



Appendix H:

Traffic Technical Memorandum

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To: Bill O’Hair, P.E.
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Valley Link Rail Project

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Subject: Valley Link Rail Project
Environmental Assessment Support - Traffic Technical Memorandum

Enclosure:

1 Purpose

The purpose of this memorandum is to summarize existing and future (opening year 2030 and horizon year 2040) intersection traffic operations in the study area with and without the proposed Valley Link Rail Project. This memorandum describes the existing data collection, traffic forecasting, and traffic analysis conducted to support the Project’s Environmental Assessment (EA).

2 Study Area

Table 1 summarizes the list of traffic study locations identified for this task by the EA Consultant Lead (AECOM) based on anticipated changes in local traffic volumes near the new Station park and ride lots.

Table 1: Study Intersections

No.	Intersection	Control Type
1	Isabel Avenue & Airway Boulevard	Signal
2	Southfront Road & Preston Avenue	Stop Control
3	Mountain House Parkway & Von Sosten Avenue	Signal
4	Mountain House Parkway & Station Entrance (future intersection)	Signal
5	Mountain House Parkway & I-205 WB Ramps	Signal
6	Mountain House Parkway & I-205 EB Ramps	Signal

3 Analysis Scenarios

Traffic forecasts were developed, and traffic operations were evaluated at the study locations for the typical weekday AM and PM peak hours. The following scenarios were evaluated consistent with the overall EA approach:

- Existing (2023) Conditions
- Opening Year (2030) No-Build Conditions

- Opening Year (2030) Build Conditions
- Horizon Year (2040) No-Build Conditions
- Horizon Year (2040) Build Conditions

4 Traffic Volume Development

4.1 Existing Traffic Volumes

New AM peak period (5:00 AM – 10:00 AM) and PM peak period (3:00 PM – 7:00 PM) turning movement counts, including vehicle classification counts, were collected at the study intersections on a midweek day in the weeks of September 18, 2023, and September 25, 2023. Heavy vehicle percentages were calculated for each intersection during both AM and PM peak periods based on the count data. The five-hour AM peak period and four-hour PM peak period volumes for the I-580 and I-205 corridors were reviewed, and a single system peak hour was selected for each peak period. The system peak hour was the hour that has the highest hourly volume across the corridor for each period. The peak hours selected were 6:45 AM to 7:45 AM and 4:00 PM to 5:00 PM.

4.2 Forecast Volumes

The traffic forecast model runs completed for the Valley Link Environmental Impact Report (EIR) were used to prepare traffic forecasts for the study intersections. The ridership forecasts for the EIR were conducted using a combination of two models.

- The Alameda Corridor Express (ACE) Passenger Rail Forecasting Model (ACE Model) was used to develop ridership for the interregional trips.
- A version of the Alameda County Transportation Commission (ACTC) travel demand forecasting model (ACTC Model) initially developed and validated for the BART to Livermore Extension Project, was used to improve spatial detail and interaction between modes.

The ACTC model provided the basis for the highway forecasts for both No-Build and Build scenarios, and the ridership forecasts from the combined modeling were used as the basis for the Project trips.

Model outputs for one base year (2013) and two future years (2030 and 2050) for both No-Build and Build scenarios were obtained from the EIR modeling team. The No-Build model outputs represent the highway volumes in the study area without the proposed project and Build model outputs represent the highway volumes in the study area with the proposed Valley Link Rail project.

The raw model link volumes were post-processed to develop the future Opening Year (2030) and Horizon Year (2040) traffic volumes at the study intersections. The methodology described in the National Cooperative Highway Research Program (NCHRP) Report 765 was used to post-process the raw volumes at the Isabel Avenue & Airway Boulevard and Southfront Road & Preston Avenue intersections. Due to the absence of a detailed highway network in San Joaquin County, the NCHRP methodology was not applied to the intersections along Mountain House Parkway.

A traffic growth factor was developed by comparing the traffic volumes generated at several Traffic Analysis Zones (TAZ) in San Joaquin County between modeling years 2013 and 2030, and 2013 and 2050. The growth factor was then applied to the existing intersection turning movement volumes to develop the future 2030 and 2050 traffic volumes for No-Build and Build scenarios.

In addition, park-and-ride trips at each proposed station were assigned to the study area intersections to calculate the Build volumes at the intersections. Horizon Year (2040) intersection turning movement volumes were developed by interpolating between 2030 and 2050 traffic volumes. Traffic volumes at the study intersections for the study scenarios are summarized in **Appendix A**.

5 Traffic Analysis

AM and PM peak hour traffic operations at study area intersections were analyzed based on the Highway Capacity Manual, 6th Edition (HCM6) operations methodology utilizing Synchro (v11) software. Signal timing sheets for the signalized intersections were obtained from Caltrans and local cities. Signal timing, lane geometrics, and traffic volume were input into the Synchro models to calculate delay and LOS at the study intersections. Signal timings were optimized for future year analyses.

The lane configurations at study intersections for the Opening Year (2030) and Horizon Year (2040) were assumed to be the same as existing conditions at the Isabel Avenue & Airway Boulevard and Southfront Road & Preston Avenue intersections.

However, it is anticipated that the I-205/Mountain House Parkway Interchange Improvement Project (I-205/MH Project) will modify the lane configuration at the two I-205/Mountain House Parkway ramp intersections in the future. The I-205/MH project will convert the existing hybrid tight-diamond/loop interchange into a partial cloverleaf interchange (Type L-9). The project will add a new westbound loop entrance ramp on the north side of I-205 and widen Mountain House Parkway south and north of I-205. The lane configurations proposed by the I-205/MH project are assumed to be the baseline condition for the Valley Link Rail Project. The lane configurations at the Mountain House Parkway/I-205 WB Ramps and Mountain House Parkway/I-205 EB Ramps intersections were modified to reflect the configurations proposed by the I-205/MH project for both Opening Year (2030) and Horizon Year (2040) No-Build and Build conditions.

In addition, 95th percentile queue lengths were determined at the freeway off-ramps based on the HCM methodology using the results of the intersection LOS analysis. The 95th percentile queues were then compared to the storage lengths to determine if there is sufficient queuing space on the off-ramps, including turn pockets.

5.1 Existing Conditions (2023)

A level of service analysis was conducted by applying existing lane configurations and existing AM and PM peak hour turning movement volumes. The results of the Existing (2023) intersection analysis are summarized in **Table 2**. As shown in the table below, all intersections are currently operating at LOS C or better.

Table 2: Existing (2023) Intersection Level of Service

ID	Intersection	Control	AM Peak Hour		PM Peak Hour	
			Delay	LOS	Delay	LOS
1	Isabel Ave & Airway Blvd	Signal	29.3	C	33.4	C
2	Southfront Rd & Preston Ave	Stop	9.7	A	9.4	A
3	Mountain House Pkwy & Von Sosten Rd	Signal	14.0	B	10.3	B
4	Mountain House Pkwy & Station Entrance	N/A	Future Intersection			
5	Mountain House Pkwy & I-205 WB Ramps	Signal	32.8	C	19.6	B
6	Mountain House Pkwy & I-205 EB Ramps	Signal	5.0	A	7.0	A

Delay is measured in seconds/vehicle; LOS = Level of Service

A queuing analysis was conducted to evaluate 95th percentile queues at the two off-ramps on Mountain House Parkway at I-205. **Table 3** summarizes the queue lengths for existing conditions and provides a comparison to the available storage on the ramps. As shown in the table, the available storage on the off-ramps is sufficient to handle the existing 95th percentile queues.

Table 3: Existing (2023) Queuing Analysis

ID	Intersection	Movement	Storage (ft)	Queue Length (ft)	
				AM	PM
5	Mountain House Pkwy & I-205 WB Ramps	WBT	685	538	152
		WBR	1,510	17	31
6	Mountain House Pkwy & I-205 EB Ramps	EBL	1,555	33	57
		EBT	1,555	32	58
		EBR	470	31	27

5.2 Opening Year (2030) No-Build Conditions

A level of service analysis was conducted to evaluate the Opening Year (2030) No-Build conditions at the study intersections. **Table 4** summarizes the resulting delay and LOS. As shown in the table, all intersections are anticipated to operate at LOS D or better during the Opening Year (2030) No-Build conditions.

Table 4: Opening Year (2030) No-Build Intersection Level of Service

ID	Intersection	Control	AM Peak Hour		PM Peak Hour	
			Delay	LOS	Delay	LOS
1	Isabel Ave & Airway Blvd	Signal	36.0	D	39.1	D
2	Southfront Rd & Preston Ave	Stop	10.4	B	10.9	B
3	Mountain House Pkwy & Von Sosten Rd	Signal	16.0	B	10.8	B
4	Mountain House Pkwy & Station Entrance	N/A	Future Intersection			
5	Mountain House Pkwy & I-205 WB Ramps	Signal	17.9	B	12.9	B
6	Mountain House Pkwy & I-205 EB Ramps	Signal	3.0	A	7.2	A

Delay is measured in seconds/vehicle; LOS = Level of Service

A queuing analysis was conducted to evaluate the 95th percentile queues at the I-205 off-ramp intersections on Mountain House Parkway under 2030 No-Build conditions. **Table 5** summarizes the anticipated queue lengths and storage lengths at the intersections. As shown, the expected storage at the off-ramps is anticipated to accommodate the projected 95th percentile queues.

Table 5: Opening Year (2030) No-Build Queuing Analysis

ID	Intersection	Movement	Storage (ft)*	Queue Length (ft)	
				AM	PM
5	Mountain House Pkwy & I-205 WB Ramps	WBL	1,380	159	67
		WBT	1,380	225	81
		WBR	1,380	22	38
6	Mountain House Pkwy & I-205 EB Ramps	EBL	1,555	49	66
		EBT	1,555	36	68
		EBR	470	25	28

* - expected storage lengths measured approximately

5.3 Opening Year (2030) Build Conditions

Table 6 summarizes the delay and LOS at the study intersections under the Opening Year (2030) Build scenario. As shown in the table, all intersections are projected to continue to operate at LOS D or better.

Table 6: Opening Year (2030) Build Intersection Level of Service

ID	Intersection	Control	AM Peak Hour		PM Peak Hour	
			Delay	LOS	Delay	LOS
1	Isabel Ave & Airway Blvd	Signal	33.6	C	40.2	D
2	Southfront Rd & Preston Ave	Stop	10.8	B	11.5	B
3	Mountain House Pkwy & Von Sosten Rd	Signal	16.0	B	11.0	B
4	Mountain House Pkwy & Station Entrance	Signal	28.5	C	11.8	B
5	Mountain House Pkwy & I-205 WB Ramps	Signal	17.8	B	10.5	B
6	Mountain House Pkwy & I-205 EB Ramps	Signal	3.0	A	7.0	A

Delay is measured in seconds/vehicle; LOS = Level of Service

Table 7 summarizes the anticipated queue lengths and storage lengths at the two I-205 off-ramp intersections and the Station Entrance intersection on Mountain House Parkway under 2030 Build conditions. The Station Entrance intersection is included in the summary because it is a new intersection proposed by the project and because of its proximity to the I-205/Mountain House Parkway interchange. As shown, the expected storage lengths at the off-ramps and the Station Entrance intersection are anticipated to accommodate the projected 95th percentile queues.

Table 7: Opening Year (2030) Build Queuing Analysis

ID	Intersection	Movement	Storage (ft)*	Queue Length (ft)	
				AM	PM
3	Mountain House Pkwy & Station Entrance	NBL	900	626	0
		SBR	700	0	0
		EBLT	300	0	23
		EBR	300	0	38
5	Mountain House Pkwy & I-205 WB Ramps	WBL	1,380	159	67
		WBT	1,380	225	81
		WBR	1,380	38	38
6	Mountain House Pkwy & I-205 EB Ramps	EBL	1,555	49	66
		EBT	1,555	36	68
		EBR	470	25	28

* - expected storage lengths measured approximately

5.4 Horizon Year (2040) No-Build Conditions

A level of service analysis was conducted to evaluate the Horizon Year (2040) No-Build conditions at the study intersections. **Table 8** summarizes the resulting delay and LOS. As shown in the table, all intersections are anticipated to operate at LOS D or better during the Horizon Year (2040) No-Build conditions.

Table 8: Horizon Year (2040) No-Build Intersection Level of Service

ID	Intersection	Control	AM Peak Hour		PM Peak Hour	
			Delay	LOS	Delay	LOS
1	Isabel Ave & Airway Blvd	Signal	35.3	D	43.8	D
2	Southfront Rd & Preston Ave	Stop	10.4	B	11.7	B
3	Mountain House Pkwy & Von Sosten Rd	Signal	17.5	B	11.2	B
4	Mountain House Pkwy & Station Entrance	N/A	Future Intersection			
5	Mountain House Pkwy & I-205 WB Ramps	Signal	18.0	B	13.0	B
6	Mountain House Pkwy & I-205 EB Ramps	Signal	3.0	A	7.3	A

Delay is measured in seconds/vehicle; LOS = Level of Service

A queuing analysis was conducted to evaluate the 95th percentile queues at the two I-205 off-ramp intersections on Mountain House Parkway under 2040 No-Build conditions. **Table 9** summarizes the anticipated queue lengths and storage lengths at the intersections. As shown, the expected storage at the off-ramps is anticipated to accommodate the projected 95th percentile queues.

Table 9: Horizon Year (2040) No-Build Queuing Analysis

ID	Intersection	Movement	Storage (ft)*	Queue Length (ft)	
				AM	PM
5	Mountain House Pkwy & I-205 WB Ramps	WBL	1,380	167	70
		WBT	1,380	237	83
		WBR	1,380	23	38
6	Mountain House Pkwy & I-205 EB Ramps	EBL	1,555	51	70
		EBT	1,555	39	70
		EBR	470	28	29

* - expected storage lengths measured approximately

5.5 Horizon Year (2040) Build Conditions

Table 10 summarizes the delay and LOS at the study intersections under the Horizon Year (2040) Build scenario. As shown in the table, all intersections are projected to continue to operate at LOS D or better, except for the Mountain House Parkway & Mountain House Station Entrance intersection. The intersection is projected to operate at LOS F during AM peak hour under the 2040 Build conditions due to the northbound Mountain House Parkway left-turning demand into the station.

Table 10: Horizon Year (2040) Build Intersection Level of Service

ID	Intersection	Control	AM Peak Hour		PM Peak Hour	
			Delay	LOS	Delay	LOS
1	Isabel Ave & Airway Blvd	Signal	39.5	D	50.2	D
2	Southfront Rd & Preston Ave	Stop	10.9	B	13.2	B
3	Mountain House Pkwy & Von Sostan Rd	Signal	17.5	B	11.5	B
4	Mountain House Pkwy & Station Entrance	Signal	168.0	F	35.3	D
5	Mountain House Pkwy & I-205 WB Ramps	Signal	17.6	B	9.9	A
6	Mountain House Pkwy & I-205 EB Ramps	Signal	3.0	A	1.9	A

Delay is measured in seconds/vehicle; LOS = Level of Service

BOLD font indicates LOS E/LOS F conditions

Table 11 summarizes the anticipated queue lengths and storage lengths at the two I-205 off-ramp intersections and the Station Entrance intersection on Mountain House Parkway under 2040 Build conditions. As shown, the expected storage lengths at the off-ramps are anticipated to accommodate the projected 95th percentile queues. However, the northbound left-turn lane at the Station Entrance intersection would have inadequate storage length to handle the projected queues in 2040 conditions.

Table 11: Horizon Year (2040) Build Queuing Analysis

ID	Intersection	Movement	Storage (ft)*	Queue Length (ft)	
				AM	PM
3	Mountain House Pkwy & Station Entrance	NBL	900	1,673	0
		SBR	700	22	0
		EBLT	300	0	43
		EBR	300	0	449
5	Mountain House Pkwy & I-205 WB Ramps	WBL	1,380	124	70
		WBT	1,380	176	83
		WBR	1,380	346	38
6	Mountain House Pkwy & I-205 EB Ramps	EBL	1,555	51	70
		EBT	1,555	39	70
		EBR	470	28	29

* - expected storage lengths measured approximately; **BOLD** font indicates queue exceeding storage

5.6 Build Conditions with Improvements

As summarized in **Table 10**, the LOS at the Mountain House Parkway & Mountain House Station Entrance intersection is projected to operate at LOS F in the AM peak hour during 2040 Build conditions. A modified lane configuration was examined to mitigate the deteriorating traffic operations at that intersection, as follows:

- Restripe the northbound approach to include two exclusive left-turn lanes, one through lane, and one shared through/right-turn lane.

Under 2030 Build conditions with the proposed modification, the intersection is anticipated to operate at LOS B during both AM and PM peak hours. Under 2040 Build conditions, with the proposed restriping, the traffic operation at the intersection is anticipated to improve to LOS D in the AM peak hour. **Table 12** summarizes the improved delay and LOS at the intersection under 2030 and 2040 Build conditions with the proposed improvements.

Table 12: Build Intersection Level of Service with Improvements

ID	Intersection	Scenario	AM Peak Hour		PM Peak Hour	
			Delay	LOS	Delay	LOS
4	Mountain House Pkwy & Station Entrance	2030 Build	15.4	B	12.3	B
		2040 Build	39.8	D	36.2	D

Delay is measured in seconds/vehicle; LOS = Level of Service

Queuing analysis conducted for the intersection with the proposed modified lane configuration showed that the available storage would be sufficient to accommodate the potential queues at the intersection under 2030 conditions. Under 2040 conditions, the queue at the right-turn lane out of Station Entrance is projected to extend beyond the storage length. The turn pockets may need to be increased on Station Entrance road to accommodate the potential queues in 2040. **Table 13** summarizes the queuing analysis at the intersection.

Table 13: Build Queuing Analysis with Improvements

ID	Intersection	Scenario	Movement	Storage (ft)*	Queue Length (ft)	
					AM	PM
3	Mountain House Pkwy & Station Entrance	2030 Build	NBL	900	209	0
			SBR	700	0	0
			EBLT	300	0	23
			EBR	300	0	38
		2040 Build	NBL	900	688	0
			SBR	700	18	0
			EBLT	300	0	43
			EBR	300	0	449

* - expected storage lengths measured approximately; **BOLD** font indicates queue exceeding storage length

Level of service calculation sheets and queuing summary sheets at all study intersections for all study scenarios are included in **Appendix B**.

6 Conclusion

The level of service analysis conducted for the project showed that all study intersections are currently operating at LOS D or better and are projected to operate at LOS D or better in the future Opening Year (2030) No-Build and Build conditions and Horizon Year (2040) No-Build conditions. Under the Horizon Year (2040) Build conditions, one intersection is projected to operate at LOS F in the AM peak hour. The proposed restriping of that intersection would improve traffic operations to LOS D.

The queuing analysis showed that the available storage at the I-205 off-ramps on Mountain House Parkway is sufficient to accommodate the existing and projected queues. However, there would be potential storage deficiencies under 2040 Build conditions at the Mountain House Parkway & Station Entrance intersection. The proposed restriping at the intersection and increasing the lengths of turn pockets on Station Entrance road would provide sufficient storage for the expected queues in 2040 conditions.



Tri-Valley & San Joaquin Valley
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Appendix A

Intersection Turning Movement Volumes

AM Peak Hour		Existing (2023)											
INTID	Int_Name	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
28	Isabel Ave & Airway Blvd	136	1197	27	234	1006	6	1	67	88	27	55	116
42	Southfront Rd & Preston Ave	0	0	0	21	0	20	10	14	0	0	26	130
52	Mountain House Pkwy & Von Sosten Rd	0	291	8	20	759	0	0	0	0	365	0	27
301	Mountain House Pkwy & Station Entrance	0	300	0	0	1124	0	0	0	0	0	0	0
53	Mountain House Pkwy & I-205 WB Ramps	85	152	0	0	650	475	0	0	0	444	194	148
54	Mountain House Pkwy & I-205 EB Ramps	0	201	274	0	882	0	37	3	45	0	0	0

PM Peak Hour		Existing (2023)											
INTID	Int_Name	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
28	Isabel Ave & Airway Blvd	159	1293	33	229	1226	19	8	88	216	38	42	215
42	Southfront Rd & Preston Ave	0	0	0	67	0	6	2	14	0	0	14	54
52	Mountain House Pkwy & Von Sosten Rd	0	562	44	39	459	0	0	0	0	16	0	37
301	Mountain House Pkwy & Station Entrance	0	625	0	0	475	0	0	0	0	0	0	0
53	Mountain House Pkwy & I-205 WB Ramps	27	265	0	0	405	74	0	0	0	212	0	360
54	Mountain House Pkwy & I-205 EB Ramps	0	201	539	0	337	0	91	1	35	0	0	0

154	Mountain House Pkwy & I-205 EB Ramps	0	238	0	0	882	213	0	0	0	0	0	0
		0	292	0	0	337	280	0	0	0	0	0	0

AM Peak Hour		2030 NO BUILD											
INTID	Int_Name	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
28	Isabel Ave & Airway Blvd	136	1197	71	234	1110	6	1	83	121	114	72	161
42	Southfront Rd & Preston Ave	0	0	0	23	0	20	12	14	0	0	28	253
52	Mountain House Pkwy & Von Sosten Rd	0	344	9	24	897	0	0	0	0	431	0	32
301	Mountain House Pkwy & Station Entrance	0	354	0	0	1328	0	0	0	0	0	0	0
53	Mountain House Pkwy & I-205 WB Ramps	100	180	0	0	768	561	0	0	0	525	229	175
54	Mountain House Pkwy & I-205 EB Ramps	0	237	324	0	1042	252	44	4	53	0	0	0

PM Peak Hour		2030 NO BUILD											
INTID	Int_Name	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
28	Isabel Ave & Airway Blvd	201	1301	62	272	1226	19	8	113	228	57	51	215
42	Southfront Rd & Preston Ave	0	0	0	227	0	7	2	15	0	0	14	55
52	Mountain House Pkwy & Von Sosten Rd	0	656	51	46	536	0	0	0	0	19	0	43
301	Mountain House Pkwy & Station Entrance	0	730	0	0	555	0	0	0	0	0	0	0
53	Mountain House Pkwy & I-205 WB Ramps	32	309	0	0	473	86	0	0	0	247	0	420
54	Mountain House Pkwy & I-205 EB Ramps	0	235	629	0	393	327	106	1	41	0	0	0

AM Peak Hour		2030 BUILD											
INTID	Int_Name	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
28	Isabel Ave & Airway Blvd	136	1197	83	319	1169	6	1	85	157	118	69	153
42	Southfront Rd & Preston Ave	0	0	0	25	0	22	14	14	0	0	26	308
52	Mountain House Pkwy & Von Sosten Rd	0	343	9	24	922	0	0	0	0	430	0	32
301	Mountain House Pkwy & Station Entrance	515	354	20	10	1325	27	0	0	0	1	2	2
53	Mountain House Pkwy & I-205 WB Ramps	0	206	100	0	766	560	0	0	0	524	229	663
54	Mountain House Pkwy & I-205 EB Ramps	0	264	323	0	1040	251	44	4	53	0	0	0

PM Peak Hour		2030 BUILD											
INTID	Int_Name	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
28	Isabel Ave & Airway Blvd	203	1306	72	277	1226	19	8	106	216	88	52	305
42	Southfront Rd & Preston Ave	0	0	0	274	0	7	2	15	0	0	14	55
52	Mountain House Pkwy & Von Sosten Rd	0	683	51	45	535	0	0	0	0	19	0	43
301	Mountain House Pkwy & Station Entrance	0	728	3	2	553	0	29	0	542	20	0	10
53	Mountain House Pkwy & I-205 WB Ramps	0	309	31	0	1014	86	0	0	0	247	0	419
54	Mountain House Pkwy & I-205 EB Ramps	0	234	628	0	421	839	106	1	41	0	0	0

AM Peak Hour		2040 NO BUILD											
INTID	Int_Name	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
28	Isabel Ave & Airway Blvd	136	1197	67	234	1150	6	1	101	168	196	111	262
42	Southfront Rd & Preston Ave	0	0	0	28	0	30	17	14	0	0	27	365
52	Mountain House Pkwy & Von Sosten Rd	0	373	10	26	974	0	0	0	0	468	0	35
301	Mountain House Pkwy & Station Entrance	0	385	0	0	1441	0	0	0	0	0	0	0
53	Mountain House Pkwy & I-205 WB Ramps	0	195	109	0	834	609	0	0	0	570	249	190
54	Mountain House Pkwy & I-205 EB Ramps	0	258	352	0	1131	274	48	4	58	0	0	0

PM Peak Hour		2040 NO BUILD											
INTID	Int_Name	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
28	Isabel Ave & Airway Blvd	295	1345	182	337	1226	19	8	146	227	101	67	215
42	Southfront Rd & Preston Ave	0	0	0	342	0	20	3	27	0	0	15	55
52	Mountain House Pkwy & Von Sosten Rd	0	711	56	50	581	0	0	0	0	21	0	47
301	Mountain House Pkwy & Station Entrance	0	791	0	0	602	0	0	0	0	0	0	0
53	Mountain House Pkwy & I-205 WB Ramps	0	335	35	0	513	94	0	0	0	268	0	456
54	Mountain House Pkwy & I-205 EB Ramps	0	255	682	0	426	355	115	1	45	0	0	0

AM Peak Hour		2040 BUILD											
INTID	Int_Name	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
28	Isabel Ave & Airway Blvd	139	1197	126	430	1184	6	1	100	191	246	113	227
42	Southfront Rd & Preston Ave	0	0	0	30	0	32	19	14	0	0	26	469
52	Mountain House Pkwy & Von Sosten Rd	0	372	10	26	1035	0	0	0	0	466	0	35
301	Mountain House Pkwy & Station Entrance	1242	384	20	10	1436	66	0	0	0	1	2	2
53	Mountain House Pkwy & I-205 WB Ramps	0	260	109	0	830	607	0	0	0	568	248	1367
54	Mountain House Pkwy & I-205 EB Ramps	0	322	350	0	1127	272	48	4	58	0	0	0

PM Peak Hour		2040 BUILD											
INTID	Int_Name	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
28	Isabel Ave & Airway Blvd	302	1358	181	344	1226	19	8	143	221	149	66	422
42	Southfront Rd & Preston Ave	0	0	0	437	0	17	3	27	0	0	15	55
52	Mountain House Pkwy & Von Sosten Rd	0	777	56	49	579	0	0	0	0	21	0	47
301	Mountain House Pkwy & Station Entrance	0	788	3	2	599	0	69	0	1308	20	0	10
53	Mountain House Pkwy & I-205 WB Ramps	0	334	34	0	1818	93	0	0	0	267	0	454
54	Mountain House Pkwy & I-205 EB Ramps	0	253	679	0	494	1591	115	1	44	0	0	0



Tri-Valley & San Joaquin Valley
REGIONAL RAIL AUTHORITY

Appendix B

Level of Service and Queuing Worksheets

LOS Analysis Worksheets

HCM 6th Signalized Intersection Summary 28: Isabel Ave & Airway Blvd

Existing
AM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	67	88	27	55	116	136	1197	27	234	1006	6
Future Volume (veh/h)	1	67	88	27	55	116	136	1197	27	234	1006	6
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	1767	1767	1767	1767	1767	1767	1767	1767	1767	1767	1767	1767
Adj Flow Rate, veh/h	1	73	96	29	60	126	148	1301	29	254	1093	7
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	9	9	9	9	9	9	9	9	9	9	9	9
Cap, veh/h	7	313	265	150	463	392	205	1550	481	453	1674	11
Arrive On Green	0.00	0.18	0.18	0.09	0.26	0.26	0.12	0.32	0.32	0.14	0.34	0.34
Sat Flow, veh/h	1682	1767	1497	1682	1767	1497	1682	4823	1497	3264	4945	32
Grp Volume(v), veh/h	1	73	96	29	60	126	148	1301	29	254	711	389
Grp Sat Flow(s),veh/h/ln	1682	1767	1497	1682	1767	1497	1682	1608	1497	1632	1608	1761
Q Serve(g_s), s	0.0	2.8	4.5	1.3	2.0	5.4	6.7	19.8	1.1	5.7	14.8	14.8
Cycle Q Clear(g_c), s	0.0	2.8	4.5	1.3	2.0	5.4	6.7	19.8	1.1	5.7	14.8	14.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.02
Lane Grp Cap(c), veh/h	7	313	265	150	463	392	205	1550	481	453	1088	596
V/C Ratio(X)	0.14	0.23	0.36	0.19	0.13	0.32	0.72	0.84	0.06	0.56	0.65	0.65
Avail Cap(c_a), veh/h	341	939	796	319	917	777	213	1550	481	454	1088	596
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.2	27.9	28.6	33.3	22.3	23.5	33.4	24.9	18.5	31.8	22.2	22.2
Incr Delay (d2), s/veh	8.1	0.4	0.8	0.6	0.1	0.5	11.0	5.6	0.2	1.6	3.1	5.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	1.2	1.6	0.5	0.8	1.9	3.3	7.9	0.4	2.3	5.8	6.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	47.2	28.3	29.4	34.0	22.4	24.0	44.4	30.5	18.8	33.3	25.2	27.7
LnGrp LOS	D	C	C	C	C	C	D	C	B	C	C	C
Approach Vol, veh/h	170			215			1478			1354		
Approach Delay, s/veh	29.0			24.9			31.7			27.5		
Approach LOS	C			C			C			C		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	16.0	31.2	12.1	19.8	14.6	32.5	5.3	26.5				
Change Period (Y+Rc), s	5.0	5.8	5.0	5.8	5.0	5.8	5.0	5.8				
Max Green Setting (Gmax), s	11.0	25.4	15.0	42.0	10.0	26.4	16.0	41.0				
Max Q Clear Time (g_c+l1), s	7.7	21.8	3.3	6.5	8.7	16.8	2.0	7.4				
Green Ext Time (p_c), s	0.3	2.6	0.0	0.7	0.0	4.9	0.0	0.8				
Intersection Summary												
HCM 6th Ctrl Delay	29.3											
HCM 6th LOS	C											

Intersection

Int Delay, s/veh 2.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	10	14	26	130	21	20
Future Vol, veh/h	10	14	26	130	21	20
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	70	70	70	70	70	70
Heavy Vehicles, %	15	15	15	15	15	15
Mvmt Flow	14	20	37	186	30	29

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	223	0	0 178 130
Stage 1	-	-	- 130 -
Stage 2	-	-	- 48 -
Critical Hdwy	4.25	-	- 6.55 6.35
Critical Hdwy Stg 1	-	-	- 5.55 -
Critical Hdwy Stg 2	-	-	- 5.55 -
Follow-up Hdwy	2.335	-	- 3.635 3.435
Pot Cap-1 Maneuver	1273	-	- 783 886
Stage 1	-	-	- 865 -
Stage 2	-	-	- 942 -
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	1273	-	- 774 886
Mov Cap-2 Maneuver	-	-	- 774 -
Stage 1	-	-	- 855 -
Stage 2	-	-	- 942 -

Approach	EB	WB	SB
HCM Control Delay, s	3.3	0	9.7
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1273	-	-	-	825
HCM Lane V/C Ratio	0.011	-	-	-	0.071
HCM Control Delay (s)	7.9	0	-	-	9.7
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.2

HCM 6th Signalized Intersection Summary 52: Mountain House Pkwy & Von Sosten Rd

Existing
AM Peak

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	365	27	291	8	20	759
Future Volume (veh/h)	365	27	291	8	20	759
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	1796	1796	1796	1796	1796	1796
Adj Flow Rate, veh/h	388	29	310	9	21	807
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	7	7	7	7	7	7
Cap, veh/h	575	512	1117	498	156	1706
Arrive On Green	0.34	0.34	0.33	0.33	0.09	0.50
Sat Flow, veh/h	1711	1522	3503	1522	1711	3503
Grp Volume(v), veh/h	388	29	310	9	21	807
Grp Sat Flow(s),veh/h/ln	1711	1522	1706	1522	1711	1706
Q Serve(g_s), s	10.7	0.7	3.7	0.2	0.6	8.5
Cycle Q Clear(g_c), s	10.7	0.7	3.7	0.2	0.6	8.5
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	575	512	1117	498	156	1706
V/C Ratio(X)	0.67	0.06	0.28	0.02	0.14	0.47
Avail Cap(c_a), veh/h	575	512	1117	498	156	1706
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	15.7	12.3	13.7	12.5	23.0	9.0
Incr Delay (d2), s/veh	6.2	0.2	0.6	0.1	1.8	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	4.6	0.2	1.4	0.1	0.3	2.7
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	21.9	12.6	14.3	12.6	24.8	9.9
LnGrp LOS	C	B	B	B	C	A
Approach Vol, veh/h	417		319			828
Approach Delay, s/veh	21.2		14.3			10.3
Approach LOS	C		B			B
Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	9.5	22.5			32.0	23.0
Change Period (Y+Rc), s	4.5	4.5			4.5	4.5
Max Green Setting (Gmax), s	5.0	18.0			27.5	18.5
Max Q Clear Time (g_c+l1), s	2.6	5.7			10.5	12.7
Green Ext Time (p_c), s	0.0	1.6			5.3	0.7
Intersection Summary						
HCM 6th Ctrl Delay			14.0			
HCM 6th LOS			B			

HCM 6th Signalized Intersection Summary

53: Mountain House Pkwy & I-205 WB Ramps

Existing
AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↕	↕↕	↕	↕↕			↕↕	↕
Traffic Volume (veh/h)	0	0	0	444	194	148	85	152	0	0	650	475
Future Volume (veh/h)	0	0	0	444	194	148	85	152	0	0	650	475
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach				No			No			No		
Adj Sat Flow, veh/h/ln				1752	1752	1752	1752	1752	0	0	1752	1752
Adj Flow Rate, veh/h				483	211	161	92	165	0	0	707	0
Peak Hour Factor				0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %				10	10	10	10	10	0	0	10	10
Cap, veh/h				513	224	1138	145	1400	0	0	923	
Arrive On Green				0.44	0.44	0.44	0.09	0.42	0.00	0.00	0.28	0.00
Sat Flow, veh/h				1178	515	2613	1668	3416	0	0	3416	1485
Grp Volume(v), veh/h				694	0	161	92	165	0	0	707	0
Grp Sat Flow(s),veh/h/ln				1693	0	1306	1668	1664	0	0	1664	1485
Q Serve(g_s), s				31.4	0.0	3.0	4.3	2.4	0.0	0.0	15.6	0.0
Cycle Q Clear(g_c), s				31.4	0.0	3.0	4.3	2.4	0.0	0.0	15.6	0.0
Prop In Lane				0.70		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				738	0	1138	145	1400	0	0	923	
V/C Ratio(X)				0.94	0.00	0.14	0.63	0.12	0.00	0.00	0.77	
Avail Cap(c_a), veh/h				766	0	1182	167	1400	0	0	923	
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh				21.6	0.0	13.6	35.3	14.1	0.0	0.0	26.5	0.0
Incr Delay (d2), s/veh				19.2	0.0	0.1	6.1	0.2	0.0	0.0	6.0	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				15.3	0.0	0.8	1.9	0.9	0.0	0.0	6.7	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				40.8	0.0	13.6	41.4	14.3	0.0	0.0	32.6	0.0
LnGrp LOS				D	A	B	D	B	A	A	C	
Approach Vol, veh/h					855			257			707	
Approach Delay, s/veh					35.7			24.0			32.6	
Approach LOS					D			C			C	
Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		39.3			11.5	27.9		40.7				
Change Period (Y+Rc), s		5.7			4.5	5.7		5.8				
Max Green Setting (Gmax), s		32.3			8.0	19.8		36.2				
Max Q Clear Time (g_c+I1), s		4.4			6.3	17.6		33.4				
Green Ext Time (p_c), s		1.0			0.0	1.0		1.5				

Intersection Summary

HCM 6th Ctrl Delay	32.8
HCM 6th LOS	C

Notes

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

HCM 6th Signalized Intersection Summary 54: International Pkwy/Mountain House Pkwy & I-205 EB Ramps

Existing
AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	37	3	45	0	0	0	0	201	274	0	882	0
Future Volume (veh/h)	37	3	45	0	0	0	0	201	274	0	882	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No						No			No		
Adj Sat Flow, veh/h/ln	1604	1604	1604				0	1604	1604	0	1604	0
Adj Flow Rate, veh/h	42	0	48				0	216	295	0	948	0
Peak Hour Factor	0.93	0.93	0.93				0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	20	20	20				0	20	20	0	20	0
Cap, veh/h	264	0	118				0	2372	1058	0	2372	0
Arrive On Green	0.09	0.00	0.09				0.00	0.78	0.78	0.00	0.78	0.00
Sat Flow, veh/h	3054	0	1359				0	3127	1359	0	3207	0
Grp Volume(v), veh/h	42	0	48				0	216	295	0	948	0
Grp Sat Flow(s),veh/h/ln	1527	0	1359				0	1523	1359	0	1523	0
Q Serve(g_s), s	1.0	0.0	2.7				0.0	1.4	4.9	0.0	8.0	0.0
Cycle Q Clear(g_c), s	1.0	0.0	2.7				0.0	1.4	4.9	0.0	8.0	0.0
Prop In Lane	1.00		1.00				0.00		1.00	0.00		0.00
Lane Grp Cap(c), veh/h	264	0	118				0	2372	1058	0	2372	0
V/C Ratio(X)	0.16	0.00	0.41				0.00	0.09	0.28	0.00	0.40	0.00
Avail Cap(c_a), veh/h	760	0	338				0	2372	1058	0	2372	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	0.00	1.00	0.00
Uniform Delay (d), s/veh	33.8	0.0	34.6				0.0	2.1	2.5	0.0	2.8	0.0
Incr Delay (d2), s/veh	0.1	0.0	0.8				0.0	0.1	0.7	0.0	0.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	0.9				0.0	0.3	1.0	0.0	1.6	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	34.0	0.0	35.4				0.0	2.2	3.2	0.0	3.4	0.0
LnGrp LOS	C	A	D				A	A	A	A	A	A
Approach Vol, veh/h	90						511			948		
Approach Delay, s/veh	34.7						2.8			3.4		
Approach LOS	C						A			A		
Timer - Assigned Phs	2			4			6					
Phs Duration (G+Y+Rc), s	68.0			12.0			68.0					
Change Period (Y+Rc), s	5.7			5.1			5.7					
Max Green Setting (Gmax), s	49.3			19.9			49.3					
Max Q Clear Time (g_c+I1), s	6.9			4.7			10.0					
Green Ext Time (p_c), s	1.5			0.0			5.5					

Intersection Summary

HCM 6th Ctrl Delay	5.0
HCM 6th LOS	A

Notes

User approved volume balancing among the lanes for turning movement.

HCM 6th Signalized Intersection Summary 28: Isabel Ave & Airway Blvd

Existing
PM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	8	88	216	38	42	215	159	1293	33	229	1226	19
Future Volume (veh/h)	8	88	216	38	42	215	159	1293	33	229	1226	19
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1841	1841	1841	1841	1841	1841	1841	1841	1841	1841	1841	1841
Adj Flow Rate, veh/h	9	97	237	42	46	236	175	1421	36	252	1347	21
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	4	4	4	4	4	4	4	4	4	4	4	4
Cap, veh/h	62	334	283	184	462	392	207	1884	585	388	1890	29
Arrive On Green	0.04	0.18	0.18	0.11	0.25	0.25	0.12	0.37	0.37	0.11	0.37	0.37
Sat Flow, veh/h	1753	1841	1560	1753	1841	1560	1753	5025	1560	3401	5097	79
Grp Volume(v), veh/h	9	97	237	42	46	236	175	1421	36	252	885	483
Grp Sat Flow(s),veh/h/ln	1753	1841	1560	1753	1841	1560	1753	1675	1560	1700	1675	1826
Q Serve(g_s), s	0.5	4.4	14.1	2.1	1.8	12.9	9.4	23.7	1.4	6.8	21.8	21.8
Cycle Q Clear(g_c), s	0.5	4.4	14.1	2.1	1.8	12.9	9.4	23.7	1.4	6.8	21.8	21.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.04
Lane Grp Cap(c), veh/h	62	334	283	184	462	392	207	1884	585	388	1242	677
V/C Ratio(X)	0.14	0.29	0.84	0.23	0.10	0.60	0.84	0.75	0.06	0.65	0.71	0.71
Avail Cap(c_a), veh/h	306	854	724	288	835	708	238	1884	585	417	1242	677
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.0	34.0	38.0	39.5	27.7	31.8	41.6	26.2	19.3	40.8	25.9	25.9
Incr Delay (d2), s/veh	1.1	0.5	6.5	0.6	0.1	1.5	21.1	2.9	0.2	3.2	3.5	6.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	2.0	5.8	0.9	0.8	4.9	5.2	9.6	0.5	3.0	9.0	10.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	46.1	34.5	44.5	40.1	27.8	33.3	62.7	29.1	19.5	44.0	29.4	32.2
LnGrp LOS	D	C	D	D	C	C	E	C	B	D	C	C
Approach Vol, veh/h	343			324			1632			1620		
Approach Delay, s/veh	41.7			33.4			32.5			32.5		
Approach LOS	D			C			C			C		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	16.0	41.9	15.1	23.3	16.4	41.5	8.4	30.0				
Change Period (Y+Rc), s	5.0	5.8	5.0	5.8	5.0	5.8	5.0	5.8				
Max Green Setting (Gmax), s	11.8	36.1	15.8	44.7	13.1	34.8	16.8	43.7				
Max Q Clear Time (g_c+I1), s	8.8	25.7	4.1	16.1	11.4	23.8	2.5	14.9				
Green Ext Time (p_c), s	0.2	6.8	0.0	1.4	0.1	6.6	0.0	1.1				
Intersection Summary												
HCM 6th Ctrl Delay	33.4											
HCM 6th LOS	C											

HCM 6th TWSC
42: Preston Ave & Southfront Rd

Existing
PM Peak

Intersection						
Int Delay, s/veh	4.5					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	2	14	14	54	67	6
Future Vol, veh/h	2	14	14	54	67	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	78	78	78	78	78	78
Heavy Vehicles, %	7	7	7	7	7	7
Mvmt Flow	3	18	18	69	86	8
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	87	0	-	0	77	53
Stage 1	-	-	-	-	53	-
Stage 2	-	-	-	-	24	-
Critical Hdwy	4.17	-	-	-	6.47	6.27
Critical Hdwy Stg 1	-	-	-	-	5.47	-
Critical Hdwy Stg 2	-	-	-	-	5.47	-
Follow-up Hdwy	2.263	-	-	-	3.563	3.363
Pot Cap-1 Maneuver	1478	-	-	-	914	1000
Stage 1	-	-	-	-	957	-
Stage 2	-	-	-	-	986	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1478	-	-	-	912	1000
Mov Cap-2 Maneuver	-	-	-	-	912	-
Stage 1	-	-	-	-	955	-
Stage 2	-	-	-	-	986	-
Approach	EB	WB		SB		
HCM Control Delay, s	0.9	0		9.4		
HCM LOS				A		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1478	-	-	-	919	
HCM Lane V/C Ratio	0.002	-	-	-	0.102	
HCM Control Delay (s)	7.4	0	-	-	9.4	
HCM Lane LOS	A	A	-	-	A	
HCM 95th %tile Q(veh)	0	-	-	-	0.3	

HCM 6th Signalized Intersection Summary 52: Mountain House Pkwy & Von Sosten Rd

Existing
PM Peak

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	16	37	562	44	39	459
Future Volume (veh/h)	16	37	562	44	39	459
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	1811	1811	1811	1811	1811	1811
Adj Flow Rate, veh/h	16	38	573	45	40	468
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	6	6	6	6	6	6
Cap, veh/h	690	614	1376	614	378	1376
Arrive On Green	0.40	0.40	0.40	0.40	0.40	0.40
Sat Flow, veh/h	1725	1535	3532	1535	780	3532
Grp Volume(v), veh/h	16	38	573	45	40	468
Grp Sat Flow(s),veh/h/ln	1725	1535	1721	1535	780	1721
Q Serve(g_s), s	0.3	0.7	5.4	0.8	1.8	4.3
Cycle Q Clear(g_c), s	0.3	0.7	5.4	0.8	7.1	4.3
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	690	614	1376	614	378	1376
V/C Ratio(X)	0.02	0.06	0.42	0.07	0.11	0.34
Avail Cap(c_a), veh/h	690	614	1376	614	378	1376
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	8.2	8.3	9.7	8.3	12.3	9.4
Incr Delay (d2), s/veh	0.1	0.2	0.9	0.2	0.6	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.2	1.8	0.3	0.3	1.4
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	8.2	8.5	10.6	8.6	12.9	10.0
LnGrp LOS	A	A	B	A	B	B
Approach Vol, veh/h	54		618			508
Approach Delay, s/veh	8.4		10.5			10.3
Approach LOS	A		B			B
Timer - Assigned Phs	2		6		8	
Phs Duration (G+Y+Rc), s	22.5		22.5		22.5	
Change Period (Y+Rc), s	4.5		4.5		4.5	
Max Green Setting (Gmax), s	18.0		18.0		18.0	
Max Q Clear Time (g_c+l1), s	7.4		9.1		2.7	
Green Ext Time (p_c), s	3.0		2.2		0.1	
Intersection Summary						
HCM 6th Ctrl Delay			10.3			
HCM 6th LOS			B			

HCM 6th Signalized Intersection Summary

53: Mountain House Pkwy & I-205 WB Ramps

Existing
PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↕	↗↘	↖	↕			↕	↗
Traffic Volume (veh/h)	0	0	0	212	0	360	27	265	0	0	405	74
Future Volume (veh/h)	0	0	0	212	0	360	27	265	0	0	405	74
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach				No			No			No		
Adj Sat Flow, veh/h/ln				1752	1752	1752	1752	1752	0	0	1752	1752
Adj Flow Rate, veh/h				226	0	383	29	282	0	0	431	0
Peak Hour Factor				0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %				10	10	10	10	10	0	0	10	10
Cap, veh/h				326	0	511	79	2199	0	0	1853	
Arrive On Green				0.20	0.00	0.20	0.05	0.66	0.00	0.00	0.56	0.00
Sat Flow, veh/h				1668	0	2613	1668	3416	0	0	3416	1485
Grp Volume(v), veh/h				226	0	383	29	282	0	0	431	0
Grp Sat Flow(s),veh/h/ln				1668	0	1306	1668	1664	0	0	1664	1485
Q Serve(g_s), s				10.1	0.0	11.1	1.3	2.5	0.0	0.0	5.3	0.0
Cycle Q Clear(g_c), s				10.1	0.0	11.1	1.3	2.5	0.0	0.0	5.3	0.0
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				326	0	511	79	2199	0	0	1853	
V/C Ratio(X)				0.69	0.00	0.75	0.37	0.13	0.00	0.00	0.23	
Avail Cap(c_a), veh/h				567	0	888	219	2199	0	0	1853	
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh				29.9	0.0	30.3	36.9	5.0	0.0	0.0	9.0	0.0
Incr Delay (d2), s/veh				2.6	0.0	2.2	2.8	0.1	0.0	0.0	0.3	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				4.2	0.0	3.5	0.6	0.8	0.0	0.0	1.8	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				32.6	0.0	32.5	39.7	5.2	0.0	0.0	9.3	0.0
LnGrp LOS				C	A	C	D	A	A	A	A	
Approach Vol, veh/h				609				311			431	
Approach Delay, s/veh				32.6				8.4			9.3	
Approach LOS				C				A			A	
Timer - Assigned Phs	2			5	6		8					
Phs Duration (G+Y+Rc), s	58.5			8.3	50.2		21.5					
Change Period (Y+Rc), s	5.7			4.5	5.7		5.8					
Max Green Setting (Gmax), s	41.3			10.5	26.3		27.2					
Max Q Clear Time (g_c+I1), s	4.5			3.3	7.3		13.1					
Green Ext Time (p_c), s	2.0			0.0	2.7		2.6					

Intersection Summary

HCM 6th Ctrl Delay 19.6
HCM 6th LOS B

Notes

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

HCM 6th Signalized Intersection Summary 54: International Pkwy/Mountain House Pkwy & I-205 EB Ramps

Existing
PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	91	1	35	0	0	0	0	201	539	0	337	0
Future Volume (veh/h)	91	1	35	0	0	0	0	201	539	0	337	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No						No			No		
Adj Sat Flow, veh/h/ln	1678	1678	1678				0	1678	1678	0	1678	0
Adj Flow Rate, veh/h	97	0	37				0	212	567	0	355	0
Peak Hour Factor	0.95	0.95	0.95				0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	15	15	15				0	15	15	0	15	0
Cap, veh/h	303	0	135				0	2455	1095	0	2455	0
Arrive On Green	0.09	0.00	0.09				0.00	0.77	0.77	0.00	0.77	0.00
Sat Flow, veh/h	3196	0	1422				0	3272	1422	0	3355	0
Grp Volume(v), veh/h	97	0	37				0	212	567	0	355	0
Grp Sat Flow(s),veh/h/ln	1598	0	1422				0	1594	1422	0	1594	0
Q Serve(g_s), s	2.3	0.0	1.9				0.0	1.3	12.2	0.0	2.3	0.0
Cycle Q Clear(g_c), s	2.3	0.0	1.9				0.0	1.3	12.2	0.0	2.3	0.0
Prop In Lane	1.00		1.00				0.00		1.00	0.00		0.00
Lane Grp Cap(c), veh/h	303	0	135				0	2455	1095	0	2455	0
V/C Ratio(X)	0.32	0.00	0.27				0.00	0.09	0.52	0.00	0.14	0.00
Avail Cap(c_a), veh/h	755	0	336				0	2455	1095	0	2455	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	0.00	1.00	0.00
Uniform Delay (d), s/veh	33.8	0.0	33.6				0.0	2.3	3.5	0.0	2.4	0.0
Incr Delay (d2), s/veh	0.2	0.0	0.4				0.0	0.1	1.8	0.0	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	0.0	0.7				0.0	0.3	2.6	0.0	0.5	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	34.0	0.0	34.0				0.0	2.3	5.3	0.0	2.5	0.0
LnGrp LOS	C	A	C				A	A	A	A	A	A
Approach Vol, veh/h	134						779			355		
Approach Delay, s/veh	34.0						4.5			2.5		
Approach LOS	C						A			A		
Timer - Assigned Phs	2			4			6					
Phs Duration (G+Y+Rc), s	67.3			12.7			67.3					
Change Period (Y+Rc), s	5.7			5.1			5.7					
Max Green Setting (Gmax), s	50.3			18.9			50.3					
Max Q Clear Time (g_c+l1), s	14.2			4.3			4.3					
Green Ext Time (p_c), s	2.1			0.0			1.7					
Intersection Summary												
HCM 6th Ctrl Delay	7.0											
HCM 6th LOS	A											
Notes												

HCM 6th Signalized Intersection Summary 28: Isabel Ave & Airway Blvd

2030 No Build
AM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	83	121	114	72	161	136	1197	71	234	1110	6
Future Volume (veh/h)	1	83	121	114	72	161	136	1197	71	234	1110	6
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	1767	1767	1767	1767	1767	1767	1767	1767	1767	1767	1767	1767
Adj Flow Rate, veh/h	1	90	132	124	78	175	148	1301	77	254	1207	7
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	9	9	9	9	9	9	9	9	9	9	9	9
Cap, veh/h	7	287	412	278	571	674	190	1421	441	416	1530	9
Arrive On Green	0.00	0.16	0.16	0.17	0.32	0.32	0.11	0.29	0.29	0.13	0.31	0.31
Sat Flow, veh/h	1682	1767	1497	1682	1767	1497	1682	4823	1497	3264	4948	29
Grp Volume(v), veh/h	1	90	132	124	78	175	148	1301	77	254	784	430
Grp Sat Flow(s),veh/h/ln	1682	1767	1497	1682	1767	1497	1682	1608	1497	1632	1608	1761
Q Serve(g_s), s	0.1	3.9	6.0	5.7	2.7	6.3	7.4	22.5	3.3	6.3	19.2	19.2
Cycle Q Clear(g_c), s	0.1	3.9	6.0	5.7	2.7	6.3	7.4	22.5	3.3	6.3	19.2	19.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.02
Lane Grp Cap(c), veh/h	7	287	412	278	571	674	190	1421	441	416	995	545
V/C Ratio(X)	0.14	0.31	0.32	0.45	0.14	0.26	0.78	0.92	0.17	0.61	0.79	0.79
Avail Cap(c_a), veh/h	312	861	898	293	840	903	195	1421	441	417	995	545
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	42.7	31.9	24.8	32.4	20.7	14.7	37.2	29.4	22.6	35.6	27.2	27.2
Incr Delay (d2), s/veh	8.1	0.6	0.4	1.1	0.1	0.2	17.8	10.7	0.9	2.6	6.3	11.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	1.7	2.1	2.4	1.1	2.1	3.9	9.7	1.2	2.6	8.0	9.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	50.8	32.5	25.3	33.6	20.8	14.9	55.0	40.1	23.5	38.2	33.5	38.2
LnGrp LOS	D	C	C	C	C	B	E	D	C	D	C	D
Approach Vol, veh/h	223			377			1526			1468		
Approach Delay, s/veh	28.3			22.3			40.7			35.7		
Approach LOS	C			C			D			D		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	16.0	31.2	19.2	19.8	14.7	32.5	5.4	33.7				
Change Period (Y+Rc), s	5.0	5.8	5.0	5.8	5.0	5.8	5.0	5.8				
Max Green Setting (Gmax), s	11.0	25.4	15.0	42.0	10.0	26.4	16.0	41.0				
Max Q Clear Time (g_c+l1), s	8.3	24.5	7.7	8.0	9.4	21.2	2.1	8.3				
Green Ext Time (p_c), s	0.2	0.7	0.2	1.0	0.0	3.3	0.0	1.0				
Intersection Summary												
HCM 6th Ctrl Delay	36.0											
HCM 6th LOS	D											

Intersection						
Int Delay, s/veh	1.6					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	12	14	28	253	23	20
Future Vol, veh/h	12	14	28	253	23	20
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	70	70	70	70	70	70
Heavy Vehicles, %	15	15	15	15	15	15
Mvmt Flow	17	20	40	361	33	29
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	401	0	-	0	275	221
Stage 1	-	-	-	-	221	-
Stage 2	-	-	-	-	54	-
Critical Hdwy	4.25	-	-	-	6.55	6.35
Critical Hdwy Stg 1	-	-	-	-	5.55	-
Critical Hdwy Stg 2	-	-	-	-	5.55	-
Follow-up Hdwy	2.335	-	-	-	3.635	3.435
Pot Cap-1 Maneuver	1091	-	-	-	688	787
Stage 1	-	-	-	-	786	-
Stage 2	-	-	-	-	936	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1091	-	-	-	677	787
Mov Cap-2 Maneuver	-	-	-	-	677	-
Stage 1	-	-	-	-	773	-
Stage 2	-	-	-	-	936	-
Approach	EB	WB		SB		
HCM Control Delay, s	3.9	0		10.4		
HCM LOS				B		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1091	-	-	-	724	
HCM Lane V/C Ratio	0.016	-	-	-	0.085	
HCM Control Delay (s)	8.4	0	-	-	10.4	
HCM Lane LOS	A	A	-	-	B	
HCM 95th %tile Q(veh)	0	-	-	-	0.3	

HCM 6th Signalized Intersection Summary 52: Mountain House Pkwy & Von Sosten Rd

2030 No Build
AM Peak

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	431	32	344	9	24	897
Future Volume (veh/h)	431	32	344	9	24	897
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	1796	1796	1796	1796	1796	1796
Adj Flow Rate, veh/h	459	34	366	10	26	954
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	7	7	7	7	7	7
Cap, veh/h	575	512	1117	498	156	1706
Arrive On Green	0.34	0.34	0.33	0.33	0.09	0.50
Sat Flow, veh/h	1711	1522	3503	1522	1711	3503
Grp Volume(v), veh/h	459	34	366	10	26	954
Grp Sat Flow(s),veh/h/ln	1711	1522	1706	1522	1711	1706
Q Serve(g_s), s	13.4	0.8	4.4	0.2	0.8	10.7
Cycle Q Clear(g_c), s	13.4	0.8	4.4	0.2	0.8	10.7
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	575	512	1117	498	156	1706
V/C Ratio(X)	0.80	0.07	0.33	0.02	0.17	0.56
Avail Cap(c_a), veh/h	575	512	1117	498	156	1706
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	16.6	12.4	13.9	12.5	23.1	9.5
Incr Delay (d2), s/veh	11.0	0.2	0.8	0.1	2.3	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.3	0.3	1.6	0.1	0.4	3.5
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	27.6	12.6	14.7	12.6	25.4	10.9
LnGrp LOS	C	B	B	B	C	B
Approach Vol, veh/h	493		376			980
Approach Delay, s/veh	26.5		14.7			11.3
Approach LOS	C		B			B
Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	9.5	22.5			32.0	23.0
Change Period (Y+Rc), s	4.5	4.5			4.5	4.5
Max Green Setting (Gmax), s	5.0	18.0			27.5	18.5
Max Q Clear Time (g_c+l1), s	2.8	6.4			12.7	15.4
Green Ext Time (p_c), s	0.0	1.8			6.0	0.6
Intersection Summary						
HCM 6th Ctrl Delay			16.0			
HCM 6th LOS			B			

HCM 6th Signalized Intersection Summary

53: Mountain House Pkwy & I-205 WB Ramps

2030 No Build

AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↔↔	↔	↔↔		↕↕	↔↔		↕↕↕	↔
Traffic Volume (veh/h)	0	0	0	525	229	175	0	180	100	0	768	561
Future Volume (veh/h)	0	0	0	525	229	175	0	180	100	0	768	561
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach				No		No		No		No		
Adj Sat Flow, veh/h/ln				1752	1752	1752	0	1752	1752	0	1752	1752
Adj Flow Rate, veh/h				559	266	0	0	196	0	0	835	0
Peak Hour Factor				0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %				10	10	10	0	10	10	0	10	10
Cap, veh/h				738	388		0	2114		0	3827	
Arrive On Green				0.22	0.22	0.00	0.00	0.21	0.00	0.00	0.64	0.00
Sat Flow, veh/h				3337	1752	2969	0	3416	2613	0	6271	1485
Grp Volume(v), veh/h				559	266	0	0	196	0	0	835	0
Grp Sat Flow(s),veh/h/ln				1668	1752	1485	0	1664	1306	0	1507	1485
Q Serve(g_s), s				12.5	11.2	0.0	0.0	3.8	0.0	0.0	4.7	0.0
Cycle Q Clear(g_c), s				12.5	11.2	0.0	0.0	3.8	0.0	0.0	4.7	0.0
Prop In Lane				1.00		1.00	0.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h				738	388		0	2114		0	3827	
V/C Ratio(X)				0.76	0.69		0.00	0.09		0.00	0.22	
Avail Cap(c_a), veh/h				1134	596		0	2114		0	3827	
HCM Platoon Ratio				1.00	1.00	1.00	1.00	0.33	0.33	1.00	1.00	1.00
Upstream Filter(I)				1.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh				29.1	28.6	0.0	0.0	13.0	0.0	0.0	6.2	0.0
Incr Delay (d2), s/veh				1.6	2.2	0.0	0.0	0.1	0.0	0.0	0.1	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				5.0	4.8	0.0	0.0	1.3	0.0	0.0	1.3	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				30.8	30.8	0.0	0.0	13.1	0.0	0.0	6.3	0.0
LnGrp LOS				C	C		A	B		A	A	
Approach Vol, veh/h					825			196			835	
Approach Delay, s/veh					30.8			13.1			6.3	
Approach LOS					C			B			A	
Timer - Assigned Phs		2				6		8				
Phs Duration (G+Y+Rc), s		56.5				56.5		23.5				
Change Period (Y+Rc), s		5.7				5.7		5.8				
Max Green Setting (Gmax), s		41.3				41.3		27.2				
Max Q Clear Time (g_c+I1), s		5.8				6.7		14.5				
Green Ext Time (p_c), s		1.3				7.0		3.2				

Intersection Summary

HCM 6th Ctrl Delay	17.9
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	44	4	53	0	0	0	0	237	324	0	1042	252
Future Volume (veh/h)	44	4	53	0	0	0	0	237	324	0	1042	252
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No						No			No		
Adj Sat Flow, veh/h/ln	1604	1604	1604				0	1604	1604	0	1604	1604
Adj Flow Rate, veh/h	68	0	38				0	255	0	0	1120	0
Peak Hour Factor	0.93	0.93	0.93				0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	20	20	20				0	20	20	0	20	20
Cap, veh/h	276	0	123				0	3391		0	3391	
Arrive On Green	0.09	0.00	0.09				0.00	0.77	0.00	0.00	1.00	0.00
Sat Flow, veh/h	3054	0	1359				0	4522	2392	0	4522	1359
Grp Volume(v), veh/h	68	0	38				0	255	0	0	1120	0
Grp Sat Flow(s),veh/h/ln	1527	0	1359				0	1459	1196	0	1459	1359
Q Serve(g_s), s	1.7	0.0	2.1				0.0	1.1	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	1.7	0.0	2.1				0.0	1.1	0.0	0.0	0.0	0.0
Prop In Lane	1.00		1.00				0.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h	276	0	123				0	3391		0	3391	
V/C Ratio(X)	0.25	0.00	0.31				0.00	0.08		0.00	0.33	
Avail Cap(c_a), veh/h	836	0	372				0	3391		0	3391	
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	2.00	2.00
Upstream Filter(l)	1.00	0.00	1.00				0.00	1.00	0.00	0.00	0.93	0.00
Uniform Delay (d), s/veh	33.8	0.0	34.0				0.0	2.2	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.2	0.0	0.5				0.0	0.0	0.0	0.0	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.0	0.7				0.0	0.2	0.0	0.0	0.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	34.0	0.0	34.6				0.0	2.2	0.0	0.0	0.2	0.0
LnGrp LOS	C	A	C				A	A		A	A	
Approach Vol, veh/h	106						255			1120		
Approach Delay, s/veh	34.2						2.2			0.2		
Approach LOS	C						A			A		
Timer - Assigned Phs	2			4			6					
Phs Duration (G+Y+Rc), s	67.7			12.3			67.7					
Change Period (Y+Rc), s	5.7			5.1			5.7					
Max Green Setting (Gmax), s	47.3			21.9			47.3					
Max Q Clear Time (g_c+l1), s	3.1			4.1			2.0					
Green Ext Time (p_c), s	1.3			0.0			6.9					

Intersection Summary

HCM 6th Ctrl Delay	3.0
HCM 6th LOS	A

Notes

User approved volume balancing among the lanes for turning movement.

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

HCM 6th Signalized Intersection Summary 28: Isabel Ave & Airway Blvd

2030 No Build
PM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	8	113	228	57	51	215	201	1301	62	272	1226	19
Future Volume (veh/h)	8	113	228	57	51	215	201	1301	62	272	1226	19
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1841	1841	1841	1841	1841	1841	1841	1841	1841	1841	1841	1841
Adj Flow Rate, veh/h	9	124	251	63	56	236	221	1430	68	299	1347	21
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	4	4	4	4	4	4	4	4	4	4	4	4
Cap, veh/h	58	352	298	218	519	440	247	1791	556	377	1663	26
Arrive On Green	0.03	0.19	0.19	0.12	0.28	0.28	0.14	0.36	0.36	0.11	0.33	0.33
Sat Flow, veh/h	1753	1841	1560	1753	1841	1560	1753	5025	1560	3401	5097	79
Grp Volume(v), veh/h	9	124	251	63	56	236	221	1430	68	299	885	483
Grp Sat Flow(s),veh/h/ln	1753	1841	1560	1753	1841	1560	1753	1675	1560	1700	1675	1826
Q Serve(g_s), s	0.5	5.8	15.4	3.2	2.2	12.7	12.3	25.4	2.9	8.5	24.0	24.0
Cycle Q Clear(g_c), s	0.5	5.8	15.4	3.2	2.2	12.7	12.3	25.4	2.9	8.5	24.0	24.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.04
Lane Grp Cap(c), veh/h	58	352	298	218	519	440	247	1791	556	377	1093	596
V/C Ratio(X)	0.15	0.35	0.84	0.29	0.11	0.54	0.89	0.80	0.12	0.79	0.81	0.81
Avail Cap(c_a), veh/h	265	778	660	265	778	660	247	1791	556	377	1093	596
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	46.7	34.9	38.7	39.5	26.4	30.1	41.9	28.8	21.5	43.1	30.6	30.6
Incr Delay (d2), s/veh	1.2	0.6	6.4	0.7	0.1	1.0	31.1	3.8	0.5	11.1	6.5	11.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	2.6	6.3	1.4	1.0	4.8	7.4	10.6	1.1	4.1	10.4	12.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	47.9	35.5	45.2	40.2	26.5	31.2	73.1	32.6	22.0	54.2	37.2	42.0
LnGrp LOS	D	D	D	D	C	C	E	C	C	D	D	D
Approach Vol, veh/h		384			355			1719			1667	
Approach Delay, s/veh		42.1			32.0			37.4			41.6	
Approach LOS		D			C			D			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	16.0	41.2	17.4	24.8	19.0	38.2	8.3	33.8				
Change Period (Y+Rc), s	5.0	5.8	5.0	5.8	5.0	5.8	5.0	5.8				
Max Green Setting (Gmax), s	11.0	35.4	15.0	42.0	14.0	32.4	15.0	42.0				
Max Q Clear Time (g_c+I1), s	10.5	27.4	5.2	17.4	14.3	26.0	2.5	14.7				
Green Ext Time (p_c), s	0.1	5.6	0.1	1.6	0.0	4.3	0.0	1.1				
Intersection Summary												
HCM 6th Ctrl Delay			39.1									
HCM 6th LOS			D									

Intersection						
Int Delay, s/veh	8					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	2	15	14	55	227	7
Future Vol, veh/h	2	15	14	55	227	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	78	78	78	78	78	78
Heavy Vehicles, %	7	7	7	7	7	7
Mvmt Flow	3	19	18	71	291	9
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	89	0	-	0	79	54
Stage 1	-	-	-	-	54	-
Stage 2	-	-	-	-	25	-
Critical Hdwy	4.17	-	-	-	6.47	6.27
Critical Hdwy Stg 1	-	-	-	-	5.47	-
Critical Hdwy Stg 2	-	-	-	-	5.47	-
Follow-up Hdwy	2.263	-	-	-	3.563	3.363
Pot Cap-1 Maneuver	1475	-	-	-	911	999
Stage 1	-	-	-	-	956	-
Stage 2	-	-	-	-	985	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1475	-	-	-	909	999
Mov Cap-2 Maneuver	-	-	-	-	909	-
Stage 1	-	-	-	-	954	-
Stage 2	-	-	-	-	985	-
Approach	EB	WB		SB		
HCM Control Delay, s	0.9	0		10.9		
HCM LOS				B		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1475	-	-	-	911	
HCM Lane V/C Ratio	0.002	-	-	-	0.329	
HCM Control Delay (s)	7.4	0	-	-	10.9	
HCM Lane LOS	A	A	-	-	B	
HCM 95th %tile Q(veh)	0	-	-	-	1.4	

HCM 6th Signalized Intersection Summary
52: Mountain House Pkwy & Von Sosten Rd

2030 No Build

PM Peak

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	19	43	656	51	46	536
Future Volume (veh/h)	19	43	656	51	46	536
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	1811	1811	1811	1811	1811	1811
Adj Flow Rate, veh/h	19	44	669	52	47	547
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	6	6	6	6	6	6
Cap, veh/h	690	614	1376	614	341	1376
Arrive On Green	0.40	0.40	0.40	0.40	0.40	0.40
Sat Flow, veh/h	1725	1535	3532	1535	708	3532
Grp Volume(v), veh/h	19	44	669	52	47	547
Grp Sat Flow(s),veh/h/ln	1725	1535	1721	1535	708	1721
Q Serve(g_s), s	0.3	0.8	6.5	0.9	2.4	5.1
Cycle Q Clear(g_c), s	0.3	0.8	6.5	0.9	8.9	5.1
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	690	614	1376	614	341	1376
V/C Ratio(X)	0.03	0.07	0.49	0.08	0.14	0.40
Avail Cap(c_a), veh/h	690	614	1376	614	341	1376
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	8.2	8.3	10.1	8.4	13.4	9.6
Incr Delay (d2), s/veh	0.1	0.2	1.2	0.3	0.8	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	0.1	0.2	2.1	0.3	0.4	1.7
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	8.3	8.6	11.3	8.7	14.2	10.5
LnGrp LOS	A	A	B	A	B	B
Approach Vol, veh/h	63		721			594
Approach Delay, s/veh	8.5		11.1			10.8
Approach LOS	A		B			B
Timer - Assigned Phs	2		6		8	
Phs Duration (G+Y+Rc), s	22.5		22.5		22.5	
Change Period (Y+Rc), s	4.5		4.5		4.5	
Max Green Setting (Gmax), s	18.0		18.0		18.0	
Max Q Clear Time (g_c+l1), s	8.5		10.9		2.8	
Green Ext Time (p_c), s	3.3		2.3		0.1	
Intersection Summary						
HCM 6th Ctrl Delay	10.8					
HCM 6th LOS	B					

HCM 6th Signalized Intersection Summary

53: Mountain House Pkwy & I-205 WB Ramps

2030 No Build
PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↔↔	↔	↔↔		↕↕	↔↔		↕↕↕	↔
Traffic Volume (veh/h)	0	0	0	247	0	420	0	309	32	0	473	86
Future Volume (veh/h)	0	0	0	247	0	420	0	309	32	0	473	86
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach				No		No		No		No		
Adj Sat Flow, veh/h/ln				1752	1752	1752	0	1752	1752	0	1752	1752
Adj Flow Rate, veh/h				263	0	0	0	329	0	0	503	0
Peak Hour Factor				0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %				10	10	10	0	10	10	0	10	10
Cap, veh/h				938	0		0	2226		0	4030	
Arrive On Green				0.19	0.00	0.00	0.00	0.22	0.00	0.00	0.67	0.00
Sat Flow, veh/h				5005	0	2969	0	3416	2613	0	6271	1485
Grp Volume(v), veh/h				263	0	0	0	329	0	0	503	0
Grp Sat Flow(s),veh/h/ln				1668	0	1485	0	1664	1306	0	1507	1485
Q Serve(g_s), s				3.6	0.0	0.0	0.0	6.4	0.0	0.0	2.4	0.0
Cycle Q Clear(g_c), s				3.6	0.0	0.0	0.0	6.4	0.0	0.0	2.4	0.0
Prop In Lane				1.00		1.00	0.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h				938	0		0	2226		0	4030	
V/C Ratio(X)				0.28	0.00		0.00	0.15		0.00	0.12	
Avail Cap(c_a), veh/h				2077	0		0	2226		0	4030	
HCM Platoon Ratio				1.00	1.00	1.00	1.00	0.33	0.33	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh				27.9	0.0	0.0	0.0	12.8	0.0	0.0	4.8	0.0
Incr Delay (d2), s/veh				0.2	0.0	0.0	0.0	0.1	0.0	0.0	0.1	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				1.4	0.0	0.0	0.0	2.3	0.0	0.0	0.6	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				28.0	0.0	0.0	0.0	12.9	0.0	0.0	4.9	0.0
LnGrp LOS				C	A		A	B		A	A	
Approach Vol, veh/h					263			329			503	
Approach Delay, s/veh					28.0			12.9			4.9	
Approach LOS					C			B			A	
Timer - Assigned Phs		2				6		8				
Phs Duration (G+Y+Rc), s		59.2				59.2		20.8				
Change Period (Y+Rc), s		5.7				5.7		5.8				
Max Green Setting (Gmax), s		35.3				35.3		33.2				
Max Q Clear Time (g_c+I1), s		8.4				4.4		5.6				
Green Ext Time (p_c), s		2.2				3.8		1.0				

Intersection Summary

HCM 6th Ctrl Delay	12.9
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	106	1	41	0	0	0	0	235	629	0	393	327
Future Volume (veh/h)	106	1	41	0	0	0	0	235	629	0	393	327
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No						No			No		
Adj Sat Flow, veh/h/ln	1678	1678	1678				0	1678	1678	0	1678	1678
Adj Flow Rate, veh/h	126	0	29				0	247	0	0	414	0
Peak Hour Factor	0.95	0.95	0.95				0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	15	15	15				0	15	15	0	15	15
Cap, veh/h	309	0	138				0	3518		0	3518	
Arrive On Green	0.10	0.00	0.10				0.00	0.77	0.00	0.00	1.00	0.00
Sat Flow, veh/h	3196	0	1422				0	4731	2502	0	4731	1422
Grp Volume(v), veh/h	126	0	29				0	247	0	0	414	0
Grp Sat Flow(s),veh/h/ln	1598	0	1422				0	1527	1251	0	1527	1422
Q Serve(g_s), s	3.0	0.0	1.5				0.0	1.1	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	3.0	0.0	1.5				0.0	1.1	0.0	0.0	0.0	0.0
Prop In Lane	1.00		1.00				0.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h	309	0	138				0	3518		0	3518	
V/C Ratio(X)	0.41	0.00	0.21				0.00	0.07		0.00	0.12	
Avail Cap(c_a), veh/h	915	0	407				0	3518		0	3518	
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	2.00	2.00
Upstream Filter(l)	1.00	0.00	1.00				0.00	1.00	0.00	0.00	0.99	0.00
Uniform Delay (d), s/veh	34.0	0.0	33.3				0.0	2.3	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.3	0.0	0.3				0.0	0.0	0.0	0.0	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	0.0	0.5				0.0	0.2	0.0	0.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	34.3	0.0	33.6				0.0	2.3	0.0	0.0	0.1	0.0
LnGrp LOS	C	A	C				A	A		A	A	
Approach Vol, veh/h	155						247			414		
Approach Delay, s/veh	34.2						2.3			0.1		
Approach LOS	C						A			A		
Timer - Assigned Phs	2			4			6					
Phs Duration (G+Y+Rc), s	67.2			12.8			67.2					
Change Period (Y+Rc), s	5.7			5.1			5.7					
Max Green Setting (Gmax), s	46.3			22.9			46.3					
Max Q Clear Time (g_c+l1), s	3.1			5.0			2.0					
Green Ext Time (p_c), s	1.2			0.0			2.1					

Intersection Summary

HCM 6th Ctrl Delay	7.2
HCM 6th LOS	A

Notes

User approved volume balancing among the lanes for turning movement.

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

HCM 6th Signalized Intersection Summary 28: Isabel Ave & Airway Blvd

2030 Build
AM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	85	157	118	69	153	136	1197	83	319	1169	6
Future Volume (veh/h)	1	85	157	118	69	153	136	1197	83	319	1169	6
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	1767	1767	1767	1767	1767	1767	1767	1767	1767	1767	1767	1767
Adj Flow Rate, veh/h	1	92	171	128	75	166	148	1301	90	347	1271	7
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	9	9	9	9	9	9	9	9	9	9	9	9
Cap, veh/h	7	259	377	255	519	629	177	1685	523	413	1834	10
Arrive On Green	0.00	0.15	0.15	0.15	0.29	0.29	0.11	0.35	0.35	0.13	0.37	0.37
Sat Flow, veh/h	1682	1767	1497	1682	1767	1497	1682	4823	1497	3264	4950	27
Grp Volume(v), veh/h	1	92	171	128	75	166	148	1301	90	347	826	452
Grp Sat Flow(s),veh/h/ln	1682	1767	1497	1682	1767	1497	1682	1608	1497	1632	1608	1762
Q Serve(g_s), s	0.1	4.5	9.2	6.7	3.0	6.9	8.2	23.0	4.0	9.9	20.8	20.8
Cycle Q Clear(g_c), s	0.1	4.5	9.2	6.7	3.0	6.9	8.2	23.0	4.0	9.9	20.8	20.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.02
Lane Grp Cap(c), veh/h	7	259	377	255	519	629	177	1685	523	413	1191	653
V/C Ratio(X)	0.14	0.36	0.45	0.50	0.14	0.26	0.83	0.77	0.17	0.84	0.69	0.69
Avail Cap(c_a), veh/h	282	776	816	264	758	831	194	1685	523	444	1191	653
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	47.4	36.7	30.2	37.2	24.9	18.1	41.9	27.7	21.5	40.8	25.5	25.5
Incr Delay (d2), s/veh	8.1	0.8	0.9	1.5	0.1	0.2	24.4	3.5	0.7	12.8	3.3	6.0
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	0.0	2.0	3.4	2.8	1.3	2.4	4.6	9.1	1.5	4.7	8.2	9.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	55.5	37.6	31.1	38.7	25.0	18.3	66.3	31.2	22.2	53.7	28.8	31.5
LnGrp LOS	E	D	C	D	C	B	E	C	C	D	C	C
Approach Vol, veh/h	264			369			1539			1625		
Approach Delay, s/veh	33.4			26.8			34.0			34.9		
Approach LOS	C			C			C			C		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	17.1	39.2	19.5	19.8	15.1	41.2	5.4	33.9				
Change Period (Y+Rc), s	5.0	5.8	5.0	5.8	5.0	5.8	5.0	5.8				
Max Green Setting (Gmax), s	13.0	33.4	15.0	42.0	11.0	35.4	16.0	41.0				
Max Q Clear Time (g_c+1), s	11.9	25.0	8.7	11.2	10.2	22.8	2.1	8.9				
Green Ext Time (p_c), s	0.2	5.5	0.2	1.1	0.0	6.8	0.0	1.0				
Intersection Summary												
HCM 6th Ctrl Delay	33.6											
HCM 6th LOS	C											

Intersection						
Int Delay, s/veh	1.5					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	14	14	26	308	25	22
Future Vol, veh/h	14	14	26	308	25	22
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	70	70	70	70	70	70
Heavy Vehicles, %	15	15	15	15	15	15
Mvmt Flow	20	20	37	440	36	31
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	477	0	-	0	317	257
Stage 1	-	-	-	-	257	-
Stage 2	-	-	-	-	60	-
Critical Hdwy	4.25	-	-	-	6.55	6.35
Critical Hdwy Stg 1	-	-	-	-	5.55	-
Critical Hdwy Stg 2	-	-	-	-	5.55	-
Follow-up Hdwy	2.335	-	-	-	3.635	3.435
Pot Cap-1 Maneuver	1021	-	-	-	650	751
Stage 1	-	-	-	-	757	-
Stage 2	-	-	-	-	930	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1021	-	-	-	637	751
Mov Cap-2 Maneuver	-	-	-	-	637	-
Stage 1	-	-	-	-	742	-
Stage 2	-	-	-	-	930	-
Approach	EB	WB		SB		
HCM Control Delay, s	4.3	0		10.8		
HCM LOS				B		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1021	-	-	-	686	
HCM Lane V/C Ratio	0.02	-	-	-	0.098	
HCM Control Delay (s)	8.6	0	-	-	10.8	
HCM Lane LOS	A	A	-	-	B	
HCM 95th %tile Q(veh)	0.1	-	-	-	0.3	

HCM 6th Signalized Intersection Summary

52: Mountain House Pkwy & Von Sosten Rd

2030 Build
AM Peak

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	430	32	343	9	24	922
Future Volume (veh/h)	430	32	343	9	24	922
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	1796	1796	1796	1796	1796	1796
Adj Flow Rate, veh/h	457	34	365	10	26	981
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	7	7	7	7	7	7
Cap, veh/h	575	512	1117	498	156	1706
Arrive On Green	0.34	0.34	0.33	0.33	0.09	0.50
Sat Flow, veh/h	1711	1522	3503	1522	1711	3503
Grp Volume(v), veh/h	457	34	365	10	26	981
Grp Sat Flow(s),veh/h/ln	1711	1522	1706	1522	1711	1706
Q Serve(g_s), s	13.3	0.8	4.4	0.2	0.8	11.1
Cycle Q Clear(g_c), s	13.3	0.8	4.4	0.2	0.8	11.1
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	575	512	1117	498	156	1706
V/C Ratio(X)	0.79	0.07	0.33	0.02	0.17	0.57
Avail Cap(c_a), veh/h	575	512	1117	498	156	1706
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	16.5	12.4	13.9	12.5	23.1	9.6
Incr Delay (d2), s/veh	10.8	0.2	0.8	0.1	2.3	1.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.2	0.3	1.6	0.1	0.4	3.6
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	27.3	12.6	14.7	12.6	25.4	11.1
LnGrp LOS	C	B	B	B	C	B
Approach Vol, veh/h	491		375			1007
Approach Delay, s/veh	26.3		14.7			11.4
Approach LOS	C		B			B
Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	9.5	22.5			32.0	23.0
Change Period (Y+Rc), s	4.5	4.5			4.5	4.5
Max Green Setting (Gmax), s	5.0	18.0			27.5	18.5
Max Q Clear Time (g_c+I1), s	2.8	6.4			13.1	15.3
Green Ext Time (p_c), s	0.0	1.8			6.1	0.6
Intersection Summary						
HCM 6th Ctrl Delay			16.0			
HCM 6th LOS			B			

HCM 6th Signalized Intersection Summary

53: Mountain House Pkwy & I-205 WB Ramps

2030 Build
AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↔↔	↔	↔↔		↕↕	↔↔		↕↕↕	↔
Traffic Volume (veh/h)	0	0	0	524	229	663	0	206	100	0	766	560
Future Volume (veh/h)	0	0	0	524	229	663	0	206	100	0	766	560
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach				No		No		No		No		
Adj Sat Flow, veh/h/ln				1752	1752	1752	0	1752	1752	0	1752	1752
Adj Flow Rate, veh/h				558	266	0	0	224	0	0	833	0
Peak Hour Factor				0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %				10	10	10	0	10	10	0	10	10
Cap, veh/h				737	387		0	2115		0	3829	
Arrive On Green				0.22	0.22	0.00	0.00	0.21	0.00	0.00	0.64	0.00
Sat Flow, veh/h				3337	1752	2969	0	3416	2613	0	6271	1485
Grp Volume(v), veh/h				558	266	0	0	224	0	0	833	0
Grp Sat Flow(s),veh/h/ln				1668	1752	1485	0	1664	1306	0	1507	1485
Q Serve(g_s), s				12.5	11.2	0.0	0.0	4.4	0.0	0.0	4.7	0.0
Cycle Q Clear(g_c), s				12.5	11.2	0.0	0.0	4.4	0.0	0.0	4.7	0.0
Prop In Lane				1.00		1.00	0.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h				737	387		0	2115		0	3829	
V/C Ratio(X)				0.76	0.69		0.00	0.11		0.00	0.22	
Avail Cap(c_a), veh/h				1134	596		0	2115		0	3829	
HCM Platoon Ratio				1.00	1.00	1.00	1.00	0.33	0.33	1.00	1.00	1.00
Upstream Filter(I)				1.00	1.00	0.00	0.00	1.00	0.00	0.00	0.44	0.00
Uniform Delay (d), s/veh				29.2	28.6	0.0	0.0	13.2	0.0	0.0	6.2	0.0
Incr Delay (d2), s/veh				1.6	2.2	0.0	0.0	0.1	0.0	0.0	0.1	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				5.0	4.8	0.0	0.0	1.5	0.0	0.0	1.3	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				30.8	30.8	0.0	0.0	13.3	0.0	0.0	6.2	0.0
LnGrp LOS				C	C		A	B		A	A	
Approach Vol, veh/h					824			224			833	
Approach Delay, s/veh					30.8			13.3			6.2	
Approach LOS					C			B			A	
Timer - Assigned Phs		2				6		8				
Phs Duration (G+Y+Rc), s		56.5				56.5		23.5				
Change Period (Y+Rc), s		5.7				5.7		5.8				
Max Green Setting (Gmax), s		41.3				41.3		27.2				
Max Q Clear Time (g_c+I1), s		6.4				6.7		14.5				
Green Ext Time (p_c), s		1.5				6.9		3.2				

Intersection Summary

HCM 6th Ctrl Delay	17.8
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

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

HCM 6th Signalized Intersection Summary

54: International Pkwy/Mountain House Pkwy & I-205 EB Ramps

2030 Build
AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	44	4	53	0	0	0	0	264	323	0	1040	251
Future Volume (veh/h)	44	4	53	0	0	0	0	264	323	0	1040	251
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No						No			No		
Adj Sat Flow, veh/h/ln	1604	1604	1604				0	1604	1604	0	1604	1604
Adj Flow Rate, veh/h	68	0	38				0	284	0	0	1118	0
Peak Hour Factor	0.93	0.93	0.93				0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	20	20	20				0	20	20	0	20	20
Cap, veh/h	276	0	123				0	3391		0	3391	
Arrive On Green	0.09	0.00	0.09				0.00	0.77	0.00	0.00	1.00	0.00
Sat Flow, veh/h	3054	0	1359				0	4522	2392	0	4522	1359
Grp Volume(v), veh/h	68	0	38				0	284	0	0	1118	0
Grp Sat Flow(s),veh/h/ln	1527	0	1359				0	1459	1196	0	1459	1359
Q Serve(g_s), s	1.7	0.0	2.1				0.0	1.3	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	1.7	0.0	2.1				0.0	1.3	0.0	0.0	0.0	0.0
Prop In Lane	1.00		1.00				0.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h	276	0	123				0	3391		0	3391	
V/C Ratio(X)	0.25	0.00	0.31				0.00	0.08		0.00	0.33	
Avail Cap(c_a), veh/h	836	0	372				0	3391		0	3391	
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	0.00	0.00	0.94	0.00
Uniform Delay (d), s/veh	33.8	0.0	34.0				0.0	2.2	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.2	0.0	0.5				0.0	0.0	0.0	0.0	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.0	0.7				0.0	0.2	0.0	0.0	0.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	34.0	0.0	34.6				0.0	2.2	0.0	0.0	0.2	0.0
LnGrp LOS	C	A	C				A	A		A	A	
Approach Vol, veh/h	106						284			1118		
Approach Delay, s/veh	34.2						2.2			0.2		
Approach LOS	C						A			A		
Timer - Assigned Phs	2			4			6					
Phs Duration (G+Y+Rc), s	67.7			12.3			67.7					
Change Period (Y+Rc), s	5.7			5.1			5.7					
Max Green Setting (Gmax), s	47.3			21.9			47.3					
Max Q Clear Time (g_c+l1), s	3.3			4.1			2.0					
Green Ext Time (p_c), s	1.4			0.0			6.8					

Intersection Summary

HCM 6th Ctrl Delay	3.0
HCM 6th LOS	A

Notes

User approved volume balancing among the lanes for turning movement.

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

HCM 6th Signalized Intersection Summary

301: Mountain House Pkwy & MH Station Entrance/OMF

2030 Build
AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↩	↩↩	↩	↩	↩	↩	↩↩	↩	↩	↩↩	↩
Traffic Volume (veh/h)	0	0	0	1	2	2	515	354	20	10	1325	27
Future Volume (veh/h)	0	0	0	1	2	2	515	354	20	10	1325	27
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1796	1796	1796	1796	1796	1796	1796	1796	1796	1796	1796	1796
Adj Flow Rate, veh/h	0	0	0	1	2	2	560	385	22	11	1440	29
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	7	7	7	7	7	7	7	7	7	7	7	7
Cap, veh/h	0	12	17	77	12	10	592	2924	1304	22	1787	797
Arrive On Green	0.00	0.00	0.00	0.01	0.01	0.01	0.35	0.86	0.86	0.01	0.52	0.52
Sat Flow, veh/h	0	1796	2679	1711	1796	1522	1711	3413	1522	1711	3413	1522
Grp Volume(v), veh/h	0	0	0	1	2	2	560	385	22	11	1440	29
Grp Sat Flow(s),veh/h/ln	0	1796	1340	1711	1796	1522	1711	1706	1522	1711	1706	1522
Q Serve(g_s), s	0.0	0.0	0.0	0.1	0.1	0.1	34.7	2.0	0.2	0.7	37.9	1.0
Cycle Q Clear(g_c), s	0.0	0.0	0.0	0.1	0.1	0.1	34.7	2.0	0.2	0.7	37.9	1.0
Prop In Lane	0.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	0	12	17	77	12	10	592	2924	1304	22	1787	797
V/C Ratio(X)	0.00	0.00	0.00	0.01	0.17	0.20	0.95	0.13	0.02	0.49	0.81	0.04
Avail Cap(c_a), veh/h	0	296	442	348	296	251	666	2924	1304	78	1787	797
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)	0.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	0.0	0.0	53.9	53.9	53.9	34.7	1.3	1.1	53.5	21.4	12.6
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.1	6.9	9.9	21.2	0.1	0.0	16.0	4.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.0	0.0	0.1	0.1	17.6	0.4	0.0	0.4	15.4	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.0	0.0	54.0	60.8	63.8	55.8	1.4	1.2	69.5	25.4	12.7
LnGrp LOS	A	A	A	D	E	E	E	A	A	E	C	B
Approach Vol, veh/h	0			5			967			1480		
Approach Delay, s/veh	0.0			60.6			32.9			25.5		
Approach LOS				E			C			C		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.9	98.0		5.2	42.3	61.6		5.2				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	93.5			18.0	42.5	56.0		18.0				
Max Q Clear Time (g_c+I_2), s	4.0			0.0	36.7	39.9		2.1				
Green Ext Time (p_c), s	0.0	3.0		0.0	1.1	9.8		0.0				

Intersection Summary

HCM 6th Ctrl Delay	28.5
HCM 6th LOS	C

HCM 6th Signalized Intersection Summary 28: Isabel Ave & Airway Blvd

2030 Build
PM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	8	106	216	88	52	305	203	1306	72	277	1226	19
Future Volume (veh/h)	8	106	216	88	52	305	203	1306	72	277	1226	19
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1841	1841	1841	1841	1841	1841	1841	1841	1841	1841	1841	1841
Adj Flow Rate, veh/h	9	116	237	97	57	335	223	1435	79	304	1347	21
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	4	4	4	4	4	4	4	4	4	4	4	4
Cap, veh/h	58	334	283	245	530	449	245	1777	551	374	1649	26
Arrive On Green	0.03	0.18	0.18	0.14	0.29	0.29	0.14	0.35	0.35	0.11	0.32	0.32
Sat Flow, veh/h	1753	1841	1560	1753	1841	1560	1753	5025	1560	3401	5097	79
Grp Volume(v), veh/h	9	116	237	97	57	335	223	1435	79	304	885	483
Grp Sat Flow(s),veh/h/ln	1753	1841	1560	1753	1841	1560	1753	1675	1560	1700	1675	1826
Q Serve(g_s), s	0.5	5.5	14.7	5.0	2.3	19.5	12.6	25.9	3.5	8.8	24.3	24.3
Cycle Q Clear(g_c), s	0.5	5.5	14.7	5.0	2.3	19.5	12.6	25.9	3.5	8.8	24.3	24.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.04
Lane Grp Cap(c), veh/h	58	334	283	245	530	449	245	1777	551	374	1084	591
V/C Ratio(X)	0.15	0.35	0.84	0.40	0.11	0.75	0.91	0.81	0.14	0.81	0.82	0.82
Avail Cap(c_a), veh/h	263	772	654	263	772	654	245	1777	551	374	1084	591
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	47.0	35.8	39.6	39.2	26.2	32.3	42.4	29.3	22.0	43.6	31.1	31.1
Incr Delay (d2), s/veh	1.2	0.6	6.5	1.0	0.1	2.7	34.4	4.1	0.5	12.9	6.8	11.9
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	0.2	2.5	6.1	2.2	1.0	7.6	7.7	10.8	1.3	4.3	10.6	12.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	48.3	36.4	46.1	40.3	26.3	35.1	76.9	33.4	22.6	56.5	38.0	43.0
LnGrp LOS	D	D	D	D	C	D	E	C	C	E	D	D
Approach Vol, veh/h	362			489			1737			1672		
Approach Delay, s/veh	43.1			35.1			38.5			42.8		
Approach LOS	D			D			D			D		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	16.0	41.2	19.0	23.9	19.0	38.2	8.3	34.6				
Change Period (Y+Rc), s	5.0	5.8	5.0	5.8	5.0	5.8	5.0	5.8				
Max Green Setting (Gmax), s	11.0	35.4	15.0	42.0	14.0	32.4	15.0	42.0				
Max Q Clear Time (g_c+I1), s	10.8	27.9	7.0	16.7	14.6	26.3	2.5	21.5				
Green Ext Time (p_c), s	0.0	5.4	0.1	1.5	0.0	4.1	0.0	1.4				
Intersection Summary												
HCM 6th Ctrl Delay	40.2											
HCM 6th LOS	D											

Intersection

Int Delay, s/veh 8.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	2	15	14	55	274	7
Future Vol, veh/h	2	15	14	55	274	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	78	78	78	78	78	78
Heavy Vehicles, %	7	7	7	7	7	7
Mvmt Flow	3	19	18	71	351	9

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	89	0	0 79 54
Stage 1	-	-	- 54 -
Stage 2	-	-	- 25 -
Critical Hdwy	4.17	-	- 6.47 6.27
Critical Hdwy Stg 1	-	-	- 5.47 -
Critical Hdwy Stg 2	-	-	- 5.47 -
Follow-up Hdwy	2.263	-	- 3.563 3.363
Pot Cap-1 Maneuver	1475	-	- 911 999
Stage 1	-	-	- 956 -
Stage 2	-	-	- 985 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1475	-	- 909 999
Mov Cap-2 Maneuver	-	-	- 909 -
Stage 1	-	-	- 954 -
Stage 2	-	-	- 985 -

Approach	EB	WB	SB
HCM Control Delay, s	0.9	0	11.5
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1475	-	-	-	911
HCM Lane V/C Ratio	0.002	-	-	-	0.395
HCM Control Delay (s)	7.4	0	-	-	11.5
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	1.9

HCM 6th Signalized Intersection Summary

52: Mountain House Pkwy & Von Sosten Rd

2030 Build
PM Peak

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	19	43	683	51	45	535
Future Volume (veh/h)	19	43	683	51	45	535
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	1811	1811	1811	1811	1811	1811
Adj Flow Rate, veh/h	19	44	697	52	46	546
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	6	6	6	6	6	6
Cap, veh/h	690	614	1376	614	331	1376
Arrive On Green	0.40	0.40	0.40	0.40	0.40	0.40
Sat Flow, veh/h	1725	1535	3532	1535	690	3532
Grp Volume(v), veh/h	19	44	697	52	46	546
Grp Sat Flow(s),veh/h/ln	1725	1535	1721	1535	690	1721
Q Serve(g_s), s	0.3	0.8	6.9	0.9	2.4	5.1
Cycle Q Clear(g_c), s	0.3	0.8	6.9	0.9	9.3	5.1
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	690	614	1376	614	331	1376
V/C Ratio(X)	0.03	0.07	0.51	0.08	0.14	0.40
Avail Cap(c_a), veh/h	690	614	1376	614	331	1376
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	8.2	8.3	10.2	8.4	13.6	9.6
Incr Delay (d2), s/veh	0.1	0.2	1.3	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	0.1	0.2	2.3	0.3	0.4	1.7
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	8.3	8.6	11.5	8.7	14.5	10.5
LnGrp LOS	A	A	B	A	B	B
Approach Vol, veh/h	63		749			592
Approach Delay, s/veh	8.5		11.3			10.8
Approach LOS	A		B			B
Timer - Assigned Phs	2		6		8	
Phs Duration (G+Y+Rc), s	22.5		22.5		22.5	
Change Period (Y+Rc), s	4.5		4.5		4.5	
Max Green Setting (Gmax), s	18.0		18.0		18.0	
Max Q Clear Time (g_c+l1), s	8.9		11.3		2.8	
Green Ext Time (p_c), s	3.3		2.2		0.1	
Intersection Summary						
HCM 6th Ctrl Delay			11.0			
HCM 6th LOS			B			

HCM 6th Signalized Intersection Summary

53: Mountain House Pkwy & I-205 WB Ramps

2030 Build
PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↔↔	↔	↔↔		↕↕	↔↔		↕↕↕	↔
Traffic Volume (veh/h)	0	0	0	247	0	419	0	309	31	0	1014	86
Future Volume (veh/h)	0	0	0	247	0	419	0	309	31	0	1014	86
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach				No		No		No		No		
Adj Sat Flow, veh/h/ln				1752	1752	1752	0	1752	1752	0	1752	1752
Adj Flow Rate, veh/h				263	0	0	0	329	0	0	1079	0
Peak Hour Factor				0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %				10	10	10	0	10	10	0	10	10
Cap, veh/h				938	0	0	0	2226	0	0	4030	0
Arrive On Green				0.19	0.00	0.00	0.00	0.22	0.00	0.00	0.67	0.00
Sat Flow, veh/h				5005	0	2969	0	3416	2613	0	6271	1485
Grp Volume(v), veh/h				263	0	0	0	329	0	0	1079	0
Grp Sat Flow(s),veh/h/ln				1668	0	1485	0	1664	1306	0	1507	1485
Q Serve(g_s), s				3.6	0.0	0.0	0.0	6.4	0.0	0.0	5.8	0.0
Cycle Q Clear(g_c), s				3.6	0.0	0.0	0.0	6.4	0.0	0.0	5.8	0.0
Prop In Lane				1.00		1.00	0.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h				938	0	0	0	2226	0	0	4030	0
V/C Ratio(X)				0.28	0.00	0.00	0.00	0.15	0.00	0.00	0.27	0.00
Avail Cap(c_a), veh/h				2015	0	0	0	2226	0	0	4030	0
HCM Platoon Ratio				1.00	1.00	1.00	1.00	0.33	0.33	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.90	0.00
Uniform Delay (d), s/veh				27.9	0.0	0.0	0.0	12.8	0.0	0.0	5.3	0.0
Incr Delay (d2), s/veh				0.2	0.0	0.0	0.0	0.1	0.0	0.0	0.1	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				1.4	0.0	0.0	0.0	2.3	0.0	0.0	1.5	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				28.0	0.0	0.0	0.0	12.9	0.0	0.0	5.5	0.0
LnGrp LOS				C	A		A	B		A	A	
Approach Vol, veh/h				263				329			1079	
Approach Delay, s/veh				28.0				12.9			5.5	
Approach LOS				C				B			A	
Timer - Assigned Phs	2				6			8				
Phs Duration (G+Y+Rc), s	59.2				59.2			20.8				
Change Period (Y+Rc), s	5.7				5.7			5.8				
Max Green Setting (Gmax), s	36.3				36.3			32.2				
Max Q Clear Time (g_c+I1), s	8.4				7.8			5.6				
Green Ext Time (p_c), s	2.3				9.1			1.0				

Intersection Summary

HCM 6th Ctrl Delay	10.5
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

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

HCM 6th Signalized Intersection Summary

54: International Pkwy/Mountain House Pkwy & I-205 EB Ramps

2030 Build

PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	106	1	41	0	0	0	0	234	628	0	421	839
Future Volume (veh/h)	106	1	41	0	0	0	0	234	628	0	421	839
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No						No			No		
Adj Sat Flow, veh/h/ln	1678	1678	1678				0	1678	1678	0	1678	1678
Adj Flow Rate, veh/h	126	0	29				0	246	0	0	443	0
Peak Hour Factor	0.95	0.95	0.95				0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	15	15	15				0	15	15	0	15	15
Cap, veh/h	309	0	138				0	3518		0	3518	
Arrive On Green	0.10	0.00	0.10				0.00	0.77	0.00	0.00	1.00	0.00
Sat Flow, veh/h	3196	0	1422				0	4731	2502	0	4731	1422
Grp Volume(v), veh/h	126	0	29				0	246	0	0	443	0
Grp Sat Flow(s),veh/h/ln	1598	0	1422				0	1527	1251	0	1527	1422
Q Serve(g_s), s	3.0	0.0	1.5				0.0	1.1	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	3.0	0.0	1.5				0.0	1.1	0.0	0.0	0.0	0.0
Prop In Lane	1.00		1.00				0.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h	309	0	138				0	3518		0	3518	
V/C Ratio(X)	0.41	0.00	0.21				0.00	0.07		0.00	0.13	
Avail Cap(c_a), veh/h	699	0	311				0	3518		0	3518	
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.67	1.67
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	0.00	0.00	0.97	0.00
Uniform Delay (d), s/veh	34.0	0.0	33.3				0.0	2.3	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.3	0.0	0.3				0.0	0.0	0.0	0.0	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	0.0	0.5				0.0	0.2	0.0	0.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	34.3	0.0	33.6				0.0	2.3	0.0	0.0	0.1	0.0
LnGrp LOS	C	A	C				A	A		A	A	
Approach Vol, veh/h	155						246			443		
Approach Delay, s/veh	34.2						2.3			0.1		
Approach LOS	C						A			A		
Timer - Assigned Phs	2			4			6					
Phs Duration (G+Y+Rc), s	67.2			12.8			67.2					
Change Period (Y+Rc), s	5.7			5.1			5.7					
Max Green Setting (Gmax), s	51.7			17.5			51.7					
Max Q Clear Time (g_c+l1), s	3.1			5.0			2.0					
Green Ext Time (p_c), s	1.2			0.0			2.3					

Intersection Summary

HCM 6th Ctrl Delay	7.0
HCM 6th LOS	A

Notes

User approved volume balancing among the lanes for turning movement.

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

HCM 6th Signalized Intersection Summary 301: Mountain House Pkwy & MH Station Entrance/OMF

2030 Build
PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗↘	↖	↕	↗	↖	↗↗	↗	↖	↗↗	↖
Traffic Volume (veh/h)	29	0	542	20	0	10	0	728	3	2	553	0
Future Volume (veh/h)	29	0	542	20	0	10	0	728	3	2	553	0
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	1811	1811	1811	1811	1811	1811	1811	1811	1811	1811	1811	1811
Adj Flow Rate, veh/h	32	0	589	22	0	11	0	791	3	2	601	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	6	6	6	6	6	6	6	6	6	6	6	6
Cap, veh/h	548	0	761	554	510	432	4	1423	635	5	1779	793
Arrive On Green	0.28	0.00	0.28	0.28	0.00	0.28	0.00	0.41	0.41	0.00	0.52	0.00
Sat Flow, veh/h	1373	0	2701	1373	1811	1535	1725	3441	1535	1725	3441	1535
Grp Volume(v), veh/h	32	0	589	22	0	11	0	791	3	2	601	0
Grp Sat Flow(s),veh/h/ln	1373	0	1351	1373	1811	1535	1725	1721	1535	1725	1721	1535
Q Serve(g_s), s	0.8	0.0	9.0	0.0	0.0	0.2	0.0	7.8	0.1	0.1	4.6	0.0
Cycle Q Clear(g_c), s	0.8	0.0	9.0	0.4	0.0	0.2	0.0	7.8	0.1	0.1	4.6	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	548	0	761	554	510	432	4	1423	635	5	1779	793
V/C Ratio(X)	0.06	0.00	0.77	0.04	0.00	0.03	0.00	0.56	0.00	0.42	0.34	0.00
Avail Cap(c_a), veh/h	713	0	1087	719	729	618	193	1423	635	193	1779	793
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	11.8	0.0	14.8	11.7	0.0	11.6	0.0	10.0	7.7	22.3	6.3	0.0
Incr Delay (d2), s/veh	0.0	0.0	2.2	0.0	0.0	0.0	0.0	1.6	0.0	50.4	0.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	2.5	0.1	0.0	0.1	0.0	2.6	0.0	0.1	1.3	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	11.9	0.0	17.0	11.7	0.0	11.6	0.0	11.6	7.7	72.7	6.8	0.0
LnGrp LOS	B	A	B	B	A	B	A	B	A	E	A	A
Approach Vol, veh/h	621		33			794			603			
Approach Delay, s/veh	16.7		11.7			11.5			7.1			
Approach LOS	B		B			B			A			
Timer - Assigned Phs	1	2	4		5	6	8					
Phs Duration (G+Y+Rc), s	4.6	23.0	17.1		0.0	27.6	17.1					
Change Period (Y+Rc), s	4.5	4.5	4.5		4.5	4.5	4.5					
Max Green Setting (Gmax), s	18.5	18.5	18.0		5.0	18.5	18.0					
Max Q Clear Time (g_c+I),s	9.8	9.8	11.0		0.0	6.6	2.4					
Green Ext Time (p_c), s	0.0	3.5	1.6		0.0	3.2	0.0					
Intersection Summary												
HCM 6th Ctrl Delay			11.8									
HCM 6th LOS			B									

HCM 6th Signalized Intersection Summary 28: Isabel Ave & Airway Blvd

2040 No Build
AM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	101	168	196	111	262	136	1197	67	234	1150	6
Future Volume (veh/h)	1	101	168	196	111	262	136	1197	67	234	1150	6
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	1767	1767	1767	1767	1767	1767	1767	1767	1767	1767	1767	1767
Adj Flow Rate, veh/h	1	106	177	206	117	276	143	1260	71	246	1211	6
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, %	9	9	9	9	9	9	9	9	9	9	9	9
Cap, veh/h	7	285	408	289	580	681	188	1410	438	412	1522	8
Arrive On Green	0.00	0.16	0.16	0.17	0.33	0.33	0.11	0.29	0.29	0.13	0.31	0.31
Sat Flow, veh/h	1682	1767	1497	1682	1767	1497	1682	4823	1497	3264	4953	25
Grp Volume(v), veh/h	1	106	177	206	117	276	143	1260	71	246	786	431
Grp Sat Flow(s),veh/h/ln	1682	1767	1497	1682	1767	1497	1682	1608	1497	1632	1608	1762
Q Serve(g_s), s	0.1	4.7	8.5	10.0	4.1	10.7	7.2	21.7	3.1	6.2	19.5	19.5
Cycle Q Clear(g_c), s	0.1	4.7	8.5	10.0	4.1	10.7	7.2	21.7	3.1	6.2	19.5	19.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.01
Lane Grp Cap(c), veh/h	7	285	408	289	580	681	188	1410	438	412	988	541
V/C Ratio(X)	0.14	0.37	0.43	0.71	0.20	0.41	0.76	0.89	0.16	0.60	0.80	0.80
Avail Cap(c_a), veh/h	310	854	891	291	834	896	194	1410	438	413	988	541
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.1	32.5	26.1	34.0	21.0	15.8	37.5	29.4	22.8	35.9	27.6	27.6
Incr Delay (d2), s/veh	8.1	0.8	0.7	8.0	0.2	0.4	15.8	9.0	0.8	2.3	6.6	11.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	2.0	3.0	4.7	1.7	3.5	3.7	9.2	1.2	2.6	8.1	9.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	51.2	33.3	26.8	42.0	21.2	16.2	53.3	38.4	23.6	38.2	34.2	39.1
LnGrp LOS	D	C	C	D	C	B	D	D	C	D	C	D
Approach Vol, veh/h	284			599			1474			1463		
Approach Delay, s/veh	29.3			26.0			39.2			36.3		
Approach LOS	C			C			D			D		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	16.0	31.2	19.9	19.8	14.7	32.5	5.4	34.3				
Change Period (Y+Rc), s	5.0	5.8	5.0	5.8	5.0	5.8	5.0	5.8				
Max Green Setting (Gmax), s	11.0	25.4	15.0	42.0	10.0	26.4	16.0	41.0				
Max Q Clear Time (g_c+l1), s	8.2	23.7	12.0	10.5	9.2	21.5	2.1	12.7				
Green Ext Time (p_c), s	0.2	1.3	0.2	1.2	0.0	3.2	0.0	1.7				
Intersection Summary												
HCM 6th Ctrl Delay	35.3											
HCM 6th LOS	D											

Intersection						
Int Delay, s/veh	1.6					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	17	14	27	365	28	30
Future Vol, veh/h	17	14	27	365	28	30
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	15	15	15	15	15	15
Mvmt Flow	18	15	28	384	29	32
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	412	0	-	0	271	220
Stage 1	-	-	-	-	220	-
Stage 2	-	-	-	-	51	-
Critical Hdwy	4.25	-	-	-	6.55	6.35
Critical Hdwy Stg 1	-	-	-	-	5.55	-
Critical Hdwy Stg 2	-	-	-	-	5.55	-
Follow-up Hdwy	2.335	-	-	-	3.635	3.435
Pot Cap-1 Maneuver	1080	-	-	-	691	788
Stage 1	-	-	-	-	787	-
Stage 2	-	-	-	-	939	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1080	-	-	-	679	788
Mov Cap-2 Maneuver	-	-	-	-	679	-
Stage 1	-	-	-	-	774	-
Stage 2	-	-	-	-	939	-
Approach	EB	WB		SB		
HCM Control Delay, s	4.6	0		10.4		
HCM LOS				B		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1080	-	-	-	731	
HCM Lane V/C Ratio	0.017	-	-	-	0.084	
HCM Control Delay (s)	8.4	0	-	-	10.4	
HCM Lane LOS	A	A	-	-	B	
HCM 95th %tile Q(veh)	0.1	-	-	-	0.3	

HCM 6th Signalized Intersection Summary
52: Mountain House Pkwy & Von Sosten Rd

2040 No Build
AM Peak

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	468	35	373	10	26	974
Future Volume (veh/h)	468	35	373	10	26	974
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	1796	1796	1796	1796	1796	1796
Adj Flow Rate, veh/h	493	37	393	11	27	1025
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	7	7	7	7	7	7
Cap, veh/h	575	512	1117	498	156	1706
Arrive On Green	0.34	0.34	0.33	0.33	0.09	0.50
Sat Flow, veh/h	1711	1522	3503	1522	1711	3503
Grp Volume(v), veh/h	493	37	393	11	27	1025
Grp Sat Flow(s),veh/h/ln	1711	1522	1706	1522	1711	1706
Q Serve(g_s), s	14.8	0.9	4.8	0.3	0.8	11.8
Cycle Q Clear(g_c), s	14.8	0.9	4.8	0.3	0.8	11.8
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	575	512	1117	498	156	1706
V/C Ratio(X)	0.86	0.07	0.35	0.02	0.17	0.60
Avail Cap(c_a), veh/h	575	512	1117	498	156	1706
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	17.0	12.4	14.1	12.5	23.1	9.8
Incr Delay (d2), s/veh	15.1	0.3	0.9	0.1	2.4	1.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.4	0.3	1.8	0.1	0.4	3.8
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	32.2	12.7	14.9	12.6	25.5	11.4
LnGrp LOS	C	B	B	B	C	B
Approach Vol, veh/h	530		404			1052
Approach Delay, s/veh	30.8		14.9			11.8
Approach LOS	C		B			B
Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	9.5	22.5			32.0	23.0
Change Period (Y+Rc), s	4.5	4.5			4.5	4.5
Max Green Setting (Gmax), s	5.0	18.0			27.5	18.5
Max Q Clear Time (g_c+l1), s	2.8	6.8			13.8	16.8
Green Ext Time (p_c), s	0.0	1.9			6.2	0.4
Intersection Summary						
HCM 6th Ctrl Delay			17.5			
HCM 6th LOS			B			

HCM 6th Signalized Intersection Summary

53: Mountain House Pkwy & I-205 WB Ramps

2040 No Build
AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↰	↰	↰		↱	↱		↱	↱
Traffic Volume (veh/h)	0	0	0	570	249	190	0	195	109	0	834	609
Future Volume (veh/h)	0	0	0	570	249	190	0	195	109	0	834	609
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach				No			No			No		
Adj Sat Flow, veh/h/ln				1752	1752	1752	0	1752	1752	0	1752	1752
Adj Flow Rate, veh/h				587	280	0	0	205	0	0	878	0
Peak Hour Factor				0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %				10	10	10	0	10	10	0	10	10
Cap, veh/h				769	404		0	2083		0	3771	
Arrive On Green				0.23	0.23	0.00	0.00	0.21	0.00	0.00	0.63	0.00
Sat Flow, veh/h				3337	1752	2969	0	3416	2613	0	6271	1485
Grp Volume(v), veh/h				587	280	0	0	205	0	0	878	0
Grp Sat Flow(s),veh/h/ln				1668	1752	1485	0	1664	1306	0	1507	1485
Q Serve(g_s), s				13.1	11.7	0.0	0.0	4.0	0.0	0.0	5.1	0.0
Cycle Q Clear(g_c), s				13.1	11.7	0.0	0.0	4.0	0.0	0.0	5.1	0.0
Prop In Lane				1.00		1.00	0.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h				769	404		0	2083		0	3771	
V/C Ratio(X)				0.76	0.69		0.00	0.10		0.00	0.23	
Avail Cap(c_a), veh/h				1143	600		0	2083		0	3771	
HCM Platoon Ratio				1.00	1.00	1.00	1.00	0.33	0.33	1.00	1.00	1.00
Upstream Filter(I)				1.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh				28.7	28.2	0.0	0.0	13.5	0.0	0.0	6.6	0.0
Incr Delay (d2), s/veh				1.8	2.1	0.0	0.0	0.1	0.0	0.0	0.1	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				5.3	5.0	0.0	0.0	1.4	0.0	0.0	1.4	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				30.5	30.3	0.0	0.0	13.6	0.0	0.0	6.7	0.0
LnGrp LOS				C	C		A	B		A	A	
Approach Vol, veh/h					867			205			878	
Approach Delay, s/veh					30.5			13.6			6.7	
Approach LOS					C			B			A	
Timer - Assigned Phs		2				6		8				
Phs Duration (G+Y+Rc), s		55.8				55.8		24.2				
Change Period (Y+Rc), s		5.7				5.7		5.8				
Max Green Setting (Gmax), s		41.1				41.1		27.4				
Max Q Clear Time (g_c+I1), s		6.0				7.1		15.1				
Green Ext Time (p_c), s		1.4				7.4		3.3				

Intersection Summary

HCM 6th Ctrl Delay	18.0
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

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

HCM 6th Signalized Intersection Summary

54: International Pkwy/Mountain House Pkwy & I-205 EB Ramps

2040 No Build
AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	48	4	58	0	0	0	0	258	352	0	1131	274
Future Volume (veh/h)	48	4	58	0	0	0	0	258	352	0	1131	274
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No						No			No		
Adj Sat Flow, veh/h/ln	1604	1604	1604				0	1604	1604	0	1604	1604
Adj Flow Rate, veh/h	73	0	40				0	272	0	0	1191	0
Peak Hour Factor	0.95	0.95	0.95				0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	20	20	20				0	20	20	0	20	20
Cap, veh/h	281	0	125				0	3385		0	3385	
Arrive On Green	0.09	0.00	0.09				0.00	0.77	0.00	0.00	1.00	0.00
Sat Flow, veh/h	3054	0	1359				0	4522	2392	0	4522	1359
Grp Volume(v), veh/h	73	0	40				0	272	0	0	1191	0
Grp Sat Flow(s),veh/h/ln	1527	0	1359				0	1459	1196	0	1459	1359
Q Serve(g_s), s	1.8	0.0	2.2				0.0	1.2	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	1.8	0.0	2.2				0.0	1.2	0.0	0.0	0.0	0.0
Prop In Lane	1.00		1.00				0.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h	281	0	125				0	3385		0	3385	
V/C Ratio(X)	0.26	0.00	0.32				0.00	0.08		0.00	0.35	
Avail Cap(c_a), veh/h	798	0	355				0	3385		0	3385	
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	2.00	2.00
Upstream Filter(l)	1.00	0.00	1.00				0.00	1.00	0.00	0.00	0.92	0.00
Uniform Delay (d), s/veh	33.8	0.0	34.0				0.0	2.2	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.2	0.0	0.5				0.0	0.0	0.0	0.0	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.0	0.7				0.0	0.2	0.0	0.0	0.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	34.0	0.0	34.5				0.0	2.2	0.0	0.0	0.3	0.0
LnGrp LOS	C	A	C				A	A		A	A	
Approach Vol, veh/h	113						272			1191		
Approach Delay, s/veh	34.2						2.2			0.3		
Approach LOS	C						A			A		
Timer - Assigned Phs	2			4			6					
Phs Duration (G+Y+Rc), s	67.5			12.5			67.5					
Change Period (Y+Rc), s	5.7			5.1			5.7					
Max Green Setting (Gmax), s	48.3			20.9			48.3					
Max Q Clear Time (g_c+l1), s	3.2			4.2			2.0					
Green Ext Time (p_c), s	1.4			0.0			7.5					

Intersection Summary

HCM 6th Ctrl Delay	3.0
HCM 6th LOS	A

Notes

User approved volume balancing among the lanes for turning movement.

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

HCM 6th Signalized Intersection Summary 28: Isabel Ave & Airway Blvd

2040 No Build
PM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	8	146	227	101	67	215	295	1345	182	337	1226	19
Future Volume (veh/h)	8	146	227	101	67	215	295	1345	182	337	1226	19
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1841	1841	1841	1841	1841	1841	1841	1841	1841	1841	1841	1841
Adj Flow Rate, veh/h	8	154	239	106	71	226	311	1416	192	355	1291	20
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, %	4	4	4	4	4	4	4	4	4	4	4	4
Cap, veh/h	52	333	282	225	515	437	337	1897	589	411	1560	24
Arrive On Green	0.03	0.18	0.18	0.13	0.28	0.28	0.19	0.38	0.38	0.12	0.31	0.31
Sat Flow, veh/h	1753	1841	1560	1753	1841	1560	1753	5025	1560	3401	5098	79
Grp Volume(v), veh/h	8	154	239	106	71	226	311	1416	192	355	848	463
Grp Sat Flow(s),veh/h/ln	1753	1841	1560	1753	1841	1560	1753	1675	1560	1700	1675	1827
Q Serve(g_s), s	0.5	8.4	16.7	6.3	3.2	13.7	19.6	27.5	9.8	11.5	26.5	26.5
Cycle Q Clear(g_c), s	0.5	8.4	16.7	6.3	3.2	13.7	19.6	27.5	9.8	11.5	26.5	26.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.04
Lane Grp Cap(c), veh/h	52	333	282	225	515	437	337	1897	589	411	1025	559
V/C Ratio(X)	0.15	0.46	0.85	0.47	0.14	0.52	0.92	0.75	0.33	0.86	0.83	0.83
Avail Cap(c_a), veh/h	234	688	583	234	688	583	343	1897	589	424	1025	559
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	53.2	41.2	44.5	45.4	30.3	34.1	44.6	30.3	24.8	48.5	36.3	36.3
Incr Delay (d2), s/veh	1.4	1.0	6.9	1.5	0.1	1.0	29.4	2.7	1.5	16.3	7.7	13.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	3.9	6.9	2.8	1.5	5.3	11.2	11.3	3.9	5.8	11.8	13.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	54.6	42.2	51.5	47.0	30.4	35.0	73.9	33.1	26.3	64.8	43.9	49.5
LnGrp LOS	D	D	D	D	C	D	E	C	C	E	D	D
Approach Vol, veh/h		401			403			1919			1666	
Approach Delay, s/veh		47.9			37.4			39.0			49.9	
Approach LOS		D			D			D			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	18.6	48.2	19.5	26.1	26.6	40.2	8.3	37.3				
Change Period (Y+Rc), s	5.0	5.8	5.0	5.8	5.0	5.8	5.0	5.8				
Max Green Setting (Gmax), s	14.0	42.4	15.0	42.0	22.0	34.4	15.0	42.0				
Max Q Clear Time (g_c+I1), s	13.5	29.5	8.3	18.7	21.6	28.5	2.5	15.7				
Green Ext Time (p_c), s	0.1	8.4	0.1	1.7	0.0	3.9	0.0	1.2				
Intersection Summary												
HCM 6th Ctrl Delay			43.8									
HCM 6th LOS			D									

Intersection						
Int Delay, s/veh	9.2					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	3	27	15	55	342	20
Future Vol, veh/h	3	27	15	55	342	20
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	7	7	7	7	7	7
Mvmt Flow	3	28	16	58	360	21
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	74	0	-	0	79	45
Stage 1	-	-	-	-	45	-
Stage 2	-	-	-	-	34	-
Critical Hdwy	4.17	-	-	-	6.47	6.27
Critical Hdwy Stg 1	-	-	-	-	5.47	-
Critical Hdwy Stg 2	-	-	-	-	5.47	-
Follow-up Hdwy	2.263	-	-	-	3.563	3.363
Pot Cap-1 Maneuver	1494	-	-	-	911	1011
Stage 1	-	-	-	-	965	-
Stage 2	-	-	-	-	976	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1494	-	-	-	909	1011
Mov Cap-2 Maneuver	-	-	-	-	909	-
Stage 1	-	-	-	-	963	-
Stage 2	-	-	-	-	976	-
Approach	EB	WB		SB		
HCM Control Delay, s	0.7	0		11.7		
HCM LOS				B		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1494	-	-	-	914	
HCM Lane V/C Ratio	0.002	-	-	-	0.417	
HCM Control Delay (s)	7.4	0	-	-	11.7	
HCM Lane LOS	A	A	-	-	B	
HCM 95th %tile Q(veh)	0	-	-	-	2.1	

HCM 6th Signalized Intersection Summary
52: Mountain House Pkwy & Von Sosten Rd

2040 No Build

PM Peak

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	21	47	711	56	50	581
Future Volume (veh/h)	21	47	711	56	50	581
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	1811	1811	1811	1811	1811	1811
Adj Flow Rate, veh/h	21	48	726	57	51	593
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	6	6	6	6	6	6
Cap, veh/h	690	614	1376	614	320	1376
Arrive On Green	0.40	0.40	0.40	0.40	0.40	0.40
Sat Flow, veh/h	1725	1535	3532	1535	669	3532
Grp Volume(v), veh/h	21	48	726	57	51	593
Grp Sat Flow(s),veh/h/ln	1725	1535	1721	1535	669	1721
Q Serve(g_s), s	0.3	0.9	7.2	1.0	2.8	5.6
Cycle Q Clear(g_c), s	0.3	0.9	7.2	1.0	10.0	5.6
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	690	614	1376	614	320	1376
V/C Ratio(X)	0.03	0.08	0.53	0.09	0.16	0.43
Avail Cap(c_a), veh/h	690	614	1376	614	320	1376
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	8.2	8.4	10.3	8.4	14.1	9.8
Incr Delay (d2), s/veh	0.1	0.2	1.4	0.3	1.1	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.3	2.4	0.3	0.5	1.8
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	8.3	8.6	11.7	8.7	15.1	10.8
LnGrp LOS	A	A	B	A	B	B
Approach Vol, veh/h	69		783			644
Approach Delay, s/veh	8.5		11.5			11.1
Approach LOS	A		B			B
Timer - Assigned Phs	2		6		8	
Phs Duration (G+Y+Rc), s	22.5		22.5		22.5	
Change Period (Y+Rc), s	4.5		4.5		4.5	
Max Green Setting (Gmax), s	18.0		18.0		18.0	
Max Q Clear Time (g_c+l1), s	9.2		12.0		2.9	
Green Ext Time (p_c), s	3.4		2.2		0.1	
Intersection Summary						
HCM 6th Ctrl Delay			11.2			
HCM 6th LOS			B			

HCM 6th Signalized Intersection Summary

53: Mountain House Pkwy & I-205 WB Ramps

2040 No Build
PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↔↔	↔	↔↔		↕↕	↔↔		↕↕↕	↔
Traffic Volume (veh/h)	0	0	0	268	0	456	0	335	35	0	513	94
Future Volume (veh/h)	0	0	0	268	0	456	0	335	35	0	513	94
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach				No		No		No		No		
Adj Sat Flow, veh/h/ln				1752	1752	1752	0	1752	1752	0	1752	1752
Adj Flow Rate, veh/h				282	0	0	0	353	0	0	540	0
Peak Hour Factor				0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %				10	10	10	0	10	10	0	10	10
Cap, veh/h				938	0		0	2226		0	4030	
Arrive On Green				0.19	0.00	0.00	0.00	0.22	0.00	0.00	0.67	0.00
Sat Flow, veh/h				5005	0	2969	0	3416	2613	0	6271	1485
Grp Volume(v), veh/h				282	0	0	0	353	0	0	540	0
Grp Sat Flow(s),veh/h/ln				1668	0	1485	0	1664	1306	0	1507	1485
Q Serve(g_s), s				3.9	0.0	0.0	0.0	6.9	0.0	0.0	2.6	0.0
Cycle Q Clear(g_c), s				3.9	0.0	0.0	0.0	6.9	0.0	0.0	2.6	0.0
Prop In Lane				1.00		1.00	0.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h				938	0		0	2226		0	4030	
V/C Ratio(X)				0.30	0.00		0.00	0.16		0.00	0.13	
Avail Cap(c_a), veh/h				2077	0		0	2226		0	4030	
HCM Platoon Ratio				1.00	1.00	1.00	1.00	0.33	0.33	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh				28.0	0.0	0.0	0.0	13.0	0.0	0.0	4.8	0.0
Incr Delay (d2), s/veh				0.2	0.0	0.0	0.0	0.2	0.0	0.0	0.1	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				1.5	0.0	0.0	0.0	2.5	0.0	0.0	0.7	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				28.2	0.0	0.0	0.0	13.1	0.0	0.0	4.9	0.0
LnGrp LOS				C	A		A	B		A	A	
Approach Vol, veh/h					282			353			540	
Approach Delay, s/veh					28.2			13.1			4.9	
Approach LOS					C			B			A	
Timer - Assigned Phs		2				6		8				
Phs Duration (G+Y+Rc), s		59.2				59.2		20.8				
Change Period (Y+Rc), s		5.7				5.7		5.8				
Max Green Setting (Gmax), s		35.3				35.3		33.2				
Max Q Clear Time (g_c+I1), s		8.9				4.6		5.9				
Green Ext Time (p_c), s		2.4				4.1		1.1				

Intersection Summary

HCM 6th Ctrl Delay 13.0
HCM 6th LOS B

Notes

User approved volume balancing among the lanes for turning movement.

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

HCM 6th Signalized Intersection Summary

54: International Pkwy/Mountain House Pkwy & I-205 EB Ramps

2040 No Build
PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations								  	 		  	 
Traffic Volume (veh/h)	115	1	45	0	0	0	0	255	682	0	426	355
Future Volume (veh/h)	115	1	45	0	0	0	0	255	682	0	426	355
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No						No			No		
Adj Sat Flow, veh/h/ln	1678	1678	1678				0	1678	1678	0	1678	1678
Adj Flow Rate, veh/h	136	0	32				0	268	0	0	448	0
Peak Hour Factor	0.95	0.95	0.95				0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	15	15	15				0	15	15	0	15	15
Cap, veh/h	312	0	139				0	3515		0	3515	
Arrive On Green	0.10	0.00	0.10				0.00	0.77	0.00	0.00	1.00	0.00
Sat Flow, veh/h	3196	0	1422				0	4731	2502	0	4731	1422
Grp Volume(v), veh/h	136	0	32				0	268	0	0	448	0
Grp Sat Flow(s),veh/h/ln	1598	0	1422				0	1527	1251	0	1527	1422
Q Serve(g_s), s	3.2	0.0	1.7				0.0	1.2	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	3.2	0.0	1.7				0.0	1.2	0.0	0.0	0.0	0.0
Prop In Lane	1.00		1.00				0.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h	312	0	139				0	3515		0	3515	
V/C Ratio(X)	0.44	0.00	0.23				0.00	0.08		0.00	0.13	
Avail Cap(c_a), veh/h	875	0	389				0	3515		0	3515	
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	2.00	2.00
Upstream Filter(l)	1.00	0.00	1.00				0.00	1.00	0.00	0.00	0.99	0.00
Uniform Delay (d), s/veh	34.0	0.0	33.3				0.0	2.3	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.4	0.0	0.3				0.0	0.0	0.0	0.0	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	0.0	0.6				0.0	0.2	0.0	0.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	34.4	0.0	33.6				0.0	2.3	0.0	0.0	0.1	0.0
LnGrp LOS	C	A	C				A	A		A	A	
Approach Vol, veh/h	168						268			448		
Approach Delay, s/veh	34.2						2.3			0.1		
Approach LOS	C						A			A		
Timer - Assigned Phs	2			4			6					
Phs Duration (G+Y+Rc), s	67.1			12.9			67.1					
Change Period (Y+Rc), s	5.7			5.1			5.7					
Max Green Setting (Gmax), s	47.3			21.9			47.3					
Max Q Clear Time (g_c+l1), s	3.2			5.2			2.0					
Green Ext Time (p_c), s	1.3			0.0			2.3					
Intersection Summary												
HCM 6th Ctrl Delay			7.3									
HCM 6th LOS			A									

Notes

User approved volume balancing among the lanes for turning movement.

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

HCM 6th Signalized Intersection Summary 28: Isabel Ave & Airway Blvd

2040 Build
AM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	100	191	246	113	227	139	1197	126	430	1184	6
Future Volume (veh/h)	1	100	191	246	113	227	139	1197	126	430	1184	6
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	1767	1767	1767	1767	1767	1767	1767	1767	1767	1767	1767	1767
Adj Flow Rate, veh/h	1	105	201	259	119	239	146	1260	133	453	1246	6
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, %	9	9	9	9	9	9	9	9	9	9	9	9
Cap, veh/h	7	260	375	288	555	707	173	1537	477	515	1850	9
Arrive On Green	0.00	0.15	0.15	0.17	0.31	0.31	0.10	0.32	0.32	0.16	0.37	0.37
Sat Flow, veh/h	1682	1767	1497	1682	1767	1497	1682	4823	1497	3264	4954	24
Grp Volume(v), veh/h	1	105	201	259	119	239	146	1260	133	453	809	443
Grp Sat Flow(s),veh/h/ln	1682	1767	1497	1682	1767	1497	1682	1608	1497	1632	1608	1762
Q Serve(g_s), s	0.1	5.7	12.3	15.9	5.2	10.6	9.0	25.4	7.0	14.3	22.2	22.2
Cycle Q Clear(g_c), s	0.1	5.7	12.3	15.9	5.2	10.6	9.0	25.4	7.0	14.3	22.2	22.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.01
Lane Grp Cap(c), veh/h	7	260	375	288	555	707	173	1537	477	515	1201	658
V/C Ratio(X)	0.14	0.40	0.54	0.90	0.21	0.34	0.84	0.82	0.28	0.88	0.67	0.67
Avail Cap(c_a), veh/h	255	703	750	319	770	889	191	1537	477	557	1201	658
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.3	40.8	34.2	42.8	26.6	17.5	46.5	33.1	26.9	43.4	27.7	27.7
Incr Delay (d2), s/veh	8.1	1.0	1.2	25.2	0.2	0.3	25.5	5.0	1.5	14.3	3.0	5.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	2.5	4.5	8.6	2.2	3.6	5.0	10.4	2.7	6.8	8.9	10.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	60.4	41.8	35.4	68.0	26.8	17.8	72.0	38.1	28.3	57.7	30.7	33.1
LnGrp LOS	E	D	D	E	C	B	E	D	C	E	C	C
Approach Vol, veh/h	307			617			1539			1705		
Approach Delay, s/veh	37.7			40.6			40.5			38.5		
Approach LOS	D			D			D			D		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	21.6	39.4	23.1	21.3	15.9	45.2	5.5	38.9				
Change Period (Y+Rc), s	5.0	5.8	5.0	5.8	5.0	5.8	5.0	5.8				
Max Green Setting (Gmax), s	18.0	33.4	20.0	42.0	12.0	39.4	16.0	46.0				
Max Q Clear Time (g_c+I1), s	16.3	27.4	17.9	14.3	11.0	24.2	2.1	12.6				
Green Ext Time (p_c), s	0.3	4.1	0.2	1.3	0.0	7.5	0.0	1.6				
Intersection Summary												
HCM 6th Ctrl Delay	39.5											
HCM 6th LOS	D											

Intersection						
Int Delay, s/veh	1.4					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	19	14	26	469	30	32
Future Vol, veh/h	19	14	26	469	30	32
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	15	15	15	15	15	15
Mvmt Flow	20	15	27	494	32	34
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	521	0	-	0	329	274
Stage 1	-	-	-	-	274	-
Stage 2	-	-	-	-	55	-
Critical Hdwy	4.25	-	-	-	6.55	6.35
Critical Hdwy Stg 1	-	-	-	-	5.55	-
Critical Hdwy Stg 2	-	-	-	-	5.55	-
Follow-up Hdwy	2.335	-	-	-	3.635	3.435
Pot Cap-1 Maneuver	982	-	-	-	640	735
Stage 1	-	-	-	-	743	-
Stage 2	-	-	-	-	935	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	982	-	-	-	627	735
Mov Cap-2 Maneuver	-	-	-	-	627	-
Stage 1	-	-	-	-	727	-
Stage 2	-	-	-	-	935	-
Approach	EB	WB		SB		
HCM Control Delay, s	5	0		10.9		
HCM LOS				B		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	982	-	-	-	678	
HCM Lane V/C Ratio	0.02	-	-	-	0.096	
HCM Control Delay (s)	8.7	0	-	-	10.9	
HCM Lane LOS	A	A	-	-	B	
HCM 95th %tile Q(veh)	0.1	-	-	-	0.3	

HCM 6th Signalized Intersection Summary

52: Mountain House Pkwy & Von Sosten Rd

2040 Build
AM Peak

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	466	35	372	10	26	1035
Future Volume (veh/h)	466	35	372	10	26	1035
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	1796	1796	1796	1796	1796	1796
Adj Flow Rate, veh/h	491	37	392	11	27	1089
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	7	7	7	7	7	7
Cap, veh/h	575	512	1117	498	156	1706
Arrive On Green	0.34	0.34	0.33	0.33	0.09	0.50
Sat Flow, veh/h	1711	1522	3503	1522	1711	3503
Grp Volume(v), veh/h	491	37	392	11	27	1089
Grp Sat Flow(s),veh/h/ln	1711	1522	1706	1522	1711	1706
Q Serve(g_s), s	14.7	0.9	4.8	0.3	0.8	12.9
Cycle Q Clear(g_c), s	14.7	0.9	4.8	0.3	0.8	12.9
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	575	512	1117	498	156	1706
V/C Ratio(X)	0.85	0.07	0.35	0.02	0.17	0.64
Avail Cap(c_a), veh/h	575	512	1117	498	156	1706
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	17.0	12.4	14.1	12.5	23.1	10.1
Incr Delay (d2), s/veh	14.9	0.3	0.9	0.1	2.4	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	7.4	0.3	1.8	0.1	0.4	4.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	31.8	12.7	14.9	12.6	25.5	11.9
LnGrp LOS	C	B	B	B	C	B
Approach Vol, veh/h	528		403			1116
Approach Delay, s/veh	30.5		14.9			12.3
Approach LOS	C		B			B
Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	9.5	22.5			32.0	23.0
Change Period (Y+Rc), s	4.5	4.5			4.5	4.5
Max Green Setting (Gmax), s	5.0	18.0			27.5	18.5
Max Q Clear Time (g_c+I1), s	2.8	6.8			14.9	16.7
Green Ext Time (p_c), s	0.0	1.9			6.2	0.4
Intersection Summary						
HCM 6th Ctrl Delay			17.5			
HCM 6th LOS			B			

HCM 6th Signalized Intersection Summary

53: Mountain House Pkwy & I-205 WB Ramps

2040 Build
AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↔↔	↔	↔↔		↑↑	↔↔		↑↑↑	↔
Traffic Volume (veh/h)	0	0	0	568	248	1367	0	260	109	0	830	607
Future Volume (veh/h)	0	0	0	568	248	1367	0	260	109	0	830	607
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach				No			No			No		
Adj Sat Flow, veh/h/ln				1752	1752	1752	0	1752	1752	0	1752	1752
Adj Flow Rate, veh/h				585	279	0	0	274	0	0	874	0
Peak Hour Factor				0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %				10	10	10	0	10	10	0	10	10
Cap, veh/h				795	417		0	2057		0	3725	
Arrive On Green				0.24	0.24	0.00	0.00	0.20	0.00	0.00	0.62	0.00
Sat Flow, veh/h				3337	1752	2969	0	3416	2613	0	6271	1485
Grp Volume(v), veh/h				585	279	0	0	274	0	0	874	0
Grp Sat Flow(s),veh/h/ln				1668	1752	1485	0	1664	1306	0	1507	1485
Q Serve(g_s), s				13.0	11.5	0.0	0.0	5.4	0.0	0.0	5.2	0.0
Cycle Q Clear(g_c), s				13.0	11.5	0.0	0.0	5.4	0.0	0.0	5.2	0.0
Prop In Lane				1.00		1.00	0.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h				795	417		0	2057		0	3725	
V/C Ratio(X)				0.74	0.67		0.00	0.13		0.00	0.23	
Avail Cap(c_a), veh/h				1635	858		0	2057		0	3725	
HCM Platoon Ratio				1.00	1.00	1.00	1.00	0.33	0.33	1.00	1.00	1.00
Upstream Filter(I)				1.00	1.00	0.00	0.00	1.00	0.00	0.00	0.09	0.00
Uniform Delay (d), s/veh				28.1	27.6	0.0	0.0	14.3	0.0	0.0	6.8	0.0
Incr Delay (d2), s/veh				1.3	1.9	0.0	0.0	0.1	0.0	0.0	0.0	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				5.1	4.9	0.0	0.0	2.0	0.0	0.0	1.4	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				29.5	29.5	0.0	0.0	14.4	0.0	0.0	6.8	0.0
LnGrp LOS				C	C		A	B		A	A	
Approach Vol, veh/h					864			274			874	
Approach Delay, s/veh					29.5			14.4			6.8	
Approach LOS					C			B			A	
Timer - Assigned Phs		2				6		8				
Phs Duration (G+Y+Rc), s		55.1				55.1		24.9				
Change Period (Y+Rc), s		5.7				5.7		5.8				
Max Green Setting (Gmax), s		29.3				29.3		39.2				
Max Q Clear Time (g_c+I1), s		7.4				7.2		15.0				
Green Ext Time (p_c), s		1.7				6.5		4.1				

Intersection Summary

HCM 6th Ctrl Delay	17.6
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

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

HCM 6th Signalized Intersection Summary

54: International Pkwy/Mountain House Pkwy & I-205 EB Ramps

2040 Build

AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	48	4	58	0	0	0	0	322	350	0	1127	272
Future Volume (veh/h)	48	4	58	0	0	0	0	322	350	0	1127	272
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No						No			No		
Adj Sat Flow, veh/h/ln	1604	1604	1604				0	1604	1604	0	1604	1604
Adj Flow Rate, veh/h	73	0	40				0	339	0	0	1186	0
Peak Hour Factor	0.95	0.95	0.95				0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	20	20	20				0	20	20	0	20	20
Cap, veh/h	281	0	125				0	3385		0	3385	
Arrive On Green	0.09	0.00	0.09				0.00	0.77	0.00	0.00	1.00	0.00
Sat Flow, veh/h	3054	0	1359				0	4522	2392	0	4522	1359
Grp Volume(v), veh/h	73	0	40				0	339	0	0	1186	0
Grp Sat Flow(s),veh/h/ln	1527	0	1359				0	1459	1196	0	1459	1359
Q Serve(g_s), s	1.8	0.0	2.2				0.0	1.5	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	1.8	0.0	2.2				0.0	1.5	0.0	0.0	0.0	0.0
Prop In Lane	1.00		1.00				0.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h	281	0	125				0	3385		0	3385	
V/C Ratio(X)	0.26	0.00	0.32				0.00	0.10		0.00	0.35	
Avail Cap(c_a), veh/h	798	0	355				0	3385		0	3385	
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	0.00	0.00	0.93	0.00
Uniform Delay (d), s/veh	33.8	0.0	34.0				0.0	2.2	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.2	0.0	0.5				0.0	0.1	0.0	0.0	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.0	0.7				0.0	0.3	0.0	0.0	0.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	34.0	0.0	34.5				0.0	2.3	0.0	0.0	0.3	0.0
LnGrp LOS	C	A	C				A	A		A	A	
Approach Vol, veh/h	113						339			1186		
Approach Delay, s/veh	34.2						2.3			0.3		
Approach LOS	C						A			A		
Timer - Assigned Phs	2			4			6					
Phs Duration (G+Y+Rc), s	67.5			12.5			67.5					
Change Period (Y+Rc), s	5.7			5.1			5.7					
Max Green Setting (Gmax), s	48.3			20.9			48.3					
Max Q Clear Time (g_c+l1), s	3.5			4.2			2.0					
Green Ext Time (p_c), s	1.7			0.0			7.4					

Intersection Summary

HCM 6th Ctrl Delay	3.0
HCM 6th LOS	A

Notes

User approved volume balancing among the lanes for turning movement.

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

HCM 6th Signalized Intersection Summary 301: Mountain House Pkwy & MH Station Entrance/OMF

2040 Build
AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↰	↱	↰	↱	↱	↰	↱	↱	↰	↱	↱
Traffic Volume (veh/h)	0	0	0	1	2	2	1242	384	20	10	1436	66
Future Volume (veh/h)	0	0	0	1	2	2	1242	384	20	10	1436	66
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1796	1796	1796	1796	1796	1796	1796	1796	1796	1796	1796	1796
Adj Flow Rate, veh/h	0	0	0	1	2	2	1307	404	21	11	1512	69
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, %	7	7	7	7	7	7	7	7	7	7	7	7
Cap, veh/h	0	12	17	75	12	10	888	2938	1310	22	1211	540
Arrive On Green	0.00	0.00	0.00	0.01	0.01	0.01	0.52	0.86	0.86	0.01	0.35	0.35
Sat Flow, veh/h	0	1796	2679	1711	1796	1522	1711	3413	1522	1711	3413	1522
Grp Volume(v), veh/h	0	0	0	1	2	2	1307	404	21	11	1512	69
Grp Sat Flow(s),veh/h/ln	0	1796	1340	1711	1796	1522	1711	1706	1522	1711	1706	1522
Q Serve(g_s), s	0.0	0.0	0.0	0.1	0.1	0.1	58.5	2.1	0.2	0.7	40.0	3.5
Cycle Q Clear(g_c), s	0.0	0.0	0.0	0.1	0.1	0.1	58.5	2.1	0.2	0.7	40.0	3.5
Prop In Lane	0.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	0	12	17	75	12	10	888	2938	1310	22	1211	540
V/C Ratio(X)	0.00	0.00	0.00	0.01	0.17	0.20	1.47	0.14	0.02	0.50	1.25	0.13
Avail Cap(c_a), veh/h	0	287	428	337	287	243	888	2938	1310	76	1211	540
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)	0.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	0.0	0.0	55.7	55.7	55.7	27.1	1.2	1.1	55.3	36.4	24.6
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.1	6.9	9.9	218.6	0.1	0.0	16.2	118.8	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.0	0.0	0.1	0.1	76.4	0.4	0.0	0.4	36.3	1.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.0	0.0	55.7	62.6	65.6	245.7	1.3	1.1	71.5	155.2	25.1
LnGrp LOS	A	A	A	E	E	E	F	A	A	E	F	C
Approach Vol, veh/h	0				5				1732			
Approach Delay, s/veh	0.0				62.5				185.8			
Approach LOS					E				F			
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	101.5			5.2	63.0	44.5		5.2				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	93.5			18.0	58.5	40.0		18.0				
Max Q Clear Time (g_c+I_2), s	4.1			0.0	60.5	42.0		2.1				
Green Ext Time (p_c), s	0.0	3.1		0.0	0.0	0.0		0.0				
Intersection Summary												
HCM 6th Ctrl Delay	168.0											
HCM 6th LOS	F											

HCM 6th Signalized Intersection Summary

28: Isabel Ave & Airway Blvd

2040 Build
PM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	8	143	221	149	66	422	302	1358	181	344	1226	19
Future Volume (veh/h)	8	143	221	149	66	422	302	1358	181	344	1226	19
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1841	1841	1841	1841	1841	1841	1841	1841	1841	1841	1841	1841
Adj Flow Rate, veh/h	8	151	233	157	69	444	318	1429	191	362	1291	20
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, %	4	4	4	4	4	4	4	4	4	4	4	4
Cap, veh/h	51	381	323	223	561	476	343	1801	559	417	1456	23
Arrive On Green	0.03	0.21	0.21	0.13	0.30	0.30	0.20	0.36	0.36	0.12	0.29	0.29
Sat Flow, veh/h	1753	1841	1560	1753	1841	1560	1753	5025	1560	3401	5098	79
Grp Volume(v), veh/h	8	151	233	157	69	444	318	1429	191	362	848	463
Grp Sat Flow(s),veh/h/ln	1753	1841	1560	1753	1841	1560	1753	1675	1560	1700	1675	1827
Q Serve(g_s), s	0.5	8.3	16.3	10.0	3.2	32.3	20.9	29.8	10.5	12.2	28.3	28.3
Cycle Q Clear(g_c), s	0.5	8.3	16.3	10.0	3.2	32.3	20.9	29.8	10.5	12.2	28.3	28.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.04
Lane Grp Cap(c), veh/h	51	381	323	223	561	476	343	1801	559	417	957	522
V/C Ratio(X)	0.16	0.40	0.72	0.70	0.12	0.93	0.93	0.79	0.34	0.87	0.89	0.89
Avail Cap(c_a), veh/h	225	661	560	225	661	560	345	1801	559	436	957	522
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	55.4	40.1	43.3	48.9	29.4	39.5	46.2	33.6	27.4	50.4	40.0	40.0
Incr Delay (d2), s/veh	1.4	0.7	3.1	9.4	0.1	21.0	30.6	3.7	1.7	16.3	11.9	19.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	3.8	6.5	5.0	1.4	15.0	11.9	12.6	4.2	6.1	13.1	15.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	56.7	40.8	46.3	58.3	29.5	60.5	76.8	37.3	29.1	66.7	51.9	59.5
LnGrp LOS	E	D	D	E	C	E	E	D	C	E	D	E
Approach Vol, veh/h		392			670			1938			1673	
Approach Delay, s/veh		44.4			56.8			43.0			57.2	
Approach LOS		D			E			D			E	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	19.3	47.7	19.9	30.0	27.9	39.2	8.4	41.5				
Change Period (Y+Rc), s	5.0	5.8	5.0	5.8	5.0	5.8	5.0	5.8				
Max Green Setting (Gmax), s	15.0	41.4	15.0	42.0	23.0	33.4	15.0	42.0				
Max Q Clear Time (g_c+I1), s	14.2	31.8	12.0	18.3	22.9	30.3	2.5	34.3				
Green Ext Time (p_c), s	0.1	6.7	0.1	1.6	0.0	2.2	0.0	1.3				
Intersection Summary												
HCM 6th Ctrl Delay			50.2									
HCM 6th LOS			D									

Intersection						
Int Delay, s/veh	10.9					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	3	27	15	55	437	17
Future Vol, veh/h	3	27	15	55	437	17
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	7	7	7	7	7	7
Mvmt Flow	3	28	16	58	460	18
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	74	0	-	0	79	45
Stage 1	-	-	-	-	45	-
Stage 2	-	-	-	-	34	-
Critical Hdwy	4.17	-	-	-	6.47	6.27
Critical Hdwy Stg 1	-	-	-	-	5.47	-
Critical Hdwy Stg 2	-	-	-	-	5.47	-
Follow-up Hdwy	2.263	-	-	-	3.563	3.363
Pot Cap-1 Maneuver	1494	-	-	-	911	1011
Stage 1	-	-	-	-	965	-
Stage 2	-	-	-	-	976	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1494	-	-	-	909	1011
Mov Cap-2 Maneuver	-	-	-	-	909	-
Stage 1	-	-	-	-	963	-
Stage 2	-	-	-	-	976	-
Approach	EB	WB		SB		
HCM Control Delay, s	0.7	0		13.2		
HCM LOS				B		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1494	-	-	-	912	
HCM Lane V/C Ratio	0.002	-	-	-	0.524	
HCM Control Delay (s)	7.4	0	-	-	13.2	
HCM Lane LOS	A	A	-	-	B	
HCM 95th %tile Q(veh)	0	-	-	-	3.1	

HCM 6th Signalized Intersection Summary

52: Mountain House Pkwy & Von Sosten Rd

2040 Build
PM Peak

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	21	47	777	56	49	579
Future Volume (veh/h)	21	47	777	56	49	579
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	1811	1811	1811	1811	1811	1811
Adj Flow Rate, veh/h	21	48	793	57	50	591
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	6	6	6	6	6	6
Cap, veh/h	690	614	1376	614	298	1376
Arrive On Green	0.40	0.40	0.40	0.40	0.40	0.40
Sat Flow, veh/h	1725	1535	3532	1535	628	3532
Grp Volume(v), veh/h	21	48	793	57	50	591
Grp Sat Flow(s),veh/h/ln	1725	1535	1721	1535	628	1721
Q Serve(g_s), s	0.3	0.9	8.1	1.0	3.0	5.6
Cycle Q Clear(g_c), s	0.3	0.9	8.1	1.0	11.1	5.6
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	690	614	1376	614	298	1376
V/C Ratio(X)	0.03	0.08	0.58	0.09	0.17	0.43
Avail Cap(c_a), veh/h	690	614	1376	614	298	1376
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	8.2	8.4	10.5	8.4	14.9	9.8
Incr Delay (d2), s/veh	0.1	0.2	1.8	0.3	1.2	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.3	2.7	0.3	0.5	1.8
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	8.3	8.6	12.3	8.7	16.1	10.8
LnGrp LOS	A	A	B	A	B	B
Approach Vol, veh/h	69		850			641
Approach Delay, s/veh	8.5		12.0			11.2
Approach LOS	A		B			B
Timer - Assigned Phs	2		6		8	
Phs Duration (G+Y+Rc), s	22.5		22.5		22.5	
Change Period (Y+Rc), s	4.5		4.5		4.5	
Max Green Setting (Gmax), s	18.0		18.0		18.0	
Max Q Clear Time (g_c+l1), s	10.1		13.1		2.9	
Green Ext Time (p_c), s	3.4		1.9		0.1	
Intersection Summary						
HCM 6th Ctrl Delay			11.5			
HCM 6th LOS			B			

HCM 6th Signalized Intersection Summary

53: Mountain House Pkwy & I-205 WB Ramps

2040 Build
PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↔↔	↔	↔↔		↕↕	↔↔		↕↕↕	↔
Traffic Volume (veh/h)	0	0	0	267	0	454	0	334	34	0	1818	93
Future Volume (veh/h)	0	0	0	267	0	454	0	334	34	0	1818	93
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach				No		No		No		No		
Adj Sat Flow, veh/h/ln				1752	1752	1752	0	1752	1752	0	1752	1752
Adj Flow Rate, veh/h				281	0	0	0	352	0	0	1914	0
Peak Hour Factor				0.95	0.95	0.95	0.95	0.95	0.90	0.95	0.95	0.95
Percent Heavy Veh, %				10	10	10	0	10	10	0	10	10
Cap, veh/h				938	0		0	2226		0	4030	
Arrive On Green				0.19	0.00	0.00	0.00	0.22	0.00	0.00	0.67	0.00
Sat Flow, veh/h				5005	0	2969	0	3416	2613	0	6271	1485
Grp Volume(v), veh/h				281	0	0	0	352	0	0	1914	0
Grp Sat Flow(s),veh/h/ln				1668	0	1485	0	1664	1306	0	1507	1485
Q Serve(g_s), s				3.9	0.0	0.0	0.0	6.8	0.0	0.0	12.3	0.0
Cycle Q Clear(g_c), s				3.9	0.0	0.0	0.0	6.8	0.0	0.0	12.3	0.0
Prop In Lane				1.00		1.00	0.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h				938	0		0	2226		0	4030	
V/C Ratio(X)				0.30	0.00		0.00	0.16		0.00	0.47	
Avail Cap(c_a), veh/h				1389	0		0	2226		0	4030	
HCM Platoon Ratio				1.00	1.00	1.00	1.00	0.33	0.33	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.57	0.00
Uniform Delay (d), s/veh				28.0	0.0	0.0	0.0	13.0	0.0	0.0	6.4	0.0
Incr Delay (d2), s/veh				0.2	0.0	0.0	0.0	0.2	0.0	0.0	0.2	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				1.5	0.0	0.0	0.0	2.5	0.0	0.0	3.2	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				28.2	0.0	0.0	0.0	13.1	0.0	0.0	6.7	0.0
LnGrp LOS				C	A		A	B		A	A	
Approach Vol, veh/h					281			352			1914	
Approach Delay, s/veh					28.2			13.1			6.7	
Approach LOS					C			B			A	
Timer - Assigned Phs		2				6		8				
Phs Duration (G+Y+Rc), s		59.2				59.2		20.8				
Change Period (Y+Rc), s		5.7				5.7		5.8				
Max Green Setting (Gmax), s		46.3				46.3		22.2				
Max Q Clear Time (g_c+I1), s		8.8				14.3		5.9				
Green Ext Time (p_c), s		2.6				19.8		0.9				

Intersection Summary

HCM 6th Ctrl Delay	9.9
HCM 6th LOS	A

Notes

User approved volume balancing among the lanes for turning movement.

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

HCM 6th Signalized Intersection Summary

54: International Pkwy/Mountain House Pkwy & I-205 EB Ramps

2040 Build
PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	115	1	44	0	0	0	0	253	679	0	494	1591
Future Volume (veh/h)	115	1	44	0	0	0	0	253	679	0	494	1591
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No						No			No		
Adj Sat Flow, veh/h/ln	1678	1678	1678				0	1678	1678	0	1678	1678
Adj Flow Rate, veh/h	136	0	31				0	266	0	0	520	0
Peak Hour Factor	0.95	0.95	0.95				0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	15	15	15				0	15	15	0	15	15
Cap, veh/h	312	0	139				0	3515		0	3515	
Arrive On Green	0.10	0.00	0.10				0.00	0.77	0.00	0.00	1.00	0.00
Sat Flow, veh/h	3196	0	1422				0	4731	2502	0	4731	1422
Grp Volume(v), veh/h	136	0	31				0	266	0	0	520	0
Grp Sat Flow(s),veh/h/ln	1598	0	1422				0	1527	1251	0	1527	1422
Q Serve(g_s), s	3.2	0.0	1.6				0.0	1.1	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	3.2	0.0	1.6				0.0	1.1	0.0	0.0	0.0	0.0
Prop In Lane	1.00		1.00				0.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h	312	0	139				0	3515		0	3515	
V/C Ratio(X)	0.44	0.00	0.22				0.00	0.08		0.00	0.15	
Avail Cap(c_a), veh/h	695	0	309				0	3515		0	3515	
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.67	1.67
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	0.00	0.00	0.88	0.00
Uniform Delay (d), s/veh	34.0	0.0	33.3				0.0	2.3	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.4	0.0	0.3				0.0	0.0	0.0	0.0	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	0.0	0.6				0.0	0.2	0.0	0.0	0.0	0.0
Unsig. Movement Delay, s/veh							0.00			0.00		
LnGrp Delay(d),s/veh	34.4	0.0	33.6				0.0	2.3	0.0	0.0	0.1	0.0
LnGrp LOS	C	A	C				A	A	A	A	A	A
Approach Vol, veh/h	167						981			2195		
Approach Delay, s/veh	34.2						0.6			0.0		
Approach LOS	C						A			A		
Timer - Assigned Phs	2			4			6					
Phs Duration (G+Y+Rc), s	67.1			12.9			67.1					
Change Period (Y+Rc), s	5.7			5.1			5.7					
Max Green Setting (Gmax), s	51.8			17.4			51.8					
Max Q Clear Time (g_c+I1), s	3.1			5.2			2.0					
Green Ext Time (p_c), s	1.3			0.0			2.7					

Intersection Summary

HCM 6th Ctrl Delay	1.9
HCM 6th LOS	A

Notes

User approved volume balancing among the lanes for turning movement.

Unsignalized Delay for [NBR, SBR] is included in calculations of the approach delay and intersection delay.

HCM 6th Signalized Intersection Summary

301: Mountain House Pkwy & MH Station Entrance/OMF

2040 Build
PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗↘	↖	↕	↗	↖	↗↗	↖	↖	↗↗	↖
Traffic Volume (veh/h)	69	0	1308	20	0	10	0	788	3	2	599	0
Future Volume (veh/h)	69	0	1308	20	0	10	0	788	3	2	599	0
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			
Adj Sat Flow, veh/h/ln	1811	1811	1811	1811	1811	1811	1811	1811	1811	1811	1811	1811
Adj Flow Rate, veh/h	73	0	1377	21	0	11	0	829	3	2	631	0
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, %	6	6	6	6	6	6	6	6	6	6	6	6
Cap, veh/h	780	0	1347	790	903	765	2	1098	490	5	1313	586
Arrive On Green	0.50	0.00	0.50	0.50	0.00	0.50	0.00	0.32	0.32	0.00	0.38	0.00
Sat Flow, veh/h	1373	0	2701	1373	1811	1535	1725	3441	1535	1725	3441	1535
Grp Volume(v), veh/h	73	0	1377	21	0	11	0	829	3	2	631	0
Grp Sat Flow(s),veh/h/ln	1373	0	1351	1373	1811	1535	1725	1721	1535	1725	1721	1535
Q Serve(g_s), s	2.1	0.0	37.5	0.0	0.0	0.3	0.0	16.3	0.1	0.1	10.4	0.0
Cycle Q Clear(g_c), s	2.1	0.0	37.5	0.5	0.0	0.3	0.0	16.3	0.1	0.1	10.4	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	780	0	1347	790	903	765	2	1098	490	5	1313	586
V/C Ratio(X)	0.09	0.00	1.02	0.03	0.00	0.01	0.00	0.75	0.01	0.43	0.48	0.00
Avail Cap(c_a), veh/h	780	0	1347	790	903	765	115	1098	490	115	1313	586
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	10.0	0.0	18.9	9.6	0.0	9.5	0.0	23.0	17.5	37.4	17.6	0.0
Incr Delay (d2), s/veh	0.1	0.0	30.3	0.0	0.0	0.0	0.0	4.8	0.0	51.3	1.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.0	15.8	0.2	0.0	0.1	0.0	6.9	0.0	0.1	4.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	10.0	0.0	49.2	9.6	0.0	9.5	0.0	27.8	17.5	88.8	18.9	0.0
LnGrp LOS	B	A	F	A	A	A	A	C	B	F	B	A
Approach Vol, veh/h	1450				32		832				633	
Approach Delay, s/veh	47.2				9.6		27.8				19.1	
Approach LOS	D				A		C				B	
Timer - Assigned Phs	1	2	4		5	6	8					
Phs Duration (G+Y+Rc), s	4.7	28.5	42.0		0.0	33.2	42.0					
Change Period (Y+Rc), s	4.5	4.5	4.5		4.5	4.5	4.5					
Max Green Setting (Gmax), s	4.5	24.0	37.5		5.0	24.0	37.5					
Max Q Clear Time (g_c+I_2),s	18.3	18.3	39.5		0.0	12.4	2.5					
Green Ext Time (p_c), s	0.0	2.7	0.0		0.0	3.3	0.1					

Intersection Summary

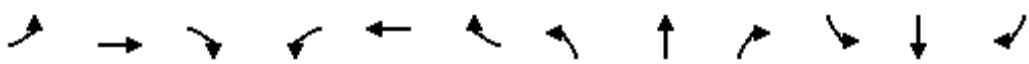
HCM 6th Ctrl Delay 35.3
HCM 6th LOS D

HCM 6th Signalized Intersection Summary

301: Mountain House Pkwy & MH Station Entrance/OMF

2030 Build with Mitigation

AM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↩	↩↩	↩	↩	↩	↩↩	↩↩		↩	↩↩	↩
Traffic Volume (veh/h)	0	0	0	1	2	2	515	354	20	10	1325	27
Future Volume (veh/h)	0	0	0	1	2	2	515	354	20	10	1325	27
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1796	1796	1796	1796	1796	1796	1796	1796	1796	1796	1796	1796
Adj Flow Rate, veh/h	0	0	0	1	2	2	560	385	22	11	1440	29
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	7	7	7	7	7	7	7	7	7	7	7	7
Cap, veh/h	0	12	18	114	12	10	668	2583	147	24	2046	913
Arrive On Green	0.00	0.00	0.00	0.01	0.01	0.01	0.20	0.79	0.79	0.01	0.60	0.60
Sat Flow, veh/h	0	1796	2679	1711	1796	1522	3319	3282	187	1711	3413	1522
Grp Volume(v), veh/h	0	0	0	1	2	2	560	200	207	11	1440	29
Grp Sat Flow(s),veh/h/ln	0	1796	1340	1711	1796	1522	1659	1706	1763	1711	1706	1522
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.1	0.1	11.4	2.0	2.0	0.4	20.5	0.5
Cycle Q Clear(g_c), s	0.0	0.0	0.0	0.0	0.1	0.1	11.4	2.0	2.0	0.4	20.5	0.5
Prop In Lane	0.00		1.00	1.00		1.00	1.00		0.11	1.00		1.00
Lane Grp Cap(c), veh/h	0	12	18	114	12	10	668	1343	1387	24	2046	913
V/C Ratio(X)	0.00	0.00	0.00	0.01	0.17	0.20	0.84	0.15	0.15	0.47	0.70	0.03
Avail Cap(c_a), veh/h	0	462	688	542	462	391	782	1343	1387	122	2046	913
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)	0.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	0.0	0.0	34.6	34.6	34.6	26.9	1.8	1.8	34.3	9.7	5.7
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.0	6.5	9.3	7.1	0.2	0.2	13.7	2.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.0	0.0	0.1	0.1	4.9	0.4	0.4	0.3	6.7	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.0	0.0	34.6	41.1	43.9	34.0	2.0	2.0	48.0	11.8	5.8
LnGrp LOS	A	A	A	C	D	D	C	A	A	D	B	A
Approach Vol, veh/h	0			5			967			1480		
Approach Delay, s/veh	0.0			40.9			20.5			11.9		
Approach LOS				D			C			B		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.5	59.6		5.0	18.6	46.5		5.0				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	5.0	53.5		18.0	16.5	42.0		18.0				
Max Q Clear Time (g_c+I1), s	2.4	4.0		0.0	13.4	22.5		2.1				
Green Ext Time (p_c), s	0.0	2.7		0.0	0.7	11.1		0.0				
Intersection Summary												
HCM 6th Ctrl Delay	15.4											
HCM 6th LOS	B											

HCM 6th Signalized Intersection Summary

301: Mountain House Pkwy & MH Station Entrance/OMF

2030 Build with Mitigation

PM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	29	0	542	20	0	10	0	728	3	2	553	0
Future Volume (veh/h)	29	0	542	20	0	10	0	728	3	2	553	0
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	1811	1811	1811	1811	1811	1811	1811	1811	1811	1811	1811	1811
Adj Flow Rate, veh/h	32	0	589	22	0	11	0	791	3	2	601	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	6	6	6	6	6	6	6	6	6	6	6	6
Cap, veh/h	548	0	761	554	510	432	7	1454	6	5	1779	793
Arrive On Green	0.28	0.00	0.28	0.28	0.00	0.28	0.00	0.41	0.41	0.00	0.52	0.00
Sat Flow, veh/h	1373	0	2701	1373	1811	1535	3346	3516	13	1725	3441	1535
Grp Volume(v), veh/h	32	0	589	22	0	11	0	387	407	2	601	0
Grp Sat Flow(s),veh/h/ln	1373	0	1351	1373	1811	1535	1673	1721	1809	1725	1721	1535
Q Serve(g_s), s	0.8	0.0	9.0	0.0	0.0	0.2	0.0	7.6	7.6	0.1	4.6	0.0
Cycle Q Clear(g_c), s	0.8	0.0	9.0	0.4	0.0	0.2	0.0	7.6	7.6	0.1	4.6	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.01	1.00		1.00
Lane Grp Cap(c), veh/h	548	0	761	554	510	432	7	712	748	5	1779	793
V/C Ratio(X)	0.06	0.00	0.77	0.04	0.00	0.03	0.00	0.54	0.54	0.42	0.34	0.00
Avail Cap(c_a), veh/h	713	0	1087	719	729	618	374	712	748	193	1779	793
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	11.8	0.0	14.8	11.7	0.0	11.6	0.0	9.9	9.9	22.3	6.3	0.0
Incr Delay (d2), s/veh	0.0	0.0	2.2	0.0	0.0	0.0	0.0	3.0	2.8	50.4	0.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	2.5	0.1	0.0	0.1	0.0	2.8	2.9	0.1	1.3	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	11.9	0.0	17.0	11.7	0.0	11.6	0.0	12.9	12.8	72.7	6.8	0.0
LnGrp LOS	B	A	B	B	A	B	A	B	B	E	A	A
Approach Vol, veh/h	621			33			794			603		
Approach Delay, s/veh	16.7			11.7			12.8			7.1		
Approach LOS	B			B			B			A		
Timer - Assigned Phs	1	2	4		5	6	8					
Phs Duration (G+Y+Rc), s	4.6	23.0	17.1		0.0	27.6	17.1					
Change Period (Y+Rc), s	4.5	4.5	4.5		4.5	4.5	4.5					
Max Green Setting (Gmax), s	5.0	18.5	18.0		5.0	18.5	18.0					
Max Q Clear Time (g_c+l1), s	2.1	9.6	11.0		0.0	6.6	2.4					
Green Ext Time (p_c), s	0.0	3.3	1.6		0.0	3.2	0.0					
Intersection Summary												
HCM 6th Ctrl Delay	12.3											
HCM 6th LOS	B											

HCM 6th Signalized Intersection Summary
301: Mountain House Pkwy & MH Station Entrance/OMF

2040 Build with Mitigation
AM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	1	2	2	1242	384	20	10	1436	66
Future Volume (veh/h)	0	0	0	1	2	2	1242	384	20	10	1436	66
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1796	1796	1796	1796	1796	1796	1796	1796	1796	1796	1796	1796
Adj Flow Rate, veh/h	0	0	0	1	2	2	1307	404	21	11	1512	69
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, %	7	7	7	7	7	7	7	7	7	7	7	7
Cap, veh/h	0	12	17	75	12	10	1340	2842	147	22	1605	716
Arrive On Green	0.00	0.00	0.00	0.01	0.01	0.01	0.40	0.86	0.86	0.01	0.47	0.47
Sat Flow, veh/h	0	1796	2679	1711	1796	1522	3319	3301	171	1711	3413	1522
Grp Volume(v), veh/h	0	0	0	1	2	2	1307	208	217	11	1512	69
Grp Sat Flow(s),veh/h/ln	0	1796	1340	1711	1796	1522	1659	1706	1765	1711	1706	1522
Q Serve(g_s), s	0.0	0.0	0.0	0.1	0.1	0.1	43.7	2.2	2.2	0.7	47.5	2.8
Cycle Q Clear(g_c), s	0.0	0.0	0.0	0.1	0.1	0.1	43.7	2.2	2.2	0.7	47.5	2.8
Prop In Lane	0.00		1.00	1.00		1.00	1.00		0.10	1.00		1.00
Lane Grp Cap(c), veh/h	0	12	17	75	12	10	1340	1469	1520	22	1605	716
V/C Ratio(X)	0.00	0.00	0.00	0.01	0.17	0.20	0.98	0.14	0.14	0.50	0.94	0.10
Avail Cap(c_a), veh/h	0	287	428	337	287	243	1340	1469	1520	76	1605	716
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)	0.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	0.0	0.0	55.7	55.7	55.7	33.1	1.2	1.2	55.3	28.4	16.6
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.1	6.9	9.9	19.0	0.2	0.2	16.2	12.4	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.0	0.0	0.1	0.1	20.6	0.4	0.4	0.4	21.4	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.0	0.0	55.7	62.6	65.6	52.0	1.4	1.4	71.5	40.8	16.8
LnGrp LOS	A	A	A	E	E	E	D	A	A	E	D	B
Approach Vol, veh/h	0			5			1732			1592		
Approach Delay, s/veh	0.0			62.5			39.6			40.0		
Approach LOS				E			D			D		
Timer - Assigned Phs	1	2	4		5	6	8					
Phs Duration (G+Y+Rc), s	6.0	101.5	5.2		50.0	57.5	5.2					
Change Period (Y+Rc), s	4.5	4.5	4.5		4.5	4.5	4.5					
Max Green Setting (Gmax), s	5.0	93.5	18.0		45.5	53.0	18.0					
Max Q Clear Time (g_c+l1), s	2.7	4.2	0.0		45.7	49.5	2.1					
Green Ext Time (p_c), s	0.0	2.8	0.0		0.0	2.8	0.0					
Intersection Summary												
HCM 6th Ctrl Delay			39.8									
HCM 6th LOS			D									

HCM 6th Signalized Intersection Summary

301: Mountain House Pkwy & MH Station Entrance/OMF

2040 Build with Mitigation

PM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	69	0	1308	20	0	10	0	788	3	2	599	0
Future Volume (veh/h)	69	0	1308	20	0	10	0	788	3	2	599	0
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	1811	1811	1811	1811	1811	1811	1811	1811	1811	1811	1811	1811
Adj Flow Rate, veh/h	73	0	1377	21	0	11	0	829	3	2	631	0
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, %	6	6	6	6	6	6	6	6	6	6	6	6
Cap, veh/h	780	0	1347	790	903	765	4	1122	4	5	1313	586
Arrive On Green	0.50	0.00	0.50	0.50	0.00	0.50	0.00	0.32	0.32	0.00	0.38	0.00
Sat Flow, veh/h	1373	0	2701	1373	1811	1535	3346	3517	13	1725	3441	1535
Grp Volume(v), veh/h	73	0	1377	21	0	11	0	406	426	2	631	0
Grp Sat Flow(s),veh/h/ln	1373	0	1351	1373	1811	1535	1673	1721	1809	1725	1721	1535
Q Serve(g_s), s	2.1	0.0	37.5	0.0	0.0	0.3	0.0	15.8	15.8	0.1	10.4	0.0
Cycle Q Clear(g_c), s	2.1	0.0	37.5	0.5	0.0	0.3	0.0	15.8	15.8	0.1	10.4	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.01	1.00		1.00
Lane Grp Cap(c), veh/h	780	0	1347	790	903	765	4	549	577	5	1313	586
V/C Ratio(X)	0.09	0.00	1.02	0.03	0.00	0.01	0.00	0.74	0.74	0.43	0.48	0.00
Avail Cap(c_a), veh/h	780	0	1347	790	903	765	222	549	577	115	1313	586
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	10.0	0.0	18.9	9.6	0.0	9.5	0.0	22.8	22.8	37.4	17.6	0.0
Incr Delay (d2), s/veh	0.1	0.0	30.3	0.0	0.0	0.0	0.0	8.6	8.2	51.3	1.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.0	15.8	0.2	0.0	0.1	0.0	7.3	7.7	0.1	4.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	10.0	0.0	49.2	9.6	0.0	9.5	0.0	31.4	31.0	88.8	18.9	0.0
LnGrp LOS	B	A	F	A	A	A	A	C	C	F	B	A
Approach Vol, veh/h	1450		32			832			633			
Approach Delay, s/veh	47.2		9.6			31.2			19.1			
Approach LOS	D		A			C			B			
Timer - Assigned Phs	1	2	4		5	6	8					
Phs Duration (G+Y+Rc), s	4.7	28.5	42.0		0.0	33.2	42.0					
Change Period (Y+Rc), s	4.5	4.5	4.5		4.5	4.5	4.5					
Max Green Setting (Gmax), s	5.0	24.0	37.5		5.0	24.0	37.5					
Max Q Clear Time (g_c+l1), s	2.1	17.8	39.5		0.0	12.4	2.5					
Green Ext Time (p_c), s	0.0	2.7	0.0		0.0	3.3	0.1					
Intersection Summary												
HCM 6th Ctrl Delay			36.2									
HCM 6th LOS			D									

Queuing Worksheets

Queues
28: Isabel Ave & Airway Blvd

Existing
AM Peak

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	1	73	96	29	60	126	148	1301	29	254	1100
v/c Ratio	0.00	0.22	0.25	0.09	0.15	0.29	0.66	0.79	0.05	0.53	0.65
Control Delay	28.0	31.0	6.0	29.0	26.1	7.8	49.6	28.7	0.1	36.0	23.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	28.0	31.0	6.0	29.0	26.1	7.8	49.6	28.7	0.1	36.0	23.8
Queue Length 50th (ft)	0	25	0	9	20	0	58	162	0	49	126
Queue Length 95th (ft)	5	75	29	37	65	48	#177	#346	0	108	250
Internal Link Dist (ft)	1476			1363			940			656	
Turn Bay Length (ft)	100			130			320			630	
Base Capacity (vph)	359	992	896	336	968	879	224	1638	589	479	1701
Starvation Cap Reductn	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
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.00	0.07	0.11	0.09	0.06	0.14	0.66	0.79	0.05	0.53	0.65

Intersection Summary

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

Queues

52: Mountain House Pkwy & Von Sosten Rd

Existing

AM Peak



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	388	29	310	9	21	807
v/c Ratio	0.68	0.06	0.28	0.02	0.14	0.48
Control Delay	23.5	5.9	14.6	7.9	25.3	10.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	23.5	5.9	14.6	7.9	25.3	10.2
Queue Length 50th (ft)	107	0	38	0	7	83
Queue Length 95th (ft)	#199	14	64	8	24	123
Internal Link Dist (ft)	524		769			587
Turn Bay Length (ft)		225		250	300	
Base Capacity (vph)	567	526	1104	499	153	1687
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.68	0.06	0.28	0.02	0.14	0.48

Intersection Summary

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

Queues

Existing

53: Mountain House Pkwy & I-205 WB Ramps

AM Peak



Lane Group	WBT	WBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	694	161	92	165	707	516
v/c Ratio	0.94	0.13	0.56	0.12	0.74	0.65
Control Delay	44.7	2.6	49.7	18.7	33.5	7.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	44.7	2.6	49.7	18.7	33.5	7.1
Queue Length 50th (ft)	312	0	46	28	178	0
Queue Length 95th (ft)	#538	17	#102	53	#274	84
Internal Link Dist (ft)	1314			396	1975	
Turn Bay Length (ft)		700	315			200
Base Capacity (vph)	755	1257	164	1361	951	791
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.92	0.13	0.56	0.12	0.74	0.65

Intersection Summary

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

Queues

Existing

54: International Pkwy/Mountain House Pkwy & I-205 EB Ramps

AM Peak



Lane Group	EBL	EBT	EBR	NBT	NBR	SBT
Lane Group Flow (vph)	22	21	48	216	295	948
v/c Ratio	0.15	0.15	0.27	0.09	0.26	0.39
Control Delay	35.8	35.5	15.0	2.3	0.9	0.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	35.8	35.5	15.0	2.3	0.9	0.8
Queue Length 50th (ft)	10	10	0	11	0	9
Queue Length 95th (ft)	33	32	31	17	14	m0
Internal Link Dist (ft)		831		2815		117
Turn Bay Length (ft)			460			
Base Capacity (vph)	355	358	370	2442	1148	2442
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.06	0.06	0.13	0.09	0.26	0.39

Intersection Summary

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

Queues
28: Isabel Ave & Airway Blvd

Existing
PM Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	9	97	237	42	46	236	175	1421	36	252	1368
v/c Ratio	0.03	0.34	0.53	0.14	0.11	0.43	0.69	0.70	0.05	0.58	0.71
Control Delay	35.5	40.4	10.1	37.2	29.9	7.5	54.8	26.3	0.2	44.7	27.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	35.5	40.4	10.1	37.2	29.9	7.5	54.8	26.3	0.2	44.7	27.3
Queue Length 50th (ft)	5	56	0	23	19	0	107	284	0	78	276
Queue Length 95th (ft)	19	106	67	55	60	68	#213	349	0	121	339
Internal Link Dist (ft)	1476			1363			940			656	
Turn Bay Length (ft)	100			130			320			630	
Base Capacity (vph)	325	912	894	306	891	878	253	2020	692	443	1935
Starvation Cap Reductn	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
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.03	0.11	0.27	0.14	0.05	0.27	0.69	0.70	0.05	0.57	0.71

Intersection Summary

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

Queues

52: Mountain House Pkwy & Von Sosten Rd

Existing

PM Peak



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	16	38	573	45	40	468
v/c Ratio	0.02	0.06	0.42	0.07	0.14	0.34
Control Delay	8.4	3.9	10.9	3.8	10.1	10.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	8.4	3.9	10.9	3.8	10.1	10.3
Queue Length 50th (ft)	2	0	53	0	6	41
Queue Length 95th (ft)	10	12	84	13	21	68
Internal Link Dist (ft)	524		769			587
Turn Bay Length (ft)		225		250	300	
Base Capacity (vph)	681	632	1362	636	296	1362
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.02	0.06	0.42	0.07	0.14	0.34
Intersection Summary						

Queues

Existing

53: Mountain House Pkwy & I-205 WB Ramps

PM Peak



Lane Group	WBT	WBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	226	383	29	282	431	79
v/c Ratio	0.59	0.43	0.17	0.14	0.24	0.09
Control Delay	33.3	4.1	35.8	7.2	11.8	2.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	33.3	4.1	35.8	7.2	11.8	2.8
Queue Length 50th (ft)	104	0	13	25	41	0
Queue Length 95th (ft)	152	31	37	53	117	19
Internal Link Dist (ft)	1314			396	1975	
Turn Bay Length (ft)		700	315			200
Base Capacity (vph)	557	1131	215	2046	1832	864
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.41	0.34	0.13	0.14	0.24	0.09
Intersection Summary						

Queues

Existing

54: International Pkwy/Mountain House Pkwy & I-205 EB Ramps

PM Peak



Lane Group	EBL	EBT	EBR	NBT	NBR	SBT
Lane Group Flow (vph)	48	49	37	212	567	355
v/c Ratio	0.32	0.32	0.21	0.08	0.46	0.14
Control Delay	39.4	39.6	14.8	2.3	1.5	2.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	39.4	39.6	14.8	2.3	1.5	2.3
Queue Length 50th (ft)	24	24	0	10	0	16
Queue Length 95th (ft)	57	58	27	18	19	20
Internal Link Dist (ft)		831		2815		117
Turn Bay Length (ft)			460			
Base Capacity (vph)	352	353	359	2544	1245	2544
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.14	0.14	0.10	0.08	0.46	0.14
Intersection Summary						

Queues
28: Isabel Ave & Airway Blvd

2030 No Build
AM Peak

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	1	90	132	124	78	175	148	1301	77	254	1214
v/c Ratio	0.00	0.28	0.24	0.37	0.14	0.22	0.67	0.80	0.13	0.54	0.72
Control Delay	29.0	35.0	6.7	36.2	24.4	3.8	54.1	32.2	2.1	39.5	28.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	29.0	35.0	6.7	36.2	24.4	3.8	54.1	32.2	2.1	39.5	28.7
Queue Length 50th (ft)	0	44	5	62	27	0	80	253	0	69	226
Queue Length 95th (ft)	5	88	43	115	80	42	#177	#346	13	108	282
Internal Link Dist (ft)	1476			1363			940			656	
Turn Bay Length (ft)	100			130			320			630	
Base Capacity (vph)	355	983	549	333	960	783	222	1623	585	474	1686
Starvation Cap Reductn	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
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.00	0.09	0.24	0.37	0.08	0.22	0.67	0.80	0.13	0.54	0.72

Intersection Summary

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



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	459	34	366	10	26	954
v/c Ratio	0.81	0.06	0.33	0.02	0.17	0.57
Control Delay	30.9	5.7	15.0	7.8	25.9	11.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	30.9	5.7	15.0	7.8	25.9	11.2
Queue Length 50th (ft)	134	0	46	0	8	104
Queue Length 95th (ft)	#274	15	75	8	27	152
Internal Link Dist (ft)	524		769			587
Turn Bay Length (ft)		225		250	300	
Base Capacity (vph)	567	530	1104	500	153	1687
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.81	0.06	0.33	0.02	0.17	0.57

Intersection Summary

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

53: Mountain House Pkwy & I-205 WB Ramps

AM Peak



Lane Group	WBL	WBT	WBR	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	514	306	190	196	109	835	610
v/c Ratio	0.59	0.68	0.21	0.11	0.07	0.25	0.60
Control Delay	26.7	32.4	3.7	9.7	2.9	9.7	6.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	26.7	32.4	3.7	9.7	2.9	9.7	6.7
Queue Length 50th (ft)	117	143	0	30	0	59	45
Queue Length 95th (ft)	159	225	22	35	8	83	146
Internal Link Dist (ft)		1314		593		1414	
Turn Bay Length (ft)			700		100		200
Base Capacity (vph)	1027	535	1013	1871	1520	3388	1019
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.50	0.57	0.19	0.10	0.07	0.25	0.60
Intersection Summary							

54: International Pkwy/Mountain House Pkwy & I-205 EB Ramps

AM Peak



Lane Group	EBL	EBT	EBR	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	38	36	34	255	348	1120	271
v/c Ratio	0.27	0.24	0.21	0.07	0.17	0.32	0.24
Control Delay	38.5	23.1	14.7	2.2	0.5	3.1	1.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	38.5	23.1	14.7	2.2	0.5	3.1	1.6
Queue Length 50th (ft)	18	6	0	8	0	91	0
Queue Length 95th (ft)	49	36	25	13	7	13	0
Internal Link Dist (ft)		831		833		593	
Turn Bay Length (ft)			460		800		
Base Capacity (vph)	391	369	376	3509	1989	3509	1144
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.10	0.10	0.09	0.07	0.17	0.32	0.24
Intersection Summary							

Queues
28: Isabel Ave & Airway Blvd

2030 No Build
PM Peak

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	9	124	251	63	56	236	221	1430	68	299	1368
v/c Ratio	0.03	0.43	0.55	0.23	0.11	0.39	0.84	0.75	0.10	0.75	0.79
Control Delay	36.1	42.7	10.0	39.0	27.9	6.6	69.0	29.3	1.5	54.3	32.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	36.1	42.7	10.0	39.0	27.9	6.6	69.0	29.3	1.5	54.3	32.4
Queue Length 50th (ft)	5	71	0	35	23	0	135	283	0	93	280
Queue Length 95th (ft)	20	128	67	75	67	65	#279	358	9	#163	355
Internal Link Dist (ft)	1476			1363			940			656	
Turn Bay Length (ft)	100			130			320			630	
Base Capacity (vph)	280	827	840	280	827	832	262	1904	661	399	1740
Starvation Cap Reductn	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
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.03	0.15	0.30	0.23	0.07	0.28	0.84	0.75	0.10	0.75	0.79

Intersection Summary

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



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	19	44	669	52	47	547
v/c Ratio	0.03	0.07	0.49	0.08	0.19	0.40
Control Delay	8.4	3.8	11.6	3.7	11.1	10.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	8.4	3.8	11.6	3.7	11.1	10.8
Queue Length 50th (ft)	3	0	64	0	7	50
Queue Length 95th (ft)	11	13	100	14	25	80
Internal Link Dist (ft)	524		769			587
Turn Bay Length (ft)		225		250	300	
Base Capacity (vph)	681	636	1362	640	252	1362
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.03	0.07	0.49	0.08	0.19	0.40
Intersection Summary						

53: Mountain House Pkwy & I-205 WB Ramps

PM Peak



Lane Group	WBL	WBT	WBR	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	176	87	447	329	34	503	91
v/c Ratio	0.30	0.30	0.52	0.15	0.02	0.13	0.09
Control Delay	28.6	30.1	5.2	6.6	3.9	5.3	1.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	28.6	30.1	5.2	6.6	3.9	5.3	1.6
Queue Length 50th (ft)	42	41	0	27	0	22	0
Queue Length 95th (ft)	67	81	38	63	7	37	15
Internal Link Dist (ft)		1314		593		1414	
Turn Bay Length (ft)			700		100		200
Base Capacity (vph)	1239	619	1333	2164	1716	3918	998
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.14	0.14	0.34	0.15	0.02	0.13	0.09
Intersection Summary							

54: International Pkwy/Mountain House Pkwy & I-205 EB Ramps

PM Peak



Lane Group	EBL	EBT	EBR	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	58	59	39	247	662	414	344
v/c Ratio	0.37	0.39	0.22	0.07	0.31	0.11	0.29
Control Delay	40.6	39.5	14.7	2.3	0.6	1.5	1.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	40.6	39.5	14.7	2.3	0.6	1.5	1.2
Queue Length 50th (ft)	29	28	0	8	0	9	0
Queue Length 95th (ft)	66	68	28	15	11	15	1
Internal Link Dist (ft)		831		833		593	
Turn Bay Length (ft)			460		800		
Base Capacity (vph)	426	410	409	3643	2124	3643	1200
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.14	0.14	0.10	0.07	0.31	0.11	0.29
Intersection Summary							

Queues
28: Isabel Ave & Airway Blvd

2030 Build
AM Peak

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	1	92	171	128	75	166	148	1301	90	347	1278
v/c Ratio	0.00	0.35	0.36	0.48	0.16	0.21	0.75	0.76	0.15	0.77	0.70
Control Delay	34.0	41.6	15.3	43.8	29.2	4.0	66.0	30.5	3.4	52.3	27.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	34.0	41.6	15.3	43.8	29.2	4.0	66.0	30.5	3.4	52.3	27.7
Queue Length 50th (ft)	1	52	38	73	31	0	90	262	0	108	247
Queue Length 95th (ft)	5	100	92	132	86	44	#193	319	23	#176	301
Internal Link Dist (ft)	1476			1363			940			656	
Turn Bay Length (ft)	100			130			320			630	
Base Capacity (vph)	287	793	479	269	774	794	197	1722	607	452	1824
Starvation Cap Reductn	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
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.00	0.12	0.36	0.48	0.10	0.21	0.75	0.76	0.15	0.77	0.70

Intersection Summary

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

Queues

2030 Build

52: Mountain House Pkwy & Von Sosten Rd

AM Peak



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	457	34	365	10	26	981
v/c Ratio	0.81	0.06	0.33	0.02	0.17	0.58
Control Delay	30.6	5.7	15.0	7.8	25.9	11.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	30.6	5.7	15.0	7.8	25.9	11.4
Queue Length 50th (ft)	133	0	46	0	8	108
Queue Length 95th (ft)	#272	15	75	8	27	157
Internal Link Dist (ft)	524		769			587
Turn Bay Length (ft)		225		250	300	
Base Capacity (vph)	567	530	1104	500	153	1687
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.81	0.06	0.33	0.02	0.17	0.58

Intersection Summary

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

53: Mountain House Pkwy & I-205 WB Ramps

AM Peak



Lane Group	WBL	WBT	WBR	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	513	306	721	224	109	833	609
v/c Ratio	0.52	0.60	0.54	0.13	0.08	0.27	0.62
Control Delay	23.4	27.3	3.3	11.7	3.3	11.2	7.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	23.4	27.3	3.3	11.7	3.3	11.2	7.5
Queue Length 50th (ft)	102	125	0	41	0	70	53
Queue Length 95th (ft)	159	225	38	40	8	82	145
Internal Link Dist (ft)		1314		593		1414	
Turn Bay Length (ft)			700		100		200
Base Capacity (vph)	1072	559	1390	1797	1464	3254	995
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.48	0.55	0.52	0.12	0.07	0.26	0.61
Intersection Summary							

54: International Pkwy/Mountain House Pkwy & I-205 EB Ramps

AM Peak



Lane Group	EBL	EBT	EBR	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	38	36	34	284	347	1118	270
v/c Ratio	0.27	0.24	0.21	0.08	0.17	0.32	0.24
Control Delay	38.5	23.1	14.7	2.2	0.5	3.4	1.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	38.5	23.1	14.7	2.2	0.5	3.4	1.6
Queue Length 50th (ft)	18	6	0	9	0	94	15
Queue Length 95th (ft)	49	36	25	15	7	13	0
Internal Link Dist (ft)		831		833		593	
Turn Bay Length (ft)			460		800		
Base Capacity (vph)	391	369	376	3509	1988	3509	1144
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.10	0.10	0.09	0.08	0.17	0.32	0.24
Intersection Summary							



Lane Group	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	1	2	2	560	385	22	11	1440	29
v/c Ratio	0.01	0.02	0.01	0.86	0.12	0.02	0.14	0.83	0.04
Control Delay	52.0	52.0	0.0	45.7	0.9	0.1	56.3	28.8	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	52.0	52.0	0.0	45.7	0.9	0.1	56.3	28.8	0.1
Queue Length 50th (ft)	1	1	0	343	0	0	7	418	0
Queue Length 95th (ft)	7	10	0	#626	41	1	28	#637	0
Internal Link Dist (ft)		599			1414			481	
Turn Bay Length (ft)									
Base Capacity (vph)	292	292	321	654	3233	1448	77	1725	815
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	0.00	0.01	0.01	0.86	0.12	0.02	0.14	0.83	0.04

Intersection Summary

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

Queues
28: Isabel Ave & Airway Blvd

2030 Build
PM Peak

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	9	116	237	97	57	335	223	1435	79	304	1368
v/c Ratio	0.03	0.41	0.54	0.35	0.11	0.50	0.85	0.75	0.12	0.76	0.79
Control Delay	36.0	42.2	10.0	41.0	28.0	6.7	69.9	29.3	2.3	54.9	32.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	36.0	42.2	10.0	41.0	28.0	6.7	69.9	29.3	2.3	54.9	32.3
Queue Length 50th (ft)	5	66	0	54	23	0	137	284	0	95	280
Queue Length 95th (ft)	19	121	65	107	68	79	#281	357	16	#165	352
Internal Link Dist (ft)	1476			1363			940			656	
Turn Bay Length (ft)	100			130			320			630	
Base Capacity (vph)	281	828	833	281	828	887	262	1906	662	399	1742
Starvation Cap Reductn	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
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.03	0.14	0.28	0.35	0.07	0.38	0.85	0.75	0.12	0.76	0.79

Intersection Summary

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

Queues

2030 Build

52: Mountain House Pkwy & Von Sosten Rd

PM Peak



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	19	44	697	52	46	546
v/c Ratio	0.03	0.07	0.51	0.08	0.19	0.40
Control Delay	8.4	3.8	11.8	3.7	11.4	10.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	8.4	3.8	11.8	3.7	11.4	10.8
Queue Length 50th (ft)	3	0	67	0	7	50
Queue Length 95th (ft)	11	13	105	14	24	80
Internal Link Dist (ft)	524		769			587
Turn Bay Length (ft)		225		250	300	
Base Capacity (vph)	681	636	1362	640	240	1362
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.03	0.07	0.51	0.08	0.19	0.40
Intersection Summary						

53: Mountain House Pkwy & I-205 WB Ramps



Lane Group	WBL	WBT	WBR	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	176	87	446	329	33	1079	91
v/c Ratio	0.30	0.30	0.52	0.15	0.02	0.28	0.09
Control Delay	28.6	30.1	5.2	7.8	4.9	6.0	1.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	28.6	30.1	5.2	7.8	4.9	6.0	1.6
Queue Length 50th (ft)	42	41	0	32	0	54	0
Queue Length 95th (ft)	67	81	38	81	11	81	15
Internal Link Dist (ft)		1314		593		1414	
Turn Bay Length (ft)			700		100		200
Base Capacity (vph)	1201	600	1306	2164	1716	3918	998
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.15	0.14	0.34	0.15	0.02	0.28	0.09
Intersection Summary							

54: International Pkwy/Mountain House Pkwy & I-205 EB Ramps

PM Peak



Lane Group	EBL	EBT	EBR	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	58	59	39	246	661	443	883
v/c Ratio	0.37	0.39	0.23	0.07	0.31	0.12	0.68
Control Delay	40.6	39.6	14.8	2.3	0.6	1.9	9.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	40.6	39.6	14.8	2.3	0.6	1.9	9.5
Queue Length 50th (ft)	29	28	0	8	0	12	147
Queue Length 95th (ft)	66	68	28	15	11	20	306
Internal Link Dist (ft)		831		833		593	
Turn Bay Length (ft)			460		800		
Base Capacity (vph)	326	314	322	3644	2124	3644	1304
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.18	0.19	0.12	0.07	0.31	0.12	0.68
Intersection Summary							

Queues

2030 Build

301: Mountain House Pkwy & MH Station Entrance/OMF

PM Peak

								
Lane Group	EBT	EBR	WBL	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	32	589	22	11	791	3	2	601
v/c Ratio	0.10	0.57	0.07	0.02	0.47	0.00	0.01	0.33
Control Delay	13.0	4.6	12.8	0.1	9.1	0.0	18.5	6.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	13.0	4.6	12.8	0.1	9.1	0.0	18.5	6.1
Queue Length 50th (ft)	5	3	3	0	38	0	0	27
Queue Length 95th (ft)	23	38	18	0	157	0	6	76
Internal Link Dist (ft)	1082				1414			481
Turn Bay Length (ft)								
Base Capacity (vph)	656	1581	638	876	1693	817	228	1816
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.05	0.37	0.03	0.01	0.47	0.00	0.01	0.33
Intersection Summary								

Queues
28: Isabel Ave & Airway Blvd

2040 No Build
AM Peak

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	1	106	177	206	117	276	143	1260	71	246	1217
v/c Ratio	0.00	0.35	0.35	0.69	0.22	0.31	0.71	0.86	0.13	0.57	0.80
Control Delay	30.0	36.0	14.4	47.3	24.6	3.3	58.7	35.9	1.7	41.4	32.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	30.0	36.0	14.4	47.3	24.6	3.3	58.7	35.9	1.7	41.4	32.1
Queue Length 50th (ft)	0	53	39	108	41	0	77	242	0	67	227
Queue Length 95th (ft)	5	101	89	#214	111	50	#175	#342	9	107	#297
Internal Link Dist (ft)	1476			1363			940			656	
Turn Bay Length (ft)	100			130			320			630	
Base Capacity (vph)	321	887	506	300	866	896	200	1464	539	428	1521
Starvation Cap Reductn	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
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.00	0.12	0.35	0.69	0.14	0.31	0.71	0.86	0.13	0.57	0.80

Intersection Summary

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



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	493	37	393	11	27	1025
v/c Ratio	0.87	0.07	0.36	0.02	0.18	0.61
Control Delay	36.7	5.5	15.2	7.6	26.0	11.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	36.7	5.5	15.2	7.6	26.0	11.8
Queue Length 50th (ft)	147	0	50	0	8	115
Queue Length 95th (ft)	#302	15	81	9	28	167
Internal Link Dist (ft)	524		769			587
Turn Bay Length (ft)		225		250	300	
Base Capacity (vph)	567	532	1104	501	153	1687
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.87	0.07	0.36	0.02	0.18	0.61

Intersection Summary

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

53: Mountain House Pkwy & I-205 WB Ramps

AM Peak



Lane Group	WBL	WBT	WBR	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	540	322	200	205	115	878	641
v/c Ratio	0.62	0.71	0.22	0.11	0.08	0.26	0.64
Control Delay	27.2	33.8	3.7	10.0	2.9	9.8	8.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	27.2	33.8	3.7	10.0	2.9	9.8	8.0
Queue Length 50th (ft)	121	150	0	0	0	64	60
Queue Length 95th (ft)	167	237	23	36	8	88	183
Internal Link Dist (ft)		1314		593		1414	
Turn Bay Length (ft)			700		100		200
Base Capacity (vph)	1024	534	1018	1855	1510	3358	1006
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.53	0.60	0.20	0.11	0.08	0.26	0.64
Intersection Summary							

54: International Pkwy/Mountain House Pkwy & I-205 EB Ramps

AM Peak



Lane Group	EBL	EBT	EBR	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	40	39	37	272	371	1191	288
v/c Ratio	0.28	0.26	0.23	0.08	0.19	0.34	0.25
Control Delay	38.9	23.6	15.5	2.2	0.5	3.2	1.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	38.9	23.6	15.5	2.2	0.5	3.2	1.7
Queue Length 50th (ft)	20	7	0	9	0	94	8
Queue Length 95th (ft)	51	39	28	14	8	117	36
Internal Link Dist (ft)		831		833		593	
Turn Bay Length (ft)			460		800		
Base Capacity (vph)	373	354	361	3509	1993	3509	1147
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.11	0.11	0.10	0.08	0.19	0.34	0.25
Intersection Summary							

Queues
28: Isabel Ave & Airway Blvd

2040 No Build

PM Peak

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	8	154	239	106	71	226	311	1416	192	355	1311
v/c Ratio	0.03	0.57	0.55	0.45	0.13	0.37	0.89	0.73	0.27	0.82	0.83
Control Delay	42.6	52.3	10.5	50.4	31.9	6.7	70.5	31.4	4.4	63.2	40.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	42.6	52.3	10.5	50.4	31.9	6.7	70.5	31.4	4.4	63.2	40.6
Queue Length 50th (ft)	5	102	0	68	34	0	208	295	0	123	301
Queue Length 95th (ft)	20	169	69	130	87	67	#394	386	46	#210	391
Internal Link Dist (ft)	1476			1363			940			656	
Turn Bay Length (ft)	100			130			320			630	
Base Capacity (vph)	238	704	745	238	704	737	350	1940	721	432	1572
Starvation Cap Reductn	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
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.03	0.22	0.32	0.45	0.10	0.31	0.89	0.73	0.27	0.82	0.83

Intersection Summary

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



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	21	48	726	57	51	593
v/c Ratio	0.03	0.08	0.53	0.09	0.22	0.44
Control Delay	8.4	3.7	12.1	3.6	12.1	11.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	8.4	3.7	12.1	3.6	12.1	11.1
Queue Length 50th (ft)	3	0	71	0	8	55
Queue Length 95th (ft)	12	14	110	15	27	87
Internal Link Dist (ft)	524		769			587
Turn Bay Length (ft)		225		250	300	
Base Capacity (vph)	681	638	1362	643	228	1362
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.03	0.08	0.53	0.09	0.22	0.44
Intersection Summary						

53: Mountain House Pkwy & I-205 WB Ramps

PM Peak



Lane Group	WBL	WBT	WBR	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	189	93	480	353	37	540	99
v/c Ratio	0.31	0.31	0.53	0.16	0.02	0.14	0.10
Control Delay	28.3	29.7	5.0	6.7	3.8	5.6	1.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	28.3	29.7	5.0	6.7	3.8	5.6	1.7
Queue Length 50th (ft)	45	45	0	30	0	24	0
Queue Length 95th (ft)	70	83	38	65	7	42	17
Internal Link Dist (ft)		1314		593		1414	
Turn Bay Length (ft)			700		100		200
Base Capacity (vph)	1239	619	1353	2147	1703	3887	994
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.15	0.15	0.35	0.16	0.02	0.14	0.10
Intersection Summary							

54: International Pkwy/Mountain House Pkwy & I-205 EB Ramps

PM Peak



Lane Group	EBL	EBT	EBR	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	64	63	42	268	718	448	374
v/c Ratio	0.41	0.41	0.24	0.07	0.34	0.12	0.31
Control Delay	41.6	39.7	14.5	2.4	0.7	1.6	1.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	41.6	39.7	14.5	2.4	0.7	1.6	1.9
Queue Length 50th (ft)	32	30	0	9	0	10	0
Queue Length 95th (ft)	70	70	29	16	12	16	2
Internal Link Dist (ft)		831		833		593	
Turn Bay Length (ft)			460		800		
Base Capacity (vph)	408	392	395	3639	2133	3639	1205
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.16	0.16	0.11	0.07	0.34	0.12	0.31
Intersection Summary							

Queues
28: Isabel Ave & Airway Blvd

2040 Build
AM Peak

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	1	105	201	259	119	239	146	1260	133	453	1252
v/c Ratio	0.00	0.45	0.39	0.84	0.21	0.26	0.79	0.85	0.24	0.84	0.72
Control Delay	39.0	49.6	16.7	66.7	29.9	3.1	76.2	41.5	5.0	58.8	32.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	39.0	49.6	16.7	66.7	29.9	3.1	76.2	41.5	5.0	58.8	32.1
Queue Length 50th (ft)	1	68	51	173	55	0	99	294	0	156	266
Queue Length 95th (ft)	5	123	115	#318	130	48	#208	364	38	#243	330
Internal Link Dist (ft)	1476			1363			940			656	
Turn Bay Length (ft)	100			130			320			630	
Base Capacity (vph)	246	681	516	308	746	922	184	1480	559	538	1744
Starvation Cap Reductn	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
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.00	0.15	0.39	0.84	0.16	0.26	0.79	0.85	0.24	0.84	0.72

Intersection Summary

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

Queues

2040 Build

52: Mountain House Pkwy & Von Sosten Rd

AM Peak



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	491	37	392	11	27	1089
v/c Ratio	0.87	0.07	0.36	0.02	0.18	0.65
Control Delay	36.3	5.5	15.2	7.6	26.0	12.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	36.3	5.5	15.2	7.6	26.0	12.4
Queue Length 50th (ft)	147	0	50	0	8	126
Queue Length 95th (ft)	#300	15	81	9	28	182
Internal Link Dist (ft)	524		769			587
Turn Bay Length (ft)		225		250	300	
Base Capacity (vph)	567	532	1104	501	153	1687
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.87	0.07	0.36	0.02	0.18	0.65

Intersection Summary

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

53: Mountain House Pkwy & I-205 WB Ramps

AM Peak



Lane Group	WBL	WBT	WBR	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	538	321	1439	274	115	874	639
v/c Ratio	0.36	0.41	0.87	0.23	0.12	0.41	0.73
Control Delay	13.1	14.6	15.5	24.3	9.9	20.3	9.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	13.1	14.6	15.5	24.3	9.9	20.3	9.2
Queue Length 50th (ft)	81	101	167	61	0	97	31
Queue Length 95th (ft)	124	176	#346	83	24	119	144
Internal Link Dist (ft)		1314		593		1414	
Turn Bay Length (ft)			700		100		200
Base Capacity (vph)	1523	795	1677	1237	1045	2240	896
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.35	0.40	0.86	0.22	0.11	0.39	0.71

Intersection Summary

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

54: International Pkwy/Mountain House Pkwy & I-205 EB Ramps

AM Peak



Lane Group	EBL	EBT	EBR	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	40	39	37	339	368	1186	286
v/c Ratio	0.28	0.26	0.23	0.10	0.18	0.34	0.25
Control Delay	38.9	23.6	15.5	2.2	0.5	2.4	1.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	38.9	23.6	15.5	2.2	0.5	2.4	1.3
Queue Length 50th (ft)	20	7	0	12	0	17	0
Queue Length 95th (ft)	51	39	28	17	8	147	38
Internal Link Dist (ft)		831		833		593	
Turn Bay Length (ft)			460		800		
Base Capacity (vph)	373	354	361	3509	1992	3509	1146
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.11	0.11	0.10	0.10	0.18	0.34	0.25
Intersection Summary							



Lane Group	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	1	2	2	1307	404	21	11	1512	69
v/c Ratio	0.01	0.02	0.01	1.45	0.12	0.01	0.14	1.23	0.11
Control Delay	52.0	52.0	0.0	233.8	0.9	0.1	56.3	141.6	3.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	52.0	52.0	0.0	233.8	0.9	0.1	56.3	141.6	3.9
Queue Length 50th (ft)	1	1	0	~1220	0	0	7	~669	0
Queue Length 95th (ft)	7	10	0	#1673	42	1	28	#925	22
Internal Link Dist (ft)		599			1414			481	
Turn Bay Length (ft)									
Base Capacity (vph)	292	292	321	901	3233	1448	77	1232	606
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	0.00	0.01	0.01	1.45	0.12	0.01	0.14	1.23	0.11

Intersection Summary

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

Queues
28: Isabel Ave & Airway Blvd

2040 Build
PM Peak

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	8	151	233	157	69	444	318	1429	191	362	1311
v/c Ratio	0.03	0.57	0.55	0.66	0.13	0.58	0.87	0.75	0.27	0.78	0.86
Control Delay	42.5	52.2	10.6	59.1	31.8	6.9	66.0	32.7	4.5	58.4	42.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	42.5	52.2	10.6	59.1	31.8	6.9	66.0	32.7	4.5	58.4	42.5
Queue Length 50th (ft)	5	99	0	103	33	0	211	304	0	125	306
Queue Length 95th (ft)	20	166	68	#202	85	96	#398	400	47	#207	#409
Internal Link Dist (ft)	1476			1363			940			656	
Turn Bay Length (ft)	100			130			320			630	
Base Capacity (vph)	239	705	742	239	705	872	366	1897	709	464	1529
Starvation Cap Reductn	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
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.03	0.21	0.31	0.66	0.10	0.51	0.87	0.75	0.27	0.78	0.86

Intersection Summary

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

Queues

2040 Build

52: Mountain House Pkwy & Von Sosten Rd

PM Peak



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	21	48	793	57	50	591
v/c Ratio	0.03	0.08	0.58	0.09	0.25	0.43
Control Delay	8.4	3.7	12.7	3.6	13.0	11.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	8.4	3.7	12.7	3.6	13.0	11.1
Queue Length 50th (ft)	3	0	79	0	8	54
Queue Length 95th (ft)	12	14	122	15	28	87
Internal Link Dist (ft)	524		769			587
Turn Bay Length (ft)		225		250	300	
Base Capacity (vph)	681	638	1362	643	200	1362
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.03	0.08	0.58	0.09	0.25	0.43
Intersection Summary						

53: Mountain House Pkwy & I-205 WB Ramps



Lane Group	WBL	WBT	WBR	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	188	93	478	352	38	1914	98
v/c Ratio	0.31	0.31	0.53	0.16	0.02	0.49	0.10
Control Delay	28.3	29.7	5.0	10.9	7.6	7.8	1.7
Queue Delay	0.1	0.2	0.0	0.0	0.0	0.0	0.0
Total Delay	28.4	29.9	5.0	10.9	7.6	7.8	1.7
Queue Length 50th (ft)	45	45	0	56	0	116	0
Queue Length 95th (ft)	70	83	38	92	13	173	17
Internal Link Dist (ft)		1314		593		1414	
Turn Bay Length (ft)			700		100		200
Base Capacity (vph)	828	414	1062	2148	1704	3890	995
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	131	65	0	0	0	139	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.27	0.27	0.45	0.16	0.02	0.51	0.10
Intersection Summary							

54: International Pkwy/Mountain House Pkwy & I-205 EB Ramps

PM Peak



Lane Group	EBL	EBT	EBR	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	64	63	41	266	715	520	1675
v/c Ratio	0.41	0.41	0.23	0.07	0.34	0.14	1.25
Control Delay	41.7	39.8	14.6	2.3	0.7	2.7	136.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	41.7	39.8	14.6	2.3	0.7	2.7	136.5
Queue Length 50th (ft)	32	30	0	9	0	16	~941
Queue Length 95th (ft)	70	70	29	16	12	42	#1230
Internal Link Dist (ft)		831		833		593	
Turn Bay Length (ft)			460		800		
Base Capacity (vph)	324	313	322	3641	2133	3641	1343
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.20	0.20	0.13	0.07	0.34	0.14	1.25

Intersection Summary

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



Lane Group	EBT	EBR	WBL	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	73	1377	21	11	829	3	2	631
v/c Ratio	0.11	0.88	0.03	0.01	0.71	0.01	0.02	0.51
Control Delay	10.3	19.2	9.9	0.0	25.5	0.0	34.0	19.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	10.3	19.2	9.9	0.0	25.5	0.0	34.0	19.3
Queue Length 50th (ft)	15	187	4	0	162	0	1	114
Queue Length 95th (ft)	43	#449	17	0	#274	0	8	158
Internal Link Dist (ft)	1082				1414			481
Turn Bay Length (ft)								
Base Capacity (vph)	726	1635	681	913	1167	576	121	1248
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.10	0.84	0.03	0.01	0.71	0.01	0.02	0.51

Intersection Summary

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



Lane Group	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	1	2	2	560	407	11	1440	29
v/c Ratio	0.01	0.01	0.01	0.73	0.13	0.09	0.70	0.03
Control Delay	32.0	31.5	0.0	32.1	1.4	33.8	12.4	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	32.0	31.5	0.0	32.1	1.4	33.8	12.4	0.1
Queue Length 50th (ft)	0	1	0	108	0	4	179	0
Queue Length 95th (ft)	5	7	0	#209	45	21	366	0
Internal Link Dist (ft)		599			1414		481	
Turn Bay Length (ft)								
Base Capacity (vph)	463	463	487	783	3137	122	2055	968
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.00	0.00	0.00	0.72	0.13	0.09	0.70	0.03

Intersection Summary

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

							
Lane Group	EBT	EBR	WBL	WBR	NBT	SBL	SBT
Lane Group Flow (vph)	32	589	22	11	794	2	601
v/c Ratio	0.10	0.57	0.07	0.02	0.47	0.01	0.33
Control Delay	13.0	4.6	12.8	0.1	9.2	18.5	6.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	13.0	4.6	12.8	0.1	9.2	18.5	6.1
Queue Length 50th (ft)	5	3	3	0	38	0	27
Queue Length 95th (ft)	23	38	18	0	158	6	76
Internal Link Dist (ft)	1082				1414		481
Turn Bay Length (ft)							
Base Capacity (vph)	656	1581	638	876	1691	228	1816
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.05	0.37	0.03	0.01	0.47	0.01	0.33
Intersection Summary							



Lane Group	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	1	2	2	1307	425	11	1512	69
v/c Ratio	0.01	0.02	0.01	0.96	0.13	0.14	0.93	0.09
Control Delay	52.0	52.0	0.0	48.7	0.9	56.3	37.8	2.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	52.0	52.0	0.0	48.7	0.9	56.3	37.8	2.6
Queue Length 50th (ft)	1	1	0	436	0	7	485	0
Queue Length 95th (ft)	7	10	0	#688	44	28	#770	18
Internal Link Dist (ft)		599			1414		481	
Turn Bay Length (ft)								
Base Capacity (vph)	292	292	321	1360	3210	77	1633	775
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.00	0.01	0.01	0.96	0.13	0.14	0.93	0.09

Intersection Summary

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



Lane Group	EBT	EBR	WBL	WBR	NBT	SBL	SBT
Lane Group Flow (vph)	73	1377	21	11	832	2	631
v/c Ratio	0.11	0.88	0.03	0.01	0.71	0.02	0.51
Control Delay	10.3	19.2	9.9	0.0	25.6	34.0	19.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	10.3	19.2	9.9	0.0	25.6	34.0	19.3
Queue Length 50th (ft)	15	187	4	0	163	1	114
Queue Length 95th (ft)	43	#449	17	0	#277	8	158
Internal Link Dist (ft)	1082				1414		481
Turn Bay Length (ft)							
Base Capacity (vph)	726	1635	681	913	1166	121	1248
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.10	0.84	0.03	0.01	0.71	0.02	0.51

Intersection Summary

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