	2,565	1,833	33.2%

BOLD = Denotes highest fair share percentage.

SITE ACCESS

The site adjacent improvements are also consistent with the 2022 Traffic Study. Table 7 summarizes the revised peak hour queuing analysis for the study area intersections along Horsethief Canyon Road between Temescal Canyon Road and Street A. Attachment E includes the queuing analysis worksheets.

TABLE 7: PEAK HOUR QUEUING SUMMARY FOR HORIZON YEAR (2040) CONDITIONS

		Horizon Year (2040) With Project				
		Available Stacking	95th Percentile Queue		Acceptable?	
Intersection	Movement[1]	Distance	AM Peak Hour	PM Peak Hour	AM	PM
Horsethief Canyon Rd. & Temescal Canyon Rd.	WBL	325	191	141	Yes	Yes
	NBL	Trap	97	324	Yes	Yes
	NBR	125	105	119	Yes	Yes
Horsethief Canyon Rd. & De Palma Rd.	EBL	Trap	80	436	Yes	Yes
	EBR	200	123	174	Yes	Yes
	NBL	250	238	242	Yes	Yes
Horsethief Canyon Rd. & Street A	SBL	TWLTL	219	168	Yes	Yes

[1] NBR = Improvement

[2] Trap = Trap Lane; TWLTL = Two-way left-turn lane

CONCLUSION

This focused traffic assessment demonstrates routing 100% of the Project traffic via Street A on Horsethief Canyon Road would not result in a new deficiency and the same improvements identified in the 2022 Traffic Study are sufficient to accommodate acceptable peak hour operations at the study area intersections for the applicable future traffic analysis scenarios. However, due to the change in travel patterns for the Project, the fair share contribution at each of the study area intersections is anticipated to increase (see Table 6).

If you have any questions or comments, I can be reached at (949) 861-0177.

Respectfully submitted,

URBAN CROSSROADS, INC.

Charlene So

Charlene So, PE
Principal

ATTACHMENT A

EAP CONDITIONS – INTERSECTION ANALYSIS WORKSHEETS

Intersection	
Int Delay, s/veh	8.8

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	47	181	254	189	146	153
Future Vol, veh/h	47	181	254	189	146	153
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	50
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	49	191	267	199	154	161

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	240	0	878	145
Stage 1	-	-	-	-	145	-
Stage 2	-	-	-	-	733	-
Critical Hdwy	-	-	4.1	-	6	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1339	-	354	908
Stage 1	-	-	-	-	887	-
Stage 2	-	-	-	-	479	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1339	-	275	908
Mov Cap-2 Maneuver	-	-	-	-	275	-
Stage 1	-	-	-	-	887	-
Stage 2	-	-	-	-	372	-

Approach	EB	WB	NB
HCM Control Delay, s	0	4.8	21.4
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	275	908	-	-	1339	-
HCM Lane V/C Ratio	0.559	0.177	-	-	0.2	-
HCM Control Delay (s)	33.5	9.8	-	-	8.4	0
HCM Lane LOS	D	A	-	-	A	A
HCM 95th %tile Q(veh)	3.1	0.6	-	-	0.7	-

Intersection	
Intersection Delay, s/veh	19.9
Intersection LOS	C

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	15	168	296	282	397	38
Future Vol, veh/h	15	168	296	282	397	38
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	18	202	357	340	478	46
Number of Lanes	1	0	1	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	2
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	2	0	1
HCM Control Delay	12.6	17.4	26.4
HCM LOS	B	C	D

Lane	NBLn1	NBLn2	EBLn1	SBLn1
Vol Left, %	100%	0%	8%	0%
Vol Thru, %	0%	100%	0%	91%
Vol Right, %	0%	0%	92%	9%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	296	282	183	435
LT Vol	296	0	15	0
Through Vol	0	282	0	397
RT Vol	0	0	168	38
Lane Flow Rate	357	340	220	524
Geometry Grp	7	7	2	5
Degree of Util (X)	0.628	0.55	0.369	0.795
Departure Headway (Hd)	6.339	5.831	6.024	5.463
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	571	618	595	660
Service Time	4.081	3.573	4.073	3.501
HCM Lane V/C Ratio	0.625	0.55	0.37	0.794
HCM Control Delay	19.2	15.5	12.6	26.4
HCM Lane LOS	C	C	B	D
HCM 95th-tile Q	4.3	3.3	1.7	7.9

Intersection	
Int Delay, s/veh	5.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	9	115	464	30	394	171
Future Vol, veh/h	9	115	464	30	394	171
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	100	-
Veh in Median Storage, #	2	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	9	121	488	32	415	180

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1514	504	0	0	520	0
Stage 1	504	-	-	-	-	-
Stage 2	1010	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	133	572	-	-	1056	-
Stage 1	611	-	-	-	-	-
Stage 2	355	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	81	572	-	-	1056	-
Mov Cap-2 Maneuver	198	-	-	-	-	-
Stage 1	611	-	-	-	-	-
Stage 2	215	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	14.6	0	7.4
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	503	1056	-
HCM Lane V/C Ratio	-	-	0.259	0.393	-
HCM Control Delay (s)	-	-	14.6	10.6	-
HCM Lane LOS	-	-	B	B	-
HCM 95th %tile Q(veh)	-	-	1	1.9	-

Intersection	
Int Delay, s/veh	12

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	125	112	167	53	251	265
Future Vol, veh/h	125	112	167	53	251	265
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	50
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	132	118	176	56	264	279

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	250	0	599	191
Stage 1	-	-	-	-	191	-
Stage 2	-	-	-	-	408	-
Critical Hdwy	-	-	4.1	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1327	-	468	856
Stage 1	-	-	-	-	846	-
Stage 2	-	-	-	-	676	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1327	-	404	856
Mov Cap-2 Maneuver	-	-	-	-	404	-
Stage 1	-	-	-	-	846	-
Stage 2	-	-	-	-	583	-

Approach	EB	WB	NB
HCM Control Delay, s	0	6.2	20
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	404	856	-	-	1327	-
HCM Lane V/C Ratio	0.654	0.326	-	-	0.132	-
HCM Control Delay (s)	29.2	11.2	-	-	8.1	0
HCM Lane LOS	D	B	-	-	A	A
HCM 95th %tile Q(veh)	4.5	1.4	-	-	0.5	-

Intersection	
Intersection Delay, s/veh	25.8
Intersection LOS	D

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	24	410	212	492	257	22
Future Vol, veh/h	24	410	212	492	257	22
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	24	418	216	502	262	22
Number of Lanes	1	0	1	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	2
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	2	0	1
HCM Control Delay	21.5	32.4	15.7
HCM LOS	C	D	C

Lane	NBLn1	NBLn2	EBLn1	SBLn1
Vol Left, %	100%	0%	6%	0%
Vol Thru, %	0%	100%	0%	92%
Vol Right, %	0%	0%	94%	8%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	212	492	434	279
LT Vol	212	0	24	0
Through Vol	0	492	0	257
RT Vol	0	0	410	22
Lane Flow Rate	216	502	443	285
Geometry Grp	7	7	2	5
Degree of Util (X)	0.412	0.886	0.705	0.501
Departure Headway (Hd)	6.859	6.35	5.731	6.331
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	521	567	629	567
Service Time	4.635	4.125	3.803	4.413
HCM Lane V/C Ratio	0.415	0.885	0.704	0.503
HCM Control Delay	14.4	40.2	21.5	15.7
HCM Lane LOS	B	E	C	C
HCM 95th-tile Q	2	10.2	5.7	2.8

Intersection	
Int Delay, s/veh	7.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	33	409	295	12	154	513
Future Vol, veh/h	33	409	295	12	154	513
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	100	-
Veh in Median Storage, #	2	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	35	431	311	13	162	540

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1182	318	0	0	324	0
Stage 1	318	-	-	-	-	-
Stage 2	864	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	212	727	-	-	1247	-
Stage 1	742	-	-	-	-	-
Stage 2	416	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	184	727	-	-	1247	-
Mov Cap-2 Maneuver	331	-	-	-	-	-
Stage 1	742	-	-	-	-	-
Stage 2	362	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	21.9	0	1.9
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	667	1247	-
HCM Lane V/C Ratio	-	-	0.698	0.13	-
HCM Control Delay (s)	-	-	21.9	8.3	-
HCM Lane LOS	-	-	C	A	-
HCM 95th %tile Q(veh)	-	-	5.7	0.4	-

ATTACHMENT B

EAPC CONDITIONS – INTERSECTION ANALYSIS WORKSHEETS

Intersection	
Int Delay, s/veh	11.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	47	186	265	189	159	185
Future Vol, veh/h	47	186	265	189	159	185
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	50
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	49	196	279	199	167	195

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	245	0	904	147
Stage 1	-	-	-	-	147	-
Stage 2	-	-	-	-	757	-
Critical Hdwy	-	-	4.1	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1333	-	310	905
Stage 1	-	-	-	-	885	-
Stage 2	-	-	-	-	467	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1333	-	237	905
Mov Cap-2 Maneuver	-	-	-	-	237	-
Stage 1	-	-	-	-	885	-
Stage 2	-	-	-	-	357	-

Approach	EB	WB	NB
HCM Control Delay, s	0	4.9	28.5
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	237	905	-	-	1333	-
HCM Lane V/C Ratio	0.706	0.215	-	-	0.209	-
HCM Control Delay (s)	50	10.1	-	-	8.4	0
HCM Lane LOS	F	B	-	-	A	A
HCM 95th %tile Q(veh)	4.7	0.8	-	-	0.8	-

Intersection	
Intersection Delay, s/veh	23.4
Intersection LOS	C

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	34	172	309	307	406	45
Future Vol, veh/h	34	172	309	307	406	45
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	41	207	372	370	489	54
Number of Lanes	1	0	1	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	2
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	2	0	1
HCM Control Delay	13.9	20	32.5
HCM LOS	B	C	D

Lane	NBLn1	NBLn2	EBLn1	SBLn1
Vol Left, %	100%	0%	17%	0%
Vol Thru, %	0%	100%	0%	90%
Vol Right, %	0%	0%	83%	10%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	309	307	206	451
LT Vol	309	0	34	0
Through Vol	0	307	0	406
RT Vol	0	0	172	45
Lane Flow Rate	372	370	248	543
Geometry Grp	7	7	2	5
Degree of Util (X)	0.675	0.618	0.429	0.85
Departure Headway (Hd)	6.527	6.018	6.22	5.632
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	551	599	578	641
Service Time	4.283	3.774	4.277	3.678
HCM Lane V/C Ratio	0.675	0.618	0.429	0.847
HCM Control Delay	21.9	18.1	13.9	32.5
HCM Lane LOS	C	C	B	D
HCM 95th-tile Q	5.1	4.2	2.1	9.5

Intersection	
Int Delay, s/veh	12.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↰	↱		↰	↱	
Traffic Vol, veh/h	39	0	13	9	0	115	4	464	30	394	171	13
Future Vol, veh/h	39	0	13	9	0	115	4	464	30	394	171	13
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	100	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	2	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	41	0	14	9	0	121	4	488	32	415	180	14

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1590	1545	187	1536	1536	504	194	0	0	520	0	0
Stage 1	1017	1017	-	512	512	-	-	-	-	-	-	-
Stage 2	573	528	-	1024	1024	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	88	116	860	96	117	572	1391	-	-	1056	-	-
Stage 1	289	318	-	548	540	-	-	-	-	-	-	-
Stage 2	508	531	-	286	315	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	48	70	860	65	71	572	1391	-	-	1056	-	-
Mov Cap-2 Maneuver	48	70	-	155	172	-	-	-	-	-	-	-
Stage 1	288	193	-	546	538	-	-	-	-	-	-	-
Stage 2	399	529	-	171	191	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	185	15.3	0.1	7.2
HCM LOS	F	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1391	-	-	63	479	1056	-	-
HCM Lane V/C Ratio	0.003	-	-	0.869	0.272	0.393	-	-
HCM Control Delay (s)	7.6	-	-	185	15.3	10.6	-	-
HCM Lane LOS	A	-	-	F	C	B	-	-
HCM 95th %tile Q(veh)	0	-	-	4	1.1	1.9	-	-

Intersection	
Int Delay, s/veh	15.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	125	127	203	53	259	286
Future Vol, veh/h	125	127	203	53	259	286
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	50
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	132	134	214	56	273	301

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	266	0	683	199
Stage 1	-	-	-	-	199	-
Stage 2	-	-	-	-	484	-
Critical Hdwy	-	-	4.1	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1310	-	418	847
Stage 1	-	-	-	-	839	-
Stage 2	-	-	-	-	624	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1310	-	347	847
Mov Cap-2 Maneuver	-	-	-	-	347	-
Stage 1	-	-	-	-	839	-
Stage 2	-	-	-	-	519	-

Approach	EB	WB	NB
HCM Control Delay, s	0	6.6	27.3
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	347	847	-	-	1310	-
HCM Lane V/C Ratio	0.786	0.355	-	-	0.163	-
HCM Control Delay (s)	44.6	11.6	-	-	8.3	0
HCM Lane LOS	E	B	-	-	A	A
HCM 95th %tile Q(veh)	6.5	1.6	-	-	0.6	-

Intersection	
Intersection Delay, s/veh	32.6
Intersection LOS	D

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	37	424	221	509	286	43
Future Vol, veh/h	37	424	221	509	286	43
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	38	433	226	519	292	44
Number of Lanes	1	0	1	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	2
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	2	0	1
HCM Control Delay	26.8	42.2	19.2
HCM LOS	D	E	C

Lane	NBLn1	NBLn2	EBLn1	SBLn1
Vol Left, %	100%	0%	8%	0%
Vol Thru, %	0%	100%	0%	87%
Vol Right, %	0%	0%	92%	13%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	221	509	461	329
LT Vol	221	0	37	0
Through Vol	0	509	0	286
RT Vol	0	0	424	43
Lane Flow Rate	226	519	470	336
Geometry Grp	7	7	2	5
Degree of Util (X)	0.446	0.954	0.776	0.606
Departure Headway (Hd)	7.121	6.61	5.942	6.501
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	503	545	602	551
Service Time	4.919	4.408	4.026	4.6
HCM Lane V/C Ratio	0.449	0.952	0.781	0.61
HCM Control Delay	15.6	53.7	26.8	19.2
HCM Lane LOS	C	F	D	C
HCM 95th-tile Q	2.3	12.4	7.3	4

Intersection	
Int Delay, s/veh	12

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔		↰	↑		↰	↑	
Traffic Vol, veh/h	26	0	9	33	0	409	14	295	12	154	513	43
Future Vol, veh/h	26	0	9	33	0	409	14	295	12	154	513	43
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	100	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	2	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	27	0	9	35	0	431	15	311	13	162	540	45

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1450	1241	563	1239	1257	318	585	0	0	324	0	0
Stage 1	887	887	-	348	348	-	-	-	-	-	-	-
Stage 2	563	354	-	891	909	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	110	176	530	154	173	727	1000	-	-	1247	-	-
Stage 1	341	365	-	672	638	-	-	-	-	-	-	-
Stage 2	514	634	-	340	357	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	40	151	530	135	148	727	1000	-	-	1247	-	-
Mov Cap-2 Maneuver	40	151	-	255	271	-	-	-	-	-	-	-
Stage 1	336	318	-	662	628	-	-	-	-	-	-	-
Stage 2	206	624	-	291	311	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	171	24.2	0.4	1.8
HCM LOS	F	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1000	-	-	52	639	1247	-	-
HCM Lane V/C Ratio	0.015	-	-	0.709	0.728	0.13	-	-
HCM Control Delay (s)	8.7	-	-	171	24.2	8.3	-	-
HCM Lane LOS	A	-	-	F	C	A	-	-
HCM 95th %tile Q(veh)	0	-	-	2.9	6.2	0.4	-	-

ATTACHMENT C

HORIZON YEAR (2040) CONDITIONS – INTERSECTION ANALYSIS WORKSHEETS

Intersection	
Int Delay, s/veh	225.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	62	376	454	359	226	251
Future Vol, veh/h	62	376	454	359	226	251
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	50
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	65	396	478	378	238	264

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	461	0	1597	263
Stage 1	-	-	-	-	263	-
Stage 2	-	-	-	-	1334	-
Critical Hdwy	-	-	4.1	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1111	-	~ 118	781
Stage 1	-	-	-	-	786	-
Stage 2	-	-	-	-	248	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1111	-	~ 54	781
Mov Cap-2 Maneuver	-	-	-	-	~ 54	-
Stage 1	-	-	-	-	786	-
Stage 2	-	-	-	-	~ 113	-

Approach	EB	WB	NB
HCM Control Delay, s	0	6	$ 805.1
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	54	781	-	-	1111	-
HCM Lane V/C Ratio	4.405	0.338	-	-	0.43	-
HCM Control Delay (s)	$ 1686	11.9	-	-	10.7	0
HCM Lane LOS	F	B	-	-	B	A
HCM 95th %tile Q(veh)	26.4	1.5	-	-	2.2	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Intersection Delay, s/veh	180.9
Intersection LOS	F

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	38	249	361	438	781	49
Future Vol, veh/h	38	249	361	438	781	49
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	46	300	435	528	941	59
Number of Lanes	1	0	1	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	2
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	2	0	1
HCM Control Delay	22.1	52.8	359.1
HCM LOS	C	F	F

Lane	NBLn1	NBLn2	EBLn1	SBLn1
Vol Left, %	100%	0%	13%	0%
Vol Thru, %	0%	100%	0%	94%
Vol Right, %	0%	0%	87%	6%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	361	438	287	830
LT Vol	361	0	38	0
Through Vol	0	438	0	781
RT Vol	0	0	249	49
Lane Flow Rate	435	528	346	1000
Geometry Grp	7	7	2	5
Degree of Util (X)	0.86	0.97	0.62	1.746
Departure Headway (Hd)	7.975	7.458	7.572	6.286
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	457	491	481	590
Service Time	5.675	5.158	5.572	4.29
HCM Lane V/C Ratio	0.952	1.075	0.719	1.695
HCM Control Delay	43	60.9	22.1	359.1
HCM Lane LOS	E	F	C	F
HCM 95th-tile Q	8.7	12.4	4.1	59.7

Intersection	
Int Delay, s/veh	54.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↰	↱		↰	↱	
Traffic Vol, veh/h	43	0	14	9	0	115	4	684	30	394	636	14
Future Vol, veh/h	43	0	14	9	0	115	4	684	30	394	636	14
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	100	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	2	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	45	0	15	9	0	121	4	720	32	415	669	15

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2312	2267	677	2258	2258	736	684	0	0	752	0	0
Stage 1	1507	1507	-	744	744	-	-	-	-	-	-	-
Stage 2	805	760	-	1514	1514	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	~ 27	41	456	30	42	422	919	-	-	867	-	-
Stage 1	152	185	-	410	424	-	-	-	-	-	-	-
Stage 2	379	417	-	151	184	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	~ 12	21	456	18	22	422	919	-	-	867	-	-
Mov Cap-2 Maneuver	~ 12	21	-	67	86	-	-	-	-	-	-	-
Stage 1	151	96	-	408	422	-	-	-	-	-	-	-
Stage 2	269	415	-	76	96	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	$ 1722	25.4	0	4.9
HCM LOS	F	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	919	-	-	16	305	867	-	-
HCM Lane V/C Ratio	0.005	-	-	3.75	0.428	0.478	-	-
HCM Control Delay (s)	8.9	-	-	$ 1722	25.4	12.9	-	-
HCM Lane LOS	A	-	-	F	D	B	-	-
HCM 95th %tile Q(veh)	0	-	-	8.2	2.1	2.6	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	334.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	267	220	307	58	531	519
Future Vol, veh/h	267	220	307	58	531	519
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	50
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	281	232	323	61	559	546

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	513	0	1104	397
Stage 1	-	-	-	-	397	-
Stage 2	-	-	-	-	707	-
Critical Hdwy	-	-	4.1	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1063	-	~ 236	657
Stage 1	-	-	-	-	683	-
Stage 2	-	-	-	-	~ 493	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1063	-	~ 162	657
Mov Cap-2 Maneuver	-	-	-	-	~ 162	-
Stage 1	-	-	-	-	683	-
Stage 2	-	-	-	-	~ 338	-

Approach	EB	WB	NB
HCM Control Delay, s	0	8.3	$ 602.4
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	162	657	-	-	1063	-
HCM Lane V/C Ratio	3.45	0.832	-	-	0.304	-
HCM Control Delay (s)	$ 1160.3	31.6	-	-	9.9	0
HCM Lane LOS	F	D	-	-	A	A
HCM 95th %tile Q(veh)	53.5	9	-	-	1.3	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Intersection Delay, s/veh	276
Intersection LOS	F

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	147	722	349	904	444	85
Future Vol, veh/h	147	722	349	904	444	85
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	150	737	356	922	453	87
Number of Lanes	1	0	1	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	2
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	2	0	1
HCM Control Delay	298.7	339.3	88.7
HCM LOS	F	F	F

Lane	NBLn1	NBLn2	EBLn1	SBLn1
Vol Left, %	100%	0%	17%	0%
Vol Thru, %	0%	100%	0%	84%
Vol Right, %	0%	0%	83%	16%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	349	904	869	529
LT Vol	349	0	147	0
Through Vol	0	904	0	444
RT Vol	0	0	722	85
Lane Flow Rate	356	922	887	540
Geometry Grp	7	7	2	5
Degree of Util (X)	0.798	1.94	1.603	1.049
Departure Headway (Hd)	9.995	9.47	6.947	8.916
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	367	397	532	410
Service Time	7.695	7.17	4.947	6.916
HCM Lane V/C Ratio	0.97	2.322	1.667	1.317
HCM Control Delay	42.4	453.9	298.7	88.7
HCM Lane LOS	E	F	F	F
HCM 95th-tile Q	6.8	50.2	45.9	13.9

Intersection	
Int Delay, s/veh	55.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↰	↱		↰	↱	
Traffic Vol, veh/h	29	0	10	33	0	409	15	844	12	154	1012	47
Future Vol, veh/h	29	0	10	33	0	409	15	844	12	154	1012	47
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	100	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	2	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	31	0	11	35	0	431	16	888	13	162	1065	49

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2556	2347	1090	2346	2365	895	1114	0	0	901	0	0
Stage 1	1414	1414	-	927	927	-	-	-	-	-	-	-
Stage 2	1142	933	-	1419	1438	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	~ 18	37	264	~ 26	36	~ 342	634	-	-	763	-	-
Stage 1	172	206	-	324	350	-	-	-	-	-	-	-
Stage 2	246	348	-	171	200	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	28	264	~ 20	28	~ 342	634	-	-	763	-	-
Mov Cap-2 Maneuver	-	28	-	101	125	-	-	-	-	-	-	-
Stage 1	168	162	-	316	341	-	-	-	-	-	-	-
Stage 2	-	339	-	129	158	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s		$ 319.1	0.2	1.4
HCM LOS	-	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	634	-	-	-	290	763	-	-
HCM Lane V/C Ratio	0.025	-	-	-	1.604	0.212	-	-
HCM Control Delay (s)	10.8	-	-	-	$ 319.1	11	-	-
HCM Lane LOS	B	-	-	-	F	B	-	-
HCM 95th %tile Q(veh)	0.1	-	-	-	28.1	0.8	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

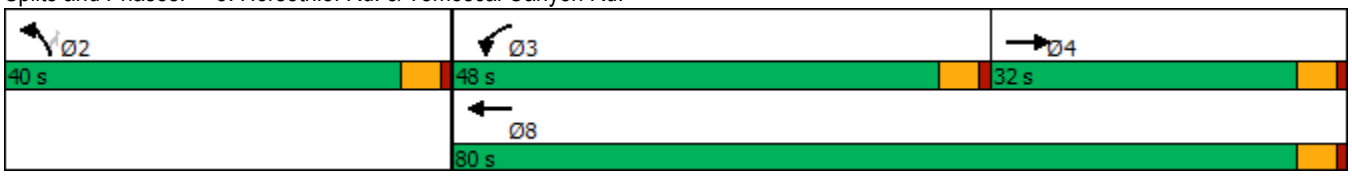
ATTACHMENT D

INTERSECTION ANALYSIS WORKSHEETS, WITH IMPROVEMENTS

Lane Group	EBT	WBL	WBT	NBL	NBR
Lane Configurations					
Traffic Volume (vph)	47	265	189	159	185
Future Volume (vph)	47	265	189	159	185
Turn Type	NA	Prot	NA	Prot	Perm
Protected Phases	4	3	8	2	
Permitted Phases					2
Detector Phase	4	3	8	2	2
Switch Phase					
Minimum Initial (s)	10.0	5.0	10.0	10.0	10.0
Minimum Split (s)	26.7	9.6	14.7	26.7	26.7
Total Split (s)	32.0	48.0	80.0	40.0	40.0
Total Split (%)	26.7%	40.0%	66.7%	33.3%	33.3%
Yellow Time (s)	3.7	3.6	3.7	3.7	3.7
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.7	4.6	4.7	4.7	4.7
Lead/Lag	Lag	Lead			
Lead-Lag Optimize?	Yes	Yes			
Recall Mode	Min	None	Min	None	None
Act Effct Green (s)	11.1	12.8	28.6	11.6	11.6
Actuated g/C Ratio	0.22	0.26	0.57	0.23	0.23
v/c Ratio	0.49	0.60	0.18	0.40	0.40
Control Delay	11.8	22.7	5.6	20.9	9.0
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	11.8	22.7	5.6	20.9	9.0
LOS	B	C	A	C	A
Approach Delay	11.8		15.6	14.5	
Approach LOS	B		B	B	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 49.9	
Natural Cycle: 70	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.60	
Intersection Signal Delay: 14.4	Intersection LOS: B
Intersection Capacity Utilization 49.1%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 5: Horsethief Rd. & Temescal Canyon Rd.



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	47	186	265	189	159	185
Future Volume (veh/h)	47	186	265	189	159	185
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	49	91	279	199	167	116
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	142	264	355	1036	417	371
Arrive On Green	0.24	0.24	0.20	0.55	0.23	0.23
Sat Flow, veh/h	595	1106	1810	1900	1810	1610
Grp Volume(v), veh/h	0	140	279	199	167	116
Grp Sat Flow(s),veh/h/ln	0	1701	1810	1900	1810	1610
Q Serve(g_s), s	0.0	2.9	6.1	2.2	3.3	2.5
Cycle Q Clear(g_c), s	0.0	2.9	6.1	2.2	3.3	2.5
Prop In Lane		0.65	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	0	407	355	1036	417	371
V/C Ratio(X)	0.00	0.34	0.79	0.19	0.40	0.31
Avail Cap(c_a), veh/h	0	1110	1878	3421	1527	1359
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	13.2	16.0	4.8	13.7	13.4
Incr Delay (d2), s/veh	0.0	0.5	1.5	0.1	0.6	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	1.0	2.3	0.6	1.2	0.8
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.0	13.7	17.5	4.9	14.3	13.8
LnGrp LOS	A	B	B	A	B	B
Approach Vol, veh/h	140			478	283	
Approach Delay, s/veh	13.7			12.2	14.1	
Approach LOS	B			B	B	

Timer - Assigned Phs		2	3	4		8
Phs Duration (G+Y+Rc), s		14.3	12.8	14.7		27.5
Change Period (Y+Rc), s		* 4.7	4.6	* 4.7		* 4.7
Max Green Setting (Gmax), s		* 35	43.4	* 27		* 75
Max Q Clear Time (g_c+I1), s		5.3	8.1	4.9		4.2
Green Ext Time (p_c), s		0.9	0.4	0.7		1.3

Intersection Summary	
HCM 6th Ctrl Delay	13.0
HCM 6th LOS	B

Notes

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

Intersection	
Int Delay, s/veh	6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	39	0	13	9	0	115	4	464	30	394	171	13
Future Vol, veh/h	39	0	13	9	0	115	4	464	30	394	171	13
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	100	-	-	100	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	41	0	14	9	0	121	4	488	32	415	180	14

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1269	1545	97	1432	1536	260	194	0	0	520	0	0
Stage 1	1017	1017	-	512	512	-	-	-	-	-	-	-
Stage 2	252	528	-	920	1024	-	-	-	-	-	-	-
Critical Hdwy	7.5	6.5	6.9	7.5	6.5	6.9	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.5	5.5	-	6.5	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.5	5.5	-	6.5	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	143	123	*1029	107	125	745	1507	-	-	1056	-	-
Stage 1	286	339	-	518	540	-	-	-	-	-	-	-
Stage 2	736	531	-	331	337	-	-	-	-	-	-	-
Platoon blocked, %	1	1	1	1	1		1	-	-		-	-
Mov Cap-1 Maneuver	83	74	*1029	73	75	745	1507	-	-	1056	-	-
Mov Cap-2 Maneuver	143	96	-	153	159	-	-	-	-	-	-	-
Stage 1	285	206	-	516	538	-	-	-	-	-	-	-
Stage 2	615	529	-	198	205	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	33.1	13	0.1	7.2
HCM LOS	D	B		

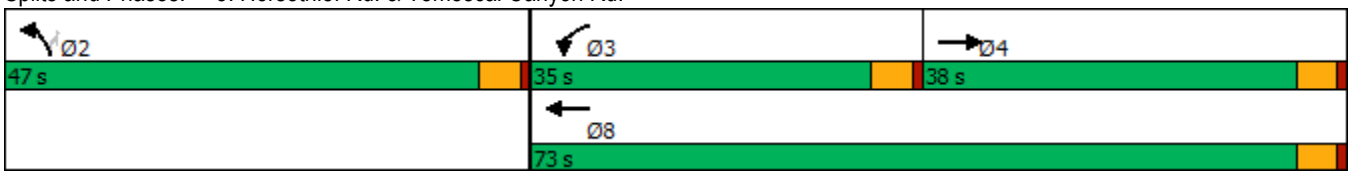
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1507	-	-	182	582	1056	-	-
HCM Lane V/C Ratio	0.003	-	-	0.301	0.224	0.393	-	-
HCM Control Delay (s)	7.4	-	-	33.1	13	10.6	-	-
HCM Lane LOS	A	-	-	D	B	B	-	-
HCM 95th %tile Q(veh)	0	-	-	1.2	0.9	1.9	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Lane Group	EBT	WBL	WBT	NBL	NBR
Lane Configurations					
Traffic Volume (vph)	125	203	53	259	286
Future Volume (vph)	125	203	53	259	286
Turn Type	NA	Prot	NA	Prot	Perm
Protected Phases	4	3	8	2	
Permitted Phases					2
Detector Phase	4	3	8	2	2
Switch Phase					
Minimum Initial (s)	10.0	5.0	10.0	10.0	10.0
Minimum Split (s)	26.7	9.6	14.7	26.7	26.7
Total Split (s)	38.0	35.0	73.0	47.0	47.0
Total Split (%)	31.7%	29.2%	60.8%	39.2%	39.2%
Yellow Time (s)	3.7	3.6	3.7	3.7	3.7
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.7	4.6	4.7	4.7	4.7
Lead/Lag	Lag	Lead			
Lead-Lag Optimize?	Yes	Yes			
Recall Mode	Min	None	Min	None	None
Act Effct Green (s)	14.4	12.3	31.5	15.6	15.6
Actuated g/C Ratio	0.25	0.22	0.55	0.27	0.27
v/c Ratio	0.56	0.55	0.05	0.55	0.54
Control Delay	22.3	27.9	6.8	24.0	14.0
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	22.3	27.9	6.8	24.0	14.0
LOS	C	C	A	C	B
Approach Delay	22.3		23.5	18.7	
Approach LOS	C		C	B	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 57.1	
Natural Cycle: 65	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.56	
Intersection Signal Delay: 20.7	Intersection LOS: C
Intersection Capacity Utilization 51.6%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 5: Horsethief Rd. & Temescal Canyon Rd.



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	125	127	203	53	259	286
Future Volume (veh/h)	125	127	203	53	259	286
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	132	-134	214	56	273	90
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	0	447	285	658	593	528
Arrive On Green	0.03	0.00	0.16	0.35	0.33	0.33
Sat Flow, veh/h	-9602	9747	1810	1900	1810	1610
Grp Volume(v), veh/h	0	-2	214	56	273	90
Grp Sat Flow(s),veh/h/ln	0	145	1810	1900	1810	1610
Q Serve(g_s), s	0.0	0.0	3.3	0.6	3.4	1.1
Cycle Q Clear(g_c), s	0.0	0.0	3.3	0.6	3.4	1.1
Prop In Lane		67.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	0	0	285	658	593	528
V/C Ratio(X)	0.00	0.00	0.75	0.09	0.46	0.17
Avail Cap(c_a), veh/h	0	0	1906	4497	2653	2360
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	0.0	11.6	6.3	7.7	6.9
Incr Delay (d2), s/veh	0.0	0.0	1.5	0.1	0.6	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	1.1	0.1	0.9	0.3
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.0	0.0	13.1	6.4	8.2	7.1
LnGrp LOS	A	A	B	A	A	A
Approach Vol, veh/h	-2			270	363	
Approach Delay, s/veh	0.0			11.7	7.9	
Approach LOS	A			B	A	

Timer - Assigned Phs		2	3	4		8
Phs Duration (G+Y+Rc), s		14.2	9.2	5.5		14.7
Change Period (Y+Rc), s		* 4.7	4.6	* 4.7		* 4.7
Max Green Setting (Gmax), s		* 42	30.4	* 33		* 68
Max Q Clear Time (g_c+I1), s		5.4	5.3	0.0		2.6
Green Ext Time (p_c), s		1.1	0.3	0.0		0.3

Intersection Summary	
HCM 6th Ctrl Delay	9.6
HCM 6th LOS	A

Notes

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

Intersection	
Int Delay, s/veh	5.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	26	0	9	33	0	409	14	295	12	154	513	43
Future Vol, veh/h	26	0	9	33	0	409	14	295	12	154	513	43
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	100	-	-	100	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	27	0	9	35	0	431	15	311	13	162	540	45

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1073	1241	293	942	1257	162	585	0	0	324	0	0
Stage 1	887	887	-	348	348	-	-	-	-	-	-	-
Stage 2	186	354	-	594	909	-	-	-	-	-	-	-
Critical Hdwy	7.5	6.5	6.9	7.5	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.5	5.5	-	6.5	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.5	5.5	-	6.5	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	315	255	*872	*412	249	888	*1309	-	-	1247	-	-
Stage 1	509	504	-	*647	638	-	-	-	-	-	-	-
Stage 2	804	634	-	*822	490	-	-	-	-	-	-	-
Platoon blocked, %	1	1	1	1	1		1	-	-		-	-
Mov Cap-1 Maneuver	145	220	*872	*363	214	888	*1309	-	-	1247	-	-
Mov Cap-2 Maneuver	205	306	-	*469	317	-	-	-	-	-	-	-
Stage 1	504	439	-	*640	631	-	-	-	-	-	-	-
Stage 2	409	627	-	*708	426	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	21.5	14.7	0.3	1.8
HCM LOS	C	B		

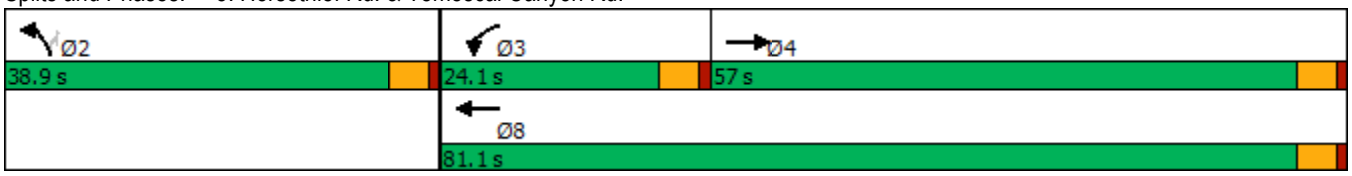
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	* 1309	-	-	255	832	1247	-	-
HCM Lane V/C Ratio	0.011	-	-	0.144	0.559	0.13	-	-
HCM Control Delay (s)	7.8	-	-	21.5	14.7	8.3	-	-
HCM Lane LOS	A	-	-	C	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.5	3.5	0.4	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Lane Group	EBT	WBL	WBT	NBL	NBR
Lane Configurations					
Traffic Volume (vph)	62	454	359	226	251
Future Volume (vph)	62	454	359	226	251
Turn Type	NA	Prot	NA	Prot	Perm
Protected Phases	4	3	8	2	
Permitted Phases					2
Detector Phase	4	3	8	2	2
Switch Phase					
Minimum Initial (s)	10.0	5.0	10.0	10.0	10.0
Minimum Split (s)	26.7	9.6	14.7	26.7	26.7
Total Split (s)	57.0	24.1	81.1	38.9	38.9
Total Split (%)	47.5%	20.1%	67.6%	32.4%	32.4%
Yellow Time (s)	3.7	3.6	3.7	3.7	3.7
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.7	4.6	4.7	4.7	4.7
Lead/Lag	Lag	Lead			
Lead-Lag Optimize?	Yes	Yes			
Recall Mode	Min	None	Min	None	None
Act Effct Green (s)	10.2	11.3	26.1	10.4	10.4
Actuated g/C Ratio	0.22	0.25	0.57	0.23	0.23
v/c Ratio	0.46	0.56	0.18	0.30	0.46
Control Delay	5.3	17.9	5.0	16.5	5.9
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	5.3	17.9	5.0	16.5	5.9
LOS	A	B	A	B	A
Approach Delay	5.3		12.2	10.9	
Approach LOS	A		B	B	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 45.9	
Natural Cycle: 70	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.56	
Intersection Signal Delay: 10.1	Intersection LOS: B
Intersection Capacity Utilization 46.8%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 5: Horsethief Rd. & Temescal Canyon Rd.



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	62	376	454	359	226	251
Future Volume (veh/h)	62	376	454	359	226	251
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	65	291	478	378	238	185
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	480	428	669	2025	792	363
Arrive On Green	0.27	0.27	0.19	0.56	0.23	0.23
Sat Flow, veh/h	1900	1610	3510	3705	3510	1610
Grp Volume(v), veh/h	65	291	478	378	238	185
Grp Sat Flow(s),veh/h/ln	1805	1610	1755	1805	1755	1610
Q Serve(g_s), s	1.2	7.1	5.6	2.3	2.5	4.4
Cycle Q Clear(g_c), s	1.2	7.1	5.6	2.3	2.5	4.4
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	480	428	669	2025	792	363
V/C Ratio(X)	0.14	0.68	0.71	0.19	0.30	0.51
Avail Cap(c_a), veh/h	2143	1911	1554	6260	2725	1250
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	12.3	14.5	16.7	4.7	14.2	14.9
Incr Delay (d2), s/veh	0.1	1.9	0.5	0.0	0.2	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	2.4	2.0	0.5	0.9	1.5
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	12.4	16.4	17.3	4.8	14.4	16.0
LnGrp LOS	B	B	B	A	B	B
Approach Vol, veh/h	356			856	423	
Approach Delay, s/veh	15.7			11.7	15.1	
Approach LOS	B			B	B	

Timer - Assigned Phs		2	3	4		8
Phs Duration (G+Y+Rc), s		14.6	13.0	16.4		29.4
Change Period (Y+Rc), s		* 4.7	4.6	* 4.7		* 4.7
Max Green Setting (Gmax), s		* 34	19.5	* 52		* 76
Max Q Clear Time (g_c+I1), s		6.4	7.6	9.1		4.3
Green Ext Time (p_c), s		1.5	0.8	2.6		2.8

Intersection Summary	
HCM 6th Ctrl Delay	13.5
HCM 6th LOS	B

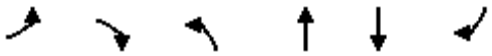
Notes

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

Lane Group	EBL	EBR	NBL	NBT	SBT
Lane Configurations					
Traffic Volume (vph)	38	249	361	438	781
Future Volume (vph)	38	249	361	438	781
Turn Type	Prot	Perm	Prot	NA	NA
Protected Phases	4		5	2	6
Permitted Phases		4			
Detector Phase	4	4	5	2	6
Switch Phase					
Minimum Initial (s)	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	26.7	26.7	9.6	14.7	26.7
Total Split (s)	27.0	27.0	42.0	93.0	51.0
Total Split (%)	22.5%	22.5%	35.0%	77.5%	42.5%
Yellow Time (s)	3.7	3.7	3.6	3.7	3.7
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.7	4.7	4.6	4.7	4.7
Lead/Lag			Lead		Lag
Lead-Lag Optimize?			Yes		Yes
Recall Mode	None	None	None	C-Min	C-Min
Act Effct Green (s)	11.1	11.1	30.4	99.5	64.5
Actuated g/C Ratio	0.09	0.09	0.25	0.83	0.54
v/c Ratio	0.25	0.69	0.86	0.16	0.47
Control Delay	53.6	15.4	60.5	2.3	19.4
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	53.6	15.4	60.5	2.3	19.4
LOS	D	B	E	A	B
Approach Delay	20.4			28.6	19.4
Approach LOS	C			C	B

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green	
Natural Cycle: 80	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.86	
Intersection Signal Delay: 23.4	Intersection LOS: C
Intersection Capacity Utilization 63.1%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 6: Horsethief Rd. & De Palma Rd.



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	38	249	361	438	781	49
Future Volume (veh/h)	38	249	361	438	781	49
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	41	271	392	476	849	53
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	330	294	421	2668	1615	101
Arrive On Green	0.18	0.18	0.23	0.74	0.47	0.47
Sat Flow, veh/h	1810	1610	1810	3705	3546	215
Grp Volume(v), veh/h	41	271	392	476	444	458
Grp Sat Flow(s),veh/h/ln	1810	1610	1810	1805	1805	1861
Q Serve(g_s), s	2.3	19.9	25.5	4.8	20.8	20.8
Cycle Q Clear(g_c), s	2.3	19.9	25.5	4.8	20.8	20.8
Prop In Lane	1.00	1.00	1.00			0.12
Lane Grp Cap(c), veh/h	330	294	421	2668	845	871
V/C Ratio(X)	0.12	0.92	0.93	0.18	0.53	0.53
Avail Cap(c_a), veh/h	336	299	564	2668	845	871
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.71	0.71	0.81	0.81
Uniform Delay (d), s/veh	41.0	48.2	45.1	4.7	22.5	22.5
Incr Delay (d2), s/veh	0.2	32.2	12.7	0.1	1.9	1.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	19.0	12.8	1.6	9.2	9.5
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	41.2	80.4	57.8	4.8	24.4	24.4
LnGrp LOS	D	F	E	A	C	C
Approach Vol, veh/h	312			868	902	
Approach Delay, s/veh	75.2			28.7	24.4	
Approach LOS	E			C	C	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		93.4		26.6	32.5	60.9
Change Period (Y+Rc), s		* 4.7		* 4.7	4.6	* 4.7
Max Green Setting (Gmax), s		* 88		* 22	37.4	* 46
Max Q Clear Time (g_c+I1), s		6.8		21.9	27.5	22.8
Green Ext Time (p_c), s		3.6		0.1	0.5	6.2

Intersection Summary		
HCM 6th Ctrl Delay		33.8
HCM 6th LOS		C

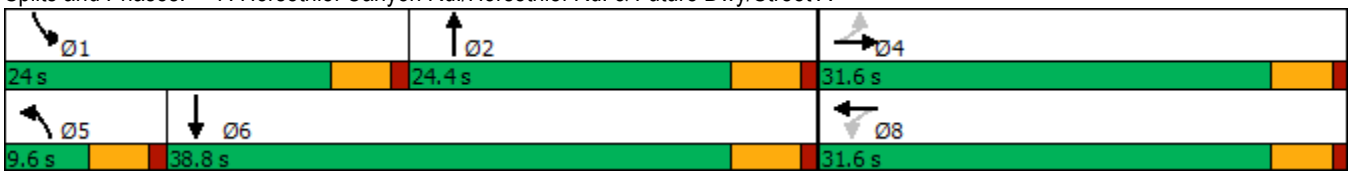
Notes

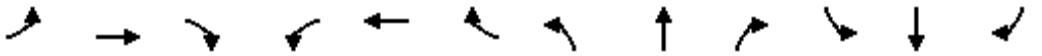
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	43	0	9	0	4	684	394	636
Future Volume (vph)	43	0	9	0	4	684	394	636
Turn Type	Perm	NA	Perm	NA	Prot	NA	Prot	NA
Protected Phases		4		8	5	2	1	6
Permitted Phases	4		8					
Detector Phase	4	4	8	8	5	2	1	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	31.6	31.6	31.6	31.6	9.6	22.7	9.6	22.7
Total Split (s)	31.6	31.6	31.6	31.6	9.6	24.4	24.0	38.8
Total Split (%)	39.5%	39.5%	39.5%	39.5%	12.0%	30.5%	30.0%	48.5%
Yellow Time (s)	3.6	3.6	3.6	3.6	3.6	4.2	3.6	4.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0		0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		4.6		4.6	4.6	5.2	4.6	5.2
Lead/Lag					Lead	Lag	Lead	Lag
Lead-Lag Optimize?					Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Max	None	Max
Act Effct Green (s)		13.1		13.1	5.2	20.0	18.6	43.4
Actuated g/C Ratio		0.21		0.21	0.08	0.32	0.30	0.70
v/c Ratio		0.16		0.28	0.03	0.65	0.77	0.27
Control Delay		0.9		4.4	32.0	24.6	34.7	7.5
Queue Delay		0.0		0.0	0.0	0.0	0.0	0.0
Total Delay		0.9		4.4	32.0	24.6	34.7	7.5
LOS		A		A	C	C	C	A
Approach Delay		0.9		4.4		24.7		17.8
Approach LOS		A		A		C		B

Intersection Summary	
Cycle Length: 80	
Actuated Cycle Length: 62.4	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.77	
Intersection Signal Delay: 19.0	Intersection LOS: B
Intersection Capacity Utilization 63.6%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 7: Horsethief Canyon Rd./Horsethief Rd. & Future Dwy/Street A





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	43	0	14	9	0	115	4	684	30	394	636	14
Future Volume (veh/h)	43	0	14	9	0	115	4	684	30	394	636	14
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	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	45	0	15	9	0	121	4	720	32	415	669	15
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	285	16	64	74	10	246	10	1160	52	470	2108	47
Arrive On Green	0.16	0.00	0.16	0.16	0.00	0.16	0.01	0.33	0.33	0.26	0.58	0.58
Sat Flow, veh/h	1080	95	392	48	64	1502	1810	3520	156	1810	3610	81
Grp Volume(v), veh/h	60	0	0	130	0	0	4	369	383	415	334	350
Grp Sat Flow(s),veh/h/ln	1567	0	0	1613	0	0	1810	1805	1872	1810	1805	1885
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	0.1	10.0	10.1	12.8	5.5	5.5
Cycle Q Clear(g_c), s	1.7	0.0	0.0	4.2	0.0	0.0	0.1	10.0	10.1	12.8	5.5	5.5
Prop In Lane	0.75		0.25	0.07		0.93	1.00		0.08	1.00		0.04
Lane Grp Cap(c), veh/h	365	0	0	330	0	0	10	595	617	470	1054	1101
V/C Ratio(X)	0.16	0.00	0.00	0.39	0.00	0.00	0.41	0.62	0.62	0.88	0.32	0.32
Avail Cap(c_a), veh/h	771	0	0	808	0	0	155	595	617	602	1054	1101
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.1	0.0	0.0	22.2	0.0	0.0	28.9	16.5	16.5	20.7	6.2	6.2
Incr Delay (d2), s/veh	0.2	0.0	0.0	0.8	0.0	0.0	10.0	4.8	4.7	10.3	0.8	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.0	0.0	1.6	0.0	0.0	0.1	4.5	4.6	6.2	1.8	1.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	21.3	0.0	0.0	22.9	0.0	0.0	38.9	21.3	21.1	31.0	7.0	7.0
LnGrp LOS	C	A	A	C	A	A	D	C	C	C	A	A
Approach Vol, veh/h		60			130			756			1099	
Approach Delay, s/veh		21.3			22.9			21.3			16.0	
Approach LOS		C			C			C			B	

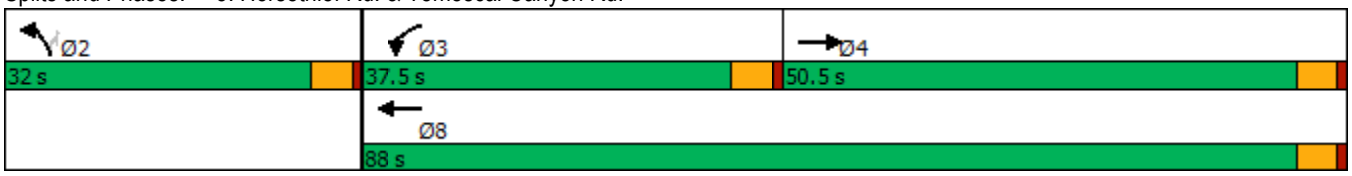
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	19.8	24.4		14.1	4.9	39.2		14.1				
Change Period (Y+Rc), s	4.6	5.2		4.6	4.6	5.2		4.6				
Max Green Setting (Gmax), s	19.4	19.2		27.0	5.0	33.6		27.0				
Max Q Clear Time (g_c+I1), s	14.8	12.1		3.7	2.1	7.5		6.2				
Green Ext Time (p_c), s	0.3	2.7		0.3	0.0	4.5		0.7				

Intersection Summary												
HCM 6th Ctrl Delay			18.6									
HCM 6th LOS			B									

Lane Group	EBT	WBL	WBT	NBL	NBR
Lane Configurations					
Traffic Volume (vph)	267	307	58	531	519
Future Volume (vph)	267	307	58	531	519
Turn Type	NA	Prot	NA	Prot	Perm
Protected Phases	4	3	8	2	
Permitted Phases					2
Detector Phase	4	3	8	2	2
Switch Phase					
Minimum Initial (s)	10.0	5.0	10.0	10.0	10.0
Minimum Split (s)	26.7	9.6	14.7	26.7	26.7
Total Split (s)	50.5	37.5	88.0	32.0	32.0
Total Split (%)	42.1%	31.3%	73.3%	26.7%	26.7%
Yellow Time (s)	3.7	3.6	3.7	3.7	3.7
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.7	4.6	4.7	4.7	4.7
Lead/Lag	Lag	Lead			
Lead-Lag Optimize?	Yes	Yes			
Recall Mode	Min	None	Min	None	None
Act Effct Green (s)	12.6	10.2	27.5	27.5	27.5
Actuated g/C Ratio	0.20	0.16	0.43	0.43	0.43
v/c Ratio	0.60	0.56	0.04	0.36	0.67
Control Delay	17.3	29.5	10.3	14.3	14.0
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	17.3	29.5	10.3	14.3	14.0
LOS	B	C	B	B	B
Approach Delay	17.3		26.4	14.1	
Approach LOS	B		C	B	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 64.4	
Natural Cycle: 65	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.67	
Intersection Signal Delay: 17.3	Intersection LOS: B
Intersection Capacity Utilization 54.4%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 5: Horsethief Rd. & Temescal Canyon Rd.



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	267	220	307	58	531	519
Future Volume (veh/h)	267	220	307	58	531	519
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	281	-36	323	61	559	335
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	1716	0	511	1821	1097	488
Arrive On Green	0.23	0.00	0.14	0.48	0.30	0.30
Sat Flow, veh/h	3800	0	3619	3800	3619	1610
Grp Volume(v), veh/h	245	0	323	61	559	335
Grp Sat Flow(s),veh/h/ln	1900	0	1810	1900	1810	1610
Q Serve(g_s), s	0.0	0.0	3.6	0.4	5.5	7.9
Cycle Q Clear(g_c), s	0.0	0.0	3.6	0.4	5.5	7.9
Prop In Lane		0.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	0	0	511	1821	1097	488
V/C Ratio(X)	0.00	0.00	0.63	0.03	0.51	0.69
Avail Cap(c_a), veh/h	0	0	2756	7327	2287	1018
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	0.0	17.5	6.0	12.4	13.2
Incr Delay (d2), s/veh	0.0	0.0	0.5	0.0	0.4	1.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	1.3	0.1	1.9	2.5
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.0	0.0	18.0	6.0	12.8	15.0
LnGrp LOS	A	A	B	A	B	B
Approach Vol, veh/h	245			384	894	
Approach Delay, s/veh	0.0			16.1	13.6	
Approach LOS	A			B	B	

Timer - Assigned Phs		2	3	4		8
Phs Duration (G+Y+Rc), s		17.8	10.7	14.7		25.4
Change Period (Y+Rc), s		* 4.7	4.6	* 4.7		* 4.7
Max Green Setting (Gmax), s		* 27	32.9	* 46		* 83
Max Q Clear Time (g_c+I1), s		9.9	5.6	2.0		2.4
Green Ext Time (p_c), s		3.2	0.6	1.8		0.4

Intersection Summary	
HCM 6th Ctrl Delay	12.0
HCM 6th LOS	B

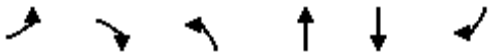
Notes

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

Lane Group	EBL	EBR	NBL	NBT	SBT
Lane Configurations					
Traffic Volume (vph)	147	722	349	904	444
Future Volume (vph)	147	722	349	904	444
Turn Type	Prot	Perm	Prot	NA	NA
Protected Phases	4		5	2	6
Permitted Phases		4			
Detector Phase	4	4	5	2	6
Switch Phase					
Minimum Initial (s)	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	26.7	26.7	9.6	14.7	26.7
Total Split (s)	37.2	37.2	26.0	82.8	56.8
Total Split (%)	31.0%	31.0%	21.7%	69.0%	47.3%
Yellow Time (s)	3.7	3.7	3.6	3.7	3.7
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.7	4.7	4.6	4.7	4.7
Lead/Lag			Lead		Lag
Lead-Lag Optimize?			Yes		Yes
Recall Mode	None	None	None	C-Min	C-Min
Act Effct Green (s)	31.5	31.5	33.2	79.1	41.3
Actuated g/C Ratio	0.26	0.26	0.28	0.66	0.34
v/c Ratio	0.32	0.92	0.71	0.39	0.44
Control Delay	34.6	28.3	48.8	11.7	32.5
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	34.6	28.3	48.8	11.7	32.5
LOS	C	C	D	B	C
Approach Delay	29.3			22.0	32.5
Approach LOS	C			C	C

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green	
Natural Cycle: 80	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.92	
Intersection Signal Delay: 26.5	Intersection LOS: C
Intersection Capacity Utilization 67.5%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 6: Horsethief Rd. & De Palma Rd.



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	147	722	349	904	444	85
Future Volume (veh/h)	147	722	349	904	444	85
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	150	456	356	922	453	56
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	490	436	323	2350	1405	173
Arrive On Green	0.27	0.27	0.18	0.65	0.43	0.43
Sat Flow, veh/h	1810	1610	1810	3705	3330	398
Grp Volume(v), veh/h	150	456	356	922	252	257
Grp Sat Flow(s),veh/h/ln	1810	1610	1810	1805	1805	1828
Q Serve(g_s), s	7.9	32.5	21.4	14.4	11.0	11.1
Cycle Q Clear(g_c), s	7.9	32.5	21.4	14.4	11.0	11.1
Prop In Lane	1.00	1.00	1.00			0.22
Lane Grp Cap(c), veh/h	490	436	323	2350	784	794
V/C Ratio(X)	0.31	1.05	1.10	0.39	0.32	0.32
Avail Cap(c_a), veh/h	490	436	323	2350	784	794
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.58	0.58	0.80	0.80
Uniform Delay (d), s/veh	34.8	43.8	49.3	9.8	22.3	22.4
Incr Delay (d2), s/veh	0.3	55.5	69.5	0.3	0.9	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.5	31.8	15.9	5.5	4.9	5.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	35.1	99.3	118.8	10.1	23.2	23.2
LnGrp LOS	D	F	F	B	C	C
Approach Vol, veh/h	606			1278	509	
Approach Delay, s/veh	83.4			40.4	23.2	
Approach LOS	F			D	C	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		82.8		37.2	26.0	56.8
Change Period (Y+Rc), s		* 4.7		* 4.7	4.6	* 4.7
Max Green Setting (Gmax), s		* 78		* 33	21.4	* 52
Max Q Clear Time (g_c+I1), s		16.4		34.5	23.4	13.1
Green Ext Time (p_c), s		8.4		0.0	0.0	3.4

Intersection Summary		
HCM 6th Ctrl Delay		47.6
HCM 6th LOS		D

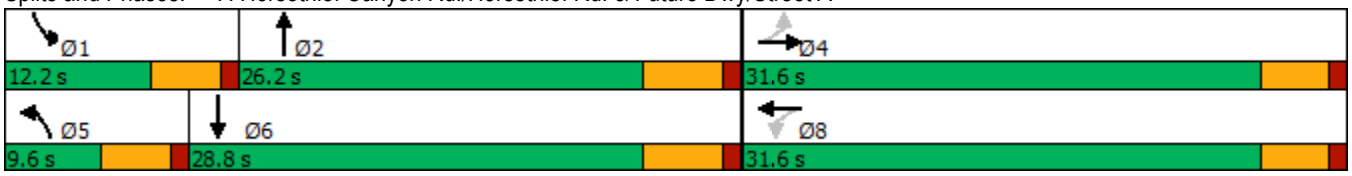
Notes

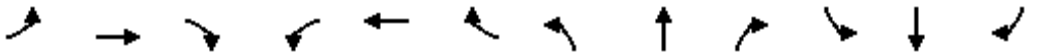
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	29	0	33	0	15	844	154	1012
Future Volume (vph)	29	0	33	0	15	844	154	1012
Turn Type	Perm	NA	Perm	NA	Prot	NA	Prot	NA
Protected Phases		4		8	5	2	1	6
Permitted Phases	4		8					
Detector Phase	4	4	8	8	5	2	1	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	31.6	31.6	31.6	31.6	9.6	22.2	9.6	22.2
Total Split (s)	31.6	31.6	31.6	31.6	9.6	26.2	12.2	28.8
Total Split (%)	45.1%	45.1%	45.1%	45.1%	13.7%	37.4%	17.4%	41.1%
Yellow Time (s)	3.6	3.6	3.6	3.6	3.6	4.2	3.6	4.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0		0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		4.6		4.6	4.6	5.2	4.6	5.2
Lead/Lag					Lead	Lag	Lead	Lag
Lead-Lag Optimize?					Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Min	None	Min
Act Effct Green (s)		16.1		16.1	5.1	19.3	7.6	30.0
Actuated g/C Ratio		0.28		0.28	0.09	0.33	0.13	0.52
v/c Ratio		0.12		0.76	0.10	0.75	0.68	0.60
Control Delay		0.7		18.2	30.0	23.1	44.9	14.5
Queue Delay		0.0		0.0	0.0	0.0	0.0	0.0
Total Delay		0.7		18.2	30.0	23.1	44.9	14.5
LOS		A		B	C	C	D	B
Approach Delay		0.7		18.2		23.2		18.4
Approach LOS		A		B		C		B

Intersection Summary	
Cycle Length: 70	
Actuated Cycle Length: 57.7	
Natural Cycle: 70	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.76	
Intersection Signal Delay: 19.7	Intersection LOS: B
Intersection Capacity Utilization 72.2%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 7: Horsethief Canyon Rd./Horsethief Rd. & Future Dwy/Street A





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	29	0	10	33	0	409	15	844	12	154	1012	47
Future Volume (veh/h)	29	0	10	33	0	409	15	844	12	154	1012	47
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	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	31	0	11	35	0	431	16	888	13	162	1065	49
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	282	16	68	88	18	505	35	1109	16	204	1398	64
Arrive On Green	0.34	0.00	0.34	0.34	0.00	0.34	0.02	0.30	0.30	0.11	0.40	0.40
Sat Flow, veh/h	519	47	201	66	54	1489	1810	3642	53	1810	3514	162
Grp Volume(v), veh/h	42	0	0	466	0	0	16	440	461	162	547	567
Grp Sat Flow(s),veh/h/ln	767	0	0	1610	0	0	1810	1805	1890	1810	1805	1871
Q Serve(g_s), s	0.0	0.0	0.0	6.9	0.0	0.0	0.5	13.2	13.2	5.2	15.5	15.5
Cycle Q Clear(g_c), s	1.4	0.0	0.0	15.9	0.0	0.0	0.5	13.2	13.2	5.2	15.5	15.5
Prop In Lane	0.74		0.26	0.08		0.92	1.00		0.03	1.00		0.09
Lane Grp Cap(c), veh/h	366	0	0	611	0	0	35	550	576	204	718	744
V/C Ratio(X)	0.11	0.00	0.00	0.76	0.00	0.00	0.45	0.80	0.80	0.79	0.76	0.76
Avail Cap(c_a), veh/h	494	0	0	800	0	0	153	642	672	233	721	747
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	13.2	0.0	0.0	18.1	0.0	0.0	28.6	18.9	18.9	25.5	15.4	15.4
Incr Delay (d2), s/veh	0.1	0.0	0.0	3.2	0.0	0.0	3.3	6.2	6.0	13.1	4.8	4.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	0.0	5.7	0.0	0.0	0.2	5.9	6.1	2.8	6.4	6.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	13.4	0.0	0.0	21.3	0.0	0.0	32.0	25.1	24.9	38.6	20.1	20.0
LnGrp LOS	B	A	A	C	A	A	C	C	C	D	C	B
Approach Vol, veh/h		42			466			917			1276	
Approach Delay, s/veh		13.4			21.3			25.1			22.4	
Approach LOS		B			C			C			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	11.3	23.2		24.6	5.8	28.7		24.6				
Change Period (Y+Rc), s	4.6	5.2		4.6	4.6	5.2		4.6				
Max Green Setting (Gmax), s	7.6	21.0		27.0	5.0	23.6		27.0				
Max Q Clear Time (g_c+I1), s	7.2	15.2		3.4	2.5	17.5		17.9				
Green Ext Time (p_c), s	0.0	2.7		0.2	0.0	3.5		2.2				

Intersection Summary												
HCM 6th Ctrl Delay			23.0									
HCM 6th LOS			C									

ATTACHMENT E

SITE ADJACENT QUEUES

Intersection: 5: Horsethief Rd. & Temescal Canyon Rd.

Movement	EB	EB	WB	WB	WB	WB	NB	NB	NB
Directions Served	T	TR	L	L	T	T	L	L	R
Maximum Queue (ft)	64	167	209	166	120	64	82	133	99
Average Queue (ft)	30	81	129	74	59	15	41	56	67
95th Queue (ft)	60	144	191	154	103	49	72	97	105
Link Distance (ft)	1018	1018	695	695	695	695	763	763	
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)									50
Storage Blk Time (%)								16	7
Queuing Penalty (veh)								39	8

Intersection: 6: Horsethief Rd. & De Palma Rd.

Movement	EB	EB	NB	NB	NB	SB	SB
Directions Served	L	R	L	T	T	T	TR
Maximum Queue (ft)	104	135	209	446	380	344	345
Average Queue (ft)	34	66	189	167	67	155	145
95th Queue (ft)	80	123	238	423	235	271	264
Link Distance (ft)	1140			670	670	763	763
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)		100	150				
Storage Blk Time (%)	0	3	31	0			
Queuing Penalty (veh)	1	1	67	0			

Intersection: 7: Horsethief Canyon Rd./Horsethief Rd. & Future Dwy/Street A

Movement	EB	WB	NB	NB	NB	SB	SB	SB
Directions Served	LTR	LTR	L	T	TR	L	T	TR
Maximum Queue (ft)	75	75	58	283	210	199	313	247
Average Queue (ft)	34	43	5	145	104	150	87	81
95th Queue (ft)	67	68	30	243	182	219	240	171
Link Distance (ft)	353	459		817	817		670	670
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)			100			100		
Storage Blk Time (%)				20		23	1	
Queuing Penalty (veh)				1		74	4	

Zone Summary

Zone wide Queuing Penalty: 196

Intersection: 5: Horsethief Rd. & Temescal Canyon Rd.

Movement	EB	EB	WB	WB	WB	WB	NB	NB	NB
Directions Served	T	TR	L	L	T	T	L	L	R
Maximum Queue (ft)	144	167	158	155	57	14	294	396	100
Average Queue (ft)	81	68	95	57	19	0	115	170	92
95th Queue (ft)	122	124	141	113	48	6	229	324	119
Link Distance (ft)	1018	1018	695	695	695	695	768	768	
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)									50
Storage Blk Time (%)								25	22
Queuing Penalty (veh)								128	58

Intersection: 6: Horsethief Rd. & De Palma Rd.

Movement	EB	EB	NB	NB	NB	SB	SB
Directions Served	L	R	L	T	T	T	TR
Maximum Queue (ft)	511	150	210	498	446	293	299
Average Queue (ft)	225	140	191	255	239	162	170
95th Queue (ft)	436	174	242	470	423	249	261
Link Distance (ft)	503			652	652	768	768
Upstream Blk Time (%)	1						
Queuing Penalty (veh)	0						
Storage Bay Dist (ft)		100	150				
Storage Blk Time (%)	4	27	41	3			
Queuing Penalty (veh)	26	40	185	11			

Intersection: 7: Horsethief Canyon Rd./Horsethief Rd. & Future Dwy/Street A

Movement	EB	WB	NB	NB	NB	SB	SB	SB
Directions Served	LTR	LTR	L	T	TR	L	T	TR
Maximum Queue (ft)	62	218	107	256	224	197	337	312
Average Queue (ft)	24	118	23	151	132	93	142	160
95th Queue (ft)	54	190	82	229	207	168	259	262
Link Distance (ft)	370	623		798	798		652	652
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)			100			100		
Storage Blk Time (%)				23		12	10	
Queuing Penalty (veh)				3		61	15	

Zone Summary

Zone wide Queuing Penalty: 526