

March 29, 2019

Mr. Todd Pendergrass
Chandler Aggregates, Inc.
P.O. Box 77850
Corona, CA 92877

SUBJECT: GILMAN SPRINGS MINE SUPPLEMENTAL TRAFFIC ASSESSMENT

Dear Mr. Todd Pendergrass:

This letter serves as a supplement to the Gilman Springs Mine Traffic Impact Analysis (April 5, 2018) (referred to as “2018 Traffic Study”). Specifically, this focused traffic assessment evaluates the study area intersections and freeway facilities based on a new Opening Year of 2019. The 2018 Traffic Study had assumed and evaluated an Opening Year of 2018. The limits of the mining have changed although there are no changes to the proposed mining operations and resulting daily and annual tonnage (see Exhibit 1). As such, the same Project trip generation and trip distribution patterns utilized in the 2018 Traffic Study have also been utilized for the purposes of this supplemental traffic assessment. The analysis results have been compared back to the 2018 Traffic Study to determine if there were new impacts or mitigation measures.

SUMMARY OF FINDINGS

Based on a comparison of the 2018 Traffic Study and the supplemental traffic assessment, all findings and recommendations for EAP (2019) and EAPC (2019) traffic conditions are consistent for the peak hour intersection operations, freeway off-ramp queues, basic freeway segment, and freeway ramp junction analyses with the exception of the following freeway ramp junction under EAP (2019) traffic conditions:

- SR-60 Freeway Eastbound, On-Ramp at Gilman Springs Road (#4) – LOS E PM peak hour only

However, at this time, Caltrans has no fee programs or other improvement programs in place to address the deficiencies caused by development projects in the County of Riverside (or other neighboring jurisdictions) on SHS roadway segments. As such, no improvements have been recommended to address the EAP deficiencies on the SHS, because there is no feasible mitigation available.

TRAFFIC FORECASTS

EXISTING PLUS AMBIENT GROWTH PLUS PROJECT (EAP) CONDITIONS

This scenario includes Existing (2018) traffic volumes plus ambient growth and Project traffic. Ambient growth assumed in the 2018 traffic study was 2.00%, as such, an ambient growth of 4.04% has been assumed for this supplemental traffic assessment. The ADT volumes and AM and PM peak hour

intersection turning movement volumes are shown on Exhibit 2. Freeway mainline volumes for EAP (2019) traffic conditions are shown on Exhibit 3.

EXISTING PLUS AMBIENT GROWTH PLUS PROJECT PLUS CUMULATIVE PROJECTS (EAPC) CONDITIONS

This scenario includes cumulative development project traffic added to the EAP (2019) traffic forecasts discussed subsequently. The weekday ADT and AM and PM peak hour traffic volumes which can be expected for EAPC (2019) traffic conditions are shown on Exhibit 4. Freeway mainline volumes for EAP (2019) traffic conditions are shown on Exhibit 5.

EAP (2019) OPERATIONS ANALYSIS

INTERSECTION OPERATIONS ANALYSIS

EAP (2019) peak hour traffic operations have been evaluated for the study area intersections based on the analysis methodologies and input parameters presented in Section 2 *Methodologies* of the 2018 Traffic Study. The intersection analysis results are summarized in Table 1, which indicates that there are no additional study area intersections anticipated to operate at a deficient LOS, in addition to those currently operating at a deficient level of service (LOS) during Existing conditions in the 2018 Traffic Study. The current findings are consistent with the findings from the 2018 Traffic Study for EAP traffic conditions. The intersection operations analysis worksheets for EAP (2019) traffic conditions are included in Attachment A.

TRAFFIC SIGNAL WARRANT ANALYSIS

Traffic Signal warrants for EAP (2019) traffic conditions are based on existing peak hour intersection turning volumes and the addition of ambient growth and Project traffic. For EAP (2019) traffic conditions, there are no study area intersections anticipated to meet peak hour volume-based traffic signal warrants (see Attachment B).

OFF-RAMP QUEUING ANALYSIS

Queuing analysis findings for EAP (2019) traffic conditions are presented in Table 2. As shown on Table 2, there are no movements that are anticipated to experience queuing issues during the weekday AM or PM peak hours based on the EAP 95th percentile traffic flows. This finding is consistent with the 2018 Traffic Study for EAP traffic conditions. Worksheets for EAP (2019) conditions off-ramp queuing analysis are provided in Attachment C.

BASIC FREEWAY SEGMENT ANALYSIS

As shown on Table 3, there are no additional freeway segments anticipated to operate at an unacceptable LOS under EAP traffic conditions during the peak hours, in addition to those previously

identified under Existing traffic conditions in the 2018 Traffic Study. This finding is consistent with the 2018 Traffic Study for EAP traffic conditions. EAP (2019) basic freeway segment analysis worksheets are provided in Attachment D.

FREEWAY RAMP JUNCTION ANALYSIS

Ramp merge and diverge operations were also evaluated for EAP conditions and the results of this analysis are presented in Table 4. The following additional ramp junction is anticipated to operate at an unacceptable LOS during the peak hours from those previously identified under Existing and EAP traffic conditions in the 2018 Traffic Study:

- SR-60 Freeway Eastbound, On-Ramp at Gilman Springs Road (#4) – LOS E PM peak hour only

EAP (2019) freeway ramp junction operations analysis worksheets are provided in Attachment E.

DEFICIENCIES AND RECOMMENDED IMPROVEMENTS

INTERSECTIONS

Improvement strategies have been recommended at intersections that have been identified as deficient in an effort to reduce each location's peak hour delay and improve the associated LOS grade to an acceptable LOS (LOS D or better). The effectiveness of the recommended improvement strategies discussed below to address EAP (2019) traffic deficiencies is presented in Table 5.

Recommended Improvement – Bridge St. & Gilman Springs Rd. (#4)

- *Install a traffic signal (consistent with Existing and E+P conditions)*

Recommended Improvement – Driveway & Gilman Springs Rd. (#5)

- *Install a traffic signal (consistent with Existing and E+P conditions)*

Recommended Improvement – SR-79 Northbound Ramps & Gilman Springs Rd. (#7)

- *Install a traffic signal (consistent with Existing and E+P conditions)*

Worksheets for EAP (2019) conditions, with improvements, HCM calculations are provided in Attachment F.

OFF-RAMP QUEUES

As shown previously on Table 2, there are no peak hour queuing issues anticipated for EAP (2019) traffic conditions. As such, no improvements are recommended.

FREEWAY FACILITIES

At this time, Caltrans has no fee programs or other improvement programs in place to address the deficiencies caused by development projects in the County of Riverside (or other neighboring jurisdictions) on SHS roadway segments. As such, no improvements have been recommended to address the EAP (2019) deficiencies on the SHS, because there is no feasible mitigation available.

EAPC (2019) OPERATIONS ANALYSIS

INTERSECTION OPERATIONS ANALYSIS

As shown on Table 6, there are no additional study area intersections anticipated to operate at a deficient LOS, in addition to those previously identified for EAPC conditions in the 2018 Traffic Study. The intersection operations analysis worksheets for EAPC (2019) traffic conditions are included in Attachment G.

TRAFFIC SIGNAL WARRANT ANALYSIS

The traffic signal warrant analysis for EAPC (2019) traffic conditions is based on existing peak hour intersection turning volumes, ambient growth, and the addition of both Project and cumulative development traffic. For EAPC (2019) traffic conditions, there are no study area intersections anticipated to meet peak hour volume-based traffic signal warrants (see Attachment H).

OFF-RAMP QUEUING ANALYSIS

As shown on Table 7, there are no additional queuing issues anticipated for EAPC (2019) traffic conditions consistent with the 2018 Traffic Study. Worksheets for EAPC (2019) conditions off-ramp queuing analysis are provided in Attachment I.

BASIC FREEWAY SEGMENT ANALYSIS

As shown on Table 8, there are no additional freeway mainline segments anticipated to operate at an unacceptable LOS from those previously identified for EAPC traffic conditions in the 2018 Traffic Study. EAPC (2019) basic freeway segment analysis worksheets are provided in Attachment J.

FREEWAY RAMP JUNCTION ANALYSIS

Freeway ramp junction merge and diverge operations were also evaluated for EAPC (2019) traffic conditions and the results are presented in Table 9. There are no additional deficiencies anticipated in addition to those previously identified for EAPC traffic conditions in the 2018 Traffic Study. EAPC (2019) freeway ramp junction operations analysis worksheets are provided in Attachment K.

DEFICIENCIES AND RECOMMENDED IMPROVEMENTS

INTERSECTIONS

Improvement strategies have been recommended at intersections that have been identified as deficient in an effort to reduce each location's peak hour delay and improve the associated LOS grade to an acceptable LOS (LOS D or better). The effectiveness of the recommended improvement strategies discussed below to address EAPC traffic deficiencies is presented in Table 10.

Recommended Improvement – Gilman Springs Rd. & Alessandro Bl. (#2)

- Install a traffic signal

Recommended Improvement – Jack Rabbit Trail & Gilman Springs Rd. (#3)

- Install a traffic signal

Recommended Improvement – Bridge St. & Gilman Springs Rd. (#4)

- Install a traffic signal (consistent with Existing, E+P, and EAP (2019) conditions)

Recommended Improvement – Driveway & Gilman Springs Rd. (#5)

- Install a traffic signal (consistent with Existing, E+P, and EAP (2019) conditions)

Recommended Improvement – SR-79 Northbound Ramps & Gilman Springs Rd. (#7)

- Install a traffic signal (consistent with Existing, E+P, and EAP (2019) conditions)

Worksheets for EAPC (2019) conditions, with improvements, HCM calculations are provided in Attachment L.

OFF-RAMP QUEUES

As shown previously on Table 7, there are no peak hour queuing issues anticipated for EAPC (2019) traffic conditions. As such, no improvements are recommended.

FREEWAY FACILITIES

At this time, Caltrans has no fee programs or other improvement programs in place to address the deficiencies caused by development projects in the County of Riverside (or other neighboring jurisdictions) on SHS roadway segments. As such, no improvements have been recommended to address the EAPC (2019) deficiencies on the SHS, because there is no feasible mitigation available.

RECOMMENDED IMPROVEMENTS

IMPROVEMENTS TO ADDRESS DEFICIENCIES AT INTERSECTIONS

A summary of off-site improvements needed to address intersection operational deficiencies for each analysis scenario is included in Table 11. These recommended improvements are consistent with or less than the geometrics assumed in the County of Riverside General Plan Circulation Element. Improvements found to be included in the Western Riverside Council of Governments (WRCOG) TUMF and County of Riverside's (lead agency) DIF program have been identified as such. For improvements that do not appear to be in the TUMF or DIF, a fair share financial contribution based on the Project's fair share impact may be imposed in order to mitigate the Project's share of impacts in lieu of construction. These fees (both to the County of Riverside, TUMF, and as determined, to surrounding agencies as fair-share contributions) are collected as part of a funding mechanism aimed at ensuring that regional highways and arterial expansions keep pace with the projected vehicle trip increases.

PROJECT FAIR SHARE

Project mitigation may include a combination of fee payments to established programs (e.g., TUMF and/or DIF), construction of specific improvements, payment of a fair share contribution toward future improvements or a combination of these approaches. Improvements constructed by development may be eligible for a fee credit or reimbursement through the program where appropriate (to be determined at the County of Riverside's discretion). When off-site improvements are identified with a minor share of responsibility assigned to proposed development, the approving jurisdiction may elect to collect a fair share contribution or require the development to construct improvements. Improvements included in a defined program and constructed by development may be eligible for a fee credit or reimbursement through the program, where appropriate. Detailed fair share calculations, for each analysis peak hour, has been provided on Table 12 for each of the cumulatively impacted intersections.

If you have any questions, please contact me directly at (949) 336-5982.

Respectfully submitted,

URBAN CROSSROADS, INC.



Charlene So, PE
Senior Associate

EXHIBIT 1: PRELIMINARY SITE PLAN

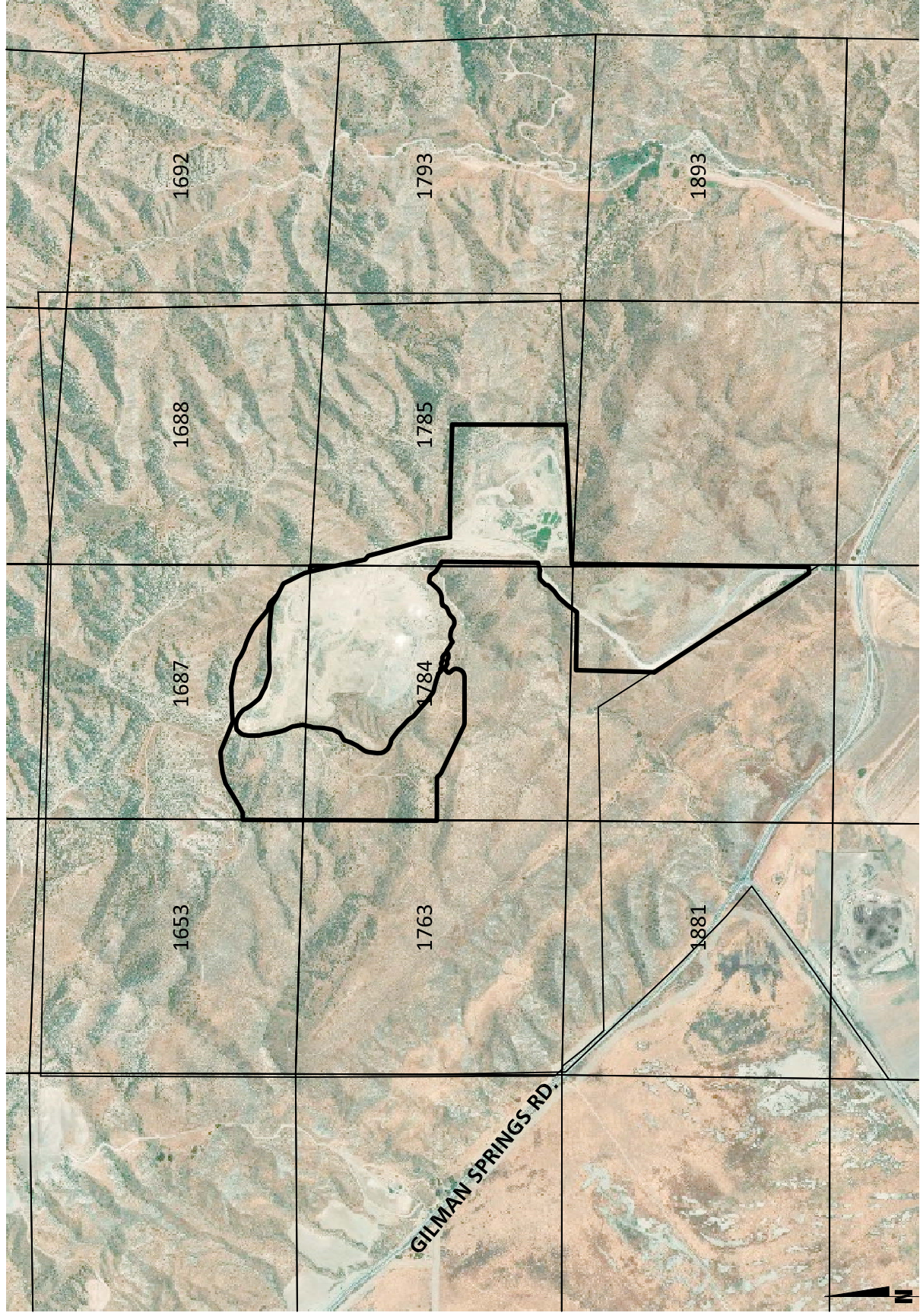
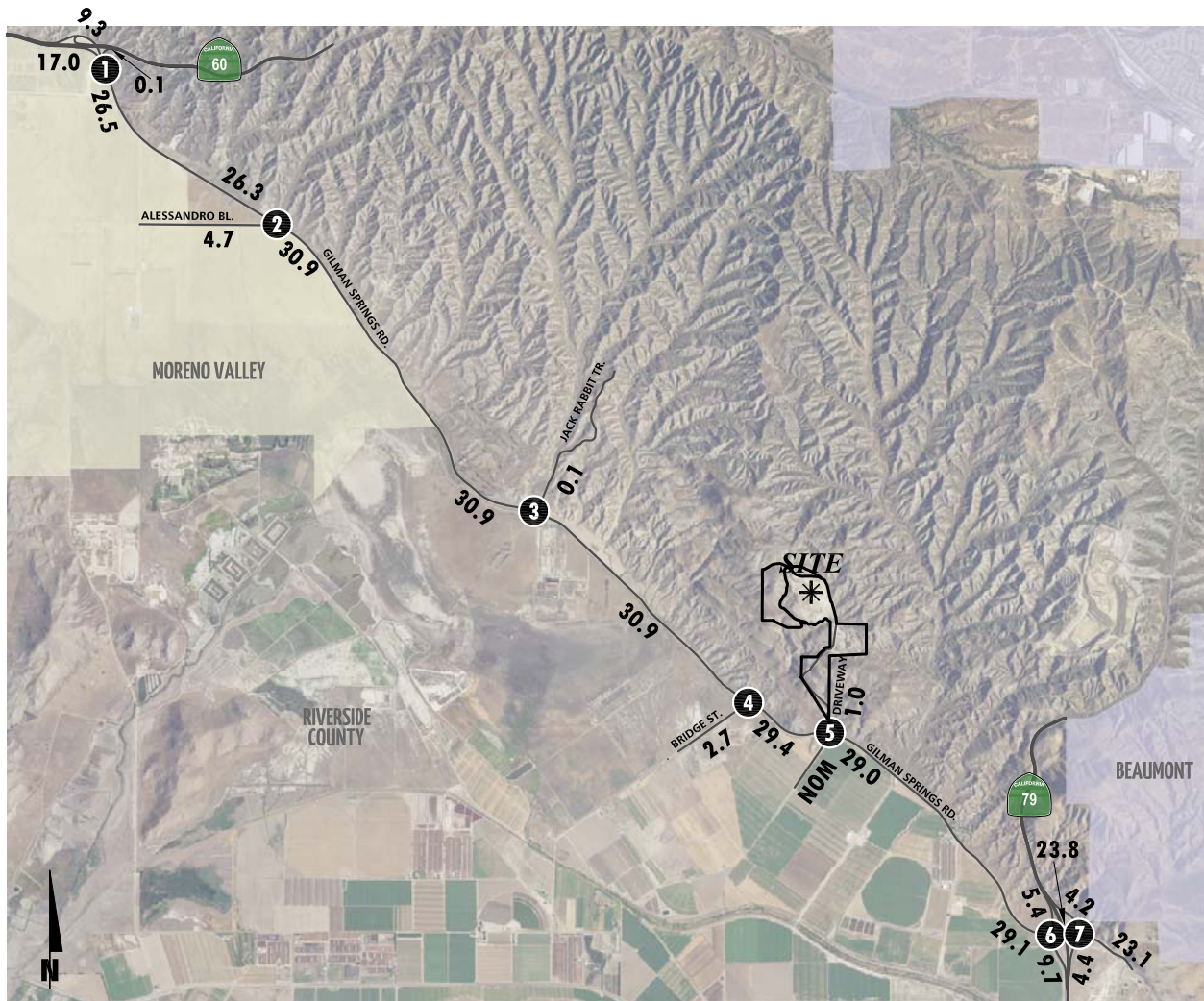


EXHIBIT 2: EAP (2019) TRAFFIC VOLUMES (IN PCE)



1 Gilman Springs Rd. & SR-60 EB Ramps 	2 Gilman Springs Rd. & Alessandro Bl. 	3 Jack Rabbit Trail & Gilman Springs Rd. 	4 Bridge St. & Gilman Springs Rd.
5 Driveway & Gilman Springs Rd. 	6 SR-79 SB Ramps & Gilman Springs Rd. 	7 SR-79 NB Ramps & Gilman Springs Rd. 	

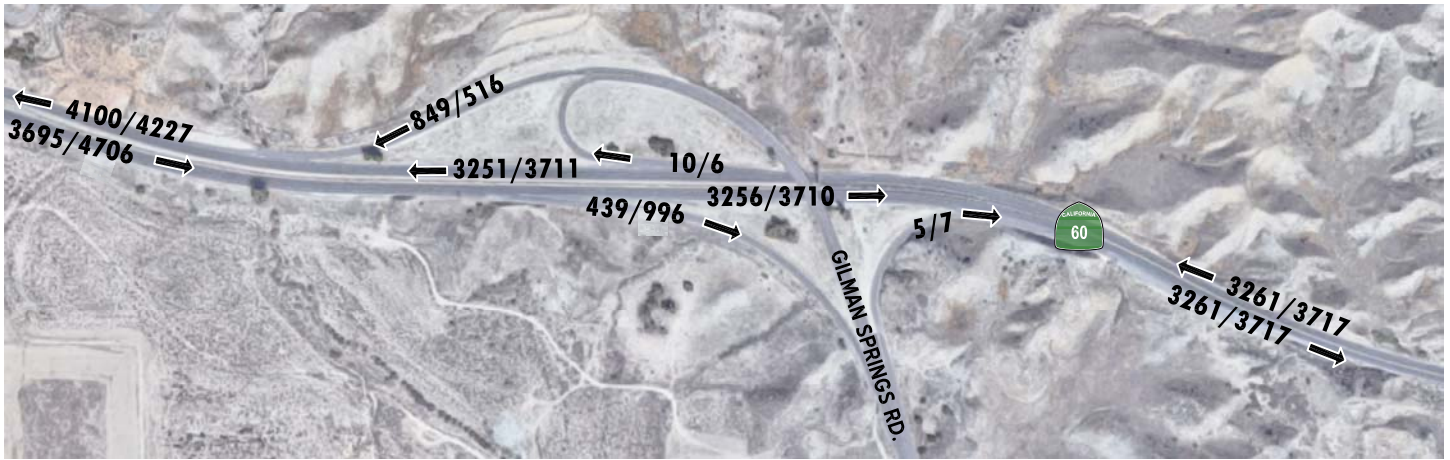
LEGEND:

10(10) = AM(PM) PEAK HOUR INTERSECTION VOLUMES

10.0 = VEHICLES PER DAY (1000'S)

NOM = NOMINAL, LESS THAN 50 VEHICLES PER DAY

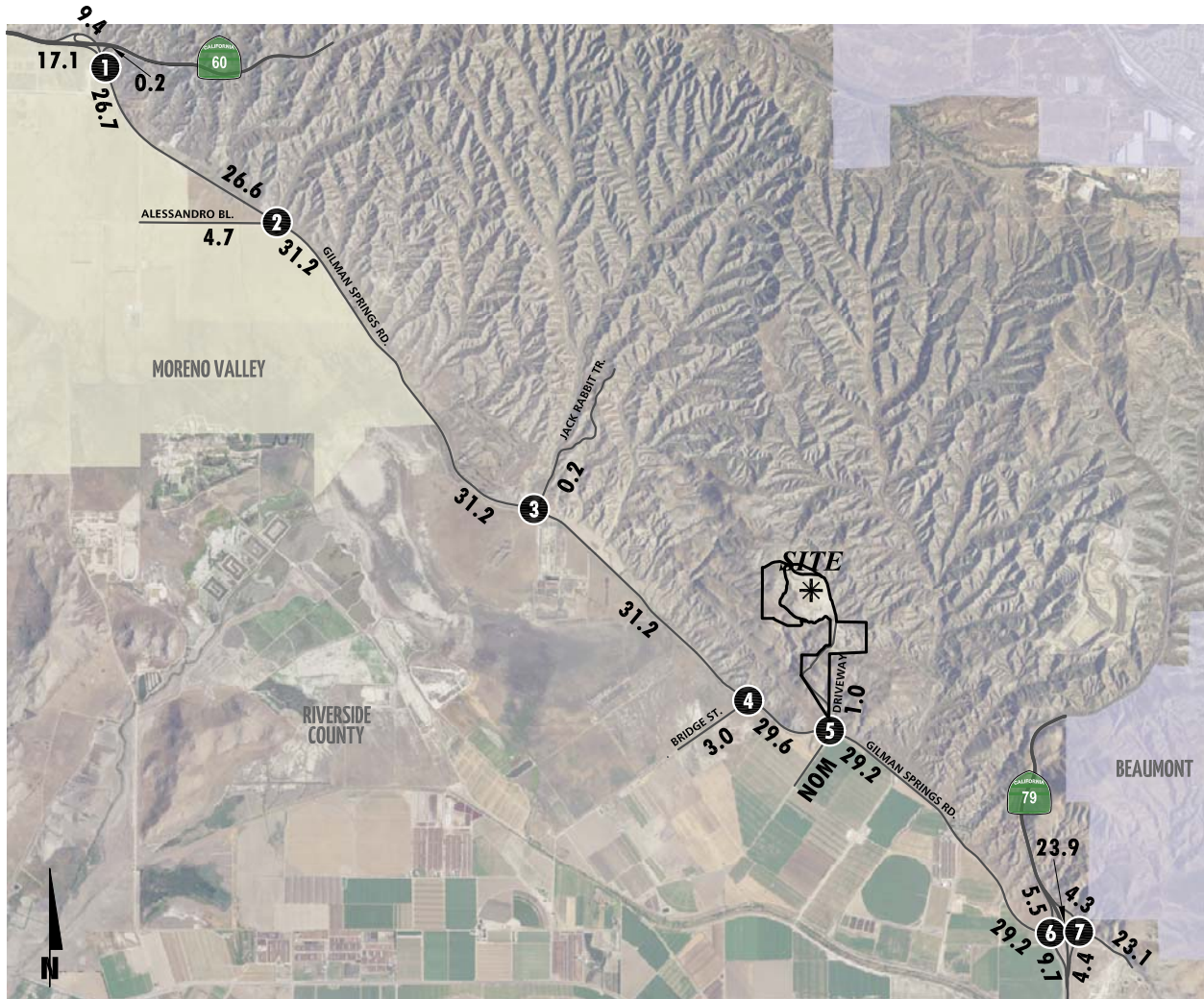
EXHIBIT 3: EAP (2019) FREEWAY MAINLINE VOLUMES



LEGEND:

← 100/200 = AM/PM PEAK HOUR VOLUMES
NOTE: VOLUMES IN ACTUAL VEHICLES (NOT PCE)

EXHIBIT 4: EAPC (2019) TRAFFIC VOLUMES (IN PCE)

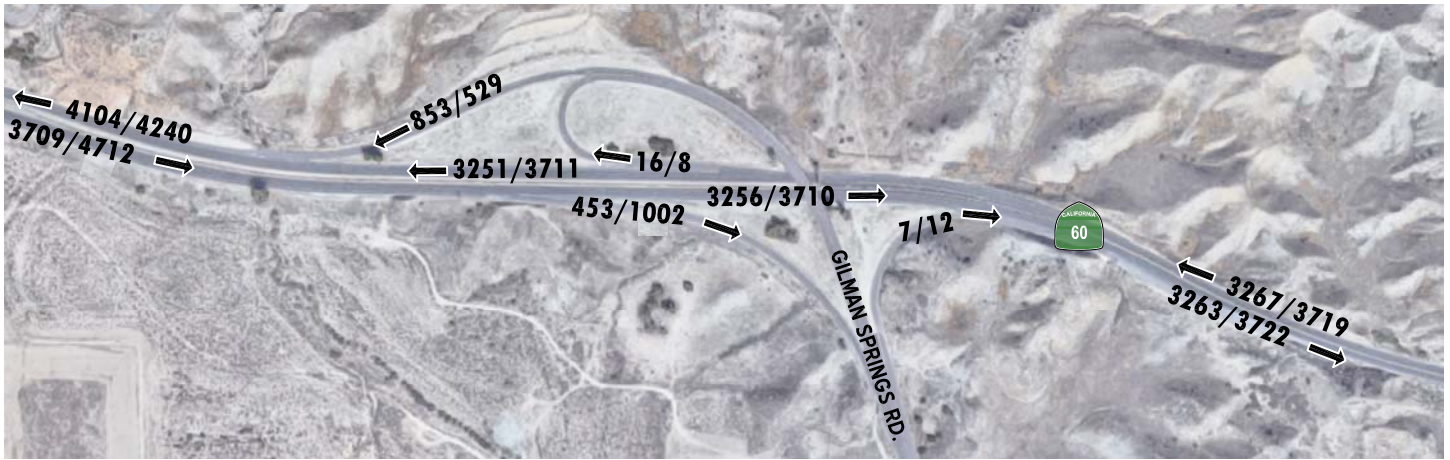


1 Gilman Springs Rd. & SR-60 EB Ramps 	2 Gilman Springs Rd. & Alessandro Bl. 	3 Jack Rabbit Trail & Gilman Springs Rd. 	4 Bridge St. & Gilman Springs Rd.
5 Driveway & Gilman Springs Rd. 	6 SR-79 SB Ramps & Gilman Springs Rd. 	7 SR-79 NB Ramps & Gilman Springs Rd. 	

LEGEND:

- 10(10) = AM(PM) PEAK HOUR INTERSECTION VOLUMES
- 10.0 = VEHICLES PER DAY (1000'S)
- NOM = NOMINAL, LESS THAN 50 VEHICLES PER DAY

EXHIBIT 5: EAPC (2019) FREEWAY MAINLINE VOLUMES



LEGEND:

← 100/200 = AM/PM PEAK HOUR VOLUMES
NOTE: VOLUMES IN ACTUAL VEHICLES (NOT PCE)

Table 1

Intersection Analysis for EAP (2019) Conditions

#	Intersection	Traffic Control ²	Existing (2018)				EAP (2018) - From TIA				EAP (2019)			
			Delay ¹ (secs.)		Level of Service		Delay ¹ (secs.)		Level of Service		Delay ¹ (secs.)		Level of Service	
			AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
1	Gilman Springs Rd. / SR-60 EB Ramps	UC	0.0	0.0	A	A	0.0	0.0	A	A	0.0	0.0	A	A
2	Gilman Springs Rd. / Alessandro Bl.	CSS	11.8	29.0	B	D	12.4	33.8	B	D	12.5	34.2	B	D
3	Jack Rabbit Trail / Gilman Springs Rd.	CSS	18.6	30.2	C	D	19.9	34.3	C	D	20.3	34.3	C	D
4	Bridge St. / Gilman Springs Rd.	CSS	>100.0	65.8	F	F	>100.0	90.8	F	F	>100.0	>100.0	F	F
5	Driveway / Gilman Springs Rd.	CSS	36.7	61.4	E	F	64.1	67.0	F	F	69.7	74.4	F	F
6	SR-79 SB Ramps / Gilman Springs Rd.	TS	7.4	12.3	A	B	7.6	12.7	A	B	7.7	12.9	A	B
7	SR-79 NB Ramps / Gilman Springs Rd.	CSS	>100.0	>100.0	F	F	>100.0	>100.0	F	F	>100.0	>100.0	F	F

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

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

² UC = Uncontrolled; CSS = Cross-street Stop; TS = Traffic Signal

Table 2

Peak Hour Freeway Off-Ramp Queuing Summary for EAP (2019) Conditions

Intersection	Movement	Available Stacking Distance (Feet)	EAP (2018) - From TIA				EAP (2019)			
			95th Percentile Queue (Feet)		Acceptable? ¹		95th Percentile Queue (Feet)		Acceptable? ¹	
			AM Peak Hour	PM Peak Hour	AM	PM	AM Peak Hour	PM Peak Hour	AM	PM
SR-79 SB Ramps / Gilman Springs Road	SBL/T	1,890	92	209	Yes	Yes	96	212	Yes	Yes
	SBR	235	0	0	Yes	Yes	0	0	Yes	Yes
SR-79 NB Ramps / Gilman Springs Road	NBL/T	1,600	525	375	Yes	Yes	560	403	Yes	Yes
	NBR	435	0	0	Yes	Yes	0	0	Yes	Yes

¹ Stacking Distance is acceptable if the required stacking distance is less than or equal to the stacking distance provided. An additional 15 feet of stacking which is assumed to be provided in the transition for turn pockets is reflected in the stacking distance shown on this table, where applicable.

Table 3

Basic Freeway Segment Analysis for EAP (2019) Conditions

Freeway	Direction	Mainline Segment	Lanes ¹	Existing				EAP (2018) - From TIA				EAP (2019)			
				Density ³		LOS ⁴		Density ³		LOS ⁴		Density ³		LOS ⁴	
				AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
SR-60 Freeway	Westbound	West of Gilman Springs Road	2	36.3	38.4	E	E	38.6	40.2	E	E	40.2	41.8	E	E
		East of Gilman Springs Road	2	25.7	31.0	C	D	26.4	31.9	D	D	27.1	33.0	D	D
	Eastbound	West of Gilman Springs Road	2	31.0	-- ⁵	D	F	32.2	-- ⁵	D	F	33.2	-- ⁵	D	F
		East of Gilman Springs Road	2	25.7	31.0	C	D	26.4	31.9	D	D	27.1	33.0	D	D
SR-79 Freeway	Southbound	North of Gilman Springs Road	2	10.6	13.6	A	B	11.0	14.0	A	B	11.2	14.3	B	B
		South of Gilman Springs Road	2	11.7	15.6	B	B	12.0	15.9	B	B	12.2	16.2	B	B
	Northbound	North of Gilman Springs Road	2	8.7	9.5	A	A	8.9	9.7	A	A	9.1	9.9	A	A
		South of Gilman Springs Road	2	9.7	9.6	A	A	9.9	9.8	A	A	10.1	10.0	A	A

BOLD = LOS does not meet Caltrans requirements (i.e., unacceptable LOS or LOS E/F).

¹ Number of lanes are in the specified direction and is based on existing conditions.

² Directional volumes based on current PeMS data.

³ Density is measured by passenger cars per mile per lane (pc/mi/ln).

⁴ LOS = Level of Service

⁵ HCS7 does not report density for freeway facilities operating at LOS F.

Table 4

Freeway Ramp Merge/Diverge Analysis for EAP (2019) Conditions

Freeway	Direction	Ramp Junction	Lanes on Freeway	Existing				EAP (2018) - From TIA				EAP (2019)			
				AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
				Density ¹	LOS ²	Density ¹	LOS ²	Density ¹	LOS ²	Density ¹	LOS ²	Density ¹	LOS ²	Density ¹	LOS ²
SR-60 Freeway	Westbound	On-Ramp at Gilman Springs Road	2	40.6	E	42.8	E	42.5	E	44.8	E	44.1	E	46.6	E
		Off-Ramp at Gilman Springs Road	2	27.9	D	31.8	E	28.5	D	32.5	E	29.1	D	33.1	E
	Eastbound	Off-Ramp at Gilman Springs Road	2	32.5	E	-- ³	F	33.3	E	-- ³	F	34.0	E	-- ³	F
		On-Ramp at Gilman Springs Road	2	29.4	D	34.8	D	30.2	D	35.9	D	31.0	D	36.9	E
SR-79 Freeway	Southbound	Off-Ramp at Gilman Springs Road	2	12.1	B	15.6	B	12.5	B	16.2	C	12.8	B	16.5	C
		On-Ramp at Gilman Springs Road	2	13.4	B	17.9	B	13.7	B	18.3	C	14.0	B	18.7	C
	Northbound	On-Ramp at Gilman Springs Road	2	9.8	B	10.8	B	10.1	B	11.1	B	10.3	B	11.3	B
		Off-Ramp at Gilman Springs Road	2	11.2	B	11.0	B	11.5	B	11.2	B	11.7	B	11.5	B

BOLD = LOS does not meet Caltrans requirements (i.e., unacceptable LOS or LOS E/F).

¹ Density is measured by passenger cars per mile per lane (pc/mi/ln).

² LOS = Level of Service

³ HCS7 does not report density for freeway facilities operating at LOS F.

Table 5

Intersection Analysis for EAP (2019) Conditions With Improvements

#	Intersection	Traffic Control ³	Intersection Approach Lanes ¹												Delay ² (secs.)		Level of Service	
			Northbound			Southbound			Eastbound			Westbound			AM	PM	AM	PM
			L	T	R	L	T	R	L	T	R	L	T	R				
4	Bridge St. / Gilman Springs Rd.																	
	- Without Improvements	CSS	0	1	0	0	0	0	0	1	1	1	1	0	>100.0	>100.0	F	F
	- With Improvements	<u>TS</u>	0	1	0	0	0	0	0	1	1	1	1	0	12.1	15.0	B	B
5	Driveway / Gilman Springs Rd.																	
	- Without Improvements	CSS	0	1	0	0	1	0	1	1	0	1	1	1	69.7	74.4	F	F
	- With Improvements	<u>TS</u>	0	1	0	0	1	0	1	1	0	1	1	1	13.2	11.2	B	B
7	SR-79 NB Ramps / Gilman Springs Rd.																	
	- Without Improvements	CSS	0	1	1	0	0	0	1	2	0	0	2	0	>100.0	>100.0	F	F
	- With Improvements	<u>TS</u>	0	1	1	0	0	0	1	2	0	0	2	0	18.0	11.0	B	B

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

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

L = Left; T = Through; R = Right

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

³ CSS = Cross-street Stop; TS = Traffic Signal; TS = Improvements

Table 6

Intersection Analysis for EAPC (2019) Conditions

#	Intersection	Traffic Control ²	EAPC (2018) - From TIA				EAPC (2019)			
			Delay ¹ (secs.)		Level of Service		Delay ¹ (secs.)		Level of Service	
			AM	PM	AM	PM	AM	PM	AM	PM
1	Gilman Springs Rd. / SR-60 EB Ramps	UC	0.0	0.0	A	A	0.0	0.0	A	A
2	Gilman Springs Rd. / Alessandro Bl.	CSS	13.1	37.9	B	E	13.2	40.6	B	E
3	Jack Rabbit Trail / Gilman Springs Rd.	CSS	31.3	44.2	D	E	32.3	46.5	D	E
4	Bridge St. / Gilman Springs Rd.	CSS	>100.0	>100.0	F	F	>100.0	>100.0	F	F
5	Driveway / Gilman Springs Rd.	CSS	77.6	79.3	F	F	84.2	89.5	F	F
6	SR-79 SB Ramps / Gilman Springs Rd.	TS	8.0	13.1	A	B	8.1	13.4	A	B
7	SR-79 NB Ramps / Gilman Springs Rd.	CSS	>100.0	>100.0	F	F	>100.0	>100.0	F	F

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

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

² UC = Uncontrolled; CSS = Cross-street Stop; TS = Traffic Signal

Table 7

Peak Hour Freeway Off-Ramp Queuing Summary for EAPC (2019) Conditions

Intersection	Movement	Available Stacking Distance (Feet)	EAPC (2018) - From TIA				EAPC (2019)			
			95th Percentile Queue (Feet)		Acceptable? ¹		95th Percentile Queue (Feet)		Acceptable? ¹	
			AM Peak Hour	PM Peak Hour	AM	PM	AM Peak Hour	PM Peak Hour	AM	PM
SR-79 SB Ramps / Gilman Springs Road	SBL/T	1,890	98	213	Yes	Yes	103	218	Yes	Yes
	SBR	235	7	4	Yes	Yes	8	4	Yes	Yes
SR-79 NB Ramps / Gilman Springs Road	NBL/T	1,600	625	450	Yes	Yes	670	460	Yes	Yes
	NBR	435	0	25	Yes	Yes	0	3	Yes	Yes

¹ Stacking Distance is acceptable if the required stacking distance is less than or equal to the stacking distance provided. An additional 15 feet of stacking which is assumed to be provided in the transition for turn pockets is reflected in the stacking distance shown on this table, where applicable.

Table 8

Basic Freeway Segment Analysis for EAPC (2019) Conditions

Freeway	Direction	Mainline Segment	Lanes ¹	Existing				EAPC (2018) - From TIA				EAPC (2019)			
				Density ³		LOS ⁴		Density ³		LOS ⁴		Density ³		LOS ⁴	
				AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
SR-60 Freeway	Westbound	West of Gilman Springs Road	2	36.3	38.4	E	E	38.7	41.3	E	E	40.2	43.1	E	E
		East of Gilman Springs Road	2	25.7	31.0	C	D	26.5	32.0	D	D	27.2	33.0	D	D
	Eastbound	West of Gilman Springs Road	2	31.0	-- ⁵	D	F	32.4	-- ⁵	D	F	33.4	-- ⁵	D	F
		East of Gilman Springs Road	2	25.7	31.0	C	D	26.4	32.0	D	D	27.2	33.1	D	D
SR-79 Freeway	Southbound	North of Gilman Springs Road	2	10.6	13.6	A	B	11.0	14.1	A	B	11.2	14.3	B	B
		South of Gilman Springs Road	2	11.7	15.6	B	B	12.0	15.9	B	B	12.2	16.2	B	B
	Northbound	North of Gilman Springs Road	2	8.7	9.5	A	A	8.9	9.9	A	A	9.1	10.1	A	A
		South of Gilman Springs Road	2	9.7	9.6	A	A	10.0	9.8	A	A	10.2	10.0	A	A

BOLD = LOS does not meet Caltrans requirements (i.e., unacceptable LOS or LOS E/F).

¹ Number of lanes are in the specified direction and is based on existing conditions.

² Directional volumes based on current PeMS data.

³ Density is measured by passenger cars per mile per lane (pc/mi/ln).

⁴ LOS = Level of Service

⁵ HCS7 does not report density for freeway facilities operating at LOS F.

Table 9

Freeway Ramp Merge/Diverge Analysis for EAPC (2019) Conditions

Freeway	Direction	Ramp Junction	Lanes on Freeway	Existing				EAPC (2018) - From TIA				EAPC (2019)			
				AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
				Density ¹	LOS ²	Density ¹	LOS ²	Density ¹	LOS ²	Density ¹	LOS ²	Density ¹	LOS ²	Density ¹	LOS ²
SR-60 Freeway	Westbound	On-Ramp at Gilman Springs Road	2	40.6	E	42.8	E	42.5	E	45.2	E	44.1	E	47.1	E
		Off-Ramp at Gilman Springs Road	2	27.9	D	31.8	E	28.6	D	32.5	E	2.1	D	33.1	E
	Eastbound	Off-Ramp at Gilman Springs Road	2	32.5	E	-- ³	F	33.4	E	-- ³	F	34.1	E	-- ³	F
		On-Ramp at Gilman Springs Road	2	29.4	D	34.8	D	30.3	D	36.0	D	31.0	D	37.1	D
SR-79 Freeway	Southbound	Off-Ramp at Gilman Springs Road	2	12.1	B	15.6	B	12.6	B	16.2	C	12.9	B	16.5	C
		On-Ramp at Gilman Springs Road	2	13.4	B	17.9	B	13.7	B	18.3	C	14.0	B	18.7	C
	Northbound	On-Ramp at Gilman Springs Road	2	9.8	B	10.8	B	10.2	B	11.2	B	10.4	B	11.4	B
		Off-Ramp at Gilman Springs Road	2	11.2	B	11.0	B	11.5	B	11.2	B	11.8	B	11.5	B

BOLD = LOS does not meet Caltrans requirements (i.e., unacceptable LOS or LOS E/F).

¹ Density is measured by passenger cars per mile per lane (pc/mi/ln).

² LOS = Level of Service

³ HCS7 does not report density for freeway facilities operating at LOS F.

Table 10

Intersection Analysis for EAPC (2019) Conditions With Improvements

#	Intersection	Traffic Control ³	Intersection Approach Lanes ¹												Delay ² (secs.)		Level of Service	
			Northbound			Southbound			Eastbound			Westbound			AM	PM	AM	PM
			L	T	R	L	T	R	L	T	R	L	T	R				
2	Gilman Springs Rd. / Alessandro Bl.																	
	- Without Improvements	CSS	1	1	0	0	1	0	0	1	0	0	0	0	13.2	40.6	B	E
	- With Improvements	<u>TS</u>	1	1	0	0	1	0	0	1	0	0	0	0	13.3	27.8	B	C
3	Jack Rabbit Trail / Gilman Springs Rd.																	
	- Without Improvements	CSS	0	0	0	0	1	0	1	1	0	0	1	0	32.3	46.5	D	E
	- With Improvements	<u>TS</u>	0	0	0	0	1	0	1	1	0	0	1	0	11.7	10.5	B	C
4	Bridge St. / Gilman Springs Rd.																	
	- Without Improvements	CSS	0	1	0	0	0	0	0	1	1	1	1	0	>100.0	>100.0	F	F
	- With Improvements	<u>TS</u>	0	1	0	0	0	0	0	1	1	1	1	0	13.4	17.0	B	B
5	Driveway / Gilman Springs Rd.																	
	- Without Improvements	CSS	0	1	0	0	1	0	1	1	0	1	1	1	84.2	89.5	F	F
	- With Improvements	<u>TS</u>	0	1	0	0	1	0	1	1	0	1	1	1	13.8	11.7	B	B
7	SR-79 NB Ramps / Gilman Springs Rd.																	
	- Without Improvements	CSS	0	1	1	0	0	0	1	2	0	0	2	0	>100.0	>100.0	F	F
	- With Improvements	<u>TS</u>	0	1	1	0	0	0	1	2	0	0	2	0	19.1	11.6	B	B

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

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

L = Left; T = Through; R = Right

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

³ CSS = Cross-street Stop; TS = Traffic Signal; TS = Improvements

Table 11

Summary of Intersection Improvements

#	Intersection Location	Jurisdiction	Recommended Improvements ¹				Improvements in TUMF or DIF ² ?
			Existing (2018)	E+P	EAP (2018)	EAPC (2018)	
2	Gilman Springs Rd. / Alessandro Bl.	Riverside County	None	None	None	Traffic Signal	Yes (TUMF)
3	Jack Rabbit Trail / Gilman Springs Rd.	Riverside County	None	None	None	Traffic Signal	No
4	Bridge St. / Gilman Springs Rd.	Riverside County	Traffic Signal	Same	Same	Same	Yes (TUMF)
5	Driveway / Gilman Springs Rd.	Riverside County	Traffic Signal	Same	Same	Same	No
7	SR-79 NB Ramps / Gilman Springs Rd.	Riverside County, Caltrans	Traffic Signal ³	Same	Same	Same	Yes (TUMF)

¹ All recommended improvements are consistent with the general plan designations of the respective jurisdictions in which they are located.

² Improvements are identified as being included in the Western Riverside Council of Governments (WRCOG) Transportation Uniform Mitigation Fee (TUMF) program and/or County of Riverside DIF.

³ Recommended improvements are consistent with the proposed Phase 5 SR-79 Freeway and Gilman Springs Road Interchange Improvements. These improvements are anticipated to be completed in April 2018.

Table 12

Project Fair Share Calculations

#	Intersection	Existing	Project Only	EAPC (2019)	Total New Traffic	Project % of New Traffic ¹
2	Gilman Springs Rd. / Alessandro Bl.	AM: 1,544	86	1,787	243	35.4%
		PM: 1,742	80	1,986	244	32.8%
3	Jack Rabbit Trail / Gilman Springs Rd.	AM: 1,545	87	1,790	245	35.5%
		PM: 1,740	79	1,985	245	32.2%
4	Bridge St. / Gilman Springs Rd.	AM: 1,581	101	1,856	275	36.7%
		PM: 1,758	91	2,032	274	33.2%
5	Driveway / Gilman Springs Rd.	AM: 1,462	145	1,727	265	54.7%
		PM: 1,647	133	1,913	266	50.0%
7	SR-79 NB Ramps / Gilman Springs Rd.	AM: 1,552	21	1,696	144	14.6%
		PM: 1,579	21	1,712	133	15.8%

¹ Project percentage of new traffic between Existing (2018) and EAPC (2018) traffic conditions. Highest fair share percentage is highlighted.

ATTACHMENT A

EAP (2019) HCM ANALYSIS WORKSHEETS

Intersection						
Int Delay, s/veh	1.5					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	84	172	916	519	1
Future Vol, veh/h	0	84	172	916	519	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	140	-	-	-
Veh in Median Storage, #	2	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	87	177	944	535	1

Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	1834	536	536	0	-	0
Stage 1	536	-	-	-	-	-
Stage 2	1298	-	-	-	-	-
Critical Hdwy	6.4	6	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	85	565	1042	-	-	-
Stage 1	591	-	-	-	-	-
Stage 2	258	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	71	565	1042	-	-	-
Mov Cap-2 Maneuver	223	-	-	-	-	-
Stage 1	491	-	-	-	-	-
Stage 2	258	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	12.5	1.4	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1042	-	565	-	-
HCM Lane V/C Ratio	0.17	-	0.153	-	-
HCM Control Delay (s)	9.2	-	12.5	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0.6	-	0.5	-	-

Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	1	602	1087	2	0	2
Future Vol, veh/h	1	602	1087	2	0	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	150	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	1	647	1169	2	0	2
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	1171	0	-	0	1819	1170
Stage 1	-	-	-	-	1170	-
Stage 2	-	-	-	-	649	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	604	-	-	-	86	237
Stage 1	-	-	-	-	298	-
Stage 2	-	-	-	-	524	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	604	-	-	-	86	237
Mov Cap-2 Maneuver	-	-	-	-	86	-
Stage 1	-	-	-	-	297	-
Stage 2	-	-	-	-	524	-
Approach	EB	WB		SB		
HCM Control Delay, s	0	0		20.3		
HCM LOS	C					
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	604	-	-	-	237	
HCM Lane V/C Ratio	0.002	-	-	-	0.009	
HCM Control Delay (s)	11	-	-	-	20.3	
HCM Lane LOS	B	-	-	-	C	
HCM 95th %tile Q(veh)	0	-	-	-	0	

Intersection						
Int Delay, s/veh	17.9					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↑	↑	↑	↑	↑
Traffic Vol, veh/h	564	38	14	989	100	40
Future Vol, veh/h	564	38	14	989	100	40
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	Yield	-	None	-	None
Storage Length	-	175	150	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	620	42	15	1087	110	44

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	620
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.1
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.2
Pot Cap-1 Maneuver	-	-	970
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	970
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	222.3
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	125	-	-	970	-
HCM Lane V/C Ratio	1.231	-	-	0.016	-
HCM Control Delay (s)	222.3	-	-	8.8	-
HCM Lane LOS	F	-	-	A	-
HCM 95th %tile Q(veh)	9.6	-	-	0	-

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

Intersection												
Int Delay, s/veh	3.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	64	539	0	0	951	32	0	0	0	26	0	52
Future Vol, veh/h	64	539	0	0	951	32	0	0	0	26	0	52
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	-	155	-	315	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	69	580	0	0	1023	34	0	0	0	28	0	56

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1057	0	0	580	0	0	1786	1775	580	1741	1741	1023
Stage 1	-	-	-	-	-	-	718	718	-	1023	1023	-
Stage 2	-	-	-	-	-	-	1068	1057	-	718	718	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	667	-	-	1004	-	-	64	84	518	69	88	289
Stage 1	-	-	-	-	-	-	423	436	-	287	316	-
Stage 2	-	-	-	-	-	-	271	304	-	423	436	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	667	-	-	1004	-	-	48	75	518	64	79	289
Mov Cap-2 Maneuver	-	-	-	-	-	-	48	75	-	64	79	-
Stage 1	-	-	-	-	-	-	379	391	-	257	316	-
Stage 2	-	-	-	-	-	-	219	304	-	379	391	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.2	0	0	69.7
HCM LOS			A	F

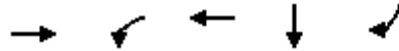
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	667	-	-	1004	-	-	133
HCM Lane V/C Ratio	-	0.103	-	-	-	-	-	0.631
HCM Control Delay (s)	0	11	-	-	0	-	-	69.7
HCM Lane LOS	A	B	-	-	A	-	-	F
HCM 95th %tile Q(veh)	-	0.3	-	-	0	-	-	3.3

Timings

Gilman Mine (JN 11379)

6: SR-79 SB Ramps & Gilman Springs Rd.

03/26/2019



Lane Group	EBT	WBL	WBT	SBT	SBR
Lane Configurations	↑↑	↑	↑↑	↑	↑
Traffic Volume (vph)	250	5	950	2	35
Future Volume (vph)	250	5	950	2	35
Turn Type	NA	Prot	NA	NA	Perm
Protected Phases	2	1	6	4	
Permitted Phases					4
Detector Phase	2	1	6	4	4
Switch Phase					
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	32.5	10.4	34.5	9.0	9.0
Total Split (s)	40.0	20.0	60.0	30.0	30.0
Total Split (%)	44.4%	22.2%	66.7%	33.3%	33.3%
Yellow Time (s)	5.5	4.4	5.5	3.0	3.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.5	5.4	6.5	4.0	4.0
Lead/Lag	Lag	Lead			
Lead-Lag Optimize?	Yes	Yes			
Recall Mode	None	None	None	None	None

Intersection Summary

Cycle Length: 90

Actuated Cycle Length: 45.3

Natural Cycle: 55

Control Type: Actuated-Uncoordinated

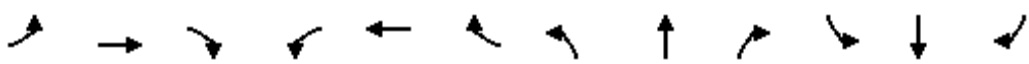
Splits and Phases: 6: SR-79 SB Ramps & Gilman Springs Rd.



HCM 6th Signalized Intersection Summary
6: SR-79 SB Ramps & Gilman Springs Rd.

Gilman Mine (JN 11379)

03/26/2019

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑		↑	↑↑						↑	↑
Traffic Volume (veh/h)	0	250	316	5	950	0	0	0	0	151	2	35
Future Volume (veh/h)	0	250	316	5	950	0	0	0	0	151	2	35
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1900	1900	1900	1900	0				1900	1900	1900
Adj Flow Rate, veh/h	0	263	264	5	1000	0				159	2	31
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95				0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0				0	0	0
Cap, veh/h	0	816	728	12	2133	0				273	3	246
Arrive On Green	0.00	0.45	0.45	0.01	0.59	0.00				0.15	0.15	0.15
Sat Flow, veh/h	0	1900	1610	1810	3705	0				1788	22	1610
Grp Volume(v), veh/h	0	263	264	5	1000	0				161	0	31
Grp Sat Flow(s),veh/h/ln	0	1805	1610	1810	1805	0				1811	0	1610
Q Serve(g_s), s	0.0	3.8	4.4	0.1	6.4	0.0				3.4	0.0	0.7
Cycle Q Clear(g_c), s	0.0	3.8	4.4	0.1	6.4	0.0				3.4	0.0	0.7
Prop In Lane	0.00		1.00	1.00		0.00				0.99		1.00
Lane Grp Cap(c), veh/h	0	816	728	12	2133	0				277	0	246
V/C Ratio(X)	0.00	0.32	0.36	0.41	0.47	0.00				0.58	0.00	0.13
Avail Cap(c_a), veh/h	0	1477	1317	645	4717	0				1150	0	1022
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	7.2	7.4	20.3	4.7	0.0				16.1	0.0	15.0
Incr Delay (d2), s/veh	0.0	0.5	0.6	40.9	0.3	0.0				4.1	0.0	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.8	0.8	0.2	0.5	0.0				1.4	0.0	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	7.7	8.0	61.2	5.1	0.0				20.2	0.0	15.5
LnGrp LOS	A	A	A	E	A	A				C	A	B
Approach Vol, veh/h		527			1005						192	
Approach Delay, s/veh		7.8			5.4						19.5	
Approach LOS		A			A						B	
Timer - Assigned Phs	1	2		4		6						
Phs Duration (G+Y+Rc), s	5.7	25.0		10.3		30.7						
Change Period (Y+Rc), s	5.4	6.5		4.0		6.5						
Max Green Setting (Gmax), s	14.6	33.5		26.0		53.5						
Max Q Clear Time (g_c+I1), s	2.1	6.4		5.4		8.4						
Green Ext Time (p_c), s	0.0	5.8		1.7		15.8						
Intersection Summary												
HCM 6th Ctrl Delay			7.7									
HCM 6th LOS			A									

Intersection												
Int Delay, s/veh	54.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↱↱			↱↱			↰	↱			
Traffic Vol, veh/h	38	363	0	0	520	272	434	2	8	0	0	0
Future Vol, veh/h	38	363	0	0	520	272	434	2	8	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	215	-	-	-	-	-	-	-	240	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	16965	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	40	382	0	0	547	286	457	2	8	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	833	0	-	-	-	0	736	1295	191
Stage 1	-	-	-	-	-	-	462	462	-
Stage 2	-	-	-	-	-	-	274	833	-
Critical Hdwy	4.1	-	-	-	-	-	6.8	6.5	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-	5.8	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.8	5.5	-
Follow-up Hdwy	2.2	-	-	-	-	-	3.5	4	3.3
Pot Cap-1 Maneuver	809	-	0	0	-	-	~ 359	164	825
Stage 1	-	-	0	0	-	-	607	568	-
Stage 2	-	-	0	0	-	-	753	386	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	809	-	-	-	-	-	~ 341	0	825
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 341	0	-
Stage 1	-	-	-	-	-	-	577	0	-
Stage 2	-	-	-	-	-	-	753	0	-

Approach	EB	WB	NB
HCM Control Delay, s	0.9	0	201.5
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	WBT	WBR
Capacity (veh/h)	341	825	809	-	-	-
HCM Lane V/C Ratio	1.346	0.01	0.049	-	-	-
HCM Control Delay (s)	205	9.4	9.7	-	-	-
HCM Lane LOS	F	A	A	-	-	-
HCM 95th %tile Q(veh)	22.4	0	0.2	-	-	-

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

Intersection						
Int Delay, s/veh	3.7					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	1	166	108	576	1035	5
Future Vol, veh/h	1	166	108	576	1035	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	140	-	-	-
Veh in Median Storage, #	2	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	1	173	113	600	1078	5
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	1907	1081	1083	0	-	0
Stage 1	1081	-	-	-	-	-
Stage 2	826	-	-	-	-	-
Critical Hdwy	6.4	5.9	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	76	292	652	-	-	-
Stage 1	328	-	-	-	-	-
Stage 2	433	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	63	292	652	-	-	-
Mov Cap-2 Maneuver	224	-	-	-	-	-
Stage 1	271	-	-	-	-	-
Stage 2	433	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	34.2	1.8		0		
HCM LOS	D					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	652	-	291	-	-	
HCM Lane V/C Ratio	0.173	-	0.598	-	-	
HCM Control Delay (s)	11.7	-	34.2	-	-	
HCM Lane LOS	B	-	D	-	-	
HCM 95th %tile Q(veh)	0.6	-	3.6	-	-	

Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	3	1199	682	2	2	2
Future Vol, veh/h	3	1199	682	2	2	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	150	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	3	1249	710	2	2	2

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	712	0	0 1966 711
Stage 1	-	-	- 711 -
Stage 2	-	-	- 1255 -
Critical Hdwy	4.1	-	- 6.3 6.2
Critical Hdwy Stg 1	-	-	- 5.4 -
Critical Hdwy Stg 2	-	-	- 5.4 -
Follow-up Hdwy	2.2	-	- 3.5 3.3
Pot Cap-1 Maneuver	897	-	- 74 436
Stage 1	-	-	- 490 -
Stage 2	-	-	- 271 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	897	-	- 74 436
Mov Cap-2 Maneuver	-	-	- 74 -
Stage 1	-	-	- 489 -
Stage 2	-	-	- 271 -

Approach	EB	WB	SB
HCM Control Delay, s	0	0	34.3
HCM LOS			D

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	897	-	-	-	127
HCM Lane V/C Ratio	0.003	-	-	-	0.033
HCM Control Delay (s)	9	-	-	-	34.3
HCM Lane LOS	A	-	-	-	D
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Intersection						
Int Delay, s/veh	3.5					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↗	↖	↑	↘	
Traffic Vol, veh/h	1128	72	17	638	46	18
Future Vol, veh/h	1128	72	17	638	46	18
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	Yield	-	None	-	None
Storage Length	-	175	150	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	1175	75	18	665	48	19
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1175	0	1876	1175
Stage 1	-	-	-	-	1175	-
Stage 2	-	-	-	-	701	-
Critical Hdwy	-	-	4.1	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	602	-	80	236
Stage 1	-	-	-	-	296	-
Stage 2	-	-	-	-	496	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	602	-	78	236
Mov Cap-2 Maneuver	-	-	-	-	78	-
Stage 1	-	-	-	-	296	-
Stage 2	-	-	-	-	481	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0.3		102	
HCM LOS					F	
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	96	-	-	602	-	
HCM Lane V/C Ratio	0.694	-	-	0.029	-	
HCM Control Delay (s)	102	-	-	11.2	-	
HCM Lane LOS	F	-	-	B	-	
HCM 95th %tile Q(veh)	3.5	-	-	0.1	-	

Intersection												
Int Delay, s/veh	3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	44	1101	1	0	608	21	0	0	0	23	0	48
Future Vol, veh/h	44	1101	1	0	608	21	0	0	0	23	0	48
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	-	155	-	315	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	47	1184	1	0	654	23	0	0	0	25	0	52

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	677	0	0	1185	0	0	1971	1956	1185	1933	1933	654
Stage 1	-	-	-	-	-	-	1279	1279	-	654	654	-
Stage 2	-	-	-	-	-	-	692	677	-	1279	1279	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	924	-	-	596	-	-	47	65	232	50	67	470
Stage 1	-	-	-	-	-	-	206	239	-	459	466	-
Stage 2	-	-	-	-	-	-	437	455	-	206	239	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	924	-	-	596	-	-	40	62	232	48	64	470
Mov Cap-2 Maneuver	-	-	-	-	-	-	40	62	-	48	64	-
Stage 1	-	-	-	-	-	-	195	227	-	436	466	-
Stage 2	-	-	-	-	-	-	389	455	-	196	227	-

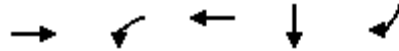
Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	0	0	74.4
HCM LOS			A	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	924	-	-	596	-	-	122
HCM Lane V/C Ratio	-	0.051	-	-	-	-	-	0.626
HCM Control Delay (s)	0	9.1	-	-	0	-	-	74.4
HCM Lane LOS	A	A	-	-	A	-	-	F
HCM 95th %tile Q(veh)	-	0.2	-	-	0	-	-	3.2

Timings
6: SR-79 SB Ramps & Gilman Springs Rd.

Gilman Mine (JN 11379)

03/26/2019



Lane Group	EBT	WBL	WBT	SBT	SBR
Lane Configurations	↑↑	↑	↑↑	↑	↑
Traffic Volume (vph)	552	2	587	3	42
Future Volume (vph)	552	2	587	3	42
Turn Type	NA	Prot	NA	NA	Perm
Protected Phases	2	1	6	4	
Permitted Phases					4
Detector Phase	2	1	6	4	4
Switch Phase					
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	32.5	10.4	34.5	9.0	9.0
Total Split (s)	40.0	20.0	60.0	30.0	30.0
Total Split (%)	44.4%	22.2%	66.7%	33.3%	33.3%
Yellow Time (s)	5.5	4.4	5.5	3.0	3.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.5	5.4	6.5	4.0	4.0
Lead/Lag	Lag	Lead			
Lead-Lag Optimize?	Yes	Yes			
Recall Mode	None	None	None	None	None

Intersection Summary

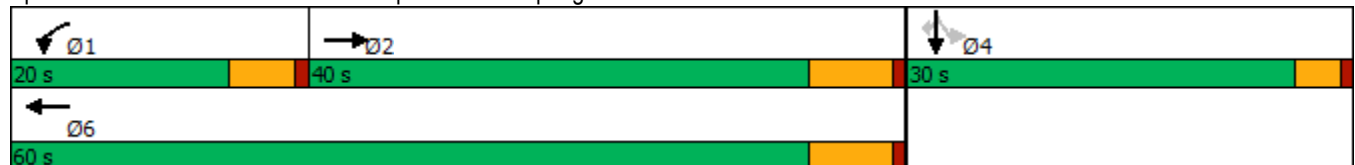
Cycle Length: 90

Actuated Cycle Length: 59.9

Natural Cycle: 60

Control Type: Actuated-Uncoordinated

Splits and Phases: 6: SR-79 SB Ramps & Gilman Springs Rd.



HCM 6th Signalized Intersection Summary
6: SR-79 SB Ramps & Gilman Springs Rd.

Gilman Mine (JN 11379)

03/26/2019

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	552	572	2	587	0	0	0	0	287	3	42
Future Volume (veh/h)	0	552	572	2	587	0	0	0	0	287	3	42
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1900	1900	1900	1900	0				1900	1900	1900
Adj Flow Rate, veh/h	0	587	463	2	624	0				305	3	33
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94				0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0				0	0	0
Cap, veh/h	0	890	701	5	2039	0				437	4	393
Arrive On Green	0.00	0.46	0.46	0.00	0.56	0.00				0.24	0.24	0.24
Sat Flow, veh/h	0	2015	1513	1810	3705	0				1793	18	1610
Grp Volume(v), veh/h	0	552	498	2	624	0				308	0	33
Grp Sat Flow(s),veh/h/ln	0	1805	1628	1810	1805	0				1810	0	1610
Q Serve(g_s), s	0.0	13.0	13.0	0.1	5.0	0.0				8.5	0.0	0.9
Cycle Q Clear(g_c), s	0.0	13.0	13.0	0.1	5.0	0.0				8.5	0.0	0.9
Prop In Lane	0.00		0.93	1.00		0.00				0.99		1.00
Lane Grp Cap(c), veh/h	0	837	754	5	2039	0				441	0	393
V/C Ratio(X)	0.00	0.66	0.66	0.40	0.31	0.00				0.70	0.00	0.08
Avail Cap(c_a), veh/h	0	1103	994	482	3522	0				858	0	763
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	11.4	11.4	27.3	6.3	0.0				18.9	0.0	16.0
Incr Delay (d2), s/veh	0.0	1.9	2.1	86.2	0.2	0.0				4.2	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	3.8	3.4	0.1	1.0	0.0				3.5	0.0	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	13.3	13.5	113.5	6.5	0.0				23.1	0.0	16.2
LnGrp LOS	A	B	B	F	A	A				C	A	B
Approach Vol, veh/h		1050			626						341	
Approach Delay, s/veh		13.4			6.8						22.4	
Approach LOS		B			A						C	
Timer - Assigned Phs	1	2		4		6						
Phs Duration (G+Y+Rc), s	5.6	31.9		17.4		37.5						
Change Period (Y+Rc), s	5.4	6.5		4.0		6.5						
Max Green Setting (Gmax), s	14.6	33.5		26.0		53.5						
Max Q Clear Time (g_c+I1), s	2.1	15.0		10.5		7.0						
Green Ext Time (p_c), s	0.0	10.4		2.9		8.5						
Intersection Summary												
HCM 6th Ctrl Delay				12.9								
HCM 6th LOS				B								

Intersection												
Int Delay, s/veh	39.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑↑			↑↑			↰	↰			
Traffic Vol, veh/h	34	805	0	0	336	227	253	1	7	0	0	0
Future Vol, veh/h	34	805	0	0	336	227	253	1	7	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	215	-	-	-	-	-	-	-	240	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	16965	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	37	866	0	0	361	244	272	1	8	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	605	0	-	-	-	0	1121	1545	433
Stage 1	-	-	-	-	-	-	940	940	-
Stage 2	-	-	-	-	-	-	181	605	-
Critical Hdwy	4.1	-	-	-	-	-	6.8	6.5	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-	5.8	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.8	5.5	-
Follow-up Hdwy	2.2	-	-	-	-	-	3.5	4	3.3
Pot Cap-1 Maneuver	983	-	0	0	-	-	~ 203	116	576
Stage 1	-	-	0	0	-	-	345	345	-
Stage 2	-	-	0	0	-	-	838	491	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	983	-	-	-	-	-	~ 195	0	576
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 195	0	-
Stage 1	-	-	-	-	-	-	332	0	-
Stage 2	-	-	-	-	-	-	838	0	-

Approach	EB	WB	NB
HCM Control Delay, s	0.4	0	247.7
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	WBT	WBR
Capacity (veh/h)	195	576	983	-	-	-
HCM Lane V/C Ratio	1.401	0.013	0.037	-	-	-
HCM Control Delay (s)	254.2	11.3	8.8	-	-	-
HCM Lane LOS	F	B	A	-	-	-
HCM 95th %tile Q(veh)	16.1	0	0.1	-	-	-

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

ATTACHMENT B

EAP (2019) TRAFFIC SIGNAL WARRANT WORKSHEETS

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **EAP 2019 Conditions - Weekday PM Peak Hour**

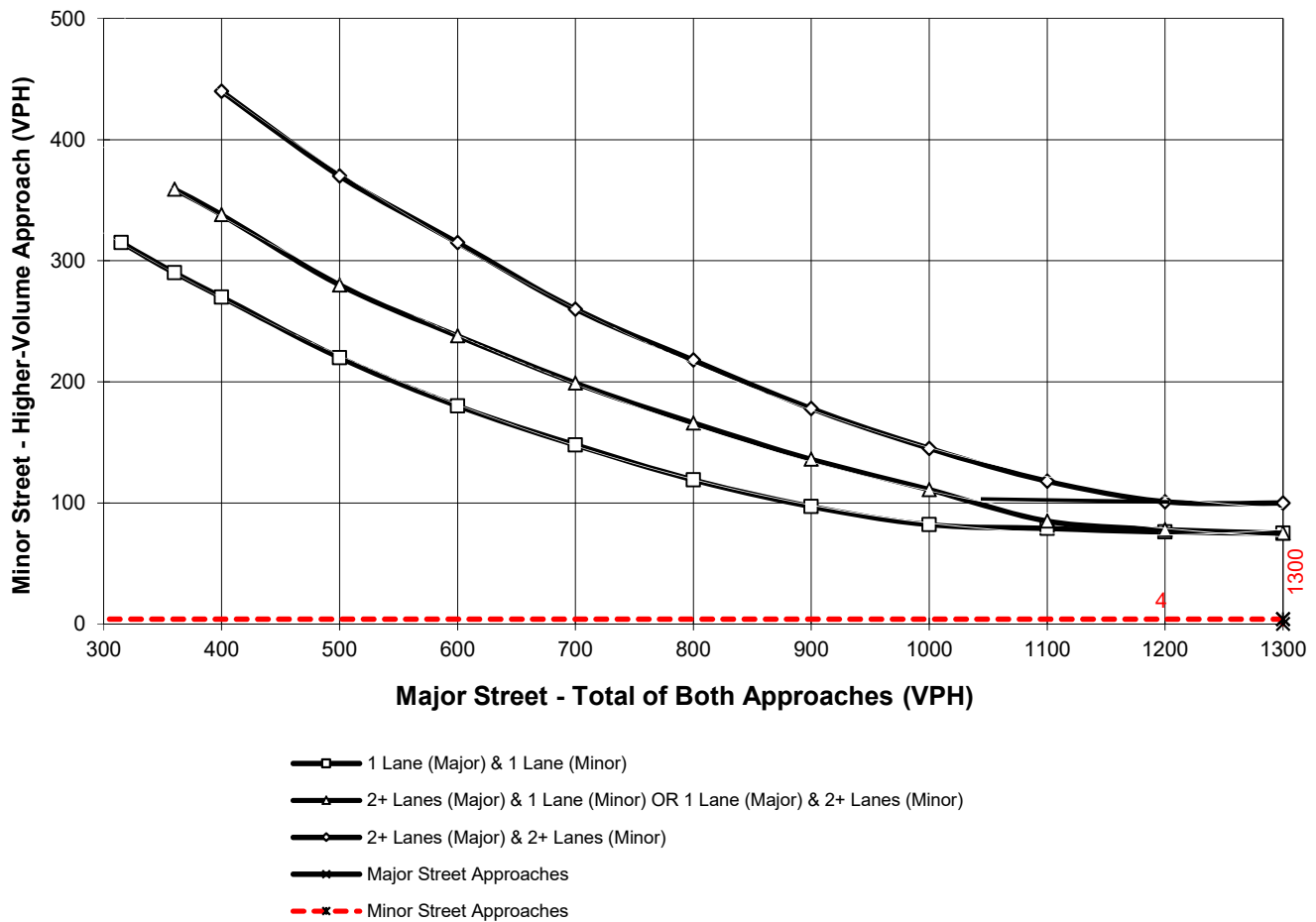
Major Street Name = **Gilman Springs Rd.**

Total of Both Approaches (VPH) = **1886**
Number of Approach Lanes Major Street = **1**

Minor Street Name = **Jack Rabbit Trail**

High Volume Approach (VPH) = **4**
Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes
and 75 vph applies as the lower threshold for a minor-street approach with one lane

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

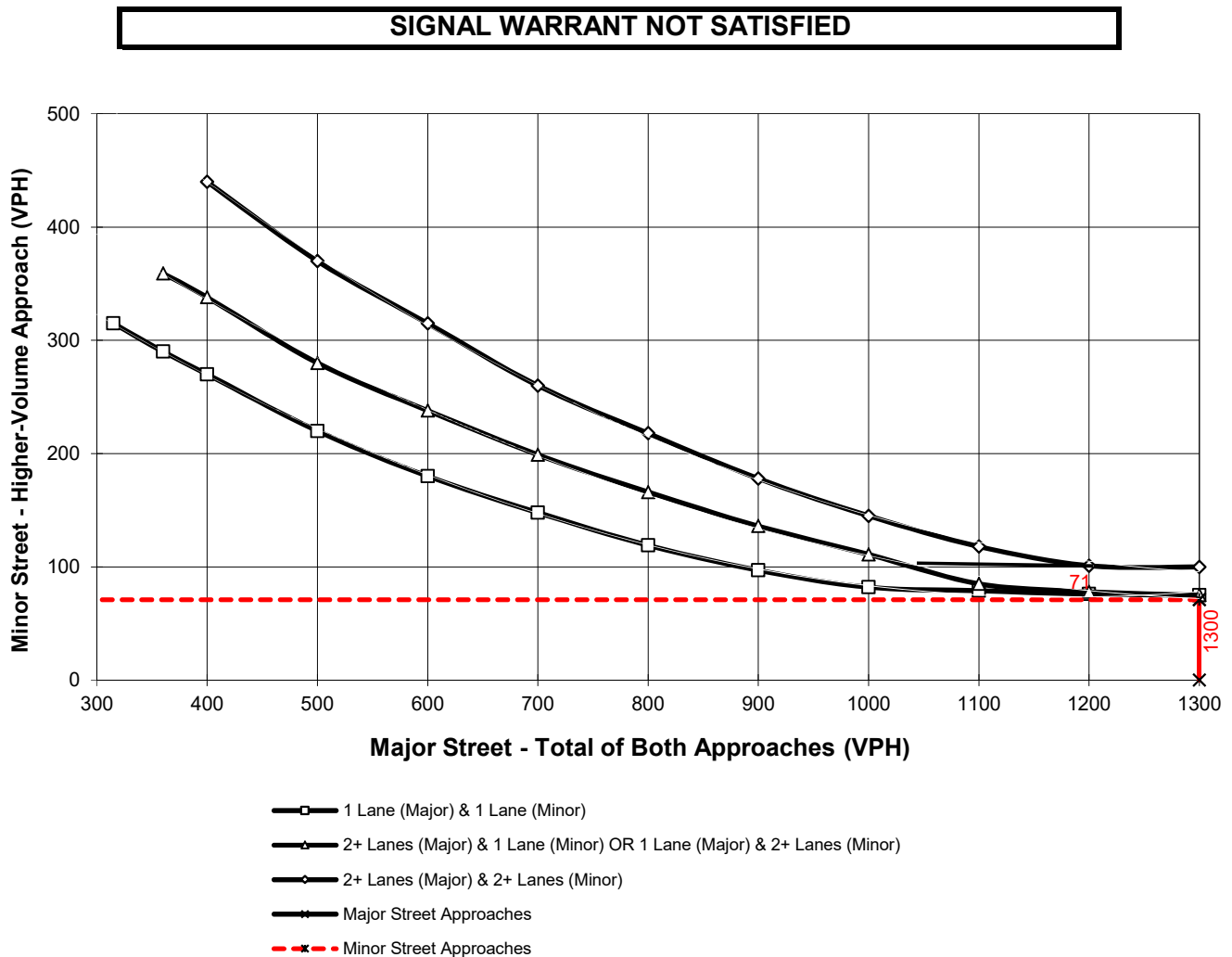
Traffic Conditions = **EAP 2019 Conditions - Weekday PM Peak Hour**

Major Street Name = **Gilman Springs Rd.**

Total of Both Approaches (VPH) = **1775**
Number of Approach Lanes Major Street = **1**

Minor Street Name = **Driveway**

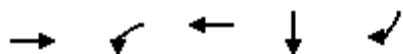
High Volume Approach (VPH) = **71**
Number of Approach Lanes Minor Street = **1**



*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes
and 75 vph applies as the lower threshold for a minor-street approach with one lane

ATTACHMENT C

EAP (2019) FREEWAY OFF-RAMP QUEUING ANALYSIS WORKSHEETS



Lane Group	EBT	WBL	WBT	SBT	SBR
Lane Group Flow (vph)	596	5	1000	161	37
v/c Ratio	0.29	0.01	0.44	0.32	0.07
Control Delay	4.6	21.8	7.5	18.6	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	4.6	21.8	7.5	18.6	0.3
Queue Length 50th (ft)	16	1	81	36	0
Queue Length 95th (ft)	70	10	147	96	0
Internal Link Dist (ft)	2294		777	1566	
Turn Bay Length (ft)		220			150
Base Capacity (vph)	2533	655	3497	1121	1040
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.24	0.01	0.29	0.14	0.04
Intersection Summary					

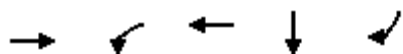
Intersection												
Int Delay, s/veh	54.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑↑			↑↑			↰	↰			
Traffic Vol, veh/h	38	363	0	0	520	272	434	2	8	0	0	0
Future Vol, veh/h	38	363	0	0	520	272	434	2	8	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	215	-	-	-	-	-	-	-	240	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	16965	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	40	382	0	0	547	286	457	2	8	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	833	0	-	-	-	0	736	1295	191
Stage 1	-	-	-	-	-	-	462	462	-
Stage 2	-	-	-	-	-	-	274	833	-
Critical Hdwy	4.1	-	-	-	-	-	6.8	6.5	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-	5.8	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.8	5.5	-
Follow-up Hdwy	2.2	-	-	-	-	-	3.5	4	3.3
Pot Cap-1 Maneuver	809	-	0	0	-	-	~ 359	164	825
Stage 1	-	-	0	0	-	-	607	568	-
Stage 2	-	-	0	0	-	-	753	386	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	809	-	-	-	-	-	~ 341	0	825
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 341	0	-
Stage 1	-	-	-	-	-	-	577	0	-
Stage 2	-	-	-	-	-	-	753	0	-

Approach	EB	WB	NB
HCM Control Delay, s	0.9	0	201.5
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	WBT	WBR
Capacity (veh/h)	341	825	809	-	-	-
HCM Lane V/C Ratio	1.346	0.01	0.049	-	-	-
HCM Control Delay (s)	205	9.4	9.7	-	-	-
HCM Lane LOS	F	A	A	-	-	-
HCM 95th %tile Q(veh)	22.4	0	0.2	-	-	-

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



Lane Group	EBT	WBL	WBT	SBT	SBR
Lane Group Flow (vph)	1196	2	624	308	45
v/c Ratio	0.67	0.01	0.33	0.57	0.08
Control Delay	11.5	30.5	9.1	24.4	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	11.5	30.5	9.1	24.4	0.3
Queue Length 50th (ft)	94	1	59	93	0
Queue Length 95th (ft)	288	7	115	212	0
Internal Link Dist (ft)	2294		777	1566	
Turn Bay Length (ft)		220			150
Base Capacity (vph)	2106	464	3163	830	799
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.57	0.00	0.20	0.37	0.06
Intersection Summary					

Intersection												
Int Delay, s/veh	39.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑↑			↑↑			↰	↰			
Traffic Vol, veh/h	34	805	0	0	336	227	253	1	7	0	0	0
Future Vol, veh/h	34	805	0	0	336	227	253	1	7	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	215	-	-	-	-	-	-	-	240	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	16965	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	37	866	0	0	361	244	272	1	8	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	605	0	-	-	-	0	1121	1545	433
Stage 1	-	-	-	-	-	-	940	940	-
Stage 2	-	-	-	-	-	-	181	605	-
Critical Hdwy	4.1	-	-	-	-	-	6.8	6.5	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-	5.8	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.8	5.5	-
Follow-up Hdwy	2.2	-	-	-	-	-	3.5	4	3.3
Pot Cap-1 Maneuver	983	-	0	0	-	-	~ 203	116	576
Stage 1	-	-	0	0	-	-	345	345	-
Stage 2	-	-	0	0	-	-	838	491	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	983	-	-	-	-	-	~ 195	0	576
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 195	0	-
Stage 1	-	-	-	-	-	-	332	0	-
Stage 2	-	-	-	-	-	-	838	0	-

Approach	EB	WB	NB
HCM Control Delay, s	0.4	0	247.7
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	WBT	WBR
Capacity (veh/h)	195	576	983	-	-	-
HCM Lane V/C Ratio	1.401	0.013	0.037	-	-	-
HCM Control Delay (s)	254.2	11.3	8.8	-	-	-
HCM Lane LOS	F	B	A	-	-	-
HCM 95th %tile Q(veh)	16.1	0	0.1	-	-	-

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

ATTACHMENT D

EAP (2019) BASIC FREEWAY SEGMENT ANALYSIS WORKSHEETS

HCS7 Basic Freeway Report

Project Information

Analyst	CS	Date	3/26/2019
Agency	Urban Crossroads, Inc.	Analysis Year	EAP (2019)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	Gilman Springs Mine TIA (JN 11379)		

Geometric Data

Number of Lanes, In	2	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Measured	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	-
Lane Width, ft	-	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	-		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	4100	Heavy Vehicle Adjustment Factor (fHV)	0.980
Peak Hour Factor	0.92	Flow Rate (Vp), pc/h/ln	2274
Total Trucks, %	2.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (cadj), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.95
Passenger Car Equivalent (Et)	2.000		

Speed and Density

Lane Width Adjustment (fLW)	-	Average Speed (S), mi/h	56.6
Right-Side Lateral Clearance Adj. (fRLC)	-	Density (D), pc/mi/ln	40.2
Total Ramp Density Adjustment	-	Level of Service (LOS)	E
Adjusted Free-Flow Speed (FFSadj), mi/h	70.0		

HCS7 Basic Freeway Report

Project Information

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Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	Gilman Springs Mine TIA (JN 11379)		

Geometric Data

Number of Lanes, In	2	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Measured	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	-
Lane Width, ft	-	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	-		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	3261	Heavy Vehicle Adjustment Factor (fHV)	0.990
Peak Hour Factor	0.92	Flow Rate (Vp), pc/h/ln	1790
Total Trucks, %	1.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (cadj), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.75
Passenger Car Equivalent (Et)	2.000		

Speed and Density

Lane Width Adjustment (fLW)	-	Average Speed (S), mi/h	66.0
Right-Side Lateral Clearance Adj. (fRLC)	-	Density (D), pc/mi/ln	27.1
Total Ramp Density Adjustment	-	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFSadj), mi/h	70.0		

HCS7 Basic Freeway Report

Project Information

Analyst	CS	Date	3/26/2019
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Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	Gilman Springs Mine TIA (JN 11379)		

Geometric Data

Number of Lanes, In	2	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Measured	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	-
Lane Width, ft	-	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	-		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	3695	Heavy Vehicle Adjustment Factor (fHV)	0.980
Peak Hour Factor	0.92	Flow Rate (Vp), pc/h/ln	2049
Total Trucks, %	2.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (cadj), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.85
Passenger Car Equivalent (Et)	2.000		

Speed and Density

Lane Width Adjustment (fLW)	-	Average Speed (S), mi/h	61.7
Right-Side Lateral Clearance Adj. (fRLC)	-	Density (D), pc/mi/ln	33.2
Total Ramp Density Adjustment	-	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFSadj), mi/h	70.0		

HCS7 Basic Freeway Report

Project Information

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Agency	Urban Crossroads, Inc.	Analysis Year	EAP (2019)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	Gilman Springs Mine TIA (JN 11379)		

Geometric Data

Number of Lanes, In	2	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Measured	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	-
Lane Width, ft	-	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	-		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	3261	Heavy Vehicle Adjustment Factor (fHV)	0.990
Peak Hour Factor	0.92	Flow Rate (Vp), pc/h/ln	1790
Total Trucks, %	1.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (cadj), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.75
Passenger Car Equivalent (Et)	2.000		

Speed and Density

Lane Width Adjustment (fLW)	-	Average Speed (S), mi/h	66.0
Right-Side Lateral Clearance Adj. (fRLC)	-	Density (D), pc/mi/ln	27.1
Total Ramp Density Adjustment	-	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFSadj), mi/h	70.0		

HCS7 Basic Freeway Report

Project Information

Analyst	CS	Date	3/26/2019
Agency	Urban Crossroads, Inc.	Analysis Year	EAP (2019)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	Gilman Springs Mine TIA (JN 11379)		

Geometric Data

Number of Lanes, In	2	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Measured	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	-
Lane Width, ft	-	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	-		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	1410	Heavy Vehicle Adjustment Factor (fHV)	0.980
Peak Hour Factor	0.92	Flow Rate (Vp), pc/h/ln	782
Total Trucks, %	2.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (cadj), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.33
Passenger Car Equivalent (Et)	2.000		

Speed and Density

Lane Width Adjustment (fLW)	-	Average Speed (S), mi/h	70.0
Right-Side Lateral Clearance Adj. (fRLC)	-	Density (D), pc/mi/ln	11.2
Total Ramp Density Adjustment	-	Level of Service (LOS)	B
Adjusted Free-Flow Speed (FFSadj), mi/h	70.0		

HCS7 Basic Freeway Report

Project Information

Analyst	CS	Date	3/26/2019
Agency	Urban Crossroads, Inc.	Analysis Year	EAP (2019)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	Gilman Springs Mine TIA (JN 11379)		

Geometric Data

Number of Lanes, In	2	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Measured	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	-
Lane Width, ft	-	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	-		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	1540	Heavy Vehicle Adjustment Factor (fHV)	0.980
Peak Hour Factor	0.92	Flow Rate (Vp), pc/h/ln	854
Total Trucks, %	2.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (cadj), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.36
Passenger Car Equivalent (Et)	2.000		

Speed and Density

Lane Width Adjustment (fLW)	-	Average Speed (S), mi/h	70.0
Right-Side Lateral Clearance Adj. (fRLC)	-	Density (D), pc/mi/ln	12.2
Total Ramp Density Adjustment	-	Level of Service (LOS)	B
Adjusted Free-Flow Speed (FFSadj), mi/h	70.0		

HCS7 Basic Freeway Report

Project Information

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Agency	Urban Crossroads, Inc.	Analysis Year	EAP (2019)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	Gilman Springs Mine TIA (JN 11379)		

Geometric Data

Number of Lanes, In	2	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Measured	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	-
Lane Width, ft	-	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	-		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	1147	Heavy Vehicle Adjustment Factor (fHV)	0.980
Peak Hour Factor	0.92	Flow Rate (Vp), pc/h/ln	636
Total Trucks, %	2.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (cadj), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.27
Passenger Car Equivalent (Et)	2.000		

Speed and Density

Lane Width Adjustment (fLW)	-	Average Speed (S), mi/h	70.0
Right-Side Lateral Clearance Adj. (fRLC)	-	Density (D), pc/mi/ln	9.1
Total Ramp Density Adjustment	-	Level of Service (LOS)	A
Adjusted Free-Flow Speed (FFSadj), mi/h	70.0		

HCS7 Basic Freeway Report

Project Information

Analyst	CS	Date	3/26/2019
Agency	Urban Crossroads, Inc.	Analysis Year	EAP (2019)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	Gilman Springs Mine TIA (JN 11379)		

Geometric Data

Number of Lanes, In	2	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Measured	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	-
Lane Width, ft	-	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	-		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	1290	Heavy Vehicle Adjustment Factor (fHV)	0.990
Peak Hour Factor	0.92	Flow Rate (Vp), pc/h/ln	708
Total Trucks, %	1.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (cadj), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.30
Passenger Car Equivalent (Et)	2.000		

Speed and Density

Lane Width Adjustment (fLW)	-	Average Speed (S), mi/h	70.0
Right-Side Lateral Clearance Adj. (fRLC)	-	Density (D), pc/mi/ln	10.1
Total Ramp Density Adjustment	-	Level of Service (LOS)	A
Adjusted Free-Flow Speed (FFSadj), mi/h	70.0		

HCS7 Basic Freeway Report

Project Information

Analyst	CS	Date	3/26/2019
Agency	Urban Crossroads, Inc.	Analysis Year	EAP (2019)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	Gilman Springs Mine TIA (JN 11379)		

Geometric Data

Number of Lanes, In	2	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Measured	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	-
Lane Width, ft	-	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	-		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	4227	Heavy Vehicle Adjustment Factor (fHV)	0.990
Peak Hour Factor	0.92	Flow Rate (Vp), pc/h/ln	2320
Total Trucks, %	1.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (cadj), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.97
Passenger Car Equivalent (Et)	2.000		

Speed and Density

Lane Width Adjustment (fLW)	-	Average Speed (S), mi/h	55.5
Right-Side Lateral Clearance Adj. (fRLC)	-	Density (D), pc/mi/ln	41.8
Total Ramp Density Adjustment	-	Level of Service (LOS)	E
Adjusted Free-Flow Speed (FFSadj), mi/h	70.0		

HCS7 Basic Freeway Report

Project Information

Analyst	CS	Date	3/26/2019
Agency	Urban Crossroads, Inc.	Analysis Year	EAP (2019)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	Gilman Springs Mine TIA (JN 11379)		

Geometric Data

Number of Lanes, In	2	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Measured	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	-
Lane Width, ft	-	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	-		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	3717	Heavy Vehicle Adjustment Factor (fHV)	0.990
Peak Hour Factor	0.92	Flow Rate (Vp), pc/h/ln	2040
Total Trucks, %	1.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (cadj), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.85
Passenger Car Equivalent (Et)	2.000		

Speed and Density

Lane Width Adjustment (fLW)	-	Average Speed (S), mi/h	61.8
Right-Side Lateral Clearance Adj. (fRLC)	-	Density (D), pc/mi/ln	33.0
Total Ramp Density Adjustment	-	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFSadj), mi/h	70.0		

HCS7 Basic Freeway Report

Project Information

Analyst	CS	Date	3/26/2019
Agency	Urban Crossroads, Inc.	Analysis Year	EAP (2019)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	Gilman Springs Mine TIA (JN 11379)		

Geometric Data

Number of Lanes, In	2	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Measured	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	-
Lane Width, ft	-	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	-		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	4706	Heavy Vehicle Adjustment Factor (fHV)	0.990
Peak Hour Factor	0.92	Flow Rate (Vp), pc/h/ln	2584
Total Trucks, %	1.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (cadj), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	1.08
Passenger Car Equivalent (Et)	2.000		

Speed and Density

Lane Width Adjustment (fLW)	-	Average Speed (S), mi/h	-
Right-Side Lateral Clearance Adj. (fRLC)	-	Density (D), pc/mi/ln	-
Total Ramp Density Adjustment	-	Level of Service (LOS)	F
Adjusted Free-Flow Speed (FFSadj), mi/h	70.0		

HCS7 Basic Freeway Report

Project Information

Analyst	CS	Date	3/26/2019
Agency	Urban Crossroads, Inc.	Analysis Year	EAP (2019)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	Gilman Springs Mine TIA (JN 11379)		

Geometric Data

Number of Lanes, In	2	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Measured	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	-
Lane Width, ft	-	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	-		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	3717	Heavy Vehicle Adjustment Factor (fHV)	0.990
Peak Hour Factor	0.92	Flow Rate (Vp), pc/h/ln	2040
Total Trucks, %	1.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (cadj), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.85
Passenger Car Equivalent (Et)	2.000		

Speed and Density

Lane Width Adjustment (fLW)	-	Average Speed (S), mi/h	61.8
Right-Side Lateral Clearance Adj. (fRLC)	-	Density (D), pc/mi/ln	33.0
Total Ramp Density Adjustment	-	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFSadj), mi/h	70.0		

HCS7 Basic Freeway Report

Project Information

Analyst	CS	Date	3/26/2019
Agency	Urban Crossroads, Inc.	Analysis Year	EAP (2019)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	Gilman Springs Mine TIA (JN 11379)		

Geometric Data

Number of Lanes, In	2	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Measured	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	-
Lane Width, ft	-	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	-		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	1807	Heavy Vehicle Adjustment Factor (fHV)	0.980
Peak Hour Factor	0.92	Flow Rate (Vp), pc/h/ln	1002
Total Trucks, %	2.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (cadj), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.42
Passenger Car Equivalent (Et)	2.000		

Speed and Density

Lane Width Adjustment (fLW)	-	Average Speed (S), mi/h	70.0
Right-Side Lateral Clearance Adj. (fRLC)	-	Density (D), pc/mi/ln	14.3
Total Ramp Density Adjustment	-	Level of Service (LOS)	B
Adjusted Free-Flow Speed (FFSadj), mi/h	70.0		

HCS7 Basic Freeway Report

Project Information

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Agency	Urban Crossroads, Inc.	Analysis Year	EAP (2019)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	Gilman Springs Mine TIA (JN 11379)		

Geometric Data

Number of Lanes, In	2	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Measured	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	-
Lane Width, ft	-	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	-		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	2067	Heavy Vehicle Adjustment Factor (fHV)	0.990
Peak Hour Factor	0.92	Flow Rate (Vp), pc/h/ln	1134
Total Trucks, %	1.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (cadj), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.47
Passenger Car Equivalent (Et)	2.000		

Speed and Density

Lane Width Adjustment (fLW)	-	Average Speed (S), mi/h	70.0
Right-Side Lateral Clearance Adj. (fRLC)	-	Density (D), pc/mi/ln	16.2
Total Ramp Density Adjustment	-	Level of Service (LOS)	B
Adjusted Free-Flow Speed (FFSadj), mi/h	70.0		

HCS7 Basic Freeway Report

Project Information

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Agency	Urban Crossroads, Inc.	Analysis Year	EAP (2019)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	Gilman Springs Mine TIA (JN 11379)		

Geometric Data

Number of Lanes, In	2	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Measured	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	-
Lane Width, ft	-	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	-		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	1265	Heavy Vehicle Adjustment Factor (fHV)	0.990
Peak Hour Factor	0.92	Flow Rate (Vp), pc/h/ln	694
Total Trucks, %	1.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (cadj), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.29
Passenger Car Equivalent (Et)	2.000		

Speed and Density

Lane Width Adjustment (fLW)	-	Average Speed (S), mi/h	70.0
Right-Side Lateral Clearance Adj. (fRLC)	-	Density (D), pc/mi/ln	9.9
Total Ramp Density Adjustment	-	Level of Service (LOS)	A
Adjusted Free-Flow Speed (FFSadj), mi/h	70.0		

HCS7 Basic Freeway Report

Project Information

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Agency	Urban Crossroads, Inc.	Analysis Year	EAP (2019)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	Gilman Springs Mine TIA (JN 11379)		

Geometric Data

Number of Lanes, In	2	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Measured	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	-
Lane Width, ft	-	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	-		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	1271	Heavy Vehicle Adjustment Factor (fHV)	0.990
Peak Hour Factor	0.92	Flow Rate (Vp), pc/h/ln	698
Total Trucks, %	1.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (cadj), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.29
Passenger Car Equivalent (Et)	2.000		

Speed and Density

Lane Width Adjustment (fLW)	-	Average Speed (S), mi/h	70.0
Right-Side Lateral Clearance Adj. (fRLC)	-	Density (D), pc/mi/ln	10.0
Total Ramp Density Adjustment	-	Level of Service (LOS)	A
Adjusted Free-Flow Speed (FFSadj), mi/h	70.0		

ATTACHMENT E

EAP (2019) RAMP JUNCTION ANALYSIS WORKSHEETS

HCS7 Freeway Merge Report

Project Information

Analyst	CS	Date	3/26/2019
Agency	Urban Crossroads, Inc.	Analysis Year	EAP (2019)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	Gilman Springs Mine TIA (JN 11379)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N), ln	2	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Acceleration Length (LA),ft	1500	300
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors

Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity

Demand Volume (Vi)	3251	849
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	1.00	5.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.990	0.952
Flow Rate (vi),pc/h	3569	969
Capacity (c), pc/h	4800	2100
Volume-to-Capacity Ratio (v/c)	0.95	0.46

Speed and Density

Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	38.6
Distance to Upstream Ramp (LUP), ft	-	Speed Index (M)	0.659
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (VOA), pc/mi/ln	-
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influence Area Speed (SR), mi/h	51.5
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	1.000	Outer Lanes Freeway Speed (SO), mi/h	-
Flow in Lanes 1 and 2 (v12), pc/h	3569	Ramp Junction Speed (S), mi/h	51.5
Flow Entering Ramp-Infl. Area (vR12), pc/h	4538	Average Density (D), pc/mi/ln	44.1
Level of Service (LOS)	E		

HCS7 Freeway Diverge Report

Project Information

Analyst	CS	Date	3/26/2019
Agency	Urban Crossroads, Inc.	Analysis Year	EAP (2019)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	Gilman Springs Mine TIA (JN 11379)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N), ln	2	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	190
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors

Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity

Demand Volume (Vi)	3261	10
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	1.00	29.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.990	0.775
Flow Rate (vi),pc/h	3580	14
Capacity (c), pc/h	4800	2100
Volume-to-Capacity Ratio (v/c)	0.75	0.01

Speed and Density

Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	33.3
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	0.299
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (VOA), pc/mi/ln	-
Distance to Downstream Ramp (LDOWN), ft	-	Off-Ramp Influence Area Speed (SR), mi/h	61.6
Prop. Freeway Vehicles in Lane 1 and 2 (Pd)	1.000	Outer Lanes Freeway Speed (So), mi/h	-
Flow in Lanes 1 and 2 (v12), pc/h	3580	Ramp Junction Speed (S), mi/h	61.6
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	29.1
Level of Service (LOS)	D		

HCS7 Freeway Diverge Report

Project Information

Analyst	CS	Date	3/26/2019
Agency	Urban Crossroads, Inc.	Analysis Year	EAP (2019)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	Gilman Springs Mine TIA (JN 11379)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N), ln	2	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	200
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors

Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity

Demand Volume (Vi)	3695	439
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	2.00	11.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.980	0.901
Flow Rate (vi),pc/h	4098	530
Capacity (c), pc/h	4800	2100
Volume-to-Capacity Ratio (v/c)	0.85	0.25

Speed and Density

Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	37.7
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	0.346
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (VOA), pc/mi/ln	-
Distance to Downstream Ramp (LDOWN), ft	-	Off-Ramp Influence Area Speed (SR), mi/h	60.3
Prop. Freeway Vehicles in Lane 1 and 2 (Pd)	1.000	Outer Lanes Freeway Speed (So), mi/h	-
Flow in Lanes 1 and 2 (v12), pc/h	4098	Ramp Junction Speed (S), mi/h	60.3
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	34.0
Level of Service (LOS)	E		

HCS7 Freeway Merge Report

Project Information

Analyst	CS	Date	3/26/2019
Agency	Urban Crossroads, Inc.	Analysis Year	EAP (2019)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	Gilman Springs Mine TIA (JN 11379)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N), ln	2	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Acceleration Length (LA),ft	1500	300
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors

Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity

Demand Volume (Vi)	3256	5
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	1.00	60.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.990	0.625
Flow Rate (vi),pc/h	3575	9
Capacity (c), pc/h	4800	2100
Volume-to-Capacity Ratio (v/c)	0.75	0.00

Speed and Density

Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	31.6
Distance to Upstream Ramp (LUP), ft	-	Speed Index (M)	0.434
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (VOA), pc/mi/ln	-
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influence Area Speed (SR), mi/h	57.8
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	1.000	Outer Lanes Freeway Speed (SO), mi/h	-
Flow in Lanes 1 and 2 (v12), pc/h	3575	Ramp Junction Speed (S), mi/h	57.8
Flow Entering Ramp-Infl. Area (vR12), pc/h	3584	Average Density (D), pc/mi/ln	31.0
Level of Service (LOS)	D		

HCS7 Freeway Diverge Report

Project Information

Analyst	CS	Date	3/26/2019
Agency	Urban Crossroads, Inc.	Analysis Year	EAP (2019)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	Gilman Springs Mine TIA (JN 11379)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N), ln	2	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	110
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors

Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity

Demand Volume (Vi)	1410	166
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	2.00	10.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.980	0.909
Flow Rate (vi),pc/h	1564	198
Capacity (c), pc/h	4800	2100
Volume-to-Capacity Ratio (v/c)	0.33	0.09

Speed and Density

Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	16.7
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	0.316
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (VOA), pc/mi/ln	-
Distance to Downstream Ramp (LDOWN), ft	-	Off-Ramp Influenecce Area Speed (SR), mi/h	61.2
Prop. Freeway Vehicles in Lane 1 and 2 (Pd)	1.000	Outer Lanes Freeway Speed (So), mi/h	-
Flow in Lanes 1 and 2 (v12), pc/h	1564	Ramp Junction Speed (S), mi/h	61.2
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	12.8
Level of Service (LOS)	B		

HCS7 Freeway Merge Report

Project Information

Analyst	CS	Date	3/26/2019
Agency	Urban Crossroads, Inc.	Analysis Year	EAP (2019)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	Gilman Springs Mine TIA (JN 11379)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N), ln	2	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Acceleration Length (LA),ft	1500	400
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors

Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity

Demand Volume (Vi)	1244	295
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	1.00	9.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.990	0.917
Flow Rate (vi),pc/h	1366	350
Capacity (c), pc/h	4800	2100
Volume-to-Capacity Ratio (v/c)	0.36	0.17

Speed and Density

Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	16.3
Distance to Upstream Ramp (LUP), ft	-	Speed Index (M)	0.307
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (VOA), pc/mi/ln	-
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influence Area Speed (SR), mi/h	61.4
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	1.000	Outer Lanes Freeway Speed (SO), mi/h	-
Flow in Lanes 1 and 2 (v12), pc/h	1366	Ramp Junction Speed (S), mi/h	61.4
Flow Entering Ramp-Infl. Area (vR12), pc/h	1716	Average Density (D), pc/mi/ln	14.0
Level of Service (LOS)	B		

HCS7 Freeway Merge Report

Project Information

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Agency	Urban Crossroads, Inc.	Analysis Year	EAP (2019)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	Gilman Springs Mine TIA (JN 11379)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N), ln	2	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Acceleration Length (LA),ft	1500	400
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors

Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity

Demand Volume (Vi)	856	291
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	1.00	6.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.990	0.943
Flow Rate (vi),pc/h	940	335
Capacity (c), pc/h	4800	2100
Volume-to-Capacity Ratio (v/c)	0.27	0.16

Speed and Density

Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	12.8
Distance to Upstream Ramp (LUP), ft	-	Speed Index (M)	0.299
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (VOA), pc/mi/ln	-
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenecce Area Speed (SR), mi/h	61.6
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	1.000	Outer Lanes Freeway Speed (SO), mi/h	-
Flow in Lanes 1 and 2 (v12), pc/h	940	Ramp Junction Speed (S), mi/h	61.6
Flow Entering Ramp-Infl. Area (vR12), pc/h	1275	Average Density (D), pc/mi/ln	10.3
Level of Service (LOS)	B		

HCS7 Freeway Diverge Report

Project Information

Analyst	CS	Date	3/26/2019
Agency	Urban Crossroads, Inc.	Analysis Year	EAP (2019)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	Gilman Springs Mine TIA (JN 11379)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N), ln	2	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	155
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors

Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity

Demand Volume (Vi)	1290	434
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	1.00	2.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.990	0.980
Flow Rate (vi),pc/h	1416	481
Capacity (c), pc/h	4800	2100
Volume-to-Capacity Ratio (v/c)	0.30	0.23

Speed and Density

Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	15.0
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	0.341
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (VOA), pc/mi/ln	-
Distance to Downstream Ramp (LDOWN), ft	-	Off-Ramp Influence Area Speed (SR), mi/h	60.5
Prop. Freeway Vehicles in Lane 1 and 2 (Pd)	1.000	Outer Lanes Freeway Speed (So), mi/h	-
Flow in Lanes 1 and 2 (v12), pc/h	1416	Ramp Junction Speed (S), mi/h	60.5
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	11.7
Level of Service (LOS)	B		

HCS7 Freeway Merge Report

Project Information

Analyst	CS	Date	3/26/2019
Agency	Urban Crossroads, Inc.	Analysis Year	EAP (2019)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	Gilman Springs Mine TIA (JN 11379)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N), ln	2	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Acceleration Length (LA),ft	1500	300
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors

Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity

Demand Volume (Vi)	3711	516
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	1.00	7.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.990	0.935
Flow Rate (vi),pc/h	4074	600
Capacity (c), pc/h	4800	2100
Volume-to-Capacity Ratio (v/c)	0.97	0.29

Speed and Density

Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	39.8
Distance to Upstream Ramp (LUP), ft	-	Speed Index (M)	0.712
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (VOA), pc/mi/ln	-
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenecce Area Speed (SR), mi/h	50.1
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	1.000	Outer Lanes Freeway Speed (SO), mi/h	-
Flow in Lanes 1 and 2 (v12), pc/h	4074	Ramp Junction Speed (S), mi/h	50.1
Flow Entering Ramp-Infl. Area (vR12), pc/h	4674	Average Density (D), pc/mi/ln	46.6
Level of Service (LOS)	E		

HCS7 Freeway Diverge Report

Project Information

Analyst	CS	Date	3/26/2019
Agency	Urban Crossroads, Inc.	Analysis Year	EAP (2019)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	Gilman Springs Mine TIA (JN 11379)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N), ln	2	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	190
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors

Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity

Demand Volume (Vi)	3717	6
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	1.00	49.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.990	0.671
Flow Rate (vi),pc/h	4081	10
Capacity (c), pc/h	4800	2100
Volume-to-Capacity Ratio (v/c)	0.85	0.00

Speed and Density

Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	37.6
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	0.299
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (VOA), pc/mi/ln	-
Distance to Downstream Ramp (LDOWN), ft	-	Off-Ramp Influence Area Speed (SR), mi/h	61.6
Prop. Freeway Vehicles in Lane 1 and 2 (Pd)	1.000	Outer Lanes Freeway Speed (So), mi/h	-
Flow in Lanes 1 and 2 (v12), pc/h	4081	Ramp Junction Speed (S), mi/h	61.6
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	33.1
Level of Service (LOS)	E		

HCS7 Freeway Diverge Report

Project Information

Analyst	CS	Date	3/26/2019
Agency	Urban Crossroads, Inc.	Analysis Year	EAP (2019)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	Gilman Springs Mine TIA (JN 11379)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N), ln	2	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	200
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors

Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity

Demand Volume (Vi)	4706	996
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	1.00	3.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.990	0.971
Flow Rate (vi),pc/h	5167	1115
Capacity (c), pc/h	4800	2100
Volume-to-Capacity Ratio (v/c)	1.08	0.53

Speed and Density

Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	46.9
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	-
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (VOA), pc/mi/ln	-
Distance to Downstream Ramp (LDOWN), ft	-	Off-Ramp Influenecce Area Speed (SR), mi/h	58.9
Prop. Freeway Vehicles in Lane 1 and 2 (Pd)	1.000	Outer Lanes Freeway Speed (So), mi/h	-
Flow in Lanes 1 and 2 (v12), pc/h	5167	Ramp Junction Speed (S), mi/h	-
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	-
Level of Service (LOS)	F		

HCS7 Freeway Merge Report

Project Information

Analyst	CS	Date	3/26/2019
Agency	Urban Crossroads, Inc.	Analysis Year	EAP (2019)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	Gilman Springs Mine TIA (JN 11379)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N), ln	2	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Acceleration Length (LA),ft	1500	300
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors

Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity

Demand Volume (Vi)	3710	7
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	1.00	42.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.990	0.704
Flow Rate (vi),pc/h	4073	11
Capacity (c), pc/h	4800	2100
Volume-to-Capacity Ratio (v/c)	0.85	0.01

Speed and Density

Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	35.5
Distance to Upstream Ramp (LUP), ft	-	Speed Index (M)	0.526
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (VOA), pc/mi/ln	-
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influence Area Speed (SR), mi/h	55.3
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	1.000	Outer Lanes Freeway Speed (SO), mi/h	-
Flow in Lanes 1 and 2 (v12), pc/h	4073	Ramp Junction Speed (S), mi/h	55.3
Flow Entering Ramp-Infl. Area (vR12), pc/h	4084	Average Density (D), pc/mi/ln	36.9
Level of Service (LOS)	E		

HCS7 Freeway Diverge Report

Project Information

Analyst	CS	Date	3/26/2019
Agency	Urban Crossroads, Inc.	Analysis Year	EAP (2019)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	Gilman Springs Mine TIA (JN 11379)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N), ln	2	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	110
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors

Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity

Demand Volume (Vi)	1807	309
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	2.00	6.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.980	0.943
Flow Rate (vi),pc/h	2004	356
Capacity (c), pc/h	4800	2100
Volume-to-Capacity Ratio (v/c)	0.42	0.17

Speed and Density

Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	20.5
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	0.330
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (VOA), pc/mi/ln	-
Distance to Downstream Ramp (LDOWN), ft	-	Off-Ramp Influence Area Speed (SR), mi/h	60.8
Prop. Freeway Vehicles in Lane 1 and 2 (Pd)	1.000	Outer Lanes Freeway Speed (So), mi/h	-
Flow in Lanes 1 and 2 (v12), pc/h	2004	Ramp Junction Speed (S), mi/h	60.8
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	16.5
Level of Service (LOS)	C		

HCS7 Freeway Merge Report

Project Information

Analyst	CS	Date	3/26/2019
Agency	Urban Crossroads, Inc.	Analysis Year	EAP (2019)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	Gilman Springs Mine TIA (JN 11379)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N), ln	2	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Acceleration Length (LA),ft	1500	400
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors

Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity

Demand Volume (Vi)	1498	569
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	1.00	2.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.990	0.980
Flow Rate (vi),pc/h	1645	631
Capacity (c), pc/h	4800	2100
Volume-to-Capacity Ratio (v/c)	0.47	0.30

Speed and Density

Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	20.5
Distance to Upstream Ramp (LUP), ft	-	Speed Index (M)	0.323
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (VOA), pc/mi/ln	-
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influence Area Speed (SR), mi/h	61.0
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	1.000	Outer Lanes Freeway Speed (SO), mi/h	-
Flow in Lanes 1 and 2 (v12), pc/h	1645	Ramp Junction Speed (S), mi/h	61.0
Flow Entering Ramp-Infl. Area (vR12), pc/h	2276	Average Density (D), pc/mi/ln	18.7
Level of Service (LOS)	C		

HCS7 Freeway Merge Report

Project Information

Analyst	CS	Date	3/26/2019
Agency	Urban Crossroads, Inc.	Analysis Year	EAP (2019)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	Gilman Springs Mine TIA (JN 11379)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N), ln	2	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Acceleration Length (LA),ft	1500	400
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors

Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity

Demand Volume (Vi)	1019	246
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	1.00	4.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.990	0.962
Flow Rate (vi),pc/h	1119	278
Capacity (c), pc/h	4800	2100
Volume-to-Capacity Ratio (v/c)	0.29	0.13

Speed and Density

Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	13.8
Distance to Upstream Ramp (LUP), ft	-	Speed Index (M)	0.301
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (VOA), pc/mi/ln	-
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influence Area Speed (SR), mi/h	61.6
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	1.000	Outer Lanes Freeway Speed (SO), mi/h	-
Flow in Lanes 1 and 2 (v12), pc/h	1119	Ramp Junction Speed (S), mi/h	61.6
Flow Entering Ramp-Infl. Area (vR12), pc/h	1397	Average Density (D), pc/mi/ln	11.3
Level of Service (LOS)	B		

HCS7 Freeway Diverge Report

Project Information

Analyst	CS	Date	3/26/2019
Agency	Urban Crossroads, Inc.	Analysis Year	EAP (2019)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	Gilman Springs Mine TIA (JN 11379)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N), ln	2	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	155
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors

Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity

Demand Volume (Vi)	1271	253
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	1.00	4.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.990	0.962
Flow Rate (vi),pc/h	1395	286
Capacity (c), pc/h	4800	2100
Volume-to-Capacity Ratio (v/c)	0.29	0.14

Speed and Density

Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	14.9
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	0.324
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (VOA), pc/mi/ln	-
Distance to Downstream Ramp (LDOWN), ft	-	Off-Ramp Influence Area Speed (SR), mi/h	60.9
Prop. Freeway Vehicles in Lane 1 and 2 (Pd)	1.000	Outer Lanes Freeway Speed (So), mi/h	-
Flow in Lanes 1 and 2 (v12), pc/h	1395	Ramp Junction Speed (S), mi/h	60.9
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	11.5
Level of Service (LOS)	B		

ATTACHMENT F

EAP (2019) HCM ANALYSIS WORKSHEETS, WITH IMPROVEMENTS

Timings

4: Bridge St. & Gilman Springs Rd.

Gilman Mine (JN 11379)

03/26/2019

	→	↘	↙	←	↖
Lane Group	EBT	EBR	WBL	WBT	NBL
Lane Configurations	↑	↑	↘	↑	↘
Traffic Volume (vph)	564	38	14	989	100
Future Volume (vph)	564	38	14	989	100
Turn Type	NA	Perm	Prot	NA	Prot
Protected Phases	4		3	8	2
Permitted Phases		4			
Detector Phase	4	4	3	8	2
Switch Phase					
Minimum Initial (s)	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	35.5	35.5	9.6	24.5	24.5
Total Split (s)	84.0	84.0	10.0	94.0	26.0
Total Split (%)	70.0%	70.0%	8.3%	78.3%	21.7%
Yellow Time (s)	5.5	5.5	3.6	5.5	5.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.5	6.5	4.6	6.5	6.5
Lead/Lag	Lag	Lag	Lead		
Lead-Lag Optimize?	Yes	Yes	Yes		
Recall Mode	None	None	None	None	Min

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 81.4

Natural Cycle: 80

Control Type: Actuated-Uncoordinated

Splits and Phases: 4: Bridge St. & Gilman Springs Rd.

↖ Ø2	↘ Ø3	→ Ø4
26 s	10 s	84 s
	← Ø8	
	94 s	

HCM 6th Signalized Intersection Summary
4: Bridge St. & Gilman Springs Rd.

Gilman Mine (JN 11379)

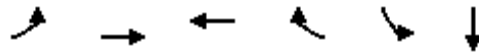
03/26/2019

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↗	↙	↑	↘	
Traffic Volume (veh/h)	564	38	14	989	100	40
Future Volume (veh/h)	564	38	14	989	100	40
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	620	0	15	1087	110	44
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	1150		32	1303	169	68
Arrive On Green	0.61	0.00	0.02	0.69	0.14	0.14
Sat Flow, veh/h	1900	1610	1810	1900	1241	496
Grp Volume(v), veh/h	620	0	15	1087	155	0
Grp Sat Flow(s),veh/h/ln	1900	1610	1810	1900	1749	0
Q Serve(g_s), s	14.0	0.0	0.6	30.8	6.2	0.0
Cycle Q Clear(g_c), s	14.0	0.0	0.6	30.8	6.2	0.0
Prop In Lane		1.00	1.00		0.71	0.28
Lane Grp Cap(c), veh/h	1150		32	1303	239	0
V/C Ratio(X)	0.54		0.46	0.83	0.65	0.00
Avail Cap(c_a), veh/h	2011		133	2270	466	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	8.5	0.0	35.6	8.4	30.0	0.0
Incr Delay (d2), s/veh	0.6	0.0	3.8	2.1	3.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.9	0.0	0.3	6.8	2.5	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	9.0	0.0	39.4	10.5	32.9	0.0
LnGrp LOS	A		D	B	C	A
Approach Vol, veh/h	620	A		1102	155	
Approach Delay, s/veh	9.0			10.9	32.9	
Approach LOS	A			B	C	
Timer - Assigned Phs	2		3	4	8	
Phs Duration (G+Y+Rc), s	16.5		5.9	50.8	56.7	
Change Period (Y+Rc), s	6.5		4.6	6.5	6.5	
Max Green Setting (Gmax), s	19.5		5.4	77.5	87.5	
Max Q Clear Time (g_c+I1), s	8.2		2.6	16.0	32.8	
Green Ext Time (p_c), s	0.3		0.0	6.2	17.5	
Intersection Summary						
HCM 6th Ctrl Delay			12.1			
HCM 6th LOS			B			
Notes						
User approved volume balancing among the lanes for turning movement.						
Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.						

Timings
5: Driveway & Gilman Springs Rd.

Gilman Mine (JN 11379)

03/26/2019



Lane Group	EBL	EBT	WBT	WBR	SBL	SBT	Ø2	Ø3
Lane Configurations								
Traffic Volume (vph)	64	539	951	32	26	0		
Future Volume (vph)	64	539	951	32	26	0		
Turn Type	Prot	NA	NA	Perm	Perm	NA		
Protected Phases	7	4	8			6	2	3
Permitted Phases				8	6			
Detector Phase	7	4	8	8	6	6		
Switch Phase								
Minimum Initial (s)	5.0	10.0	10.0	10.0	10.0	10.0	10.0	5.0
Minimum Split (s)	9.6	30.5	30.5	30.5	14.6	14.6	14.6	9.6
Total Split (s)	10.0	94.4	94.0	94.0	16.0	16.0	16.0	9.6
Total Split (%)	8.3%	78.7%	78.3%	78.3%	13.3%	13.3%	13%	8%
Yellow Time (s)	3.6	5.5	5.5	5.5	3.6	3.6	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0		
Total Lost Time (s)	4.6	6.5	6.5	6.5		4.6		
Lead/Lag	Lead	Lag	Lag	Lag				Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes				Yes
Recall Mode	None	None	None	None	Min	Min	Min	None

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 85

Natural Cycle: 80

Control Type: Actuated-Uncoordinated

Splits and Phases: 5: Driveway & Gilman Springs Rd.

16 s	9.6 s	94.4 s
16 s	10 s	94 s

HCM 6th Signalized Intersection Summary
5: Driveway & Gilman Springs Rd.

Gilman Mine (JN 11379)

03/26/2019

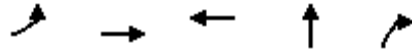
												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	64	539	0	0	951	32	0	0	0	26	0	52
Future Volume (veh/h)	64	539	0	0	951	32	0	0	0	26	0	52
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	69	580	0	0	1023	34	0	0	0	28	0	56
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	89	1409	0	2	1208	1024	0	233	0	102	22	130
Arrive On Green	0.05	0.74	0.00	0.00	0.64	0.64	0.00	0.00	0.00	0.12	0.00	0.12
Sat Flow, veh/h	1810	1900	0	1810	1900	1610	0	1900	0	349	183	1065
Grp Volume(v), veh/h	69	580	0	0	1023	34	0	0	0	84	0	0
Grp Sat Flow(s),veh/h/ln	1810	1900	0	1810	1900	1610	0	1900	0	1597	0	0
Q Serve(g_s), s	3.1	9.3	0.0	0.0	34.7	0.6	0.0	0.0	0.0	0.5	0.0	0.0
Cycle Q Clear(g_c), s	3.1	9.3	0.0	0.0	34.7	0.6	0.0	0.0	0.0	3.8	0.0	0.0
Prop In Lane	1.00		0.00	1.00		1.00	0.00		0.00	0.33		0.67
Lane Grp Cap(c), veh/h	89	1409	0	2	1208	1024	0	233	0	254	0	0
V/C Ratio(X)	0.78	0.41	0.00	0.00	0.85	0.03	0.00	0.00	0.00	0.33	0.00	0.00
Avail Cap(c_a), veh/h	120	2046	0	111	2036	1726	0	265	0	281	0	0
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	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	38.4	3.9	0.0	0.0	11.7	5.5	0.0	0.0	0.0	33.1	0.0	0.0
Incr Delay (d2), s/veh	13.6	0.3	0.0	0.0	2.5	0.0	0.0	0.0	0.0	0.8	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	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	1.6	0.0	0.0	10.3	0.2	0.0	0.0	0.0	1.6	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	51.9	4.2	0.0	0.0	14.2	5.5	0.0	0.0	0.0	33.8	0.0	0.0
LnGrp LOS	D	A	A	A	B	A	A	A	A	C	A	A
Approach Vol, veh/h	649			1057				0			84	
Approach Delay, s/veh	9.3			13.9				0.0			33.8	
Approach LOS	A			B							C	
Timer - Assigned Phs	2		3	4		6		7	8			
Phs Duration (G+Y+Rc), s	14.6		0.0	67.0		14.6		8.6	58.4			
Change Period (Y+Rc), s	4.6		4.6	6.5		4.6		4.6	6.5			
Max Green Setting (Gmax), s	11.4		5.0	87.9		11.4		5.4	87.5			
Max Q Clear Time (g_c+I1), s	0.0		0.0	11.3		5.8		5.1	36.7			
Green Ext Time (p_c), s	0.0		0.0	5.6		0.1		0.0	15.3			
Intersection Summary												
HCM 6th Ctrl Delay	13.2											
HCM 6th LOS	B											

Timings

Gilman Mine (JN 11379)

7: SR-79 NB Ramps & Gilman Springs Rd.

03/26/2019



Lane Group	EBL	EBT	WBT	NBT	NBR
Lane Configurations					
Traffic Volume (vph)	38	363	520	2	8
Future Volume (vph)	38	363	520	2	8
Turn Type	Prot	NA	NA	NA	Perm
Protected Phases	7	4	8	2	
Permitted Phases					2
Detector Phase	7	4	8	2	2
Switch Phase					
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.4	34.5	32.5	9.0	9.0
Total Split (s)	20.0	60.0	40.0	30.0	30.0
Total Split (%)	22.2%	66.7%	44.4%	33.3%	33.3%
Yellow Time (s)	4.4	5.5	5.5	3.0	3.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.4	6.5	6.5	4.0	4.0
Lead/Lag	Lead		Lag		
Lead-Lag Optimize?	Yes		Yes		
Recall Mode	None	None	None	None	None

Intersection Summary

Cycle Length: 90

Actuated Cycle Length: 68.5

Natural Cycle: 65

Control Type: Actuated-Uncoordinated

Splits and Phases: 7: SR-79 NB Ramps & Gilman Springs Rd.



HCM 6th Signalized Intersection Summary
7: SR-79 NB Ramps & Gilman Springs Rd.

Gilman Mine (JN 11379)

03/26/2019

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	38	363	0	0	520	272	434	2	8	0	0	0
Future Volume (veh/h)	38	363	0	0	520	272	434	2	8	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach	No			No			No					
Adj Sat Flow, veh/h/ln	1900	1900	0	0	1900	1900	1900	1900	1900			
Adj Flow Rate, veh/h	40	382	0	0	547	286	457	2	8			
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95			
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0			
Cap, veh/h	73	1824	0	0	860	449	577	3	515			
Arrive On Green	0.04	0.51	0.00	0.00	0.38	0.38	0.32	0.32	0.32			
Sat Flow, veh/h	1810	3705	0	0	2388	1197	1802	8	1610			
Grp Volume(v), veh/h	40	382	0	0	430	403	459	0	8			
Grp Sat Flow(s),veh/h/ln	1810	1805	0	0	1805	1685	1810	0	1610			
Q Serve(g_s), s	1.3	3.5	0.0	0.0	11.8	11.8	13.9	0.0	0.2			
Cycle Q Clear(g_c), s	1.3	3.5	0.0	0.0	11.8	11.8	13.9	0.0	0.2			
Prop In Lane	1.00		0.00	0.00		0.71	1.00		1.00			
Lane Grp Cap(c), veh/h	73	1824	0	0	677	632	579	0	515			
V/C Ratio(X)	0.55	0.21	0.00	0.00	0.64	0.64	0.79	0.00	0.02			
Avail Cap(c_a), veh/h	439	3211	0	0	1005	938	782	0	696			
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	1.00	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	28.3	8.2	0.0	0.0	15.4	15.4	18.6	0.0	14.0			
Incr Delay (d2), s/veh	12.8	0.1	0.0	0.0	2.1	2.3	6.2	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	0.8	0.9	0.0	0.0	4.3	4.0	5.9	0.0	0.1			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	41.1	8.4	0.0	0.0	17.5	17.7	24.8	0.0	14.0			
LnGrp LOS	D	A	A	A	B	B	C	A	B			
Approach Vol, veh/h	422			833			467					
Approach Delay, s/veh	11.5			17.6			24.6					
Approach LOS	B			B			C					
Timer - Assigned Phs	2			4			7			8		
Phs Duration (G+Y+Rc), s	23.3			36.9			7.8			29.1		
Change Period (Y+Rc), s	4.0			6.5			5.4			6.5		
Max Green Setting (Gmax), s	26.0			53.5			14.6			33.5		
Max Q Clear Time (g_c+I1), s	15.9			5.5			3.3			13.8		
Green Ext Time (p_c), s	3.4			4.7			0.1			8.7		
Intersection Summary												
HCM 6th Ctrl Delay	18.0											
HCM 6th LOS	B											

Timings

4: Bridge St. & Gilman Springs Rd.

Gilman Mine (JN 11379)

03/26/2019

	→	↘	↙	←	↖
Lane Group	EBT	EBR	WBL	WBT	NBL
Lane Configurations	↑	↗	↘	↑	↗
Traffic Volume (vph)	1128	72	17	638	46
Future Volume (vph)	1128	72	17	638	46
Turn Type	NA	Perm	Prot	NA	Prot
Protected Phases	4		3	8	2
Permitted Phases		4			
Detector Phase	4	4	3	8	2
Switch Phase					
Minimum Initial (s)	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	35.5	35.5	9.6	24.5	24.5
Total Split (s)	85.0	85.0	9.6	94.6	25.4
Total Split (%)	70.8%	70.8%	8.0%	78.8%	21.2%
Yellow Time (s)	5.5	5.5	3.6	5.5	5.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.5	6.5	4.6	6.5	6.5
Lead/Lag	Lag	Lag	Lead		
Lead-Lag Optimize?	Yes	Yes	Yes		
Recall Mode	None	None	None	None	Min

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 91.9

Natural Cycle: 100

Control Type: Actuated-Uncoordinated

Splits and Phases: 4: Bridge St. & Gilman Springs Rd.

↖ Ø2	↘ Ø3	→ Ø4
25.4 s	9.6 s	85 s
	← Ø8	
	94.6 s	

HCM 6th Signalized Intersection Summary

4: Bridge St. & Gilman Springs Rd.

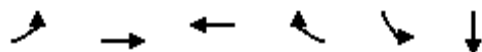
Gilman Mine (JN 11379)

03/26/2019

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	1128	72	17	638	46	18
Future Volume (veh/h)	1128	72	17	638	46	18
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	1175	0	18	665	48	19
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	1310		36	1439	130	52
Arrive On Green	0.69	0.00	0.02	0.76	0.11	0.11
Sat Flow, veh/h	1900	1610	1810	1900	1235	489
Grp Volume(v), veh/h	1175	0	18	665	68	0
Grp Sat Flow(s),veh/h/ln	1900	1610	1810	1900	1750	0
Q Serve(g_s), s	47.8	0.0	0.9	12.4	3.4	0.0
Cycle Q Clear(g_c), s	47.8	0.0	0.9	12.4	3.4	0.0
Prop In Lane		1.00	1.00		0.71	0.28
Lane Grp Cap(c), veh/h	1310		36	1439	184	0
V/C Ratio(X)	0.90		0.50	0.46	0.37	0.00
Avail Cap(c_a), veh/h	1572		95	1764	349	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	12.0	0.0	46.0	4.3	39.5	0.0
Incr Delay (d2), s/veh	6.8	0.0	3.9	0.3	1.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	15.4	0.0	0.4	2.6	1.4	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	18.8	0.0	50.0	4.6	40.7	0.0
LnGrp LOS	B		D	A	D	A
Approach Vol, veh/h	1175	A		683	68	
Approach Delay, s/veh	18.8			5.8	40.7	
Approach LOS	B			A	D	
Timer - Assigned Phs		2	3	4		8
Phs Duration (G+Y+Rc), s		16.5	6.5	71.9		78.4
Change Period (Y+Rc), s		6.5	4.6	6.5		6.5
Max Green Setting (Gmax), s		18.9	5.0	78.5		88.1
Max Q Clear Time (g_c+I1), s		5.4	2.9	49.8		14.4
Green Ext Time (p_c), s		0.1	0.0	15.6		6.9
Intersection Summary						
HCM 6th Ctrl Delay			15.0			
HCM 6th LOS			B			
Notes						
User approved volume balancing among the lanes for turning movement.						
Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.						

Timings
5: Driveway & Gilman Springs Rd.

Gilman Mine (JN 11379)
03/26/2019



Lane Group	EBL	EBT	WBT	WBR	SBL	SBT	Ø2	Ø3
Lane Configurations								
Traffic Volume (vph)	44	1101	608	21	23	0		
Future Volume (vph)	44	1101	608	21	23	0		
Turn Type	Prot	NA	NA	Perm	Perm	NA		
Protected Phases	7	4	8			6	2	3
Permitted Phases				8	6			
Detector Phase	7	4	8	8	6	6		
Switch Phase								
Minimum Initial (s)	5.0	10.0	10.0	10.0	10.0	10.0	10.0	5.0
Minimum Split (s)	9.6	30.5	30.5	30.5	14.6	14.6	14.6	9.6
Total Split (s)	9.6	95.0	95.0	95.0	15.4	15.4	15.4	9.6
Total Split (%)	8.0%	79.2%	79.2%	79.2%	12.8%	12.8%	13%	8%
Yellow Time (s)	3.6	5.5	5.5	5.5	3.6	3.6	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0		
Total Lost Time (s)	4.6	6.5	6.5	6.5		4.6		
Lead/Lag	Lead	Lag	Lag	Lag				Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes				Yes
Recall Mode	None	None	None	None	Min	Min	Min	None

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 78

Natural Cycle: 90

Control Type: Actuated-Uncoordinated

Splits and Phases: 5: Driveway & Gilman Springs Rd.

15.4 s	9.6 s	95 s
15.4 s	9.6 s	95 s

HCM 6th Signalized Intersection Summary
5: Driveway & Gilman Springs Rd.

Gilman Mine (JN 11379)

03/26/2019

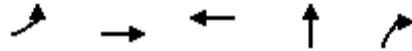
												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	44	1101	1	0	608	21	0	0	0	23	0	48
Future Volume (veh/h)	44	1101	1	0	608	21	0	0	0	23	0	48
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	47	1184	1	0	654	23	0	0	0	25	0	52
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	74	1392	1	2	1206	1022	0	240	0	101	25	137
Arrive On Green	0.04	0.73	0.73	0.00	0.63	0.63	0.00	0.00	0.00	0.13	0.00	0.13
Sat Flow, veh/h	1810	1898	2	1810	1900	1610	0	1900	0	325	195	1081
Grp Volume(v), veh/h	47	0	1185	0	654	23	0	0	0	77	0	0
Grp Sat Flow(s),veh/h/ln	1810	0	1900	1810	1900	1610	0	1900	0	1601	0	0
Q Serve(g_s), s	2.0	0.0	35.0	0.0	15.2	0.4	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	2.0	0.0	35.0	0.0	15.2	0.4	0.0	0.0	0.0	3.3	0.0	0.0
Prop In Lane	1.00		0.00	1.00		1.00	0.00		0.00	0.32		0.68
Lane Grp Cap(c), veh/h	74	0	1393	2	1206	1022	0	240	0	262	0	0
V/C Ratio(X)	0.64	0.00	0.85	0.00	0.54	0.02	0.00	0.00	0.00	0.29	0.00	0.00
Avail Cap(c_a), veh/h	114	0	2123	114	2124	1800	0	259	0	278	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	0.00	1.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	37.4	0.0	7.5	0.0	8.1	5.4	0.0	0.0	0.0	31.7	0.0	0.0
Incr Delay (d2), s/veh	3.4	0.0	2.7	0.0	0.5	0.0	0.0	0.0	0.0	0.6	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	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	0.0	6.9	0.0	4.2	0.1	0.0	0.0	0.0	1.4	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	40.8	0.0	10.2	0.0	8.6	5.4	0.0	0.0	0.0	32.3	0.0	0.0
LnGrp LOS	D	A	B	A	A	A	A	A	A	C	A	A
Approach Vol, veh/h	1232			677			0			77		
Approach Delay, s/veh	11.4			8.5			0.0			32.3		
Approach LOS	B			A						C		
Timer - Assigned Phs	2		3	4		6		7	8			
Phs Duration (G+Y+Rc), s	14.6		0.0	64.6		14.6		7.8	56.8			
Change Period (Y+Rc), s	4.6		4.6	6.5		4.6		4.6	6.5			
Max Green Setting (Gmax), s	10.8		5.0	88.5		10.8		5.0	88.5			
Max Q Clear Time (g_c+I1), s	0.0		0.0	37.0		5.3		4.0	17.2			
Green Ext Time (p_c), s	0.0		0.0	21.1		0.1		0.0	6.9			
Intersection Summary												
HCM 6th Ctrl Delay	11.2											
HCM 6th LOS	B											

Timings

Gilman Mine (JN 11379)

7: SR-79 NB Ramps & Gilman Springs Rd.

03/26/2019



Lane Group	EBL	EBT	WBT	NBT	NBR
Lane Configurations					
Traffic Volume (vph)	34	805	336	1	7
Future Volume (vph)	34	805	336	1	7
Turn Type	Prot	NA	NA	NA	Perm
Protected Phases	7	4	8	2	
Permitted Phases					2
Detector Phase	7	4	8	2	2
Switch Phase					
Minimum Initial (s)	5.0	5.0	5.0	4.5	4.5
Minimum Split (s)	10.4	34.5	32.5	9.0	9.0
Total Split (s)	20.0	60.0	40.0	30.0	30.0
Total Split (%)	22.2%	66.7%	44.4%	33.3%	33.3%
Yellow Time (s)	4.4	5.5	5.5	3.0	3.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.4	6.5	6.5	4.0	4.0
Lead/Lag	Lead		Lag		
Lead-Lag Optimize?	Yes		Yes		
Recall Mode	None	None	None	Min	Min

Intersection Summary

Cycle Length: 90

Actuated Cycle Length: 53.2

Natural Cycle: 60

Control Type: Actuated-Uncoordinated

Splits and Phases: 7: SR-79 NB Ramps & Gilman Springs Rd.



HCM 6th Signalized Intersection Summary
7: SR-79 NB Ramps & Gilman Springs Rd.

Gilman Mine (JN 11379)

03/26/2019

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	34	805	0	0	336	227	253	1	7	0	0	0
Future Volume (veh/h)	34	805	0	0	336	227	253	1	7	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach	No			No			No					
Adj Sat Flow, veh/h/ln	1900	1900	0	0	1900	1900	1900	1900	1900			
Adj Flow Rate, veh/h	37	866	0	0	361	244	272	1	8			
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93			
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0			
Cap, veh/h	75	1857	0	0	721	480	436	2	389			
Arrive On Green	0.04	0.51	0.00	0.00	0.35	0.35	0.24	0.24	0.24			
Sat Flow, veh/h	1810	3705	0	0	2171	1380	1803	7	1610			
Grp Volume(v), veh/h	37	866	0	0	313	292	273	0	8			
Grp Sat Flow(s),veh/h/ln	1810	1805	0	0	1805	1652	1810	0	1610			
Q Serve(g_s), s	0.9	6.6	0.0	0.0	5.9	6.0	5.8	0.0	0.2			
Cycle Q Clear(g_c), s	0.9	6.6	0.0	0.0	5.9	6.0	5.8	0.0	0.2			
Prop In Lane	1.00		0.00	0.00		0.84	1.00		1.00			
Lane Grp Cap(c), veh/h	75	1857	0	0	627	574	438	0	389			
V/C Ratio(X)	0.49	0.47	0.00	0.00	0.50	0.51	0.62	0.00	0.02			
Avail Cap(c_a), veh/h	613	4484	0	0	1404	1285	1092	0	972			
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	1.00	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	20.2	6.7	0.0	0.0	11.1	11.1	14.6	0.0	12.4			
Incr Delay (d2), s/veh	10.3	0.4	0.0	0.0	1.3	1.5	3.1	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	0.5	1.1	0.0	0.0	1.8	1.8	2.2	0.0	0.1			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	30.5	7.1	0.0	0.0	12.4	12.6	17.7	0.0	12.5			
LnGrp LOS	C	A	A	A	B	B	B	A	B			
Approach Vol, veh/h	903		605			281						
Approach Delay, s/veh	8.0		12.5			17.5						
Approach LOS	A		B			B						
Timer - Assigned Phs	2		4			7			8			
Phs Duration (G+Y+Rc), s	14.4		28.7			7.2			21.5			
Change Period (Y+Rc), s	4.0		6.5			5.4			6.5			
Max Green Setting (Gmax), s	26.0		53.5			14.6			33.5			
Max Q Clear Time (g_c+I1), s	7.8		8.6			2.9			8.0			
Green Ext Time (p_c), s	2.6		12.9			0.1			6.9			
Intersection Summary												
HCM 6th Ctrl Delay			11.0									
HCM 6th LOS			B									

ATTACHMENT G

EAPC (2019) HCM ANALYSIS WORKSHEETS

Intersection						
Int Delay, s/veh	1.5					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	86	173	953	574	1
Future Vol, veh/h	0	86	173	953	574	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	140	-	-	-
Veh in Median Storage, #	2	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	89	178	982	592	1
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	1931	593	593	0	-	0
Stage 1	593	-	-	-	-	-
Stage 2	1338	-	-	-	-	-
Critical Hdwy	6.4	6	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	74	526	993	-	-	-
Stage 1	556	-	-	-	-	-
Stage 2	247	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	61	526	993	-	-	-
Mov Cap-2 Maneuver	211	-	-	-	-	-
Stage 1	456	-	-	-	-	-
Stage 2	247	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	13.2	1.4		0		
HCM LOS	B					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	993	-	526	-	-	
HCM Lane V/C Ratio	0.18	-	0.169	-	-	
HCM Control Delay (s)	9.4	-	13.2	-	-	
HCM Lane LOS	A	-	B	-	-	
HCM 95th %tile Q(veh)	0.7	-	0.6	-	-	

Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	1	660	1124	2	1	2
Future Vol, veh/h	1	660	1124	2	1	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	150	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	1	710	1209	2	1	2

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	1211	0	0 1922 1210
Stage 1	-	-	- 1210 -
Stage 2	-	-	- 712 -
Critical Hdwy	4.1	-	- 6.4 6.2
Critical Hdwy Stg 1	-	-	- 5.4 -
Critical Hdwy Stg 2	-	-	- 5.4 -
Follow-up Hdwy	2.2	-	- 3.5 3.3
Pot Cap-1 Maneuver	583	-	- 75 225
Stage 1	-	-	- 285 -
Stage 2	-	-	- 490 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	583	-	- 75 225
Mov Cap-2 Maneuver	-	-	- 75 -
Stage 1	-	-	- 284 -
Stage 2	-	-	- 490 -

Approach	EB	WB	SB
HCM Control Delay, s	0	0	32.3
HCM LOS			D

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	583	-	-	-	135
HCM Lane V/C Ratio	0.002	-	-	-	0.024
HCM Control Delay (s)	11.2	-	-	-	32.3
HCM Lane LOS	B	-	-	-	D
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Intersection						
Int Delay, s/veh	37.2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↗	↖	↑	↘	
Traffic Vol, veh/h	581	66	28	1014	120	47
Future Vol, veh/h	581	66	28	1014	120	47
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	Yield	-	None	-	None
Storage Length	-	175	150	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	638	73	31	1114	132	52
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	638	0	1814	638
Stage 1	-	-	-	-	638	-
Stage 2	-	-	-	-	1176	-
Critical Hdwy	-	-	4.1	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	956	-	~ 87	480
Stage 1	-	-	-	-	530	-
Stage 2	-	-	-	-	296	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	956	-	~ 84	480
Mov Cap-2 Maneuver	-	-	-	-	~ 84	-
Stage 1	-	-	-	-	530	-
Stage 2	-	-	-	-	287	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0.2		\$ 412.5	
HCM LOS					F	
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	109	-	-	956	-	
HCM Lane V/C Ratio	1.684	-	-	0.032	-	
HCM Control Delay (s)	\$ 412.5	-	-	8.9	-	
HCM Lane LOS	F	-	-	A	-	
HCM 95th %tile Q(veh)	14.2	-	-	0.1	-	
Notes						
~: Volume exceeds capacity		\$: Delay exceeds 300s		+: Computation Not Defined		*: All major volume in platoon

Intersection												
Int Delay, s/veh	4.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	64	562	0	0	990	32	0	0	0	26	0	52
Future Vol, veh/h	64	562	0	0	990	32	0	0	0	26	0	52
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	-	155	-	315	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	69	604	0	0	1065	34	0	0	0	28	0	56

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1099	0	0	604	0	0	1852	1841	604	1807	1807	1065
Stage 1	-	-	-	-	-	-	742	742	-	1065	1065	-
Stage 2	-	-	-	-	-	-	1110	1099	-	742	742	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	643	-	-	984	-	-	58	76	502	62	80	273
Stage 1	-	-	-	-	-	-	411	425	-	272	302	-
Stage 2	-	-	-	-	-	-	256	291	-	411	425	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	643	-	-	984	-	-	42	68	502	57	71	273
Mov Cap-2 Maneuver	-	-	-	-	-	-	42	68	-	57	71	-
Stage 1	-	-	-	-	-	-	367	380	-	243	302	-
Stage 2	-	-	-	-	-	-	204	291	-	367	380	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.2	0	0	84.2
HCM LOS			A	F

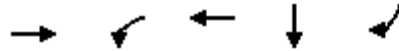
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	643	-	-	984	-	-	121
HCM Lane V/C Ratio	-	0.107	-	-	-	-	-	0.693
HCM Control Delay (s)	0	11.3	-	-	0	-	-	84.2
HCM Lane LOS	A	B	-	-	A	-	-	F
HCM 95th %tile Q(veh)	-	0.4	-	-	0	-	-	3.7

Timings

6: SR-79 SB Ramps & Gilman Springs Rd.

Gilman Mine (JN 11379)

03/26/2019



Lane Group	EBT	WBL	WBT	SBT	SBR
Lane Configurations	↑↑	↑	↑↑	↑	↑
Traffic Volume (vph)	270	9	978	2	54
Future Volume (vph)	270	9	978	2	54
Turn Type	NA	Prot	NA	NA	Perm
Protected Phases	2	1	6	4	
Permitted Phases					4
Detector Phase	2	1	6	4	4
Switch Phase					
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	32.5	10.4	34.5	9.0	9.0
Total Split (s)	40.0	20.0	60.0	30.0	30.0
Total Split (%)	44.4%	22.2%	66.7%	33.3%	33.3%
Yellow Time (s)	5.5	4.4	5.5	3.0	3.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.5	5.4	6.5	4.0	4.0
Lead/Lag	Lag	Lead			
Lead-Lag Optimize?	Yes	Yes			
Recall Mode	None	None	None	None	None

Intersection Summary

Cycle Length: 90

Actuated Cycle Length: 47.2

Natural Cycle: 55

Control Type: Actuated-Uncoordinated

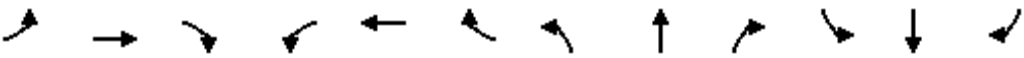
Splits and Phases: 6: SR-79 SB Ramps & Gilman Springs Rd.



HCM 6th Signalized Intersection Summary
6: SR-79 SB Ramps & Gilman Springs Rd.

Gilman Mine (JN 11379)

03/26/2019

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑		↑	↑↑						↑	↑
Traffic Volume (veh/h)	0	270	326	9	978	0	0	0	0	155	2	54
Future Volume (veh/h)	0	270	326	9	978	0	0	0	0	155	2	54
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1900	1900	1900	1900	0				1900	1900	1900
Adj Flow Rate, veh/h	0	284	274	9	1029	0				163	2	51
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95				0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0				0	0	0
Cap, veh/h	0	820	731	21	2140	0				288	4	259
Arrive On Green	0.00	0.45	0.45	0.01	0.59	0.00				0.16	0.16	0.16
Sat Flow, veh/h	0	1900	1610	1810	3705	0				1789	22	1610
Grp Volume(v), veh/h	0	284	274	9	1029	0				165	0	51
Grp Sat Flow(s),veh/h/ln	0	1805	1610	1810	1805	0				1811	0	1610
Q Serve(g_s), s	0.0	4.3	4.8	0.2	6.9	0.0				3.6	0.0	1.2
Cycle Q Clear(g_c), s	0.0	4.3	4.8	0.2	6.9	0.0				3.6	0.0	1.2
Prop In Lane	0.00		1.00	1.00		0.00				0.99		1.00
Lane Grp Cap(c), veh/h	0	820	731	21	2140	0				292	0	259
V/C Ratio(X)	0.00	0.35	0.37	0.42	0.48	0.00				0.57	0.00	0.20
Avail Cap(c_a), veh/h	0	1418	1265	620	4529	0				1104	0	982
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	7.5	7.7	20.9	4.9	0.0				16.5	0.0	15.5
Incr Delay (d2), s/veh	0.0	0.5	0.7	25.5	0.4	0.0				3.7	0.0	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.9	0.9	0.2	0.7	0.0				1.5	0.0	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	8.1	8.3	46.5	5.3	0.0				20.2	0.0	16.3
LnGrp LOS	A	A	A	D	A	A				C	A	B
Approach Vol, veh/h		558			1038						216	
Approach Delay, s/veh		8.2			5.7						19.2	
Approach LOS		A			A						B	
Timer - Assigned Phs	1	2		4		6						
Phs Duration (G+Y+Rc), s	5.9	25.9		10.9		31.8						
Change Period (Y+Rc), s	5.4	6.5		4.0		6.5						
Max Green Setting (Gmax), s	14.6	33.5		26.0		53.5						
Max Q Clear Time (g_c+I1), s	2.2	6.8		5.6		8.9						
Green Ext Time (p_c), s	0.0	6.2		1.9		16.4						
Intersection Summary												
HCM 6th Ctrl Delay			8.1									
HCM 6th LOS			A									

Intersection												
Int Delay, s/veh	73.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑↑			↑↑			↰	↰			
Traffic Vol, veh/h	46	382	0	0	529	277	453	2	8	0	0	0
Future Vol, veh/h	46	382	0	0	529	277	453	2	8	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	215	-	-	-	-	-	-	-	240	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	16965	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	48	402	0	0	557	292	477	2	8	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	849	0	-	-	-	0	777	1347	201
Stage 1	-	-	-	-	-	-	498	498	-
Stage 2	-	-	-	-	-	-	279	849	-
Critical Hdwy	4.1	-	-	-	-	-	6.8	6.5	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-	5.8	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.8	5.5	-
Follow-up Hdwy	2.2	-	-	-	-	-	3.5	4	3.3
Pot Cap-1 Maneuver	798	-	0	0	-	-	~ 338	152	813
Stage 1	-	-	0	0	-	-	582	548	-
Stage 2	-	-	0	0	-	-	749	380	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	798	-	-	-	-	-	~ 318	0	813
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 318	0	-
Stage 1	-	-	-	-	-	-	547	0	-
Stage 2	-	-	-	-	-	-	749	0	-

Approach	EB	WB	NB
HCM Control Delay, s	1.1	0	269.3
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	WBT	WBR
Capacity (veh/h)	318	813	798	-	-	-
HCM Lane V/C Ratio	1.506	0.01	0.061	-	-	-
HCM Control Delay (s)	273.9	9.5	9.8	-	-	-
HCM Lane LOS	F	A	A	-	-	-
HCM 95th %tile Q(veh)	26.8	0	0.2	-	-	-

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

Intersection

Int Delay, s/veh 4.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	1	167	110	626	1076	5
Future Vol, veh/h	1	167	110	626	1076	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	140	-	-	-
Veh in Median Storage, #	2	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	1	174	115	652	1121	5

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	2006	1124	1126
Stage 1	1124	-	-
Stage 2	882	-	-
Critical Hdwy	6.4	6	4.1
Critical Hdwy Stg 1	5.4	-	-
Critical Hdwy Stg 2	5.4	-	-
Follow-up Hdwy	3.5	3.3	2.2
Pot Cap-1 Maneuver	66	268	628
Stage 1	313	-	-
Stage 2	408	-	-
Platoon blocked, %			
Mov Cap-1 Maneuver	54	268	628
Mov Cap-2 Maneuver	210	-	-
Stage 1	256	-	-
Stage 2	408	-	-

Approach	EB	NB	SB
HCM Control Delay, s	40.6	1.8	0
HCM LOS	E		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	628	-	268	-	-
HCM Lane V/C Ratio	0.182	-	0.653	-	-
HCM Control Delay (s)	12	-	40.6	-	-
HCM Lane LOS	B	-	E	-	-
HCM 95th %tile Q(veh)	0.7	-	4.2	-	-

Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	3	1241	734	3	3	2
Future Vol, veh/h	3	1241	734	3	3	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	150	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	3	1293	765	3	3	2

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	768	0	0 2066 767
Stage 1	-	-	- 767 -
Stage 2	-	-	- 1299 -
Critical Hdwy	4.1	-	- 6.4 6.2
Critical Hdwy Stg 1	-	-	- 5.4 -
Critical Hdwy Stg 2	-	-	- 5.4 -
Follow-up Hdwy	2.2	-	- 3.5 3.3
Pot Cap-1 Maneuver	855	-	- 61 405
Stage 1	-	-	- 462 -
Stage 2	-	-	- 258 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	855	-	- 61 405
Mov Cap-2 Maneuver	-	-	- 61 -
Stage 1	-	-	- 460 -
Stage 2	-	-	- 258 -

Approach	EB	WB	SB
HCM Control Delay, s	0	0	46.5
HCM LOS			E

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	855	-	-	-	92
HCM Lane V/C Ratio	0.004	-	-	-	0.057
HCM Control Delay (s)	9.2	-	-	-	46.5
HCM Lane LOS	A	-	-	-	E
HCM 95th %tile Q(veh)	0	-	-	-	0.2

Intersection						
Int Delay, s/veh	12.7					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↑	↑	↑	↑	↑
Traffic Vol, veh/h	1154	94	25	655	70	34
Future Vol, veh/h	1154	94	25	655	70	34
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	Yield	-	None	-	None
Storage Length	-	175	150	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	1202	98	26	682	73	35

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	1202
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	4.1	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	2.2	-
Pot Cap-1 Maneuver	-	588	-
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	588	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.4	245
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	90	-	-	588	-
HCM Lane V/C Ratio	1.204	-	-	0.044	-
HCM Control Delay (s)	245	-	-	11.4	-
HCM Lane LOS	F	-	-	B	-
HCM 95th %tile Q(veh)	7.6	-	-	0.1	-

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

Intersection												
Int Delay, s/veh	3.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	44	1142	1	0	634	21	0	0	0	23	0	48
Future Vol, veh/h	44	1142	1	0	634	21	0	0	0	23	0	48
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	-	155	-	315	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	47	1228	1	0	682	23	0	0	0	25	0	52

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	705	0	0	1229	0	0	2043	2028	1229	2005	2005	682
Stage 1	-	-	-	-	-	-	1323	1323	-	682	682	-
Stage 2	-	-	-	-	-	-	720	705	-	1323	1323	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	902	-	-	574	-	-	42	58	219	45	60	453
Stage 1	-	-	-	-	-	-	194	228	-	443	453	-
Stage 2	-	-	-	-	-	-	422	442	-	194	228	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	902	-	-	574	-	-	36	55	219	43	57	453
Mov Cap-2 Maneuver	-	-	-	-	-	-	36	55	-	43	57	-
Stage 1	-	-	-	-	-	-	184	216	-	420	453	-
Stage 2	-	-	-	-	-	-	374	442	-	184	216	-

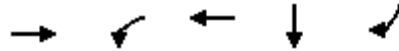
Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	0	0	89.5
HCM LOS			A	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	902	-	-	574	-	-	111
HCM Lane V/C Ratio	-	0.052	-	-	-	-	-	0.688
HCM Control Delay (s)	0	9.2	-	-	0	-	-	89.5
HCM Lane LOS	A	A	-	-	A	-	-	F
HCM 95th %tile Q(veh)	-	0.2	-	-	0	-	-	3.6

Timings
6: SR-79 SB Ramps & Gilman Springs Rd.

Gilman Mine (JN 11379)

03/26/2019



Lane Group	EBT	WBL	WBT	SBT	SBR
Lane Configurations	↑↑	↑	↑↑	↑	↑
Traffic Volume (vph)	571	4	602	7	51
Future Volume (vph)	571	4	602	7	51
Turn Type	NA	Prot	NA	NA	Perm
Protected Phases	2	1	6	4	
Permitted Phases					4
Detector Phase	2	1	6	4	4
Switch Phase					
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	32.5	10.4	34.5	9.0	9.0
Total Split (s)	40.0	20.0	60.0	30.0	30.0
Total Split (%)	44.4%	22.2%	66.7%	33.3%	33.3%
Yellow Time (s)	5.5	4.4	5.5	3.0	3.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.5	5.4	6.5	4.0	4.0
Lead/Lag	Lag	Lead			
Lead-Lag Optimize?	Yes	Yes			
Recall Mode	None	None	None	None	None

Intersection Summary

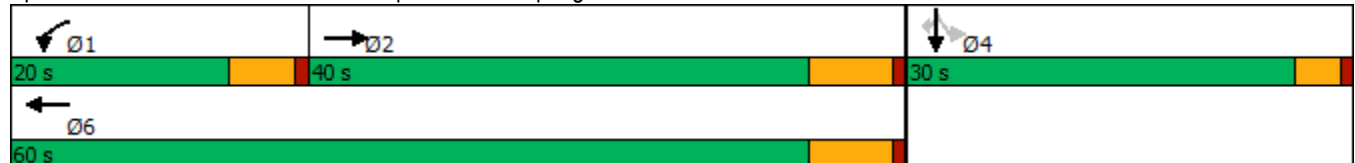
Cycle Length: 90

Actuated Cycle Length: 61.3

Natural Cycle: 60

Control Type: Actuated-Uncoordinated

Splits and Phases: 6: SR-79 SB Ramps & Gilman Springs Rd.



HCM 6th Signalized Intersection Summary
6: SR-79 SB Ramps & Gilman Springs Rd.

Gilman Mine (JN 11379)

03/26/2019

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	571	588	4	602	0	0	0	0	288	7	51
Future Volume (veh/h)	0	571	588	4	602	0	0	0	0	288	7	51
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1900	1900	1900	1900	0				1900	1900	1900
Adj Flow Rate, veh/h	0	607	480	4	640	0				306	7	42
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94				0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0				0	0	0
Cap, veh/h	0	896	708	10	2052	0				435	10	395
Arrive On Green	0.00	0.47	0.47	0.01	0.57	0.00				0.25	0.25	0.25
Sat Flow, veh/h	0	2013	1514	1810	3705	0				1771	41	1610
Grp Volume(v), veh/h	0	571	516	4	640	0				313	0	42
Grp Sat Flow(s),veh/h/ln	0	1805	1627	1810	1805	0				1811	0	1610
Q Serve(g_s), s	0.0	13.9	14.0	0.1	5.2	0.0				8.9	0.0	1.1
Cycle Q Clear(g_c), s	0.0	13.9	14.0	0.1	5.2	0.0				8.9	0.0	1.1
Prop In Lane	0.00		0.93	1.00		0.00				0.98		1.00
Lane Grp Cap(c), veh/h	0	844	761	10	2052	0				445	0	395
V/C Ratio(X)	0.00	0.68	0.68	0.41	0.31	0.00				0.70	0.00	0.11
Avail Cap(c_a), veh/h	0	1071	966	468	3422	0				835	0	742
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	11.7	11.7	28.0	6.4	0.0				19.4	0.0	16.5
Incr Delay (d2), s/veh	0.0	2.2	2.4	50.0	0.2	0.0				4.3	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	4.1	3.8	0.2	1.1	0.0				3.7	0.0	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	13.9	14.2	78.0	6.6	0.0				23.7	0.0	16.7
LnGrp LOS	A	B	B	E	A	A				C	A	B
Approach Vol, veh/h		1087			644						355	
Approach Delay, s/veh		14.0			7.0						22.9	
Approach LOS		B			A						C	
Timer - Assigned Phs	1	2		4		6						
Phs Duration (G+Y+Rc), s	5.7	32.9		17.9		38.6						
Change Period (Y+Rc), s	5.4	6.5		4.0		6.5						
Max Green Setting (Gmax), s	14.6	33.5		26.0		53.5						
Max Q Clear Time (g_c+I1), s	2.1	16.0		10.9		7.2						
Green Ext Time (p_c), s	0.0	10.4		3.0		8.7						
Intersection Summary												
HCM 6th Ctrl Delay				13.4								
HCM 6th LOS				B								

Intersection												
Int Delay, s/veh	50.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑↑			↑↑			↰	↰			
Traffic Vol, veh/h	52	812	0	0	340	232	255	5	16	0	0	0
Future Vol, veh/h	52	812	0	0	340	232	255	5	16	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	215	-	-	-	-	-	-	-	240	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	16965	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	56	873	0	0	366	249	274	5	17	0	0	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	615	0	-	-	0	1168
Stage 1	-	-	-	-	-	985
Stage 2	-	-	-	-	-	183
Critical Hdwy	4.1	-	-	-	-	6.8
Critical Hdwy Stg 1	-	-	-	-	-	5.8
Critical Hdwy Stg 2	-	-	-	-	-	5.8
Follow-up Hdwy	2.2	-	-	-	-	3.5
Pot Cap-1 Maneuver	974	-	0	0	-	~ 189
Stage 1	-	-	0	0	-	327
Stage 2	-	-	0	0	-	836
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	974	-	-	-	-	~ 178
Mov Cap-2 Maneuver	-	-	-	-	-	~ 178
Stage 1	-	-	-	-	-	308
Stage 2	-	-	-	-	-	836

Approach	EB	WB	NB
HCM Control Delay, s	0.5	0	\$ 310.7
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	WBT	WBR
Capacity (veh/h)	178	573	974	-	-	-
HCM Lane V/C Ratio	1.571	0.03	0.057	-	-	-
HCM Control Delay (s)	\$ 329.1	11.5	8.9	-	-	-
HCM Lane LOS	F	B	A	-	-	-
HCM 95th %tile Q(veh)	18.4	0.1	0.2	-	-	-

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

ATTACHMENT H

EAPC (2019) TRAFFIC SIGNAL WARRANT WORKSHEETS

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **EAPC 2019 Conditions - Weekday PM Peak Hour**

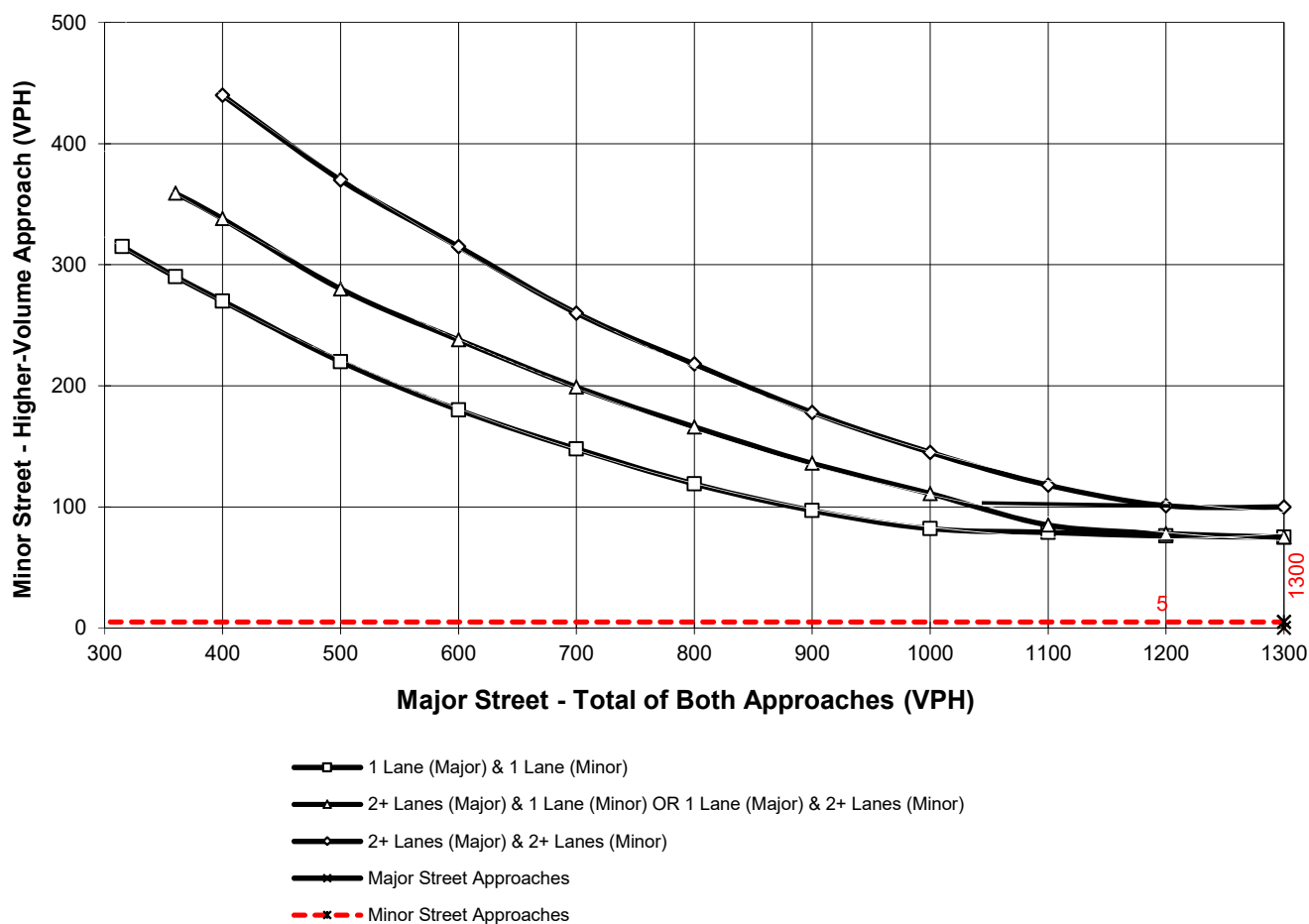
Major Street Name = **Gilman Springs Rd.**

Total of Both Approaches (VPH) = **1981**
Number of Approach Lanes Major Street = **1**

Minor Street Name = **Jack Rabbit Trail**

High Volume Approach (VPH) = **5**
Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold for a minor-street approach with one lane

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

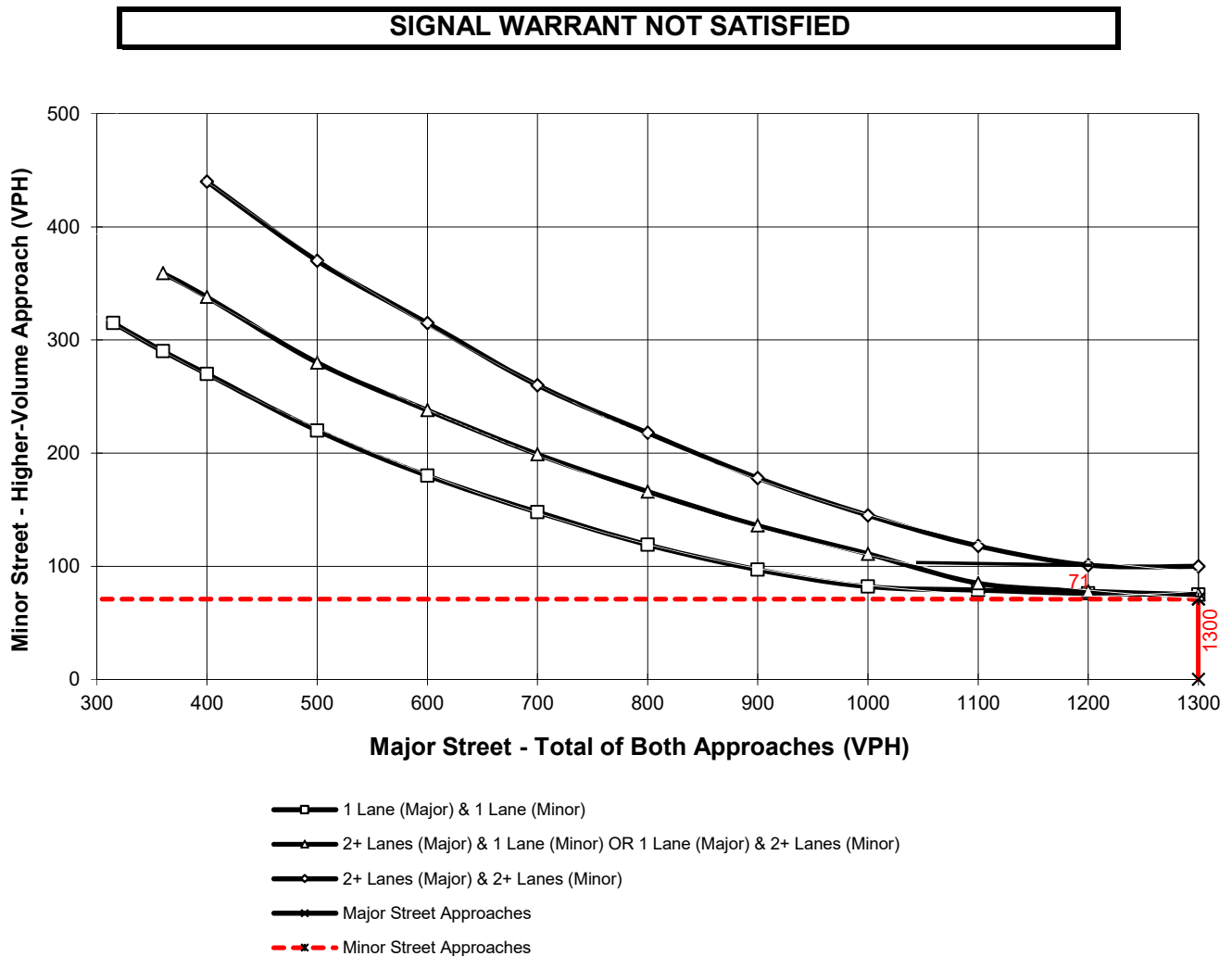
Traffic Conditions = **EAPC 2019 Conditions - Weekday PM Peak Hour**

Major Street Name = **Gilman Springs Rd.**

Total of Both Approaches (VPH) = **1842**
Number of Approach Lanes Major Street = **1**

Minor Street Name = **Driveway**

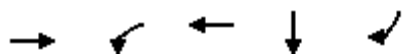
High Volume Approach (VPH) = **71**
Number of Approach Lanes Minor Street = **1**



*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes
and 75 vph applies as the lower threshold for a minor-street approach with one lane

ATTACHMENT I

EAPC (2019) FREEWAY OFF-RAMP QUEUING ANALYSIS WORKSHEETS



Lane Group	EBT	WBL	WBT	SBT	SBR
Lane Group Flow (vph)	627	9	1029	165	57
v/c Ratio	0.30	0.03	0.45	0.33	0.11
Control Delay	4.8	23.0	7.7	19.3	1.7
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	4.8	23.0	7.7	19.3	1.7
Queue Length 50th (ft)	18	2	85	38	0
Queue Length 95th (ft)	78	15	162	103	8
Internal Link Dist (ft)	2294		777	1566	
Turn Bay Length (ft)		220			150
Base Capacity (vph)	2484	628	3456	1094	1018
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.25	0.01	0.30	0.15	0.06
Intersection Summary					

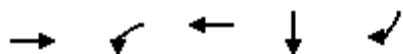
Intersection												
Int Delay, s/veh	73.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑↑			↑↑			↰	↰			
Traffic Vol, veh/h	46	382	0	0	529	277	453	2	8	0	0	0
Future Vol, veh/h	46	382	0	0	529	277	453	2	8	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	215	-	-	-	-	-	-	-	240	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	16965	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	48	402	0	0	557	292	477	2	8	0	0	0

Major/Minor	Major1		Major2		Minor1		
Conflicting Flow All	849	0	-	-	-	0	777 1347 201
Stage 1	-	-	-	-	-	-	498 498 -
Stage 2	-	-	-	-	-	-	279 849 -
Critical Hdwy	4.1	-	-	-	-	-	6.8 6.5 6.9
Critical Hdwy Stg 1	-	-	-	-	-	-	5.8 5.5 -
Critical Hdwy Stg 2	-	-	-	-	-	-	5.8 5.5 -
Follow-up Hdwy	2.2	-	-	-	-	-	3.5 4 3.3
Pot Cap-1 Maneuver	798	-	0	0	-	-	~ 338 152 813
Stage 1	-	-	0	0	-	-	582 548 -
Stage 2	-	-	0	0	-	-	749 380 -
Platoon blocked, %	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	798	-	-	-	-	-	~ 318 0 813
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 318 0 -
Stage 1	-	-	-	-	-	-	547 0 -
Stage 2	-	-	-	-	-	-	749 0 -

Approach	EB	WB	NB
HCM Control Delay, s	1.1	0	269.3
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	WBT	WBR
Capacity (veh/h)	318	813	798	-	-	-
HCM Lane V/C Ratio	1.506	0.01	0.061	-	-	-
HCM Control Delay (s)	273.9	9.5	9.8	-	-	-
HCM Lane LOS	F	A	A	-	-	-
HCM 95th %tile Q(veh)	26.8	0	0.2	-	-	-

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



Lane Group	EBT	WBL	WBT	SBT	SBR
Lane Group Flow (vph)	1233	4	640	313	54
v/c Ratio	0.68	0.02	0.34	0.59	0.10
Control Delay	11.9	30.2	9.0	25.3	0.9
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	11.9	30.2	9.0	25.3	0.9
Queue Length 50th (ft)	102	1	61	100	0
Queue Length 95th (ft)	307	11	118	218	4
Internal Link Dist (ft)	2294		777	1566	
Turn Bay Length (ft)		220			150
Base Capacity (vph)	2050	449	3132	804	777
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.60	0.01	0.20	0.39	0.07
Intersection Summary					

Intersection												
Int Delay, s/veh	50.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑↑			↑↑			↰	↰			
Traffic Vol, veh/h	52	812	0	0	340	232	255	5	16	0	0	0
Future Vol, veh/h	52	812	0	0	340	232	255	5	16	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	215	-	-	-	-	-	-	-	240	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	16965	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	56	873	0	0	366	249	274	5	17	0	0	0

Major/Minor	Major1		Major2		Minor1					
Conflicting Flow All	615	0	-	-	-	0	1168	1600	437	
Stage 1	-	-	-	-	-	-	985	985	-	
Stage 2	-	-	-	-	-	-	183	615	-	
Critical Hdwy	4.1	-	-	-	-	-	6.8	6.5	6.9	
Critical Hdwy Stg 1	-	-	-	-	-	-	5.8	5.5	-	
Critical Hdwy Stg 2	-	-	-	-	-	-	5.8	5.5	-	
Follow-up Hdwy	2.2	-	-	-	-	-	3.5	4	3.3	
Pot Cap-1 Maneuver	974	-	0	0	-	-	~ 189	107	573	
Stage 1	-	-	0	0	-	-	327	329	-	
Stage 2	-	-	0	0	-	-	836	485	-	
Platoon blocked, %	-	-	-	-	-	-	-	-	-	
Mov Cap-1 Maneuver	974	-	-	-	-	-	~ 178	0	573	
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 178	0	-	
Stage 1	-	-	-	-	-	-	308	0	-	
Stage 2	-	-	-	-	-	-	836	0	-	

Approach	EB	WB	NB
HCM Control Delay, s	0.5	0	\$ 310.7
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	WBT	WBR
Capacity (veh/h)	178	573	974	-	-	-
HCM Lane V/C Ratio	1.571	0.03	0.057	-	-	-
HCM Control Delay (s)	\$ 329.1	11.5	8.9	-	-	-
HCM Lane LOS	F	B	A	-	-	-
HCM 95th %tile Q(veh)	18.4	0.1	0.2	-	-	-

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

ATTACHMENT J

EAPC (2019) BASIC FREEWAY SEGMENT ANALYSIS WORKSHEETS

HCS7 Basic Freeway Report

Project Information

Analyst	CS	Date	3/26/2019
Agency	Urban Crossroads, Inc.	Analysis Year	EAPC (2019)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	Gilman Springs Mine TIA (JN 11379)		

Geometric Data

Number of Lanes, In	2	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Measured	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	-
Lane Width, ft	-	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	-		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	4104	Heavy Vehicle Adjustment Factor (fHV)	0.980
Peak Hour Factor	0.92	Flow Rate (Vp), pc/h/ln	2276
Total Trucks, %	2.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (cadj), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.95
Passenger Car Equivalent (Et)	2.000		

Speed and Density

Lane Width Adjustment (fLW)	-	Average Speed (S), mi/h	56.6
Right-Side Lateral Clearance Adj. (fRLC)	-	Density (D), pc/mi/ln	40.2
Total Ramp Density Adjustment	-	Level of Service (LOS)	E
Adjusted Free-Flow Speed (FFSadj), mi/h	70.0		

HCS7 Basic Freeway Report

Project Information

Analyst	CS	Date	3/26/2019
Agency	Urban Crossroads, Inc.	Analysis Year	EAPC (2019)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	Gilman Springs Mine TIA (JN 11379)		

Geometric Data

Number of Lanes, In	2	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Measured	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	-
Lane Width, ft	-	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	-		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	3267	Heavy Vehicle Adjustment Factor (fHV)	0.990
Peak Hour Factor	0.92	Flow Rate (Vp), pc/h/ln	1794
Total Trucks, %	1.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (cadj), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.75
Passenger Car Equivalent (Et)	2.000		

Speed and Density

Lane Width Adjustment (fLW)	-	Average Speed (S), mi/h	65.9
Right-Side Lateral Clearance Adj. (fRLC)	-	Density (D), pc/mi/ln	27.2
Total Ramp Density Adjustment	-	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFSadj), mi/h	70.0		

HCS7 Basic Freeway Report

Project Information

Analyst	CS	Date	3/26/2019
Agency	Urban Crossroads, Inc.	Analysis Year	EAPC (2019)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	Gilman Springs Mine TIA (JN 11379)		

Geometric Data

Number of Lanes, In	2	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Measured	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	-
Lane Width, ft	-	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	-		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	3709	Heavy Vehicle Adjustment Factor (fHV)	0.980
Peak Hour Factor	0.92	Flow Rate (Vp), pc/h/ln	2057
Total Trucks, %	2.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (cadj), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.86
Passenger Car Equivalent (Et)	2.000		

Speed and Density

Lane Width Adjustment (fLW)	-	Average Speed (S), mi/h	61.5
Right-Side Lateral Clearance Adj. (fRLC)	-	Density (D), pc/mi/ln	33.4
Total Ramp Density Adjustment	-	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFSadj), mi/h	70.0		

HCS7 Basic Freeway Report

Project Information

Analyst	CS	Date	3/26/2019
Agency	Urban Crossroads, Inc.	Analysis Year	EAPC (2019)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	Gilman Springs Mine TIA (JN 11379)		

Geometric Data

Number of Lanes, In	2	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Measured	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	-
Lane Width, ft	-	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	-		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	3263	Heavy Vehicle Adjustment Factor (fHV)	0.990
Peak Hour Factor	0.92	Flow Rate (Vp), pc/h/ln	1792
Total Trucks, %	1.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (cadj), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.75
Passenger Car Equivalent (Et)	2.000		

Speed and Density

Lane Width Adjustment (fLW)	-	Average Speed (S), mi/h	65.9
Right-Side Lateral Clearance Adj. (fRLC)	-	Density (D), pc/mi/ln	27.2
Total Ramp Density Adjustment	-	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFSadj), mi/h	70.0		

HCS7 Basic Freeway Report

Project Information

Analyst	CS	Date	3/26/2019
Agency	Urban Crossroads, Inc.	Analysis Year	EAPC (2019)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	Gilman Springs Mine TIA (JN 11379)		

Geometric Data

Number of Lanes, In	2	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Measured	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	-
Lane Width, ft	-	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	-		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	1418	Heavy Vehicle Adjustment Factor (fHV)	0.980
Peak Hour Factor	0.92	Flow Rate (Vp), pc/h/ln	786
Total Trucks, %	2.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (cadj), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.33
Passenger Car Equivalent (Et)	2.000		

Speed and Density

Lane Width Adjustment (fLW)	-	Average Speed (S), mi/h	70.0
Right-Side Lateral Clearance Adj. (fRLC)	-	Density (D), pc/mi/ln	11.2
Total Ramp Density Adjustment	-	Level of Service (LOS)	B
Adjusted Free-Flow Speed (FFSadj), mi/h	70.0		

HCS7 Basic Freeway Report

Project Information

Analyst	CS	Date	3/26/2019
Agency	Urban Crossroads, Inc.	Analysis Year	EAPC (2019)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	Gilman Springs Mine TIA (JN 11379)		

Geometric Data

Number of Lanes, In	2	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Measured	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	-
Lane Width, ft	-	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	-		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	1541	Heavy Vehicle Adjustment Factor (fHV)	0.980
Peak Hour Factor	0.92	Flow Rate (Vp), pc/h/ln	854
Total Trucks, %	2.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (cadj), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.36
Passenger Car Equivalent (Et)	2.000		

Speed and Density

Lane Width Adjustment (fLW)	-	Average Speed (S), mi/h	70.0
Right-Side Lateral Clearance Adj. (fRLC)	-	Density (D), pc/mi/ln	12.2
Total Ramp Density Adjustment	-	Level of Service (LOS)	B
Adjusted Free-Flow Speed (FFSadj), mi/h	70.0		

HCS7 Basic Freeway Report

Project Information

Analyst	CS	Date	3/26/2019
Agency	Urban Crossroads, Inc.	Analysis Year	EAPC (2019)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	Gilman Springs Mine TIA (JN 11379)		

Geometric Data

Number of Lanes, In	2	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Measured	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	-
Lane Width, ft	-	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	-		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	1149	Heavy Vehicle Adjustment Factor (fHV)	0.980
Peak Hour Factor	0.92	Flow Rate (Vp), pc/h/ln	637
Total Trucks, %	2.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (cadj), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.27
Passenger Car Equivalent (Et)	2.000		

Speed and Density

Lane Width Adjustment (fLW)	-	Average Speed (S), mi/h	70.0
Right-Side Lateral Clearance Adj. (fRLC)	-	Density (D), pc/mi/ln	9.1
Total Ramp Density Adjustment	-	Level of Service (LOS)	A
Adjusted Free-Flow Speed (FFSadj), mi/h	70.0		

HCS7 Basic Freeway Report

Project Information

Analyst	CS	Date	3/26/2019
Agency	Urban Crossroads, Inc.	Analysis Year	EAPC (2019)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	Gilman Springs Mine TIA (JN 11379)		

Geometric Data

Number of Lanes, In	2	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Measured	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	-
Lane Width, ft	-	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	-		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	1295	Heavy Vehicle Adjustment Factor (fHV)	0.990
Peak Hour Factor	0.92	Flow Rate (Vp), pc/h/ln	711
Total Trucks, %	1.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (cadj), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.30
Passenger Car Equivalent (Et)	2.000		

Speed and Density

Lane Width Adjustment (fLW)	-	Average Speed (S), mi/h	70.0
Right-Side Lateral Clearance Adj. (fRLC)	-	Density (D), pc/mi/ln	10.2
Total Ramp Density Adjustment	-	Level of Service (LOS)	A
Adjusted Free-Flow Speed (FFSadj), mi/h	70.0		

HCS7 Basic Freeway Report

Project Information

Analyst	CS	Date	3/26/2019
Agency	Urban Crossroads, Inc.	Analysis Year	EAPC (2019)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	Gilman Springs Mine TIA (JN 11379)		

Geometric Data

Number of Lanes, In	2	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Measured	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	-
Lane Width, ft	-	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	-		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	4240	Heavy Vehicle Adjustment Factor (fHV)	0.980
Peak Hour Factor	0.92	Flow Rate (Vp), pc/h/ln	2352
Total Trucks, %	2.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (cadj), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.98
Passenger Car Equivalent (Et)	2.000		

Speed and Density

Lane Width Adjustment (fLW)	-	Average Speed (S), mi/h	54.6
Right-Side Lateral Clearance Adj. (fRLC)	-	Density (D), pc/mi/ln	43.1
Total Ramp Density Adjustment	-	Level of Service (LOS)	E
Adjusted Free-Flow Speed (FFSadj), mi/h	70.0		

HCS7 Basic Freeway Report

Project Information

Analyst	CS	Date	3/26/2019
Agency	Urban Crossroads, Inc.	Analysis Year	EAPC (2019)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	Gilman Springs Mine TIA (JN 11379)		

Geometric Data

Number of Lanes, In	2	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Measured	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	-
Lane Width, ft	-	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	-		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	3719	Heavy Vehicle Adjustment Factor (fHV)	0.990
Peak Hour Factor	0.92	Flow Rate (Vp), pc/h/ln	2042
Total Trucks, %	1.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (cadj), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.85
Passenger Car Equivalent (Et)	2.000		

Speed and Density

Lane Width Adjustment (fLW)	-	Average Speed (S), mi/h	61.8
Right-Side Lateral Clearance Adj. (fRLC)	-	Density (D), pc/mi/ln	33.0
Total Ramp Density Adjustment	-	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFSadj), mi/h	70.0		

HCS7 Basic Freeway Report

Project Information

Analyst	CS	Date	3/26/2019
Agency	Urban Crossroads, Inc.	Analysis Year	EAPC (2019)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	Gilman Springs Mine TIA (JN 11379)		

Geometric Data

Number of Lanes, In	2	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Measured	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	-
Lane Width, ft	-	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	-		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	4712	Heavy Vehicle Adjustment Factor (fHV)	0.990
Peak Hour Factor	0.92	Flow Rate (Vp), pc/h/ln	2586
Total Trucks, %	1.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (cadj), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	1.08
Passenger Car Equivalent (Et)	2.000		

Speed and Density

Lane Width Adjustment (fLW)	-	Average Speed (S), mi/h	-
Right-Side Lateral Clearance Adj. (fRLC)	-	Density (D), pc/mi/ln	-
Total Ramp Density Adjustment	-	Level of Service (LOS)	F
Adjusted Free-Flow Speed (FFSadj), mi/h	70.0		

HCS7 Basic Freeway Report

Project Information

Analyst	CS	Date	3/26/2019
Agency	Urban Crossroads, Inc.	Analysis Year	EAPC (2019)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	Gilman Springs Mine TIA (JN 11379)		

Geometric Data

Number of Lanes, In	2	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Measured	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	-
Lane Width, ft	-	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	-		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	3722	Heavy Vehicle Adjustment Factor (fHV)	0.990
Peak Hour Factor	0.92	Flow Rate (Vp), pc/h/ln	2044
Total Trucks, %	1.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (cadj), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.85
Passenger Car Equivalent (Et)	2.000		

Speed and Density

Lane Width Adjustment (fLW)	-	Average Speed (S), mi/h	61.8
Right-Side Lateral Clearance Adj. (fRLC)	-	Density (D), pc/mi/ln	33.1
Total Ramp Density Adjustment	-	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFSadj), mi/h	70.0		

HCS7 Basic Freeway Report

Project Information

Analyst	CS	Date	3/26/2019
Agency	Urban Crossroads, Inc.	Analysis Year	EAPC (2019)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	Gilman Springs Mine TIA (JN 11379)		

Geometric Data

Number of Lanes, In	2	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Measured	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	-
Lane Width, ft	-	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	-		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	1810	Heavy Vehicle Adjustment Factor (fHV)	0.980
Peak Hour Factor	0.92	Flow Rate (Vp), pc/h/ln	1004
Total Trucks, %	2.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (cadj), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.42
Passenger Car Equivalent (Et)	2.000		

Speed and Density

Lane Width Adjustment (fLW)	-	Average Speed (S), mi/h	70.0
Right-Side Lateral Clearance Adj. (fRLC)	-	Density (D), pc/mi/ln	14.3
Total Ramp Density Adjustment	-	Level of Service (LOS)	B
Adjusted Free-Flow Speed (FFSadj), mi/h	70.0		

HCS7 Basic Freeway Report

Project Information

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Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	Gilman Springs Mine TIA (JN 11379)		

Geometric Data

Number of Lanes, In	2	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Measured	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	-
Lane Width, ft	-	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	-		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	2071	Heavy Vehicle Adjustment Factor (fHV)	0.990
Peak Hour Factor	0.92	Flow Rate (Vp), pc/h/ln	1137
Total Trucks, %	1.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (cadj), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.47
Passenger Car Equivalent (Et)	2.000		

Speed and Density

Lane Width Adjustment (fLW)	-	Average Speed (S), mi/h	70.0
Right-Side Lateral Clearance Adj. (fRLC)	-	Density (D), pc/mi/ln	16.2
Total Ramp Density Adjustment	-	Level of Service (LOS)	B
Adjusted Free-Flow Speed (FFSadj), mi/h	70.0		

HCS7 Basic Freeway Report

Project Information

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Agency	Urban Crossroads, Inc.	Analysis Year	EAPC (2019)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	Gilman Springs Mine TIA (JN 11379)		

Geometric Data

Number of Lanes, In	2	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Measured	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	-
Lane Width, ft	-	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	-		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	1273	Heavy Vehicle Adjustment Factor (fHV)	0.980
Peak Hour Factor	0.92	Flow Rate (Vp), pc/h/ln	706
Total Trucks, %	2.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (cadj), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.29
Passenger Car Equivalent (Et)	2.000		

Speed and Density

Lane Width Adjustment (fLW)	-	Average Speed (S), mi/h	70.0
Right-Side Lateral Clearance Adj. (fRLC)	-	Density (D), pc/mi/ln	10.1
Total Ramp Density Adjustment	-	Level of Service (LOS)	A
Adjusted Free-Flow Speed (FFSadj), mi/h	70.0		

HCS7 Basic Freeway Report

Project Information

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Agency	Urban Crossroads, Inc.	Analysis Year	EAPC (2019)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	Gilman Springs Mine TIA (JN 11379)		

Geometric Data

Number of Lanes, In	2	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Measured	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Total Ramp Density (TRD), ramps/mi	-
Lane Width, ft	-	Free-Flow Speed (FFS), mi/h	70.0
Right-Side Lateral Clearance, ft	-		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	1273	Heavy Vehicle Adjustment Factor (fHV)	0.990
Peak Hour Factor	0.92	Flow Rate (Vp), pc/h/ln	699
Total Trucks, %	1.00	Capacity (c), pc/h/ln	2400
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (cadj), pc/h/ln	2400
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.29
Passenger Car Equivalent (Et)	2.000		

Speed and Density

Lane Width Adjustment (fLW)	-	Average Speed (S), mi/h	70.0
Right-Side Lateral Clearance Adj. (fRLC)	-	Density (D), pc/mi/ln	10.0
Total Ramp Density Adjustment	-	Level of Service (LOS)	A
Adjusted Free-Flow Speed (FFSadj), mi/h	70.0		

ATTACHMENT K

EAPC (2019) RAMP JUNCTION ANALYSIS WORKSHEETS

HCS7 Freeway Merge Report

Project Information

Analyst	CS	Date	3/26/2019
Agency	Urban Crossroads, Inc.	Analysis Year	EAPC (2019)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	Gilman Springs Mine TIA (JN 11379)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N), ln	2	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Acceleration Length (LA),ft	1500	300
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors

Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity

Demand Volume (Vi)	3251	853
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	1.00	5.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.990	0.952
Flow Rate (vi),pc/h	3569	974
Capacity (c), pc/h	4800	2100
Volume-to-Capacity Ratio (v/c)	0.95	0.46

Speed and Density

Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	38.7
Distance to Upstream Ramp (LUP), ft	-	Speed Index (M)	0.660
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (VOA), pc/mi/ln	-
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influence Area Speed (SR), mi/h	51.5
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	1.000	Outer Lanes Freeway Speed (SO), mi/h	-
Flow in Lanes 1 and 2 (v12), pc/h	3569	Ramp Junction Speed (S), mi/h	51.5
Flow Entering Ramp-Infl. Area (vR12), pc/h	4543	Average Density (D), pc/mi/ln	44.1
Level of Service (LOS)	E		

HCS7 Freeway Diverge Report

Project Information

Analyst	CS	Date	3/26/2019
Agency	Urban Crossroads, Inc.	Analysis Year	EAPC (2019)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	Gilman Springs Mine TIA (JN 11379)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N), ln	2	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	190
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors

Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity

Demand Volume (Vi)	3267	16
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	1.00	31.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.990	0.763
Flow Rate (vi),pc/h	3587	23
Capacity (c), pc/h	4800	2100
Volume-to-Capacity Ratio (v/c)	0.75	0.01

Speed and Density

Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	33.4
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	0.300
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (VOA), pc/mi/ln	-
Distance to Downstream Ramp (LDOWN), ft	-	Off-Ramp Influence Area Speed (SR), mi/h	61.6
Prop. Freeway Vehicles in Lane 1 and 2 (Pd)	1.000	Outer Lanes Freeway Speed (So), mi/h	-
Flow in Lanes 1 and 2 (v12), pc/h	3587	Ramp Junction Speed (S), mi/h	61.6
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	29.1
Level of Service (LOS)	D		

HCS7 Freeway Diverge Report

Project Information

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Project Description	Gilman Springs Mine TIA (JN 11379)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N), ln	2	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	200
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors

Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity

Demand Volume (Vi)	3709	453
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	2.00	12.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.980	0.893
Flow Rate (vi),pc/h	4114	551
Capacity (c), pc/h	4800	2100
Volume-to-Capacity Ratio (v/c)	0.86	0.26

Speed and Density

Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	37.8
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	0.348
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (VOA), pc/mi/ln	-
Distance to Downstream Ramp (LDOWN), ft	-	Off-Ramp Influence Area Speed (SR), mi/h	60.3
Prop. Freeway Vehicles in Lane 1 and 2 (Pd)	1.000	Outer Lanes Freeway Speed (So), mi/h	-
Flow in Lanes 1 and 2 (v12), pc/h	4114	Ramp Junction Speed (S), mi/h	60.3
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	34.1
Level of Service (LOS)	E		

HCS7 Freeway Merge Report

Project Information

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Agency	Urban Crossroads, Inc.	Analysis Year	EAPC (2019)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	Gilman Springs Mine TIA (JN 11379)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N), ln	2	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Acceleration Length (LA),ft	1500	300
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors

Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity

Demand Volume (Vi)	3256	7
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	1.00	57.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.990	0.637
Flow Rate (vi),pc/h	3575	12
Capacity (c), pc/h	4800	2100
Volume-to-Capacity Ratio (v/c)	0.75	0.01

Speed and Density

Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	31.6
Distance to Upstream Ramp (LUP), ft	-	Speed Index (M)	0.435
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (VOA), pc/mi/ln	-
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influence Area Speed (SR), mi/h	57.8
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	1.000	Outer Lanes Freeway Speed (SO), mi/h	-
Flow in Lanes 1 and 2 (v12), pc/h	3575	Ramp Junction Speed (S), mi/h	57.8
Flow Entering Ramp-Infl. Area (vR12), pc/h	3587	Average Density (D), pc/mi/ln	31.0
Level of Service (LOS)	D		

HCS7 Freeway Diverge Report

Project Information

Analyst	CS	Date	3/26/2019
Agency	Urban Crossroads, Inc.	Analysis Year	EAPC (2019)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	Gilman Springs Mine TIA (JN 11379)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N), ln	2	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	110
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors

Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity

Demand Volume (Vi)	1418	174
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	2.00	12.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.980	0.893
Flow Rate (vi),pc/h	1573	212
Capacity (c), pc/h	4800	2100
Volume-to-Capacity Ratio (v/c)	0.33	0.10

Speed and Density

Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	16.8
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	0.317
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (VOA), pc/mi/ln	-
Distance to Downstream Ramp (LDOWN), ft	-	Off-Ramp Influence Area Speed (SR), mi/h	61.1
Prop. Freeway Vehicles in Lane 1 and 2 (Pd)	1.000	Outer Lanes Freeway Speed (So), mi/h	-
Flow in Lanes 1 and 2 (v12), pc/h	1573	Ramp Junction Speed (S), mi/h	61.1
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	12.9
Level of Service (LOS)	B		

HCS7 Freeway Merge Report

Project Information

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Geometric Data

	Freeway	Ramp
Number of Lanes (N), ln	2	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Acceleration Length (LA),ft	1500	400
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors

Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity

Demand Volume (Vi)	1244	296
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	1.00	9.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.990	0.917
Flow Rate (vi),pc/h	1366	351
Capacity (c), pc/h	4800	2100
Volume-to-Capacity Ratio (v/c)	0.36	0.17

Speed and Density

Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	16.3
Distance to Upstream Ramp (LUP), ft	-	Speed Index (M)	0.307
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (VOA), pc/mi/ln	-
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenecce Area Speed (SR), mi/h	61.4
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	1.000	Outer Lanes Freeway Speed (SO), mi/h	-
Flow in Lanes 1 and 2 (v12), pc/h	1366	Ramp Junction Speed (S), mi/h	61.4
Flow Entering Ramp-Infl. Area (vR12), pc/h	1717	Average Density (D), pc/mi/ln	14.0
Level of Service (LOS)	B		

HCS7 Freeway Merge Report

Project Information

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Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	Gilman Springs Mine TIA (JN 11379)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N), ln	2	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Acceleration Length (LA),ft	1500	400
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors

Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity

Demand Volume (Vi)	856	293
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	1.00	6.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.990	0.943
Flow Rate (vi),pc/h	940	338
Capacity (c), pc/h	4800	2100
Volume-to-Capacity Ratio (v/c)	0.27	0.16

Speed and Density

Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	12.9
Distance to Upstream Ramp (LUP), ft	-	Speed Index (M)	0.299
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (VOA), pc/mi/ln	-
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influence Area Speed (SR), mi/h	61.6
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	1.000	Outer Lanes Freeway Speed (SO), mi/h	-
Flow in Lanes 1 and 2 (v12), pc/h	940	Ramp Junction Speed (S), mi/h	61.6
Flow Entering Ramp-Infl. Area (vR12), pc/h	1278	Average Density (D), pc/mi/ln	10.4
Level of Service (LOS)	B		

HCS7 Freeway Diverge Report

Project Information

Analyst	CS	Date	3/26/2019
Agency	Urban Crossroads, Inc.	Analysis Year	EAPC (2019)
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	Gilman Springs Mine TIA (JN 11379)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N), ln	2	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	155
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors

Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity

Demand Volume (Vi)	1295	439
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	1.00	2.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.990	0.980
Flow Rate (vi),pc/h	1422	487
Capacity (c), pc/h	4800	2100
Volume-to-Capacity Ratio (v/c)	0.30	0.23

Speed and Density

Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	15.1
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	0.342
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (VOA), pc/mi/ln	-
Distance to Downstream Ramp (LDOWN), ft	-	Off-Ramp Influence Area Speed (SR), mi/h	60.4
Prop. Freeway Vehicles in Lane 1 and 2 (Pd)	1.000	Outer Lanes Freeway Speed (So), mi/h	-
Flow in Lanes 1 and 2 (v12), pc/h	1422	Ramp Junction Speed (S), mi/h	60.4
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	11.8
Level of Service (LOS)	B		

HCS7 Freeway Merge Report

Project Information

Analyst	CS	Date	3/26/2019
Agency	Urban Crossroads, Inc.	Analysis Year	EAPC (2019)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	Gilman Springs Mine TIA (JN 11379)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N), ln	2	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Acceleration Length (LA),ft	1500	300
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors

Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity

Demand Volume (Vi)	3711	529
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	1.00	8.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.990	0.926
Flow Rate (vi),pc/h	4074	621
Capacity (c), pc/h	4800	2100
Volume-to-Capacity Ratio (v/c)	0.98	0.30

Speed and Density

Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	40.0
Distance to Upstream Ramp (LUP), ft	-	Speed Index (M)	0.721
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (VOA), pc/mi/ln	-
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influence Area Speed (SR), mi/h	49.8
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	1.000	Outer Lanes Freeway Speed (SO), mi/h	-
Flow in Lanes 1 and 2 (v12), pc/h	4074	Ramp Junction Speed (S), mi/h	49.8
Flow Entering Ramp-Infl. Area (vR12), pc/h	4695	Average Density (D), pc/mi/ln	47.1
Level of Service (LOS)	E		

HCS7 Freeway Diverge Report

Project Information

Analyst	CS	Date	3/26/2019
Agency	Urban Crossroads, Inc.	Analysis Year	EAPC (2019)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	Gilman Springs Mine TIA (JN 11379)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N), ln	2	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	190
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors

Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity

Demand Volume (Vi)	3719	8
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	1.00	50.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.990	0.667
Flow Rate (vi),pc/h	4083	13
Capacity (c), pc/h	4800	2100
Volume-to-Capacity Ratio (v/c)	0.85	0.01

Speed and Density

Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	37.7
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	0.299
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (VOA), pc/mi/ln	-
Distance to Downstream Ramp (LDOWN), ft	-	Off-Ramp Influence Area Speed (SR), mi/h	61.6
Prop. Freeway Vehicles in Lane 1 and 2 (Pd)	1.000	Outer Lanes Freeway Speed (So), mi/h	-
Flow in Lanes 1 and 2 (v12), pc/h	4083	Ramp Junction Speed (S), mi/h	61.6
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	33.1
Level of Service (LOS)	E		

HCS7 Freeway Diverge Report

Project Information

Analyst	CS	Date	3/26/2019
Agency	Urban Crossroads, Inc.	Analysis Year	EAPC (2019)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	Gilman Springs Mine TIA (JN 11379)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N), ln	2	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	200
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors

Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity

Demand Volume (Vi)	4712	1002
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	1.00	3.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.990	0.971
Flow Rate (vi),pc/h	5173	1122
Capacity (c), pc/h	4800	2100
Volume-to-Capacity Ratio (v/c)	1.08	0.53

Speed and Density

Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	46.9
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	-
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (VOA), pc/mi/ln	-
Distance to Downstream Ramp (LDOWN), ft	-	Off-Ramp Influence Area Speed (SR), mi/h	58.8
Prop. Freeway Vehicles in Lane 1 and 2 (Pd)	1.000	Outer Lanes Freeway Speed (So), mi/h	-
Flow in Lanes 1 and 2 (v12), pc/h	5173	Ramp Junction Speed (S), mi/h	-
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	-
Level of Service (LOS)	F		

HCS7 Freeway Merge Report

Project Information

Analyst	CS	Date	3/26/2019
Agency	Urban Crossroads, Inc.	Analysis Year	EAPC (2019)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	Gilman Springs Mine TIA (JN 11379)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N), ln	2	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Acceleration Length (LA),ft	1500	300
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors

Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity

Demand Volume (Vi)	3710	12
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	1.00	41.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.990	0.709
Flow Rate (vi),pc/h	4073	18
Capacity (c), pc/h	4800	2100
Volume-to-Capacity Ratio (v/c)	0.85	0.01

Speed and Density

Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	35.6
Distance to Upstream Ramp (LUP), ft	-	Speed Index (M)	0.527
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (VOA), pc/mi/ln	-
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenece Area Speed (SR), mi/h	55.2
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	1.000	Outer Lanes Freeway Speed (SO), mi/h	-
Flow in Lanes 1 and 2 (v12), pc/h	4073	Ramp Junction Speed (S), mi/h	55.2
Flow Entering Ramp-Infl. Area (vR12), pc/h	4091	Average Density (D), pc/mi/ln	37.1
Level of Service (LOS)	E		

HCS7 Freeway Diverge Report

Project Information

Analyst	CS	Date	3/26/2019
Agency	Urban Crossroads, Inc.	Analysis Year	EAPC (2019)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	Gilman Springs Mine TIA (JN 11379)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N), ln	2	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	110
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors

Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity

Demand Volume (Vi)	1810	312
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	2.00	6.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.980	0.943
Flow Rate (vi),pc/h	2008	360
Capacity (c), pc/h	4800	2100
Volume-to-Capacity Ratio (v/c)	0.42	0.17

Speed and Density

Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	20.5
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	0.330
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (VOA), pc/mi/ln	-
Distance to Downstream Ramp (LDOWN), ft	-	Off-Ramp Influence Area Speed (SR), mi/h	60.8
Prop. Freeway Vehicles in Lane 1 and 2 (Pd)	1.000	Outer Lanes Freeway Speed (So), mi/h	-
Flow in Lanes 1 and 2 (v12), pc/h	2008	Ramp Junction Speed (S), mi/h	60.8
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	16.5
Level of Service (LOS)	C		

HCS7 Freeway Merge Report

Project Information

Analyst	CS	Date	3/26/2019
Agency	Urban Crossroads, Inc.	Analysis Year	EAPC (2019)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	Gilman Springs Mine TIA (JN 11379)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N), ln	2	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Acceleration Length (LA),ft	1500	400
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors

Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity

Demand Volume (Vi)	1498	573
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	1.00	2.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.990	0.980
Flow Rate (vi),pc/h	1645	636
Capacity (c), pc/h	4800	2100
Volume-to-Capacity Ratio (v/c)	0.48	0.30

Speed and Density

Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	20.5
Distance to Upstream Ramp (LUP), ft	-	Speed Index (M)	0.323
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (VOA), pc/mi/ln	-
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influence Area Speed (SR), mi/h	61.0
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	1.000	Outer Lanes Freeway Speed (SO), mi/h	-
Flow in Lanes 1 and 2 (v12), pc/h	1645	Ramp Junction Speed (S), mi/h	61.0
Flow Entering Ramp-Infl. Area (vR12), pc/h	2281	Average Density (D), pc/mi/ln	18.7
Level of Service (LOS)	C		

HCS7 Freeway Merge Report

Project Information

Analyst	CS	Date	3/26/2019
Agency	Urban Crossroads, Inc.	Analysis Year	EAPC (2019)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	Gilman Springs Mine TIA (JN 11379)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N), ln	2	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Acceleration Length (LA),ft	1500	400
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors

Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity

Demand Volume (Vi)	1019	254
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	1.00	5.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.990	0.952
Flow Rate (vi),pc/h	1119	290
Capacity (c), pc/h	4800	2100
Volume-to-Capacity Ratio (v/c)	0.29	0.14

Speed and Density

Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	13.9
Distance to Upstream Ramp (LUP), ft	-	Speed Index (M)	0.301
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (VOA), pc/mi/ln	-
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influence Area Speed (SR), mi/h	61.6
Prop. Freeway Vehicles in Lane 1 and 2 (PM)	1.000	Outer Lanes Freeway Speed (SO), mi/h	-
Flow in Lanes 1 and 2 (v12), pc/h	1119	Ramp Junction Speed (S), mi/h	61.6
Flow Entering Ramp-Infl. Area (vR12), pc/h	1409	Average Density (D), pc/mi/ln	11.4
Level of Service (LOS)	B		

HCS7 Freeway Diverge Report

Project Information

Analyst	CS	Date	3/26/2019
Agency	Urban Crossroads, Inc.	Analysis Year	EAPC (2019)
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	Gilman Springs Mine TIA (JN 11379)		

Geometric Data

	Freeway	Ramp
Number of Lanes (N), ln	2	1
Free-Flow Speed (FFS), mi/h	70.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1500	155
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors

Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity

Demand Volume (Vi)	1273	255
Peak Hour Factor (PHF)	0.92	0.92
Total Trucks, %	1.00	4.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.990	0.962
Flow Rate (vi),pc/h	1398	288
Capacity (c), pc/h	4800	2100
Volume-to-Capacity Ratio (v/c)	0.29	0.14

Speed and Density

Upstream Equilibrium Distance (LEQ), ft	-	Density in Ramp Influence Area (DR), pc/mi/ln	14.9
Distance to Upstream Ramp (LUP), ft	-	Speed Index (D)	0.324
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (VOA), pc/mi/ln	-
Distance to Downstream Ramp (LDOWN), ft	-	Off-Ramp Influence Area Speed (SR), mi/h	60.9
Prop. Freeway Vehicles in Lane 1 and 2 (Pd)	1.000	Outer Lanes Freeway Speed (So), mi/h	-
Flow in Lanes 1 and 2 (v12), pc/h	1398	Ramp Junction Speed (S), mi/h	60.9
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	11.5
Level of Service (LOS)	B		

ATTACHMENT L

EAPC (2019) HCM ANALYSIS WORKSHEETS, WITH IMPROVEMENTS

Timings
2: Gilman Springs Rd. & Alessandro Bl.

Gilman Mine (JN 11379)

03/26/2019



Lane Group	EBL	NBL	NBT	SBT
Lane Configurations				
Traffic Volume (vph)	0	173	953	574
Future Volume (vph)	0	173	953	574
Turn Type	Prot	Prot	NA	NA
Protected Phases	4	5	2	6
Permitted Phases				
Detector Phase	4	5	2	6
Switch Phase				
Minimum Initial (s)	10.0	5.0	10.0	10.0
Minimum Split (s)	16.2	9.6	16.5	35.5
Total Split (s)	19.0	31.0	101.0	70.0
Total Split (%)	15.8%	25.8%	84.2%	58.3%
Yellow Time (s)	5.2	3.6	5.5	5.5
All-Red Time (s)	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.2	4.6	6.5	6.5
Lead/Lag		Lead		Lag
Lead-Lag Optimize?		Yes		Yes
Recall Mode	None	None	Min	Min

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 65.6

Natural Cycle: 65

Control Type: Actuated-Uncoordinated

Splits and Phases: 2: Gilman Springs Rd. & Alessandro Bl.



HCM 6th Signalized Intersection Summary

2: Gilman Springs Rd. & Alessandro Bl.

Gilman Mine (JN 11379)

03/26/2019



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	86	173	953	574	1
Future Volume (veh/h)	0	86	173	953	574	1
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	0	89	178	982	592	1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	0	209	227	1239	850	1
Arrive On Green	0.00	0.13	0.13	0.65	0.45	0.45
Sat Flow, veh/h	0	1595	1810	1900	1896	3
Grp Volume(v), veh/h	0	90	178	982	0	593
Grp Sat Flow(s),veh/h/ln	0	1613	1810	1900	0	1899
Q Serve(g_s), s	0.0	3.0	5.6	21.8	0.0	14.7
Cycle Q Clear(g_c), s	0.0	3.0	5.6	21.8	0.0	14.7
Prop In Lane	0.00	0.99	1.00			0.00
Lane Grp Cap(c), veh/h	0	212	227	1239	0	851
V/C Ratio(X)	0.00	0.43	0.78	0.79	0.00	0.70
Avail Cap(c_a), veh/h	0	352	815	3063	0	2057
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	23.4	24.9	7.3	0.0	13.0
Incr Delay (d2), s/veh	0.0	1.4	2.3	1.7	0.0	1.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	1.1	2.2	3.9	0.0	4.6
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.0	24.8	27.1	9.0	0.0	14.4
LnGrp LOS	A	C	C	A	A	B
Approach Vol, veh/h	90			1160	593	
Approach Delay, s/veh	24.8			11.8	14.4	
Approach LOS	C			B	B	
Timer - Assigned Phs	2			4	5	6
Phs Duration (G+Y+Rc), s	44.7			13.9	12.0	32.8
Change Period (Y+Rc), s	6.5			6.2	4.6	6.5
Max Green Setting (Gmax), s	94.5			12.8	26.4	63.5
Max Q Clear Time (g_c+I1), s	23.8			5.0	7.6	16.7
Green Ext Time (p_c), s	14.4			0.1	0.2	5.7

Intersection Summary

HCM 6th Ctrl Delay	13.3
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

Timings
3: Gilman Springs Rd. & Jack Rabbit Tr.

Gilman Mine (JN 11379)

03/26/2019



Lane Group	EBL	EBT	WBT	SBL
Lane Configurations				
Traffic Volume (vph)	1	660	1124	1
Future Volume (vph)	1	660	1124	1
Turn Type	Prot	NA	NA	Prot
Protected Phases	7	4	8	6
Permitted Phases				
Detector Phase	7	4	8	6
Switch Phase				
Minimum Initial (s)	5.0	10.0	10.0	10.0
Minimum Split (s)	9.6	16.5	24.5	14.6
Total Split (s)	9.6	96.6	87.0	23.4
Total Split (%)	8.0%	80.5%	72.5%	19.5%
Yellow Time (s)	3.6	5.5	5.5	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.5	6.5	4.6
Lead/Lag	Lead		Lag	
Lead-Lag Optimize?	Yes		Yes	
Recall Mode	None	None	None	Min

Intersection Summary

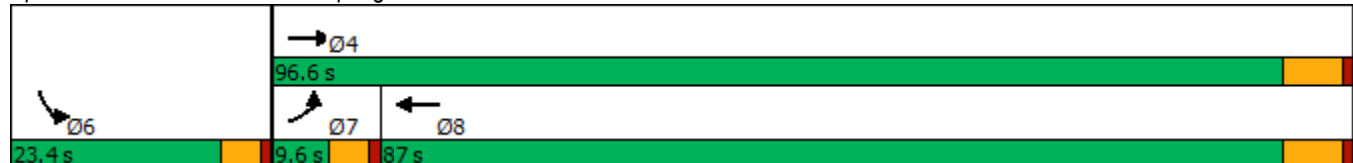
Cycle Length: 120

Actuated Cycle Length: 88.2

Natural Cycle: 90

Control Type: Actuated-Uncoordinated

Splits and Phases: 3: Gilman Springs Rd. & Jack Rabbit Tr.

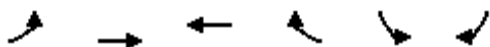


HCM 6th Signalized Intersection Summary

3: Gilman Springs Rd. & Jack Rabbit Tr.

Gilman Mine (JN 11379)

03/26/2019



Movement	EBL	EBT	WBT	WBR	SBL	SBR	
Lane Configurations							
Traffic Volume (veh/h)	1	660	1124	2	1	2	
Future Volume (veh/h)	1	660	1124	2	1	2	
Initial Q (Qb), veh	0	0	0	0	0	0	
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	
Work Zone On Approach		No	No		No		
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	
Adj Flow Rate, veh/h	1	710	1209	2	1	2	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	
Percent Heavy Veh, %	0	0	0	0	0	0	
Cap, veh/h	2	1460	1359	2	47	95	
Arrive On Green	0.00	0.77	0.72	0.72	0.11	0.11	
Sat Flow, veh/h	1810	1900	1896	3	431	862	
Grp Volume(v), veh/h	1	710	0	1211	4	0	
Grp Sat Flow(s),veh/h/ln	1810	1900	0	1899	1723	0	
Q Serve(g_s), s	0.1	12.6	0.0	45.4	0.2	0.0	
Cycle Q Clear(g_c), s	0.1	12.6	0.0	45.4	0.2	0.0	
Prop In Lane	1.00			0.00	0.25	0.50	
Lane Grp Cap(c), veh/h	2	1460	0	1361	189	0	
V/C Ratio(X)	0.40	0.49	0.00	0.89	0.02	0.00	
Avail Cap(c_a), veh/h	99	1878	0	1677	355	0	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	
Uniform Delay (d), s/veh	45.5	3.9	0.0	10.1	36.2	0.0	
Incr Delay (d2), s/veh	34.8	0.4	0.0	5.9	0.0	0.0	
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	
%ile BackOfQ(50%),veh/ln	0.0	2.2	0.0	12.8	0.1	0.0	
Unsig. Movement Delay, s/veh							
LnGrp Delay(d),s/veh	80.3	4.3	0.0	16.0	36.3	0.0	
LnGrp LOS	F	A	A	B	D	A	
Approach Vol, veh/h		711	1211		4		
Approach Delay, s/veh		4.4	16.0		36.3		
Approach LOS		A	B		D		
Timer - Assigned Phs				4	6	7	8
Phs Duration (G+Y+Rc), s				76.6	14.6	4.7	71.8
Change Period (Y+Rc), s				6.5	4.6	4.6	6.5
Max Green Setting (Gmax), s				90.1	18.8	5.0	80.5
Max Q Clear Time (g_c+I1), s				14.6	2.2	2.1	47.4
Green Ext Time (p_c), s				7.7	0.0	0.0	17.9
Intersection Summary							
HCM 6th Ctrl Delay			11.7				
HCM 6th LOS			B				
Notes							

Timings

4: Bridge St. & Gilman Springs Rd.

Gilman Mine (JN 11379)

03/26/2019

	→	↘	↙	←	↖
Lane Group	EBT	EBR	WBL	WBT	NBL
Lane Configurations	↑	↑	↘	↑	↘
Traffic Volume (vph)	581	66	28	1014	120
Future Volume (vph)	581	66	28	1014	120
Turn Type	NA	Perm	Prot	NA	Prot
Protected Phases	4		3	8	2
Permitted Phases		4			
Detector Phase	4	4	3	8	2
Switch Phase					
Minimum Initial (s)	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	35.5	35.5	9.6	24.5	24.5
Total Split (s)	84.0	84.0	10.0	94.0	26.0
Total Split (%)	70.0%	70.0%	8.3%	78.3%	21.7%
Yellow Time (s)	5.5	5.5	3.6	5.5	5.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.5	6.5	4.6	6.5	6.5
Lead/Lag	Lag	Lag	Lead		
Lead-Lag Optimize?	Yes	Yes	Yes		
Recall Mode	None	None	None	None	Min

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 86.5

Natural Cycle: 90

Control Type: Actuated-Uncoordinated

Splits and Phases: 4: Bridge St. & Gilman Springs Rd.

↖ Ø2	↘ Ø3	→ Ø4
26 s	10 s	84 s
	← Ø8	
	94 s	

HCM 6th Signalized Intersection Summary

4: Bridge St. & Gilman Springs Rd.

Gilman Mine (JN 11379)

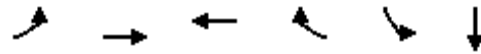
03/26/2019

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↑	↘	↑	↘	
Traffic Volume (veh/h)	581	66	28	1014	120	47
Future Volume (veh/h)	581	66	28	1014	120	47
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	638	0	31	1114	132	52
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	1149		57	1324	166	65
Arrive On Green	0.60	0.00	0.03	0.70	0.13	0.13
Sat Flow, veh/h	1900	1610	1810	1900	1248	492
Grp Volume(v), veh/h	638	0	31	1114	185	0
Grp Sat Flow(s),veh/h/ln	1900	1610	1810	1900	1749	0
Q Serve(g_s), s	15.2	0.0	1.3	32.8	7.8	0.0
Cycle Q Clear(g_c), s	15.2	0.0	1.3	32.8	7.8	0.0
Prop In Lane		1.00	1.00		0.71	0.28
Lane Grp Cap(c), veh/h	1149		57	1324	233	0
V/C Ratio(X)	0.56		0.54	0.84	0.80	0.00
Avail Cap(c_a), veh/h	1931		128	2180	447	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	9.0	0.0	36.4	8.5	32.1	0.0
Incr Delay (d2), s/veh	0.6	0.0	3.0	2.3	6.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.4	0.0	0.6	7.4	3.4	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	9.6	0.0	39.3	10.8	38.2	0.0
LnGrp LOS	A		D	B	D	A
Approach Vol, veh/h	638	A		1145	185	
Approach Delay, s/veh	9.6			11.5	38.2	
Approach LOS	A			B	D	
Timer - Assigned Phs		2	3	4		8
Phs Duration (G+Y+Rc), s		16.6	7.0	52.6		59.6
Change Period (Y+Rc), s		6.5	4.6	6.5		6.5
Max Green Setting (Gmax), s		19.5	5.4	77.5		87.5
Max Q Clear Time (g_c+I1), s		9.8	3.3	17.2		34.8
Green Ext Time (p_c), s		0.3	0.0	6.5		18.3
Intersection Summary						
HCM 6th Ctrl Delay			13.4			
HCM 6th LOS			B			
Notes						
User approved volume balancing among the lanes for turning movement.						
Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.						

Timings
5: Driveway & Gilman Springs Rd.

Gilman Mine (JN 11379)

03/26/2019



Lane Group	EBL	EBT	WBT	WBR	SBL	SBT	Ø2	Ø3
Lane Configurations								
Traffic Volume (vph)	64	562	990	32	26	0		
Future Volume (vph)	64	562	990	32	26	0		
Turn Type	Prot	NA	NA	Perm	Perm	NA		
Protected Phases	7	4	8			6	2	3
Permitted Phases				8	6			
Detector Phase	7	4	8	8	6	6		
Switch Phase								
Minimum Initial (s)	5.0	10.0	10.0	10.0	10.0	10.0	10.0	5.0
Minimum Split (s)	9.6	30.5	30.5	30.5	14.6	14.6	14.6	9.6
Total Split (s)	10.0	94.4	94.0	94.0	16.0	16.0	16.0	9.6
Total Split (%)	8.3%	78.7%	78.3%	78.3%	13.3%	13.3%	13%	8%
Yellow Time (s)	3.6	5.5	5.5	5.5	3.6	3.6	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0		
Total Lost Time (s)	4.6	6.5	6.5	6.5		4.6		
Lead/Lag	Lead	Lag	Lag	Lag				Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes				Yes
Recall Mode	None	None	None	None	Min	Min	Min	None

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 89.2

Natural Cycle: 80

Control Type: Actuated-Uncoordinated

Splits and Phases: 5: Driveway & Gilman Springs Rd.

16 s	9.6 s	94.4 s
16 s	10 s	94 s

HCM 6th Signalized Intersection Summary
5: Driveway & Gilman Springs Rd.

Gilman Mine (JN 11379)

03/26/2019

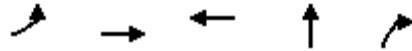
												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	64	562	0	0	990	32	0	0	0	26	0	52
Future Volume (veh/h)	64	562	0	0	990	32	0	0	0	26	0	52
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	69	604	0	0	1065	34	0	0	0	28	0	56
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	89	1436	0	2	1242	1052	0	220	0	97	20	123
Arrive On Green	0.05	0.76	0.00	0.00	0.65	0.65	0.00	0.00	0.00	0.12	0.00	0.12
Sat Flow, veh/h	1810	1900	0	1810	1900	1610	0	1900	0	355	176	1063
Grp Volume(v), veh/h	69	604	0	0	1065	34	0	0	0	84	0	0
Grp Sat Flow(s),veh/h/ln	1810	1900	0	1810	1900	1610	0	1900	0	1595	0	0
Q Serve(g_s), s	3.3	9.8	0.0	0.0	38.2	0.6	0.0	0.0	0.0	1.0	0.0	0.0
Cycle Q Clear(g_c), s	3.3	9.8	0.0	0.0	38.2	0.6	0.0	0.0	0.0	4.1	0.0	0.0
Prop In Lane	1.00		0.00	1.00		1.00	0.00		0.00	0.33		0.67
Lane Grp Cap(c), veh/h	89	1436	0	2	1242	1052	0	220	0	240	0	0
V/C Ratio(X)	0.77	0.42	0.00	0.00	0.86	0.03	0.00	0.00	0.00	0.35	0.00	0.00
Avail Cap(c_a), veh/h	113	1931	0	105	1922	1629	0	250	0	265	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	40.6	3.8	0.0	0.0	11.8	5.3	0.0	0.0	0.0	35.6	0.0	0.0
Incr Delay (d2), s/veh	16.9	0.3	0.0	0.0	3.2	0.0	0.0	0.0	0.0	0.9	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	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	1.7	0.0	0.0	11.5	0.2	0.0	0.0	0.0	1.7	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	57.5	4.1	0.0	0.0	15.0	5.3	0.0	0.0	0.0	36.5	0.0	0.0
LnGrp LOS	E	A	A	A	B	A	A	A	A	D	A	A
Approach Vol, veh/h	673			1099			0			84		
Approach Delay, s/veh	9.5			14.7			0.0			36.5		
Approach LOS	A			B						D		
Timer - Assigned Phs	2		3	4	6		7	8				
Phs Duration (G+Y+Rc), s	14.6		0.0	71.9	14.6		8.9	63.0				
Change Period (Y+Rc), s	4.6		4.6	6.5	4.6		4.6	6.5				
Max Green Setting (Gmax), s	11.4		5.0	87.9	11.4		5.4	87.5				
Max Q Clear Time (g_c+I1), s	0.0		0.0	11.8	6.1		5.3	40.2				
Green Ext Time (p_c), s	0.0		0.0	6.0	0.1		0.0	16.3				
Intersection Summary												
HCM 6th Ctrl Delay	13.8											
HCM 6th LOS	B											

Timings

Gilman Mine (JN 11379)

7: SR-79 NB Ramps & Gilman Springs Rd.

03/26/2019



Lane Group	EBL	EBT	WBT	NBT	NBR
Lane Configurations					
Traffic Volume (vph)	46	382	529	2	8
Future Volume (vph)	46	382	529	2	8
Turn Type	Prot	NA	NA	NA	Perm
Protected Phases	7	4	8	2	
Permitted Phases					2
Detector Phase	7	4	8	2	2
Switch Phase					
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.4	34.5	32.5	9.0	9.0
Total Split (s)	20.0	60.0	40.0	30.0	30.0
Total Split (%)	22.2%	66.7%	44.4%	33.3%	33.3%
Yellow Time (s)	4.4	5.5	5.5	3.0	3.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.4	6.5	6.5	4.0	4.0
Lead/Lag	Lead		Lag		
Lead-Lag Optimize?	Yes		Yes		
Recall Mode	None	None	None	None	None

Intersection Summary

Cycle Length: 90

Actuated Cycle Length: 70.1

Natural Cycle: 65

Control Type: Actuated-Uncoordinated

Splits and Phases: 7: SR-79 NB Ramps & Gilman Springs Rd.



HCM 6th Signalized Intersection Summary
7: SR-79 NB Ramps & Gilman Springs Rd.

Gilman Mine (JN 11379)

03/26/2019

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	46	382	0	0	529	277	453	2	8	0	0	0
Future Volume (veh/h)	46	382	0	0	529	277	453	2	8	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach	No			No			No					
Adj Sat Flow, veh/h/ln	1900	1900	0	0	1900	1900	1900	1900	1900			
Adj Flow Rate, veh/h	48	402	0	0	557	292	477	2	8			
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95			
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0			
Cap, veh/h	82	1825	0	0	856	448	588	2	525			
Arrive On Green	0.05	0.51	0.00	0.00	0.37	0.37	0.33	0.33	0.33			
Sat Flow, veh/h	1810	3705	0	0	2385	1199	1802	8	1610			
Grp Volume(v), veh/h	48	402	0	0	439	410	479	0	8			
Grp Sat Flow(s),veh/h/ln	1810	1805	0	0	1805	1684	1810	0	1610			
Q Serve(g_s), s	1.6	3.9	0.0	0.0	12.5	12.6	15.1	0.0	0.2			
Cycle Q Clear(g_c), s	1.6	3.9	0.0	0.0	12.5	12.6	15.1	0.0	0.2			
Prop In Lane	1.00		0.00	0.00		0.71	1.00		1.00			
Lane Grp Cap(c), veh/h	82	1825	0	0	674	629	590	0	525			
V/C Ratio(X)	0.59	0.22	0.00	0.00	0.65	0.65	0.81	0.00	0.02			
Avail Cap(c_a), veh/h	424	3097	0	0	970	905	755	0	671			
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	1.00	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	29.2	8.6	0.0	0.0	16.2	16.2	19.3	0.0	14.2			
Incr Delay (d2), s/veh	13.4	0.1	0.0	0.0	2.3	2.4	7.3	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	0.9	1.1	0.0	0.0	4.6	4.4	6.6	0.0	0.1			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	42.6	8.7	0.0	0.0	18.4	18.6	26.6	0.0	14.3			
LnGrp LOS	D	A	A	A	B	B	C	A	B			
Approach Vol, veh/h	450			849			487					
Approach Delay, s/veh	12.3			18.5			26.4					
Approach LOS	B			B			C					
Timer - Assigned Phs	2			4			7			8		
Phs Duration (G+Y+Rc), s	24.3			38.0			8.2			29.8		
Change Period (Y+Rc), s	4.0			6.5			5.4			6.5		
Max Green Setting (Gmax), s	26.0			53.5			14.6			33.5		
Max Q Clear Time (g_c+I1), s	17.1			5.9			3.6			14.6		
Green Ext Time (p_c), s	3.2			5.0			0.1			8.7		
Intersection Summary												
HCM 6th Ctrl Delay	19.1											
HCM 6th LOS	B											

Timings
2: Gilman Springs Rd. & Alessandro Bl.

Gilman Mine (JN 11379)

03/26/2019



Lane Group	EBL	NBL	NBT	SBT
Lane Configurations				
Traffic Volume (vph)	1	110	626	1076
Future Volume (vph)	1	110	626	1076
Turn Type	Prot	Prot	NA	NA
Protected Phases	4	5	2	6
Permitted Phases				
Detector Phase	4	5	2	6
Switch Phase				
Minimum Initial (s)	10.0	5.0	10.0	10.0
Minimum Split (s)	16.2	9.6	16.5	35.5
Total Split (s)	18.0	17.0	102.0	85.0
Total Split (%)	15.0%	14.2%	85.0%	70.8%
Yellow Time (s)	5.2	3.6	5.5	5.5
All-Red Time (s)	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.2	4.6	6.5	6.5
Lead/Lag		Lead		Lag
Lead-Lag Optimize?		Yes		Yes
Recall Mode	None	None	Min	Min

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 107.1

Natural Cycle: 90

Control Type: Actuated-Uncoordinated

Splits and Phases: 2: Gilman Springs Rd. & Alessandro Bl.

Ø2	Ø4
102 s	18 s
Ø5	Ø6
17 s	85 s

HCM 6th Signalized Intersection Summary

2: Gilman Springs Rd. & Alessandro Bl.

Gilman Mine (JN 11379)

03/26/2019



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	1	167	110	626	1076	5
Future Volume (veh/h)	1	167	110	626	1076	5
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	1	174	115	652	1121	5
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	1	177	143	1463	1224	5
Arrive On Green	0.11	0.11	0.08	0.77	0.65	0.65
Sat Flow, veh/h	9	1594	1810	1900	1890	8
Grp Volume(v), veh/h	176	0	115	652	0	1126
Grp Sat Flow(s),veh/h/ln	1613	0	1810	1900	0	1898
Q Serve(g_s), s	11.6	0.0	6.7	12.8	0.0	54.7
Cycle Q Clear(g_c), s	11.6	0.0	6.7	12.8	0.0	54.7
Prop In Lane	0.01	0.99	1.00			0.00
Lane Grp Cap(c), veh/h	179	0	143	1463	0	1230
V/C Ratio(X)	0.98	0.00	0.81	0.45	0.00	0.92
Avail Cap(c_a), veh/h	179	0	211	1704	0	1400
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	47.2	0.0	48.2	4.3	0.0	16.2
Incr Delay (d2), s/veh	62.7	0.0	7.9	0.3	0.0	9.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.6	0.0	3.2	2.9	0.0	21.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	109.9	0.0	56.1	4.6	0.0	25.5
LnGrp LOS	F	A	E	A	A	C
Approach Vol, veh/h	176			767	1126	
Approach Delay, s/veh	109.9			12.3	25.5	
Approach LOS	F			B	C	
Timer - Assigned Phs	2		4		5	6
Phs Duration (G+Y+Rc), s	88.5		18.0		13.0	75.5
Change Period (Y+Rc), s	6.5		6.2		4.6	6.5
Max Green Setting (Gmax), s	95.5		11.8		12.4	78.5
Max Q Clear Time (g_c+I1), s	14.8		13.6		8.7	56.7
Green Ext Time (p_c), s	6.7		0.0		0.0	12.3
Intersection Summary						
HCM 6th Ctrl Delay			27.8			
HCM 6th LOS			C			

Notes

User approved volume balancing among the lanes for turning movement.

Timings
3: Gilman Springs Rd. & Jack Rabbit Tr.

Gilman Mine (JN 11379)

03/26/2019



Lane Group	EBL	EBT	WBT	SBL
Lane Configurations				
Traffic Volume (vph)	3	1241	734	3
Future Volume (vph)	3	1241	734	3
Turn Type	Prot	NA	NA	Prot
Protected Phases	7	4	8	6
Permitted Phases				
Detector Phase	7	4	8	6
Switch Phase				
Minimum Initial (s)	5.0	10.0	10.0	10.0
Minimum Split (s)	9.6	16.5	23.5	14.6
Total Split (s)	9.6	97.0	87.4	23.0
Total Split (%)	8.0%	80.8%	72.8%	19.2%
Yellow Time (s)	3.6	5.5	5.5	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.5	6.5	4.6
Lead/Lag	Lead		Lag	
Lead-Lag Optimize?	Yes		Yes	
Recall Mode	None	None	None	Min

Intersection Summary

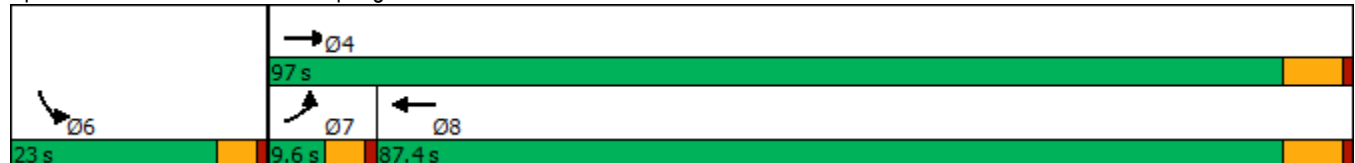
Cycle Length: 120

Actuated Cycle Length: 90.9

Natural Cycle: 80

Control Type: Actuated-Uncoordinated

Splits and Phases: 3: Gilman Springs Rd. & Jack Rabbit Tr.

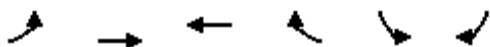


HCM 6th Signalized Intersection Summary

3: Gilman Springs Rd. & Jack Rabbit Tr.

Gilman Mine (JN 11379)

03/26/2019



Movement	EBL	EBT	WBT	WBR	SBL	SBR	
Lane Configurations							
Traffic Volume (veh/h)	3	1241	734	3	3	2	
Future Volume (veh/h)	3	1241	734	3	3	2	
Initial Q (Qb), veh	0	0	0	0	0	0	
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	
Work Zone On Approach		No	No		No		
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	
Adj Flow Rate, veh/h	3	1293	765	3	3	2	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	
Percent Heavy Veh, %	0	0	0	0	0	0	
Cap, veh/h	7	1464	1355	5	95	63	
Arrive On Green	0.00	0.77	0.72	0.72	0.11	0.11	
Sat Flow, veh/h	1810	1900	1891	7	876	584	
Grp Volume(v), veh/h	3	1293	0	768	6	0	
Grp Sat Flow(s),veh/h/ln	1810	1900	0	1899	1751	0	
Q Serve(g_s), s	0.2	44.9	0.0	17.7	0.3	0.0	
Cycle Q Clear(g_c), s	0.2	44.9	0.0	17.7	0.3	0.0	
Prop In Lane	1.00			0.00	0.50	0.33	
Lane Grp Cap(c), veh/h	7	1464	0	1361	190	0	
V/C Ratio(X)	0.41	0.88	0.00	0.56	0.03	0.00	
Avail Cap(c_a), veh/h	98	1869	0	1670	350	0	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	
Uniform Delay (d), s/veh	45.7	7.6	0.0	6.2	36.7	0.0	
Incr Delay (d2), s/veh	13.3	4.9	0.0	0.5	0.1	0.0	
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	9.5	0.0	4.4	0.1	0.0	
Unsig. Movement Delay, s/veh							
LnGrp Delay(d),s/veh	59.1	12.4	0.0	6.7	36.7	0.0	
LnGrp LOS	E	B	A	A	D	A	
Approach Vol, veh/h		1296	768		6		
Approach Delay, s/veh		12.6	6.7		36.7		
Approach LOS		B	A		D		
Timer - Assigned Phs				4	6	7	8
Phs Duration (G+Y+Rc), s				77.4	14.6	5.0	72.4
Change Period (Y+Rc), s				6.5	4.6	4.6	6.5
Max Green Setting (Gmax), s				90.5	18.4	5.0	80.9
Max Q Clear Time (g_c+I1), s				46.9	2.3	2.2	19.7
Green Ext Time (p_c), s				24.0	0.0	0.0	8.7
Intersection Summary							
HCM 6th Ctrl Delay			10.5				
HCM 6th LOS			B				
Notes							

Timings
4: Bridge St. & Gilman Springs Rd.

Gilman Mine (JN 11379)

03/26/2019

	→	↘	↙	←	↖
Lane Group	EBT	EBR	WBL	WBT	NBL
Lane Configurations	↑	↑	↘	↑	↘
Traffic Volume (vph)	1154	94	25	655	70
Future Volume (vph)	1154	94	25	655	70
Turn Type	NA	Perm	Prot	NA	Prot
Protected Phases	4		3	8	2
Permitted Phases		4			
Detector Phase	4	4	3	8	2
Switch Phase					
Minimum Initial (s)	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	35.5	35.5	9.6	24.5	24.5
Total Split (s)	85.0	85.0	9.6	94.6	25.4
Total Split (%)	70.8%	70.8%	8.0%	78.8%	21.2%
Yellow Time (s)	5.5	5.5	3.6	5.5	5.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.5	6.5	4.6	6.5	6.5
Lead/Lag	Lag	Lag	Lead		
Lead-Lag Optimize?	Yes	Yes	Yes		
Recall Mode	None	None	None	None	Min

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 101

Natural Cycle: 110

Control Type: Actuated-Uncoordinated

Splits and Phases: 4: Bridge St. & Gilman Springs Rd.

↖ Ø2	↘ Ø3	→ Ø4
25.4 s	9.6 s	85 s
	← Ø8	
	94.6 s	

HCM 6th Signalized Intersection Summary
4: Bridge St. & Gilman Springs Rd.

Gilman Mine (JN 11379)

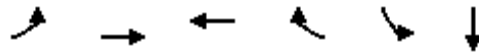
03/26/2019

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	1154	94	25	655	70	34
Future Volume (veh/h)	1154	94	25	655	70	34
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	1202	0	26	682	73	35
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	1320		47	1458	118	57
Arrive On Green	0.69	0.00	0.03	0.77	0.10	0.10
Sat Flow, veh/h	1900	1610	1810	1900	1166	559
Grp Volume(v), veh/h	1202	0	26	682	109	0
Grp Sat Flow(s),veh/h/ln	1900	1610	1810	1900	1741	0
Q Serve(g_s), s	51.9	0.0	1.4	12.9	5.9	0.0
Cycle Q Clear(g_c), s	51.9	0.0	1.4	12.9	5.9	0.0
Prop In Lane		1.00	1.00		0.67	0.32
Lane Grp Cap(c), veh/h	1320		47	1458	176	0
V/C Ratio(X)	0.91		0.56	0.47	0.62	0.00
Avail Cap(c_a), veh/h	1510		92	1694	333	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	12.5	0.0	47.6	4.2	42.6	0.0
Incr Delay (d2), s/veh	8.3	0.0	3.8	0.3	3.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	17.4	0.0	0.6	2.7	2.6	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	20.8	0.0	51.4	4.5	46.1	0.0
LnGrp LOS	C		D	A	D	A
Approach Vol, veh/h	1202	A		708	109	
Approach Delay, s/veh	20.8			6.2	46.1	
Approach LOS	C			A	D	
Timer - Assigned Phs		2	3	4		8
Phs Duration (G+Y+Rc), s		16.5	7.2	75.1		82.3
Change Period (Y+Rc), s		6.5	4.6	6.5		6.5
Max Green Setting (Gmax), s		18.9	5.0	78.5		88.1
Max Q Clear Time (g_c+I1), s		7.9	3.4	53.9		14.9
Green Ext Time (p_c), s		0.2	0.0	14.7		7.2
Intersection Summary						
HCM 6th Ctrl Delay			17.0			
HCM 6th LOS			B			
Notes						
User approved volume balancing among the lanes for turning movement.						
Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.						

Timings
5: Driveway & Gilman Springs Rd.

Gilman Mine (JN 11379)

03/26/2019



Lane Group	EBL	EBT	WBT	WBR	SBL	SBT	Ø2	Ø3
Lane Configurations								
Traffic Volume (vph)	44	1142	634	21	23	0		
Future Volume (vph)	44	1142	634	21	23	0		
Turn Type	Prot	NA	NA	Perm	Perm	NA		
Protected Phases	7	4	8			6	2	3
Permitted Phases				8	6			
Detector Phase	7	4	8	8	6	6		
Switch Phase								
Minimum Initial (s)	5.0	10.0	10.0	10.0	10.0	10.0	10.0	5.0
Minimum Split (s)	9.6	30.5	30.5	30.5	14.6	14.6	14.6	9.6
Total Split (s)	9.6	95.0	95.0	95.0	15.4	15.4	15.4	9.6
Total Split (%)	8.0%	79.2%	79.2%	79.2%	12.8%	12.8%	13%	8%
Yellow Time (s)	3.6	5.5	5.5	5.5	3.6	3.6	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0		
Total Lost Time (s)	4.6	6.5	6.5	6.5		4.6		
Lead/Lag	Lead	Lag	Lag	Lag				Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes				Yes
Recall Mode	None	None	None	None	Min	Min	Min	None

Intersection Summary

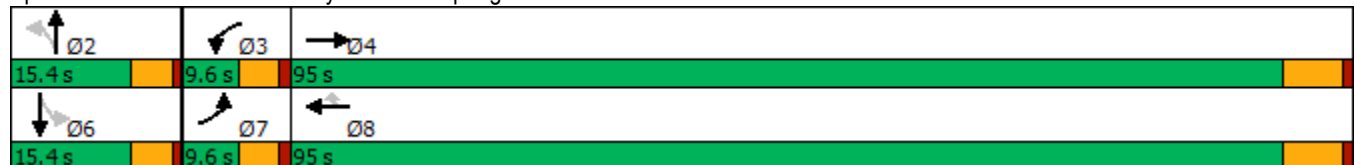
Cycle Length: 120

Actuated Cycle Length: 83.1

Natural Cycle: 90

Control Type: Actuated-Uncoordinated

Splits and Phases: 5: Driveway & Gilman Springs Rd.



HCM 6th Signalized Intersection Summary
5: Driveway & Gilman Springs Rd.

Gilman Mine (JN 11379)

03/26/2019

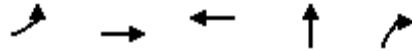
												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	44	1142	1	0	634	21	0	0	0	23	0	48
Future Volume (veh/h)	44	1142	1	0	634	21	0	0	0	23	0	48
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	47	1228	1	0	682	23	0	0	0	25	0	52
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	72	1422	1	2	1244	1054	0	226	0	96	22	128
Arrive On Green	0.04	0.75	0.75	0.00	0.65	0.65	0.00	0.00	0.00	0.12	0.00	0.12
Sat Flow, veh/h	1810	1898	2	1810	1900	1610	0	1900	0	331	188	1080
Grp Volume(v), veh/h	47	0	1229	0	682	23	0	0	0	77	0	0
Grp Sat Flow(s),veh/h/ln	1810	0	1900	1810	1900	1610	0	1900	0	1600	0	0
Q Serve(g_s), s	2.2	0.0	38.7	0.0	16.3	0.4	0.0	0.0	0.0	0.1	0.0	0.0
Cycle Q Clear(g_c), s	2.2	0.0	38.7	0.0	16.3	0.4	0.0	0.0	0.0	3.5	0.0	0.0
Prop In Lane	1.00		0.00	1.00		1.00	0.00		0.00	0.32		0.68
Lane Grp Cap(c), veh/h	72	0	1423	2	1244	1054	0	226	0	247	0	0
V/C Ratio(X)	0.66	0.00	0.86	0.00	0.55	0.02	0.00	0.00	0.00	0.31	0.00	0.00
Avail Cap(c_a), veh/h	108	0	1999	108	2000	1695	0	244	0	262	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	0.00	1.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	39.8	0.0	7.5	0.0	7.8	5.1	0.0	0.0	0.0	34.2	0.0	0.0
Incr Delay (d2), s/veh	3.7	0.0	3.5	0.0	0.5	0.0	0.0	0.0	0.0	0.7	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	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	0.0	8.0	0.0	4.5	0.1	0.0	0.0	0.0	1.5	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	43.6	0.0	11.0	0.0	8.4	5.1	0.0	0.0	0.0	34.9	0.0	0.0
LnGrp LOS	D	A	B	A	A	A	A	A	A	C	A	A
Approach Vol, veh/h	1276				705				0			
Approach Delay, s/veh	12.2				8.3				0.0			
Approach LOS	B				A				C			
Timer - Assigned Phs	2		3	4		6		7	8			
Phs Duration (G+Y+Rc), s	14.6		0.0	69.5		14.6		7.9	61.6			
Change Period (Y+Rc), s	4.6		4.6	6.5		4.6		4.6	6.5			
Max Green Setting (Gmax), s	10.8		5.0	88.5		10.8		5.0	88.5			
Max Q Clear Time (g_c+I1), s	0.0		0.0	40.7		5.5		4.2	18.3			
Green Ext Time (p_c), s	0.0		0.0	22.3		0.1		0.0	7.4			
Intersection Summary												
HCM 6th Ctrl Delay	11.7											
HCM 6th LOS	B											

Timings

Gilman Mine (JN 11379)

7: SR-79 NB Ramps & Gilman Springs Rd.

03/26/2019



Lane Group	EBL	EBT	WBT	NBT	NBR
Lane Configurations					
Traffic Volume (vph)	52	812	340	5	16
Future Volume (vph)	52	812	340	5	16
Turn Type	Prot	NA	NA	NA	Perm
Protected Phases	7	4	8	2	
Permitted Phases					2
Detector Phase	7	4	8	2	2
Switch Phase					
Minimum Initial (s)	5.0	5.0	5.0	4.5	4.5
Minimum Split (s)	10.4	34.5	32.5	9.0	9.0
Total Split (s)	20.0	60.0	40.0	30.0	30.0
Total Split (%)	22.2%	66.7%	44.4%	33.3%	33.3%
Yellow Time (s)	4.4	5.5	5.5	3.0	3.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.4	6.5	6.5	4.0	4.0
Lead/Lag	Lead		Lag		
Lead-Lag Optimize?	Yes		Yes		
Recall Mode	None	None	None	Min	Min

Intersection Summary

Cycle Length: 90

Actuated Cycle Length: 56

Natural Cycle: 60

Control Type: Actuated-Uncoordinated

Splits and Phases: 7: SR-79 NB Ramps & Gilman Springs Rd.



HCM 6th Signalized Intersection Summary
7: SR-79 NB Ramps & Gilman Springs Rd.

Gilman Mine (JN 11379)

03/26/2019

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	52	812	0	0	340	232	255	5	16	0	0	0
Future Volume (veh/h)	52	812	0	0	340	232	255	5	16	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach	No			No			No					
Adj Sat Flow, veh/h/ln	1900	1900	0	0	1900	1900	1900	1900	1900			
Adj Flow Rate, veh/h	56	873	0	0	366	249	274	5	17			
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93			
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0			
Cap, veh/h	101	1884	0	0	714	478	433	8	392			
Arrive On Green	0.06	0.52	0.00	0.00	0.35	0.35	0.24	0.24	0.24			
Sat Flow, veh/h	1810	3705	0	0	2164	1386	1779	32	1610			
Grp Volume(v), veh/h	56	873	0	0	318	297	279	0	17			
Grp Sat Flow(s),veh/h/ln	1810	1805	0	0	1805	1651	1811	0	1610			
Q Serve(g_s), s	1.3	6.8	0.0	0.0	6.3	6.4	6.2	0.0	0.4			
Cycle Q Clear(g_c), s	1.3	6.8	0.0	0.0	6.3	6.4	6.2	0.0	0.4			
Prop In Lane	1.00		0.00	0.00		0.84	0.98		1.00			
Lane Grp Cap(c), veh/h	101	1884	0	0	623	570	441	0	392			
V/C Ratio(X)	0.55	0.46	0.00	0.00	0.51	0.52	0.63	0.00	0.04			
Avail Cap(c_a), veh/h	591	4318	0	0	1352	1236	1053	0	936			
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	1.00	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	20.6	6.7	0.0	0.0	11.6	11.7	15.1	0.0	12.9			
Incr Delay (d2), s/veh	9.7	0.4	0.0	0.0	1.4	1.6	3.2	0.0	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			
%ile BackOfQ(50%),veh/ln	0.7	1.2	0.0	0.0	2.0	1.9	2.4	0.0	0.1			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	30.2	7.1	0.0	0.0	13.0	13.3	18.3	0.0	13.0			
LnGrp LOS	C	A	A	A	B	B	B	A	B			
Approach Vol, veh/h	929			615			296					
Approach Delay, s/veh	8.5			13.1			18.0					
Approach LOS	A			B			B					
Timer - Assigned Phs	2			4			7			8		
Phs Duration (G+Y+Rc), s	14.9			29.8			7.9			21.9		
Change Period (Y+Rc), s	4.0			6.5			5.4			6.5		
Max Green Setting (Gmax), s	26.0			53.5			14.6			33.5		
Max Q Clear Time (g_c+I1), s	8.2			8.8			3.3			8.4		
Green Ext Time (p_c), s	2.7			13.0			0.1			7.0		
Intersection Summary												
HCM 6th Ctrl Delay	11.6											
HCM 6th LOS	B											