

**SR-60/WORLD LOGISTICS CENTER PARKWAY
INTERCHANGE PA/ED
TRAFFIC STUDY REPORT
EA 0M590**

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EXECUTIVE SUMMARY

This report presents the traffic analysis for the Project Approval and Environmental Document (PA/ED) for improvements to the SR-60/World Logistics Center Parkway Interchange in the City of Moreno Valley, California. The scope and methodology for this study were reviewed and approved by the City of Moreno Valley and Caltrans¹. In addition to this report, a Ramp Closure Study and an Interchange Closure Study are being prepared that will analyze conditions during the construction phase.

The SR-60/World Logistics Center Parkway Interchange (SR-60/WLC Pkwy IC) is currently a two-quadrant cloverleaf with side-street stop controlled ramp intersections (see Exhibit ES-1). This configuration is sufficient to handle the current low traffic demand. At present the interchange's catchment area is sparsely developed with the exception of the 1.8 million square-foot Skechers high-cube warehouse. Directly northeast of the interchange are the three remaining structures of Anco Ranch which were described as being of "special interest" in the Cultural Resources section of EIR for the City's latest General Plan.

North of SR-60, the Community Development Element of the City's General Plan calls for the development of a mix of office buildings and single-family dwellings. South of SR-60, the General Plan includes the World Logistics Center (WLC) Specific Plan. The WLC would consist primarily of approximately 41 million square feet of high-cube logistics warehouse buildings.



Exhibit ES-1: Existing Configuration of the SR-60/World Logistics Center Parkway Interchange

With buildout of the General Plan, the traffic demand at the SR-60/WLC Pkwy IC will be much greater than at present. The proposed project is to improve the capacity of the SR-60/WLC Pkwy IC to accommodate the anticipated increase in demand. The operations analysis was based on traffic forecasts assuming the buildout of the General Plan as well as the regional development assumed in the Southern California Area Government's 2016 Regional Transportation Plan/Sustainable Communities Strategies (SGAG 2016 RTP/SCS).

A Traffic Report for this interchange Project was approved in 2015 in which seven (one no-build, and six build) alternatives were studied. That report concluded that four alternatives (Alternatives 3, 4, 5, and 7) should be eliminated as they did not meet the purpose and need of the Project. This report supersedes the previous analysis

¹ See Appendix B: SR-60/Theodore Interchange PA/ED Methodology and Traffic Volumes Report, WSP, August 2018

with new traffic counts and forecasts, and focuses only on the two build alternatives (Alternatives 2 and 6) from the previous report that have been selected for PA/ED, as well as a No-Build Alternative (the existing configuration). Exhibit ES-2 provides a brief description of the alternatives and a summary comparison of how they would operate under 2045 conditions. For the traffic study the alternatives were compared in terms of three criteria, namely intersection level of service (LOS), freeway LOS and other operational concerns. Other analyses in separate documents will cover other factors such as cost or environmental impacts.

As can be seen from Exhibit ES-3, one alternative can be eliminated because it would not provide an adequate level-of-service (LOS). This is:

Alternative 1 (No-Build) The capacity of this configuration is too low to accommodate the large traffic volumes associated with the development in the General Plan.

The other two alternatives were found to provide an acceptable LOS for intersections and have similar LOS on SR-60:

Alternative 2 (modified partial cloverleaf) Overlap phasing at the westbound ramps intersection is needed to achieve acceptable LOS.

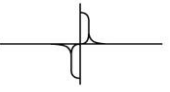
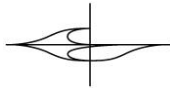
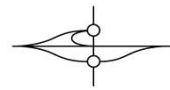
Alternative 6 (modified partial cloverleaf with roundabouts) Trucks would not need to come to a complete stop which may result in less air quality and noise impacts than the other alternatives. The roundabout design will need to accommodate the possibility of a high percentage of trucks.

The analysis found that Alternative 6 would result in less vehicle delay than Alternative 2 and so would be preferred from a traffic operations standpoint. However, both of these alternatives would provide an acceptable intersection LOS and similar freeway LOS, so neither Alternative 2 or 6 can be eliminated based on traffic operations.

Exhibit ES-2: Daily Volume and Truck Percentages

Facility	ADT			Truck Percentage		
	2018	2025	2045	2018	2025	2045
SR-60 (Redlands to WLC Pkwy)	68,000	92,000	168,000	12%	17%	14%
WLC Pkwy (Eucalyptus Ave to SR-60)	2,000	24,000	32,000	15%	36%	39%

Exhibit ES-3: Comparison of Alternatives in 2045 Conditions

Alternative	Key Features	2045 Intersection LOS		2045 Freeway Mainline LOS			Operational or Other Issues
		AM Pk-Hr	PM Pk-Hr	Mainline Section	AM Pk-Hr	PM Pk-Hr	
1 No-Build	 <ul style="list-style-type: none"> The WLC Pkwy bridge has only one lane in each direction so there is limited storage capacity and no separation between through movements and turning movements. The stop-controlled intersections have limited capacity to process traffic coming from the off-ramps. 	F (WB)	F (WB)	WB GSR-WLC Pkwy WB WLC Pkwy-Redlands	F F	D E	Would not provide an adequate LOS for intersections or for SR-60
		F (EB)	F (EB)	EB Redlands-WLC Pkwy EB WLC Pkwy-GSR	D C	F E	
2 Modified Partial Cloverleaf	 <ul style="list-style-type: none"> The WB off-ramp is as far as possible from the GSR IC, thus providing the maximum weaving distance possible under the circumstances. Shared by Alts 2 & 6. If the GSR off-ramp is not moved to the east (as assumed in this study), the EB weave from WLC Pkwy to GSR would be too short (approximately 950 ft.), which could create congestion. Shared by Alts 2 & 6. The heavy NB-to-WB movement along WLC Pkwy coming from the WLC in the PM peak hour will be required to make a left turn to get onto WB SR-60. Shared by Alts 2 & 6 The southbound movements along WLC Pkwy would be able to make right turns to get onto SR-60 in either the EB or WB directions. 	C (WB)	C (WB)	WB GSR-WLC Pkwy WB WLC Pkwy-Redlands	D F	C D	Overlap phasing at the WB Ramps intersection is necessary to achieve acceptable LOS. Multi-use trail along the east side of WLC Pkwy minimizes active transportation conflicts. WB weaving segment from WLC Pkwy to Redlands is short and may operate over capacity. SB-to-EB Loop On-ramp merge operates near capacity.
		A (EB)	B (EB)	EB Redlands-WLC Pkwy EB WLC Pkwy-GSR	B B	D E	
6 Modified Partial Cloverleaf with Roundabout	 <ul style="list-style-type: none"> The WB off-ramp is as far as possible from the GSR IC, thus providing the maximum weave distance possible under the circumstances. Shared by Alts 2 & 6. If the GSR off-ramp is not moved to the east (as assumed in this study), the EB weave from WLC Pkwy to GSR would be too short (approximately 950 ft.), which could create congestion. Shared by Alts 2 & 6. The heavy NB-to-WB movement along WLC Pkwy coming from the WLC in the PM peak hour will be required to make a 270-degree roundabout movement to get onto WB SR-60. Shared by Alts 2 & 6. Vehicles exiting SR-60 from either the EB or WB directions to go southbound on WLC Pkwy would be able to make free right turns. The narrower bridge required for this configuration would reduce construction costs compared to the other build alternatives Trucks (and other vehicles) would not have to stop, thus reducing noise and air quality impacts 	B (WB)	B (WB)	WB GSR-WLC Pkwy WB WLC Pkwy-Redlands	D F	C D	Design would need to take into account the possibility of a high percentage of trucks. Multi-use trail along the east side of WLC Pkwy minimizes active transportation conflicts. WB weaving segment from WLC Pkwy to Redlands is short and may operate over capacity.
		B (EB)	B (EB)	EB Redlands-WLC Pkwy EB WLC Pkwy-GSR	B B	D D	

Items in red font are potential causes for elimination from consideration.

Abbreviations: "GSR" is Gilman Springs Road, "IC" is Interchange, "NB" = Northbound, "SB" is Southbound, "EB" is Eastbound, "WB" is Westbound

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1. PROJECT BACKGROUND AND DESCRIPTION

The SR-60/WLC Parkway Interchange² (WR-60/WLC Pkwy IC) is currently a two-quadrant cloverleaf with side-street stop controlled ramp intersections (see Exhibit 1). This configuration is sufficient to handle the current low traffic demand. At present the interchange's catchment area is sparsely developed with the exception of the 1.8 million square-foot Skechers high-cube warehouse. The City's General Plan currently designates the area south of SR-60 for future development of the World Logistics Center (WLC) Specific Plan. The WLC would consist primarily of approximately 41 million square feet of high-cube logistics warehouse buildings. North of SR-60, the General Plan calls for the development of a mix of office buildings and single-family dwellings.

A Traffic Report for this interchange Project was approved in 2015 in which seven (one no-build, and six build) alternatives were studied. That report concluded that four alternatives (Alternatives 3, 4, 5, and 7) should be eliminated as they did not meet the purpose and need of the Project. This report supersedes the previous analysis with new traffic counts and forecasts, and focuses only on the two build alternatives (Alternatives 2 and 6) from the previous report that have been selected for PA/ED.



Exhibit 1: Existing Configuration of the SR-60/WLC Parkway Interchange

With buildout of the City's General Plan, the traffic demand at the SR-60/WLC Pkwy IC will be much greater than at present. The proposed project is to improve the capacity of the SR-60/WLC Pkwy IC to accommodate the anticipated increase in demand.

The current SCAG RPT/SCS and the Federal Transportation Improvement Program (FTIP) include an additional general purpose lane in each direction on SR-60 between Redlands Boulevard and Gilman Springs Road (i.e. the interchanges on either side of the WLC Pkwy IC). The analysis performed for the current study confirmed the need for these lanes on SR-60 between Redlands Blvd. and Gilman Springs Rd. interchanges.

² The segment of Theodore Street from SR-60 southward has been renamed to World Logistics Center Parkway (WLC Pkwy). The SR-60/Theodore Street Interchange Project will therefore now be referred to as the SR-60/World Logistics Center Parkway Interchange Project (Project).

This report presents the traffic study for the Project Approval and Environmental Document (PA/ED) for improvements to the SR-60/WLC Pkwy Interchange in the City of Moreno Valley, California. The scope and methodology for this study were reviewed and approved by the City of Moreno Valley and Caltrans and can be found in Appendix B: *SR-60/Theodore Interchange PA/ED Methodology and Traffic Volumes Report*, WSP, August 2018.

Existing Conditions at the SR-60/WLC Parkway Interchange

WLC Parkway is a two-lane undivided arterial running on a north-south alignment between Alessandro Boulevard, 1.5 miles south of SR-60, and the SR-60 westbound ramps intersection. Theodore Street runs from the SR-60 Westbound Ramps to Ironwood Avenue, 0.5 miles north of SR-60. State Route 60 (SR-60) runs in a generally east-west alignment between I-110 in Los Angeles to I-10 in Beaumont. In the vicinity of WLC Parkway SR-60 has two travel lanes in each direction.

At present the SR-60/WLC Pkwy IC has a two-quadrant cloverleaf, or L-7, configuration. The ramp intersections are side-street stop controlled. The nearest interchanges to the WLC Pkwy IC are at Redlands Boulevard 5,270 feet to the west and at Gilman Springs Road 3,810 feet to the east, center-line-to-center-line, along SR-60.

The area served by the WLC Pkwy IC is sparsely developed at the present time. South of SR-60 there is a single large building, the 1.8 million square-foot Skechers high-cube warehouse, seven residences, and fields currently used for dry agriculture. North of SR-60 there are several single-family residences and more fields of dry agriculture. Directly northeast of the interchange are the three remaining structures of Anco Ranch which were described as being of “special interest” in the Cultural Resources section of the EIR for the City’s latest General Plan.

Future Land Development Near the SR-60/WLC Parkway Interchange

The Community Development Element of the City’s General Plan currently designates area south of SR-60 to consist primarily of high-cube logistics warehouse buildings of approximately 500,000 or more square feet each. This is based on the World Logistics Center (WLC) Specific Plan which was approved by the City in 2015. Exhibit 3 and Exhibit 4 show the proposed land uses and road network for the WLC. World Logistics Center Parkway (the recently renamed portion of Theodore Street from SR-60 south) would form the main north-south spine of the development and would be upgraded to a major arterial.

The area north of SR-60 would be developed as a mix of office buildings and single-family dwellings.

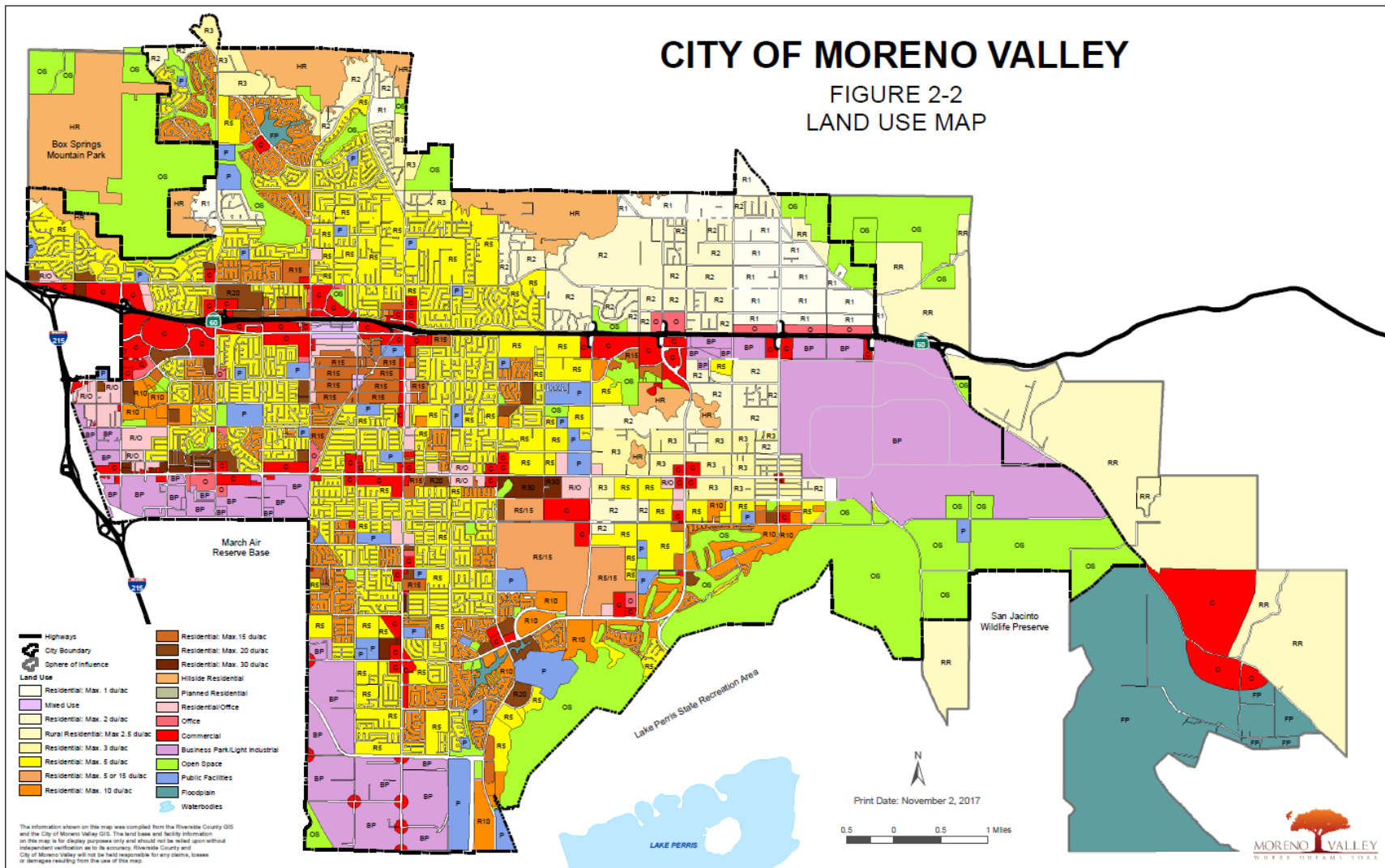


Exhibit 2: Land Uses

Exhibit 3: The World Logistics Center Specific Plan Land Use Summary

Land Use	Acreage
Specific Plan Area	
Logistics Development (includes Logistics Support site)	2,383
Light Logistics	37
Open Space	74
Street ROW	116
Outside Specific Plan	
Open Space (CDFW)	1,084
Public (SDGE, SCG)	20
Total	3,714

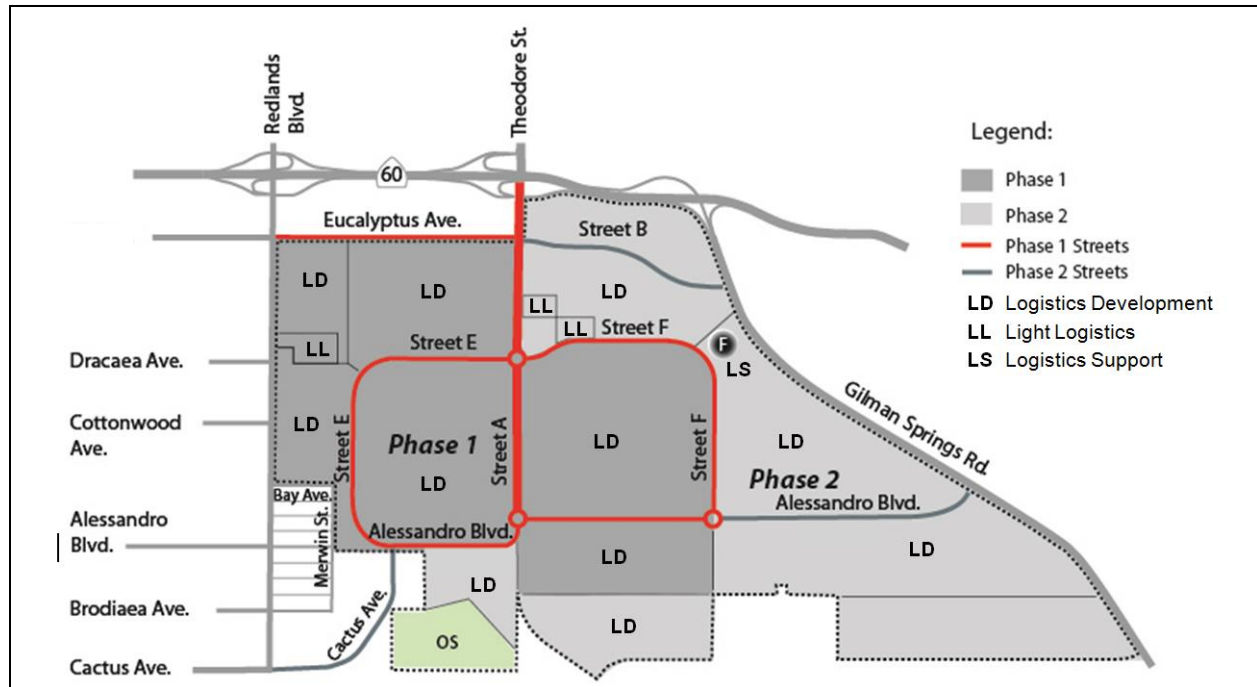


Exhibit 4: WLC Proposed Land Uses and Road Network

Transportation Concept Report

In September 2012 Caltrans District 8 issued a new Transportation Concept Report for SR-60 from the Los Angeles/San Bernardino County Line to the I-10 interchange. This report found that although no mainline capacity improvements were planned or programmed at the time of the report, there appeared to be a need for additional lanes in some sections in the long term.

Proposed Project Purpose and Need

With buildout of the City's General Plan, traffic demand at the SR-60/WLC Pkwy IC will be much greater than at present. The proposed project is to improve the capacity of the SR-60/WLC Pkwy IC to accommodate the anticipated increase in demand.

The purpose of the proposed project is to:

1. Provide increased interchange capacity, reduce congestion, and improve traffic operations to support the forecast travel demand for the 2045 design year;
2. Improve existing and projected interchange geometric deficiencies; and
3. Accommodate a multimodal facility that has harmony with the community and preserves the values of the area.

The proposed project is needed for the following reasons:

1. According to the demographics and growth forecast prepared for the 2016 Southern California Association of Governments (SCAG) Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS), between 2012 and 2040, Riverside County's population is expected to increase by 41 percent, job growth is anticipated to increase by 90 percent, and households are anticipated to increase by 51 percent. For Moreno Valley specifically, between 2012-2040, population is anticipated to increase by 30 percent, households jobs are anticipated to increase by 165 percent, and households are anticipated to increase by 41 percent. Without improvements, in the year 2045, the eastbound and westbound mainline and on-and off- ramps are anticipated to operate at unacceptable levels of service (LOS) in at least one of the peak hours and the ramp intersections with WLC Pkwy are anticipated to operate at LOS F for both the a.m. and p.m. peak hours.
2. The overpass bridge at the interchange was recently (January 2015) struck by a load on a flatbed truck and a costly emergency repair project was required, which shows the need to bring vertical clearance up to current standards. In addition, the WLC Pkwy overcrossing is geometrically deficient and needs additional capacity to accommodate projected future travel volumes.
3. This project will fulfill the need to accommodate the movement of people using multiple modes of transportation by community-based design taking into consideration the natural environment, social environment, transportation behavior, cultural characteristics and economic environment.

Related Studies

In addition to this report, a Ramp Closure Study and an Interchange Closure Study are being prepared that will analyze conditions during the construction phase.

2. TRAFFIC FORECASTING METHODOLOGY

The macro-level traffic forecasting was conducted using the Riverside County Transportation Analysis Model (RivTAM)³. RivTAM is a version of the SCAG's six-county model with additional detail (traffic analysis zones and local roads) added within Riverside County. It was developed for TIAs in Riverside County as a replacement for several older models that covered different portions of the county. RivTAM has both the geographic scope needed to capture all likely impacts and conformity with regional planning assumptions. There is a memorandum of understanding⁴ among the jurisdictions of Riverside County that encourages the use of the RivTAM model for TIAs. The MOU reads, in part,

"RivTAM was designed to address most city and county level modeling needs in Riverside County. The model inputs and zone system were designed with sufficient detail to support most city/county planning applications. The modeling methodology can support evaluation of a range of highway, HOV, and transit scenarios. The Agencies encourage the use of RivTAM by Cities, other governmental jurisdictions, and private entities for their own transportation planning purposes. Universal use of RivTAM by the Agencies, Cities, other governmental jurisdictions, and private entities, and their consultants will ensure that planning decisions in Riverside County are made on accurate and consistent travel forecasts." (MOU for RivTAM Model Maintenance, Update, and Usage, page 4)

The version of RivTAM model that was developed for the WLC EIR traffic analysis was used in this study. This version included several modifications from earlier versions of RivTAM, including:

- The traffic analysis zones (TAZs) within the WLC site were subdivided to allow for a detailed analysis of traffic distribution patterns.
- A 2018 model year was created by adding in land use changes and network changes completed between 2012 and 2018.
- A 2025 model year was created for analysis of the first phase of WLC by interpolating the land use growth assumptions found in SCAG's 2016 RTP/SCS, which had model years of 2012 and 2040. This model reflects all known development projects in the greater Moreno Valley area that will foreseeably be completed by 2025 including the first 23 million square feet of the WLC. The network includes roadway projects from the STIP, RTP, and City of Moreno Valley General Plan programmed to be completed by 2025. All the improvements listed in Exhibit 5 are included in the 2025 model network.
- A 2040 model year was created for the WLC traffic analysis using SCAG's 2016 RTP/SCS, which models 2040. This model also includes all foreseeable development projects in the greater Moreno Valley area including buildout (41 million square feet) of the WLC. The network is consistent with the SCAG 2040 RTP/SCS model network in the greater Moreno Valley area.
- Forecasts for the 2045 study year were developed by extrapolating the ambient (i.e. non-WLC) growth for the 2025-to-2040 period for an additional 5 years and then adding in the traffic from full build-out of the WLC. No roadway projects were added because no adopted plans are available beyond 2040 so any additions would have been speculative.
- Full build-out of the Moreno Valley General Plan was assumed, including the WLC Specific Plan land uses and network. Maps of the land uses and roadway network in the general plan are shown in Attachment 1.

³ The modeling data in RivTAM is based upon modeling information originally developed by the Southern California Association of Governments (SCAG), which has been modified by WSP. The modeling data used in this study does not necessarily reflect the official views or policies of SCAG. WSP is wholly responsible for the modeling results and the content of the documentation.

⁴ *MOU for RivTAM Model Maintenance, Update, and Usage*. Not dated, but signed by various parties between June and September, 2010. The signatories were Riverside County Transportation Department, Riverside County Transportation Commission, Western Riverside Council of Governments, Coachella Valley Association of Governments, Southern California Association of Governments, and Caltrans.

- The 2040 network assumptions followed those in SCAG’s 2040 financially constrained RTP project set. The 2040 Network is consistent with roadway improvements in the City of Moreno Valley General Plan including the World Logistics Center.
- RivTAM quantifies non-residential developments in units of employees rather than acres or square feet of building space. For developments in the City of Moreno Valley, future developments’ acreage was converted into square feet of development using the existing developmental densities in Moreno Valley, and then the square footage was used to estimate the number of employees using the conversion factors in the City’s General Plan. For areas outside Moreno Valley the conversion factors used in the Riverside County General Plan were used in this analysis.
- In the trip distribution stage of RivTAM the model assigns destinations to the trucks trips originating in the WLC warehouses. Since WLC warehouses are attractors of truck trips as well as generators of truck trips, the model assigns approximately 10% of WLC truck trips to destinations that are other warehouses within the project site. As this does not reflect the WLC’s expected operations and might result in an under-estimation of truck trips entering and leaving the WLC site, these internal trips were replaced with an equal number of external trips that were distributed among the routes available to trucks leaving the site. Since some trucks may in fact have deliveries or pick-ups at more than one warehouse within the WLC site this represents a conservative assumption.

All other RivTAM parameters were left unchanged. The outputs from RivTAM were post-processed to generate forecasts for the traffic on the study segments of SR-60 and the turning movements at the ramp intersections. The post-processing included:

- RivTAM forecasts traffic for two peak periods; a three-hour period in the morning and a four-hour period in the evening. These were converted into forecasts for single peak hours using conversion factors in the *San Bernardino County CMP*.
- The link-level forecasts from RivTAM were converted into turning movements for the intersection-level analysis. The Furness method⁵ was used to allocate approach volumes among the possible turning movements based on traffic counts of existing traffic patterns.
- The RivTAM model was calibrated to ensure that its forecasts are reasonable. Nevertheless, a model covering a six-county area cannot be expected to be perfectly accurate on each of the hundreds of thousands of links in the model. For that reason, best industry practice is to use the model to forecast the change in traffic volumes and add this change to existing traffic volumes, rather than using the forecast volumes directly from model. This technique, called the “difference method”, was used in this TIA⁶. It was determined based on review of counts and model volumes to use the difference method rather than the ratio method. The difference method eliminates certain types of imperfections in the forecast of background traffic and so improves the accuracy of traffic forecasts.

The demand information generated by this task (for example westbound on-movements in the morning peak hour, eastbound off-movements in the evening peak hour, etc.) was then used as inputs for the intersection and freeway LOS analysis.

Assumptions Regarding SR-60

SCAG’s 2016 RTP includes a number of improvement projects relevant to this study including improvements to Redlands Boulevard, WLC Parkway, and Gilman Springs Road and their interchanges (see Exhibit 5). For this analysis we assumed that the improvements to Redland Blvd. and Gilman Springs Rd. would take place, while the

⁵ The Furness method is a technique for balancing the forecast turning movements in such a way as to match both the total approach volume and the total departure volume for each leg predicted in the traffic model. Furness K.P. *Time Function Interaction*. Traffic Engineering and Control, Vol. 7, No. 7, 1970, pp. 19-36

⁶ This is the “difference method” described in NCHRP Report 765 Analytical Travel Forecasting Approaches for Project-Level Planning and Design, Transportation Research Board, 2014.

improvements to WLC Parkway and its interchange are to be determined in the current study and so were not assumed.

The 2016 RTP also calls for the section between Redlands Blvd. and Gilman Springs Rd. to be widened from 4 lanes to 6 lanes and this widening is assumed to take place before 2040.

Assumptions Regarding the WLC

The assumptions for the WLC were taken from the EIR update currently being prepared. The WLC road network (see Exhibit 6) is sparse due to the need for large blocks to accommodate the very large buildings that are the predominant feature of the plan. In accordance with an agreement between the City and the developer of the WLC to use the ITE trip-gen rates⁷ for the EIR, the trip generation in the RivTAM model was factored up within the model run to match the ITE rates.

⁷ The rates were taken from ITE's Trip Generation Manual 10th Edition for high-cube warehouses (ITE land use code 154). The rates were 1.400 vehicle-trips/day per 1,000 square feet of warehouse space, 0.08 VT/KSF for the AM peak hour, and 0.10 VT/KSF for the PM peak hour.

Exhibit 5: Relevant Projects as They Appear in the 2016 RTP

FTIP ID	Description	Project Cost (\$1,000's)
At Redlands Boulevard		
RIV080902	AT SR-60/REDLANDS BLVD – WIDEN OC FROM 2 TO 6 THRU LANES; WIDEN WB EXIT & ENTRY RAMPS FROM 1 LANE TO 2 LANES AT EXIT/ENTRY, 3 LANES AT ARTERIAL AND HOV AT ENTRY; WIDEN EB EXIT & ENTRY RAMPS FROM 1 LANE TO 2 LANES AT EXIT/ENTRY AND HOV AT ENTRY; ADD AUX LANES 1000' EACH DIRECTION WEST OF IC AND 1700' EACH DIRECTION EAST OF IC	\$52,000
RIV080918	IN THE CITY OF MORENO VALLEY – WIDEN REDLANDS BLVD BETWEEN SR-60 AND CACTUS AVE FROM 2 TO 4 LANES. IMPROVEMENTS INCLUDE MEDIANS, TRAFFIC SIGNALS, CHANNELIZATION, LEFT TURN POCKETS, DEDICATED RIGHT TURN, DRAINAGE, LANDSCAPING, SIDEWALKS, BIKE LANES, AND TRAILS.	\$18,300
3A07161	REDLANDS BLVD: FROM SPRUCE AVE TO IRONWOOD AVE: WIDEN 2 TO 4 LANES/STREET IMPROVEMENT	\$2,000
3A07159	REDLANDS BLVD: FROM KALMIA AVE TO LOCUST AVE: WIDEN 2 TO 4 LANES/STREET IMPROVEMENT	\$372
3A07148	REDLANDS BLVD: FROM IRONWOOD AVE TO KALMIA AVE: WIDEN 2 TO 4 LANES/STREET IMPROVEMENT	\$884
At Theodore Street		
RIV080904	AT SR-60/THEODORE ST IC: WIDEN OC FROM 2 TO 6 THRU LANES; WIDEN WB EXIT/ENTRY RAMPS FROM 1 LN TO 2 LNS AT EXIT/ENTRY, 3 LNS AT ART. W/ HOV AT ENTRY; WIDEN EB EXIT RAMP FROM 1 LN TO 2 LNS AT EXIT AND 3 LNS AT ART.; WIDEN EB ENTRY RAMP FROM 1 LN TO 2 LNS W/HOV; ADD EB LOOP ENTRY WITH 2 LNS AT ART. AND 1 LN AT ENTRY; ADD AUX LNS 1700' EACH DIR WEST OF IC & 1200' EB AND 2200' WB EAST OF IC -RTP 3M0801	\$52,000
RIV090908	IN MORENO VALLEY, WIDEN THEODORE ST FROM 2 TO 4 LANES FROM ALESSANDRO BLVD TO EUCALYPTUS AVE, INCLUDING TRAFFIC SIGNALS, CHANNELIZATION IMPROVEMENTS, LEFT-TURN POCKETS, DEDICATED RIGHT-TURN LANES, DRAINAGE IMPROVEMENTS, LANDSCAPING, SIDEWALKS, AND BIKE LANES.	\$15,456
RIV090909	IN MORENO VALLEY, WIDEN THEODORE ST FROM 2 TO 4 LANES + 2 AUX LANES FROM EUCALYPTUS AVE TO SR-60 EB RAMPS, INCLUDING MEDIANS, TRAFFIC SIGNALS, CHANNELIZATION IMPROVEMENTS, LEFT-TURN POCKETS, DEDICATED RIGHT-TURN LANES, DRAINAGE IMPROVEMENTS, LANDSCAPING, SIDEWALKS, AND BIKE LANES.	\$4,791
RIV090910	IN MORENO VALLEY, WIDEN THEODORE ST FROM 2 TO 4 LANES FROM SR-60 WB RAMPS TO IRONWOOD AVE, INCLUDING TRAFFIC SIGNALS, CHANNELIZATION IMPROVEMENTS, LEFT-TURN POCKETS, DEDICATED RIGHT-TURN LANES, DRAINAGE IMPROVEMENTS, LANDSCAPING, SIDEWALKS, AND BIKE LANES.	\$4,791
At Gilman Springs Road		
RIV080903	AT SR-60/GILMAN SPRINGS RD IC – REALIGN GILMAN SPRINGS RD/REMOVE EXISTING EB/WB RAMPS; WIDEN OC FROM 2 TO 6 THRU LANES; WB EXIT IS 1 LANE WIDENING TO 2 LANES THEN TO 3 LANES AT ARTERIAL, WB LOOP & EB ENTRY RAMPS FROM 1 LANE TO 2 LANES W/ HOV; WIDEN EB EXIT RAMPS FROM 1 LANE TO 2 LANES AT EXIT AND 3 LANES AT ARTERIAL; ADD AUX LANES TO WEST OF IC 1200' EB AND 2200' WB	\$70,000
RIV080908	IN THE CITY OF MORENO VALLEY – WIDEN GILMAN SPRINGS RD BETWEEN SR-60 AND ALESSANDRO BLVD FROM 2 TO 6 LANES. IMPROVEMENTS INCLUDE MEDIANS, TRAFFIC SIGNALS, CHANNELIZATION, LEFT TURN POCKETS, DEDICATED RIGHT TURN, DRAINAGE, ACCESS ROADS, LANDSCAPING, SIDEWALKS, AND BIKE LANES.	\$41,500

RIV080909	IN THE CITY OF MORENO VALLEY - WIDEN GILMAN SPRINGS RD BETWEEN ALESSANDRO BLVD AND BRIDGE ST FROM 2 TO 6 LANES. IMPROVEMENTS INCLUDE MEDIANS, TRAFFIC SIGNALS, CHANNELIZATION, LEFT TURN POCKETS, DEDICATED RIGHT TURN, DRAINAGE, ACCESS ROADS, LANDSCAPING, SIDEWALKS, AND BIKE LANES.	\$51,000
At Eucalyptus Avenue		
RIV091002	IN WESTERN RIVERSIDE COUNTY IN THE CITY OF MORENO VALLEY - EUCALYPTUS AVE. EXTENSION: CONSTRUCTION OF 3 THROUGH LANES (2 LANES WB & 1 LANE EB) BETWEEN REDLANDS BLVD. AND THEODORE STREET, INCLUDING THE INSTALLATION OF MEDIANS, LEFT TURN POCKETS, DEDICATED RIGHT TURN LANES, DRAINAGE IMPROVEMENTS, LANDSCAPING, SIDEWALKS, AND A CLASS I BIKE PATH.	\$7,266
RIV091003	IN WESTERN RIVERSIDE COUNTY IN THE CITY OF MORENO VALLEY - EUCALYPTUS AVE. WIDENING/EXTENSION: CONSTRUCTION OF A 4TH THROUGH LANE IN THE EASTERN DIRECTION FROM REDLANDS BLVD. TO THEODORE ST & EXTENSION OF EUCALYPTUS AVE. TO REDLANDS BLVD., WITH A SIGNALIZED INTERSECTION.	\$3,550
At SR-60		
RIV151220	IN WESTERN RIVERSIDE COUNTY IN THE CITY OF MORENO VALLEY ALONG SR 60 - WIDEN FROM TWO TO THREE LANES IN EACH DIRECTION IN THE EXISTING MEDIAN TO PROVIDE ONE ADDITIONAL GENERAL PURPOSE LANE IN EACH DIRECTION FROM REDLANDS BLVD. TO GILMAN SPRINGS RD.	\$7,500
RIV120201	ON SR-60 NEAR BEAUMONT: CONSTRUCT NEW EASTBOUND AND WESTBOUND TRUCK LANES FROM GILMAN SPRINGS RD TO 1.47 MILES WEST OF JACK RABBIT TRAIL AND UPGRADE EXISTING INSIDE AND OUTSIDE SHOULDERS TO STANDARD WIDTHS (10-FT INSIDE SHOULDER AND 10-FT OUTSIDE SHOULDER) (EA: 0N69U) - CMAQ PM2.5 BENEFITS PROJECT. \$802.9 TC WILL BE UTILIZED FOR CMAQ ENG IN FY 14/15.	\$126,282

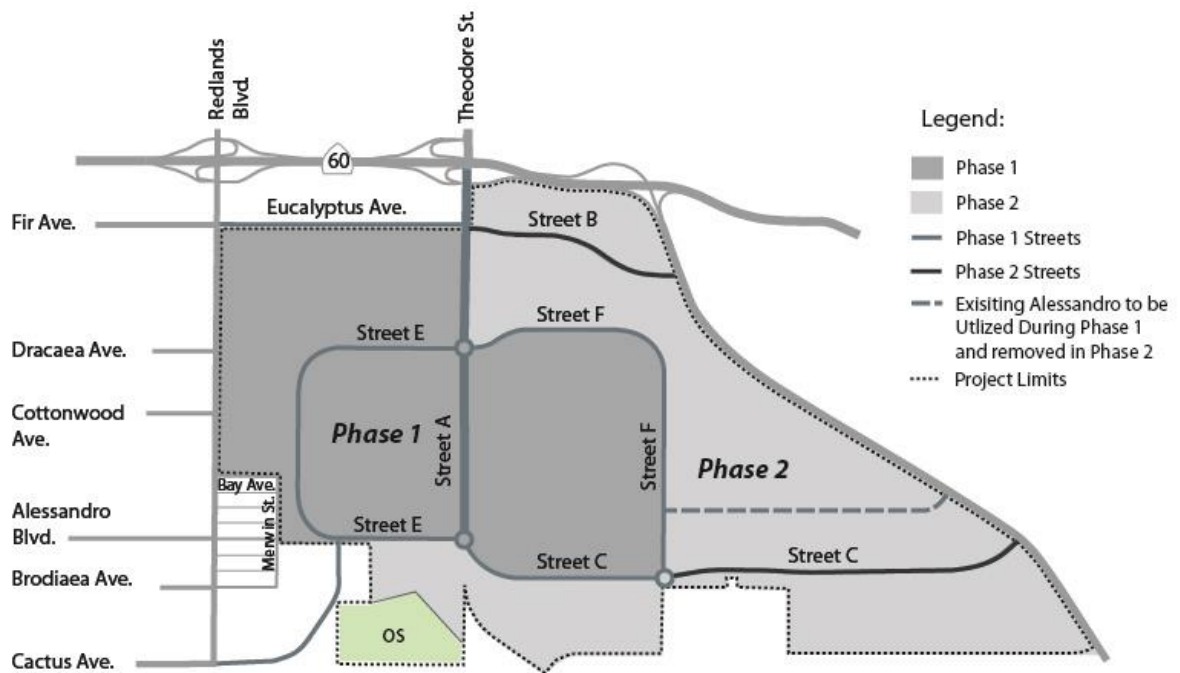


Exhibit 6: WLC Road Network

3. TRAFFIC OPERATIONS ANALYSIS METHODOLOGY

Definition of LOS

The HCM defines level of service (LOS) as a quality measure describing operational conditions within a traffic stream, generally in terms of such service measures as speed and travel time, freedom to maneuver, traffic interruptions, and comfort and convenience. Six LOS are defined for each type of facility, ranging from “A” for the best operating conditions to “F” for the worst, based on driver’s perceptions of those conditions. Most jurisdictions have adopted policies that set target levels of LOS for road facilities under their control.

Intersection LOS

The level of service (LOS) for study signalized and stop-controlled intersections was determined using Synchro 10 applying the Highway Capacity Manual (HCM) 6th Edition methodology. HCM 6th Edition Approach C, multiperiod analysis, was expected to not be necessary because forecasts are lower than previous forecasts that found no intersections exceeding capacity in the build alternatives. This was confirmed by the results of the analysis.

Roundabout intersections were analyzed in SIDRA software using HCM 6th Edition methodology.

The HCM determines LOS based on ranges of average delay. Exhibit 7 shows the LOS thresholds for signalized and unsignalized intersections. Note that for side-street-stop-control intersections LOS is determined based on the average delay for the approach with the highest delay. For all other intersections, average delay for the whole intersection is used.

For signalized and stop-controlled intersection analysis, the City’s TIA guidelines mandate the use of passenger car equivalent (PCE) factors taken from the San Bernardino County CMP, 2003 Update. These are more precise and on average higher than default rates in the HCM. Where HCM recommends two PCEs per heavy truck, the San Bernardino CMP PCE rates use 1.5 for 2-axle trucks, 2.0 for 3-axle trucks and 3.0 for trucks with four or more axles. Intersection volumes were input to Synchro directly as PCEs (with the heavy vehicle percentage set to zero to avoid double-counting of trucks).

Freeway LOS

The LOS analysis for freeways was performed using HCM 6th Edition Approach C. Each direction of travel was analyzed using the freeway facility function in HCS 7 using eight fifteen-minute time periods representing the two-hour peak periods (7:00-9:00 AM and 4:00-6:00 PM). Exhibit 8 shows the thresholds for freeway LOS determination.

Freeway analysis used the recommended heavy truck PCE factor of 2.0 from the HCM 6th Edition for level terrain⁸.

Target LOS

Caltrans has established a target LOS of D for the section of SR-60 under study. The City of Moreno Valley has established a target LOS of D for the eight study intersections.

⁸ The study sections of SR-60 fall within the category of level terrain.

Exhibit 7: LOS Thresholds for Signalized and Unsignalized Intersections

Level of Service	Description	Average Control Delay (seconds/vehicle)	
		Signalized	Unsignalized & Roundabouts
A	Volume-to-capacity ratio is low and either progression is exceptionally favorable or the cycle length is very short. If LOS A is the result of favourable progression, most vehicles arrive during the green indication and travel through the intersection without stopping.	≤ 10	≤ 10
B	Volume-to-capacity ratio is low and either progression is highly favorable or the cycle length is short. More vehicles stop than with LOS A.	> 10 to 20	> 10 to 15
C	Progression is favorable or the cycle length is moderate. Individual <i>cycle failures</i> (i.e. one or more queued vehicles are not able to depart as a result of insufficient capacity during the cycle) may begin to appear at this level. The number of vehicles stopping is significant, although many vehicles still pass through the intersection without stopping.	> 20 to 35	> 15 to 25
D	Volume-to-capacity ratio is high and either progression is ineffective or cycle length is long. Many vehicles stop and individual cycle failures are noticeable.	> 35 to 55	> 25 to 35
E	Volume-to-capacity ratio is high, progression is unfavorable, and the cycle length is long. Individual cycle failures are frequent.	> 55 to 80	> 35 to 50
F	Volume-to-capacity ratio is very high, progression is very poor, and the cycle length is long. Most cycles fail to clear the queue.	> 80	> 50

Source: *Highway Capacity Manual 6th Edition*, Transportation Research Board

Note: The description is from the HCM 6th Edition chapter on signalized intersections. For signalized intersections and roundabouts the LOS is based on the average for all vehicles entering the intersection. For unsignalized intersections the LOS is based on the delay for the worst-performing approach.

Exhibit 8: LOS Thresholds for Freeway Facilities

LOS	Basic Freeway Segment Density	Freeway Weaving Segment Density	Freeway Ramp Density
	(pc/mi/ln)	(pc/mi/ln)	(pc/mi/ln)
A	0-11.0	≤ 10.0	≤ 10.0
B	11.0 – 18.0	> 10.0 and ≤ 20.0	> 10.0 and ≤ 20.0
C	18.0 – 26.0	> 20.0 and ≤ 28.0	> 20.0 and ≤ 28.0
D	26.0 – 35.0	> 28.0 and ≤ 35.0	> 28.0 and ≤ 35.0
E	35.0 – 45.0	>35.0 and ≤ 43.0	> 35.0
F	> 45.0, or demand exceeds capacity	> 43.0, or demand exceeds capacity	Demand exceeds capacity

Source: *Highway Capacity Manual 6th Edition*, Transportation Research Board

4. EXISTING CONDITIONS

This section reports traffic conditions as they exist in 2018. This is the base condition for analysis. The scope, traffic volumes, and methodology for this study were reviewed and approved by the City of Moreno Valley and Caltrans and can be found in Appendix B: *SR-60/Theodore Interchange PA/ED Methodology and Traffic Volumes Report*, WSP, August 2018.

Traffic Counts

Traffic counts for turning movements in the AM and PM peak hours were collected for study intersections during typical workdays in May, 2017. Additional traffic counts were collected in January, 2018, but the 2017 counts are used in this analysis, because they are higher. Exhibit 10 shows the turning movement volumes under Existing Conditions. Traffic counts are reported in detail in Appendix A.

Intersection LOS

Exhibit 9 summarizes the intersection LOS under Existing Conditions. Detailed worksheets are presented in Appendix C. The LOS for all study intersections is currently acceptable (LOS D) or better in both the AM and PM peak hours.

Exhibit 9: Intersection LOS for Existing Conditions

ID	Intersection Name	Control Type	AM Peak Hour		PM Peak Hour	
			Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
1	World Logistics Center Pkwy/Eucalyptus Ave	CSS	10.0	A	9.2	A
2	World Logistics Center Pkwy/SR-60 EB Ramps	CSS	10.1	B	9.0	A
3	World Logistics Center Pkwy/SR-60 WB Ramps	CSS	10.3	B	9.4	A
4	Theodore St/Ironwood Ave	CSS	8.8	A	8.8	A
5	Redlands Blvd/Eucalyptus Ave	Signal	7.8	A	13.1	B
6	Redlands Blvd/SR-60 EB Ramps	Signal	19.1	B	27.9	C
7	Redlands Blvd/SR-60 WB Ramps/Spruce Ave	Signal	30.6	C	26.5	C
8	Redlands Blvd/Ironwood Ave	Signal	12.8	B	13.2	B

Notes:
 For signalized intersections, average intersection delay and LOS are reported.
 "CSS" means "cross-street stop-controlled." For CSS intersections, delay and LOS for the worst performing approach are reported.

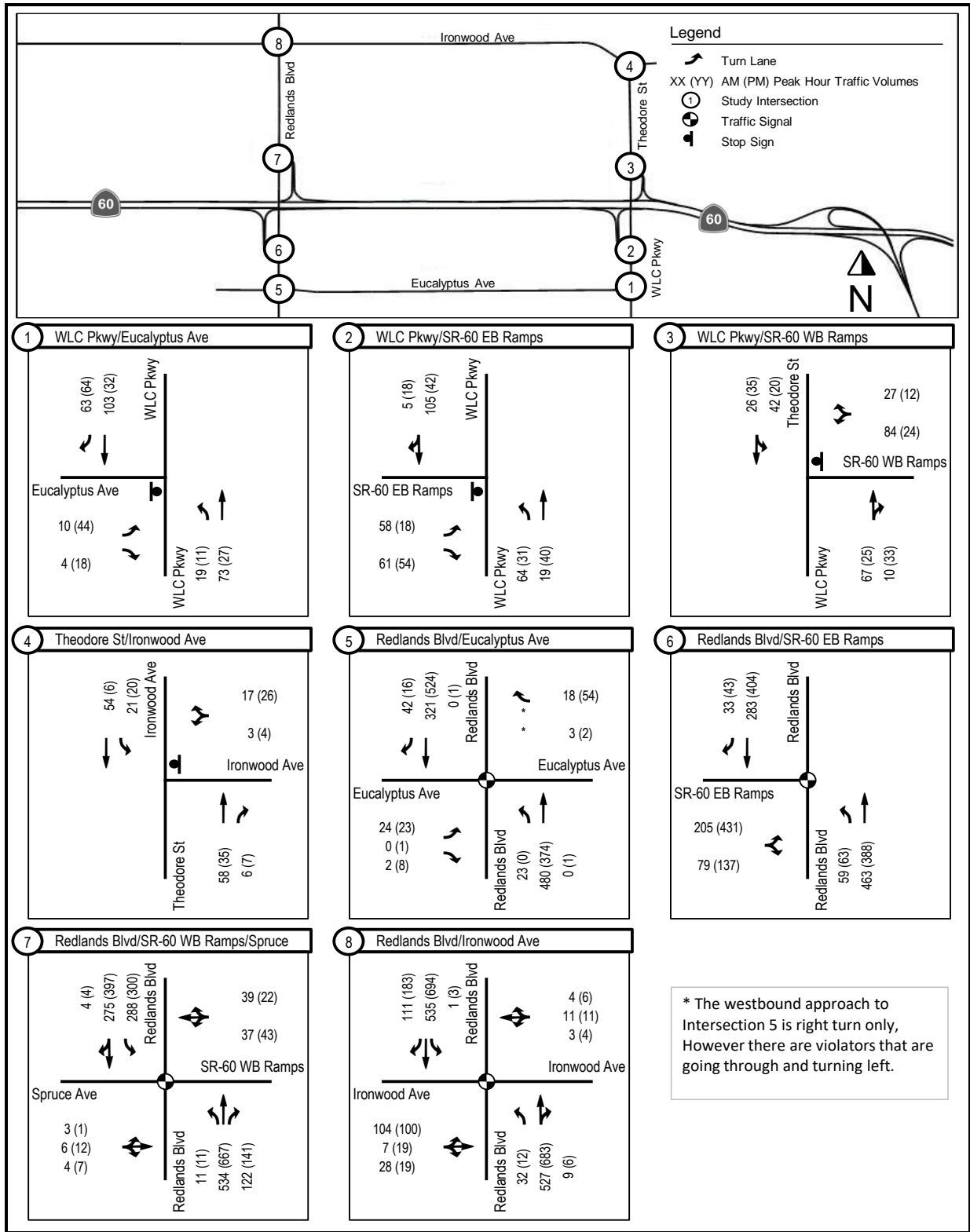


Exhibit 10: Turning Movement Volumes (PCE) under Existing Conditions

Freeway LOS

Exhibit 11 describes the existing peak-hour traffic conditions on SR-60. As can be seen from the table, in the vicinity of the WLC Parkway Interchange SR-60 currently operates at LOS C or better in both the AM and PM peak periods. Details of the LOS calculations for freeways under Existing Conditions can be found in Appendix D.

AM Peak Hour	7:00	17.2	19.0	14.7	18.1	15.2	16.9	14.9	18.2	16.8	8.3
	7:15	17.2	19.0	14.1	17.4	14.6	16.2	14.2	17.9	16.6	9.4
7:30	15.5	17.0	12.5	15.5	13.0	14.5	12.7	15.8	14.5	7.6	
7:45	14.4	15.8	11.7	14.8	12.4	13.7	12.1	15.5	14.2	7.9	
8:00	13.1	14.4	10.8	13.5	11.3	12.6	10.9	13.6	12.5	6.7	
8:15	13.7	15.1	11.5	14.1	11.9	13.2	11.5	14.3	13.1	7.3	
8:30	12.7	13.9	9.8	12.2	10.2	11.5	9.8	12.1	11.2	6.8	
8:45	12.9	14.1	10.6	12.9	10.9	12.0	10.6	13.3	12.2	7.6	
Max	B 17.2	B 19.0	B 14.7	C 18.1	B 15.2	B 16.9	B 14.9	C 18.2	B 16.8	A 9.4	
PM Peak Hour	16:00	17.2	19.0	14.2	17.8	14.9	16.5	14.2	16.8	15.7	10.7
	16:15	20.8	22.8	17.3	21.1	17.8	19.7	17.2	20.8	19.5	13.6
	16:30	19.8	21.7	16.4	19.8	16.6	18.5	16.0	19.1	17.9	11.7
	16:45	17.5	19.3	14.7	18.2	15.2	16.9	14.9	17.9	16.8	12.0
	17:00	20.1	22.1	16.8	20.5	17.3	19.2	16.9	20.2	19.1	13.5
	17:15	20.0	22.0	16.4	20.2	17.0	18.8	16.9	20.0	18.8	13.4
	17:30	19.2	21.1	15.2	18.9	15.8	17.6	15.4	18.3	17.2	11.6
	17:45	17.9	19.7	14.9	18.1	15.2	16.9	15.0	18.0	16.9	12.2
Max	C 20.8	C 22.8	B 17.3	C 21.1	B 17.8	B 19.7	B 17.2	C 20.8	C 19.5	B 13.6	

Redlands Blvd
WLC Pkwy
Gilman Springs Rd

Eastbound	Type	Basic	Diverge	Basic	Merge	Basic	Diverge	Basic	Merge	Overlap	Diverge	Basic
	Length, ft	1350	1500	1270	1500	1155	1500	900	1220	280	1220	1850
	Segment ID	1	2	3	4	5	6	7	8	9	10	11
	Lanes	3	3	2	2	2	2	2	2	2	2	2

AM Peak Hour	7:00	10.1	10.1	13.9	15.9	14.4	17.2	13.7	15.7	16.9	16.9	11.0
	7:15	9.6	9.6	13.5	15.8	14.3	17.1	13.6	15.8	16.9	16.9	10.9
7:30	10.5	10.5	14.4	16.6	15.0	17.9	14.2	16.5	17.7	17.7	11.3	
7:45	10.1	10.1	13.7	16.0	14.5	17.3	13.8	16.1	17.2	17.2	11.1	
8:00	8.6	8.6	10.9	12.8	11.6	13.9	10.7	12.5	13.3	13.3	8.8	
8:15	9.0	9.0	11.1	12.6	11.5	13.7	10.3	11.9	12.7	12.7	8.3	
8:30	9.7	9.7	12.9	14.8	13.4	16.1	12.3	14.2	15.3	15.3	9.8	
8:45	10.7	10.7	14.0	15.9	14.4	17.2	13.5	15.9	16.9	16.9	11.2	
Max	A 10.7	A 10.7	B 14.4	B 16.6	B 15.0	C 17.9	B 14.2	C 16.5	B 17.7	C 17.7	B 11.3	
PM Peak Hour	16:00	12.5	12.5	16.0	18.5	16.6	19.7	16.4	19.0	20.6	20.6	11.7
	16:15	13.4	13.4	17.0	19.9	17.8	21.1	17.6	20.2	22.1	22.1	11.4
	16:30	13.6	13.6	17.5	20.1	18.1	21.4	17.6	20.5	22.3	22.3	11.4
	16:45	13.6	13.6	17.1	20.4	18.3	21.7	18.0	20.9	22.7	22.7	11.9
	17:00	13.2	13.2	16.6	19.2	17.3	20.5	17.0	19.5	21.2	21.2	11.5
	17:15	13.8	13.8	18.0	20.8	18.7	22.0	18.4	21.1	23.1	23.1	11.3
	17:30	12.2	12.2	15.6	17.9	16.1	19.2	15.8	18.2	20.0	20.0	9.9
	17:45	14.2	14.2	18.4	21.2	19.1	22.4	18.8	21.6	23.6	23.6	11.4
Max	B 14.2	B 14.2	C 18.4	C 21.2	C 19.1	C 22.4	C 18.8	C 21.6	C 23.6	C 23.6	B 11.9	

LOS A B C D E F

Density (pce/mi/ln)

Exhibit 11: Freeway Facility LOS under Existing Conditions

5. ALTERNATIVE 1 (THE NO-BUILD ALTERNATIVE)

Description of the Alternative

Alternative 1 is the No-Build scenario in which the SR-60/WLC Pkwy IC would remain in its current L-7 configuration, while the area to the north and south of the interchange developed according the WLC specific plan and the City's adopted General Plan. The No-Build Alternative is shown in Exhibit 12.

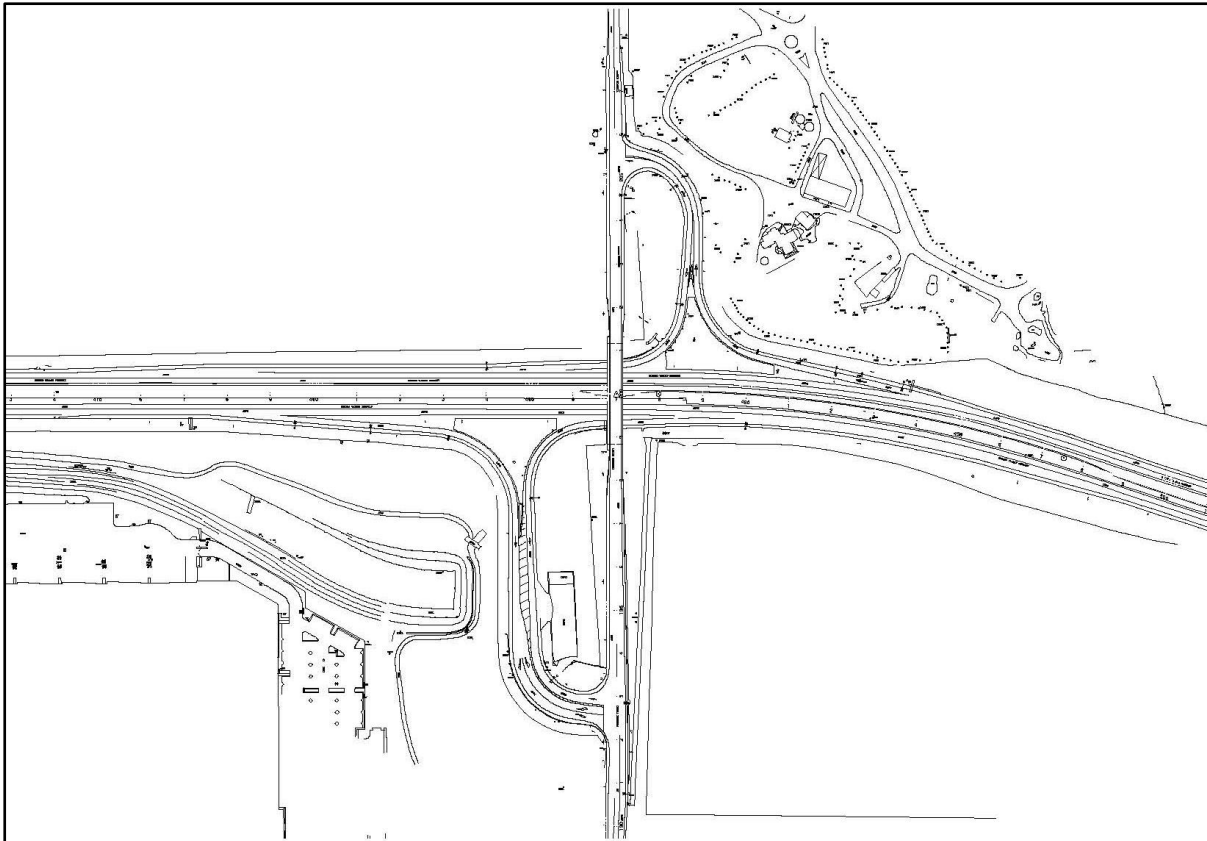


Exhibit 12: The No-Build Alternative Configuration

The key features of this configuration are:

- The WLC Parkway bridge has only one lane in each direction so there is limited storage capacity and no separation between through movements and turning movements.
- The stop-controlled intersections have limited capacity to process traffic coming from the off-ramps.

Intersection LOS

The turning movement volumes are shown in Exhibit 15 under the No-Build Alternative in 2025 conditions. Exhibit 13 summarizes the intersection LOS for the No-Build Alternative under 2025 conditions in the AM and PM peak hours (see Appendix E for details).

Exhibit 13: Intersection LOS – No-Build, 2025

ID	Intersection Name	Control Type	AM Peak Hour		PM Peak Hour	
			Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
1	World Logistics Center Pkwy/Eucalyptus Ave	CSS	>180	F	>180	F
2	World Logistics Center Pkwy/SR-60 EB Ramps	CSS	>180	F	>180	F
3	World Logistics Center Pkwy/SR-60 WB Ramps	CSS	126.2	F	109.2	F
4	Theodore St/Ironwood Ave	CSS	9.4	A	9.7	A
5	Redlands Blvd/Eucalyptus Ave	Signal	13.3	B	15.7	B
6	Redlands Blvd/SR-60 EB Ramps	Signal	6.4	A	7.8	A
7	Redlands Blvd/SR-60 WB Ramps/Spruce Ave	Signal	6.3	A	6.7	A
8	Redlands Blvd/Ironwood Ave	Signal	13.4	B	15.0	B

Notes:
 For signalized intersections, average intersection delay and LOS are reported.
 "CSS" means "cross-street stop-controlled." For CSS intersections, delay and LOS for the worst performing approach are reported.

Exhibit 13 and Exhibit 14 show that the existing configuration cannot handle the anticipated demand in 2025 or 2045. The WLC Pkwy ramp terminal intersections become bottlenecks, experiencing delays of three minutes or greater, that would lead to queuing onto SR-60. The resulting LOS, F, would not meet the purpose and need of the project.

Exhibit 14: Intersection LOS – No-Build, 2045

ID	Intersection Name	Control Type	AM Peak Hour		PM Peak Hour	
			Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
1	World Logistics Center Pkwy/Eucalyptus Ave	CSS	>180	F	>180	F
2	World Logistics Center Pkwy/SR-60 EB Ramps	CSS	>180	F	>180	F
3	World Logistics Center Pkwy/SR-60 WB Ramps	CSS	>180	F	>180	F
4	Theodore St/Ironwood Ave	CSS	1.5	A	1.1	A
5	Redlands Blvd/Eucalyptus Ave	Signal	17.5	B	22.8	C
6	Redlands Blvd/SR-60 EB Ramps	Signal	6.7	A	15.0	B
7	Redlands Blvd/SR-60 WB Ramps/Spruce Ave	Signal	9.9	A	9.1	A
8	Redlands Blvd/Ironwood Ave	Signal	17.4	B	22.5	C

Notes:
 For signalized intersections, average intersection delay and LOS are reported.
 "CSS" means "cross-street stop-controlled." For CSS intersections, delay and LOS for the worst performing approach are reported.

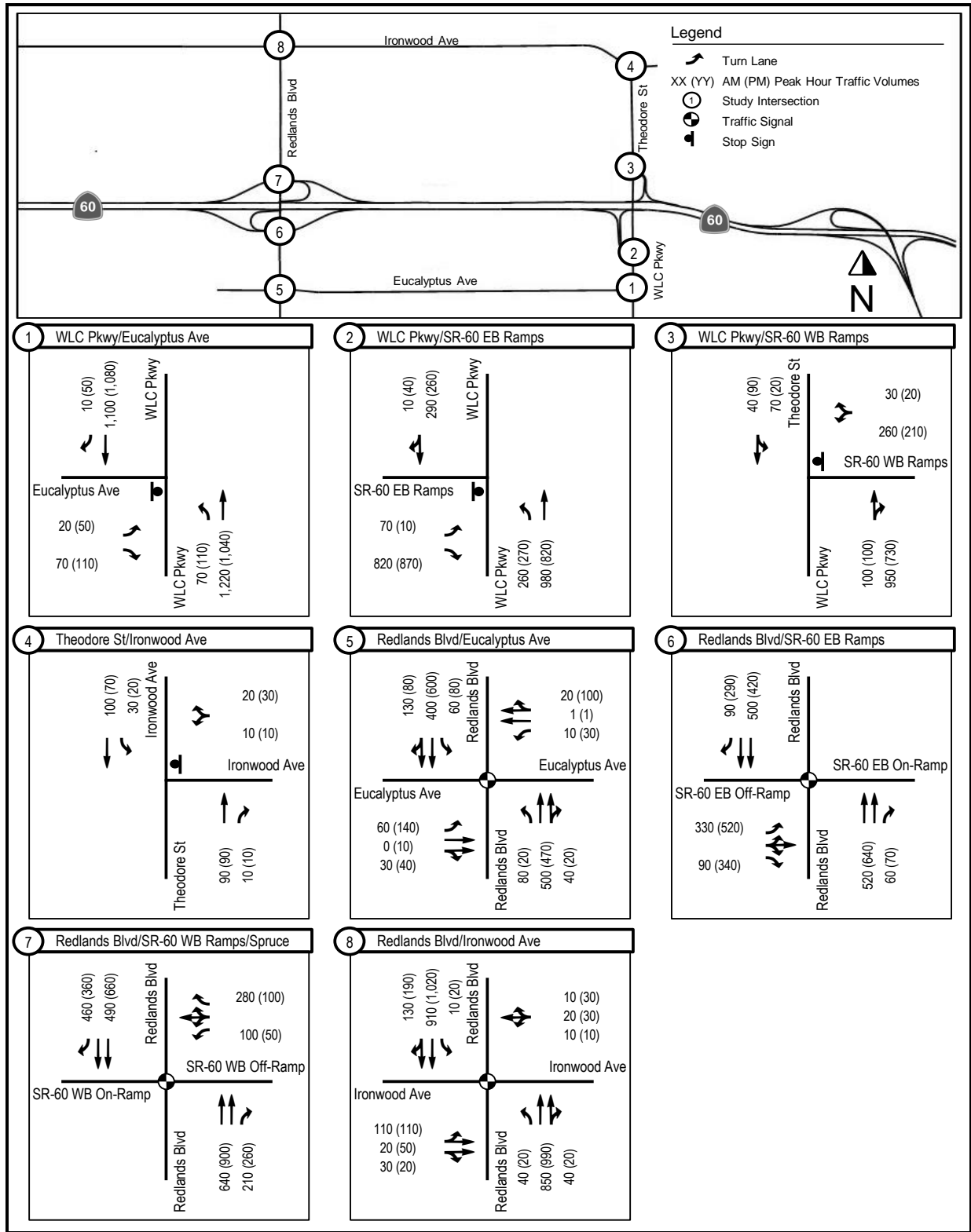


Exhibit 15: Turning Movement Volumes (PCE) under No-Build, 2025

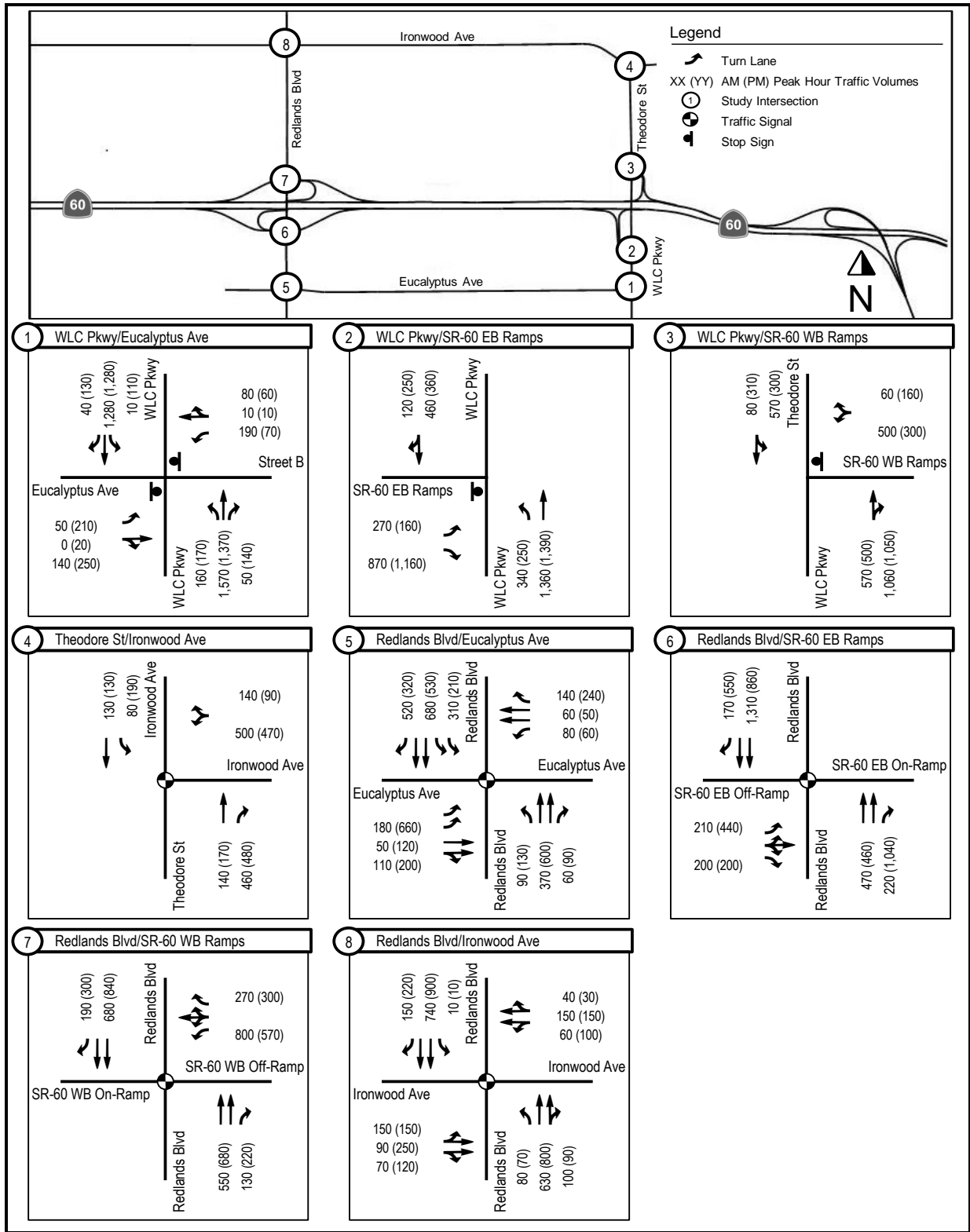


Exhibit 16: Turning Movement Volumes (PCE) under No-Build, 2045

AM Peak Hour	7:00	31.9	31.6	30.9	29.4	> Cap.	> Cap.	> Cap.	72.5	62.9	62.9	48.4	18.7
	7:15	33.1	32.5	31.5	30.0	> Cap.	> Cap.	> Cap.	77.6	72.1	72.1	68.6	21.8
7:30	33.0	32.4	31.4	29.9	34.9	38.3	> Cap.	77.4	64.9	64.9	33.9	17.3	
7:45	30.5	30.6	29.6	28.2	35.1	38.3	37.8	77.6	31.2	32.3	32.3	18.1	
8:00	30.4	30.5	29.8	28.3	37.3	44.3	47.9	19.8	24.8	24.8	24.7	15.1	
8:15	33.1	32.5	31.8	30.8	36.3	42.6	45.9	21.7	26.1	26.4	26.4	16.4	
8:30	39.2	36.7	35.8	35.1	37.2	44.1	> Cap.	18.8	22.7	22.7	22.3	15.3	
8:45	26.6	27.5	27.2	24.5	30.0	30.5	31.8	20.9	25.0	25.0	24.8	17.1	
Max	E 39.2	D 36.7	D 35.8	E 35.1	F > Cap.	F > Cap.	F > Cap.	F 77.6	F 72.1	F 72.1	F 68.6	C 21.8	
PM Peak Hour	16:00	25.7	26.2	24.8	22.7	31.0	31.5	37.8	18.7	21.3	21.3	20.8	11.9
	16:15	27.5	27.8	26.3	24.1	30.3	30.9	34.5	20.6	26.3	26.3	26.0	15.1
	16:30	34.1	32.9	31.0	29.8	31.6	33.6	38.2	21.4	24.8	24.9	24.9	13.0
	16:45	20.0	21.0	19.7	17.7	25.1	23.6	25.9	18.2	22.1	22.1	21.4	13.2
	17:00	24.7	25.4	24.0	21.7	27.9	27.4	29.4	21.0	25.1	25.1	24.8	15.0
	17:15	22.5	23.4	22.1	19.5	26.4	25.4	27.0	21.1	24.5	24.5	24.3	14.8
	17:30	25.0	25.6	23.6	21.4	29.0	28.7	31.6	20.4	23.2	23.2	23.0	12.9
	17:45	21.1	22.1	20.7	18.6	23.4	22.2	24.1	18.1	22.0	22.0	21.3	13.5
Max	D 34.1	D 32.9	D 31.0	D 29.8	C 31.6	D 33.6	E 38.2	C 21.4	D 26.3	D 26.3	C 26.0	B 15.1	
Type	Basic	Merge	Merge	Basic	Diverge	Basic	Merge	Basic	Diverge	Overlap	Merge	Basic	
Length, ft	1070	1500	1300	2000	1500	410	1500	980	220	1280	220	2700	
Segment ID	12	11	10	9	8	7	6	5	4	3	2	1	
Lanes	3	3	3	3	3	3	3	3	3	3	3	3	

Eastbound	Type	Basic	Diverge	Basic	Merge	Merge	Overlap	Diverge	Basic	Merge	Basic	Diverge	Basic
	Length, ft	600	1500	2150	1250	1275	225	1275	900	1500	220	1500	1850
Segment ID	1	2	3	4	5	6	7	8	9	10	11	12	
Lanes	3	3	3	3	3	3	3	3	3	3	3	2	

AM Peak Hour	7:00	19.5	21.3	17.9	19.7	20.0	21.4	21.4	15.2	17.4	16.1	15.5	15.8
	7:15	18.7	20.5	17.6	20.0	20.9	22.4	22.4	15.5	19.0	17.4	16.8	17.4
7:30	20.5	22.3	18.7	20.5	21.2	22.7	22.7	15.9	19.5	17.8	17.2	17.2	
7:45	19.9	21.7	18.0	20.2	21.1	22.6	22.6	15.7	19.9	18.1	17.5	18.4	
8:00	16.5	18.4	14.5	16.3	17.3	19.3	19.3	11.2	14.2	13.1	12.5	13.2	
8:15	17.0	19.0	14.7	15.6	16.0	18.5	18.5	8.8	10.8	10.0	9.6	8.6	
8:30	18.6	20.5	16.7	18.7	19.0	21.3	21.3	11.8	14.4	13.3	12.7	11.8	
8:45	20.8	22.7	18.2	19.9	20.2	22.0	22.0	14.0	18.2	16.6	16.0	17.0	
Max	C 20.8	B 22.7	C 18.7	C 20.5	B 21.2	C 22.7	D 22.7	B 15.9	C 19.9	C 18.1	B 17.5	C 18.4	
PM Peak Hour	16:00	27.3	27.9	23.6	27.5	32.1	32.1	31.6	27.4	30.9	30.4	30.0	34.5
	16:15	30.6	30.1	25.8	30.7	38.2	38.2	35.5	32.3	34.5	35.3	35.0	36.0
	16:30	31.1	30.4	26.3	30.4	35.0	35.0	34.8	25.0	29.9	29.0	28.5	26.0
	16:45	31.7	29.9	62.3	73.2	> Cap.	> Cap.	> Cap.	29.3	34.3	34.7	34.6	> Cap.
	17:00	29.8	73.7	87.1	77.4	37.3	37.3	34.8	29.2	32.3	32.1	32.7	35.4
	17:15	32.2	69.5	84.1	77.6	37.3	37.3	34.7	28.7	31.9	31.6	33.4	32.7
	17:30	26.0	28.7	26.5	63.7	36.1	36.1	35.1	29.7	33.6	33.9	34.1	29.4
	17:45	33.4	31.7	27.3	64.3	36.7	36.7	34.6	26.0	29.2	28.2	31.5	23.9
Max	D 33.4	F 73.7	F 87.1	F 77.6	F > Cap.	F > Cap.	F > Cap.	D 32.3	D 34.5	E 35.3	D 35.0	F > Cap.	

LOS A B C D E F

Density (pce/mi/ln)

> Cap. = Segment is over capacity (i.e. V/C >1)

Exhibit 18: Freeway Facility LOS under No-Build, 2045

6. ALTERNATIVE 2 (MODIFIED PARTIAL CLOVERLEAF)

Description of the Alternative

Alternative 2 would re-configure the SR-60/WLC Pkwy IC into a modified partial cloverleaf with signalized ramp terminal intersections. The existing westbound ramps would be replaced with a loop off-ramp and a slip on-ramp. The eastbound ramps would be replaced with a slip off-ramp, a slip on-ramp for north-bound traffic on WLC Parkway, and a loop on-ramp for southbound traffic on WLC Parkway. Auxiliary lanes would be provided in both directions between Redlands Boulevard and WLC Parkway and between WLC Parkway and Gilman Springs Road (this is a feature of both build alternatives). Alternative 2 is shown in Exhibit 19.

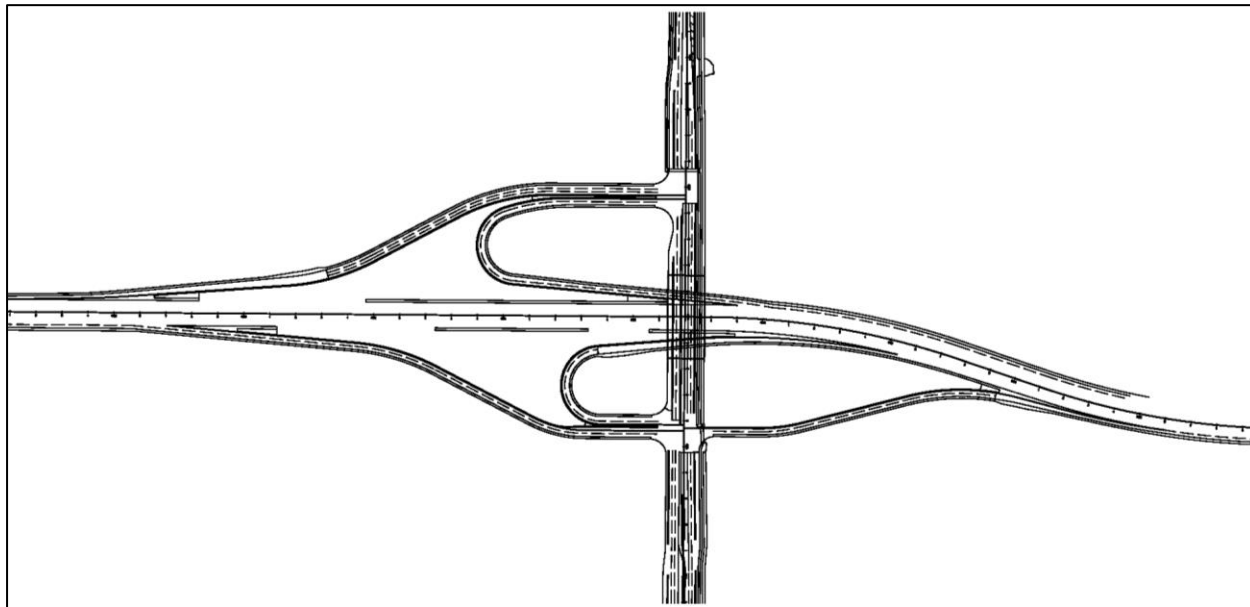


Exhibit 19: Alternative 2 Configuration

The key features of this configuration are:

- The westbound off-ramp is as far as possible from the Gilman Springs Road IC, thus providing the maximum weaving distance possible under the circumstances.
- The northbound-to-eastbound on-ramp would end within 1,450 feet of the start of the Gilman Springs Road eastbound off-ramp, which could occasionally cause weaving problems⁹. This is common to both Build Alternatives.
- The heavy northbound-to-westbound movement along WLC Parkway coming from the WLC in the PM peak hour will be required to make a left turn to get onto westbound SR-60. This problem is common both Build Alternatives.
- The southbound movements along WLC Parkway would be able to make right turns to get onto SR-60 in either the eastbound or westbound directions.

⁹ This assumes that the Gilman Springs Road Interchange would to be relocated eastwards, as is envisioned in a project in the current RTP (RIV080903). If this does not happen then the distance between the WLC Parkway on-ramp and the Gilman Springs Road off-ramp would be only 950 ft.

- The included multi-use trail along the east side of WLC Parkway which minimizes conflicts between vehicles and pedestrians/cyclists. This is common to both Build Alternatives.
- Alternative 2 includes a traffic signal at the WLC Parkway/Eucalyptus Ave intersection, because a series of signals can provide coordinated traffic progression.

Intersection LOS

Exhibit 20 and Exhibit 21 summarize the intersection LOS for Alternative 2 in 2018 and 2025 in the AM and PM peak hours. Alternative 2 can accommodate existing traffic demand and the growth in traffic demand to 2025 with little control delay; the LOS would be C or better at all eight study intersections in both the AM and PM peak periods. 95th-percentile queues would not exceed storage capacity for any movements along WLC Pkwy or on the SR-60 off ramps.

Exhibit 20: Intersection LOS – Alternative 2, 2018

ID	Intersection Name	Control Type	AM Peak Hour		PM Peak Hour	
			Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
1	World Logistics Center Pkwy/Eucalyptus Ave	Signal	10.6	B	11.3	B
2	World Logistics Center Pkwy/SR-60 EB Ramps	Signal	10.0	A	9.4	A
3	World Logistics Center Pkwy/SR-60 WB Ramps	Signal	12.3	B	11.8	B
4	Theodore St/Ironwood Ave	CSS	8.8	A	8.8	A
5	Redlands Blvd/Eucalyptus Ave	Signal	7.8	A	13.1	B
6	Redlands Blvd/SR-60 EB Ramps	Signal	19.1	B	27.9	C
7	Redlands Blvd/SR-60 WB Ramps/Spruce Ave	Signal	30.6	C	26.5	C
8	Redlands Blvd/Ironwood Ave	Signal	12.8	B	13.2	B

Notes:
 For signalized intersections, average intersection delay and LOS are reported.
 "CSS" means "cross-street stop-controlled." For CSS intersections, delay and LOS for the worst performing approach are reported.

Exhibit 21: Intersection LOS – Alternative 2, 2025

ID	Intersection Name	Control Type	AM Peak Hour		PM Peak Hour	
			Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
1	World Logistics Center Pkwy/Eucalyptus Ave	Signal	21.5	C	6.5	A
2	World Logistics Center Pkwy/SR-60 EB Ramps	Signal	17.2	B	11.4	B
3	World Logistics Center Pkwy/SR-60 WB Ramps	Signal	8.1	A	20.4	C
4	Theodore St/Ironwood Ave	CSS	9.4	A	9.7	A
5	Redlands Blvd/Eucalyptus Ave	Signal	13.3	B	15.7	B
6	Redlands Blvd/SR-60 EB Ramps	Signal	6.4	A	7.8	A
7	Redlands Blvd/SR-60 WB Ramps/Spruce Ave	Signal	6.3	A	6.7	A
8	Redlands Blvd/Ironwood Ave	Signal	13.4	B	15.0	B

Notes:
 For signalized intersections, average intersection delay and LOS are reported.
 "CSS" means "cross-street stop-controlled." For CSS intersections, delay and LOS for the worst performing approach are reported.

As can be seen in Exhibit 22, the 2045 LOS for all study intersections would be acceptable with 2045 demand.

Exhibit 22: Intersection LOS – Alternative 2, 2045

ID	Intersection Name	Control Type	AM Peak Hour		PM Peak Hour	
			Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
1	World Logistics Center Pkwy/Eucalyptus Ave	Signal	48.1	D	50.3	D
2	World Logistics Center Pkwy/SR-60 EB Ramps	Signal	8.7	A	13.3	B
3	World Logistics Center Pkwy/SR-60 WB Ramps	Signal	28.4	C	20.9	C
4	Theodore St/Ironwood Ave	Signal	1.5	A	1.1	A
5	Redlands Blvd/Eucalyptus Ave	Signal	17.5	B	22.8	C
6	Redlands Blvd/SR-60 EB Ramps	Signal	6.7	A	15.0	B
7	Redlands Blvd/SR-60 WB Ramps/Spruce Ave	Signal	9.9	A	9.1	A
8	Redlands Blvd/Ironwood Ave	Signal	17.4	B	22.5	C

Notes:
For signalized intersections, average intersection delay and LOS are reported.

Queuing in 2045 is also acceptable with 95th-percentile queues not exceeding the storage provided. The northbound left-turn queue at the WLC Pkwy/SR-60 WB Ramps would be approximately 300', which exceeds the 250' single-lane left-turn pocket, but the left lane also traps as a turn lane providing sufficient storage for left turning vehicles, with no queues spilling back to the upstream intersection.

Details of the LOS and queuing calculations for intersections under the Alternative 2 can be found in Appendix G.

The turning movement volumes are shown in Exhibit 23 and Exhibit 24 and Exhibit 25 for Alternative 2 in 2018, 2025, and 2045, respectively.

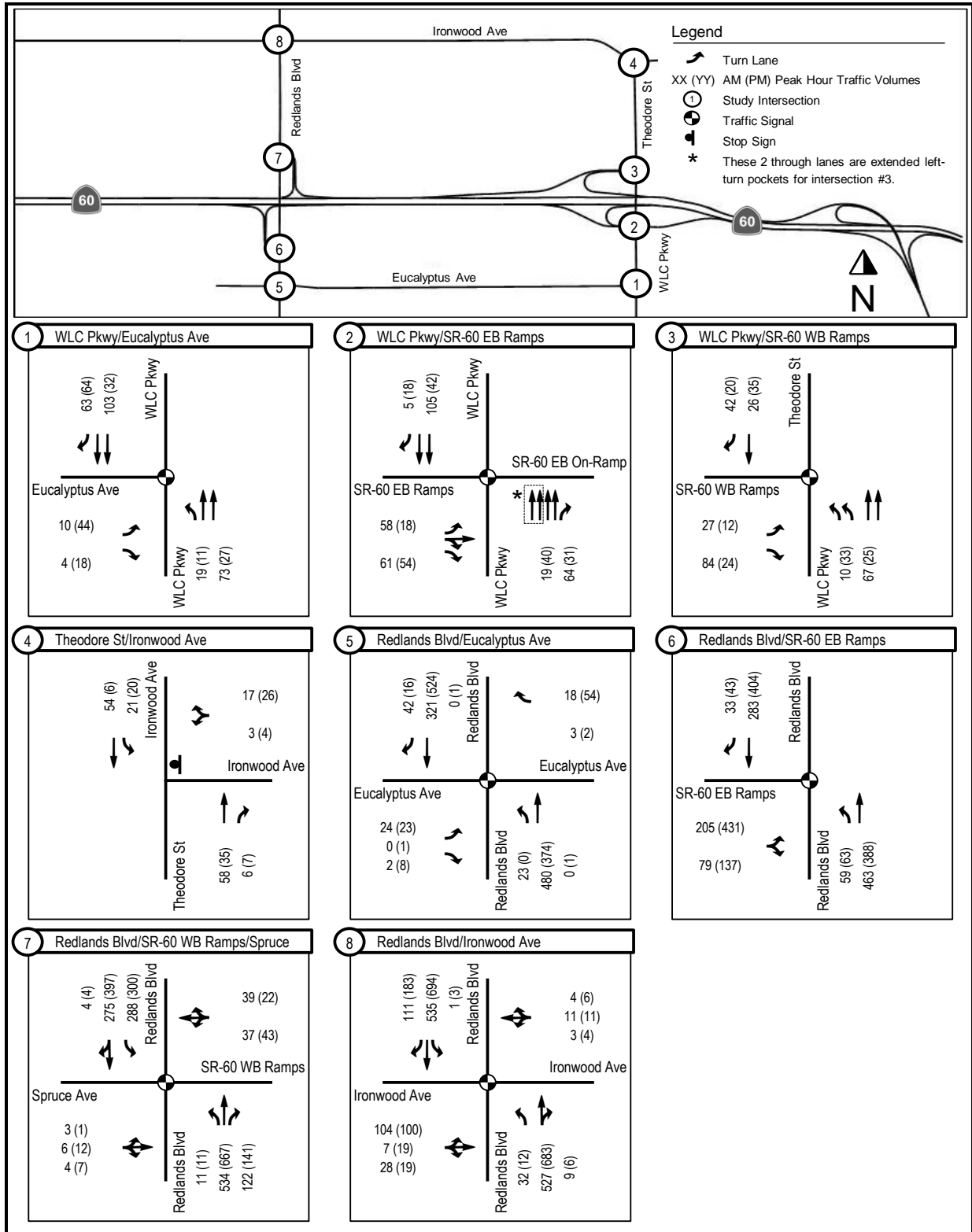


Exhibit 23: Turning Movement Volumes (PCE) - Alternative 2, 2018

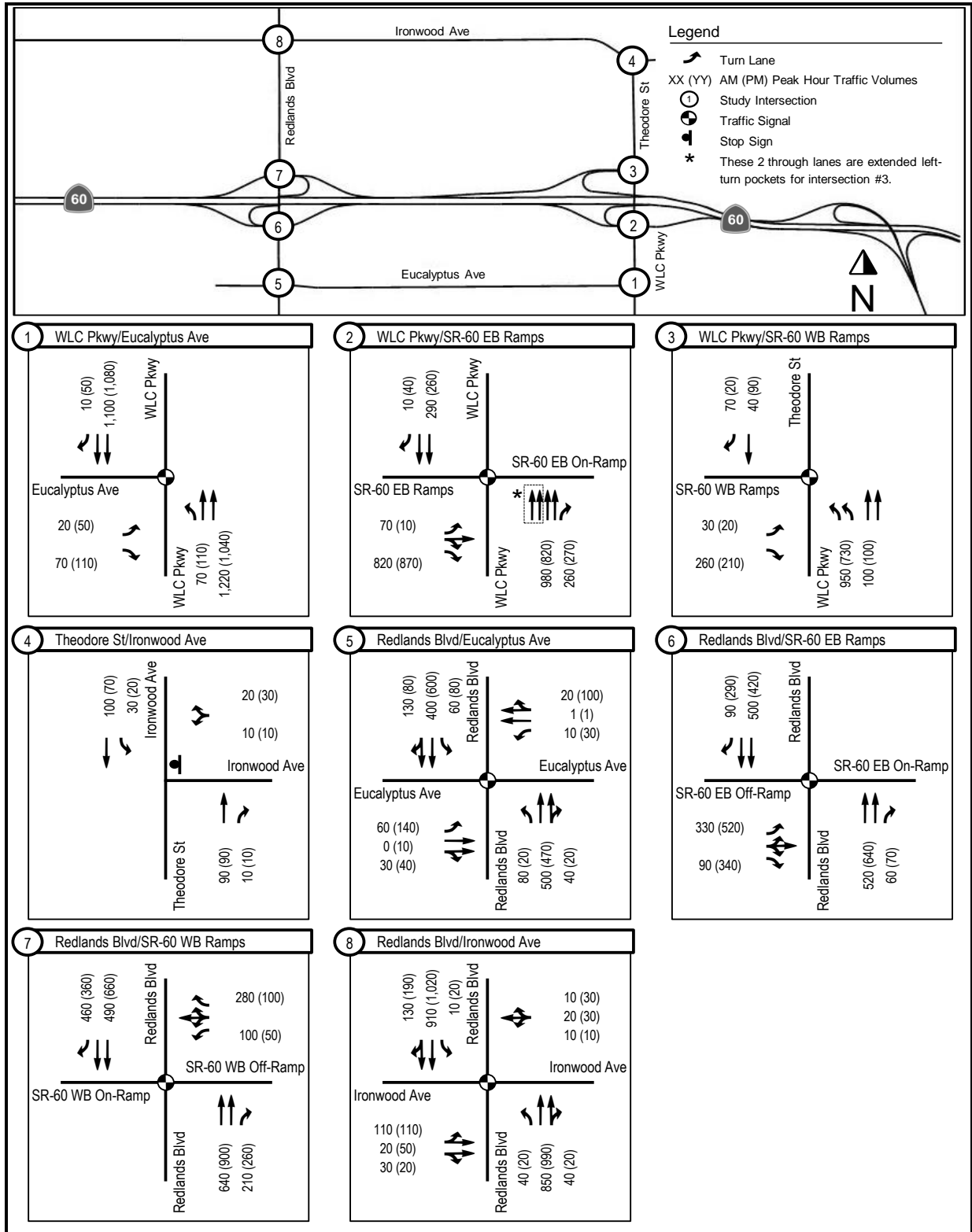


Exhibit 24: Turning Movement Volumes (PCE) - Alternative 2, 2025

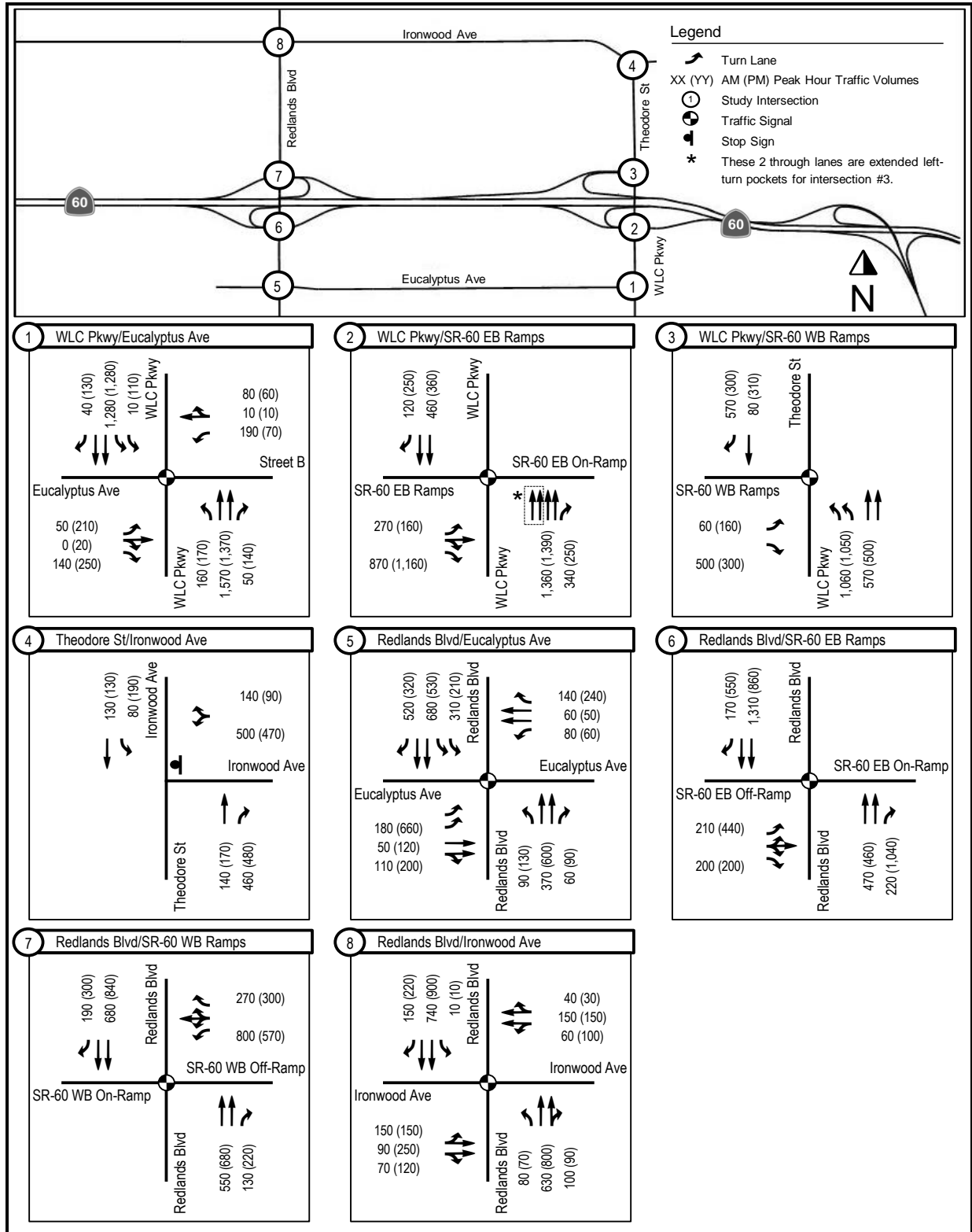


Exhibit 25: Turning Movement Volumes (PCE) - Alternative 2, 2045

Freeway LOS

Exhibit 26 and Exhibit 27 describe the peak-hour traffic conditions on SR-60 for Alternative 2 in 2018 and 2025. The freeway basic sections, weave sections, and ramps would all have an acceptable LOS through 2025.

Exhibit 28 describes the conditions on SR-60 freeway facilities under 2045 conditions. As shown in the tables, the section of westbound SR-60 between WLC Pkwy and Redlands Blvd is a weaving section which would be over capacity for one 15-minute interval in the AM peak, but not so much that it would cause queuing on SR-60 east of the WLC Pkwy on-ramp. (Note that even though density on this segment is less than 43 pc/mi/ln, its weaving volume exceeds weaving capacity, and is therefore over-capacity per the HCM 6th Edition.) The merge area for the eastbound loop on-ramp would operate near capacity at LOS E for one 15-minute interval in the PM peak.

Details of the LOS calculations for freeways under Alternative 2 can be found in Appendix H.

Since both build alternatives have the same westbound on-ramps and off-ramps, the westbound freeway mainline problems shown in Exhibit 28 would occur for both Project build alternatives. Thus, it is not a criterion for selecting the Preferred Alternative.

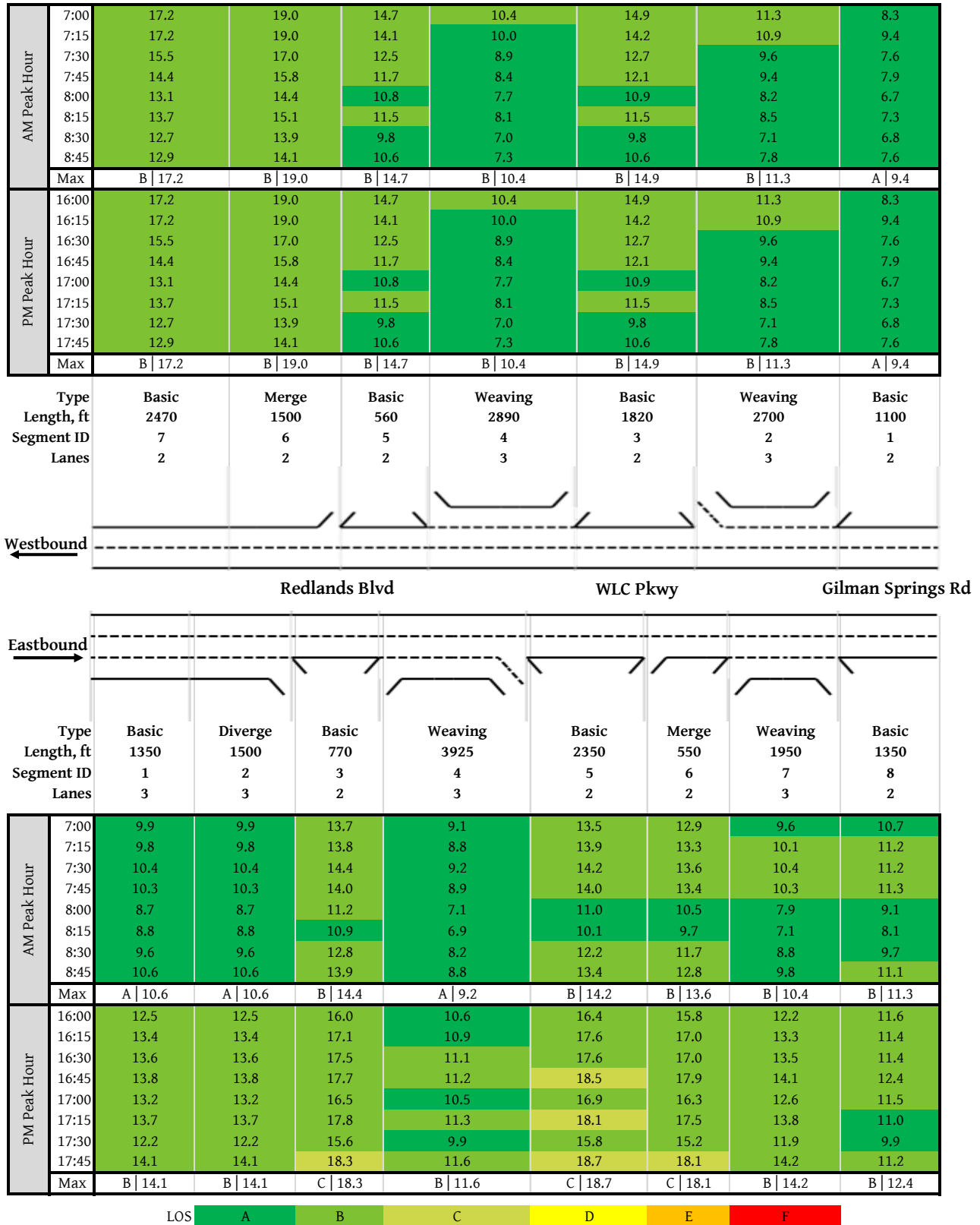
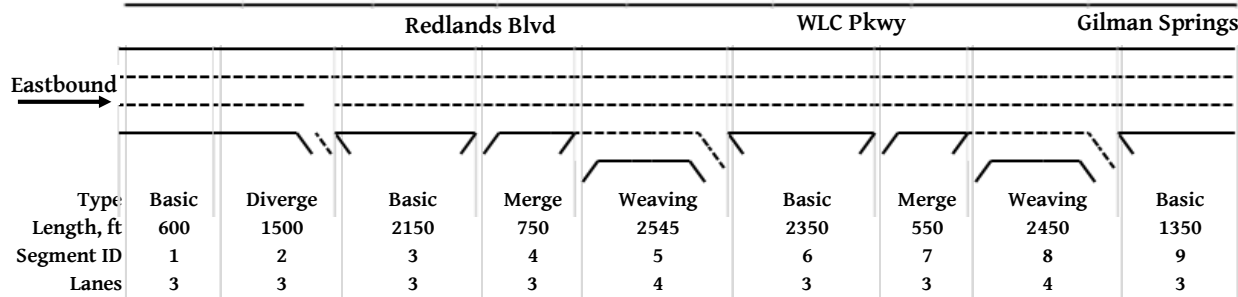
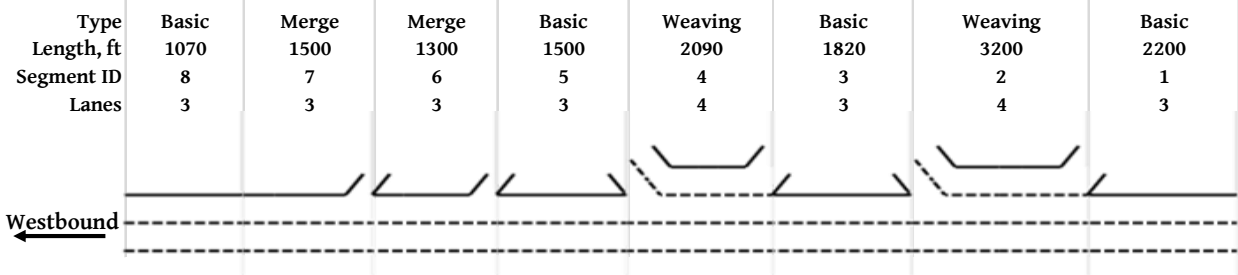


Exhibit 26: Freeway Facility LOS - Alternative 2, 2018

AM Peak Hour	7:00	18.0	18.9	17.1	15.2	14.4	13.3	11.7	9.2
	7:15	18.9	19.8	17.5	15.4	14.9	13.0	11.8	10.4
	7:30	17.7	18.6	16.3	14.4	14.9	11.4	10.1	8.4
	7:45	14.7	15.4	13.0	11.9	12.0	10.7	10.1	8.7
	8:00	16.0	16.8	15.0	13.5	14.2	9.8	8.7	7.4
	8:15	17.1	18.0	16.3	14.7	15.0	10.5	9.2	8.1
	8:30	18.3	19.3	17.7	15.0	17.0	9.2	7.9	7.5
	8:45	15.3	16.1	15.0	12.8	12.0	9.9	8.7	8.4
	Max	C 18.9	B 19.8	C 17.7	B 15.4	B 17.0	B 13.3	B 11.8	A 10.4

PM Peak Hour	16:00	18.7	19.6	18.0	15.9	15.9	12.1	10.1	10.0
	16:15	20.2	21.1	19.5	17.0	15.9	14.0	12.7	12.7
	16:30	20.3	21.2	19.4	17.2	16.0	13.4	11.6	11.0
	16:45	16.7	17.6	16.0	14.2	12.7	12.6	10.8	11.2
	17:00	19.0	19.9	18.4	16.1	14.2	14.3	12.4	12.6
	17:15	18.5	19.4	17.9	15.3	13.1	14.3	12.2	12.5
	17:30	18.9	19.8	17.5	15.4	14.3	13.1	11.1	10.9
	17:45	16.8	17.6	16.0	14.2	12.0	12.7	10.9	11.4
	Max	C 20.3	C 21.2	C 19.5	B 17.2	B 16.0	B 14.3	B 12.7	B 12.7



AM Peak Hour	7:00	14.7	16.4	13.5	12.8	11.0	10.9	10.5	8.8	9.5
	7:15	14.4	16.0	13.4	12.8	11.4	10.9	10.4	9.4	9.9
	7:30	15.5	17.3	14.2	13.5	11.7	11.4	10.9	9.7	10.2
	7:45	15.2	16.9	13.7	13.0	11.5	11.0	10.6	9.7	10.2
	8:00	12.8	14.3	10.9	10.4	9.5	7.3	7.0	6.5	6.9
	8:15	13.1	14.7	10.9	10.3	9.2	5.8	5.5	4.9	4.9
	8:30	14.2	15.9	12.5	11.9	10.8	8.0	7.7	6.9	7.0
	8:45	15.8	17.7	13.7	13.0	11.4	9.9	9.5	8.9	9.5
	Max	B 15.8	A 17.7	B 14.2	B 13.5	B 11.7	B 11.4	A 10.9	A 9.7	A 10.2

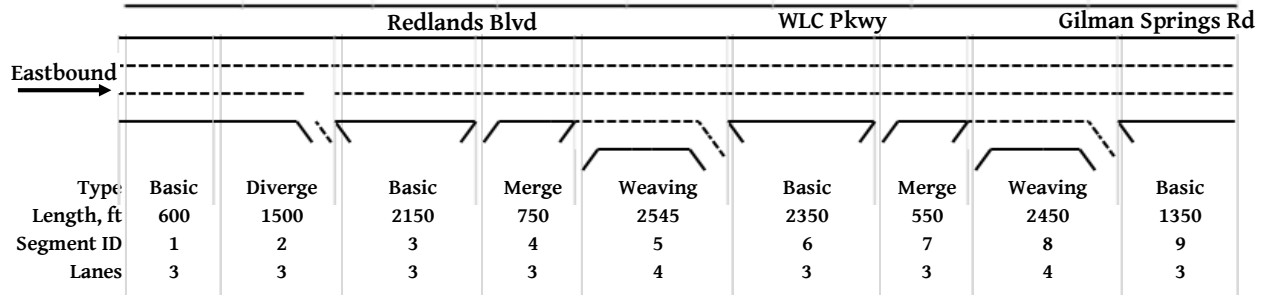
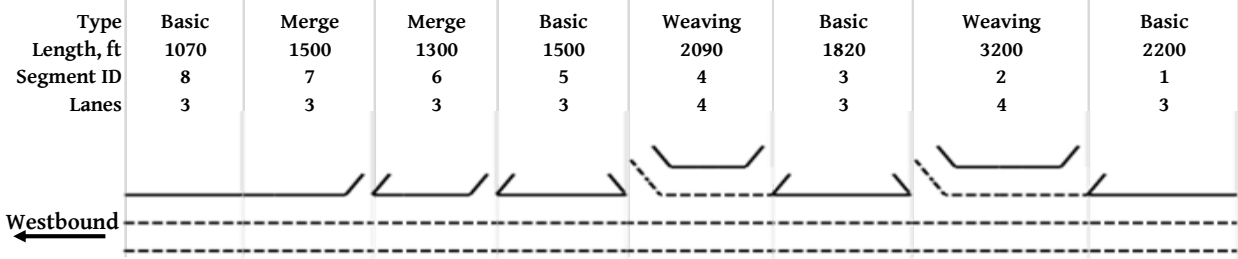
PM Peak Hour	16:00	18.5	20.6	15.4	14.5	13.1	14.7	14.1	12.5	12.3
	16:15	20.0	22.1	16.3	15.4	14.3	15.8	15.2	13.0	12.0
	16:30	20.5	22.5	16.8	15.9	14.8	14.0	13.4	12.5	10.9
	16:45	20.8	22.9	16.9	16.0	15.5	15.9	15.4	14.3	13.1
	17:00	19.7	21.9	15.9	15.0	13.8	14.3	13.7	11.9	11.1
	17:15	20.7	22.8	17.2	16.3	14.5	15.4	14.8	12.5	10.9
	17:30	17.9	20.0	14.9	14.0	13.4	13.3	12.7	11.5	10.1
	17:45	21.4	23.4	17.6	16.7	15.0	16.4	15.8	13.8	12.0
	Max	C 21.4	B 23.4	B 17.6	B 16.7	B 15.5	B 16.4	B 15.8	B 14.3	B 13.1



Density (pce/mi/ln)

Exhibit 27: Freeway Facility LOS - Alternative 2, 2025

AM Peak Hour	7:00	38.0	35.7	34.7	35.5	31.9	32.3	29.3	18.9
	7:15	38.4	35.9	34.8	35.2	32.8	30.5	28.6	22.0
	7:30	32.7	31.9	30.9	30.1	32.7	25.2	24.3	17.2
	7:45	24.0	24.8	24.0	22.5	25.6	23.1	23.7	17.9
	8:00	28.4	28.5	27.9	26.7	30.7	20.9	20.4	15.1
	8:15	33.7	32.6	31.9	31.8	32.7	22.7	21.6	16.4
	8:30	32.4	32.0	31.4	29.2	> Cap.	18.9	17.9	15.3
	8:45	25.4	26.5	26.3	23.4	23.8	21.1	19.9	17.1
	Max	E 38.4	D 35.9	D 34.8	E 35.5	F > Cap.	D 32.3	D 29.3	C 22.0
PM Peak Hour	16:00	25.7	26.2	24.8	22.7	28.9	18.7	17.3	11.9
	16:15	27.5	27.8	26.3	24.1	26.9	20.6	21.5	15.1
	16:30	34.1	32.9	31.0	29.8	29.5	21.4	20.9	13.0
	16:45	20.0	21.0	19.7	17.7	20.2	18.2	17.6	13.2
	17:00	24.7	25.4	24.0	21.7	22.7	21.0	20.5	15.0
	17:15	22.5	23.4	22.1	19.5	20.3	21.1	20.0	14.8
	17:30	25.0	25.6	23.6	21.4	24.6	20.4	19.2	12.9
	17:45	21.1	22.1	20.7	18.6	18.5	18.1	17.4	13.5
	Max	D 34.1	D 32.9	D 31.0	D 29.8	D 29.5	C 21.4	C 21.5	B 15.1



AM Peak Hour	7:00	19.3	21.1	17.8	17.0	15.4	15.2	14.6	12.4	10.2
	7:15	18.8	20.6	17.7	16.8	16.5	15.6	15.1	13.7	11.2
	7:30	20.5	22.3	18.8	17.9	16.6	16.0	15.4	14.5	11.6
	7:45	20.0	21.8	18.2	17.3	16.7	15.8	15.3	15.4	13.0
	8:00	16.5	18.4	14.7	13.8	14.1	11.4	10.9	10.7	9.1
	8:15	17.0	18.9	14.7	13.9	13.2	8.8	8.5	8.0	6.0
	8:30	18.5	20.4	16.7	15.9	15.4	11.8	11.4	10.7	8.1
	8:45	20.9	22.8	18.4	17.5	16.1	14.2	13.6	14.6	12.8
	Max	C 20.9	B 22.8	C 18.8	B 17.9	B 16.7	B 16.0	B 15.4	B 15.4	B 13.0
PM Peak Hour	16:00	27.3	27.9	23.7	22.8	24.8	27.5	27.3	22.2	19.7
	16:15	30.3	30.0	25.7	24.8	28.5	32.2	32.3	24.4	20.5
	16:30	31.3	30.5	26.6	25.7	27.0	25.3	25.0	21.7	16.3
	16:45	32.0	30.9	26.9	25.9	34.7	37.9	38.4	28.0	24.5
	17:00	29.7	29.6	25.1	24.2	27.5	28.3	28.2	22.3	18.9
	17:15	31.9	30.9	27.2	26.3	28.1	30.0	30.0	23.4	18.0
	17:30	26.1	27.0	22.8	21.9	22.9	22.3	21.9	19.1	14.0
	17:45	33.4	31.7	28.1	27.2	27.5	30.9	30.9	23.1	16.9
	Max	D 33.4	C 31.7	D 28.1	D 27.2	D 34.7	E 37.9	E 38.4	C 28.0	C 24.5

LOS A B C D E F

Density (pce/mi/ln)

> Cap. = Segment is over capacity (i.e. V/C >1)

Exhibit 28: Freeway Facility LOS - Alternative 2, 2045

7. ALTERNATIVE 6 (MODIFIED PARTIAL CLOVERLEAF WITH ROUNDABOUTS)

Description of the Alternative

Alternative 6 would re-configure the SR-60/WLC Pkwy IC ramp intersections into a pair of two-lane roundabouts. Otherwise the configuration is similar to Alternative 2, except that there would be no dedicated southbound-to-eastbound ramp. Auxiliary lanes would be provided in both directions between Redlands Boulevard and WLC Parkway and between WLC Parkway and Gilman Springs Road (this is a feature of all build alternatives). Alternative 6 is shown in Exhibit 29.

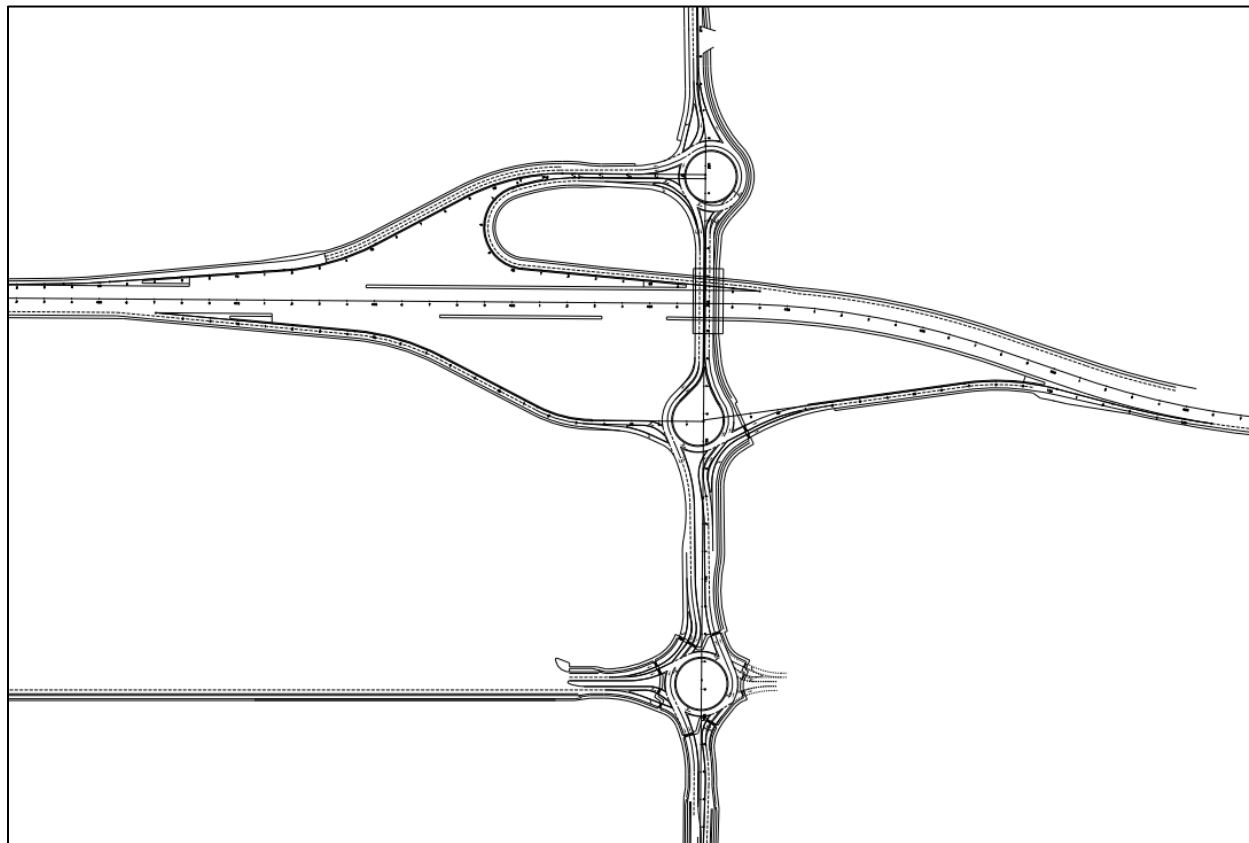


Exhibit 29: Alternative 6 Configuration

The key features of this configuration are:

- The westbound off-ramp is as far as possible from the Gilman Springs Road IC, thus providing the maximum weave distance possible under the circumstances.
- The northbound-to-eastbound on-ramp would end within 1,450 feet of the start of the Gilman Springs Road eastbound off-ramp, which could occasionally cause weaving problems¹⁰. This is common to both Build Alternatives.

¹⁰ This assumes that the Gilman Springs Road Interchange would be relocated eastwards, as is envisioned in a project in the current RTP (RIV080903). If this does not happen then the distance between the WLC Parkway on-ramp and the Gilman Springs Road off-ramp would be only 950-ft.

- The heavy northbound-to-westbound movement along WLC Parkway coming from the WLC in the PM peak hour will be required to make a 270-degree roundabout movement to get onto westbound SR-60. This problem is common to both Build Alternatives.
- Vehicles exiting SR-60 from either the eastbound or westbound directions to go southbound on WLC Parkway would be able to make free right turns.
- The narrower bridge required for this configuration, a result of less queuing on the bridge, would reduce construction costs compared to Alternative 2.
- The southbound movements along WLC Parkway would be able to make right turns to get onto SR-60 in either the eastbound or westbound directions.
- The included multi-use trail along the east side of WLC Parkway minimizes conflicts between vehicles and pedestrians/cyclists. This is common to both Build Alternatives.
- Alternative 6 includes a roundabout at the WLC Parkway/Eucalyptus Ave intersection, because a series of roundabouts provide smooth traffic flow.

Intersection LOS

Exhibit 30 and Exhibit 31 summarize the intersection LOS for the Alternative 6 conditions in 2018 and 2025 in the AM and PM peak hours. Alternative 6 can accommodate existing traffic demand and the growth in traffic demand to 2025 with little control delay; the LOS would be B or better at all eight study intersections in both the AM and PM peak periods.

Exhibit 30: Intersection LOS – Alternative 6, 2018

ID	Intersection Name	Control Type	AM Peak Hour		PM Peak Hour	
			Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
1	World Logistics Center Pkwy/Eucalyptus Ave	RABT	2.7	A	2.2	A
2	World Logistics Center Pkwy/SR-60 EB Ramps	RABT	2.9	A	2.4	A
3	World Logistics Center Pkwy/SR-60 WB Ramps	RABT	2.6	A	2.5	A
4	Theodore St/Ironwood Ave	CSS	8.8	A	8.8	A
5	Redlands Blvd/Eucalyptus Ave	Signal	7.8	A	13.1	B
6	Redlands Blvd/SR-60 EB Ramps	Signal	19.1	B	27.9	C
7	Redlands Blvd/SR-60 WB Ramps/Spruce Ave	Signal	30.6	C	26.5	C
8	Redlands Blvd/Ironwood Ave	Signal	12.8	B	13.2	B

Notes:
 For signalized intersections, average intersection delay and LOS are reported.
 "CSS" means "cross-street stop-controlled." For CSS intersections, delay and LOS for the worst performing approach are reported.

Exhibit 31: Intersection LOS – Alternative 6, 2025

ID	Intersection Name	Control Type	AM Peak Hour		PM Peak Hour	
			Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
1	World Logistics Center Pkwy/Eucalyptus Ave	RABT	7.6	A	7.7	A
2	World Logistics Center Pkwy/SR-60 EB Ramps	RABT	6.8	A	6.8	A
3	World Logistics Center Pkwy/SR-60 WB Ramps	RABT	5.5	A	5.5	A
4	Theodore St/Ironwood Ave	CSS	9.4	A	9.7	A
5	Redlands Blvd/Eucalyptus Ave	Signal	13.3	B	15.7	B
6	Redlands Blvd/SR-60 EB Ramps	Signal	6.4	A	7.8	A
7	Redlands Blvd/SR-60 WB Ramps/Spruce Ave	Signal	6.3	A	6.7	A
8	Redlands Blvd/Ironwood Ave	Signal	13.4	B	15.0	B

Notes:

"CSS" means "cross-street stop-controlled." For CSS intersections, delay and LOS for the worst performing approach are reported.

"RABT" means Roundabout.

For signalized intersections, average intersection delay and LOS are reported.

Exhibit 32: Intersection LOS – Alternative 6, 2045

ID	Intersection Name	Control Type	AM Peak Hour		PM Peak Hour	
			Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
1	World Logistics Center Pkwy/Eucalyptus Ave	RABT	13.5	B	19.7	C
2	World Logistics Center Pkwy/SR-60 EB Ramps	RABT	10.1	B	14.3	B
3	World Logistics Center Pkwy/SR-60 WB Ramps	RABT	13.3	B	14.7	B
4	Theodore St/Ironwood Ave	Signal	1.5	A	1.1	A
5	Redlands Blvd/Eucalyptus Ave	Signal	17.5	B	22.8	C
6	Redlands Blvd/SR-60 EB Ramps	Signal	6.7	A	15.0	B
7	Redlands Blvd/SR-60 WB Ramps/Spruce Ave	Signal	9.9	A	9.1	A
8	Redlands Blvd/Ironwood Ave	Signal	17.4	B	22.5	C

Notes:

"RABT" means Roundabout.

For signalized intersections, average intersection delay and LOS are reported.

Exhibit 32 describes the 2045 intersection LOS. If properly designed, the roundabouts in Alternative 6 would provide LOS C or better. For example, at the westbound off-ramp the median lane should be aligned with the outer lane of the roundabout so that westbound-to-northbound traffic would not have to weave within the roundabout. The lanes may need to be wider than usual and other modifications to standard roundabout design may be needed to accommodate a high percentage of trucks.

Queues at the WLC Pkwy/SR-60 interchange roundabouts would not exceed the provided storage under any of the study years.

Alternative 6 has the additional advantage that trucks would not need to come to a complete stop, reducing air quality and noise impacts compared to the other alternatives.

Details of the LOS and queuing calculations for intersections under Alternative 6 can be found in Appendix I. The turning movement volumes are shown in Exhibit 33, Exhibit 34, and Exhibit 35 for Alternative 6 in 2018, 2025, and 2045, respectively.

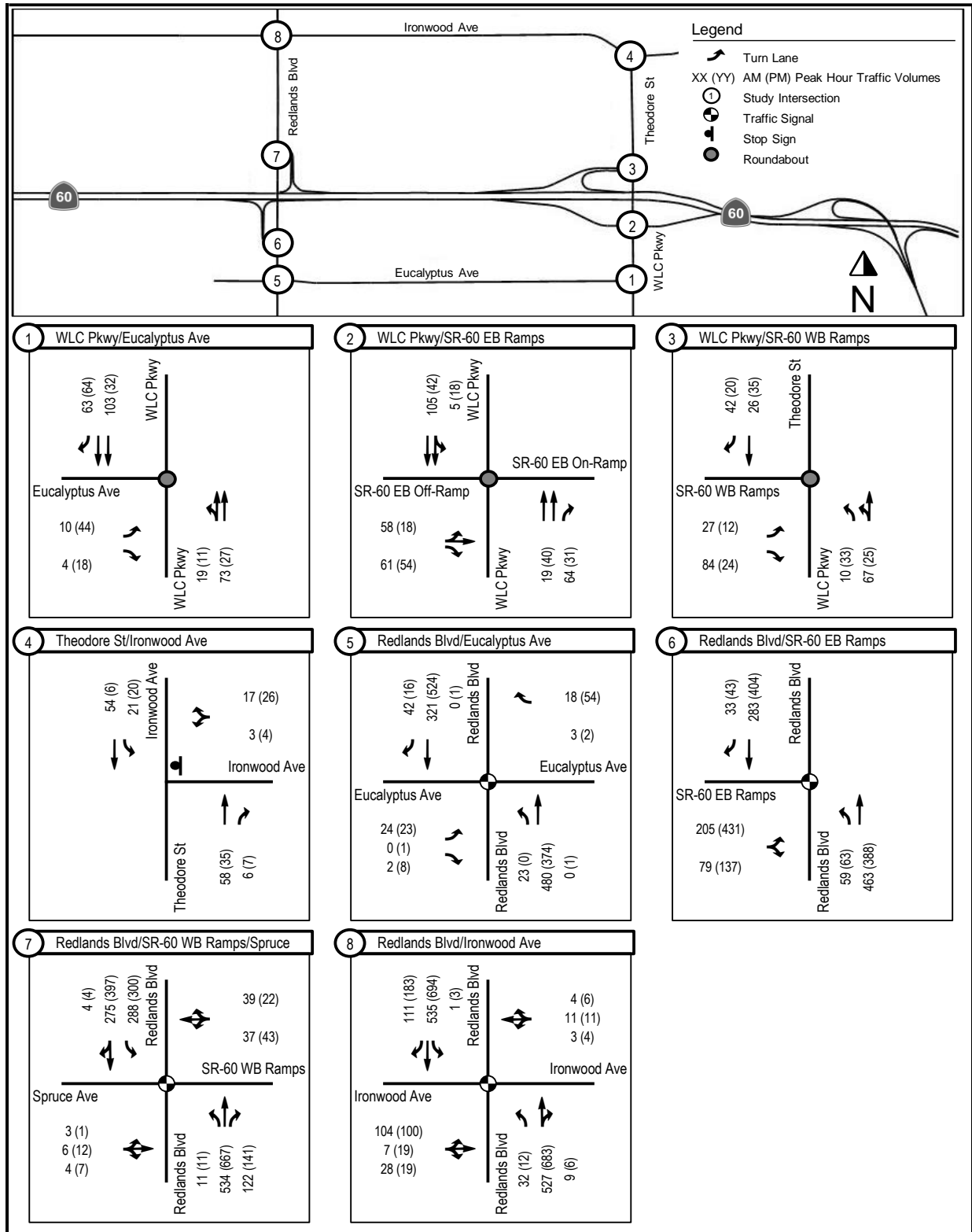


Exhibit 33: Turning Movement Volumes (PCE) - Alternative 6, 2018

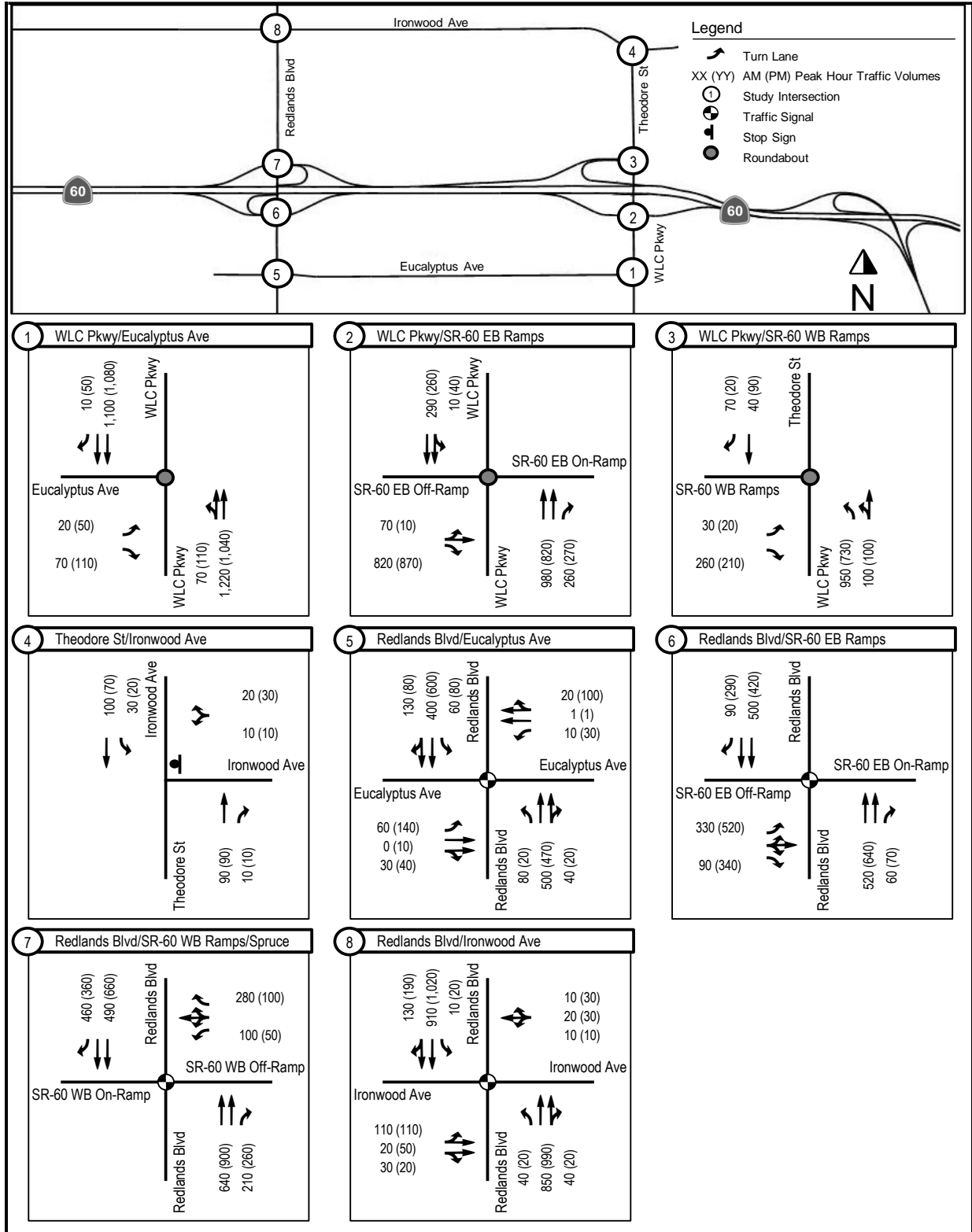


Exhibit 34: Turning Movement Volumes (PCE) - Alternative 6, 2025

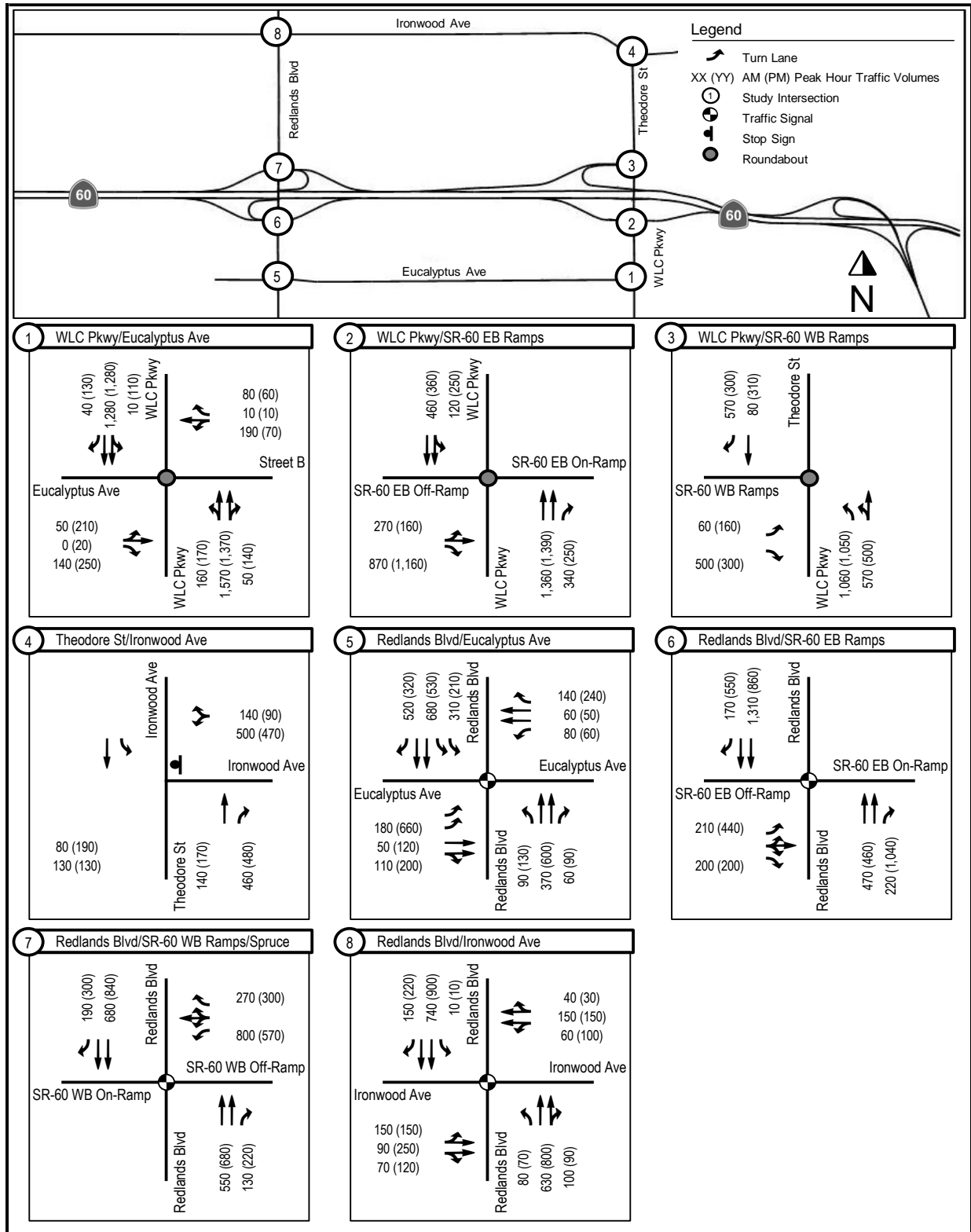


Exhibit 35: Turning Movement Volumes (PCE) - Alternative 6, 2045

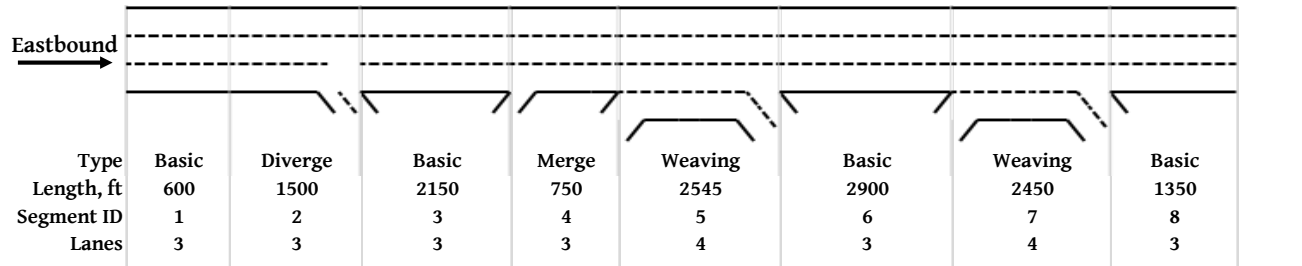
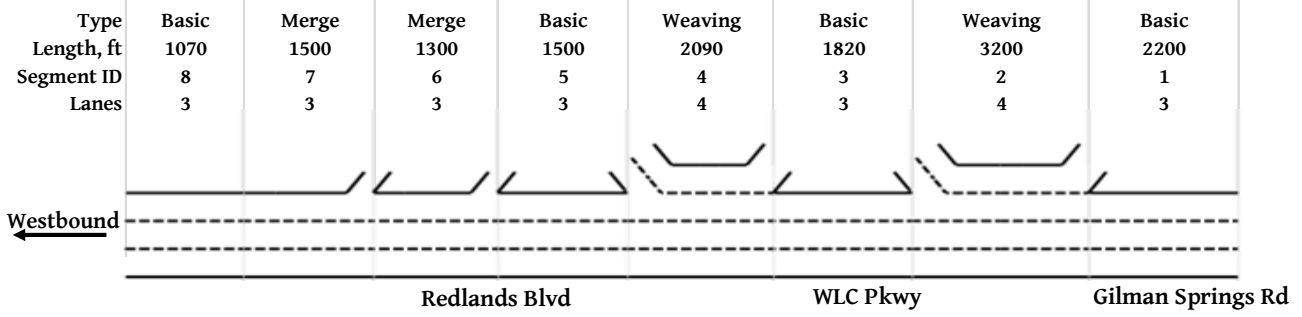
Freeway LOS

Exhibit 36 and Exhibit 37 describe the peak-hour traffic conditions on SR-60 for Alternative 6 in 2018 and 2025. The freeway mainline sections, weave sections, and ramps would all have an acceptable LOS in the short and medium term.

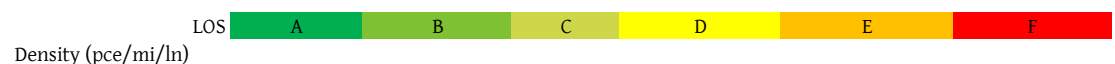
Exhibit 38 shows the freeway facilities LOS for Alternative 6 under 2045 assumptions. Alternative 6 would have the same segment (westbound SR-60 from the WLC Pkwy on-ramp to the Redlands Blvd off-ramp) operating over capacity in the AM Peak as the other build alternative. Alternative 6 does not have separate on-ramps from northbound and southbound WLC Pkwy removing a potentially congested merge area. If the eastbound off-ramp to Gilman Springs IC is not relocated eastward and widened to 2 lanes, the higher weaving volume (single on-ramp from NB and SB WLC Pkwy traffic) would result in worse congestion than for Alternative 2. If, however, the Gilman Springs Road interchange is upgraded as planned, this segment would operate acceptably for both alternatives.

Details of the LOS calculations for freeways under Alternative 6 can be found in Appendix J.

AM Peak Hour	7:00	18.0	18.9	17.1	15.2	14.4	13.3	11.7	9.2
	7:15	18.9	19.8	17.5	15.4	14.9	13.0	11.8	10.4
	7:30	17.7	18.6	16.3	14.4	14.9	11.4	10.1	8.4
	7:45	14.7	15.4	13.0	11.9	12.0	10.7	10.1	8.7
	8:00	16.0	16.8	15.0	13.5	14.2	9.8	8.7	7.4
	8:15	17.1	18.0	16.3	14.7	15.0	10.5	9.2	8.1
	8:30	18.3	19.3	17.7	15.0	17.0	9.2	7.9	7.5
	8:45	15.3	16.1	15.0	12.8	12.0	9.9	8.7	8.4
Max	C 18.9	B 19.8	C 17.7	B 15.4	B 17.0	B 13.3	B 11.8	A 10.4	
PM Peak Hour	16:00	18.7	19.6	18.0	15.9	15.9	12.1	10.1	10.0
	16:15	20.2	21.1	19.5	17.0	15.9	14.0	12.7	12.7
	16:30	20.3	21.2	19.4	17.2	16.0	13.4	11.6	11.0
	16:45	16.7	17.6	16.0	14.2	12.7	12.6	10.8	11.2
	17:00	19.0	19.9	18.4	16.1	14.2	14.3	12.4	12.6
	17:15	18.5	19.4	17.9	15.3	13.1	14.3	12.2	12.5
	17:30	18.9	19.8	17.5	15.4	14.3	13.1	11.1	10.9
	17:45	16.8	17.6	16.0	14.2	12.0	12.7	10.9	11.4
Max	C 20.3	C 21.2	C 19.5	B 17.2	B 16.0	B 14.3	B 12.7	B 12.7	



AM Peak Hour	7:00	14.7	16.4	13.3	12.8	11.0	10.8	8.7	9.4
	7:15	14.4	16.0	13.3	12.8	11.4	10.8	9.3	9.8
	7:30	15.5	17.3	14.1	13.5	11.7	11.3	9.8	10.1
	7:45	15.2	17.0	13.6	13.0	11.6	11.0	9.8	10.2
	8:00	12.8	14.3	10.8	10.4	9.5	7.3	6.5	6.8
	8:15	13.1	14.7	10.8	10.3	9.2	5.7	4.9	4.9
	8:30	14.2	15.9	12.5	11.9	10.8	8.0	6.9	6.9
	8:45	15.8	17.7	13.6	13.1	11.4	9.9	9.1	9.5
Max	B 15.8	A 17.7	B 14.1	B 13.5	B 11.7	B 11.3	A 9.8	A 10.2	
PM Peak Hour	16:00	18.5	20.6	15.3	14.5	13.1	14.6	12.5	12.1
	16:15	20.0	22.1	16.2	15.4	14.3	15.7	13.2	12.0
	16:30	20.5	22.6	16.7	15.9	14.8	13.9	12.4	10.7
	16:45	20.7	22.8	16.7	16.0	15.5	15.8	14.0	12.8
	17:00	19.7	21.8	15.8	15.0	13.8	14.2	11.9	11.1
	17:15	20.8	22.8	17.1	16.4	14.5	15.3	12.8	11.0
	17:30	17.9	20.0	14.8	14.0	13.4	13.2	11.5	10.0
	17:45	21.3	23.3	17.3	16.6	14.9	16.1	13.4	11.6
Max	C 21.3	B 23.3	B 17.3	B 16.6	B 15.5	B 16.1	B 14.0	B 12.8	



Density (pce/mi/ln)

Exhibit 37: Freeway Facility LOS - Alternative 6, 2025

8. COMPARISON OF ALTERNATIVES

This chapter presents a comparison of the alternatives in terms of their traffic operational performance to facilitate the selection of preferred alternatives for further study. The presentation focuses on points of difference and therefore does not discuss conditions that are common to all the alternatives.

Intersection LOS

Study intersections 4, 5, 6, 7, and 8 are identical for all Project alternatives and the LOS at these intersections cannot be used as a selection criterion. Only the LOS at intersections 1, 2, and 3 matter for the purposes of selecting an alternative. Similarly, since the LOS in 2018 and 2025 at Intersections 1, 2, and 3 would be good (C or better) for all alternatives, there is no need to compare them. The only intersection LOS results that matter are those for Intersections 1, 2, and 3 in 2045. These are shown in Exhibit 39.

Exhibit 39: Comparison of Intersection LOS under 2045 Conditions

Alt	Description	Traffic Control	1. WLC Pkwy and Eucalyptus Ave				2. WLC Pkwy and SR-60 EB Ramps				3. WLC Pkwy and SR-60 WB Ramps			
			AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
			Delay ¹	LOS	Delay	LOS	Delay ¹	LOS	Delay	LOS	Delay	LOS	Delay	LOS
1	No-Build	SSSC ²	>180	F	>180	F	>180	F	>180	F	>180	F	>180	F
2	Modified Partial Cloverleaf	Signal ³	48.1	D	50.3	D	8.7	A	13.3	B	28.4	C	20.9	C
6	Modified Partial Cloverleaf with Roundabout	RABT ⁴	13.5	B	19.7	C	10.1	B	14.3	B	13.3	B	14.7	B

Notes:
 1. Delay is reported in sec/veh.
 2. "SSSC" means "side-street stop-controlled." For SSSC intersections, delay and LOS for the worst performing approach are reported.
 3. For signalized intersections, average intersection delay and LOS are reported.
 4. "RABT" means "Roundabout." For roundabout intersections, average intersection delay and LOS are reported.

As can be seen from the exhibits, Alternative 1 (No Build) can be eliminated from consideration because it would not provide an acceptable intersection LOS while other alternatives would provide acceptable intersection LOS. Alternative 6 would perform better compared to Alternative 2 at the WLC Parkway/Eucalyptus intersection (LOS C vs. D) and at the WLC Parkway/SR-60 WB ramp intersection in the PM Peak (LOS B vs. C). At the WLC Parkway/SR-60 EB ramp intersection Alternative 2 performs better than Alternative 6 in the AM peak hour (LOS A vs. B) about the same as Alternative 2 in the PM peak hour (both LOS B). Alternative 6 has shorter queues on intersection approaches compared to Alternative 2.

Freeway Facilities LOS

Continuing the logic from the previous section, the freeway LOS are very good for all alternatives for 2018 and 2025, and so would not constitute a basis for selection among alternatives. Only the LOS in 2045, shown in Exhibit 40, shows a difference between alternatives and so could be used to select the preferred alternative. While all three alternatives fail to provide an acceptable westbound LOS in AM peak hour, the No Build alternative would fail for a longer duration (see Exhibit 41) and queue back to Gilman Springs Rd (see Exhibit 18), while the two Build alternatives would only be over capacity for one 15-minute interval and not have significant queuing. Eastbound SR-60 would operate over capacity for 45 minutes in PM peak with the No Build alternative and can be eliminated from consideration on that basis. The Build alternatives would all have an auxiliary lane between Redlands Blvd and WLC Parkway as well as WLC Parkway and Gilman Springs Road which would provide sufficient additional capacity to provide acceptable LOS.

Exhibit 40: Comparison of Freeway Segment LOS under 2045 Conditions

Freeway Segment	2045					
	AM Peak Hour			PM Peak Hour		
	Alt 1 No Build	Alt 2	Alt 6	Alt 1 No Build	Alt 2	Alt 6
Westbound SR-60						
Gilman Springs Rd to WLC Pkwy	F	D	D	D	C	C
WLC Pkwy to Redlands Blvd	F	F	F	E	D	D
Redlands Blvd to Moreno Beach Dr	E	E	E	D	D	D
Eastbound SR-60						
Moreno Beach Dr to Redlands Blvd	C	C	C	F	D	D
Redlands Blvd to WLC Pkwy	D	B	B	F	D	D
WLC Pkwy to Gilman Springs Rd	C	B	B	E	E	D

Exhibit 41: Comparison of Freeway Facilities LOS under 2045 Conditions

	AM Peak Period (2 hour)			PM Peak Period (2 hour)			
	Alt 1 No Build	Alt 2 Modified Partial Cloverleaf	Alt 6 Modified Partial Cloverleaf with Roundabouts	Alt 1 No Build	Alt 2 Modified Partial Cloverleaf	Alt 6 Modified Partial Cloverleaf with Roundabouts	
Westbound	Density (pc/mi/ln)	Avg. 32.6	26.1	26.1	23.0	21.0	21.0
		Max. 38.7	31.0	31.0	27.5	24.9	24.9
	Travel Time (minutes)	Avg. 2.9	2.7	2.7	2.5	2.6	2.6
		Max. 3.3	2.8	2.8	2.6	2.7	2.7
	Duration of LOS F (minutes)	60	15	15	0	0	0
	Total VHD (vehicle-hours)	114	72	72	33	45	45
Eastbound	Density (pc/mi/ln)	Avg. 17.7	15.0	14.9	38.2	26.4	26.2
		Max. 19.6	16.8	16.7	52.4	31.4	31.3
	Travel Time (minutes)	Avg. 2.3	2.3	2.3	3.1	2.4	2.5
		Max. 2.4	2.3	2.3	4.2	2.5	2.6
	Duration of LOS F (minutes)	0	0	0	45	0	0
	Total VHD (vehicle-hours)	17	13	14	163	53	54

9. CONCLUSIONS

Several conclusions can be made from the analysis described above:

- One alternative can be eliminated because it would not provide an adequate level-of-service (LOS). This is:
Alternative 1 (No-Build) features side-street stop-control at the two WLC Parkway ramp intersections. The capacity of this configuration is too low to accommodate the large traffic volumes associated with the projected future development.
- Two alternatives were found to provide acceptable LOS for both ramp terminal intersections and had only one segment of SR-60 that would operate over capacity (an improvement compared to Alternative 1). These were:

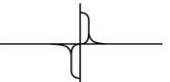
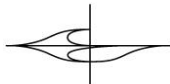
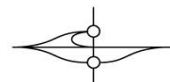
Alternative 2 (modified partial cloverleaf) would provide an acceptable LOS. However, the design would have to accommodate a large northbound-to-westbound left turn movement in both peak hours. Overlap phasing (eastbound-right-turn green during northbound-left phase and southbound-right-turn green during eastbound-left phase) at the westbound ramps intersection is needed to achieve acceptable LOS.

Alternative 6 (modified partial cloverleaf with roundabouts) would provide an acceptable LOS and, because trucks would not need to come to a complete stop, may have less air quality and noise impacts than the other alternatives. The lanes may need to be wider than usual and other modifications to standard roundabout design may be needed to accommodate the possibility of a high percentage of trucks.

Alternative 6 would result in lower average delays than Alternative 2 at two of the three critical intersections on WLC Pkwy for both AM and PM peak periods. At the third intersection both alternatives performs at LOS B or better. So, if the choice between the alternatives was based strictly on traffic operations then Alternative 6 would be preferred over Alternative 2. However, since either Alternative 2 or Alternative 6 would provide an acceptable LOS, other factors such as cost and other (non-traffic) impacts may be a more important basis for selecting the alternative¹¹.

¹¹ Other documents in the PA/ED will cover costs, environmental impacts, and other considerations.

Exhibit 42: Summary of Features and LOS by Alternative

Alternative	Key Features	2045 Intersection LOS		2045 Freeway Mainline LOS			Operational or Other Issues
		AM Pk-Hr	PM Pk-Hr	Mainline Section	AM Pk-Hr	PM Pk-Hr	
1 No-Build 	<ul style="list-style-type: none"> The WLC Pkwy bridge has only one lane in each direction so there is limited storage capacity and no separation between through movements and turning movements. The stop-controlled intersections have limited capacity to process traffic coming from the off-ramps. 	F (WB) F (EB)	F (WB) F (EB)	WB GSR-WLC Pkwy WB WLC Pkwy-Redlands EB Redlands-WLC Pkwy EB WLC Pkwy-GSR	F F D C	D E F E	Would not provide an adequate LOS for intersections or for SR-60
2 Modified Partial Cloverleaf 	<ul style="list-style-type: none"> The WB off-ramp is as far as possible from the GSR IC, thus providing the maximum weaving distance possible under the circumstances. Shared by Alts 2 & 6. If the GSR off-ramp is not moved to the east (as assumed in this study), the EB weave from WLC Pkwy to GSR would be too short (approximately 950 ft.), which could create congestion. Shared by Alts 2 & 6. The heavy NB-to-WB movement along WLC Pkwy coming from the WLC in the PM peak hour will be required to make a left turn to get onto WB SR-60. Shared by Alts 2 & 6 The southbound movements along WLC Pkwy would be able to make right turns to get onto SR-60 in either the EB or WB directions. 	C (WB) A (EB)	C (WB) B (EB)	WB GSR-WLC Pkwy WB WLC Pkwy-Redlands EB Redlands-WLC Pkwy EB WLC Pkwy-GSR	D F B B	C D D E	Overlap phasing at the WB Ramps intersection is necessary to achieve acceptable LOS. Multi-use trail along the east side of WLC Pkwy minimizes active transportation conflicts. WB weaving segment from WLC Pkwy to Redlands is short and may operate over capacity. SB-to-EB Loop On-ramp merge operates near capacity.
6 Modified Partial Cloverleaf with Roundabout 	<ul style="list-style-type: none"> The WB off-ramp is as far as possible from the GSR IC, thus providing the maximum weave distance possible under the circumstances. Shared by Alts 2 & 6. If the GSR off-ramp is not moved to the east (as assumed in this study), the EB weave from WLC Pkwy to GSR would be too short (approximately 950 ft.), which could create congestion. Shared by Alts 2 & 6. The heavy NB-to-WB movement along WLC Pkwy coming from the WLC in the PM peak hour will be required to make a 270-degree roundabout movement to get onto WB SR-60. Shared by Alts 2 & 6. Vehicles exiting SR-60 from either the EB or WB directions to go southbound on WLC Pkwy would be able to make free right turns. The narrower bridge required for this configuration would reduce construction costs compared to the other build alternatives Trucks (and other vehicles) would not have to stop, thus reducing noise and air quality impacts 	B (WB) B (EB)	B (WB) B (EB)	WB GSR-WLC Pkwy WB WLC Pkwy-Redlands EB Redlands-WLC Pkwy EB WLC Pkwy-GSR	D F B B	C D D D	Design would need to take into account the possibility of a high percentage of trucks. Multi-use trail along the east side of WLC Pkwy minimizes active transportation conflicts. WB weaving segment from WLC Pkwy to Redlands is short and may operate over capacity.

Items in red font are potential causes for elimination from consideration.

Abbreviations: "GSR" is Gilman Springs Road, "IC" is Interchange, "NB" = Northbound, "SB" is Southbound, "EB" is Eastbound, "WB" is Westbound

Appendix A

Traffic Counts

Appendix A-1

Freeway Counts

13. SR-60 WB - Gilman Springs Road to Theodore Street

	Cars & Trailers	Large 2 Axle	3 Axle	4 Axle	5 Axle	6+ Axle	Buses & RV's	Motorcycles	Bicycles	Medium Trucks	Combined Total
7:00	245	3	2	2	22	0	0	0	0	5	279
7:15	279	1	1	1	28	1	0	0	0	5	316
7:30	228	0	0	2	25	0	0	1	0	1	257
7:45	225	3	0	1	29	2	1	3	0	2	266
8:00	190	5	0	0	26	3	2	1	0	0	227
8:15	213	1	0	0	30	0	2	0	0	0	246
8:30	186	5	1	1	31	2	4	0	0	0	230
8:45	201	7	3	0	36	2	2	0	0	4	255
Total	1767	25	7	7	227	10	11	5	0	17	2076

	Cars & Trailers	Large 2 Axle	3 Axle	4 Axle	5 Axle	6+ Axle	Buses & RV's	Motorcycles	Bicycles	Medium Trucks	Combined Total
16:00	318	10	1	1	28	0	1	0	0	2	361
16:15	385	14	4	1	41	2	2	4	0	4	457
16:30	342	8	1	1	37	3	2	1	0	0	395
16:45	362	8	0	2	28	0	1	1	0	1	403
17:00	397	9	3	3	36	0	3	2	0	1	454
17:15	399	9	1	1	36	1	2	1	0	0	450
17:30	342	6	1	0	35	4	2	1	0	1	392
17:45	364	6	2	1	36	0	3	0	0	0	412
Total	2909	70	13	10	277	10	16	10	0	9	3324

14. SR-60 EB - Gilman Springs Road to Theodore Street

	Cars & Trailers	Large 2 Axle	3 Axle	4 Axle	5 Axle	6+ Axle	Buses & RV's	Motorcycles	Bicycles	Medium Trucks	Combined Total
7:00	321	8	3	0	17	0	0	3	0	4	356
7:15	301	20	6	0	25	0	0	0	0	1	353
7:30	327	13	2	1	17	1	1	1	0	2	365
7:45	303	15	3	1	37	0	0	0	0	1	360
8:00	246	10	1	2	19	3	1	1	0	2	285
8:15	233	12	0	0	20	1	1	1	0	2	270
8:30	259	14	3	0	38	0	1	1	0	1	317
8:45	306	9	2	1	39	1	3	1	0	2	364
Total	2296	101	20	5	212	6	7	8	0	15	2670

	Cars & Trailers	Large 2 Axle	3 Axle	4 Axle	5 Axle	6+ Axle	Buses & RV's	Motorcycles	Bicycles	Medium Trucks	Combined Total
16:00	337	7	0	1	38	0	2	3	0	0	388
16:15	334	4	1	0	32	0	3	3	0	2	379
16:30	332	5	3	1	28	1	1	6	0	2	379
16:45	361	5	1	1	23	0	1	2	0	2	396
17:00	348	3	1	0	27	0	1	0	0	3	383
17:15	337	6	1	1	23	0	3	2	0	2	375
17:30	306	2	1	0	19	0	0	0	0	1	329
17:45	334	2	1	1	35	1	0	2	0	3	379
Total	2689	34	9	5	225	2	11	18	0	15	3008

15. Gilman Springs Road WB On-Ramp to SR-60

	Cars & Trailers	Large 2 Axle	3 Axle	4 Axle	5 Axle	6+ Axle	Buses & RV's	Motorcycles	Bicycles	Medium Trucks	Combined Total
7:00	222	2	0	0	4	0	0	1	0	1	230
7:15	173	2	0	0	4	0	0	1	0	2	182
7:30	173	3	0	0	4	0	0	1	0	2	183
7:45	155	3	0	0	0	1	0	3	0	3	165
8:00	149	2	0	0	1	0	0	1	0	1	154
8:15	150	1	0	0	1	0	0	0	0	0	152
8:30	104	1	0	0	1	0	0	2	0	1	109
8:45	103	3	1	0	3	0	2	1	0	2	115
Total	1229	17	1	0	18	1	2	10	0	12	1290

	Cars & Trailers	Large 2 Axle	3 Axle	4 Axle	5 Axle	6+ Axle	Buses & RV's	Motorcycles	Bicycles	Medium Trucks	Combined Total
16:00	101	5	1	0	0	0	0	1	0	2	110
16:15	115	4	0	0	1	0	0	1	0	2	123
16:30	134	2	0	0	0	0	1	1	0	2	140
16:45	92	3	0	0	0	0	0	0	0	2	97
17:00	107	3	1	0	1	0	0	0	0	0	112
17:15	103	0	0	0	3	0	1	0	0	1	108
17:30	112	2	1	0	3	0	0	1	0	2	121
17:45	86	1	0	0	3	0	0	0	0	1	91
Total	850	20	3	0	11	0	2	4	0	12	902

16. Gilman Springs Road EB Off-Ramp from SR-60

	Cars & Trailers	Large 2 Axle	3 Axle	4 Axle	5 Axle	6+ Axle	Buses & RV's	Motorcycles	Bicycles	Medium Trucks	Combined Total
7:00	92	3	1	0	0	1	0	0	0	1	98
7:15	95	2	0	0	4	0	0	1	0	0	102
7:30	104	4	0	0	3	0	0	1	0	0	112
7:45	94	4	0	0	3	1	0	0	0	2	104
8:00	72	2	1	0	1	0	0	0	0	0	76
8:15	67	5	0	0	1	0	0	1	0	1	75
8:30	89	3	0	0	3	0	0	0	0	0	95
8:45	87	2	1	0	0	1	0	0	0	2	93
Total	700	25	3	0	15	3	0	3	0	6	755

	Cars & Trailers	Large 2 Axle	3 Axle	4 Axle	5 Axle	6+ Axle	Buses & RV's	Motorcycles	Bicycles	Medium Trucks	Combined Total
16:00	176	0	0	0	1	0	0	1	0	0	178
16:15	217	5	1	0	1	0	0	0	0	0	224
16:30	224	4	1	0	0	1	0	0	0	0	230
16:45	218	2	0	0	2	0	0	2	0	0	224
17:00	193	1	0	0	3	0	1	1	0	0	199
17:15	246	1	0	0	0	0	0	2	0	2	251
17:30	214	0	0	0	2	1	0	0	0	0	217
17:45	254	4	0	0	1	0	0	0	0	1	260
Total	1742	17	2	0	10	2	1	6	0	3	1783

Appendix A-2

Arterial Counts

Counts Unlimited, Inc

City of Moreno Valley
 Theodore Street
 B/ State Route 60 Eastbound - Fir Avenue
 24 Hour Directional Classification Count

PO Box 1178
 Corona, CA 92878
 Phone: 951-268-6268
 email: counts@countsunlimited.com

MRV002C
 Site Code: 098-18079

Northbound

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
01/30/18	1	6	0	0	1	1	0	0	0	0	0	0	0	9
01:00	1	2	0	0	0	1	0	0	0	0	0	0	0	4
02:00	0	2	1	0	1	0	0	0	0	0	0	0	0	4
03:00	0	1	1	0	0	0	0	0	0	0	1	0	0	3
04:00	0	5	2	0	0	0	0	0	0	0	0	0	0	7
05:00	0	10	2	0	1	0	0	0	0	0	0	0	0	13
06:00	1	21	3	0	5	1	0	0	0	0	0	0	0	31
07:00	1	25	5	0	3	2	0	2	0	0	0	0	0	38
08:00	1	45	11	0	3	1	0	0	1	0	0	0	0	62
09:00	1	11	11	0	3	1	0	1	0	0	0	0	0	28
10:00	2	26	11	1	3	1	0	0	0	0	0	0	0	44
11:00	1	30	13	0	3	1	0	0	0	0	0	0	0	48
12 PM	1	39	14	0	2	1	0	0	2	0	0	0	0	59
13:00	3	42	10	0	3	3	0	1	0	0	0	0	0	62
14:00	3	40	8	1	4	3	0	0	0	0	0	0	0	59
15:00	2	53	9	0	4	2	0	0	1	0	0	0	0	71
16:00	5	42	7	0	0	2	0	2	0	0	0	0	0	58
17:00	5	50	7	0	3	3	0	0	0	0	0	0	0	68
18:00	2	44	5	0	1	2	0	0	0	0	0	0	0	54
19:00	1	15	0	0	0	1	0	0	0	0	0	0	0	17
20:00	0	16	3	0	0	0	0	1	1	0	0	0	0	21
21:00	2	31	5	0	0	2	0	0	0	0	0	0	0	40
22:00	2	11	4	0	0	2	0	0	1	0	0	0	0	20
23:00	1	2	1	0	1	0	0	0	0	0	0	0	0	5
Total	36	569	133	2	41	30	0	7	6	0	1	0	0	825
Percent	4.4%	69.0%	16.1%	0.2%	5.0%	3.6%	0.0%	0.8%	0.7%	0.0%	0.1%	0.0%	0.0%	
AM Peak	10:00	08:00	11:00	10:00	06:00	07:00		07:00	08:00		03:00			08:00
Vol.	2	45	13	1	5	2		2	1		1			62
PM Peak	16:00	15:00	12:00	14:00	14:00	13:00		16:00	12:00					15:00
Vol.	5	53	14	1	4	3		2	2					71
Grand Total	36	569	133	2	41	30	0	7	6	0	1	0	0	825
Percent	4.4%	69.0%	16.1%	0.2%	5.0%	3.6%	0.0%	0.8%	0.7%	0.0%	0.1%	0.0%	0.0%	

Counts Unlimited, Inc

City of Moreno Valley
 Theodore Street
 B/ State Route 60 Eastbound - Fir Avenue
 24 Hour Directional Classification Count

PO Box 1178
 Corona, CA 92878
 Phone: 951-268-6268
 email: counts@countsunlimited.com

MRV002C
 Site Code: 098-18079

Southbound

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
01/30/18	0	6	1	0	1	0	0	0	1	0	0	0	0	9
01:00	1	7	0	0	0	1	0	0	2	0	0	0	0	11
02:00	2	4	1	0	0	2	0	0	2	0	0	0	0	11
03:00	2	10	2	0	0	2	0	0	1	0	0	0	0	17
04:00	1	64	22	0	3	1	0	0	0	0	0	0	0	91
05:00	1	76	13	0	2	1	0	2	2	0	0	0	0	97
06:00	2	27	7	0	3	2	0	0	0	0	0	0	0	41
07:00	5	49	12	0	3	5	0	0	0	0	0	0	0	74
08:00	5	82	24	1	2	5	0	1	2	0	0	0	0	122
09:00	8	27	14	1	9	7	0	1	4	0	0	0	0	71
10:00	3	30	12	2	7	5	0	2	3	0	0	0	0	64
11:00	7	37	12	1	4	6	0	0	8	0	0	0	0	75
12 PM	5	40	8	1	1	5	0	2	8	0	1	0	0	71
13:00	7	52	17	1	3	6	0	0	2	0	1	0	0	89
14:00	8	38	13	0	4	7	0	1	1	0	0	0	0	72
15:00	4	32	8	1	4	2	0	2	1	0	0	0	0	54
16:00	7	40	11	0	5	3	0	0	2	0	0	0	0	68
17:00	7	27	8	0	7	4	0	0	0	0	0	0	0	53
18:00	3	28	9	0	2	4	1	1	0	0	0	0	0	48
19:00	2	46	7	0	1	3	0	1	2	0	0	0	0	62
20:00	5	31	11	1	1	4	0	0	15	0	0	0	0	68
21:00	3	70	9	0	2	3	0	1	13	0	0	0	0	101
22:00	2	17	4	0	0	3	0	0	8	0	0	0	0	34
23:00	3	7	2	0	0	3	0	0	3	0	0	0	0	18
Total	93	847	227	9	64	84	1	14	80	0	2	0	0	1421
Percent	6.5%	59.6%	16.0%	0.6%	4.5%	5.9%	0.1%	1.0%	5.6%	0.0%	0.1%	0.0%	0.0%	
AM Peak	09:00	08:00	08:00	10:00	09:00	09:00		05:00	11:00					08:00
Vol.	8	82	24	2	9	7		2	8					122
PM Peak	14:00	21:00	13:00	12:00	17:00	14:00	18:00	12:00	20:00		12:00			21:00
Vol.	8	70	17	1	7	7	1	2	15		1			101
Grand Total	93	847	227	9	64	84	1	14	80	0	2	0	0	1421
Percent	6.5%	59.6%	16.0%	0.6%	4.5%	5.9%	0.1%	1.0%	5.6%	0.0%	0.1%	0.0%	0.0%	

Counts Unlimited, Inc

City of Moreno Valley
 Theodore Street
 B/ State Route 60 Eastbound - Fir Avenue
 24 Hour Directional Classification Count

PO Box 1178
 Corona, CA 92878
 Phone: 951-268-6268
 email: counts@countsunlimited.com

MRV002C
 Site Code: 098-18079

Northbound, Southbound

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
01/30/18	1	12	1	0	2	1	0	0	1	0	0	0	0	18
01:00	2	9	0	0	0	2	0	0	2	0	0	0	0	15
02:00	2	6	2	0	1	2	0	0	2	0	0	0	0	15
03:00	2	11	3	0	0	2	0	0	1	0	1	0	0	20
04:00	1	69	24	0	3	1	0	0	0	0	0	0	0	98
05:00	1	86	15	0	3	1	0	2	2	0	0	0	0	110
06:00	3	48	10	0	8	3	0	0	0	0	0	0	0	72
07:00	6	74	17	0	6	7	0	2	0	0	0	0	0	112
08:00	6	127	35	1	5	6	0	1	3	0	0	0	0	184
09:00	9	38	25	1	12	8	0	2	4	0	0	0	0	99
10:00	5	56	23	3	10	6	0	2	3	0	0	0	0	108
11:00	8	67	25	1	7	7	0	0	8	0	0	0	0	123
12 PM	6	79	22	1	3	6	0	2	10	0	1	0	0	130
13:00	10	94	27	1	6	9	0	1	2	0	1	0	0	151
14:00	11	78	21	1	8	10	0	1	1	0	0	0	0	131
15:00	6	85	17	1	8	4	0	2	2	0	0	0	0	125
16:00	12	82	18	0	5	5	0	2	2	0	0	0	0	126
17:00	12	77	15	0	10	7	0	0	0	0	0	0	0	121
18:00	5	72	14	0	3	6	1	1	0	0	0	0	0	102
19:00	3	61	7	0	1	4	0	1	2	0	0	0	0	79
20:00	5	47	14	1	1	4	0	1	16	0	0	0	0	89
21:00	5	101	14	0	2	5	0	1	13	0	0	0	0	141
22:00	4	28	8	0	0	5	0	0	9	0	0	0	0	54
23:00	4	9	3	0	1	3	0	0	3	0	0	0	0	23
Total	129	1416	360	11	105	114	1	21	86	0	3	0	0	2246
Percent	5.7%	63.0%	16.0%	0.5%	4.7%	5.1%	0.0%	0.9%	3.8%	0.0%	0.1%	0.0%	0.0%	
AM Peak	09:00	08:00	08:00	10:00	09:00	09:00		05:00	11:00		03:00			08:00
Vol.	9	127	35	3	12	8		2	8		1			184
PM Peak	16:00	21:00	13:00	12:00	17:00	14:00	18:00	12:00	20:00		12:00			13:00
Vol.	12	101	27	1	10	10	1	2	16		1			151
Grand Total	129	1416	360	11	105	114	1	21	86	0	3	0	0	2246
Percent	5.7%	63.0%	16.0%	0.5%	4.7%	5.1%	0.0%	0.9%	3.8%	0.0%	0.1%	0.0%	0.0%	

Appendix A-3a

Intersection Counts (Used in Analysis)

City of Moreno Valley
 N/S: Theodore Street
 E/W: Eucalyptus Avenue
 Weather: Clear

File Name : 04_MRV_Theodore_Eucalyptus AM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- Cars & Trailers - Large 2 Axle Vehicles - 3 Axle Vehicles - 4 Axle Trucks - 5 Axle Trucks - 6+ Axle Trucks - Buses & RV's -
 Motorcycles - Bicycles - Medium Truck

Start Time	Theodore Street Southbound			Theodore Street Northbound			Eucalyptus Avenue Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
07:00 AM	7	7	14	1	8	9	1	0	1	24
07:15 AM	17	11	28	4	11	15	2	0	2	45
07:30 AM	15	15	30	6	12	18	0	2	2	50
07:45 AM	14	16	30	7	13	20	2	2	4	54
Total	53	49	102	18	44	62	5	4	9	173
08:00 AM	10	23	33	15	12	27	2	1	3	63
08:15 AM	12	34	46	10	10	20	2	4	6	72
08:30 AM	12	26	38	6	12	18	9	27	36	92
08:45 AM	10	17	27	2	12	14	4	5	9	50
Total	44	100	144	33	46	79	17	37	54	277
Grand Total	97	149	246	51	90	141	22	41	63	450
Apprch %	39.4	60.6		36.2	63.8		34.9	65.1		
Total %	21.6	33.1	54.7	11.3	20	31.3	4.9	9.1	14	
Cars & Trailers	45	117	162	47	44	91	13	37	50	303
% Cars & Trailers	46.4	78.5	65.9	92.2	48.9	64.5	59.1	90.2	79.4	67.3
Large 2 Axle Vehicles	0	1	1	0	0	0	0	0	0	1
% Large 2 Axle Vehicles	0	0.7	0.4	0	0	0	0	0	0	0.2
3 Axle Vehicles	0	2	2	0	0	0	1	0	1	3
% 3 Axle Vehicles	0	1.3	0.8	0	0	0	4.5	0	1.6	0.7
4 Axle Trucks	1	2	3	0	0	0	1	0	1	4
% 4 Axle Trucks	1	1.3	1.2	0	0	0	4.5	0	1.6	0.9
5 Axle Trucks	43	13	56	0	40	40	3	0	3	99
% 5 Axle Trucks	44.3	8.7	22.8	0	44.4	28.4	13.6	0	4.8	22
6+ Axle Trucks	0	1	1	0	0	0	0	0	0	1
% 6+ Axle Trucks	0	0.7	0.4	0	0	0	0	0	0	0.2
Buses & RV's	0	0	0	0	0	0	0	0	0	0
% Buses & RV's	0	0	0	0	0	0	0	0	0	0
Motorcycles	0	1	1	0	0	0	0	0	0	1
% Motorcycles	0	0.7	0.4	0	0	0	0	0	0	0.2
Bicycles	0	1	1	0	0	0	0	1	1	2
% Bicycles	0	0.7	0.4	0	0	0	0	2.4	1.6	0.4
Medium Truck	8	11	19	4	6	10	4	3	7	36
% Medium Truck	8.2	7.4	7.7	7.8	6.7	7.1	18.2	7.3	11.1	8

Start Time	Theodore Street Southbound			Theodore Street Northbound			Eucalyptus Avenue Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:45 AM										
07:45 AM	14	16	30	7	13	20	2	2	4	54
08:00 AM	10	23	33	15	12	27	2	1	3	63
08:15 AM	12	34	46	10	10	20	2	4	6	72
08:30 AM	12	26	38	6	12	18	9	27	36	92
Total Volume	48	99	147	38	47	85	15	34	49	281
% App. Total	32.7	67.3		44.7	55.3		30.6	69.4		
PHF	.857	.728	.799	.633	.904	.787	.417	.315	.340	.764

City of Moreno Valley
 N/S: Theodore Street
 E/W: Eucalyptus Avenue
 Weather: Clear

File Name : 04_MRV_Theodore_Eucalyptus AM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- Cars & Trailers

Start Time	Theodore Street Southbound			Theodore Street Northbound			Eucalyptus Avenue Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
07:00 AM	5	4	9	1	7	8	0	0	0	17
07:15 AM	10	6	16	4	10	14	1	0	1	31
07:30 AM	9	10	19	5	6	11	0	1	1	31
07:45 AM	4	13	17	7	6	13	1	1	2	32
Total	28	33	61	17	29	46	2	2	4	111
08:00 AM	6	19	25	13	3	16	1	1	2	43
08:15 AM	3	29	32	9	5	14	1	4	5	51
08:30 AM	3	22	25	6	5	11	6	25	31	67
08:45 AM	5	14	19	2	2	4	3	5	8	31
Total	17	84	101	30	15	45	11	35	46	192
Grand Total	45	117	162	47	44	91	13	37	50	303
Apprch %	27.8	72.2		51.6	48.4		26	74		
Total %	14.9	38.6	53.5	15.5	14.5	30	4.3	12.2	16.5	

Start Time	Theodore Street Southbound			Theodore Street Northbound			Eucalyptus Avenue Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
07:45 AM	4	13	17	7	6	13	1	1	2	32
08:00 AM	6	19	25	13	3	16	1	1	2	43
08:15 AM	3	29	32	9	5	14	1	4	5	51
08:30 AM	3	22	25	6	5	11	6	25	31	67
Total Volume	16	83	99	35	19	54	9	31	40	193
% App. Total	16.2	83.8		64.8	35.2		22.5	77.5		
PHF	.667	.716	.773	.673	.792	.844	.375	.310	.323	.720

Peak Hour Analysis From 07:45 AM to 08:30 AM - Peak 1 of 1
 Peak Hour for Entire Intersection Begins at 07:45 AM

City of Moreno Valley
 N/S: Theodore Street
 E/W: Eucalyptus Avenue
 Weather: Clear

File Name : 04_MRV_Theodore_Eucalyptus AM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- Large 2 Axle Vehicles

Start Time	Theodore Street Southbound			Theodore Street Northbound			Eucalyptus Avenue Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
07:00 AM	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	1	1	0	0	0	0	0	0	1
07:45 AM	0	0	0	0	0	0	0	0	0	0
Total	0	1	1	0	0	0	0	0	0	1
08:00 AM	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
Grand Total	0	1	1	0	0	0	0	0	0	1
Apprch %	0	100		0	0		0	0		
Total %	0	100	100	0	0	0	0	0	0	

Start Time	Theodore Street Southbound			Theodore Street Northbound			Eucalyptus Avenue Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
07:45 AM	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0		0	0		0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

Peak Hour Analysis From 07:45 AM to 08:30 AM - Peak 1 of 1
 Peak Hour for Entire Intersection Begins at 07:45 AM

City of Moreno Valley
 N/S: Theodore Street
 E/W: Eucalyptus Avenue
 Weather: Clear

File Name : 04_MR_V_Theodore_Eucalyptus AM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- 3 Axle Vehicles

Start Time	Theodore Street Southbound			Theodore Street Northbound			Eucalyptus Avenue Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
07:00 AM	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	1	1	0	0	0	0	0	0	1
08:15 AM	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	1	0	1	1
08:45 AM	0	1	1	0	0	0	0	0	0	1
Total	0	2	2	0	0	0	1	0	1	3
Grand Total	0	2	2	0	0	0	1	0	1	3
Apprch %	0	100		0	0		100	0		
Total %	0	66.7	66.7	0	0	0	33.3	0	33.3	

Start Time	Theodore Street Southbound			Theodore Street Northbound			Eucalyptus Avenue Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
07:45 AM	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	1	1	0	0	0	0	0	0	1
08:15 AM	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	1	0	1	1
Total Volume	0	1	1	0	0	0	1	0	1	2
% App. Total	0	100		0	0		100	0		
PHF	.000	.250	.250	.000	.000	.000	.250	.000	.250	.500

Peak Hour Analysis From 07:45 AM to 08:30 AM - Peak 1 of 1
 Peak Hour for Entire Intersection Begins at 07:45 AM

City of Moreno Valley
 N/S: Theodore Street
 E/W: Eucalyptus Avenue
 Weather: Clear

File Name : 04_MRV_Theodore_Eucalyptus AM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- 4 Axle Trucks

Start Time	Theodore Street Southbound			Theodore Street Northbound			Eucalyptus Avenue Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
07:00 AM	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0
07:45 AM	1	1	2	0	0	0	0	0	0	2
Total	1	1	2	0	0	0	0	0	0	2
08:00 AM	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	1	1	0	0	0	1	0	1	2
08:30 AM	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0
Total	0	1	1	0	0	0	1	0	1	2
Grand Total	1	2	3	0	0	0	1	0	1	4
Apprch %	33.3	66.7		0	0		100	0		
Total %	25	50	75	0	0	0	25	0	25	

Start Time	Theodore Street Southbound			Theodore Street Northbound			Eucalyptus Avenue Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
07:45 AM	1	1	2	0	0	0	0	0	0	2
08:00 AM	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	1	1	0	0	0	1	0	1	2
08:30 AM	0	0	0	0	0	0	0	0	0	0
Total Volume	1	2	3	0	0	0	1	0	1	4
% App. Total	33.3	66.7		0	0		100	0		
PHF	.250	.500	.375	.000	.000	.000	.250	.000	.250	.500

Peak Hour Analysis From 07:45 AM to 08:30 AM - Peak 1 of 1
 Peak Hour for Entire Intersection Begins at 07:45 AM

City of Moreno Valley
 N/S: Theodore Street
 E/W: Eucalyptus Avenue
 Weather: Clear

File Name : 04_MRV_Theodore_Eucalyptus AM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- 5 Axle Trucks

Start Time	Theodore Street Southbound			Theodore Street Northbound			Eucalyptus Avenue Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
07:00 AM	0	1	1	0	0	0	0	0	0	1
07:15 AM	7	3	10	0	1	1	1	0	1	12
07:30 AM	5	0	5	0	6	6	0	0	0	11
07:45 AM	8	1	9	0	6	6	1	0	1	16
Total	20	5	25	0	13	13	2	0	2	40
08:00 AM	4	1	5	0	8	8	1	0	1	14
08:15 AM	7	1	8	0	4	4	0	0	0	12
08:30 AM	7	4	11	0	7	7	0	0	0	18
08:45 AM	5	2	7	0	8	8	0	0	0	15
Total	23	8	31	0	27	27	1	0	1	59
Grand Total	43	13	56	0	40	40	3	0	3	99
Apprch %	76.8	23.2		0	100		100	0		
Total %	43.4	13.1	56.6	0	40.4	40.4	3	0	3	

Start Time	Theodore Street Southbound			Theodore Street Northbound			Eucalyptus Avenue Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
07:45 AM	8	1	9	0	6	6	1	0	1	16
08:00 AM	4	1	5	0	8	8	1	0	1	14
08:15 AM	7	1	8	0	4	4	0	0	0	12
08:30 AM	7	4	11	0	7	7	0	0	0	18
Total Volume	26	7	33	0	25	25	2	0	2	60
% App. Total	78.8	21.2		0	100		100	0		
PHF	.813	.438	.750	.000	.781	.781	.500	.000	.500	.833

Peak Hour Analysis From 07:45 AM to 08:30 AM - Peak 1 of 1
 Peak Hour for Entire Intersection Begins at 07:45 AM

City of Moreno Valley
 N/S: Theodore Street
 E/W: Eucalyptus Avenue
 Weather: Clear

File Name : 04_MRV_Theodore_Eucalyptus AM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- 6+ Axle Trucks

Start Time	Theodore Street Southbound			Theodore Street Northbound			Eucalyptus Avenue Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
07:00 AM	0	1	1	0	0	0	0	0	0	1
07:15 AM	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0
Total	0	1	1	0	0	0	0	0	0	1
08:00 AM	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
Grand Total	0	1	1	0	0	0	0	0	0	1
Apprch %	0	100		0	0		0	0		
Total %	0	100	100	0	0	0	0	0	0	

Start Time	Theodore Street Southbound			Theodore Street Northbound			Eucalyptus Avenue Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
07:45 AM	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0		0	0		0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

Peak Hour Analysis From 07:45 AM to 08:30 AM - Peak 1 of 1
 Peak Hour for Entire Intersection Begins at 07:45 AM

City of Moreno Valley
 N/S: Theodore Street
 E/W: Eucalyptus Avenue
 Weather: Clear

File Name : 04_MR_V_Theodore_Eucalyptus AM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- Buses & RV's

Start Time	Theodore Street Southbound			Theodore Street Northbound			Eucalyptus Avenue Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
07:00 AM	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0
Apprch %	0	0		0	0		0	0		
Total %										

Start Time	Theodore Street Southbound			Theodore Street Northbound			Eucalyptus Avenue Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
Peak Hour Analysis From 07:45 AM to 08:30 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:45 AM										
07:45 AM	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0		0	0		0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

City of Moreno Valley
 N/S: Theodore Street
 E/W: Eucalyptus Avenue
 Weather: Clear

File Name : 04_MRV_Theodore_Eucalyptus AM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- Motorcycles

Start Time	Theodore Street Southbound			Theodore Street Northbound			Eucalyptus Avenue Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
07:00 AM	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	1	1	0	0	0	0	0	0	1
07:30 AM	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0
Total	0	1	1	0	0	0	0	0	0	1
08:00 AM	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
Grand Total	0	1	1	0	0	0	0	0	0	1
Apprch %	0	100		0	0		0	0		
Total %	0	100	100	0	0	0	0	0	0	

Start Time	Theodore Street Southbound			Theodore Street Northbound			Eucalyptus Avenue Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
07:45 AM	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0		0	0		0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

Peak Hour Analysis From 07:45 AM to 08:30 AM - Peak 1 of 1
 Peak Hour for Entire Intersection Begins at 07:45 AM

City of Moreno Valley
 N/S: Theodore Street
 E/W: Eucalyptus Avenue
 Weather: Clear

File Name : 04_MRJV_Theodore_Eucalyptus AM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- Bicycles

Start Time	Theodore Street Southbound			Theodore Street Northbound			Eucalyptus Avenue Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
07:00 AM	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	1	1	0	0	0	0	0	0	1
07:30 AM	0	0	0	0	0	0	0	1	1	1
07:45 AM	0	0	0	0	0	0	0	0	0	0
Total	0	1	1	0	0	0	0	1	1	2
08:00 AM	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
Grand Total	0	1	1	0	0	0	0	1	1	2
Apprch %	0	100		0	0		0	100		
Total %	0	50	50	0	0	0	0	50	50	

Start Time	Theodore Street Southbound			Theodore Street Northbound			Eucalyptus Avenue Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
07:45 AM	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0		0	0		0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

Peak Hour Analysis From 07:45 AM to 08:30 AM - Peak 1 of 1
 Peak Hour for Entire Intersection Begins at 07:45 AM

City of Moreno Valley
 N/S: Theodore Street
 E/W: Eucalyptus Avenue
 Weather: Clear

File Name : 04_MRJV_Theodore_Eucalyptus AM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- Medium Truck

Start Time	Theodore Street Southbound			Theodore Street Northbound			Eucalyptus Avenue Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
07:00 AM	2	1	3	0	1	1	1	0	1	5
07:15 AM	0	0	0	0	0	0	0	0	0	0
07:30 AM	1	4	5	1	0	1	0	0	0	6
07:45 AM	1	1	2	0	1	1	0	1	1	4
Total	4	6	10	1	2	3	1	1	2	15
08:00 AM	0	2	2	2	1	3	0	0	0	5
08:15 AM	2	3	5	1	1	2	0	0	0	7
08:30 AM	2	0	2	0	0	0	2	2	4	6
08:45 AM	0	0	0	0	2	2	1	0	1	3
Total	4	5	9	3	4	7	3	2	5	21
Grand Total	8	11	19	4	6	10	4	3	7	36
Apprch %	42.1	57.9		40	60		57.1	42.9		
Total %	22.2	30.6	52.8	11.1	16.7	27.8	11.1	8.3	19.4	

Start Time	Theodore Street Southbound			Theodore Street Northbound			Eucalyptus Avenue Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
07:45 AM	1	1	2	0	1	1	0	1	1	4
08:00 AM	0	2	2	2	1	3	0	0	0	5
08:15 AM	2	3	5	1	1	2	0	0	0	7
08:30 AM	2	0	2	0	0	0	2	2	4	6
Total Volume	5	6	11	3	3	6	2	3	5	22
% App. Total	45.5	54.5		50	50		40	60		
PHF	.625	.500	.550	.375	.750	.500	.250	.375	.313	.786

Peak Hour Analysis From 07:45 AM to 08:30 AM - Peak 1 of 1
 Peak Hour for Entire Intersection Begins at 07:45 AM

City of Moreno Valley
 N/S: Theodore Street
 E/W: Eucalyptus Avenue
 Weather: Clear

File Name : 04_MRV_Theodore_Eucalyptus PM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- Cars & Trailers - Large 2 Axle Vehicles - 3 Axle Vehicles - 4 Axle Trucks - 5 Axle Trucks - 6+ Axle Trucks - Buses & RV's -
 Motorcycles - Bicycles - Medium Truck

Start Time	Theodore Street Southbound			Theodore Street Northbound			Eucalyptus Avenue Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
04:00 PM	6	6	12	3	11	14	12	2	14	40
04:15 PM	10	8	18	1	4	5	11	4	15	38
04:30 PM	9	10	19	2	10	12	11	8	19	50
04:45 PM	6	8	14	4	7	11	10	2	12	37
Total	31	32	63	10	32	42	44	16	60	165
05:00 PM	6	10	16	2	3	5	9	4	13	34
05:15 PM	4	10	14	0	3	3	5	2	7	24
05:30 PM	8	11	19	1	12	13	15	8	23	55
05:45 PM	9	3	12	4	5	9	10	3	13	34
Total	27	34	61	7	23	30	39	17	56	147
Grand Total	58	66	124	17	55	72	83	33	116	312
Apprch %	46.8	53.2		23.6	76.4		71.6	28.4		
Total %	18.6	21.2	39.7	5.4	17.6	23.1	26.6	10.6	37.2	
Cars & Trailers	47	45	92	12	37	49	63	29	92	233
% Cars & Trailers	81	68.2	74.2	70.6	67.3	68.1	75.9	87.9	79.3	74.7
Large 2 Axle Vehicles	0	1	1	1	0	1	1	0	1	3
% Large 2 Axle Vehicles	0	1.5	0.8	5.9	0	1.4	1.2	0	0.9	1
3 Axle Vehicles	0	1	1	0	0	0	4	0	4	5
% 3 Axle Vehicles	0	1.5	0.8	0	0	0	4.8	0	3.4	1.6
4 Axle Trucks	0	2	2	0	0	0	0	0	0	2
% 4 Axle Trucks	0	3	1.6	0	0	0	0	0	0	0.6
5 Axle Trucks	3	13	16	1	5	6	2	0	2	24
% 5 Axle Trucks	5.2	19.7	12.9	5.9	9.1	8.3	2.4	0	1.7	7.7
6+ Axle Trucks	0	0	0	0	0	0	0	0	0	0
% 6+ Axle Trucks	0	0	0	0	0	0	0	0	0	0
Buses & RV's	0	0	0	0	0	0	0	0	0	0
% Buses & RV's	0	0	0	0	0	0	0	0	0	0
Motorcycles	0	0	0	0	4	4	0	0	0	4
% Motorcycles	0	0	0	0	7.3	5.6	0	0	0	1.3
Bicycles	0	0	0	0	0	0	0	0	0	0
% Bicycles	0	0	0	0	0	0	0	0	0	0
Medium Truck	8	4	12	3	9	12	13	4	17	41
% Medium Truck	13.8	6.1	9.7	17.6	16.4	16.7	15.7	12.1	14.7	13.1

Start Time	Theodore Street Southbound			Theodore Street Northbound			Eucalyptus Avenue Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:00 PM										
04:00 PM	6	6	12	3	11	14	12	2	14	40
04:15 PM	10	8	18	1	4	5	11	4	15	38
04:30 PM	9	10	19	2	10	12	11	8	19	50
04:45 PM	6	8	14	4	7	11	10	2	12	37
Total Volume	31	32	63	10	32	42	44	16	60	165
% App. Total	49.2	50.8		23.8	76.2		73.3	26.7		
PHF	.775	.800	.829	.625	.727	.750	.917	.500	.789	.825

City of Moreno Valley
 N/S: Theodore Street
 E/W: Eucalyptus Avenue
 Weather: Clear

File Name : 04_MRV_Theodore_Eucalyptus PM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- Cars & Trailers

Start Time	Theodore Street Southbound			Theodore Street Northbound			Eucalyptus Avenue Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
04:00 PM	5	5	10	2	7	9	6	2	8	27
04:15 PM	8	6	14	1	2	3	7	4	11	28
04:30 PM	6	6	12	0	5	5	9	6	15	32
04:45 PM	4	6	10	3	7	10	8	1	9	29
Total	23	23	46	6	21	27	30	13	43	116
05:00 PM	4	7	11	2	2	4	7	4	11	26
05:15 PM	3	5	8	0	3	3	5	2	7	18
05:30 PM	8	8	16	1	9	10	12	7	19	45
05:45 PM	9	2	11	3	2	5	9	3	12	28
Total	24	22	46	6	16	22	33	16	49	117
Grand Total	47	45	92	12	37	49	63	29	92	233
Apprch %	51.1	48.9		24.5	75.5		68.5	31.5		
Total %	20.2	19.3	39.5	5.2	15.9	21	27	12.4	39.5	

Start Time	Theodore Street Southbound			Theodore Street Northbound			Eucalyptus Avenue Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
04:00 PM	5	5	10	2	7	9	6	2	8	27
04:15 PM	8	6	14	1	2	3	7	4	11	28
04:30 PM	6	6	12	0	5	5	9	6	15	32
04:45 PM	4	6	10	3	7	10	8	1	9	29
Total Volume	23	23	46	6	21	27	30	13	43	116
% App. Total	50	50		22.2	77.8		69.8	30.2		
PHF	.719	.958	.821	.500	.750	.675	.833	.542	.717	.906

Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1
 Peak Hour for Entire Intersection Begins at 04:00 PM

City of Moreno Valley
 N/S: Theodore Street
 E/W: Eucalyptus Avenue
 Weather: Clear

File Name : 04_MRV_Theodore_Eucalyptus PM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- Large 2 Axle Vehicles

Start Time	Theodore Street Southbound			Theodore Street Northbound			Eucalyptus Avenue Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
04:00 PM	0	0	0	1	0	1	0	0	0	1
04:15 PM	0	0	0	0	0	0	1	0	1	1
04:30 PM	0	1	1	0	0	0	0	0	0	1
04:45 PM	0	0	0	0	0	0	0	0	0	0
Total	0	1	1	1	0	1	1	0	1	3
05:00 PM	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
Grand Total	0	1	1	1	0	1	1	0	1	3
Apprch %	0	100		100	0		100	0		
Total %	0	33.3	33.3	33.3	0	33.3	33.3	0	33.3	

Start Time	Theodore Street Southbound			Theodore Street Northbound			Eucalyptus Avenue Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
04:00 PM	0	0	0	1	0	1	0	0	0	1
04:15 PM	0	0	0	0	0	0	1	0	1	1
04:30 PM	0	1	1	0	0	0	0	0	0	1
04:45 PM	0	0	0	0	0	0	0	0	0	0
Total Volume	0	1	1	1	0	1	1	0	1	3
% App. Total	0	100		100	0		100	0		
PHF	.000	.250	.250	.250	.000	.250	.250	.000	.250	.750

Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1
 Peak Hour for Entire Intersection Begins at 04:00 PM

City of Moreno Valley
 N/S: Theodore Street
 E/W: Eucalyptus Avenue
 Weather: Clear

File Name : 04_MRV_Theodore_Eucalyptus PM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- 3 Axle Vehicles

Start Time	Theodore Street Southbound			Theodore Street Northbound			Eucalyptus Avenue Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
04:00 PM	0	0	0	0	0	0	2	0	2	2
04:15 PM	0	1	1	0	0	0	1	0	1	2
04:30 PM	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0
Total	0	1	1	0	0	0	3	0	3	4
05:00 PM	0	0	0	0	0	0	1	0	1	1
05:15 PM	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	1	0	1	1
Grand Total	0	1	1	0	0	0	4	0	4	5
Apprch %	0	100		0	0		100	0		
Total %	0	20	20	0	0	0	80	0	80	

Start Time	Theodore Street Southbound			Theodore Street Northbound			Eucalyptus Avenue Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
04:00 PM	0	0	0	0	0	0	2	0	2	2
04:15 PM	0	1	1	0	0	0	1	0	1	2
04:30 PM	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0
Total Volume	0	1	1	0	0	0	3	0	3	4
% App. Total	0	100		0	0		100	0		
PHF	.000	.250	.250	.000	.000	.000	.375	.000	.375	.500

Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1
 Peak Hour for Entire Intersection Begins at 04:00 PM

City of Moreno Valley
 N/S: Theodore Street
 E/W: Eucalyptus Avenue
 Weather: Clear

File Name : 04_MRV_Theodore_Eucalyptus PM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- 4 Axle Trucks

Start Time	Theodore Street Southbound			Theodore Street Northbound			Eucalyptus Avenue Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
04:00 PM	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	1	1	0	0	0	0	0	0	1
Total	0	1	1	0	0	0	0	0	0	1
05:00 PM	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	1	1	0	0	0	0	0	0	1
05:30 PM	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0
Total	0	1	1	0	0	0	0	0	0	1
Grand Total	0	2	2	0	0	0	0	0	0	2
Apprch %	0	100		0	0		0	0		
Total %	0	100	100	0	0	0	0	0	0	

Start Time	Theodore Street Southbound			Theodore Street Northbound			Eucalyptus Avenue Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
04:00 PM	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	1	1	0	0	0	0	0	0	1
Total Volume	0	1	1	0	0	0	0	0	0	1
% App. Total	0	100		0	0		0	0		
PHF	.000	.250	.250	.000	.000	.000	.000	.000	.000	.250

Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1
 Peak Hour for Entire Intersection Begins at 04:00 PM

City of Moreno Valley
 N/S: Theodore Street
 E/W: Eucalyptus Avenue
 Weather: Clear

File Name : 04_MRV_Theodore_Eucalyptus PM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- 5 Axle Trucks

Start Time	Theodore Street Southbound			Theodore Street Northbound			Eucalyptus Avenue Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
04:00 PM	0	1	1	0	3	3	0	0	0	4
04:15 PM	1	0	1	0	0	0	1	0	1	2
04:30 PM	1	2	3	1	0	1	0	0	0	4
04:45 PM	1	1	2	0	0	0	1	0	1	3
Total	3	4	7	1	3	4	2	0	2	13
05:00 PM	0	2	2	0	0	0	0	0	0	2
05:15 PM	0	4	4	0	0	0	0	0	0	4
05:30 PM	0	2	2	0	2	2	0	0	0	4
05:45 PM	0	1	1	0	0	0	0	0	0	1
Total	0	9	9	0	2	2	0	0	0	11
Grand Total	3	13	16	1	5	6	2	0	2	24
Apprch %	18.8	81.2		16.7	83.3		100	0		
Total %	12.5	54.2	66.7	4.2	20.8	25	8.3	0	8.3	

Start Time	Theodore Street Southbound			Theodore Street Northbound			Eucalyptus Avenue Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
04:00 PM	0	1	1	0	3	3	0	0	0	4
04:15 PM	1	0	1	0	0	0	1	0	1	2
04:30 PM	1	2	3	1	0	1	0	0	0	4
04:45 PM	1	1	2	0	0	0	1	0	1	3
Total Volume	3	4	7	1	3	4	2	0	2	13
% App. Total	42.9	57.1		25	75		100	0		
PHF	.750	.500	.583	.250	.250	.333	.500	.000	.500	.813

Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1
 Peak Hour for Entire Intersection Begins at 04:00 PM

City of Moreno Valley
 N/S: Theodore Street
 E/W: Eucalyptus Avenue
 Weather: Clear

File Name : 04_MRV_Theodore_Eucalyptus PM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- 6+ Axle Trucks

Start Time	Theodore Street Southbound			Theodore Street Northbound			Eucalyptus Avenue Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
04:00 PM	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0
Apprch %	0	0		0	0		0	0		
Total %										

Start Time	Theodore Street Southbound			Theodore Street Northbound			Eucalyptus Avenue Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
04:00 PM	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0		0	0		0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1
 Peak Hour for Entire Intersection Begins at 04:00 PM

City of Moreno Valley
 N/S: Theodore Street
 E/W: Eucalyptus Avenue
 Weather: Clear

File Name : 04_MRV_Theodore_Eucalyptus PM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- Buses & RV's

Start Time	Theodore Street Southbound			Theodore Street Northbound			Eucalyptus Avenue Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
04:00 PM	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0
Apprch %	0	0		0	0		0	0		
Total %										

Start Time	Theodore Street Southbound			Theodore Street Northbound			Eucalyptus Avenue Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:00 PM										
04:00 PM	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0		0	0		0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

City of Moreno Valley
 N/S: Theodore Street
 E/W: Eucalyptus Avenue
 Weather: Clear

File Name : 04_MRV_Theodore_Eucalyptus PM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- Motorcycles

Start Time	Theodore Street Southbound			Theodore Street Northbound			Eucalyptus Avenue Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
04:00 PM	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	4	4	0	0	0	4
04:45 PM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	4	4	0	0	0	4
05:00 PM	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	4	4	0	0	0	4
Apprch %	0	0		0	100		0	0		
Total %	0	0		0	100	100	0	0		

Start Time	Theodore Street Southbound			Theodore Street Northbound			Eucalyptus Avenue Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
04:00 PM	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	4	4	0	0	0	4
04:45 PM	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	4	4	0	0	0	4
% App. Total	0	0		0	100		0	0		
PHF	.000	.000	.000	.000	.250	.250	.000	.000	.000	.250

Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1
 Peak Hour for Entire Intersection Begins at 04:00 PM

City of Moreno Valley
 N/S: Theodore Street
 E/W: Eucalyptus Avenue
 Weather: Clear

File Name : 04_MRV_Theodore_Eucalyptus PM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- Bicycles

Start Time	Theodore Street Southbound			Theodore Street Northbound			Eucalyptus Avenue Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
04:00 PM	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0
Apprch %	0	0		0	0		0	0		
Total %										

Start Time	Theodore Street Southbound			Theodore Street Northbound			Eucalyptus Avenue Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:00 PM										
04:00 PM	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0		0	0		0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

City of Moreno Valley
 N/S: Theodore Street
 E/W: Eucalyptus Avenue
 Weather: Clear

File Name : 04_MRJV_Theodore_Eucalyptus PM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- Medium Truck

Start Time	Theodore Street Southbound			Theodore Street Northbound			Eucalyptus Avenue Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
04:00 PM	1	0	1	0	1	1	4	0	4	6
04:15 PM	1	1	2	0	2	2	1	0	1	5
04:30 PM	2	1	3	1	1	2	2	2	4	9
04:45 PM	1	0	1	1	0	1	1	1	2	4
Total	5	2	7	2	4	6	8	3	11	24
05:00 PM	2	1	3	0	1	1	1	0	1	5
05:15 PM	1	0	1	0	0	0	0	0	0	1
05:30 PM	0	1	1	0	1	1	3	1	4	6
05:45 PM	0	0	0	1	3	4	1	0	1	5
Total	3	2	5	1	5	6	5	1	6	17
Grand Total	8	4	12	3	9	12	13	4	17	41
Apprch %	66.7	33.3		25	75		76.5	23.5		
Total %	19.5	9.8	29.3	7.3	22	29.3	31.7	9.8	41.5	

Start Time	Theodore Street Southbound			Theodore Street Northbound			Eucalyptus Avenue Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
04:00 PM	1	0	1	0	1	1	4	0	4	6
04:15 PM	1	1	2	0	2	2	1	0	1	5
04:30 PM	2	1	3	1	1	2	2	2	4	9
04:45 PM	1	0	1	1	0	1	1	1	2	4
Total Volume	5	2	7	2	4	6	8	3	11	24
% App. Total	71.4	28.6		33.3	66.7		72.7	27.3		
PHF	.625	.500	.583	.500	.500	.750	.500	.375	.688	.667

Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1
 Peak Hour for Entire Intersection Begins at 04:00 PM

City of Moreno Valley
 N/S: Theodore Street
 E/W: SR-60 Eastbound Ramps
 Weather: Clear

File Name : 03_MR_V_Theodore_60E AM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- Cars & Trailers - Large 2 Axle Vehicles - 3 Axle Vehicles - 4 Axle Trucks - 5 Axle Trucks - 6+ Axle Trucks - Buses & RV's -
 Motorcycles - Bicycles - Medium Truck

Start Time	Theodore Street Southbound			Theodore Street Northbound			SR-60 Eastbound Ramps Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
07:00 AM	6	0	6	5	3	8	10	7	17	31
07:15 AM	10	0	10	11	4	15	9	11	20	45
07:30 AM	21	1	22	10	0	10	6	13	19	51
07:45 AM	13	2	15	12	3	15	5	15	20	50
Total	50	3	53	38	10	48	30	46	76	177
08:00 AM	14	1	15	10	5	15	5	22	27	57
08:15 AM	15	1	16	6	5	11	5	29	34	61
08:30 AM	14	1	15	8	10	18	6	26	32	65
08:45 AM	9	3	12	12	5	17	9	16	25	54
Total	52	6	58	36	25	61	25	93	118	237
Grand Total	102	9	111	74	35	109	55	139	194	414
Apprch %	91.9	8.1		67.9	32.1		28.4	71.6		
Total %	24.6	2.2	26.8	17.9	8.5	26.3	13.3	33.6	46.9	
Cars & Trailers	56	7	63	38	29	67	23	122	145	275
% Cars & Trailers	54.9	77.8	56.8	51.4	82.9	61.5	41.8	87.8	74.7	66.4
Large 2 Axle Vehicles	1	1	2	0	1	1	4	1	5	8
% Large 2 Axle Vehicles	1	11.1	1.8	0	2.9	0.9	7.3	0.7	2.6	1.9
3 Axle Vehicles	0	0	0	0	0	0	3	1	4	4
% 3 Axle Vehicles	0	0	0	0	0	0	5.5	0.7	2.1	1
4 Axle Trucks	0	0	0	0	0	0	5	3	8	8
% 4 Axle Trucks	0	0	0	0	0	0	9.1	2.2	4.1	1.9
5 Axle Trucks	39	1	40	32	5	37	19	10	29	106
% 5 Axle Trucks	38.2	11.1	36	43.2	14.3	33.9	34.5	7.2	14.9	25.6
6+ Axle Trucks	5	0	5	4	0	4	0	1	1	10
% 6+ Axle Trucks	4.9	0	4.5	5.4	0	3.7	0	0.7	0.5	2.4
Buses & RV's	0	0	0	0	0	0	1	0	1	1
% Buses & RV's	0	0	0	0	0	0	1.8	0	0.5	0.2
Motorcycles	0	0	0	0	0	0	0	1	1	1
% Motorcycles	0	0	0	0	0	0	0	0.7	0.5	0.2
Bicycles	1	0	1	0	0	0	0	0	0	1
% Bicycles	1	0	0.9	0	0	0	0	0	0	0.2
Medium Truck	0	0	0	0	0	0	0	0	0	0
% Medium Truck	0	0	0	0	0	0	0	0	0	0

Start Time	Theodore Street Southbound			Theodore Street Northbound			SR-60 Eastbound Ramps Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 08:00 AM										
08:00 AM	14	1	15	10	5	15	5	22	27	57
08:15 AM	15	1	16	6	5	11	5	29	34	61
08:30 AM	14	1	15	8	10	18	6	26	32	65
08:45 AM	9	3	12	12	5	17	9	16	25	54
Total Volume	52	6	58	36	25	61	25	93	118	237
% App. Total	89.7	10.3		59	41		21.2	78.8		
PHF	.867	.500	.906	.750	.625	.847	.694	.802	.868	.912

City of Moreno Valley
 N/S: Theodore Street
 E/W: SR-60 Eastbound Ramps
 Weather: Clear

File Name : 03_MRV_Theodore_60E AM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- Cars & Trailers

Start Time	Theodore Street Southbound			Theodore Street Northbound			SR-60 Eastbound Ramps Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
07:00 AM	6	0	6	5	3	8	4	5	9	23
07:15 AM	5	0	5	10	3	13	5	7	12	30
07:30 AM	13	0	13	5	0	5	2	12	14	32
07:45 AM	6	2	8	5	2	7	3	13	16	31
Total	30	2	32	25	8	33	14	37	51	116
08:00 AM	10	1	11	2	3	5	1	20	21	37
08:15 AM	8	1	9	2	5	7	2	28	30	46
08:30 AM	6	1	7	3	8	11	4	23	27	45
08:45 AM	2	2	4	6	5	11	2	14	16	31
Total	26	5	31	13	21	34	9	85	94	159
Grand Total	56	7	63	38	29	67	23	122	145	275
Apprch %	88.9	11.1		56.7	43.3		15.9	84.1		
Total %	20.4	2.5	22.9	13.8	10.5	24.4	8.4	44.4	52.7	

Start Time	Theodore Street Southbound			Theodore Street Northbound			SR-60 Eastbound Ramps Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
08:00 AM	10	1	11	2	3	5	1	20	21	37
08:15 AM	8	1	9	2	5	7	2	28	30	46
08:30 AM	6	1	7	3	8	11	4	23	27	45
08:45 AM	2	2	4	6	5	11	2	14	16	31
Total Volume	26	5	31	13	21	34	9	85	94	159
% App. Total	83.9	16.1		38.2	61.8		9.6	90.4		
PHF	.650	.625	.705	.542	.656	.773	.563	.759	.783	.864

Peak Hour Analysis From 08:00 AM to 08:45 AM - Peak 1 of 1
 Peak Hour for Entire Intersection Begins at 08:00 AM

City of Moreno Valley
 N/S: Theodore Street
 E/W: SR-60 Eastbound Ramps
 Weather: Clear

File Name : 03_MR_V_Theodore_60E AM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- Large 2 Axle Vehicles

Start Time	Theodore Street Southbound			Theodore Street Northbound			SR-60 Eastbound Ramps Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
07:00 AM	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	2	1	3	3
07:45 AM	0	0	0	0	1	1	0	0	0	1
Total	0	0	0	0	1	1	2	1	3	4
08:00 AM	0	0	0	0	0	0	0	0	0	0
08:15 AM	1	0	1	0	0	0	1	0	1	2
08:30 AM	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	1	1	0	0	0	1	0	1	2
Total	1	1	2	0	0	0	2	0	2	4
Grand Total	1	1	2	0	1	1	4	1	5	8
Apprch %	50	50		0	100		80	20		
Total %	12.5	12.5	25	0	12.5	12.5	50	12.5	62.5	

Start Time	Theodore Street Southbound			Theodore Street Northbound			SR-60 Eastbound Ramps Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
08:00 AM	0	0	0	0	0	0	0	0	0	0
08:15 AM	1	0	1	0	0	0	1	0	1	2
08:30 AM	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	1	1	0	0	0	1	0	1	2
Total Volume	1	1	2	0	0	0	2	0	2	4
% App. Total	50	50		0	0		100	0		
PHF	.250	.250	.500	.000	.000	.000	.500	.000	.500	.500

Peak Hour Analysis From 08:00 AM to 08:45 AM - Peak 1 of 1
 Peak Hour for Entire Intersection Begins at 08:00 AM

City of Moreno Valley
 N/S: Theodore Street
 E/W: SR-60 Eastbound Ramps
 Weather: Clear

File Name : 03_MRV_Theodore_60E AM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- 3 Axle Vehicles

Start Time	Theodore Street Southbound			Theodore Street Northbound			SR-60 Eastbound Ramps Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
07:00 AM	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	1	0	1	1
Total	0	0	0	0	0	0	1	0	1	1
08:00 AM	0	0	0	0	0	0	1	1	2	2
08:15 AM	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	1	0	1	1
Total	0	0	0	0	0	0	2	1	3	3
Grand Total	0	0	0	0	0	0	3	1	4	4
Apprch %	0	0		0	0		75	25		
Total %	0	0		0	0		75	25	100	

Start Time	Theodore Street Southbound			Theodore Street Northbound			SR-60 Eastbound Ramps Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
08:00 AM	0	0	0	0	0	0	1	1	2	2
08:15 AM	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	1	0	1	1
Total Volume	0	0	0	0	0	0	2	1	3	3
% App. Total	0	0		0	0		66.7	33.3		
PHF	.000	.000	.000	.000	.000	.000	.500	.250	.375	.375

Peak Hour Analysis From 08:00 AM to 08:45 AM - Peak 1 of 1
 Peak Hour for Entire Intersection Begins at 08:00 AM

City of Moreno Valley
 N/S: Theodore Street
 E/W: SR-60 Eastbound Ramps
 Weather: Clear

File Name : 03_MRVT_Theodore_60E AM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- 4 Axle Trucks

Start Time	Theodore Street Southbound			Theodore Street Northbound			SR-60 Eastbound Ramps Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
07:00 AM	0	0	0	0	0	0	1	0	1	1
07:15 AM	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	1	1	1
Total	0	0	0	0	0	0	1	1	2	2
08:00 AM	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	1	1	1
08:30 AM	0	0	0	0	0	0	1	0	1	1
08:45 AM	0	0	0	0	0	0	3	1	4	4
Total	0	0	0	0	0	0	4	2	6	6
Grand Total	0	0	0	0	0	0	5	3	8	8
Apprch %	0	0		0	0		62.5	37.5		
Total %	0	0		0	0		62.5	37.5	100	

Start Time	Theodore Street Southbound			Theodore Street Northbound			SR-60 Eastbound Ramps Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
08:00 AM	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	1	1	1
08:30 AM	0	0	0	0	0	0	1	0	1	1
08:45 AM	0	0	0	0	0	0	3	1	4	4
Total Volume	0	0	0	0	0	0	4	2	6	6
% App. Total	0	0		0	0		66.7	33.3		
PHF	.000	.000	.000	.000	.000	.000	.333	.500	.375	.375

Peak Hour Analysis From 08:00 AM to 08:45 AM - Peak 1 of 1
 Peak Hour for Entire Intersection Begins at 08:00 AM

City of Moreno Valley
 N/S: Theodore Street
 E/W: SR-60 Eastbound Ramps
 Weather: Clear

File Name : 03_MRV_Theodore_60E AM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- 5 Axle Trucks

Start Time	Theodore Street Southbound			Theodore Street Northbound			SR-60 Eastbound Ramps Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
07:00 AM	0	0	0	0	0	0	5	1	6	6
07:15 AM	4	0	4	1	1	2	4	3	7	13
07:30 AM	7	1	8	4	0	4	2	0	2	14
07:45 AM	6	0	6	7	0	7	1	1	2	15
Total	17	1	18	12	1	13	12	5	17	48
08:00 AM	2	0	2	7	2	9	2	1	3	14
08:15 AM	6	0	6	3	0	3	2	0	2	11
08:30 AM	8	0	8	5	2	7	1	3	4	19
08:45 AM	6	0	6	5	0	5	2	1	3	14
Total	22	0	22	20	4	24	7	5	12	58
Grand Total	39	1	40	32	5	37	19	10	29	106
Apprch %	97.5	2.5		86.5	13.5		65.5	34.5		
Total %	36.8	0.9	37.7	30.2	4.7	34.9	17.9	9.4	27.4	

Start Time	Theodore Street Southbound			Theodore Street Northbound			SR-60 Eastbound Ramps Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
08:00 AM	2	0	2	7	2	9	2	1	3	14
08:15 AM	6	0	6	3	0	3	2	0	2	11
08:30 AM	8	0	8	5	2	7	1	3	4	19
08:45 AM	6	0	6	5	0	5	2	1	3	14
Total Volume	22	0	22	20	4	24	7	5	12	58
% App. Total	100	0		83.3	16.7		58.3	41.7		
PHF	.688	.000	.688	.714	.500	.667	.875	.417	.750	.763

Peak Hour Analysis From 08:00 AM to 08:45 AM - Peak 1 of 1
 Peak Hour for Entire Intersection Begins at 08:00 AM

City of Moreno Valley
 N/S: Theodore Street
 E/W: SR-60 Eastbound Ramps
 Weather: Clear

File Name : 03_MRVT_Theodore_60E AM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- 6+ Axle Trucks

Start Time	Theodore Street Southbound			Theodore Street Northbound			SR-60 Eastbound Ramps Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
07:00 AM	0	0	0	0	0	0	0	1	1	1
07:15 AM	1	0	1	0	0	0	0	0	0	1
07:30 AM	0	0	0	1	0	1	0	0	0	1
07:45 AM	1	0	1	0	0	0	0	0	0	1
Total	2	0	2	1	0	1	0	1	1	4
08:00 AM	2	0	2	1	0	1	0	0	0	3
08:15 AM	0	0	0	1	0	1	0	0	0	1
08:30 AM	0	0	0	0	0	0	0	0	0	0
08:45 AM	1	0	1	1	0	1	0	0	0	2
Total	3	0	3	3	0	3	0	0	0	6
Grand Total	5	0	5	4	0	4	0	1	1	10
Apprch %	100	0		100	0		0	100		
Total %	50	0	50	40	0	40	0	10	10	

Start Time	Theodore Street Southbound			Theodore Street Northbound			SR-60 Eastbound Ramps Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
08:00 AM	2	0	2	1	0	1	0	0	0	3
08:15 AM	0	0	0	1	0	1	0	0	0	1
08:30 AM	0	0	0	0	0	0	0	0	0	0
08:45 AM	1	0	1	1	0	1	0	0	0	2
Total Volume	3	0	3	3	0	3	0	0	0	6
% App. Total	100	0		100	0		0	0		
PHF	.375	.000	.375	.750	.000	.750	.000	.000	.000	.500

Peak Hour Analysis From 08:00 AM to 08:45 AM - Peak 1 of 1
 Peak Hour for Entire Intersection Begins at 08:00 AM

City of Moreno Valley
 N/S: Theodore Street
 E/W: SR-60 Eastbound Ramps
 Weather: Clear

File Name : 03_MRV_Theodore_60E AM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- Buses & RV's

Start Time	Theodore Street Southbound			Theodore Street Northbound			SR-60 Eastbound Ramps Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
07:00 AM	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	1	0	1	1
08:15 AM	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	1	0	1	1
Grand Total	0	0	0	0	0	0	1	0	1	1
Apprch %	0	0		0	0		100	0		
Total %	0	0		0	0		100	0	100	

Start Time	Theodore Street Southbound			Theodore Street Northbound			SR-60 Eastbound Ramps Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
08:00 AM	0	0	0	0	0	0	1	0	1	1
08:15 AM	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	1	0	1	1
% App. Total	0	0		0	0		100	0		
PHF	.000	.000	.000	.000	.000	.000	.250	.000	.250	.250

Peak Hour Analysis From 08:00 AM to 08:45 AM - Peak 1 of 1
 Peak Hour for Entire Intersection Begins at 08:00 AM

City of Moreno Valley
 N/S: Theodore Street
 E/W: SR-60 Eastbound Ramps
 Weather: Clear

File Name : 03_MR_V_Theodore_60E AM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- Motorcycles

Start Time	Theodore Street Southbound			Theodore Street Northbound			SR-60 Eastbound Ramps Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
07:00 AM	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	1	1	1
07:30 AM	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	1	1	1
08:00 AM	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	1	1	1
Apprch %	0	0		0	0		0	100		
Total %	0	0		0	0		0	100	100	

Start Time	Theodore Street Southbound			Theodore Street Northbound			SR-60 Eastbound Ramps Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
08:00 AM	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0		0	0		0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

Peak Hour Analysis From 08:00 AM to 08:45 AM - Peak 1 of 1
 Peak Hour for Entire Intersection Begins at 08:00 AM

City of Moreno Valley
 N/S: Theodore Street
 E/W: SR-60 Eastbound Ramps
 Weather: Clear

File Name : 03_MR_V_Theodore_60E AM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- Bicycles

Start Time	Theodore Street Southbound			Theodore Street Northbound			SR-60 Eastbound Ramps Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
07:00 AM	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0
07:30 AM	1	0	1	0	0	0	0	0	0	1
07:45 AM	0	0	0	0	0	0	0	0	0	0
Total	1	0	1	0	0	0	0	0	0	1
08:00 AM	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
Grand Total	1	0	1	0	0	0	0	0	0	1
Apprch %	100	0		0	0		0	0		
Total %	100	0	100	0	0	0	0	0	0	

Start Time	Theodore Street Southbound			Theodore Street Northbound			SR-60 Eastbound Ramps Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
Peak Hour Analysis From 08:00 AM to 08:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 08:00 AM										
08:00 AM	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0		0	0		0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

City of Moreno Valley
 N/S: Theodore Street
 E/W: SR-60 Eastbound Ramps
 Weather: Clear

File Name : 03_MR_V_Theodore_60E AM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- Medium Truck

Start Time	Theodore Street Southbound			Theodore Street Northbound			SR-60 Eastbound Ramps Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
07:00 AM	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0
Apprch %	0	0		0	0		0	0		
Total %										

Start Time	Theodore Street Southbound			Theodore Street Northbound			SR-60 Eastbound Ramps Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
08:00 AM	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0		0	0		0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

Peak Hour Analysis From 08:00 AM to 08:45 AM - Peak 1 of 1
 Peak Hour for Entire Intersection Begins at 08:00 AM

City of Moreno Valley
 N/S: Theodore Street
 E/W: SR-60 Eastbound Ramps
 Weather: Clear

File Name : 03_MR_V_Theodore_60E PM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- Cars & Trailers - Large 2 Axle Vehicles - 3 Axle Vehicles - 4 Axle Trucks - 5 Axle Trucks - 6+ Axle Trucks - Buses & RV's -
 Motorcycles - Bicycles - Medium Truck

Start Time	Theodore Street Southbound			Theodore Street Northbound			SR-60 Eastbound Ramps Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
04:00 PM	7	3	10	7	15	22	1	5	6	38
04:15 PM	13	4	17	4	15	19	2	5	7	43
04:30 PM	9	4	13	10	5	15	5	10	15	43
04:45 PM	9	3	12	11	11	22	5	6	11	45
Total	38	14	52	32	46	78	13	26	39	169
05:00 PM	9	3	12	5	5	10	3	7	10	32
05:15 PM	7	5	12	3	9	12	1	8	9	33
05:30 PM	6	3	9	8	16	24	1	11	12	45
05:45 PM	9	0	9	7	8	15	2	6	8	32
Total	31	11	42	23	38	61	7	32	39	142
Grand Total	69	25	94	55	84	139	20	58	78	311
Apprch %	73.4	26.6		39.6	60.4		25.6	74.4		
Total %	22.2	8	30.2	17.7	27	44.7	6.4	18.6	25.1	
Cars & Trailers	66	23	89	46	75	121	11	41	52	262
% Cars & Trailers	95.7	92	94.7	83.6	89.3	87.1	55	70.7	66.7	84.2
Large 2 Axle Vehicles	0	1	1	0	1	1	6	1	7	9
% Large 2 Axle Vehicles	0	4	1.1	0	1.2	0.7	30	1.7	9	2.9
3 Axle Vehicles	0	0	0	0	3	3	0	1	1	4
% 3 Axle Vehicles	0	0	0	0	3.6	2.2	0	1.7	1.3	1.3
4 Axle Trucks	0	0	0	0	1	1	1	3	4	5
% 4 Axle Trucks	0	0	0	0	1.2	0.7	5	5.2	5.1	1.6
5 Axle Trucks	3	0	3	4	4	8	1	12	13	24
% 5 Axle Trucks	4.3	0	3.2	7.3	4.8	5.8	5	20.7	16.7	7.7
6+ Axle Trucks	0	1	1	0	0	0	1	0	1	2
% 6+ Axle Trucks	0	4	1.1	0	0	0	5	0	1.3	0.6
Buses & RV's	0	0	0	0	0	0	0	0	0	0
% Buses & RV's	0	0	0	0	0	0	0	0	0	0
Motorcycles	0	0	0	5	0	5	0	0	0	5
% Motorcycles	0	0	0	9.1	0	3.6	0	0	0	1.6
Bicycles	0	0	0	0	0	0	0	0	0	0
% Bicycles	0	0	0	0	0	0	0	0	0	0
Medium Truck	0	0	0	0	0	0	0	0	0	0
% Medium Truck	0	0	0	0	0	0	0	0	0	0

Start Time	Theodore Street Southbound			Theodore Street Northbound			SR-60 Eastbound Ramps Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:00 PM										
04:00 PM	7	3	10	7	15	22	1	5	6	38
04:15 PM	13	4	17	4	15	19	2	5	7	43
04:30 PM	9	4	13	10	5	15	5	10	15	43
04:45 PM	9	3	12	11	11	22	5	6	11	45
Total Volume	38	14	52	32	46	78	13	26	39	169
% App. Total	73.1	26.9		41	59		33.3	66.7		
PHF	.731	.875	.765	.727	.767	.886	.650	.650	.650	.939

City of Moreno Valley
 N/S: Theodore Street
 E/W: SR-60 Eastbound Ramps
 Weather: Clear

File Name : 03_MRVT_Theodore_60E PM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- Cars & Trailers

Start Time	Theodore Street Southbound			Theodore Street Northbound			SR-60 Eastbound Ramps Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
04:00 PM	7	3	10	5	12	17	0	5	5	32
04:15 PM	12	4	16	4	10	14	0	3	3	33
04:30 PM	8	3	11	6	5	11	4	7	11	33
04:45 PM	8	3	11	10	11	21	4	4	8	40
Total	35	13	48	25	38	63	8	19	27	138
05:00 PM	9	3	12	5	5	10	1	5	6	28
05:15 PM	7	4	11	3	8	11	1	3	4	26
05:30 PM	6	3	9	6	16	22	0	9	9	40
05:45 PM	9	0	9	7	8	15	1	5	6	30
Total	31	10	41	21	37	58	3	22	25	124
Grand Total	66	23	89	46	75	121	11	41	52	262
Apprch %	74.2	25.8		38	62		21.2	78.8		
Total %	25.2	8.8	34	17.6	28.6	46.2	4.2	15.6	19.8	

Start Time	Theodore Street Southbound			Theodore Street Northbound			SR-60 Eastbound Ramps Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
04:00 PM	7	3	10	5	12	17	0	5	5	32
04:15 PM	12	4	16	4	10	14	0	3	3	33
04:30 PM	8	3	11	6	5	11	4	7	11	33
04:45 PM	8	3	11	10	11	21	4	4	8	40
Total Volume	35	13	48	25	38	63	8	19	27	138
% App. Total	72.9	27.1		39.7	60.3		29.6	70.4		
PHF	.729	.813	.750	.625	.792	.750	.500	.679	.614	.863

Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1
 Peak Hour for Entire Intersection Begins at 04:00 PM

City of Moreno Valley
 N/S: Theodore Street
 E/W: SR-60 Eastbound Ramps
 Weather: Clear

File Name : 03_MRV_Theodore_60E PM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- Large 2 Axle Vehicles

Start Time	Theodore Street Southbound			Theodore Street Northbound			SR-60 Eastbound Ramps Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
04:00 PM	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	1	1	2	0	2	3
04:30 PM	0	0	0	0	0	0	1	1	2	2
04:45 PM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	1	1	3	1	4	5
05:00 PM	0	0	0	0	0	0	2	0	2	2
05:15 PM	0	1	1	0	0	0	0	0	0	1
05:30 PM	0	0	0	0	0	0	1	0	1	1
05:45 PM	0	0	0	0	0	0	0	0	0	0
Total	0	1	1	0	0	0	3	0	3	4
Grand Total	0	1	1	0	1	1	6	1	7	9
Apprch %	0	100		0	100		85.7	14.3		
Total %	0	11.1	11.1	0	11.1	11.1	66.7	11.1	77.8	

Start Time	Theodore Street Southbound			Theodore Street Northbound			SR-60 Eastbound Ramps Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
04:00 PM	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	1	1	2	0	2	3
04:30 PM	0	0	0	0	0	0	1	1	2	2
04:45 PM	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	1	1	3	1	4	5
% App. Total	0	0		0	100		75	25		
PHF	.000	.000	.000	.000	.250	.250	.375	.250	.500	.417

Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1
 Peak Hour for Entire Intersection Begins at 04:00 PM

City of Moreno Valley
 N/S: Theodore Street
 E/W: SR-60 Eastbound Ramps
 Weather: Clear

File Name : 03_MRV_Theodore_60E PM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- 3 Axle Vehicles

Start Time	Theodore Street Southbound			Theodore Street Northbound			SR-60 Eastbound Ramps Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
04:00 PM	0	0	0	0	1	1	0	0	0	1
04:15 PM	0	0	0	0	2	2	0	1	1	3
04:30 PM	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	3	3	0	1	1	4
05:00 PM	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	3	3	0	1	1	4
Apprch %	0	0		0	100		0	100		
Total %	0	0		0	75	75	0	25	25	

Start Time	Theodore Street Southbound			Theodore Street Northbound			SR-60 Eastbound Ramps Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
04:00 PM	0	0	0	0	1	1	0	0	0	1
04:15 PM	0	0	0	0	2	2	0	1	1	3
04:30 PM	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	3	3	0	1	1	4
% App. Total	0	0		0	100		0	100		
PHF	.000	.000	.000	.000	.375	.375	.000	.250	.250	.333

Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1
 Peak Hour for Entire Intersection Begins at 04:00 PM

City of Moreno Valley
 N/S: Theodore Street
 E/W: SR-60 Eastbound Ramps
 Weather: Clear

File Name : 03_MRV_Theodore_60E PM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- 4 Axle Trucks

Start Time	Theodore Street Southbound			Theodore Street Northbound			SR-60 Eastbound Ramps Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
04:00 PM	0	0	0	0	0	0	1	0	1	1
04:15 PM	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	1	1	1
04:45 PM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	1	1	2	2
05:00 PM	0	0	0	0	0	0	0	1	1	1
05:15 PM	0	0	0	0	1	1	0	1	1	2
05:30 PM	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	1	1	0	2	2	3
Grand Total	0	0	0	0	1	1	1	3	4	5
Apprch %	0	0		0	100		25	75		
Total %	0	0		0	20	20	20	60	80	

Start Time	Theodore Street Southbound			Theodore Street Northbound			SR-60 Eastbound Ramps Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
04:00 PM	0	0	0	0	0	0	1	0	1	1
04:15 PM	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	1	1	1
04:45 PM	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	1	1	2	2
% App. Total	0	0		0	0		50	50		
PHF	.000	.000	.000	.000	.000	.000	.250	.250	.500	.500

Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1
 Peak Hour for Entire Intersection Begins at 04:00 PM

City of Moreno Valley
 N/S: Theodore Street
 E/W: SR-60 Eastbound Ramps
 Weather: Clear

File Name : 03_MRVT_Theodore_60E PM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- 5 Axle Trucks

Start Time	Theodore Street Southbound			Theodore Street Northbound			SR-60 Eastbound Ramps Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
04:00 PM	0	0	0	1	2	3	0	0	0	3
04:15 PM	1	0	1	0	2	2	0	1	1	4
04:30 PM	1	0	1	0	0	0	0	1	1	2
04:45 PM	1	0	1	1	0	1	1	2	3	5
Total	3	0	3	2	4	6	1	4	5	14
05:00 PM	0	0	0	0	0	0	0	1	1	1
05:15 PM	0	0	0	0	0	0	0	4	4	4
05:30 PM	0	0	0	2	0	2	0	2	2	4
05:45 PM	0	0	0	0	0	0	0	1	1	1
Total	0	0	0	2	0	2	0	8	8	10
Grand Total	3	0	3	4	4	8	1	12	13	24
Apprch %	100	0		50	50		7.7	92.3		
Total %	12.5	0	12.5	16.7	16.7	33.3	4.2	50	54.2	

Start Time	Theodore Street Southbound			Theodore Street Northbound			SR-60 Eastbound Ramps Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
04:00 PM	0	0	0	1	2	3	0	0	0	3
04:15 PM	1	0	1	0	2	2	0	1	1	4
04:30 PM	1	0	1	0	0	0	0	1	1	2
04:45 PM	1	0	1	1	0	1	1	2	3	5
Total Volume	3	0	3	2	4	6	1	4	5	14
% App. Total	100	0		33.3	66.7		20	80		
PHF	.750	.000	.750	.500	.500	.500	.250	.500	.417	.700

Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1
 Peak Hour for Entire Intersection Begins at 04:00 PM

City of Moreno Valley
 N/S: Theodore Street
 E/W: SR-60 Eastbound Ramps
 Weather: Clear

File Name : 03_MR_V_Theodore_60E PM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- 6+ Axle Trucks

Start Time	Theodore Street Southbound			Theodore Street Northbound			SR-60 Eastbound Ramps Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
04:00 PM	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	1	1	0	0	0	0	0	0	1
04:45 PM	0	0	0	0	0	0	0	0	0	0
Total	0	1	1	0	0	0	0	0	0	1
05:00 PM	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	1	0	1	1
Total	0	0	0	0	0	0	1	0	1	1
Grand Total	0	1	1	0	0	0	1	0	1	2
Apprch %	0	100		0	0		100	0		
Total %	0	50	50	0	0	0	50	0	50	

Start Time	Theodore Street Southbound			Theodore Street Northbound			SR-60 Eastbound Ramps Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
04:00 PM	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	1	1	0	0	0	0	0	0	1
04:45 PM	0	0	0	0	0	0	0	0	0	0
Total Volume	0	1	1	0	0	0	0	0	0	1
% App. Total	0	100		0	0		0	0		
PHF	.000	.250	.250	.000	.000	.000	.000	.000	.000	.250

Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1
 Peak Hour for Entire Intersection Begins at 04:00 PM

City of Moreno Valley
 N/S: Theodore Street
 E/W: SR-60 Eastbound Ramps
 Weather: Clear

File Name : 03_MR_V_Theodore_60E PM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- Buses & RV's

Start Time	Theodore Street Southbound			Theodore Street Northbound			SR-60 Eastbound Ramps Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
04:00 PM	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0
Apprch %	0	0		0	0		0	0		
Total %										

Start Time	Theodore Street Southbound			Theodore Street Northbound			SR-60 Eastbound Ramps Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:00 PM										
04:00 PM	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0		0	0		0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

City of Moreno Valley
 N/S: Theodore Street
 E/W: SR-60 Eastbound Ramps
 Weather: Clear

File Name : 03_MR_V_Theodore_60E PM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- Motorcycles

Start Time	Theodore Street Southbound			Theodore Street Northbound			SR-60 Eastbound Ramps Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
04:00 PM	0	0	0	1	0	1	0	0	0	1
04:15 PM	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	4	0	4	0	0	0	4
04:45 PM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	5	0	5	0	0	0	5
05:00 PM	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	5	0	5	0	0	0	5
Apprch %	0	0		100	0		0	0		
Total %	0	0		100	0	100	0	0		

Start Time	Theodore Street Southbound			Theodore Street Northbound			SR-60 Eastbound Ramps Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
04:00 PM	0	0	0	1	0	1	0	0	0	1
04:15 PM	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	4	0	4	0	0	0	4
04:45 PM	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	5	0	5	0	0	0	5
% App. Total	0	0		100	0		0	0		
PHF	.000	.000	.000	.313	.000	.313	.000	.000	.000	.313

Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1
 Peak Hour for Entire Intersection Begins at 04:00 PM

City of Moreno Valley
 N/S: Theodore Street
 E/W: SR-60 Eastbound Ramps
 Weather: Clear

File Name : 03_MRV_Theodore_60E PM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- Bicycles

Start Time	Theodore Street Southbound			Theodore Street Northbound			SR-60 Eastbound Ramps Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
04:00 PM	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0
Apprch %	0	0		0	0		0	0		
Total %										

Start Time	Theodore Street Southbound			Theodore Street Northbound			SR-60 Eastbound Ramps Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:00 PM										
04:00 PM	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0		0	0		0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

City of Moreno Valley
 N/S: Theodore Street
 E/W: SR-60 Eastbound Ramps
 Weather: Clear

File Name : 03_MRV_Theodore_60E PM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- Medium Truck

Start Time	Theodore Street Southbound			Theodore Street Northbound			SR-60 Eastbound Ramps Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
04:00 PM	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0
Apprch %	0	0		0	0		0	0		
Total %										

Start Time	Theodore Street Southbound			Theodore Street Northbound			SR-60 Eastbound Ramps Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:00 PM										
04:00 PM	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0		0	0		0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

City of Moreno Valley
 N/S: Theodore Street
 E/W: SR-60 Westbound Ramps
 Weather: Clear

File Name : 02_MRV_Theodore_60W AM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- Cars & Trailers - Large 2 Axle Vehicles - 3 Axle Vehicles - 4 Axle Trucks - 5 Axle Trucks - 6+ Axle Trucks - Buses & RV's -
 Motorcycles - Bicycles - Medium Truck

Start Time	Theodore Street Southbound			SR-60 Westbound Ramps Westbound			Theodore Street Northbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
07:00 AM	2	5	7	2	7	9	12	3	15	31
07:15 AM	4	1	5	16	3	19	10	2	12	36
07:30 AM	7	6	13	9	5	14	4	1	5	32
07:45 AM	4	3	7	15	9	24	7	1	8	39
Total	17	15	32	42	24	66	33	7	40	138
08:00 AM	6	5	11	7	7	14	9	3	12	37
08:15 AM	6	6	12	11	1	12	7	3	10	34
08:30 AM	6	3	9	11	0	11	11	7	18	38
08:45 AM	4	4	8	12	3	15	8	2	10	33
Total	22	18	40	41	11	52	35	15	50	142
Grand Total	39	33	72	83	35	118	68	22	90	280
Apprch %	54.2	45.8		70.3	29.7		75.6	24.4		
Total %	13.9	11.8	25.7	29.6	12.5	42.1	24.3	7.9	32.1	
Cars & Trailers	15	30	45	36	29	65	37	16	53	163
% Cars & Trailers	38.5	90.9	62.5	43.4	82.9	55.1	54.4	72.7	58.9	58.2
Large 2 Axle Vehicles	3	1	4	1	3	4	4	1	5	13
% Large 2 Axle Vehicles	7.7	3	5.6	1.2	8.6	3.4	5.9	4.5	5.6	4.6
3 Axle Vehicles	3	0	3	0	0	0	3	1	4	7
% 3 Axle Vehicles	7.7	0	4.2	0	0	0	4.4	4.5	4.4	2.5
4 Axle Trucks	3	1	4	0	0	0	5	0	5	9
% 4 Axle Trucks	7.7	3	5.6	0	0	0	7.4	0	5.6	3.2
5 Axle Trucks	15	1	16	39	1	40	18	4	22	78
% 5 Axle Trucks	38.5	3	22.2	47	2.9	33.9	26.5	18.2	24.4	27.9
6+ Axle Trucks	0	0	0	7	0	7	1	0	1	8
% 6+ Axle Trucks	0	0	0	8.4	0	5.9	1.5	0	1.1	2.9
Buses & RV's	0	0	0	0	0	0	0	0	0	0
% Buses & RV's	0	0	0	0	0	0	0	0	0	0
Motorcycles	0	0	0	0	2	2	0	0	0	2
% Motorcycles	0	0	0	0	5.7	1.7	0	0	0	0.7
Bicycles	0	0	0	0	0	0	0	0	0	0
% Bicycles	0	0	0	0	0	0	0	0	0	0
Medium Truck	0	0	0	0	0	0	0	0	0	0
% Medium Truck	0	0	0	0	0	0	0	0	0	0

Start Time	Theodore Street Southbound			SR-60 Westbound Ramps Westbound			Theodore Street Northbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:45 AM										
07:45 AM	4	3	7	15	9	24	7	1	8	39
08:00 AM	6	5	11	7	7	14	9	3	12	37
08:15 AM	6	6	12	11	1	12	7	3	10	34
08:30 AM	6	3	9	11	0	11	11	7	18	38
Total Volume	22	17	39	44	17	61	34	14	48	148
% App. Total	56.4	43.6		72.1	27.9		70.8	29.2		
PHF	.917	.708	.813	.733	.472	.635	.773	.500	.667	.949

City of Moreno Valley
 N/S: Theodore Street
 E/W: SR-60 Westbound Ramps
 Weather: Clear

File Name : 02_MRV_Theodore_60W AM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- Cars & Trailers

Start Time	Theodore Street Southbound			SR-60 Westbound Ramps Westbound			Theodore Street Northbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
07:00 AM	1	5	6	2	6	8	5	3	8	22
07:15 AM	3	1	4	9	3	12	7	0	7	23
07:30 AM	0	5	5	4	5	9	1	1	2	16
07:45 AM	0	3	3	6	6	12	4	1	5	20
Total	4	14	18	21	20	41	17	5	22	81
08:00 AM	3	5	8	3	6	9	4	1	5	22
08:15 AM	3	5	8	4	1	5	6	2	8	21
08:30 AM	2	3	5	4	0	4	7	6	13	22
08:45 AM	3	3	6	4	2	6	3	2	5	17
Total	11	16	27	15	9	24	20	11	31	82
Grand Total	15	30	45	36	29	65	37	16	53	163
Apprch %	33.3	66.7		55.4	44.6		69.8	30.2		
Total %	9.2	18.4	27.6	22.1	17.8	39.9	22.7	9.8	32.5	

Start Time	Theodore Street Southbound			SR-60 Westbound Ramps Westbound			Theodore Street Northbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
07:45 AM	0	3	3	6	6	12	4	1	5	20
08:00 AM	3	5	8	3	6	9	4	1	5	22
08:15 AM	3	5	8	4	1	5	6	2	8	21
08:30 AM	2	3	5	4	0	4	7	6	13	22
Total Volume	8	16	24	17	13	30	21	10	31	85
% App. Total	33.3	66.7		56.7	43.3		67.7	32.3		
PHF	.667	.800	.750	.708	.542	.625	.750	.417	.596	.966

Peak Hour Analysis From 07:45 AM to 08:30 AM - Peak 1 of 1
 Peak Hour for Entire Intersection Begins at 07:45 AM

City of Moreno Valley
 N/S: Theodore Street
 E/W: SR-60 Westbound Ramps
 Weather: Clear

File Name : 02_MRV_Theodore_60W AM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- Large 2 Axle Vehicles

Start Time	Theodore Street Southbound			SR-60 Westbound Ramps Westbound			Theodore Street Northbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
07:00 AM	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	1	1	1
07:30 AM	0	0	0	0	0	0	1	0	1	1
07:45 AM	1	0	1	0	1	1	1	0	1	3
Total	1	0	1	0	1	1	2	1	3	5
08:00 AM	1	0	1	0	1	1	0	0	0	2
08:15 AM	1	1	2	0	0	0	1	0	1	3
08:30 AM	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	1	1	2	1	0	1	3
Total	2	1	3	1	2	3	2	0	2	8
Grand Total	3	1	4	1	3	4	4	1	5	13
Apprch %	75	25		25	75		80	20		
Total %	23.1	7.7	30.8	7.7	23.1	30.8	30.8	7.7	38.5	

Start Time	Theodore Street Southbound			SR-60 Westbound Ramps Westbound			Theodore Street Northbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
07:45 AM	1	0	1	0	1	1	1	0	1	3
08:00 AM	1	0	1	0	1	1	0	0	0	2
08:15 AM	1	1	2	0	0	0	1	0	1	3
08:30 AM	0	0	0	0	0	0	0	0	0	0
Total Volume	3	1	4	0	2	2	2	0	2	8
% App. Total	75	25		0	100		100	0		
PHF	.750	.250	.500	.000	.500	.500	.500	.000	.500	.667

Peak Hour Analysis From 07:45 AM to 08:30 AM - Peak 1 of 1
 Peak Hour for Entire Intersection Begins at 07:45 AM

City of Moreno Valley
 N/S: Theodore Street
 E/W: SR-60 Westbound Ramps
 Weather: Clear

File Name : 02_MRV_Theodore_60W AM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- 3 Axle Vehicles

Start Time	Theodore Street Southbound			SR-60 Westbound Ramps Westbound			Theodore Street Northbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
07:00 AM	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	1	0	1	1
Total	0	0	0	0	0	0	1	0	1	1
08:00 AM	1	0	1	0	0	0	1	0	1	2
08:15 AM	1	0	1	0	0	0	0	0	0	1
08:30 AM	1	0	1	0	0	0	0	1	1	2
08:45 AM	0	0	0	0	0	0	1	0	1	1
Total	3	0	3	0	0	0	2	1	3	6
Grand Total	3	0	3	0	0	0	3	1	4	7
Apprch %	100	0		0	0		75	25		
Total %	42.9	0	42.9	0	0	0	42.9	14.3	57.1	

Start Time	Theodore Street Southbound			SR-60 Westbound Ramps Westbound			Theodore Street Northbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
07:45 AM	0	0	0	0	0	0	1	0	1	1
08:00 AM	1	0	1	0	0	0	1	0	1	2
08:15 AM	1	0	1	0	0	0	0	0	0	1
08:30 AM	1	0	1	0	0	0	0	1	1	2
Total Volume	3	0	3	0	0	0	2	1	3	6
% App. Total	100	0		0	0		66.7	33.3		
PHF	.750	.000	.750	.000	.000	.000	.500	.250	.750	.750

Peak Hour Analysis From 07:45 AM to 08:30 AM - Peak 1 of 1
 Peak Hour for Entire Intersection Begins at 07:45 AM

City of Moreno Valley
 N/S: Theodore Street
 E/W: SR-60 Westbound Ramps
 Weather: Clear

File Name : 02_MRV_Theodore_60W AM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- 4 Axle Trucks

Start Time	Theodore Street Southbound			SR-60 Westbound Ramps Westbound			Theodore Street Northbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
07:00 AM	1	0	1	0	0	0	1	0	1	2
07:15 AM	1	0	1	0	0	0	0	0	0	1
07:30 AM	1	0	1	0	0	0	0	0	0	1
07:45 AM	0	0	0	0	0	0	0	0	0	0
Total	3	0	3	0	0	0	1	0	1	4
08:00 AM	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	2	0	2	2
08:45 AM	0	1	1	0	0	0	2	0	2	3
Total	0	1	1	0	0	0	4	0	4	5
Grand Total	3	1	4	0	0	0	5	0	5	9
Apprch %	75	25		0	0		100	0		
Total %	33.3	11.1	44.4	0	0	0	55.6	0	55.6	

Start Time	Theodore Street Southbound			SR-60 Westbound Ramps Westbound			Theodore Street Northbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
07:45 AM	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	2	0	2	2
Total Volume	0	0	0	0	0	0	2	0	2	2
% App. Total	0	0		0	0		100	0		
PHF	.000	.000	.000	.000	.000	.000	.250	.000	.250	.250

Peak Hour Analysis From 07:45 AM to 08:30 AM - Peak 1 of 1
 Peak Hour for Entire Intersection Begins at 07:45 AM

City of Moreno Valley
 N/S: Theodore Street
 E/W: SR-60 Westbound Ramps
 Weather: Clear

File Name : 02_MRV_Theodore_60W AM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- 5 Axle Trucks

Start Time	Theodore Street Southbound			SR-60 Westbound Ramps Westbound			Theodore Street Northbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
07:00 AM	0	0	0	0	1	1	5	0	5	6
07:15 AM	0	0	0	6	0	6	3	1	4	10
07:30 AM	6	1	7	5	0	5	2	0	2	14
07:45 AM	3	0	3	7	0	7	1	0	1	11
Total	9	1	10	18	1	19	11	1	12	41
08:00 AM	1	0	1	3	0	3	4	2	6	10
08:15 AM	1	0	1	7	0	7	0	1	1	9
08:30 AM	3	0	3	5	0	5	2	0	2	10
08:45 AM	1	0	1	6	0	6	1	0	1	8
Total	6	0	6	21	0	21	7	3	10	37
Grand Total	15	1	16	39	1	40	18	4	22	78
Apprch %	93.8	6.2		97.5	2.5		81.8	18.2		
Total %	19.2	1.3	20.5	50	1.3	51.3	23.1	5.1	28.2	

Start Time	Theodore Street Southbound			SR-60 Westbound Ramps Westbound			Theodore Street Northbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
07:45 AM	3	0	3	7	0	7	1	0	1	11
08:00 AM	1	0	1	3	0	3	4	2	6	10
08:15 AM	1	0	1	7	0	7	0	1	1	9
08:30 AM	3	0	3	5	0	5	2	0	2	10
Total Volume	8	0	8	22	0	22	7	3	10	40
% App. Total	100	0		100	0		70	30		
PHF	.667	.000	.667	.786	.000	.786	.438	.375	.417	.909

Peak Hour Analysis From 07:45 AM to 08:30 AM - Peak 1 of 1
 Peak Hour for Entire Intersection Begins at 07:45 AM

City of Moreno Valley
 N/S: Theodore Street
 E/W: SR-60 Westbound Ramps
 Weather: Clear

File Name : 02_MRV_Theodore_60W AM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- 6+ Axle Trucks

Start Time	Theodore Street Southbound			SR-60 Westbound Ramps Westbound			Theodore Street Northbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
07:00 AM	0	0	0	0	0	0	1	0	1	1
07:15 AM	0	0	0	1	0	1	0	0	0	1
07:30 AM	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	2	0	2	0	0	0	2
Total	0	0	0	3	0	3	1	0	1	4
08:00 AM	0	0	0	1	0	1	0	0	0	1
08:15 AM	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	2	0	2	0	0	0	2
08:45 AM	0	0	0	1	0	1	0	0	0	1
Total	0	0	0	4	0	4	0	0	0	4
Grand Total	0	0	0	7	0	7	1	0	1	8
Apprch %	0	0		100	0		100	0		
Total %	0	0		87.5	0	87.5	12.5	0	12.5	

Start Time	Theodore Street Southbound			SR-60 Westbound Ramps Westbound			Theodore Street Northbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
07:45 AM	0	0	0	2	0	2	0	0	0	2
08:00 AM	0	0	0	1	0	1	0	0	0	1
08:15 AM	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	2	0	2	0	0	0	2
Total Volume	0	0	0	5	0	5	0	0	0	5
% App. Total	0	0		100	0		0	0		
PHF	.000	.000	.000	.625	.000	.625	.000	.000	.000	.625

Peak Hour Analysis From 07:45 AM to 08:30 AM - Peak 1 of 1
 Peak Hour for Entire Intersection Begins at 07:45 AM

City of Moreno Valley
 N/S: Theodore Street
 E/W: SR-60 Westbound Ramps
 Weather: Clear

File Name : 02_MR_V_Theodore_60W AM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- Buses & RV's

Start Time	Theodore Street Southbound			SR-60 Westbound Ramps Westbound			Theodore Street Northbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
07:00 AM	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0
Apprch %	0	0		0	0		0	0		
Total %										

Start Time	Theodore Street Southbound			SR-60 Westbound Ramps Westbound			Theodore Street Northbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
Peak Hour Analysis From 07:45 AM to 08:30 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:45 AM										
07:45 AM	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0		0	0		0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

City of Moreno Valley
 N/S: Theodore Street
 E/W: SR-60 Westbound Ramps
 Weather: Clear

File Name : 02_MRV_Theodore_60W AM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- Motorcycles

Start Time	Theodore Street Southbound			SR-60 Westbound Ramps Westbound			Theodore Street Northbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
07:00 AM	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	2	2	0	0	0	2
Total	0	0	0	0	2	2	0	0	0	2
08:00 AM	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	2	2	0	0	0	2
Apprch %	0	0		0	100		0	0		
Total %	0	0		0	100	100	0	0		

Start Time	Theodore Street Southbound			SR-60 Westbound Ramps Westbound			Theodore Street Northbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
07:45 AM	0	0	0	0	2	2	0	0	0	2
08:00 AM	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	2	2	0	0	0	2
% App. Total	0	0		0	100		0	0		
PHF	.000	.000	.000	.000	.250	.250	.000	.000	.000	.250

Peak Hour Analysis From 07:45 AM to 08:30 AM - Peak 1 of 1
 Peak Hour for Entire Intersection Begins at 07:45 AM

City of Moreno Valley
 N/S: Theodore Street
 E/W: SR-60 Westbound Ramps
 Weather: Clear

File Name : 02_MRV_Theodore_60W AM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- Bicycles

Start Time	Theodore Street Southbound			SR-60 Westbound Ramps Westbound			Theodore Street Northbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
07:00 AM	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0
Apprch %	0	0		0	0		0	0		
Total %										

Start Time	Theodore Street Southbound			SR-60 Westbound Ramps Westbound			Theodore Street Northbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
Peak Hour Analysis From 07:45 AM to 08:30 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:45 AM										
07:45 AM	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0		0	0		0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

City of Moreno Valley
 N/S: Theodore Street
 E/W: SR-60 Westbound Ramps
 Weather: Clear

File Name : 02_MRV_Theodore_60W AM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- Medium Truck

Start Time	Theodore Street Southbound			SR-60 Westbound Ramps Westbound			Theodore Street Northbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
07:00 AM	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0
Apprch %	0	0		0	0		0	0		
Total %										

Start Time	Theodore Street Southbound			SR-60 Westbound Ramps Westbound			Theodore Street Northbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
Peak Hour Analysis From 07:45 AM to 08:30 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:45 AM										
07:45 AM	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0		0	0		0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

City of Moreno Valley
 N/S: Theodore Street
 E/W: SR-60 Westbound Ramps
 Weather: Clear

File Name : 02_MRV_Theodore_60W PM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- Cars & Trailers - Large 2 Axle Vehicles - 3 Axle Vehicles - 4 Axle Trucks - 5 Axle Trucks - 6+ Axle Trucks - Buses & RV's -
 Motorcycles - Bicycles - Medium Truck

Start Time	Theodore Street Southbound			SR-60 Westbound Ramps Westbound			Theodore Street Northbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
04:00 PM	11	7	18	3	1	4	5	13	18	40
04:15 PM	9	6	15	10	4	14	4	9	13	42
04:30 PM	10	11	21	4	3	7	7	10	17	45
04:45 PM	5	5	10	6	2	8	4	6	10	28
Total	35	29	64	23	10	33	20	38	58	155
05:00 PM	1	7	8	6	3	9	2	10	12	29
05:15 PM	3	8	11	3	4	7	1	4	5	23
05:30 PM	2	3	5	5	0	5	8	13	21	31
05:45 PM	2	3	5	4	4	8	1	6	7	20
Total	8	21	29	18	11	29	12	33	45	103
Grand Total	43	50	93	41	21	62	32	71	103	258
Apprch %	46.2	53.8		66.1	33.9		31.1	68.9		
Total %	16.7	19.4	36	15.9	8.1	24	12.4	27.5	39.9	
Cars & Trailers	32	49	81	37	20	57	27	59	86	224
% Cars & Trailers	74.4	98	87.1	90.2	95.2	91.9	84.4	83.1	83.5	86.8
Large 2 Axle Vehicles	3	0	3	0	1	1	2	6	8	12
% Large 2 Axle Vehicles	7	0	3.2	0	4.8	1.6	6.2	8.5	7.8	4.7
3 Axle Vehicles	1	0	1	1	0	1	0	4	4	6
% 3 Axle Vehicles	2.3	0	1.1	2.4	0	1.6	0	5.6	3.9	2.3
4 Axle Trucks	4	0	4	0	0	0	0	0	0	4
% 4 Axle Trucks	9.3	0	4.3	0	0	0	0	0	0	1.6
5 Axle Trucks	3	0	3	3	0	3	2	2	4	10
% 5 Axle Trucks	7	0	3.2	7.3	0	4.8	6.2	2.8	3.9	3.9
6+ Axle Trucks	0	1	1	0	0	0	1	0	1	2
% 6+ Axle Trucks	0	2	1.1	0	0	0	3.1	0	1	0.8
Buses & RV's	0	0	0	0	0	0	0	0	0	0
% Buses & RV's	0	0	0	0	0	0	0	0	0	0
Motorcycles	0	0	0	0	0	0	0	0	0	0
% Motorcycles	0	0	0	0	0	0	0	0	0	0
Bicycles	0	0	0	0	0	0	0	0	0	0
% Bicycles	0	0	0	0	0	0	0	0	0	0
Medium Truck	0	0	0	0	0	0	0	0	0	0
% Medium Truck	0	0	0	0	0	0	0	0	0	0

Start Time	Theodore Street Southbound			SR-60 Westbound Ramps Westbound			Theodore Street Northbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
04:00 PM	11	7	18	3	1	4	5	13	18	40
04:15 PM	9	6	15	10	4	14	4	9	13	42
04:30 PM	10	11	21	4	3	7	7	10	17	45
04:45 PM	5	5	10	6	2	8	4	6	10	28
Total Volume	35	29	64	23	10	33	20	38	58	155
% App. Total	54.7	45.3		69.7	30.3		34.5	65.5		
PHF	.795	.659	.762	.575	.625	.589	.714	.731	.806	.861

Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
 Peak Hour for Entire Intersection Begins at 04:00 PM

City of Moreno Valley
 N/S: Theodore Street
 E/W: SR-60 Westbound Ramps
 Weather: Clear

File Name : 02_MRV_Theodore_60W PM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- Cars & Trailers

Start Time	Theodore Street Southbound			SR-60 Westbound Ramps Westbound			Theodore Street Northbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
04:00 PM	7	7	14	2	1	3	4	9	13	30
04:15 PM	4	6	10	10	3	13	4	5	9	32
04:30 PM	9	10	19	3	3	6	7	9	16	41
04:45 PM	5	5	10	5	2	7	3	5	8	25
Total	25	28	53	20	9	29	18	28	46	128
05:00 PM	1	7	8	5	3	8	2	8	10	26
05:15 PM	3	8	11	3	4	7	1	4	5	23
05:30 PM	2	3	5	5	0	5	5	13	18	28
05:45 PM	1	3	4	4	4	8	1	6	7	19
Total	7	21	28	17	11	28	9	31	40	96
Grand Total	32	49	81	37	20	57	27	59	86	224
Apprch %	39.5	60.5		64.9	35.1		31.4	68.6		
Total %	14.3	21.9	36.2	16.5	8.9	25.4	12.1	26.3	38.4	

Start Time	Theodore Street Southbound			SR-60 Westbound Ramps Westbound			Theodore Street Northbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
04:00 PM	7	7	14	2	1	3	4	9	13	30
04:15 PM	4	6	10	10	3	13	4	5	9	32
04:30 PM	9	10	19	3	3	6	7	9	16	41
04:45 PM	5	5	10	5	2	7	3	5	8	25
Total Volume	25	28	53	20	9	29	18	28	46	128
% App. Total	47.2	52.8		69	31		39.1	60.9		
PHF	.694	.700	.697	.500	.750	.558	.643	.778	.719	.780

Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1
 Peak Hour for Entire Intersection Begins at 04:00 PM

City of Moreno Valley
 N/S: Theodore Street
 E/W: SR-60 Westbound Ramps
 Weather: Clear

File Name : 02_MRV_Theodore_60W PM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- Large 2 Axle Vehicles

Start Time	Theodore Street Southbound			SR-60 Westbound Ramps Westbound			Theodore Street Northbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
04:00 PM	2	0	2	0	0	0	0	1	1	3
04:15 PM	0	0	0	0	1	1	0	2	2	3
04:30 PM	0	0	0	0	0	0	0	1	1	1
04:45 PM	0	0	0	0	0	0	0	1	1	1
Total	2	0	2	0	1	1	0	5	5	8
05:00 PM	0	0	0	0	0	0	0	1	1	1
05:15 PM	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	2	0	2	2
05:45 PM	1	0	1	0	0	0	0	0	0	1
Total	1	0	1	0	0	0	2	1	3	4
Grand Total	3	0	3	0	1	1	2	6	8	12
Apprch %	100	0		0	100		25	75		
Total %	25	0	25	0	8.3	8.3	16.7	50	66.7	

Start Time	Theodore Street Southbound			SR-60 Westbound Ramps Westbound			Theodore Street Northbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
04:00 PM	2	0	2	0	0	0	0	1	1	3
04:15 PM	0	0	0	0	1	1	0	2	2	3
04:30 PM	0	0	0	0	0	0	0	1	1	1
04:45 PM	0	0	0	0	0	0	0	1	1	1
Total Volume	2	0	2	0	1	1	0	5	5	8
% App. Total	100	0		0	100		0	100		
PHF	.250	.000	.250	.000	.250	.250	.000	.625	.625	.667

Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1
 Peak Hour for Entire Intersection Begins at 04:00 PM

City of Moreno Valley
 N/S: Theodore Street
 E/W: SR-60 Westbound Ramps
 Weather: Clear

File Name : 02_MRV_Theodore_60W PM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- 3 Axle Vehicles

Start Time	Theodore Street Southbound			SR-60 Westbound Ramps Westbound			Theodore Street Northbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
04:00 PM	0	0	0	0	0	0	0	2	2	2
04:15 PM	0	0	0	0	0	0	0	1	1	1
04:30 PM	1	0	1	0	0	0	0	0	0	1
04:45 PM	0	0	0	0	0	0	0	0	0	0
Total	1	0	1	0	0	0	0	3	3	4
05:00 PM	0	0	0	1	0	1	0	1	1	2
05:15 PM	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	1	0	1	0	1	1	2
Grand Total	1	0	1	1	0	1	0	4	4	6
Apprch %	100	0		100	0		0	100		
Total %	16.7	0	16.7	16.7	0	16.7	0	66.7	66.7	

Start Time	Theodore Street Southbound			SR-60 Westbound Ramps Westbound			Theodore Street Northbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
04:00 PM	0	0	0	0	0	0	0	2	2	2
04:15 PM	0	0	0	0	0	0	0	1	1	1
04:30 PM	1	0	1	0	0	0	0	0	0	1
04:45 PM	0	0	0	0	0	0	0	0	0	0
Total Volume	1	0	1	0	0	0	0	3	3	4
% App. Total	100	0		0	0		0	100		
PHF	.250	.000	.250	.000	.000	.000	.000	.375	.375	.500

Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1
 Peak Hour for Entire Intersection Begins at 04:00 PM

City of Moreno Valley
 N/S: Theodore Street
 E/W: SR-60 Westbound Ramps
 Weather: Clear

File Name : 02_MRV_Theodore_60W PM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- 4 Axle Trucks

Start Time	Theodore Street Southbound			SR-60 Westbound Ramps Westbound			Theodore Street Northbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
04:00 PM	2	0	2	0	0	0	0	0	0	2
04:15 PM	2	0	2	0	0	0	0	0	0	2
04:30 PM	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0
Total	4	0	4	0	0	0	0	0	0	4
05:00 PM	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
Grand Total	4	0	4	0	0	0	0	0	0	4
Apprch %	100	0		0	0		0	0		
Total %	100	0	100	0	0	0	0	0	0	

Start Time	Theodore Street Southbound			SR-60 Westbound Ramps Westbound			Theodore Street Northbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:00 PM										
04:00 PM	2	0	2	0	0	0	0	0	0	2
04:15 PM	2	0	2	0	0	0	0	0	0	2
04:30 PM	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0
Total Volume	4	0	4	0	0	0	0	0	0	4
% App. Total	100	0		0	0		0	0		
PHF	.500	.000	.500	.000	.000	.000	.000	.000	.000	.500

City of Moreno Valley
 N/S: Theodore Street
 E/W: SR-60 Westbound Ramps
 Weather: Clear

File Name : 02_MRV_Theodore_60W PM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- 5 Axle Trucks

Start Time	Theodore Street Southbound			SR-60 Westbound Ramps Westbound			Theodore Street Northbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
04:00 PM	0	0	0	1	0	1	1	1	2	3
04:15 PM	3	0	3	0	0	0	0	1	1	4
04:30 PM	0	0	0	1	0	1	0	0	0	1
04:45 PM	0	0	0	1	0	1	1	0	1	2
Total	3	0	3	3	0	3	2	2	4	10
05:00 PM	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
Grand Total	3	0	3	3	0	3	2	2	4	10
Apprch %	100	0		100	0		50	50		
Total %	30	0	30	30	0	30	20	20	40	

Start Time	Theodore Street Southbound			SR-60 Westbound Ramps Westbound			Theodore Street Northbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
04:00 PM	0	0	0	1	0	1	1	1	2	3
04:15 PM	3	0	3	0	0	0	0	1	1	4
04:30 PM	0	0	0	1	0	1	0	0	0	1
04:45 PM	0	0	0	1	0	1	1	0	1	2
Total Volume	3	0	3	3	0	3	2	2	4	10
% App. Total	100	0		100	0		50	50		
PHF	.250	.000	.250	.750	.000	.750	.500	.500	.500	.625

Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1
 Peak Hour for Entire Intersection Begins at 04:00 PM

City of Moreno Valley
 N/S: Theodore Street
 E/W: SR-60 Westbound Ramps
 Weather: Clear

File Name : 02_MRV_Theodore_60W PM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- 6+ Axle Trucks

Start Time	Theodore Street Southbound			SR-60 Westbound Ramps Westbound			Theodore Street Northbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
04:00 PM	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	1	1	0	0	0	0	0	0	1
04:45 PM	0	0	0	0	0	0	0	0	0	0
Total	0	1	1	0	0	0	0	0	0	1
05:00 PM	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	1	0	1	1
05:45 PM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	1	0	1	1
Grand Total	0	1	1	0	0	0	1	0	1	2
Apprch %	0	100		0	0		100	0		
Total %	0	50	50	0	0	0	50	0	50	

Start Time	Theodore Street Southbound			SR-60 Westbound Ramps Westbound			Theodore Street Northbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
04:00 PM	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	1	1	0	0	0	0	0	0	1
04:45 PM	0	0	0	0	0	0	0	0	0	0
Total Volume	0	1	1	0	0	0	0	0	0	1
% App. Total	0	100		0	0		0	0		
PHF	.000	.250	.250	.000	.000	.000	.000	.000	.000	.250

Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1
 Peak Hour for Entire Intersection Begins at 04:00 PM

City of Moreno Valley
 N/S: Theodore Street
 E/W: SR-60 Westbound Ramps
 Weather: Clear

File Name : 02_MR_V_Theodore_60W PM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- Buses & RV's

Start Time	Theodore Street Southbound			SR-60 Westbound Ramps Westbound			Theodore Street Northbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
04:00 PM	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0
Apprch %	0	0		0	0		0	0		
Total %										

Start Time	Theodore Street Southbound			SR-60 Westbound Ramps Westbound			Theodore Street Northbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:00 PM										
04:00 PM	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0		0	0		0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

City of Moreno Valley
 N/S: Theodore Street
 E/W: SR-60 Westbound Ramps
 Weather: Clear

File Name : 02_MRV_Theodore_60W PM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- Motorcycles

Start Time	Theodore Street Southbound			SR-60 Westbound Ramps Westbound			Theodore Street Northbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
04:00 PM	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0
Apprch %	0	0		0	0		0	0		
Total %										

Start Time	Theodore Street Southbound			SR-60 Westbound Ramps Westbound			Theodore Street Northbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:00 PM										
04:00 PM	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0		0	0		0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

City of Moreno Valley
 N/S: Theodore Street
 E/W: SR-60 Westbound Ramps
 Weather: Clear

File Name : 02_MRV_Theodore_60W PM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- Bicycles

Start Time	Theodore Street Southbound			SR-60 Westbound Ramps Westbound			Theodore Street Northbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
04:00 PM	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0
Apprch %	0	0		0	0		0	0		
Total %										

Start Time	Theodore Street Southbound			SR-60 Westbound Ramps Westbound			Theodore Street Northbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:00 PM										
04:00 PM	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0		0	0		0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

City of Moreno Valley
 N/S: Theodore Street
 E/W: SR-60 Westbound Ramps
 Weather: Clear

File Name : 02_MRV_Theodore_60W PM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- Medium Truck

Start Time	Theodore Street Southbound			SR-60 Westbound Ramps Westbound			Theodore Street Northbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
04:00 PM	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0
Apprch %	0	0		0	0		0	0		
Total %										

Start Time	Theodore Street Southbound			SR-60 Westbound Ramps Westbound			Theodore Street Northbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:00 PM										
04:00 PM	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0		0	0		0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

City of Moreno Valley
 N/S: Theodore Street
 E/W: Ironwood Avenue
 Weather: Clear

File Name : 01_MRV_Theodore_Ironwood AM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- Cars & Trailers - Large 2 Axle Vehicles - 3 Axle Vehicles - 4 Axle Trucks - 5 Axle Trucks - 6+ Axle Trucks - Buses & RV's -
 Motorcycles - Bicycles - Medium Truck

Start Time	Ironwood Avenue Westbound			Theodore Street Northbound			Ironwood Avenue Eastbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
07:00 AM	1	5	6	6	1	7	0	8	8	21
07:15 AM	0	3	3	5	2	7	5	7	12	22
07:30 AM	1	6	7	11	2	13	3	6	9	29
07:45 AM	0	3	3	9	0	9	8	4	12	24
Total	2	17	19	31	5	36	16	25	41	96
08:00 AM	2	5	7	5	0	5	10	7	17	29
08:15 AM	3	4	7	7	1	8	4	5	9	24
08:30 AM	1	3	4	13	3	16	5	6	11	31
08:45 AM	2	2	4	6	2	8	4	9	13	25
Total	8	14	22	31	6	37	23	27	50	109
Grand Total	10	31	41	62	11	73	39	52	91	205
Apprch %	24.4	75.6		84.9	15.1		42.9	57.1		
Total %	4.9	15.1	20	30.2	5.4	35.6	19	25.4	44.4	
Cars & Trailers	2	25	27	21	3	24	25	6	31	82
% Cars & Trailers	20	80.6	65.9	33.9	27.3	32.9	64.1	11.5	34.1	40
Large 2 Axle Vehicles	1	0	1	3	1	4	2	5	7	12
% Large 2 Axle Vehicles	10	0	2.4	4.8	9.1	5.5	5.1	9.6	7.7	5.9
3 Axle Vehicles	1	0	1	7	1	8	0	8	8	17
% 3 Axle Vehicles	10	0	2.4	11.3	9.1	11	0	15.4	8.8	8.3
4 Axle Trucks	0	0	0	0	0	0	0	0	0	0
% 4 Axle Trucks	0	0	0	0	0	0	0	0	0	0
5 Axle Trucks	0	0	0	16	1	17	1	19	20	37
% 5 Axle Trucks	0	0	0	25.8	9.1	23.3	2.6	36.5	22	18
6+ Axle Trucks	0	0	0	0	0	0	0	0	0	0
% 6+ Axle Trucks	0	0	0	0	0	0	0	0	0	0
Buses & RV's	0	0	0	0	0	0	0	1	1	1
% Buses & RV's	0	0	0	0	0	0	0	1.9	1.1	0.5
Motorcycles	0	0	0	0	0	0	2	0	2	2
% Motorcycles	0	0	0	0	0	0	5.1	0	2.2	1
Bicycles	2	1	3	0	1	1	1	0	1	5
% Bicycles	20	3.2	7.3	0	9.1	1.4	2.6	0	1.1	2.4
Medium Truck	4	5	9	15	4	19	8	13	21	49
% Medium Truck	40	16.1	22	24.2	36.4	26	20.5	25	23.1	23.9

Start Time	Ironwood Avenue Westbound			Theodore Street Northbound			Ironwood Avenue Eastbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 08:00 AM										
08:00 AM	2	5	7	5	0	5	10	7	17	29
08:15 AM	3	4	7	7	1	8	4	5	9	24
08:30 AM	1	3	4	13	3	16	5	6	11	31
08:45 AM	2	2	4	6	2	8	4	9	13	25
Total Volume	8	14	22	31	6	37	23	27	50	109
% App. Total	36.4	63.6		83.8	16.2		46	54		
PHF	.667	.700	.786	.596	.500	.578	.575	.750	.735	.879

City of Moreno Valley
 N/S: Theodore Street
 E/W: Ironwood Avenue
 Weather: Clear

File Name : 01_MRV_Theodore_Ironwood AM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- Cars & Trailers

Start Time	Ironwood Avenue Westbound			Theodore Street Northbound			Ironwood Avenue Eastbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
07:00 AM	0	5	5	2	0	2	0	0	0	7
07:15 AM	0	2	2	1	1	2	3	2	5	9
07:30 AM	1	6	7	4	2	6	3	3	6	19
07:45 AM	0	1	1	4	0	4	4	0	4	9
Total	1	14	15	11	3	14	10	5	15	44
08:00 AM	0	4	4	1	0	1	6	0	6	11
08:15 AM	0	4	4	2	0	2	4	0	4	10
08:30 AM	1	2	3	6	0	6	5	1	6	15
08:45 AM	0	1	1	1	0	1	0	0	0	2
Total	1	11	12	10	0	10	15	1	16	38
Grand Total	2	25	27	21	3	24	25	6	31	82
Apprch %	7.4	92.6		87.5	12.5		80.6	19.4		
Total %	2.4	30.5	32.9	25.6	3.7	29.3	30.5	7.3	37.8	

Start Time	Ironwood Avenue Westbound			Theodore Street Northbound			Ironwood Avenue Eastbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
08:00 AM	0	4	4	1	0	1	6	0	6	11
08:15 AM	0	4	4	2	0	2	4	0	4	10
08:30 AM	1	2	3	6	0	6	5	1	6	15
08:45 AM	0	1	1	1	0	1	0	0	0	2
Total Volume	1	11	12	10	0	10	15	1	16	38
% App. Total	8.3	91.7		100	0		93.8	6.2		
PHF	.250	.688	.750	.417	.000	.417	.625	.250	.667	.633

Peak Hour Analysis From 08:00 AM to 08:45 AM - Peak 1 of 1
 Peak Hour for Entire Intersection Begins at 08:00 AM

City of Moreno Valley
 N/S: Theodore Street
 E/W: Ironwood Avenue
 Weather: Clear

File Name : 01_MRV_Theodore_Ironwood AM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- Large 2 Axle Vehicles

Start Time	Ironwood Avenue Westbound			Theodore Street Northbound			Ironwood Avenue Eastbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
07:00 AM	0	0	0	1	0	1	0	0	0	1
07:15 AM	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	2	2	2
Total	0	0	0	1	0	1	0	2	2	3
08:00 AM	1	0	1	1	0	1	1	1	2	4
08:15 AM	0	0	0	1	0	1	0	1	1	2
08:30 AM	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	1	1	1	1	2	3
Total	1	0	1	2	1	3	2	3	5	9
Grand Total	1	0	1	3	1	4	2	5	7	12
Apprch %	100	0		75	25		28.6	71.4		
Total %	8.3	0	8.3	25	8.3	33.3	16.7	41.7	58.3	

Start Time	Ironwood Avenue Westbound			Theodore Street Northbound			Ironwood Avenue Eastbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
08:00 AM	1	0	1	1	0	1	1	1	2	4
08:15 AM	0	0	0	1	0	1	0	1	1	2
08:30 AM	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	1	1	1	1	2	3
Total Volume	1	0	1	2	1	3	2	3	5	9
% App. Total	100	0		66.7	33.3		40	60		
PHF	.250	.000	.250	.500	.250	.750	.500	.750	.625	.563

Peak Hour Analysis From 08:00 AM to 08:45 AM - Peak 1 of 1
 Peak Hour for Entire Intersection Begins at 08:00 AM

City of Moreno Valley
 N/S: Theodore Street
 E/W: Ironwood Avenue
 Weather: Clear

File Name : 01_MRV_Theodore_Ironwood AM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- 3 Axle Vehicles

Start Time	Ironwood Avenue Westbound			Theodore Street Northbound			Ironwood Avenue Eastbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
07:00 AM	0	0	0	1	0	1	0	1	1	2
07:15 AM	0	0	0	1	0	1	0	0	0	1
07:30 AM	0	0	0	2	0	2	0	0	0	2
07:45 AM	0	0	0	0	0	0	0	1	1	1
Total	0	0	0	4	0	4	0	2	2	6
08:00 AM	0	0	0	0	0	0	0	1	1	1
08:15 AM	1	0	1	1	1	2	0	0	0	3
08:30 AM	0	0	0	1	0	1	0	0	0	1
08:45 AM	0	0	0	1	0	1	0	5	5	6
Total	1	0	1	3	1	4	0	6	6	11
Grand Total	1	0	1	7	1	8	0	8	8	17
Apprch %	100	0		87.5	12.5		0	100		
Total %	5.9	0	5.9	41.2	5.9	47.1	0	47.1	47.1	

Start Time	Ironwood Avenue Westbound			Theodore Street Northbound			Ironwood Avenue Eastbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
08:00 AM	0	0	0	0	0	0	0	1	1	1
08:15 AM	1	0	1	1	1	2	0	0	0	3
08:30 AM	0	0	0	1	0	1	0	0	0	1
08:45 AM	0	0	0	1	0	1	0	5	5	6
Total Volume	1	0	1	3	1	4	0	6	6	11
% App. Total	100	0		75	25		0	100		
PHF	.250	.000	.250	.750	.250	.500	.000	.300	.300	.458

Peak Hour Analysis From 08:00 AM to 08:45 AM - Peak 1 of 1
 Peak Hour for Entire Intersection Begins at 08:00 AM

City of Moreno Valley
 N/S: Theodore Street
 E/W: Ironwood Avenue
 Weather: Clear

File Name : 01_MRV_Theodore_Ironwood AM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- 4 Axle Trucks

Start Time	Ironwood Avenue Westbound			Theodore Street Northbound			Ironwood Avenue Eastbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
07:00 AM	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0
Apprch %	0	0		0	0		0	0		
Total %										

Start Time	Ironwood Avenue Westbound			Theodore Street Northbound			Ironwood Avenue Eastbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
Peak Hour Analysis From 08:00 AM to 08:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 08:00 AM										
08:00 AM	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0		0	0		0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

City of Moreno Valley
 N/S: Theodore Street
 E/W: Ironwood Avenue
 Weather: Clear

File Name : 01_MRV_Theodore_Ironwood AM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- 5 Axle Trucks

Start Time	Ironwood Avenue Westbound			Theodore Street Northbound			Ironwood Avenue Eastbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
07:00 AM	0	0	0	0	0	0	0	4	4	4
07:15 AM	0	0	0	1	0	1	1	5	6	7
07:30 AM	0	0	0	5	0	5	0	2	2	7
07:45 AM	0	0	0	4	0	4	0	1	1	5
Total	0	0	0	10	0	10	1	12	13	23
08:00 AM	0	0	0	1	0	1	0	2	2	3
08:15 AM	0	0	0	1	0	1	0	2	2	3
08:30 AM	0	0	0	3	1	4	0	1	1	5
08:45 AM	0	0	0	1	0	1	0	2	2	3
Total	0	0	0	6	1	7	0	7	7	14
Grand Total	0	0	0	16	1	17	1	19	20	37
Apprch %	0	0		94.1	5.9		5	95		
Total %	0	0		43.2	2.7	45.9	2.7	51.4	54.1	

Start Time	Ironwood Avenue Westbound			Theodore Street Northbound			Ironwood Avenue Eastbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
08:00 AM	0	0	0	1	0	1	0	2	2	3
08:15 AM	0	0	0	1	0	1	0	2	2	3
08:30 AM	0	0	0	3	1	4	0	1	1	5
08:45 AM	0	0	0	1	0	1	0	2	2	3
Total Volume	0	0	0	6	1	7	0	7	7	14
% App. Total	0	0		85.7	14.3		0	100		
PHF	.000	.000	.000	.500	.250	.438	.000	.875	.875	.700

Peak Hour Analysis From 08:00 AM to 08:45 AM - Peak 1 of 1
 Peak Hour for Entire Intersection Begins at 08:00 AM

City of Moreno Valley
 N/S: Theodore Street
 E/W: Ironwood Avenue
 Weather: Clear

File Name : 01_MRV_Theodore_Ironwood AM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- 6+ Axle Trucks

Start Time	Ironwood Avenue Westbound			Theodore Street Northbound			Ironwood Avenue Eastbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
07:00 AM	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0
Apprch %	0	0		0	0		0	0		
Total %										

Start Time	Ironwood Avenue Westbound			Theodore Street Northbound			Ironwood Avenue Eastbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
Peak Hour Analysis From 08:00 AM to 08:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 08:00 AM										
08:00 AM	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0		0	0		0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

City of Moreno Valley
 N/S: Theodore Street
 E/W: Ironwood Avenue
 Weather: Clear

File Name : 01_MRV_Theodore_Ironwood AM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- Buses & RV's

Start Time	Ironwood Avenue Westbound			Theodore Street Northbound			Ironwood Avenue Eastbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
07:00 AM	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	0	1	1	1
08:15 AM	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	1	1	1
Grand Total	0	0	0	0	0	0	0	1	1	1
Apprch %	0	0		0	0		0	100		
Total %	0	0		0	0		0	100	100	

Start Time	Ironwood Avenue Westbound			Theodore Street Northbound			Ironwood Avenue Eastbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
08:00 AM	0	0	0	0	0	0	0	1	1	1
08:15 AM	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	1	1	1
% App. Total	0	0		0	0		0	100		
PHF	.000	.000	.000	.000	.000	.000	.000	.250	.250	.250

Peak Hour Analysis From 08:00 AM to 08:45 AM - Peak 1 of 1
 Peak Hour for Entire Intersection Begins at 08:00 AM

City of Moreno Valley
 N/S: Theodore Street
 E/W: Ironwood Avenue
 Weather: Clear

File Name : 01_MRV_Theodore_Ironwood AM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- Motorcycles

Start Time	Ironwood Avenue Westbound			Theodore Street Northbound			Ironwood Avenue Eastbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
07:00 AM	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	2	0	2	2
Total	0	0	0	0	0	0	2	0	2	2
08:00 AM	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	2	0	2	2
Apprch %	0	0		0	0		100	0		
Total %	0	0		0	0		100	0	100	

Start Time	Ironwood Avenue Westbound			Theodore Street Northbound			Ironwood Avenue Eastbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
Peak Hour Analysis From 08:00 AM to 08:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 08:00 AM										
08:00 AM	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0		0	0		0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

City of Moreno Valley
 N/S: Theodore Street
 E/W: Ironwood Avenue
 Weather: Clear

File Name : 01_MRV_Theodore_Ironwood AM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- Bicycles

Start Time	Ironwood Avenue Westbound			Theodore Street Northbound			Ironwood Avenue Eastbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
07:00 AM	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	1	1	0	0	0	0	0	0	1
07:30 AM	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0
Total	0	1	1	0	0	0	0	0	0	1
08:00 AM	1	0	1	0	0	0	0	0	0	1
08:15 AM	1	0	1	0	0	0	0	0	0	1
08:30 AM	0	0	0	0	1	1	0	0	0	1
08:45 AM	0	0	0	0	0	0	1	0	1	1
Total	2	0	2	0	1	1	1	0	1	4
Grand Total	2	1	3	0	1	1	1	0	1	5
Apprch %	66.7	33.3		0	100		100	0		
Total %	40	20	60	0	20	20	20	0	20	

Start Time	Ironwood Avenue Westbound			Theodore Street Northbound			Ironwood Avenue Eastbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
08:00 AM	1	0	1	0	0	0	0	0	0	1
08:15 AM	1	0	1	0	0	0	0	0	0	1
08:30 AM	0	0	0	0	1	1	0	0	0	1
08:45 AM	0	0	0	0	0	0	1	0	1	1
Total Volume	2	0	2	0	1	1	1	0	1	4
% App. Total	100	0		0	100		100	0		
PHF	.500	.000	.500	.000	.250	.250	.250	.000	.250	1.00

Peak Hour Analysis From 08:00 AM to 08:45 AM - Peak 1 of 1
 Peak Hour for Entire Intersection Begins at 08:00 AM

City of Moreno Valley
 N/S: Theodore Street
 E/W: Ironwood Avenue
 Weather: Clear

File Name : 01_MRV_Theodore_Ironwood AM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- Medium Truck

Start Time	Ironwood Avenue Westbound			Theodore Street Northbound			Ironwood Avenue Eastbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
07:00 AM	1	0	1	2	1	3	0	3	3	7
07:15 AM	0	0	0	2	1	3	1	0	1	4
07:30 AM	0	0	0	0	0	0	0	1	1	1
07:45 AM	0	2	2	1	0	1	2	0	2	5
Total	1	2	3	5	2	7	3	4	7	17
08:00 AM	0	1	1	2	0	2	3	2	5	8
08:15 AM	1	0	1	2	0	2	0	2	2	5
08:30 AM	0	1	1	3	1	4	0	4	4	9
08:45 AM	2	1	3	3	1	4	2	1	3	10
Total	3	3	6	10	2	12	5	9	14	32
Grand Total	4	5	9	15	4	19	8	13	21	49
Apprch %	44.4	55.6		78.9	21.1		38.1	61.9		
Total %	8.2	10.2	18.4	30.6	8.2	38.8	16.3	26.5	42.9	

Start Time	Ironwood Avenue Westbound			Theodore Street Northbound			Ironwood Avenue Eastbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
08:00 AM	0	1	1	2	0	2	3	2	5	8
08:15 AM	1	0	1	2	0	2	0	2	2	5
08:30 AM	0	1	1	3	1	4	0	4	4	9
08:45 AM	2	1	3	3	1	4	2	1	3	10
Total Volume	3	3	6	10	2	12	5	9	14	32
% App. Total	50	50		83.3	16.7		35.7	64.3		
PHF	.375	.750	.500	.833	.500	.750	.417	.563	.700	.800

Peak Hour Analysis From 08:00 AM to 08:45 AM - Peak 1 of 1
 Peak Hour for Entire Intersection Begins at 08:00 AM

City of Moreno Valley
 N/S: Theodore Street
 E/W: Ironwood Avenue
 Weather: Clear

File Name : 01_MRV_Theodore_Ironwood PM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- Cars & Trailers - Large 2 Axle Vehicles - 3 Axle Vehicles - 4 Axle Trucks - 5 Axle Trucks - 6+ Axle Trucks - Buses & RV's -
 Motorcycles - Bicycles - Medium Truck

Start Time	Ironwood Avenue Westbound			Theodore Street Northbound			Ironwood Avenue Eastbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
04:00 PM	1	6	7	9	1	10	2	6	8	25
04:15 PM	0	7	7	10	1	11	6	3	9	27
04:30 PM	1	8	9	11	4	15	4	3	7	31
04:45 PM	1	2	3	10	0	10	4	1	5	18
Total	3	23	26	40	6	46	16	13	29	101
05:00 PM	1	6	7	2	1	3	6	0	6	16
05:15 PM	0	6	6	2	1	3	4	0	4	13
05:30 PM	1	2	3	7	0	7	6	1	7	17
05:45 PM	0	3	3	1	0	1	3	2	5	9
Total	2	17	19	12	2	14	19	3	22	55
Grand Total	5	40	45	52	8	60	35	16	51	156
Apprch %	11.1	88.9		86.7	13.3		68.6	31.4		
Total %	3.2	25.6	28.8	33.3	5.1	38.5	22.4	10.3	32.7	
Cars & Trailers	2	25	27	21	3	24	25	6	31	82
% Cars & Trailers	40	62.5	60	40.4	37.5	40	71.4	37.5	60.8	52.6
Large 2 Axle Vehicles	0	1	1	2	0	2	0	0	0	3
% Large 2 Axle Vehicles	0	2.5	2.2	3.8	0	3.3	0	0	0	1.9
3 Axle Vehicles	0	0	0	5	0	5	0	2	2	7
% 3 Axle Vehicles	0	0	0	9.6	0	8.3	0	12.5	3.9	4.5
4 Axle Trucks	0	0	0	0	0	0	0	0	0	0
% 4 Axle Trucks	0	0	0	0	0	0	0	0	0	0
5 Axle Trucks	0	0	0	4	0	4	1	2	3	7
% 5 Axle Trucks	0	0	0	7.7	0	6.7	2.9	12.5	5.9	4.5
6+ Axle Trucks	0	0	0	0	0	0	0	0	0	0
% 6+ Axle Trucks	0	0	0	0	0	0	0	0	0	0
Buses & RV's	0	0	0	0	0	0	0	0	0	0
% Buses & RV's	0	0	0	0	0	0	0	0	0	0
Motorcycles	0	0	0	0	0	0	0	0	0	0
% Motorcycles	0	0	0	0	0	0	0	0	0	0
Bicycles	0	0	0	0	1	1	0	0	0	1
% Bicycles	0	0	0	0	12.5	1.7	0	0	0	0.6
Medium Truck	3	14	17	20	4	24	9	6	15	56
% Medium Truck	60	35	37.8	38.5	50	40	25.7	37.5	29.4	35.9

Start Time	Ironwood Avenue Westbound			Theodore Street Northbound			Ironwood Avenue Eastbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
04:00 PM	1	6	7	9	1	10	2	6	8	25
04:15 PM	0	7	7	10	1	11	6	3	9	27
04:30 PM	1	8	9	11	4	15	4	3	7	31
04:45 PM	1	2	3	10	0	10	4	1	5	18
Total Volume	3	23	26	40	6	46	16	13	29	101
% App. Total	11.5	88.5		87	13		55.2	44.8		
PHF	.750	.719	.722	.909	.375	.767	.667	.542	.806	.815

Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
 Peak Hour for Entire Intersection Begins at 04:00 PM

City of Moreno Valley
 N/S: Theodore Street
 E/W: Ironwood Avenue
 Weather: Clear

File Name : 01_MRV_Theodore_Ironwood PM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- Cars & Trailers

Start Time	Ironwood Avenue Westbound			Theodore Street Northbound			Ironwood Avenue Eastbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
04:00 PM	0	5	5	2	0	2	0	0	0	7
04:15 PM	0	2	2	1	1	2	3	2	5	9
04:30 PM	1	6	7	4	2	6	3	3	6	19
04:45 PM	0	1	1	4	0	4	4	0	4	9
Total	1	14	15	11	3	14	10	5	15	44
05:00 PM	0	4	4	1	0	1	6	0	6	11
05:15 PM	0	4	4	2	0	2	4	0	4	10
05:30 PM	1	2	3	6	0	6	5	1	6	15
05:45 PM	0	1	1	1	0	1	0	0	0	2
Total	1	11	12	10	0	10	15	1	16	38
Grand Total	2	25	27	21	3	24	25	6	31	82
Apprch %	7.4	92.6		87.5	12.5		80.6	19.4		
Total %	2.4	30.5	32.9	25.6	3.7	29.3	30.5	7.3	37.8	

Start Time	Ironwood Avenue Westbound			Theodore Street Northbound			Ironwood Avenue Eastbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
04:00 PM	0	5	5	2	0	2	0	0	0	7
04:15 PM	0	2	2	1	1	2	3	2	5	9
04:30 PM	1	6	7	4	2	6	3	3	6	19
04:45 PM	0	1	1	4	0	4	4	0	4	9
Total Volume	1	14	15	11	3	14	10	5	15	44
% App. Total	6.7	93.3		78.6	21.4		66.7	33.3		
PHF	.250	.583	.536	.688	.375	.583	.625	.417	.625	.579

Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1
 Peak Hour for Entire Intersection Begins at 04:00 PM

City of Moreno Valley
 N/S: Theodore Street
 E/W: Ironwood Avenue
 Weather: Clear

File Name : 01_MRV_Theodore_Ironwood PM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- Large 2 Axle Vehicles

Start Time	Ironwood Avenue Westbound			Theodore Street Northbound			Ironwood Avenue Eastbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
04:00 PM	0	0	0	1	0	1	0	0	0	1
04:15 PM	0	0	0	1	0	1	0	0	0	1
04:30 PM	0	1	1	0	0	0	0	0	0	1
04:45 PM	0	0	0	0	0	0	0	0	0	0
Total	0	1	1	2	0	2	0	0	0	3
05:00 PM	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
Grand Total	0	1	1	2	0	2	0	0	0	3
Apprch %	0	100		100	0		0	0		
Total %	0	33.3	33.3	66.7	0	66.7	0	0	0	

Start Time	Ironwood Avenue Westbound			Theodore Street Northbound			Ironwood Avenue Eastbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
04:00 PM	0	0	0	1	0	1	0	0	0	1
04:15 PM	0	0	0	1	0	1	0	0	0	1
04:30 PM	0	1	1	0	0	0	0	0	0	1
04:45 PM	0	0	0	0	0	0	0	0	0	0
Total Volume	0	1	1	2	0	2	0	0	0	3
% App. Total	0	100		100	0		0	0		
PHF	.000	.250	.250	.500	.000	.500	.000	.000	.000	.750

Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1
 Peak Hour for Entire Intersection Begins at 04:00 PM

City of Moreno Valley
 N/S: Theodore Street
 E/W: Ironwood Avenue
 Weather: Clear

File Name : 01_MRV_Theodore_Ironwood PM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- 3 Axle Vehicles

Start Time	Ironwood Avenue Westbound			Theodore Street Northbound			Ironwood Avenue Eastbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
04:00 PM	0	0	0	2	0	2	0	2	2	4
04:15 PM	0	0	0	1	0	1	0	0	0	1
04:30 PM	0	0	0	2	0	2	0	0	0	2
04:45 PM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	5	0	5	0	2	2	7
05:00 PM	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	5	0	5	0	2	2	7
Apprch %	0	0		100	0		0	100		
Total %	0	0		71.4	0	71.4	0	28.6	28.6	

Start Time	Ironwood Avenue Westbound			Theodore Street Northbound			Ironwood Avenue Eastbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
04:00 PM	0	0	0	2	0	2	0	2	2	4
04:15 PM	0	0	0	1	0	1	0	0	0	1
04:30 PM	0	0	0	2	0	2	0	0	0	2
04:45 PM	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	5	0	5	0	2	2	7
% App. Total	0	0		100	0		0	100		
PHF	.000	.000	.000	.625	.000	.625	.000	.250	.250	.438

Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1
 Peak Hour for Entire Intersection Begins at 04:00 PM

City of Moreno Valley
 N/S: Theodore Street
 E/W: Ironwood Avenue
 Weather: Clear

File Name : 01_MRV_Theodore_Ironwood PM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- 4 Axle Trucks

Start Time	Ironwood Avenue Westbound			Theodore Street Northbound			Ironwood Avenue Eastbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
04:00 PM	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0
Apprch %	0	0		0	0		0	0		
Total %										

Start Time	Ironwood Avenue Westbound			Theodore Street Northbound			Ironwood Avenue Eastbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:00 PM										
04:00 PM	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0		0	0		0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

City of Moreno Valley
 N/S: Theodore Street
 E/W: Ironwood Avenue
 Weather: Clear

File Name : 01_MRV_Theodore_Ironwood PM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- 5 Axle Trucks

Start Time	Ironwood Avenue Westbound			Theodore Street Northbound			Ironwood Avenue Eastbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
04:00 PM	0	0	0	0	0	0	1	0	1	1
04:15 PM	0	0	0	3	0	3	0	0	0	3
04:30 PM	0	0	0	1	0	1	0	0	0	1
04:45 PM	0	0	0	0	0	0	0	1	1	1
Total	0	0	0	4	0	4	1	1	2	6
05:00 PM	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	1	1	1
Total	0	0	0	0	0	0	0	1	1	1
Grand Total	0	0	0	4	0	4	1	2	3	7
Apprch %	0	0		100	0		33.3	66.7		
Total %	0	0		57.1	0	57.1	14.3	28.6	42.9	

Start Time	Ironwood Avenue Westbound			Theodore Street Northbound			Ironwood Avenue Eastbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:00 PM										
04:00 PM	0	0	0	0	0	0	1	0	1	1
04:15 PM	0	0	0	3	0	3	0	0	0	3
04:30 PM	0	0	0	1	0	1	0	0	0	1
04:45 PM	0	0	0	0	0	0	0	1	1	1
Total Volume	0	0	0	4	0	4	1	1	2	6
% App. Total	0	0		100	0		50	50		
PHF	.000	.000	.000	.333	.000	.333	.250	.250	.500	.500

City of Moreno Valley
 N/S: Theodore Street
 E/W: Ironwood Avenue
 Weather: Clear

File Name : 01_MRV_Theodore_Ironwood PM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- 6+ Axle Trucks

Start Time	Ironwood Avenue Westbound			Theodore Street Northbound			Ironwood Avenue Eastbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
04:00 PM	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0
Apprch %	0	0		0	0		0	0		
Total %										

Start Time	Ironwood Avenue Westbound			Theodore Street Northbound			Ironwood Avenue Eastbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:00 PM										
04:00 PM	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0		0	0		0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

City of Moreno Valley
 N/S: Theodore Street
 E/W: Ironwood Avenue
 Weather: Clear

File Name : 01_MRV_Theodore_Ironwood PM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- Buses & RV's

Start Time	Ironwood Avenue Westbound			Theodore Street Northbound			Ironwood Avenue Eastbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
04:00 PM	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0
Apprch %	0	0		0	0		0	0		
Total %										

Start Time	Ironwood Avenue Westbound			Theodore Street Northbound			Ironwood Avenue Eastbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:00 PM										
04:00 PM	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0		0	0		0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

City of Moreno Valley
 N/S: Theodore Street
 E/W: Ironwood Avenue
 Weather: Clear

File Name : 01_MRV_Theodore_Ironwood PM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- Motorcycles

Start Time	Ironwood Avenue Westbound			Theodore Street Northbound			Ironwood Avenue Eastbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
04:00 PM	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0
Apprch %	0	0		0	0		0	0		
Total %										

Start Time	Ironwood Avenue Westbound			Theodore Street Northbound			Ironwood Avenue Eastbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:00 PM										
04:00 PM	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0		0	0		0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

City of Moreno Valley
 N/S: Theodore Street
 E/W: Ironwood Avenue
 Weather: Clear

File Name : 01_MRV_Theodore_Ironwood PM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- Bicycles

Start Time	Ironwood Avenue Westbound			Theodore Street Northbound			Ironwood Avenue Eastbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
04:00 PM	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	1	1	0	0	0	1
04:45 PM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	1	1	0	0	0	1
05:00 PM	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	1	1	0	0	0	1
Apprch %	0	0		0	100		0	0		
Total %	0	0		0	100	100	0	0		

Start Time	Ironwood Avenue Westbound			Theodore Street Northbound			Ironwood Avenue Eastbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:00 PM										
04:00 PM	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	1	1	0	0	0	1
04:45 PM	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	1	1	0	0	0	1
% App. Total	0	0		0	100		0	0		
PHF	.000	.000	.000	.000	.250	.250	.000	.000	.000	.250

City of Moreno Valley
 N/S: Theodore Street
 E/W: Ironwood Avenue
 Weather: Clear

File Name : 01_MRV_Theodore_Ironwood PM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- Medium Truck

Start Time	Ironwood Avenue Westbound			Theodore Street Northbound			Ironwood Avenue Eastbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
04:00 PM	1	1	2	4	1	5	1	4	5	12
04:15 PM	0	5	5	4	0	4	3	1	4	13
04:30 PM	0	1	1	4	1	5	1	0	1	7
04:45 PM	1	1	2	6	0	6	0	0	0	8
Total	2	8	10	18	2	20	5	5	10	40
05:00 PM	1	2	3	1	1	2	0	0	0	5
05:15 PM	0	2	2	0	1	1	0	0	0	3
05:30 PM	0	0	0	1	0	1	1	0	1	2
05:45 PM	0	2	2	0	0	0	3	1	4	6
Total	1	6	7	2	2	4	4	1	5	16
Grand Total	3	14	17	20	4	24	9	6	15	56
Apprch %	17.6	82.4		83.3	16.7		60	40		
Total %	5.4	25	30.4	35.7	7.1	42.9	16.1	10.7	26.8	

Start Time	Ironwood Avenue Westbound			Theodore Street Northbound			Ironwood Avenue Eastbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
04:00 PM	1	1	2	4	1	5	1	4	5	12
04:15 PM	0	5	5	4	0	4	3	1	4	13
04:30 PM	0	1	1	4	1	5	1	0	1	7
04:45 PM	1	1	2	6	0	6	0	0	0	8
Total Volume	2	8	10	18	2	20	5	5	10	40
% App. Total	20	80		90	10		50	50		
PHF	.500	.400	.500	.750	.500	.833	.417	.313	.500	.769

Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1
 Peak Hour for Entire Intersection Begins at 04:00 PM

INTERSECTION #5 AM

Start Date: 1/30/2018
 Comment 1: City of Moreno Valley
 Comment 2: N/S: Redlands Boulevard
 Comment 3: E/W: Eucalyptus Avenue
 Comment 4: Weather: Clear

Cars	Redlands Boulevard Southbound				Eucalyptus Avenue Westbound				Redlands Boulevard Northbound				Eucalyptus Avenue Eastbound				
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	
07:00 AM	0	59	6	0	1	0	2	0	9	132	0	0	0	0	0	0	0
07:15 AM	0	66	6	0	0	0	4	0	3	140	0	0	3	0	2	0	0
07:30 AM	0	91	8	0	1	0	1	0	2	100	0	0	0	0	0	0	0
07:45 AM	0	92	7	0	1	0	2	0	5	101	0	0	2	0	0	0	0
08:00 AM	1	80	6	0	0	0	2	0	4	83	0	0	6	0	1	0	0
08:15 AM	3	64	1	0	0	1	1	0	1	94	3	0	4	0	2	0	0
08:30 AM	1	61	2	0	1	0	20	0	2	78	0	0	2	0	4	0	0
08:45 AM	0	38	3	0	1	0	31	0	0	59	0	0	6	0	0	0	0

2-Axle Trucks	Redlands Boulevard Southbound				Eucalyptus Avenue Westbound				Redlands Boulevard Northbound				Eucalyptus Avenue Eastbound				
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	
07:00 AM	0	2	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0
07:15 AM	0	2	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	1	2	0	0	0	0	0	0	0
07:45 AM	0	1	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0
08:00 AM	0	1	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
08:30 AM	0	1	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0

3-Axle Trucks	Redlands Boulevard Southbound				Eucalyptus Avenue Westbound				Redlands Boulevard Northbound				Eucalyptus Avenue Eastbound				
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	
07:00 AM	0	1	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0
07:15 AM	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
08:45 AM	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0

4+ Axle Trucks	Redlands Boulevard Southbound				Eucalyptus Avenue Westbound				Redlands Boulevard Northbound				Eucalyptus Avenue Eastbound				
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
07:15 AM	0	0	2	0	0	0	1	0	0	0	0	0	2	0	0	0	0
07:30 AM	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0
07:45 AM	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0
08:00 AM	0	0	1	0	0	0	1	0	0	0	0	0	1	0	0	0	0
08:15 AM	0	0	1	0	0	0	3	0	0	2	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0

INTERSECTION #5 PM

Start Date: 1/30/2018
 Comment 1: City of Moreno Valley
 Comment 2: N/S: Redlands Boulevard
 Comment 3: E/W: Eucalyptus Avenue
 Comment 4: Weather: Clear

Cars	Redlands Boulevard Southbound				Eucalyptus Avenue Westbound				Redlands Boulevard Northbound				Eucalyptus Avenue Eastbound			
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
04:00 PM	0	114	0	0	0	0	4	0	0	84	0	0	6	0	3	0
04:15 PM	1	99	4	0	0	0	1	0	0	92	0	0	13	0	5	0
04:30 PM	0	125	0	0	0	0	11	0	0	83	0	0	3	1	1	0
04:45 PM	1	134	1	0	0	0	4	0	0	96	1	0	8	0	2	0
05:00 PM	0	118	0	0	2	0	9	0	0	94	0	0	2	0	5	0
05:15 PM	0	119	3	0	0	0	4	0	0	103	0	0	7	0	0	0
05:30 PM	0	136	2	0	0	0	10	0	0	91	0	0	5	0	0	0
05:45 PM	0	116	0	0	0	0	9	0	1	72	0	0	3	0	1	0

2-Axle Trucks	Redlands Boulevard Southbound				Eucalyptus Avenue Westbound				Redlands Boulevard Northbound				Eucalyptus Avenue Eastbound			
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
04:00 PM	0	3	0	0	0	0	0	0	0	0	0	0	1	0	0	0
04:15 PM	0	3	0	0	0	0	0	0	0	2	0	0	0	0	0	0
04:30 PM	0	2	0	0	0	0	1	0	0	2	0	0	0	0	0	0
04:45 PM	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0
05:00 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	3	0	0	0	0	1	0	0	0	0	0	0	0	0	0
05:30 PM	0	1	0	0	0	0	0	0	0	2	0	0	0	0	0	0
05:45 PM	0	2	0	0	0	0	0	0	0	2	0	0	0	0	0	0

3-Axle Trucks	Redlands Boulevard Southbound				Eucalyptus Avenue Westbound				Redlands Boulevard Northbound				Eucalyptus Avenue Eastbound			
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0
04:30 PM	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0

4+ Axle Trucks	Redlands Boulevard Southbound				Eucalyptus Avenue Westbound				Redlands Boulevard Northbound				Eucalyptus Avenue Eastbound			
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
04:00 PM	1	1	1	0	0	0	0	0	0	1	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0
04:30 PM	0	0	3	0	0	0	1	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0
05:00 PM	0	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0

INTERSECTION #6 AM

Start Date: 1/30/2018
 Comment 1: City of Moreno Valley
 Comment 2: N/S: Redlands Boulevard
 Comment 3: E/W: SR-60 Eastbound Ramps
 Comment 4: Weather: Clear

Cars	Redlands Boulevard Southbound				Dead End Westbound				Redlands Boulevard Northbound				SR-60 Eastbound Ramps Eastbound			
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
07:00 AM	0	48	4	0	0	0	0	0	10	140	0	0	50	0	11	0
07:15 AM	0	63	10	0	0	0	0	0	16	105	0	0	39	0	10	0
07:30 AM	0	79	4	0	0	0	0	0	14	95	0	0	35	0	25	0
07:45 AM	0	85	7	0	0	0	0	0	17	82	0	0	49	0	17	0
08:00 AM	0	70	7	0	0	0	0	0	15	77	0	0	64	0	16	0
08:15 AM	0	46	0	0	0	0	0	0	10	83	0	0	72	0	21	0
08:30 AM	0	42	8	0	0	0	0	0	9	106	0	0	61	0	12	0
08:45 AM	0	28	4	0	0	0	0	0	10	78	0	0	72	0	16	0

2-Axle Trucks	Redlands Boulevard Southbound				Dead End Westbound				Redlands Boulevard Northbound				SR-60 Eastbound Ramps Eastbound			
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
07:15 AM	0	2	0	0	0	0	0	0	0	2	0	0	2	0	0	0
07:30 AM	0	0	1	0	0	0	0	0	0	3	0	0	2	0	2	0
07:45 AM	0	2	0	0	0	0	0	0	0	5	0	0	4	0	0	0
08:00 AM	0	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	2	0	0	1	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	3	0	0	2	0	1	0
08:45 AM	0	0	0	0	0	0	0	0	0	1	0	0	1	0	1	0

3-Axle Trucks	Redlands Boulevard Southbound				Dead End Westbound				Redlands Boulevard Northbound				SR-60 Eastbound Ramps Eastbound			
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0
07:15 AM	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0

4+ Axle Trucks	Redlands Boulevard Southbound				Dead End Westbound				Redlands Boulevard Northbound				SR-60 Eastbound Ramps Eastbound			
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
07:00 AM	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	3	0	0	1	0	2	0
07:30 AM	0	0	0	0	0	0	0	0	0	2	0	0	3	0	1	0
07:45 AM	0	0	1	0	0	0	0	0	0	1	0	0	2	0	0	0
08:00 AM	0	0	1	0	0	0	0	0	1	2	0	0	2	0	2	0
08:15 AM	0	0	0	0	0	0	0	0	1	2	0	0	1	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0

INTERSECTION #6 PM

Start Date: 1/30/2018
 Comment 1: City of Moreno Valley
 Comment 2: N/S: Redlands Boulevard
 Comment 3: E/W: SR-60 Eastbound Ramps
 Comment 4: Weather: Clear

Cars	Redlands Boulevard Southbound				Dead End Westbound				Redlands Boulevard Northbound				SR-60 Eastbound Ramps Eastbound			
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
04:00 PM	0	85	8	0	0	0	0	0	10	84	0	0	95	0	26	0
04:15 PM	0	75	12	0	0	0	0	0	14	92	0	0	98	0	35	0
04:30 PM	0	93	9	0	0	0	0	0	10	79	0	0	102	0	31	0
04:45 PM	0	93	13	0	0	0	0	0	20	90	0	0	103	0	33	0
05:00 PM	0	97	9	0	0	0	0	0	14	87	0	0	110	0	33	0
05:15 PM	0	107	6	0	0	0	0	0	14	92	0	0	104	0	26	0
05:30 PM	0	103	13	0	0	0	0	0	5	104	0	0	99	0	24	0
05:45 PM	0	87	10	0	0	0	0	0	10	70	0	0	109	0	25	0

2-Axle Trucks	Redlands Boulevard Southbound				Dead End Westbound				Redlands Boulevard Northbound				SR-60 Eastbound Ramps Eastbound			
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
04:00 PM	0	5	1	0	0	0	0	0	1	3	0	0	1	0	2	0
04:15 PM	0	0	0	0	0	0	0	0	0	1	0	0	3	0	0	0
04:30 PM	0	1	0	0	0	0	0	0	0	3	0	0	1	0	2	0
04:45 PM	0	0	2	0	0	0	0	0	1	2	0	0	2	0	2	0
05:00 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	3	0	0	0	0	0	0	0	1	0	0	0	0	0	0
05:30 PM	0	2	1	0	0	0	0	0	0	2	0	0	1	0	0	0
05:45 PM	0	1	0	0	0	0	0	0	0	1	0	0	2	0	2	0

3-Axle Trucks	Redlands Boulevard Southbound				Dead End Westbound				Redlands Boulevard Northbound				SR-60 Eastbound Ramps Eastbound			
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	1	0	0	2	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0

4+ Axle Trucks	Redlands Boulevard Southbound				Dead End Westbound				Redlands Boulevard Northbound				SR-60 Eastbound Ramps Eastbound			
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
04:00 PM	0	1	0	0	0	0	0	0	0	1	0	0	0	0	2	0
04:15 PM	0	0	0	0	0	0	0	0	0	2	0	0	2	0	1	0
04:30 PM	0	1	1	0	0	0	0	0	0	1	0	0	0	0	1	0
04:45 PM	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1	0
05:00 PM	0	1	0	0	0	0	0	0	0	2	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	2	0	0	1	0	0	0
05:30 PM	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

INTERSECTION #7 AM

Start Date: 1/30/2018
 Comment 1: City of Moreno Valley
 Comment 2: N/S: Redlands Boulevard
 Comment 3: E/W: Spruce Avenue/SR-60 Westbound Ramps
 Comment 4: Weather: Clear

Cars	Redlands Boulevard Southbound				SR-60 Westbound Ramps Westbound				Redlands Boulevard Northbound				Spruce Avenue Eastbound			
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
07:00 AM	61	42	0	0	5	0	10	0	1	156	26	0	0	0	1	0
07:15 AM	72	64	1	0	11	0	5	0	1	123	27	0	0	3	0	0
07:30 AM	73	80	0	0	10	0	9	0	2	105	26	0	0	0	2	0
07:45 AM	76	72	1	0	9	0	12	0	7	101	14	0	1	1	1	0
08:00 AM	61	55	0	0	11	0	5	0	4	123	20	0	1	0	3	0
08:15 AM	53	46	0	0	8	0	4	0	0	137	17	0	0	2	1	0
08:30 AM	53	38	1	0	7	0	9	0	3	122	44	0	1	0	0	0
08:45 AM	38	26	3	0	3	0	5	0	0	108	39	0	3	0	0	0

2-Axle Trucks	Redlands Boulevard Southbound				SR-60 Westbound Ramps Westbound				Redlands Boulevard Northbound				Spruce Avenue Eastbound			
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	2	0	0	0	0	0	0	0	2	2	0	0	0	0	0
07:30 AM	2	1	0	0	0	0	0	0	0	2	2	0	0	0	0	0
07:45 AM	0	0	1	0	0	0	0	0	0	5	0	0	1	0	0	0
08:00 AM	0	0	0	0	1	0	0	0	0	2	0	0	0	0	1	0
08:15 AM	1	0	1	0	0	0	0	0	0	0	1	0	2	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0
08:45 AM	2	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0

3-Axle Trucks	Redlands Boulevard Southbound				SR-60 Westbound Ramps Westbound				Redlands Boulevard Northbound				Spruce Avenue Eastbound			
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
08:30 AM	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0

4+ Axle Trucks	Redlands Boulevard Southbound				SR-60 Westbound Ramps Westbound				Redlands Boulevard Northbound				Spruce Avenue Eastbound			
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
07:00 AM	0	1	0	0	0	0	1	0	0	0	1	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	1	3	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0
07:45 AM	1	1	0	0	0	0	0	0	0	3	1	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	0	0	0	3	1	0	0	0	0	0
08:15 AM	1	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0
08:30 AM	2	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0

INTERSECTION #7 PM

Start Date: 1/30/2018
 Comment 1: City of Moreno Valley
 Comment 2: N/S: Redlands Boulevard
 Comment 3: E/W: Spruce Avenue/SR-60 Westbound Ramps
 Comment 4: Weather: Clear

Cars	Redlands Boulevard Southbound				SR-60 Westbound Ramps Westbound				Redlands Boulevard Northbound				Spruce Avenue Eastbound			
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
04:00 PM	71	82	0	0	12	0	9	0	1	153	27	0	0	2	2	0
04:15 PM	73	80	0	0	8	0	7	0	4	158	29	0	1	2	2	0
04:30 PM	74	92	1	0	5	0	3	0	3	140	24	0	1	3	1	0
04:45 PM	66	94	1	0	15	0	4	0	0	176	24	0	0	2	0	0
05:00 PM	69	93	0	0	7	0	9	0	4	165	29	0	0	3	1	0
05:15 PM	72	104	0	0	13	0	4	0	0	175	37	0	0	2	2	0
05:30 PM	98	100	0	0	13	0	6	0	1	166	25	0	1	1	2	0
05:45 PM	72	93	0	0	5	0	7	0	2	158	25	0	0	0	0	0

2-Axle Trucks	Redlands Boulevard Southbound				SR-60 Westbound Ramps Westbound				Redlands Boulevard Northbound				Spruce Avenue Eastbound			
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
04:00 PM	0	4	0	0	0	1	0	0	0	1	1	0	0	0	0	0
04:15 PM	1	0	0	0	0	0	1	0	1	0	1	0	0	0	0	0
04:30 PM	1	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0
04:45 PM	0	2	0	0	0	0	0	0	0	1	0	0	0	1	0	0
05:00 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	2	0	0	0	0	1	0	0	0	1	0	0	0	0	0
05:30 PM	1	2	0	0	0	0	0	0	0	1	2	0	0	0	0	0
05:45 PM	3	1	0	0	0	0	0	0	1	1	0	0	0	1	0	0

3-Axle Trucks	Redlands Boulevard Southbound				SR-60 Westbound Ramps Westbound				Redlands Boulevard Northbound				Spruce Avenue Eastbound			
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	1	0	0	0	2	0	0	0	0	0
04:30 PM	1	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0

4+ Axle Trucks	Redlands Boulevard Southbound				SR-60 Westbound Ramps Westbound				Redlands Boulevard Northbound				Spruce Avenue Eastbound			
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
04:00 PM	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0
04:15 PM	0	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0
04:30 PM	1	1	0	0	1	0	0	0	0	0	1	0	0	0	0	0
04:45 PM	2	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
05:00 PM	2	0	0	0	0	0	0	0	0	0	2	0	0	0	1	0
05:15 PM	0	0	0	0	0	0	0	0	0	1	2	0	0	0	0	0
05:30 PM	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

INTERSECTION #8 AM

Start Date: 1/30/2018
 Comment 1: City of Moreno Valley
 Comment 2: N/S: Redlands Boulevard
 Comment 3: E/W: Ironwood Avenue
 Comment 4: Weather: Clear

Cars	Redlands Boulevard Southbound				Ironwood Avenue Westbound				Redlands Boulevard Northbound				Ironwood Avenue Eastbound			
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
07:00 AM	0	102	24	0	0	1	1	0	2	168	1	0	33	0	0	0
07:15 AM	0	139	33	0	1	1	0	0	7	129	2	0	21	1	5	0
07:30 AM	1	143	26	0	0	4	0	0	9	98	0	0	25	2	6	0
07:45 AM	0	139	25	0	2	2	1	0	11	106	0	0	20	1	11	0
08:00 AM	0	108	12	0	2	1	0	0	4	121	2	0	37	2	8	0
08:15 AM	0	88	11	0	1	0	2	0	2	131	0	0	23	1	1	0
08:30 AM	1	92	19	0	0	2	0	0	0	135	3	0	11	0	5	0
08:45 AM	0	54	21	0	0	1	5	0	0	134	4	0	0	0	24	0

2-Axle Trucks	Redlands Boulevard Southbound				Ironwood Avenue Westbound				Redlands Boulevard Northbound				Ironwood Avenue Eastbound			
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
07:00 AM	0	0	0	0	0	0	0	0	1	0	0	0	3	0	0	0
07:15 AM	0	2	0	0	0	0	0	0	1	1	0	0	0	1	0	0
07:30 AM	0	3	2	0	0	2	1	0	0	2	0	0	0	0	1	0
07:45 AM	0	1	0	0	0	0	0	0	0	4	0	0	0	1	1	0
08:00 AM	0	0	0	0	0	0	0	0	2	1	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	1	2	0	0	0	0	1	0
08:30 AM	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0
08:45 AM	0	2	0	0	0	0	0	0	0	4	0	0	0	0	0	0

3-Axle Trucks	Redlands Boulevard Southbound				Ironwood Avenue Westbound				Redlands Boulevard Northbound				Ironwood Avenue Eastbound			
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
07:00 AM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

4+ Axle Trucks	Redlands Boulevard Southbound				Ironwood Avenue Westbound				Redlands Boulevard Northbound				Ironwood Avenue Eastbound				
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	
07:00 AM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0
07:15 AM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0
07:45 AM	0	1	0	0	0	0	0	0	0	2	1	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0
08:15 AM	0	1	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0
08:30 AM	0	3	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0

INTERSECTION #8 PM

Start Date: 1/30/2018
 Comment 1: City of Moreno Valley
 Comment 2: N/S: Redlands Boulevard
 Comment 3: E/W: Ironwood Avenue
 Comment 4: Weather: Clear

Cars	Redlands Boulevard Southbound				Ironwood Avenue Westbound				Redlands Boulevard Northbound				Ironwood Avenue Eastbound			
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
04:00 PM	3	146	39	0	1	8	1	0	4	161	0	0	14	5	6	0
04:15 PM	2	152	44	0	0	9	1	0	5	149	1	0	26	2	3	0
04:30 PM	0	163	53	0	0	3	1	0	5	153	2	0	20	3	5	0
04:45 PM	1	160	41	0	1	1	3	0	1	171	0	0	26	4	3	0
05:00 PM	0	162	47	0	0	4	1	0	3	174	0	0	28	4	3	0
05:15 PM	2	181	39	0	0	3	1	0	3	170	4	0	21	6	5	0
05:30 PM	2	169	46	0	2	3	1	0	3	172	1	0	39	2	9	0
05:45 PM	0	154	47	0	0	2	0	0	5	168	0	0	24	2	6	0

2-Axle Trucks	Redlands Boulevard Southbound				Ironwood Avenue Westbound				Redlands Boulevard Northbound				Ironwood Avenue Eastbound			
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
04:00 PM	0	5	0	0	0	0	0	0	0	1	0	0	0	0	0	0
04:15 PM	0	1	2	0	0	0	0	0	0	2	0	0	0	0	0	0
04:30 PM	0	1	1	0	0	0	0	0	0	3	0	0	0	1	2	0
04:45 PM	0	2	1	0	0	0	0	0	0	2	0	0	0	0	0	0
05:00 PM	0	1	0	0	0	0	0	0	0	0	0	0	2	0	0	0
05:15 PM	0	3	0	0	0	0	0	0	0	1	0	0	1	0	0	0
05:30 PM	0	3	0	0	0	0	0	0	0	1	0	0	0	0	0	0
05:45 PM	0	5	0	0	0	1	0	0	0	1	0	0	0	0	0	0

3-Axle Trucks	Redlands Boulevard Southbound				Ironwood Avenue Westbound				Redlands Boulevard Northbound				Ironwood Avenue Eastbound			
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
04:00 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
04:30 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

4+ Axle Trucks	Redlands Boulevard Southbound				Ironwood Avenue Westbound				Redlands Boulevard Northbound				Ironwood Avenue Eastbound			
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
04:00 PM	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
04:30 PM	0	2	0	0	0	0	0	0	0	1	0	0	0	0	0	0
04:45 PM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
05:30 PM	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Appendix A-3b

Intersection Counts (2017)

City of Moreno Valley
 N/S: Theodore Street
 E/W: Eucalyptus Avenue
 Weather: Clear

File Name : 04_MRV_Theodore_Eucalyptus AM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- Cars & Trailers - Large 2 Axle Vehicles - 3 Axle Vehicles - 4 Axle Trucks - 5 Axle Trucks - 6+ Axle Trucks - Buses & RV's -
 Motorcycles - Bicycles - Medium Truck

Start Time	Theodore Street Southbound			Theodore Street Northbound			Eucalyptus Avenue Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
07:00 AM	7	7	14	1	8	9	1	0	1	24
07:15 AM	17	11	28	4	11	15	2	0	2	45
07:30 AM	15	15	30	6	12	18	0	2	2	50
07:45 AM	14	16	30	7	13	20	2	2	4	54
Total	53	49	102	18	44	62	5	4	9	173
08:00 AM	10	23	33	15	12	27	2	1	3	63
08:15 AM	12	34	46	10	10	20	2	4	6	72
08:30 AM	12	26	38	6	12	18	9	27	36	92
08:45 AM	10	17	27	2	12	14	4	5	9	50
Total	44	100	144	33	46	79	17	37	54	277
Grand Total	97	149	246	51	90	141	22	41	63	450
Apprch %	39.4	60.6		36.2	63.8		34.9	65.1		
Total %	21.6	33.1	54.7	11.3	20	31.3	4.9	9.1	14	
Cars & Trailers	45	117	162	47	44	91	13	37	50	303
% Cars & Trailers	46.4	78.5	65.9	92.2	48.9	64.5	59.1	90.2	79.4	67.3
Large 2 Axle Vehicles	0	1	1	0	0	0	0	0	0	1
% Large 2 Axle Vehicles	0	0.7	0.4	0	0	0	0	0	0	0.2
3 Axle Vehicles	0	2	2	0	0	0	1	0	1	3
% 3 Axle Vehicles	0	1.3	0.8	0	0	0	4.5	0	1.6	0.7
4 Axle Trucks	1	2	3	0	0	0	1	0	1	4
% 4 Axle Trucks	1	1.3	1.2	0	0	0	4.5	0	1.6	0.9
5 Axle Trucks	43	13	56	0	40	40	3	0	3	99
% 5 Axle Trucks	44.3	8.7	22.8	0	44.4	28.4	13.6	0	4.8	22
6+ Axle Trucks	0	1	1	0	0	0	0	0	0	1
% 6+ Axle Trucks	0	0.7	0.4	0	0	0	0	0	0	0.2
Buses & RV's	0	0	0	0	0	0	0	0	0	0
% Buses & RV's	0	0	0	0	0	0	0	0	0	0
Motorcycles	0	1	1	0	0	0	0	0	0	1
% Motorcycles	0	0.7	0.4	0	0	0	0	0	0	0.2
Bicycles	0	1	1	0	0	0	0	1	1	2
% Bicycles	0	0.7	0.4	0	0	0	0	2.4	1.6	0.4
Medium Truck	8	11	19	4	6	10	4	3	7	36
% Medium Truck	8.2	7.4	7.7	7.8	6.7	7.1	18.2	7.3	11.1	8

Start Time	Theodore Street Southbound			Theodore Street Northbound			Eucalyptus Avenue Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:45 AM										
07:45 AM	14	16	30	7	13	20	2	2	4	54
08:00 AM	10	23	33	15	12	27	2	1	3	63
08:15 AM	12	34	46	10	10	20	2	4	6	72
08:30 AM	12	26	38	6	12	18	9	27	36	92
Total Volume	48	99	147	38	47	85	15	34	49	281
% App. Total	32.7	67.3		44.7	55.3		30.6	69.4		
PHF	.857	.728	.799	.633	.904	.787	.417	.315	.340	.764

City of Moreno Valley
 N/S: Theodore Street
 E/W: Eucalyptus Avenue
 Weather: Clear

File Name : 04_MRV_Theodore_Eucalyptus AM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- Cars & Trailers

Start Time	Theodore Street Southbound			Theodore Street Northbound			Eucalyptus Avenue Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
07:00 AM	5	4	9	1	7	8	0	0	0	17
07:15 AM	10	6	16	4	10	14	1	0	1	31
07:30 AM	9	10	19	5	6	11	0	1	1	31
07:45 AM	4	13	17	7	6	13	1	1	2	32
Total	28	33	61	17	29	46	2	2	4	111
08:00 AM	6	19	25	13	3	16	1	1	2	43
08:15 AM	3	29	32	9	5	14	1	4	5	51
08:30 AM	3	22	25	6	5	11	6	25	31	67
08:45 AM	5	14	19	2	2	4	3	5	8	31
Total	17	84	101	30	15	45	11	35	46	192
Grand Total	45	117	162	47	44	91	13	37	50	303
Apprch %	27.8	72.2		51.6	48.4		26	74		
Total %	14.9	38.6	53.5	15.5	14.5	30	4.3	12.2	16.5	

Start Time	Theodore Street Southbound			Theodore Street Northbound			Eucalyptus Avenue Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
07:45 AM	4	13	17	7	6	13	1	1	2	32
08:00 AM	6	19	25	13	3	16	1	1	2	43
08:15 AM	3	29	32	9	5	14	1	4	5	51
08:30 AM	3	22	25	6	5	11	6	25	31	67
Total Volume	16	83	99	35	19	54	9	31	40	193
% App. Total	16.2	83.8		64.8	35.2		22.5	77.5		
PHF	.667	.716	.773	.673	.792	.844	.375	.310	.323	.720

Peak Hour Analysis From 07:45 AM to 08:30 AM - Peak 1 of 1
 Peak Hour for Entire Intersection Begins at 07:45 AM

City of Moreno Valley
 N/S: Theodore Street
 E/W: Eucalyptus Avenue
 Weather: Clear

File Name : 04_MRV_Theodore_Eucalyptus AM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- Large 2 Axle Vehicles

Start Time	Theodore Street Southbound			Theodore Street Northbound			Eucalyptus Avenue Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
07:00 AM	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	1	1	0	0	0	0	0	0	1
07:45 AM	0	0	0	0	0	0	0	0	0	0
Total	0	1	1	0	0	0	0	0	0	1
08:00 AM	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
Grand Total	0	1	1	0	0	0	0	0	0	1
Apprch %	0	100		0	0		0	0		
Total %	0	100	100	0	0	0	0	0	0	

Start Time	Theodore Street Southbound			Theodore Street Northbound			Eucalyptus Avenue Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
07:45 AM	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0		0	0		0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

Peak Hour Analysis From 07:45 AM to 08:30 AM - Peak 1 of 1
 Peak Hour for Entire Intersection Begins at 07:45 AM

City of Moreno Valley
 N/S: Theodore Street
 E/W: Eucalyptus Avenue
 Weather: Clear

File Name : 04_MR_V_Theodore_Eucalyptus AM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- 3 Axle Vehicles

Start Time	Theodore Street Southbound			Theodore Street Northbound			Eucalyptus Avenue Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
07:00 AM	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	1	1	0	0	0	0	0	0	1
08:15 AM	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	1	0	1	1
08:45 AM	0	1	1	0	0	0	0	0	0	1
Total	0	2	2	0	0	0	1	0	1	3
Grand Total	0	2	2	0	0	0	1	0	1	3
Apprch %	0	100		0	0		100	0		
Total %	0	66.7	66.7	0	0	0	33.3	0	33.3	

Start Time	Theodore Street Southbound			Theodore Street Northbound			Eucalyptus Avenue Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
07:45 AM	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	1	1	0	0	0	0	0	0	1
08:15 AM	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	1	0	1	1
Total Volume	0	1	1	0	0	0	1	0	1	2
% App. Total	0	100		0	0		100	0		
PHF	.000	.250	.250	.000	.000	.000	.250	.000	.250	.500

Peak Hour Analysis From 07:45 AM to 08:30 AM - Peak 1 of 1
 Peak Hour for Entire Intersection Begins at 07:45 AM

City of Moreno Valley
 N/S: Theodore Street
 E/W: Eucalyptus Avenue
 Weather: Clear

File Name : 04_MR_V_Theodore_Eucalyptus AM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- 4 Axle Trucks

Start Time	Theodore Street Southbound			Theodore Street Northbound			Eucalyptus Avenue Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
07:00 AM	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0
07:45 AM	1	1	2	0	0	0	0	0	0	2
Total	1	1	2	0	0	0	0	0	0	2
08:00 AM	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	1	1	0	0	0	1	0	1	2
08:30 AM	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0
Total	0	1	1	0	0	0	1	0	1	2
Grand Total	1	2	3	0	0	0	1	0	1	4
Apprch %	33.3	66.7		0	0		100	0		
Total %	25	50	75	0	0	0	25	0	25	

Start Time	Theodore Street Southbound			Theodore Street Northbound			Eucalyptus Avenue Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
07:45 AM	1	1	2	0	0	0	0	0	0	2
08:00 AM	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	1	1	0	0	0	1	0	1	2
08:30 AM	0	0	0	0	0	0	0	0	0	0
Total Volume	1	2	3	0	0	0	1	0	1	4
% App. Total	33.3	66.7		0	0		100	0		
PHF	.250	.500	.375	.000	.000	.000	.250	.000	.250	.500

Peak Hour Analysis From 07:45 AM to 08:30 AM - Peak 1 of 1
 Peak Hour for Entire Intersection Begins at 07:45 AM

City of Moreno Valley
 N/S: Theodore Street
 E/W: Eucalyptus Avenue
 Weather: Clear

File Name : 04_MRV_Theodore_Eucalyptus AM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- 5 Axle Trucks

Start Time	Theodore Street Southbound			Theodore Street Northbound			Eucalyptus Avenue Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
07:00 AM	0	1	1	0	0	0	0	0	0	1
07:15 AM	7	3	10	0	1	1	1	0	1	12
07:30 AM	5	0	5	0	6	6	0	0	0	11
07:45 AM	8	1	9	0	6	6	1	0	1	16
Total	20	5	25	0	13	13	2	0	2	40
08:00 AM	4	1	5	0	8	8	1	0	1	14
08:15 AM	7	1	8	0	4	4	0	0	0	12
08:30 AM	7	4	11	0	7	7	0	0	0	18
08:45 AM	5	2	7	0	8	8	0	0	0	15
Total	23	8	31	0	27	27	1	0	1	59
Grand Total	43	13	56	0	40	40	3	0	3	99
Apprch %	76.8	23.2		0	100		100	0		
Total %	43.4	13.1	56.6	0	40.4	40.4	3	0	3	

Start Time	Theodore Street Southbound			Theodore Street Northbound			Eucalyptus Avenue Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
07:45 AM	8	1	9	0	6	6	1	0	1	16
08:00 AM	4	1	5	0	8	8	1	0	1	14
08:15 AM	7	1	8	0	4	4	0	0	0	12
08:30 AM	7	4	11	0	7	7	0	0	0	18
Total Volume	26	7	33	0	25	25	2	0	2	60
% App. Total	78.8	21.2		0	100		100	0		
PHF	.813	.438	.750	.000	.781	.781	.500	.000	.500	.833

Peak Hour Analysis From 07:45 AM to 08:30 AM - Peak 1 of 1
 Peak Hour for Entire Intersection Begins at 07:45 AM

City of Moreno Valley
 N/S: Theodore Street
 E/W: Eucalyptus Avenue
 Weather: Clear

File Name : 04_MRV_Theodore_Eucalyptus AM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- 6+ Axle Trucks

Start Time	Theodore Street Southbound			Theodore Street Northbound			Eucalyptus Avenue Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
07:00 AM	0	1	1	0	0	0	0	0	0	1
07:15 AM	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0
Total	0	1	1	0	0	0	0	0	0	1
08:00 AM	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
Grand Total	0	1	1	0	0	0	0	0	0	1
Apprch %	0	100		0	0		0	0		
Total %	0	100	100	0	0	0	0	0	0	

Start Time	Theodore Street Southbound			Theodore Street Northbound			Eucalyptus Avenue Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
07:45 AM	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0		0	0		0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

Peak Hour Analysis From 07:45 AM to 08:30 AM - Peak 1 of 1
 Peak Hour for Entire Intersection Begins at 07:45 AM

City of Moreno Valley
 N/S: Theodore Street
 E/W: Eucalyptus Avenue
 Weather: Clear

File Name : 04_MR_V_Theodore_Eucalyptus AM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- Buses & RV's

Start Time	Theodore Street Southbound			Theodore Street Northbound			Eucalyptus Avenue Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
07:00 AM	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0
Apprch %	0	0		0	0		0	0		
Total %										

Start Time	Theodore Street Southbound			Theodore Street Northbound			Eucalyptus Avenue Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
07:45 AM	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0		0	0		0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

Peak Hour Analysis From 07:45 AM to 08:30 AM - Peak 1 of 1
 Peak Hour for Entire Intersection Begins at 07:45 AM

City of Moreno Valley
 N/S: Theodore Street
 E/W: Eucalyptus Avenue
 Weather: Clear

File Name : 04_MRV_Theodore_Eucalyptus AM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- Motorcycles

Start Time	Theodore Street Southbound			Theodore Street Northbound			Eucalyptus Avenue Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
07:00 AM	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	1	1	0	0	0	0	0	0	1
07:30 AM	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0
Total	0	1	1	0	0	0	0	0	0	1
08:00 AM	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
Grand Total	0	1	1	0	0	0	0	0	0	1
Apprch %	0	100		0	0		0	0		
Total %	0	100	100	0	0	0	0	0	0	

Start Time	Theodore Street Southbound			Theodore Street Northbound			Eucalyptus Avenue Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
07:45 AM	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0		0	0		0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

Peak Hour Analysis From 07:45 AM to 08:30 AM - Peak 1 of 1
 Peak Hour for Entire Intersection Begins at 07:45 AM

City of Moreno Valley
 N/S: Theodore Street
 E/W: Eucalyptus Avenue
 Weather: Clear

File Name : 04_MRV_Theodore_Eucalyptus AM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- Bicycles

Start Time	Theodore Street Southbound			Theodore Street Northbound			Eucalyptus Avenue Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
07:00 AM	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	1	1	0	0	0	0	0	0	1
07:30 AM	0	0	0	0	0	0	0	1	1	1
07:45 AM	0	0	0	0	0	0	0	0	0	0
Total	0	1	1	0	0	0	0	1	1	2
08:00 AM	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
Grand Total	0	1	1	0	0	0	0	1	1	2
Apprch %	0	100		0	0		0	100		
Total %	0	50	50	0	0	0	0	50	50	

Start Time	Theodore Street Southbound			Theodore Street Northbound			Eucalyptus Avenue Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
07:45 AM	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0		0	0		0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

Peak Hour Analysis From 07:45 AM to 08:30 AM - Peak 1 of 1
 Peak Hour for Entire Intersection Begins at 07:45 AM

City of Moreno Valley
 N/S: Theodore Street
 E/W: Eucalyptus Avenue
 Weather: Clear

File Name : 04_MRV_Theodore_Eucalyptus AM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- Medium Truck

Start Time	Theodore Street Southbound			Theodore Street Northbound			Eucalyptus Avenue Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
07:00 AM	2	1	3	0	1	1	1	0	1	5
07:15 AM	0	0	0	0	0	0	0	0	0	0
07:30 AM	1	4	5	1	0	1	0	0	0	6
07:45 AM	1	1	2	0	1	1	0	1	1	4
Total	4	6	10	1	2	3	1	1	2	15
08:00 AM	0	2	2	2	1	3	0	0	0	5
08:15 AM	2	3	5	1	1	2	0	0	0	7
08:30 AM	2	0	2	0	0	0	2	2	4	6
08:45 AM	0	0	0	0	2	2	1	0	1	3
Total	4	5	9	3	4	7	3	2	5	21
Grand Total	8	11	19	4	6	10	4	3	7	36
Apprch %	42.1	57.9		40	60		57.1	42.9		
Total %	22.2	30.6	52.8	11.1	16.7	27.8	11.1	8.3	19.4	

Start Time	Theodore Street Southbound			Theodore Street Northbound			Eucalyptus Avenue Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
07:45 AM	1	1	2	0	1	1	0	1	1	4
08:00 AM	0	2	2	2	1	3	0	0	0	5
08:15 AM	2	3	5	1	1	2	0	0	0	7
08:30 AM	2	0	2	0	0	0	2	2	4	6
Total Volume	5	6	11	3	3	6	2	3	5	22
% App. Total	45.5	54.5		50	50		40	60		
PHF	.625	.500	.550	.375	.750	.500	.250	.375	.313	.786

Peak Hour Analysis From 07:45 AM to 08:30 AM - Peak 1 of 1
 Peak Hour for Entire Intersection Begins at 07:45 AM

City of Moreno Valley
 N/S: Theodore Street
 E/W: Eucalyptus Avenue
 Weather: Clear

File Name : 04_MRV_Theodore_Eucalyptus PM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- Cars & Trailers - Large 2 Axle Vehicles - 3 Axle Vehicles - 4 Axle Trucks - 5 Axle Trucks - 6+ Axle Trucks - Buses & RV's -
 Motorcycles - Bicycles - Medium Truck

Start Time	Theodore Street Southbound			Theodore Street Northbound			Eucalyptus Avenue Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
04:00 PM	6	6	12	3	11	14	12	2	14	40
04:15 PM	10	8	18	1	4	5	11	4	15	38
04:30 PM	9	10	19	2	10	12	11	8	19	50
04:45 PM	6	8	14	4	7	11	10	2	12	37
Total	31	32	63	10	32	42	44	16	60	165
05:00 PM	6	10	16	2	3	5	9	4	13	34
05:15 PM	4	10	14	0	3	3	5	2	7	24
05:30 PM	8	11	19	1	12	13	15	8	23	55
05:45 PM	9	3	12	4	5	9	10	3	13	34
Total	27	34	61	7	23	30	39	17	56	147
Grand Total	58	66	124	17	55	72	83	33	116	312
Apprch %	46.8	53.2		23.6	76.4		71.6	28.4		
Total %	18.6	21.2	39.7	5.4	17.6	23.1	26.6	10.6	37.2	
Cars & Trailers	47	45	92	12	37	49	63	29	92	233
% Cars & Trailers	81	68.2	74.2	70.6	67.3	68.1	75.9	87.9	79.3	74.7
Large 2 Axle Vehicles	0	1	1	1	0	1	1	0	1	3
% Large 2 Axle Vehicles	0	1.5	0.8	5.9	0	1.4	1.2	0	0.9	1
3 Axle Vehicles	0	1	1	0	0	0	4	0	4	5
% 3 Axle Vehicles	0	1.5	0.8	0	0	0	4.8	0	3.4	1.6
4 Axle Trucks	0	2	2	0	0	0	0	0	0	2
% 4 Axle Trucks	0	3	1.6	0	0	0	0	0	0	0.6
5 Axle Trucks	3	13	16	1	5	6	2	0	2	24
% 5 Axle Trucks	5.2	19.7	12.9	5.9	9.1	8.3	2.4	0	1.7	7.7
6+ Axle Trucks	0	0	0	0	0	0	0	0	0	0
% 6+ Axle Trucks	0	0	0	0	0	0	0	0	0	0
Buses & RV's	0	0	0	0	0	0	0	0	0	0
% Buses & RV's	0	0	0	0	0	0	0	0	0	0
Motorcycles	0	0	0	0	4	4	0	0	0	4
% Motorcycles	0	0	0	0	7.3	5.6	0	0	0	1.3
Bicycles	0	0	0	0	0	0	0	0	0	0
% Bicycles	0	0	0	0	0	0	0	0	0	0
Medium Truck	8	4	12	3	9	12	13	4	17	41
% Medium Truck	13.8	6.1	9.7	17.6	16.4	16.7	15.7	12.1	14.7	13.1

Start Time	Theodore Street Southbound			Theodore Street Northbound			Eucalyptus Avenue Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:00 PM										
04:00 PM	6	6	12	3	11	14	12	2	14	40
04:15 PM	10	8	18	1	4	5	11	4	15	38
04:30 PM	9	10	19	2	10	12	11	8	19	50
04:45 PM	6	8	14	4	7	11	10	2	12	37
Total Volume	31	32	63	10	32	42	44	16	60	165
% App. Total	49.2	50.8		23.8	76.2		73.3	26.7		
PHF	.775	.800	.829	.625	.727	.750	.917	.500	.789	.825

City of Moreno Valley
 N/S: Theodore Street
 E/W: Eucalyptus Avenue
 Weather: Clear

File Name : 04_MRJV_Theodore_Eucalyptus PM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- Cars & Trailers

Start Time	Theodore Street Southbound			Theodore Street Northbound			Eucalyptus Avenue Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
04:00 PM	5	5	10	2	7	9	6	2	8	27
04:15 PM	8	6	14	1	2	3	7	4	11	28
04:30 PM	6	6	12	0	5	5	9	6	15	32
04:45 PM	4	6	10	3	7	10	8	1	9	29
Total	23	23	46	6	21	27	30	13	43	116
05:00 PM	4	7	11	2	2	4	7	4	11	26
05:15 PM	3	5	8	0	3	3	5	2	7	18
05:30 PM	8	8	16	1	9	10	12	7	19	45
05:45 PM	9	2	11	3	2	5	9	3	12	28
Total	24	22	46	6	16	22	33	16	49	117
Grand Total	47	45	92	12	37	49	63	29	92	233
Apprch %	51.1	48.9		24.5	75.5		68.5	31.5		
Total %	20.2	19.3	39.5	5.2	15.9	21	27	12.4	39.5	

Start Time	Theodore Street Southbound			Theodore Street Northbound			Eucalyptus Avenue Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
04:00 PM	5	5	10	2	7	9	6	2	8	27
04:15 PM	8	6	14	1	2	3	7	4	11	28
04:30 PM	6	6	12	0	5	5	9	6	15	32
04:45 PM	4	6	10	3	7	10	8	1	9	29
Total Volume	23	23	46	6	21	27	30	13	43	116
% App. Total	50	50		22.2	77.8		69.8	30.2		
PHF	.719	.958	.821	.500	.750	.675	.833	.542	.717	.906

Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1
 Peak Hour for Entire Intersection Begins at 04:00 PM

City of Moreno Valley
 N/S: Theodore Street
 E/W: Eucalyptus Avenue
 Weather: Clear

File Name : 04_MRV_Theodore_Eucalyptus PM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- Large 2 Axle Vehicles

Start Time	Theodore Street Southbound			Theodore Street Northbound			Eucalyptus Avenue Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
04:00 PM	0	0	0	1	0	1	0	0	0	1
04:15 PM	0	0	0	0	0	0	1	0	1	1
04:30 PM	0	1	1	0	0	0	0	0	0	1
04:45 PM	0	0	0	0	0	0	0	0	0	0
Total	0	1	1	1	0	1	1	0	1	3
05:00 PM	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
Grand Total	0	1	1	1	0	1	1	0	1	3
Apprch %	0	100		100	0		100	0		
Total %	0	33.3	33.3	33.3	0	33.3	33.3	0	33.3	

Start Time	Theodore Street Southbound			Theodore Street Northbound			Eucalyptus Avenue Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
04:00 PM	0	0	0	1	0	1	0	0	0	1
04:15 PM	0	0	0	0	0	0	1	0	1	1
04:30 PM	0	1	1	0	0	0	0	0	0	1
04:45 PM	0	0	0	0	0	0	0	0	0	0
Total Volume	0	1	1	1	0	1	1	0	1	3
% App. Total	0	100		100	0		100	0		
PHF	.000	.250	.250	.250	.000	.250	.250	.000	.250	.750

Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1
 Peak Hour for Entire Intersection Begins at 04:00 PM

City of Moreno Valley
 N/S: Theodore Street
 E/W: Eucalyptus Avenue
 Weather: Clear

File Name : 04_MRV_Theodore_Eucalyptus PM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- 3 Axle Vehicles

Start Time	Theodore Street Southbound			Theodore Street Northbound			Eucalyptus Avenue Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
04:00 PM	0	0	0	0	0	0	2	0	2	2
04:15 PM	0	1	1	0	0	0	1	0	1	2
04:30 PM	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0
Total	0	1	1	0	0	0	3	0	3	4
05:00 PM	0	0	0	0	0	0	1	0	1	1
05:15 PM	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	1	0	1	1
Grand Total	0	1	1	0	0	0	4	0	4	5
Apprch %	0	100		0	0		100	0		
Total %	0	20	20	0	0	0	80	0	80	

Start Time	Theodore Street Southbound			Theodore Street Northbound			Eucalyptus Avenue Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
04:00 PM	0	0	0	0	0	0	2	0	2	2
04:15 PM	0	1	1	0	0	0	1	0	1	2
04:30 PM	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0
Total Volume	0	1	1	0	0	0	3	0	3	4
% App. Total	0	100		0	0		100	0		
PHF	.000	.250	.250	.000	.000	.000	.375	.000	.375	.500

Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1
 Peak Hour for Entire Intersection Begins at 04:00 PM

City of Moreno Valley
 N/S: Theodore Street
 E/W: Eucalyptus Avenue
 Weather: Clear

File Name : 04_MRV_Theodore_Eucalyptus PM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- 4 Axle Trucks

Start Time	Theodore Street Southbound			Theodore Street Northbound			Eucalyptus Avenue Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
04:00 PM	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	1	1	0	0	0	0	0	0	1
Total	0	1	1	0	0	0	0	0	0	1
05:00 PM	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	1	1	0	0	0	0	0	0	1
05:30 PM	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0
Total	0	1	1	0	0	0	0	0	0	1
Grand Total	0	2	2	0	0	0	0	0	0	2
Apprch %	0	100		0	0		0	0		
Total %	0	100	100	0	0	0	0	0	0	

Start Time	Theodore Street Southbound			Theodore Street Northbound			Eucalyptus Avenue Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
04:00 PM	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	1	1	0	0	0	0	0	0	1
Total Volume	0	1	1	0	0	0	0	0	0	1
% App. Total	0	100		0	0		0	0		
PHF	.000	.250	.250	.000	.000	.000	.000	.000	.000	.250

Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1
 Peak Hour for Entire Intersection Begins at 04:00 PM

City of Moreno Valley
 N/S: Theodore Street
 E/W: Eucalyptus Avenue
 Weather: Clear

File Name : 04_MRV_Theodore_Eucalyptus PM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- 5 Axle Trucks

Start Time	Theodore Street Southbound			Theodore Street Northbound			Eucalyptus Avenue Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
04:00 PM	0	1	1	0	3	3	0	0	0	4
04:15 PM	1	0	1	0	0	0	1	0	1	2
04:30 PM	1	2	3	1	0	1	0	0	0	4
04:45 PM	1	1	2	0	0	0	1	0	1	3
Total	3	4	7	1	3	4	2	0	2	13
05:00 PM	0	2	2	0	0	0	0	0	0	2
05:15 PM	0	4	4	0	0	0	0	0	0	4
05:30 PM	0	2	2	0	2	2	0	0	0	4
05:45 PM	0	1	1	0	0	0	0	0	0	1
Total	0	9	9	0	2	2	0	0	0	11
Grand Total	3	13	16	1	5	6	2	0	2	24
Apprch %	18.8	81.2		16.7	83.3		100	0		
Total %	12.5	54.2	66.7	4.2	20.8	25	8.3	0	8.3	

Start Time	Theodore Street Southbound			Theodore Street Northbound			Eucalyptus Avenue Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
04:00 PM	0	1	1	0	3	3	0	0	0	4
04:15 PM	1	0	1	0	0	0	1	0	1	2
04:30 PM	1	2	3	1	0	1	0	0	0	4
04:45 PM	1	1	2	0	0	0	1	0	1	3
Total Volume	3	4	7	1	3	4	2	0	2	13
% App. Total	42.9	57.1		25	75		100	0		
PHF	.750	.500	.583	.250	.250	.333	.500	.000	.500	.813

Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1
 Peak Hour for Entire Intersection Begins at 04:00 PM

City of Moreno Valley
 N/S: Theodore Street
 E/W: Eucalyptus Avenue
 Weather: Clear

File Name : 04_MRV_Theodore_Eucalyptus PM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- 6+ Axle Trucks

Start Time	Theodore Street Southbound			Theodore Street Northbound			Eucalyptus Avenue Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
04:00 PM	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0
Apprch %	0	0		0	0		0	0		
Total %										

Start Time	Theodore Street Southbound			Theodore Street Northbound			Eucalyptus Avenue Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:00 PM										
04:00 PM	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0		0	0		0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

City of Moreno Valley
 N/S: Theodore Street
 E/W: Eucalyptus Avenue
 Weather: Clear

File Name : 04_MRV_Theodore_Eucalyptus PM
 Site Code : 09817323
 Start Date : 5/31/2017
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Groups Printed- Buses & RV's

Start Time	Theodore Street Southbound			Theodore Street Northbound			Eucalyptus Avenue Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
04:00 PM	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0
Apprch %	0	0		0	0		0	0		
Total %										

Start Time	Theodore Street Southbound			Theodore Street Northbound			Eucalyptus Avenue Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:00 PM										
04:00 PM	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0		0	0		0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

City of Moreno Valley
 N/S: Theodore Street
 E/W: Eucalyptus Avenue
 Weather: Clear

File Name : 04_MRV_Theodore_Eucalyptus PM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- Motorcycles

Start Time	Theodore Street Southbound			Theodore Street Northbound			Eucalyptus Avenue Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
04:00 PM	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	4	4	0	0	0	4
04:45 PM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	4	4	0	0	0	4
05:00 PM	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	4	4	0	0	0	4
Apprch %	0	0		0	100		0	0		
Total %	0	0		0	100	100	0	0		

Start Time	Theodore Street Southbound			Theodore Street Northbound			Eucalyptus Avenue Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
04:00 PM	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	4	4	0	0	0	4
04:45 PM	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	4	4	0	0	0	4
% App. Total	0	0		0	100		0	0		
PHF	.000	.000	.000	.000	.250	.250	.000	.000	.000	.250

Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1
 Peak Hour for Entire Intersection Begins at 04:00 PM

City of Moreno Valley
 N/S: Theodore Street
 E/W: Eucalyptus Avenue
 Weather: Clear

File Name : 04_MRV_Theodore_Eucalyptus PM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- Bicycles

Start Time	Theodore Street Southbound			Theodore Street Northbound			Eucalyptus Avenue Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
04:00 PM	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0
Apprch %	0	0		0	0		0	0		
Total %										

Start Time	Theodore Street Southbound			Theodore Street Northbound			Eucalyptus Avenue Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:00 PM										
04:00 PM	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0		0	0		0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

City of Moreno Valley
 N/S: Theodore Street
 E/W: Eucalyptus Avenue
 Weather: Clear

File Name : 04_MRV_Theodore_Eucalyptus PM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- Medium Truck

Start Time	Theodore Street Southbound			Theodore Street Northbound			Eucalyptus Avenue Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
04:00 PM	1	0	1	0	1	1	4	0	4	6
04:15 PM	1	1	2	0	2	2	1	0	1	5
04:30 PM	2	1	3	1	1	2	2	2	4	9
04:45 PM	1	0	1	1	0	1	1	1	2	4
Total	5	2	7	2	4	6	8	3	11	24
05:00 PM	2	1	3	0	1	1	1	0	1	5
05:15 PM	1	0	1	0	0	0	0	0	0	1
05:30 PM	0	1	1	0	1	1	3	1	4	6
05:45 PM	0	0	0	1	3	4	1	0	1	5
Total	3	2	5	1	5	6	5	1	6	17
Grand Total	8	4	12	3	9	12	13	4	17	41
Apprch %	66.7	33.3		25	75		76.5	23.5		
Total %	19.5	9.8	29.3	7.3	22	29.3	31.7	9.8	41.5	

Start Time	Theodore Street Southbound			Theodore Street Northbound			Eucalyptus Avenue Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
04:00 PM	1	0	1	0	1	1	4	0	4	6
04:15 PM	1	1	2	0	2	2	1	0	1	5
04:30 PM	2	1	3	1	1	2	2	2	4	9
04:45 PM	1	0	1	1	0	1	1	1	2	4
Total Volume	5	2	7	2	4	6	8	3	11	24
% App. Total	71.4	28.6		33.3	66.7		72.7	27.3		
PHF	.625	.500	.583	.500	.500	.750	.500	.375	.688	.667

Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1
 Peak Hour for Entire Intersection Begins at 04:00 PM

City of Moreno Valley
 N/S: Theodore Street
 E/W: SR-60 Eastbound Ramps
 Weather: Clear

File Name : 03_MR_V_Theodore_60E AM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- Cars & Trailers - Large 2 Axle Vehicles - 3 Axle Vehicles - 4 Axle Trucks - 5 Axle Trucks - 6+ Axle Trucks - Buses & RV's -
 Motorcycles - Bicycles - Medium Truck

Start Time	Theodore Street Southbound			Theodore Street Northbound			SR-60 Eastbound Ramps Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
07:00 AM	6	0	6	5	3	8	10	7	17	31
07:15 AM	10	0	10	11	4	15	9	11	20	45
07:30 AM	21	1	22	10	0	10	6	13	19	51
07:45 AM	13	2	15	12	3	15	5	15	20	50
Total	50	3	53	38	10	48	30	46	76	177
08:00 AM	14	1	15	10	5	15	5	22	27	57
08:15 AM	15	1	16	6	5	11	5	29	34	61
08:30 AM	14	1	15	8	10	18	6	26	32	65
08:45 AM	9	3	12	12	5	17	9	16	25	54
Total	52	6	58	36	25	61	25	93	118	237
Grand Total	102	9	111	74	35	109	55	139	194	414
Apprch %	91.9	8.1		67.9	32.1		28.4	71.6		
Total %	24.6	2.2	26.8	17.9	8.5	26.3	13.3	33.6	46.9	
Cars & Trailers	56	7	63	38	29	67	23	122	145	275
% Cars & Trailers	54.9	77.8	56.8	51.4	82.9	61.5	41.8	87.8	74.7	66.4
Large 2 Axle Vehicles	1	1	2	0	1	1	4	1	5	8
% Large 2 Axle Vehicles	1	11.1	1.8	0	2.9	0.9	7.3	0.7	2.6	1.9
3 Axle Vehicles	0	0	0	0	0	0	3	1	4	4
% 3 Axle Vehicles	0	0	0	0	0	0	5.5	0.7	2.1	1
4 Axle Trucks	0	0	0	0	0	0	5	3	8	8
% 4 Axle Trucks	0	0	0	0	0	0	9.1	2.2	4.1	1.9
5 Axle Trucks	39	1	40	32	5	37	19	10	29	106
% 5 Axle Trucks	38.2	11.1	36	43.2	14.3	33.9	34.5	7.2	14.9	25.6
6+ Axle Trucks	5	0	5	4	0	4	0	1	1	10
% 6+ Axle Trucks	4.9	0	4.5	5.4	0	3.7	0	0.7	0.5	2.4
Buses & RV's	0	0	0	0	0	0	1	0	1	1
% Buses & RV's	0	0	0	0	0	0	1.8	0	0.5	0.2
Motorcycles	0	0	0	0	0	0	0	1	1	1
% Motorcycles	0	0	0	0	0	0	0	0.7	0.5	0.2
Bicycles	1	0	1	0	0	0	0	0	0	1
% Bicycles	1	0	0.9	0	0	0	0	0	0	0.2
Medium Truck	0	0	0	0	0	0	0	0	0	0
% Medium Truck	0	0	0	0	0	0	0	0	0	0

Start Time	Theodore Street Southbound			Theodore Street Northbound			SR-60 Eastbound Ramps Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 08:00 AM										
08:00 AM	14	1	15	10	5	15	5	22	27	57
08:15 AM	15	1	16	6	5	11	5	29	34	61
08:30 AM	14	1	15	8	10	18	6	26	32	65
08:45 AM	9	3	12	12	5	17	9	16	25	54
Total Volume	52	6	58	36	25	61	25	93	118	237
% App. Total	89.7	10.3		59	41		21.2	78.8		
PHF	.867	.500	.906	.750	.625	.847	.694	.802	.868	.912

City of Moreno Valley
 N/S: Theodore Street
 E/W: SR-60 Eastbound Ramps
 Weather: Clear

File Name : 03_MRV_Theodore_60E AM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- Cars & Trailers

Start Time	Theodore Street Southbound			Theodore Street Northbound			SR-60 Eastbound Ramps Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
07:00 AM	6	0	6	5	3	8	4	5	9	23
07:15 AM	5	0	5	10	3	13	5	7	12	30
07:30 AM	13	0	13	5	0	5	2	12	14	32
07:45 AM	6	2	8	5	2	7	3	13	16	31
Total	30	2	32	25	8	33	14	37	51	116
08:00 AM	10	1	11	2	3	5	1	20	21	37
08:15 AM	8	1	9	2	5	7	2	28	30	46
08:30 AM	6	1	7	3	8	11	4	23	27	45
08:45 AM	2	2	4	6	5	11	2	14	16	31
Total	26	5	31	13	21	34	9	85	94	159
Grand Total	56	7	63	38	29	67	23	122	145	275
Apprch %	88.9	11.1		56.7	43.3		15.9	84.1		
Total %	20.4	2.5	22.9	13.8	10.5	24.4	8.4	44.4	52.7	

Start Time	Theodore Street Southbound			Theodore Street Northbound			SR-60 Eastbound Ramps Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
08:00 AM	10	1	11	2	3	5	1	20	21	37
08:15 AM	8	1	9	2	5	7	2	28	30	46
08:30 AM	6	1	7	3	8	11	4	23	27	45
08:45 AM	2	2	4	6	5	11	2	14	16	31
Total Volume	26	5	31	13	21	34	9	85	94	159
% App. Total	83.9	16.1		38.2	61.8		9.6	90.4		
PHF	.650	.625	.705	.542	.656	.773	.563	.759	.783	.864

Peak Hour Analysis From 08:00 AM to 08:45 AM - Peak 1 of 1
 Peak Hour for Entire Intersection Begins at 08:00 AM

City of Moreno Valley
 N/S: Theodore Street
 E/W: SR-60 Eastbound Ramps
 Weather: Clear

File Name : 03_MR_V_Theodore_60E AM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- Large 2 Axle Vehicles

Start Time	Theodore Street Southbound			Theodore Street Northbound			SR-60 Eastbound Ramps Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
07:00 AM	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	2	1	3	3
07:45 AM	0	0	0	0	1	1	0	0	0	1
Total	0	0	0	0	1	1	2	1	3	4
08:00 AM	0	0	0	0	0	0	0	0	0	0
08:15 AM	1	0	1	0	0	0	1	0	1	2
08:30 AM	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	1	1	0	0	0	1	0	1	2
Total	1	1	2	0	0	0	2	0	2	4
Grand Total	1	1	2	0	1	1	4	1	5	8
Apprch %	50	50		0	100		80	20		
Total %	12.5	12.5	25	0	12.5	12.5	50	12.5	62.5	

Start Time	Theodore Street Southbound			Theodore Street Northbound			SR-60 Eastbound Ramps Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
08:00 AM	0	0	0	0	0	0	0	0	0	0
08:15 AM	1	0	1	0	0	0	1	0	1	2
08:30 AM	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	1	1	0	0	0	1	0	1	2
Total Volume	1	1	2	0	0	0	2	0	2	4
% App. Total	50	50		0	0		100	0		
PHF	.250	.250	.500	.000	.000	.000	.500	.000	.500	.500

Peak Hour Analysis From 08:00 AM to 08:45 AM - Peak 1 of 1
 Peak Hour for Entire Intersection Begins at 08:00 AM

City of Moreno Valley
 N/S: Theodore Street
 E/W: SR-60 Eastbound Ramps
 Weather: Clear

File Name : 03_MRV_Theodore_60E AM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- 3 Axle Vehicles

Start Time	Theodore Street Southbound			Theodore Street Northbound			SR-60 Eastbound Ramps Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
07:00 AM	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	1	0	1	1
Total	0	0	0	0	0	0	1	0	1	1
08:00 AM	0	0	0	0	0	0	1	1	2	2
08:15 AM	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	1	0	1	1
Total	0	0	0	0	0	0	2	1	3	3
Grand Total	0	0	0	0	0	0	3	1	4	4
Apprch %	0	0		0	0		75	25		
Total %	0	0		0	0		75	25	100	

Start Time	Theodore Street Southbound			Theodore Street Northbound			SR-60 Eastbound Ramps Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
08:00 AM	0	0	0	0	0	0	1	1	2	2
08:15 AM	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	1	0	1	1
Total Volume	0	0	0	0	0	0	2	1	3	3
% App. Total	0	0		0	0		66.7	33.3		
PHF	.000	.000	.000	.000	.000	.000	.500	.250	.375	.375

Peak Hour Analysis From 08:00 AM to 08:45 AM - Peak 1 of 1
 Peak Hour for Entire Intersection Begins at 08:00 AM

City of Moreno Valley
 N/S: Theodore Street
 E/W: SR-60 Eastbound Ramps
 Weather: Clear

File Name : 03_MRVT_Theodore_60E AM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- 4 Axle Trucks

Start Time	Theodore Street Southbound			Theodore Street Northbound			SR-60 Eastbound Ramps Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
07:00 AM	0	0	0	0	0	0	1	0	1	1
07:15 AM	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	1	1	1
Total	0	0	0	0	0	0	1	1	2	2
08:00 AM	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	1	1	1
08:30 AM	0	0	0	0	0	0	1	0	1	1
08:45 AM	0	0	0	0	0	0	3	1	4	4
Total	0	0	0	0	0	0	4	2	6	6
Grand Total	0	0	0	0	0	0	5	3	8	8
Apprch %	0	0		0	0		62.5	37.5		
Total %	0	0		0	0		62.5	37.5	100	

Start Time	Theodore Street Southbound			Theodore Street Northbound			SR-60 Eastbound Ramps Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
Peak Hour Analysis From 08:00 AM to 08:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 08:00 AM										
08:00 AM	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	1	1	1
08:30 AM	0	0	0	0	0	0	1	0	1	1
08:45 AM	0	0	0	0	0	0	3	1	4	4
Total Volume	0	0	0	0	0	0	4	2	6	6
% App. Total	0	0		0	0		66.7	33.3		
PHF	.000	.000	.000	.000	.000	.000	.333	.500	.375	.375

City of Moreno Valley
 N/S: Theodore Street
 E/W: SR-60 Eastbound Ramps
 Weather: Clear

File Name : 03_MRV_Theodore_60E AM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- 5 Axle Trucks

Start Time	Theodore Street Southbound			Theodore Street Northbound			SR-60 Eastbound Ramps Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
07:00 AM	0	0	0	0	0	0	5	1	6	6
07:15 AM	4	0	4	1	1	2	4	3	7	13
07:30 AM	7	1	8	4	0	4	2	0	2	14
07:45 AM	6	0	6	7	0	7	1	1	2	15
Total	17	1	18	12	1	13	12	5	17	48
08:00 AM	2	0	2	7	2	9	2	1	3	14
08:15 AM	6	0	6	3	0	3	2	0	2	11
08:30 AM	8	0	8	5	2	7	1	3	4	19
08:45 AM	6	0	6	5	0	5	2	1	3	14
Total	22	0	22	20	4	24	7	5	12	58
Grand Total	39	1	40	32	5	37	19	10	29	106
Apprch %	97.5	2.5		86.5	13.5		65.5	34.5		
Total %	36.8	0.9	37.7	30.2	4.7	34.9	17.9	9.4	27.4	

Start Time	Theodore Street Southbound			Theodore Street Northbound			SR-60 Eastbound Ramps Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
08:00 AM	2	0	2	7	2	9	2	1	3	14
08:15 AM	6	0	6	3	0	3	2	0	2	11
08:30 AM	8	0	8	5	2	7	1	3	4	19
08:45 AM	6	0	6	5	0	5	2	1	3	14
Total Volume	22	0	22	20	4	24	7	5	12	58
% App. Total	100	0		83.3	16.7		58.3	41.7		
PHF	.688	.000	.688	.714	.500	.667	.875	.417	.750	.763

Peak Hour Analysis From 08:00 AM to 08:45 AM - Peak 1 of 1
 Peak Hour for Entire Intersection Begins at 08:00 AM

City of Moreno Valley
 N/S: Theodore Street
 E/W: SR-60 Eastbound Ramps
 Weather: Clear

File Name : 03_MRV_Theodore_60E AM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- 6+ Axle Trucks

Start Time	Theodore Street Southbound			Theodore Street Northbound			SR-60 Eastbound Ramps Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
07:00 AM	0	0	0	0	0	0	0	1	1	1
07:15 AM	1	0	1	0	0	0	0	0	0	1
07:30 AM	0	0	0	1	0	1	0	0	0	1
07:45 AM	1	0	1	0	0	0	0	0	0	1
Total	2	0	2	1	0	1	0	1	1	4
08:00 AM	2	0	2	1	0	1	0	0	0	3
08:15 AM	0	0	0	1	0	1	0	0	0	1
08:30 AM	0	0	0	0	0	0	0	0	0	0
08:45 AM	1	0	1	1	0	1	0	0	0	2
Total	3	0	3	3	0	3	0	0	0	6
Grand Total	5	0	5	4	0	4	0	1	1	10
Apprch %	100	0		100	0		0	100		
Total %	50	0	50	40	0	40	0	10	10	

Start Time	Theodore Street Southbound			Theodore Street Northbound			SR-60 Eastbound Ramps Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
Peak Hour Analysis From 08:00 AM to 08:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 08:00 AM										
08:00 AM	2	0	2	1	0	1	0	0	0	3
08:15 AM	0	0	0	1	0	1	0	0	0	1
08:30 AM	0	0	0	0	0	0	0	0	0	0
08:45 AM	1	0	1	1	0	1	0	0	0	2
Total Volume	3	0	3	3	0	3	0	0	0	6
% App. Total	100	0		100	0		0	0		
PHF	.375	.000	.375	.750	.000	.750	.000	.000	.000	.500

City of Moreno Valley
 N/S: Theodore Street
 E/W: SR-60 Eastbound Ramps
 Weather: Clear

File Name : 03_MRVT_Theodore_60E AM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- Buses & RV's

Start Time	Theodore Street Southbound			Theodore Street Northbound			SR-60 Eastbound Ramps Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
07:00 AM	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	1	0	1	1
08:15 AM	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	1	0	1	1
Grand Total	0	0	0	0	0	0	1	0	1	1
Apprch %	0	0		0	0		100	0		
Total %	0	0		0	0		100	0	100	

Start Time	Theodore Street Southbound			Theodore Street Northbound			SR-60 Eastbound Ramps Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
08:00 AM	0	0	0	0	0	0	1	0	1	1
08:15 AM	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	1	0	1	1
% App. Total	0	0		0	0		100	0		
PHF	.000	.000	.000	.000	.000	.000	.250	.000	.250	.250

Peak Hour Analysis From 08:00 AM to 08:45 AM - Peak 1 of 1
 Peak Hour for Entire Intersection Begins at 08:00 AM

City of Moreno Valley
 N/S: Theodore Street
 E/W: SR-60 Eastbound Ramps
 Weather: Clear

File Name : 03_MR_V_Theodore_60E AM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- Motorcycles

Start Time	Theodore Street Southbound			Theodore Street Northbound			SR-60 Eastbound Ramps Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
07:00 AM	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	1	1	1
07:30 AM	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	1	1	1
08:00 AM	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	1	1	1
Apprch %	0	0		0	0		0	100		
Total %	0	0		0	0		0	100	100	

Start Time	Theodore Street Southbound			Theodore Street Northbound			SR-60 Eastbound Ramps Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
08:00 AM	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0		0	0		0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

Peak Hour Analysis From 08:00 AM to 08:45 AM - Peak 1 of 1
 Peak Hour for Entire Intersection Begins at 08:00 AM

City of Moreno Valley
 N/S: Theodore Street
 E/W: SR-60 Eastbound Ramps
 Weather: Clear

File Name : 03_MR_V_Theodore_60E AM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- Bicycles

Start Time	Theodore Street Southbound			Theodore Street Northbound			SR-60 Eastbound Ramps Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
07:00 AM	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0
07:30 AM	1	0	1	0	0	0	0	0	0	1
07:45 AM	0	0	0	0	0	0	0	0	0	0
Total	1	0	1	0	0	0	0	0	0	1
08:00 AM	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
Grand Total	1	0	1	0	0	0	0	0	0	1
Apprch %	100	0		0	0		0	0		
Total %	100	0	100	0	0	0	0	0	0	

Start Time	Theodore Street Southbound			Theodore Street Northbound			SR-60 Eastbound Ramps Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
Peak Hour Analysis From 08:00 AM to 08:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 08:00 AM										
08:00 AM	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0		0	0		0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

City of Moreno Valley
 N/S: Theodore Street
 E/W: SR-60 Eastbound Ramps
 Weather: Clear

File Name : 03_MR_V_Theodore_60E AM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- Medium Truck

Start Time	Theodore Street Southbound			Theodore Street Northbound			SR-60 Eastbound Ramps Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
07:00 AM	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0
Apprch %	0	0		0	0		0	0		
Total %										

Start Time	Theodore Street Southbound			Theodore Street Northbound			SR-60 Eastbound Ramps Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
Peak Hour Analysis From 08:00 AM to 08:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 08:00 AM										
08:00 AM	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0		0	0		0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

City of Moreno Valley
 N/S: Theodore Street
 E/W: SR-60 Eastbound Ramps
 Weather: Clear

File Name : 03_MR_V_Theodore_60E PM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- Cars & Trailers - Large 2 Axle Vehicles - 3 Axle Vehicles - 4 Axle Trucks - 5 Axle Trucks - 6+ Axle Trucks - Buses & RV's -
 Motorcycles - Bicycles - Medium Truck

Start Time	Theodore Street Southbound			Theodore Street Northbound			SR-60 Eastbound Ramps Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
04:00 PM	7	3	10	7	15	22	1	5	6	38
04:15 PM	13	4	17	4	15	19	2	5	7	43
04:30 PM	9	4	13	10	5	15	5	10	15	43
04:45 PM	9	3	12	11	11	22	5	6	11	45
Total	38	14	52	32	46	78	13	26	39	169
05:00 PM	9	3	12	5	5	10	3	7	10	32
05:15 PM	7	5	12	3	9	12	1	8	9	33
05:30 PM	6	3	9	8	16	24	1	11	12	45
05:45 PM	9	0	9	7	8	15	2	6	8	32
Total	31	11	42	23	38	61	7	32	39	142
Grand Total	69	25	94	55	84	139	20	58	78	311
Apprch %	73.4	26.6		39.6	60.4		25.6	74.4		
Total %	22.2	8	30.2	17.7	27	44.7	6.4	18.6	25.1	
Cars & Trailers	66	23	89	46	75	121	11	41	52	262
% Cars & Trailers	95.7	92	94.7	83.6	89.3	87.1	55	70.7	66.7	84.2
Large 2 Axle Vehicles	0	1	1	0	1	1	6	1	7	9
% Large 2 Axle Vehicles	0	4	1.1	0	1.2	0.7	30	1.7	9	2.9
3 Axle Vehicles	0	0	0	0	3	3	0	1	1	4
% 3 Axle Vehicles	0	0	0	0	3.6	2.2	0	1.7	1.3	1.3
4 Axle Trucks	0	0	0	0	1	1	1	3	4	5
% 4 Axle Trucks	0	0	0	0	1.2	0.7	5	5.2	5.1	1.6
5 Axle Trucks	3	0	3	4	4	8	1	12	13	24
% 5 Axle Trucks	4.3	0	3.2	7.3	4.8	5.8	5	20.7	16.7	7.7
6+ Axle Trucks	0	1	1	0	0	0	1	0	1	2
% 6+ Axle Trucks	0	4	1.1	0	0	0	5	0	1.3	0.6
Buses & RV's	0	0	0	0	0	0	0	0	0	0
% Buses & RV's	0	0	0	0	0	0	0	0	0	0
Motorcycles	0	0	0	5	0	5	0	0	0	5
% Motorcycles	0	0	0	9.1	0	3.6	0	0	0	1.6
Bicycles	0	0	0	0	0	0	0	0	0	0
% Bicycles	0	0	0	0	0	0	0	0	0	0
Medium Truck	0	0	0	0	0	0	0	0	0	0
% Medium Truck	0	0	0	0	0	0	0	0	0	0

Start Time	Theodore Street Southbound			Theodore Street Northbound			SR-60 Eastbound Ramps Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:00 PM										
04:00 PM	7	3	10	7	15	22	1	5	6	38
04:15 PM	13	4	17	4	15	19	2	5	7	43
04:30 PM	9	4	13	10	5	15	5	10	15	43
04:45 PM	9	3	12	11	11	22	5	6	11	45
Total Volume	38	14	52	32	46	78	13	26	39	169
% App. Total	73.1	26.9		41	59		33.3	66.7		
PHF	.731	.875	.765	.727	.767	.886	.650	.650	.650	.939

City of Moreno Valley
 N/S: Theodore Street
 E/W: SR-60 Eastbound Ramps
 Weather: Clear

File Name : 03_MRVT_Theodore_60E PM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- Cars & Trailers

Start Time	Theodore Street Southbound			Theodore Street Northbound			SR-60 Eastbound Ramps Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
04:00 PM	7	3	10	5	12	17	0	5	5	32
04:15 PM	12	4	16	4	10	14	0	3	3	33
04:30 PM	8	3	11	6	5	11	4	7	11	33
04:45 PM	8	3	11	10	11	21	4	4	8	40
Total	35	13	48	25	38	63	8	19	27	138
05:00 PM	9	3	12	5	5	10	1	5	6	28
05:15 PM	7	4	11	3	8	11	1	3	4	26
05:30 PM	6	3	9	6	16	22	0	9	9	40
05:45 PM	9	0	9	7	8	15	1	5	6	30
Total	31	10	41	21	37	58	3	22	25	124
Grand Total	66	23	89	46	75	121	11	41	52	262
Apprch %	74.2	25.8		38	62		21.2	78.8		
Total %	25.2	8.8	34	17.6	28.6	46.2	4.2	15.6	19.8	

Start Time	Theodore Street Southbound			Theodore Street Northbound			SR-60 Eastbound Ramps Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
04:00 PM	7	3	10	5	12	17	0	5	5	32
04:15 PM	12	4	16	4	10	14	0	3	3	33
04:30 PM	8	3	11	6	5	11	4	7	11	33
04:45 PM	8	3	11	10	11	21	4	4	8	40
Total Volume	35	13	48	25	38	63	8	19	27	138
% App. Total	72.9	27.1		39.7	60.3		29.6	70.4		
PHF	.729	.813	.750	.625	.792	.750	.500	.679	.614	.863

Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1
 Peak Hour for Entire Intersection Begins at 04:00 PM

City of Moreno Valley
 N/S: Theodore Street
 E/W: SR-60 Eastbound Ramps
 Weather: Clear

File Name : 03_MR_V_Theodore_60E PM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- Large 2 Axle Vehicles

Start Time	Theodore Street Southbound			Theodore Street Northbound			SR-60 Eastbound Ramps Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
04:00 PM	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	1	1	2	0	2	3
04:30 PM	0	0	0	0	0	0	1	1	2	2
04:45 PM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	1	1	3	1	4	5
05:00 PM	0	0	0	0	0	0	2	0	2	2
05:15 PM	0	1	1	0	0	0	0	0	0	1
05:30 PM	0	0	0	0	0	0	1	0	1	1
05:45 PM	0	0	0	0	0	0	0	0	0	0
Total	0	1	1	0	0	0	3	0	3	4
Grand Total	0	1	1	0	1	1	6	1	7	9
Apprch %	0	100		0	100		85.7	14.3		
Total %	0	11.1	11.1	0	11.1	11.1	66.7	11.1	77.8	

Start Time	Theodore Street Southbound			Theodore Street Northbound			SR-60 Eastbound Ramps Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
04:00 PM	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	1	1	2	0	2	3
04:30 PM	0	0	0	0	0	0	1	1	2	2
04:45 PM	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	1	1	3	1	4	5
% App. Total	0	0		0	100		75	25		
PHF	.000	.000	.000	.000	.250	.250	.375	.250	.500	.417

Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1
 Peak Hour for Entire Intersection Begins at 04:00 PM

City of Moreno Valley
 N/S: Theodore Street
 E/W: SR-60 Eastbound Ramps
 Weather: Clear

File Name : 03_MRV_Theodore_60E PM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- 3 Axle Vehicles

Start Time	Theodore Street Southbound			Theodore Street Northbound			SR-60 Eastbound Ramps Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
04:00 PM	0	0	0	0	1	1	0	0	0	1
04:15 PM	0	0	0	0	2	2	0	1	1	3
04:30 PM	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	3	3	0	1	1	4
05:00 PM	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	3	3	0	1	1	4
Apprch %	0	0		0	100		0	100		
Total %	0	0		0	75	75	0	25	25	

Start Time	Theodore Street Southbound			Theodore Street Northbound			SR-60 Eastbound Ramps Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
04:00 PM	0	0	0	0	1	1	0	0	0	1
04:15 PM	0	0	0	0	2	2	0	1	1	3
04:30 PM	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	3	3	0	1	1	4
% App. Total	0	0		0	100		0	100		
PHF	.000	.000	.000	.000	.375	.375	.000	.250	.250	.333

Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1
 Peak Hour for Entire Intersection Begins at 04:00 PM

City of Moreno Valley
 N/S: Theodore Street
 E/W: SR-60 Eastbound Ramps
 Weather: Clear

File Name : 03_MRVT_Theodore_60E PM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- 4 Axle Trucks

Start Time	Theodore Street Southbound			Theodore Street Northbound			SR-60 Eastbound Ramps Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
04:00 PM	0	0	0	0	0	0	1	0	1	1
04:15 PM	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	1	1	1
04:45 PM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	1	1	2	2
05:00 PM	0	0	0	0	0	0	0	1	1	1
05:15 PM	0	0	0	0	1	1	0	1	1	2
05:30 PM	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	1	1	0	2	2	3
Grand Total	0	0	0	0	1	1	1	3	4	5
Apprch %	0	0		0	100		25	75		
Total %	0	0		0	20	20	20	60	80	

Start Time	Theodore Street Southbound			Theodore Street Northbound			SR-60 Eastbound Ramps Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
04:00 PM	0	0	0	0	0	0	1	0	1	1
04:15 PM	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	1	1	1
04:45 PM	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	1	1	2	2
% App. Total	0	0		0	0		50	50		
PHF	.000	.000	.000	.000	.000	.000	.250	.250	.500	.500

Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1
 Peak Hour for Entire Intersection Begins at 04:00 PM

City of Moreno Valley
 N/S: Theodore Street
 E/W: SR-60 Eastbound Ramps
 Weather: Clear

File Name : 03_MRVT_Theodore_60E PM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- 5 Axle Trucks

Start Time	Theodore Street Southbound			Theodore Street Northbound			SR-60 Eastbound Ramps Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
04:00 PM	0	0	0	1	2	3	0	0	0	3
04:15 PM	1	0	1	0	2	2	0	1	1	4
04:30 PM	1	0	1	0	0	0	0	1	1	2
04:45 PM	1	0	1	1	0	1	1	2	3	5
Total	3	0	3	2	4	6	1	4	5	14
05:00 PM	0	0	0	0	0	0	0	1	1	1
05:15 PM	0	0	0	0	0	0	0	4	4	4
05:30 PM	0	0	0	2	0	2	0	2	2	4
05:45 PM	0	0	0	0	0	0	0	1	1	1
Total	0	0	0	2	0	2	0	8	8	10
Grand Total	3	0	3	4	4	8	1	12	13	24
Apprch %	100	0		50	50		7.7	92.3		
Total %	12.5	0	12.5	16.7	16.7	33.3	4.2	50	54.2	

Start Time	Theodore Street Southbound			Theodore Street Northbound			SR-60 Eastbound Ramps Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
04:00 PM	0	0	0	1	2	3	0	0	0	3
04:15 PM	1	0	1	0	2	2	0	1	1	4
04:30 PM	1	0	1	0	0	0	0	1	1	2
04:45 PM	1	0	1	1	0	1	1	2	3	5
Total Volume	3	0	3	2	4	6	1	4	5	14
% App. Total	100	0		33.3	66.7		20	80		
PHF	.750	.000	.750	.500	.500	.500	.250	.500	.417	.700

Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1
 Peak Hour for Entire Intersection Begins at 04:00 PM

City of Moreno Valley
 N/S: Theodore Street
 E/W: SR-60 Eastbound Ramps
 Weather: Clear

File Name : 03_MRV_Theodore_60E PM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- 6+ Axle Trucks

Start Time	Theodore Street Southbound			Theodore Street Northbound			SR-60 Eastbound Ramps Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
04:00 PM	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	1	1	0	0	0	0	0	0	1
04:45 PM	0	0	0	0	0	0	0	0	0	0
Total	0	1	1	0	0	0	0	0	0	1
05:00 PM	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	1	0	1	1
Total	0	0	0	0	0	0	1	0	1	1
Grand Total	0	1	1	0	0	0	1	0	1	2
Apprch %	0	100		0	0		100	0		
Total %	0	50	50	0	0	0	50	0	50	

Start Time	Theodore Street Southbound			Theodore Street Northbound			SR-60 Eastbound Ramps Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
04:00 PM	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	1	1	0	0	0	0	0	0	1
04:45 PM	0	0	0	0	0	0	0	0	0	0
Total Volume	0	1	1	0	0	0	0	0	0	1
% App. Total	0	100		0	0		0	0		
PHF	.000	.250	.250	.000	.000	.000	.000	.000	.000	.250

Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1
 Peak Hour for Entire Intersection Begins at 04:00 PM

City of Moreno Valley
 N/S: Theodore Street
 E/W: SR-60 Eastbound Ramps
 Weather: Clear

File Name : 03_MR_V_Theodore_60E PM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- Buses & RV's

Start Time	Theodore Street Southbound			Theodore Street Northbound			SR-60 Eastbound Ramps Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
04:00 PM	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0
Apprch %	0	0		0	0		0	0		
Total %										

Start Time	Theodore Street Southbound			Theodore Street Northbound			SR-60 Eastbound Ramps Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:00 PM										
04:00 PM	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0		0	0		0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

City of Moreno Valley
 N/S: Theodore Street
 E/W: SR-60 Eastbound Ramps
 Weather: Clear

File Name : 03_MRV_Theodore_60E PM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- Motorcycles

Start Time	Theodore Street Southbound			Theodore Street Northbound			SR-60 Eastbound Ramps Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
04:00 PM	0	0	0	1	0	1	0	0	0	1
04:15 PM	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	4	0	4	0	0	0	4
04:45 PM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	5	0	5	0	0	0	5
05:00 PM	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	5	0	5	0	0	0	5
Apprch %	0	0		100	0		0	0		
Total %	0	0		100	0	100	0	0		

Start Time	Theodore Street Southbound			Theodore Street Northbound			SR-60 Eastbound Ramps Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
04:00 PM	0	0	0	1	0	1	0	0	0	1
04:15 PM	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	4	0	4	0	0	0	4
04:45 PM	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	5	0	5	0	0	0	5
% App. Total	0	0		100	0		0	0		
PHF	.000	.000	.000	.313	.000	.313	.000	.000	.000	.313

Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1
 Peak Hour for Entire Intersection Begins at 04:00 PM

City of Moreno Valley
 N/S: Theodore Street
 E/W: SR-60 Eastbound Ramps
 Weather: Clear

File Name : 03_MRV_Theodore_60E PM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- Bicycles

Start Time	Theodore Street Southbound			Theodore Street Northbound			SR-60 Eastbound Ramps Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
04:00 PM	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0
Apprch %	0	0		0	0		0	0		
Total %										

Start Time	Theodore Street Southbound			Theodore Street Northbound			SR-60 Eastbound Ramps Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:00 PM										
04:00 PM	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0		0	0		0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

City of Moreno Valley
 N/S: Theodore Street
 E/W: SR-60 Eastbound Ramps
 Weather: Clear

File Name : 03_MRV_Theodore_60E PM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- Medium Truck

Start Time	Theodore Street Southbound			Theodore Street Northbound			SR-60 Eastbound Ramps Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
04:00 PM	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0
Apprch %	0	0		0	0		0	0		
Total %										

Start Time	Theodore Street Southbound			Theodore Street Northbound			SR-60 Eastbound Ramps Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:00 PM										
04:00 PM	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0		0	0		0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

City of Moreno Valley
 N/S: Theodore Street
 E/W: SR-60 Westbound Ramps
 Weather: Clear

File Name : 02_MRV_Theodore_60W AM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- Cars & Trailers - Large 2 Axle Vehicles - 3 Axle Vehicles - 4 Axle Trucks - 5 Axle Trucks - 6+ Axle Trucks - Buses & RV's -
 Motorcycles - Bicycles - Medium Truck

Start Time	Theodore Street Southbound			SR-60 Westbound Ramps Westbound			Theodore Street Northbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
07:00 AM	2	5	7	2	7	9	12	3	15	31
07:15 AM	4	1	5	16	3	19	10	2	12	36
07:30 AM	7	6	13	9	5	14	4	1	5	32
07:45 AM	4	3	7	15	9	24	7	1	8	39
Total	17	15	32	42	24	66	33	7	40	138
08:00 AM	6	5	11	7	7	14	9	3	12	37
08:15 AM	6	6	12	11	1	12	7	3	10	34
08:30 AM	6	3	9	11	0	11	11	7	18	38
08:45 AM	4	4	8	12	3	15	8	2	10	33
Total	22	18	40	41	11	52	35	15	50	142
Grand Total	39	33	72	83	35	118	68	22	90	280
Apprch %	54.2	45.8		70.3	29.7		75.6	24.4		
Total %	13.9	11.8	25.7	29.6	12.5	42.1	24.3	7.9	32.1	
Cars & Trailers	15	30	45	36	29	65	37	16	53	163
% Cars & Trailers	38.5	90.9	62.5	43.4	82.9	55.1	54.4	72.7	58.9	58.2
Large 2 Axle Vehicles	3	1	4	1	3	4	4	1	5	13
% Large 2 Axle Vehicles	7.7	3	5.6	1.2	8.6	3.4	5.9	4.5	5.6	4.6
3 Axle Vehicles	3	0	3	0	0	0	3	1	4	7
% 3 Axle Vehicles	7.7	0	4.2	0	0	0	4.4	4.5	4.4	2.5
4 Axle Trucks	3	1	4	0	0	0	5	0	5	9
% 4 Axle Trucks	7.7	3	5.6	0	0	0	7.4	0	5.6	3.2
5 Axle Trucks	15	1	16	39	1	40	18	4	22	78
% 5 Axle Trucks	38.5	3	22.2	47	2.9	33.9	26.5	18.2	24.4	27.9
6+ Axle Trucks	0	0	0	7	0	7	1	0	1	8
% 6+ Axle Trucks	0	0	0	8.4	0	5.9	1.5	0	1.1	2.9
Buses & RV's	0	0	0	0	0	0	0	0	0	0
% Buses & RV's	0	0	0	0	0	0	0	0	0	0
Motorcycles	0	0	0	0	2	2	0	0	0	2
% Motorcycles	0	0	0	0	5.7	1.7	0	0	0	0.7
Bicycles	0	0	0	0	0	0	0	0	0	0
% Bicycles	0	0	0	0	0	0	0	0	0	0
Medium Truck	0	0	0	0	0	0	0	0	0	0
% Medium Truck	0	0	0	0	0	0	0	0	0	0

Start Time	Theodore Street Southbound			SR-60 Westbound Ramps Westbound			Theodore Street Northbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:45 AM										
07:45 AM	4	3	7	15	9	24	7	1	8	39
08:00 AM	6	5	11	7	7	14	9	3	12	37
08:15 AM	6	6	12	11	1	12	7	3	10	34
08:30 AM	6	3	9	11	0	11	11	7	18	38
Total Volume	22	17	39	44	17	61	34	14	48	148
% App. Total	56.4	43.6		72.1	27.9		70.8	29.2		
PHF	.917	.708	.813	.733	.472	.635	.773	.500	.667	.949

City of Moreno Valley
 N/S: Theodore Street
 E/W: SR-60 Westbound Ramps
 Weather: Clear

File Name : 02_MRV_Theodore_60W AM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- Cars & Trailers

Start Time	Theodore Street Southbound			SR-60 Westbound Ramps Westbound			Theodore Street Northbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
07:00 AM	1	5	6	2	6	8	5	3	8	22
07:15 AM	3	1	4	9	3	12	7	0	7	23
07:30 AM	0	5	5	4	5	9	1	1	2	16
07:45 AM	0	3	3	6	6	12	4	1	5	20
Total	4	14	18	21	20	41	17	5	22	81
08:00 AM	3	5	8	3	6	9	4	1	5	22
08:15 AM	3	5	8	4	1	5	6	2	8	21
08:30 AM	2	3	5	4	0	4	7	6	13	22
08:45 AM	3	3	6	4	2	6	3	2	5	17
Total	11	16	27	15	9	24	20	11	31	82
Grand Total	15	30	45	36	29	65	37	16	53	163
Apprch %	33.3	66.7		55.4	44.6		69.8	30.2		
Total %	9.2	18.4	27.6	22.1	17.8	39.9	22.7	9.8	32.5	

Start Time	Theodore Street Southbound			SR-60 Westbound Ramps Westbound			Theodore Street Northbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
07:45 AM	0	3	3	6	6	12	4	1	5	20
08:00 AM	3	5	8	3	6	9	4	1	5	22
08:15 AM	3	5	8	4	1	5	6	2	8	21
08:30 AM	2	3	5	4	0	4	7	6	13	22
Total Volume	8	16	24	17	13	30	21	10	31	85
% App. Total	33.3	66.7		56.7	43.3		67.7	32.3		
PHF	.667	.800	.750	.708	.542	.625	.750	.417	.596	.966

Peak Hour Analysis From 07:45 AM to 08:30 AM - Peak 1 of 1
 Peak Hour for Entire Intersection Begins at 07:45 AM

City of Moreno Valley
 N/S: Theodore Street
 E/W: SR-60 Westbound Ramps
 Weather: Clear

File Name : 02_MRV_Theodore_60W AM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- Large 2 Axle Vehicles

Start Time	Theodore Street Southbound			SR-60 Westbound Ramps Westbound			Theodore Street Northbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
07:00 AM	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	1	1	1
07:30 AM	0	0	0	0	0	0	1	0	1	1
07:45 AM	1	0	1	0	1	1	1	0	1	3
Total	1	0	1	0	1	1	2	1	3	5
08:00 AM	1	0	1	0	1	1	0	0	0	2
08:15 AM	1	1	2	0	0	0	1	0	1	3
08:30 AM	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	1	1	2	1	0	1	3
Total	2	1	3	1	2	3	2	0	2	8
Grand Total	3	1	4	1	3	4	4	1	5	13
Apprch %	75	25		25	75		80	20		
Total %	23.1	7.7	30.8	7.7	23.1	30.8	30.8	7.7	38.5	

Start Time	Theodore Street Southbound			SR-60 Westbound Ramps Westbound			Theodore Street Northbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
07:45 AM	1	0	1	0	1	1	1	0	1	3
08:00 AM	1	0	1	0	1	1	0	0	0	2
08:15 AM	1	1	2	0	0	0	1	0	1	3
08:30 AM	0	0	0	0	0	0	0	0	0	0
Total Volume	3	1	4	0	2	2	2	0	2	8
% App. Total	75	25		0	100		100	0		
PHF	.750	.250	.500	.000	.500	.500	.500	.000	.500	.667

Peak Hour Analysis From 07:45 AM to 08:30 AM - Peak 1 of 1
 Peak Hour for Entire Intersection Begins at 07:45 AM

City of Moreno Valley
 N/S: Theodore Street
 E/W: SR-60 Westbound Ramps
 Weather: Clear

File Name : 02_MR_V_Theodore_60W AM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- 3 Axle Vehicles

Start Time	Theodore Street Southbound			SR-60 Westbound Ramps Westbound			Theodore Street Northbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
07:00 AM	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	1	0	1	1
Total	0	0	0	0	0	0	1	0	1	1
08:00 AM	1	0	1	0	0	0	1	0	1	2
08:15 AM	1	0	1	0	0	0	0	0	0	1
08:30 AM	1	0	1	0	0	0	0	1	1	2
08:45 AM	0	0	0	0	0	0	1	0	1	1
Total	3	0	3	0	0	0	2	1	3	6
Grand Total	3	0	3	0	0	0	3	1	4	7
Apprch %	100	0		0	0		75	25		
Total %	42.9	0	42.9	0	0	0	42.9	14.3	57.1	

Start Time	Theodore Street Southbound			SR-60 Westbound Ramps Westbound			Theodore Street Northbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
07:45 AM	0	0	0	0	0	0	1	0	1	1
08:00 AM	1	0	1	0	0	0	1	0	1	2
08:15 AM	1	0	1	0	0	0	0	0	0	1
08:30 AM	1	0	1	0	0	0	0	1	1	2
Total Volume	3	0	3	0	0	0	2	1	3	6
% App. Total	100	0		0	0		66.7	33.3		
PHF	.750	.000	.750	.000	.000	.000	.500	.250	.750	.750

Peak Hour Analysis From 07:45 AM to 08:30 AM - Peak 1 of 1
 Peak Hour for Entire Intersection Begins at 07:45 AM

City of Moreno Valley
 N/S: Theodore Street
 E/W: SR-60 Westbound Ramps
 Weather: Clear

File Name : 02_MRV_Theodore_60W AM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- 4 Axle Trucks

Start Time	Theodore Street Southbound			SR-60 Westbound Ramps Westbound			Theodore Street Northbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
07:00 AM	1	0	1	0	0	0	1	0	1	2
07:15 AM	1	0	1	0	0	0	0	0	0	1
07:30 AM	1	0	1	0	0	0	0	0	0	1
07:45 AM	0	0	0	0	0	0	0	0	0	0
Total	3	0	3	0	0	0	1	0	1	4
08:00 AM	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	2	0	2	2
08:45 AM	0	1	1	0	0	0	2	0	2	3
Total	0	1	1	0	0	0	4	0	4	5
Grand Total	3	1	4	0	0	0	5	0	5	9
Apprch %	75	25		0	0		100	0		
Total %	33.3	11.1	44.4	0	0	0	55.6	0	55.6	

Start Time	Theodore Street Southbound			SR-60 Westbound Ramps Westbound			Theodore Street Northbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
07:45 AM	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	2	0	2	2
Total Volume	0	0	0	0	0	0	2	0	2	2
% App. Total	0	0		0	0		100	0		
PHF	.000	.000	.000	.000	.000	.000	.250	.000	.250	.250

Peak Hour Analysis From 07:45 AM to 08:30 AM - Peak 1 of 1
 Peak Hour for Entire Intersection Begins at 07:45 AM

City of Moreno Valley
 N/S: Theodore Street
 E/W: SR-60 Westbound Ramps
 Weather: Clear

File Name : 02_MRV_Theodore_60W AM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- 5 Axle Trucks

Start Time	Theodore Street Southbound			SR-60 Westbound Ramps Westbound			Theodore Street Northbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
07:00 AM	0	0	0	0	1	1	5	0	5	6
07:15 AM	0	0	0	6	0	6	3	1	4	10
07:30 AM	6	1	7	5	0	5	2	0	2	14
07:45 AM	3	0	3	7	0	7	1	0	1	11
Total	9	1	10	18	1	19	11	1	12	41
08:00 AM	1	0	1	3	0	3	4	2	6	10
08:15 AM	1	0	1	7	0	7	0	1	1	9
08:30 AM	3	0	3	5	0	5	2	0	2	10
08:45 AM	1	0	1	6	0	6	1	0	1	8
Total	6	0	6	21	0	21	7	3	10	37
Grand Total	15	1	16	39	1	40	18	4	22	78
Apprch %	93.8	6.2		97.5	2.5		81.8	18.2		
Total %	19.2	1.3	20.5	50	1.3	51.3	23.1	5.1	28.2	

Start Time	Theodore Street Southbound			SR-60 Westbound Ramps Westbound			Theodore Street Northbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
07:45 AM	3	0	3	7	0	7	1	0	1	11
08:00 AM	1	0	1	3	0	3	4	2	6	10
08:15 AM	1	0	1	7	0	7	0	1	1	9
08:30 AM	3	0	3	5	0	5	2	0	2	10
Total Volume	8	0	8	22	0	22	7	3	10	40
% App. Total	100	0		100	0		70	30		
PHF	.667	.000	.667	.786	.000	.786	.438	.375	.417	.909

Peak Hour Analysis From 07:45 AM to 08:30 AM - Peak 1 of 1
 Peak Hour for Entire Intersection Begins at 07:45 AM

City of Moreno Valley
 N/S: Theodore Street
 E/W: SR-60 Westbound Ramps
 Weather: Clear

File Name : 02_MRV_Theodore_60W AM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- 6+ Axle Trucks

Start Time	Theodore Street Southbound			SR-60 Westbound Ramps Westbound			Theodore Street Northbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
07:00 AM	0	0	0	0	0	0	1	0	1	1
07:15 AM	0	0	0	1	0	1	0	0	0	1
07:30 AM	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	2	0	2	0	0	0	2
Total	0	0	0	3	0	3	1	0	1	4
08:00 AM	0	0	0	1	0	1	0	0	0	1
08:15 AM	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	2	0	2	0	0	0	2
08:45 AM	0	0	0	1	0	1	0	0	0	1
Total	0	0	0	4	0	4	0	0	0	4
Grand Total	0	0	0	7	0	7	1	0	1	8
Apprch %	0	0		100	0		100	0		
Total %	0	0		87.5	0	87.5	12.5	0	12.5	

Start Time	Theodore Street Southbound			SR-60 Westbound Ramps Westbound			Theodore Street Northbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
07:45 AM	0	0	0	2	0	2	0	0	0	2
08:00 AM	0	0	0	1	0	1	0	0	0	1
08:15 AM	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	2	0	2	0	0	0	2
Total Volume	0	0	0	5	0	5	0	0	0	5
% App. Total	0	0		100	0		0	0		
PHF	.000	.000	.000	.625	.000	.625	.000	.000	.000	.625

Peak Hour Analysis From 07:45 AM to 08:30 AM - Peak 1 of 1
 Peak Hour for Entire Intersection Begins at 07:45 AM

City of Moreno Valley
 N/S: Theodore Street
 E/W: SR-60 Westbound Ramps
 Weather: Clear

File Name : 02_MR_V_Theodore_60W AM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- Buses & RV's

Start Time	Theodore Street Southbound			SR-60 Westbound Ramps Westbound			Theodore Street Northbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
07:00 AM	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0
Apprch %	0	0		0	0		0	0		
Total %										

Start Time	Theodore Street Southbound			SR-60 Westbound Ramps Westbound			Theodore Street Northbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
Peak Hour Analysis From 07:45 AM to 08:30 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:45 AM										
07:45 AM	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0		0	0		0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

City of Moreno Valley
 N/S: Theodore Street
 E/W: SR-60 Westbound Ramps
 Weather: Clear

File Name : 02_MRV_Theodore_60W AM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- Motorcycles

Start Time	Theodore Street Southbound			SR-60 Westbound Ramps Westbound			Theodore Street Northbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
07:00 AM	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	2	2	0	0	0	2
Total	0	0	0	0	2	2	0	0	0	2
08:00 AM	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	2	2	0	0	0	2
Apprch %	0	0		0	100		0	0		
Total %	0	0		0	100	100	0	0		

Start Time	Theodore Street Southbound			SR-60 Westbound Ramps Westbound			Theodore Street Northbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
Peak Hour Analysis From 07:45 AM to 08:30 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:45 AM										
07:45 AM	0	0	0	0	2	2	0	0	0	2
08:00 AM	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	2	2	0	0	0	2
% App. Total	0	0		0	100		0	0		
PHF	.000	.000	.000	.000	.250	.250	.000	.000	.000	.250

City of Moreno Valley
 N/S: Theodore Street
 E/W: SR-60 Westbound Ramps
 Weather: Clear

File Name : 02_MRV_Theodore_60W AM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- Bicycles

Start Time	Theodore Street Southbound			SR-60 Westbound Ramps Westbound			Theodore Street Northbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
07:00 AM	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0
Apprch %	0	0		0	0		0	0		
Total %										

Start Time	Theodore Street Southbound			SR-60 Westbound Ramps Westbound			Theodore Street Northbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
Peak Hour Analysis From 07:45 AM to 08:30 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:45 AM										
07:45 AM	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0		0	0		0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

City of Moreno Valley
 N/S: Theodore Street
 E/W: SR-60 Westbound Ramps
 Weather: Clear

File Name : 02_MRV_Theodore_60W AM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- Medium Truck

Start Time	Theodore Street Southbound			SR-60 Westbound Ramps Westbound			Theodore Street Northbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
07:00 AM	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0
Apprch %	0	0		0	0		0	0		
Total %										

Start Time	Theodore Street Southbound			SR-60 Westbound Ramps Westbound			Theodore Street Northbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
Peak Hour Analysis From 07:45 AM to 08:30 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:45 AM										
07:45 AM	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0		0	0		0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

City of Moreno Valley
 N/S: Theodore Street
 E/W: SR-60 Westbound Ramps
 Weather: Clear

File Name : 02_MRV_Theodore_60W PM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- Cars & Trailers - Large 2 Axle Vehicles - 3 Axle Vehicles - 4 Axle Trucks - 5 Axle Trucks - 6+ Axle Trucks - Buses & RV's -
 Motorcycles - Bicycles - Medium Truck

Start Time	Theodore Street Southbound			SR-60 Westbound Ramps Westbound			Theodore Street Northbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
04:00 PM	11	7	18	3	1	4	5	13	18	40
04:15 PM	9	6	15	10	4	14	4	9	13	42
04:30 PM	10	11	21	4	3	7	7	10	17	45
04:45 PM	5	5	10	6	2	8	4	6	10	28
Total	35	29	64	23	10	33	20	38	58	155
05:00 PM	1	7	8	6	3	9	2	10	12	29
05:15 PM	3	8	11	3	4	7	1	4	5	23
05:30 PM	2	3	5	5	0	5	8	13	21	31
05:45 PM	2	3	5	4	4	8	1	6	7	20
Total	8	21	29	18	11	29	12	33	45	103
Grand Total	43	50	93	41	21	62	32	71	103	258
Apprch %	46.2	53.8		66.1	33.9		31.1	68.9		
Total %	16.7	19.4	36	15.9	8.1	24	12.4	27.5	39.9	
Cars & Trailers	32	49	81	37	20	57	27	59	86	224
% Cars & Trailers	74.4	98	87.1	90.2	95.2	91.9	84.4	83.1	83.5	86.8
Large 2 Axle Vehicles	3	0	3	0	1	1	2	6	8	12
% Large 2 Axle Vehicles	7	0	3.2	0	4.8	1.6	6.2	8.5	7.8	4.7
3 Axle Vehicles	1	0	1	1	0	1	0	4	4	6
% 3 Axle Vehicles	2.3	0	1.1	2.4	0	1.6	0	5.6	3.9	2.3
4 Axle Trucks	4	0	4	0	0	0	0	0	0	4
% 4 Axle Trucks	9.3	0	4.3	0	0	0	0	0	0	1.6
5 Axle Trucks	3	0	3	3	0	3	2	2	4	10
% 5 Axle Trucks	7	0	3.2	7.3	0	4.8	6.2	2.8	3.9	3.9
6+ Axle Trucks	0	1	1	0	0	0	1	0	1	2
% 6+ Axle Trucks	0	2	1.1	0	0	0	3.1	0	1	0.8
Buses & RV's	0	0	0	0	0	0	0	0	0	0
% Buses & RV's	0	0	0	0	0	0	0	0	0	0
Motorcycles	0	0	0	0	0	0	0	0	0	0
% Motorcycles	0	0	0	0	0	0	0	0	0	0
Bicycles	0	0	0	0	0	0	0	0	0	0
% Bicycles	0	0	0	0	0	0	0	0	0	0
Medium Truck	0	0	0	0	0	0	0	0	0	0
% Medium Truck	0	0	0	0	0	0	0	0	0	0

Start Time	Theodore Street Southbound			SR-60 Westbound Ramps Westbound			Theodore Street Northbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:00 PM										
04:00 PM	11	7	18	3	1	4	5	13	18	40
04:15 PM	9	6	15	10	4	14	4	9	13	42
04:30 PM	10	11	21	4	3	7	7	10	17	45
04:45 PM	5	5	10	6	2	8	4	6	10	28
Total Volume	35	29	64	23	10	33	20	38	58	155
% App. Total	54.7	45.3		69.7	30.3		34.5	65.5		
PHF	.795	.659	.762	.575	.625	.589	.714	.731	.806	.861

City of Moreno Valley
 N/S: Theodore Street
 E/W: SR-60 Westbound Ramps
 Weather: Clear

File Name : 02_MRV_Theodore_60W PM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- Cars & Trailers

Start Time	Theodore Street Southbound			SR-60 Westbound Ramps Westbound			Theodore Street Northbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
04:00 PM	7	7	14	2	1	3	4	9	13	30
04:15 PM	4	6	10	10	3	13	4	5	9	32
04:30 PM	9	10	19	3	3	6	7	9	16	41
04:45 PM	5	5	10	5	2	7	3	5	8	25
Total	25	28	53	20	9	29	18	28	46	128
05:00 PM	1	7	8	5	3	8	2	8	10	26
05:15 PM	3	8	11	3	4	7	1	4	5	23
05:30 PM	2	3	5	5	0	5	5	13	18	28
05:45 PM	1	3	4	4	4	8	1	6	7	19
Total	7	21	28	17	11	28	9	31	40	96
Grand Total	32	49	81	37	20	57	27	59	86	224
Apprch %	39.5	60.5		64.9	35.1		31.4	68.6		
Total %	14.3	21.9	36.2	16.5	8.9	25.4	12.1	26.3	38.4	

Start Time	Theodore Street Southbound			SR-60 Westbound Ramps Westbound			Theodore Street Northbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
04:00 PM	7	7	14	2	1	3	4	9	13	30
04:15 PM	4	6	10	10	3	13	4	5	9	32
04:30 PM	9	10	19	3	3	6	7	9	16	41
04:45 PM	5	5	10	5	2	7	3	5	8	25
Total Volume	25	28	53	20	9	29	18	28	46	128
% App. Total	47.2	52.8		69	31		39.1	60.9		
PHF	.694	.700	.697	.500	.750	.558	.643	.778	.719	.780

Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1
 Peak Hour for Entire Intersection Begins at 04:00 PM

City of Moreno Valley
 N/S: Theodore Street
 E/W: SR-60 Westbound Ramps
 Weather: Clear

File Name : 02_MRV_Theodore_60W PM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- Large 2 Axle Vehicles

Start Time	Theodore Street Southbound			SR-60 Westbound Ramps Westbound			Theodore Street Northbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
04:00 PM	2	0	2	0	0	0	0	1	1	3
04:15 PM	0	0	0	0	1	1	0	2	2	3
04:30 PM	0	0	0	0	0	0	0	1	1	1
04:45 PM	0	0	0	0	0	0	0	1	1	1
Total	2	0	2	0	1	1	0	5	5	8
05:00 PM	0	0	0	0	0	0	0	1	1	1
05:15 PM	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	2	0	2	2
05:45 PM	1	0	1	0	0	0	0	0	0	1
Total	1	0	1	0	0	0	2	1	3	4
Grand Total	3	0	3	0	1	1	2	6	8	12
Apprch %	100	0		0	100		25	75		
Total %	25	0	25	0	8.3	8.3	16.7	50	66.7	

Start Time	Theodore Street Southbound			SR-60 Westbound Ramps Westbound			Theodore Street Northbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
04:00 PM	2	0	2	0	0	0	0	1	1	3
04:15 PM	0	0	0	0	1	1	0	2	2	3
04:30 PM	0	0	0	0	0	0	0	1	1	1
04:45 PM	0	0	0	0	0	0	0	1	1	1
Total Volume	2	0	2	0	1	1	0	5	5	8
% App. Total	100	0		0	100		0	100		
PHF	.250	.000	.250	.000	.250	.250	.000	.625	.625	.667

Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1
 Peak Hour for Entire Intersection Begins at 04:00 PM

City of Moreno Valley
 N/S: Theodore Street
 E/W: SR-60 Westbound Ramps
 Weather: Clear

File Name : 02_MRV_Theodore_60W PM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- 3 Axle Vehicles

Start Time	Theodore Street Southbound			SR-60 Westbound Ramps Westbound			Theodore Street Northbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
04:00 PM	0	0	0	0	0	0	0	2	2	2
04:15 PM	0	0	0	0	0	0	0	1	1	1
04:30 PM	1	0	1	0	0	0	0	0	0	1
04:45 PM	0	0	0	0	0	0	0	0	0	0
Total	1	0	1	0	0	0	0	3	3	4
05:00 PM	0	0	0	1	0	1	0	1	1	2
05:15 PM	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	1	0	1	0	1	1	2
Grand Total	1	0	1	1	0	1	0	4	4	6
Apprch %	100	0		100	0		0	100		
Total %	16.7	0	16.7	16.7	0	16.7	0	66.7	66.7	

Start Time	Theodore Street Southbound			SR-60 Westbound Ramps Westbound			Theodore Street Northbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
04:00 PM	0	0	0	0	0	0	0	2	2	2
04:15 PM	0	0	0	0	0	0	0	1	1	1
04:30 PM	1	0	1	0	0	0	0	0	0	1
04:45 PM	0	0	0	0	0	0	0	0	0	0
Total Volume	1	0	1	0	0	0	0	3	3	4
% App. Total	100	0		0	0		0	100		
PHF	.250	.000	.250	.000	.000	.000	.000	.375	.375	.500

Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1
 Peak Hour for Entire Intersection Begins at 04:00 PM

City of Moreno Valley
 N/S: Theodore Street
 E/W: SR-60 Westbound Ramps
 Weather: Clear

File Name : 02_MRV_Theodore_60W PM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- 4 Axle Trucks

Start Time	Theodore Street Southbound			SR-60 Westbound Ramps Westbound			Theodore Street Northbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
04:00 PM	2	0	2	0	0	0	0	0	0	2
04:15 PM	2	0	2	0	0	0	0	0	0	2
04:30 PM	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0
Total	4	0	4	0	0	0	0	0	0	4
05:00 PM	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
Grand Total	4	0	4	0	0	0	0	0	0	4
Apprch %	100	0		0	0		0	0		
Total %	100	0	100	0	0	0	0	0	0	

Start Time	Theodore Street Southbound			SR-60 Westbound Ramps Westbound			Theodore Street Northbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
04:00 PM	2	0	2	0	0	0	0	0	0	2
04:15 PM	2	0	2	0	0	0	0	0	0	2
04:30 PM	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0
Total Volume	4	0	4	0	0	0	0	0	0	4
% App. Total	100	0		0	0		0	0		
PHF	.500	.000	.500	.000	.000	.000	.000	.000	.000	.500

Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1
 Peak Hour for Entire Intersection Begins at 04:00 PM

City of Moreno Valley
 N/S: Theodore Street
 E/W: SR-60 Westbound Ramps
 Weather: Clear

File Name : 02_MRV_Theodore_60W PM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- 5 Axle Trucks

Start Time	Theodore Street Southbound			SR-60 Westbound Ramps Westbound			Theodore Street Northbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
04:00 PM	0	0	0	1	0	1	1	1	2	3
04:15 PM	3	0	3	0	0	0	0	1	1	4
04:30 PM	0	0	0	1	0	1	0	0	0	1
04:45 PM	0	0	0	1	0	1	1	0	1	2
Total	3	0	3	3	0	3	2	2	4	10
05:00 PM	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
Grand Total	3	0	3	3	0	3	2	2	4	10
Apprch %	100	0		100	0		50	50		
Total %	30	0	30	30	0	30	20	20	40	

Start Time	Theodore Street Southbound			SR-60 Westbound Ramps Westbound			Theodore Street Northbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
04:00 PM	0	0	0	1	0	1	1	1	2	3
04:15 PM	3	0	3	0	0	0	0	1	1	4
04:30 PM	0	0	0	1	0	1	0	0	0	1
04:45 PM	0	0	0	1	0	1	1	0	1	2
Total Volume	3	0	3	3	0	3	2	2	4	10
% App. Total	100	0		100	0		50	50		
PHF	.250	.000	.250	.750	.000	.750	.500	.500	.500	.625

Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1
 Peak Hour for Entire Intersection Begins at 04:00 PM

City of Moreno Valley
 N/S: Theodore Street
 E/W: SR-60 Westbound Ramps
 Weather: Clear

File Name : 02_MRV_Theodore_60W PM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- 6+ Axle Trucks

Start Time	Theodore Street Southbound			SR-60 Westbound Ramps Westbound			Theodore Street Northbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
04:00 PM	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	1	1	0	0	0	0	0	0	1
04:45 PM	0	0	0	0	0	0	0	0	0	0
Total	0	1	1	0	0	0	0	0	0	1
05:00 PM	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	1	0	1	1
05:45 PM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	1	0	1	1
Grand Total	0	1	1	0	0	0	1	0	1	2
Apprch %	0	100		0	0		100	0		
Total %	0	50	50	0	0	0	50	0	50	

Start Time	Theodore Street Southbound			SR-60 Westbound Ramps Westbound			Theodore Street Northbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
04:00 PM	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	1	1	0	0	0	0	0	0	1
04:45 PM	0	0	0	0	0	0	0	0	0	0
Total Volume	0	1	1	0	0	0	0	0	0	1
% App. Total	0	100		0	0		0	0		
PHF	.000	.250	.250	.000	.000	.000	.000	.000	.000	.250

Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1
 Peak Hour for Entire Intersection Begins at 04:00 PM

City of Moreno Valley
 N/S: Theodore Street
 E/W: SR-60 Westbound Ramps
 Weather: Clear

File Name : 02_MR_V_Theodore_60W PM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- Buses & RV's

Start Time	Theodore Street Southbound			SR-60 Westbound Ramps Westbound			Theodore Street Northbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
04:00 PM	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0
Apprch %	0	0		0	0		0	0		
Total %										

Start Time	Theodore Street Southbound			SR-60 Westbound Ramps Westbound			Theodore Street Northbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:00 PM										
04:00 PM	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0		0	0		0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

City of Moreno Valley
 N/S: Theodore Street
 E/W: SR-60 Westbound Ramps
 Weather: Clear

File Name : 02_MRV_Theodore_60W PM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- Motorcycles

Start Time	Theodore Street Southbound			SR-60 Westbound Ramps Westbound			Theodore Street Northbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
04:00 PM	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0
Apprch %	0	0		0	0		0	0		
Total %										

Start Time	Theodore Street Southbound			SR-60 Westbound Ramps Westbound			Theodore Street Northbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:00 PM										
04:00 PM	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0		0	0		0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

City of Moreno Valley
 N/S: Theodore Street
 E/W: SR-60 Westbound Ramps
 Weather: Clear

File Name : 02_MRV_Theodore_60W PM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- Bicycles

Start Time	Theodore Street Southbound			SR-60 Westbound Ramps Westbound			Theodore Street Northbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
04:00 PM	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0
Apprch %	0	0		0	0		0	0		
Total %										

Start Time	Theodore Street Southbound			SR-60 Westbound Ramps Westbound			Theodore Street Northbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:00 PM										
04:00 PM	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0		0	0		0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

City of Moreno Valley
 N/S: Theodore Street
 E/W: SR-60 Westbound Ramps
 Weather: Clear

File Name : 02_MRV_Theodore_60W PM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- Medium Truck

Start Time	Theodore Street Southbound			SR-60 Westbound Ramps Westbound			Theodore Street Northbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
04:00 PM	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0
Apprch %	0	0		0	0		0	0		
Total %										

Start Time	Theodore Street Southbound			SR-60 Westbound Ramps Westbound			Theodore Street Northbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:00 PM										
04:00 PM	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0		0	0		0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

City of Moreno Valley
 N/S: Theodore Street
 E/W: Ironwood Avenue
 Weather: Clear

File Name : 01_MRV_Theodore_Ironwood AM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- Cars & Trailers - Large 2 Axle Vehicles - 3 Axle Vehicles - 4 Axle Trucks - 5 Axle Trucks - 6+ Axle Trucks - Buses & RV's -
 Motorcycles - Bicycles - Medium Truck

Start Time	Ironwood Avenue Westbound			Theodore Street Northbound			Ironwood Avenue Eastbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
07:00 AM	1	5	6	6	1	7	0	8	8	21
07:15 AM	0	3	3	5	2	7	5	7	12	22
07:30 AM	1	6	7	11	2	13	3	6	9	29
07:45 AM	0	3	3	9	0	9	8	4	12	24
Total	2	17	19	31	5	36	16	25	41	96
08:00 AM	2	5	7	5	0	5	10	7	17	29
08:15 AM	3	4	7	7	1	8	4	5	9	24
08:30 AM	1	3	4	13	3	16	5	6	11	31
08:45 AM	2	2	4	6	2	8	4	9	13	25
Total	8	14	22	31	6	37	23	27	50	109
Grand Total	10	31	41	62	11	73	39	52	91	205
Apprch %	24.4	75.6		84.9	15.1		42.9	57.1		
Total %	4.9	15.1	20	30.2	5.4	35.6	19	25.4	44.4	
Cars & Trailers	2	25	27	21	3	24	25	6	31	82
% Cars & Trailers	20	80.6	65.9	33.9	27.3	32.9	64.1	11.5	34.1	40
Large 2 Axle Vehicles	1	0	1	3	1	4	2	5	7	12
% Large 2 Axle Vehicles	10	0	2.4	4.8	9.1	5.5	5.1	9.6	7.7	5.9
3 Axle Vehicles	1	0	1	7	1	8	0	8	8	17
% 3 Axle Vehicles	10	0	2.4	11.3	9.1	11	0	15.4	8.8	8.3
4 Axle Trucks	0	0	0	0	0	0	0	0	0	0
% 4 Axle Trucks	0	0	0	0	0	0	0	0	0	0
5 Axle Trucks	0	0	0	16	1	17	1	19	20	37
% 5 Axle Trucks	0	0	0	25.8	9.1	23.3	2.6	36.5	22	18
6+ Axle Trucks	0	0	0	0	0	0	0	0	0	0
% 6+ Axle Trucks	0	0	0	0	0	0	0	0	0	0
Buses & RV's	0	0	0	0	0	0	0	1	1	1
% Buses & RV's	0	0	0	0	0	0	0	1.9	1.1	0.5
Motorcycles	0	0	0	0	0	0	2	0	2	2
% Motorcycles	0	0	0	0	0	0	5.1	0	2.2	1
Bicycles	2	1	3	0	1	1	1	0	1	5
% Bicycles	20	3.2	7.3	0	9.1	1.4	2.6	0	1.1	2.4
Medium Truck	4	5	9	15	4	19	8	13	21	49
% Medium Truck	40	16.1	22	24.2	36.4	26	20.5	25	23.1	23.9

Start Time	Ironwood Avenue Westbound			Theodore Street Northbound			Ironwood Avenue Eastbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 08:00 AM										
08:00 AM	2	5	7	5	0	5	10	7	17	29
08:15 AM	3	4	7	7	1	8	4	5	9	24
08:30 AM	1	3	4	13	3	16	5	6	11	31
08:45 AM	2	2	4	6	2	8	4	9	13	25
Total Volume	8	14	22	31	6	37	23	27	50	109
% App. Total	36.4	63.6		83.8	16.2		46	54		
PHF	.667	.700	.786	.596	.500	.578	.575	.750	.735	.879

City of Moreno Valley
 N/S: Theodore Street
 E/W: Ironwood Avenue
 Weather: Clear

File Name : 01_MRV_Theodore_Ironwood AM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- Cars & Trailers

Start Time	Ironwood Avenue Westbound			Theodore Street Northbound			Ironwood Avenue Eastbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
07:00 AM	0	5	5	2	0	2	0	0	0	7
07:15 AM	0	2	2	1	1	2	3	2	5	9
07:30 AM	1	6	7	4	2	6	3	3	6	19
07:45 AM	0	1	1	4	0	4	4	0	4	9
Total	1	14	15	11	3	14	10	5	15	44
08:00 AM	0	4	4	1	0	1	6	0	6	11
08:15 AM	0	4	4	2	0	2	4	0	4	10
08:30 AM	1	2	3	6	0	6	5	1	6	15
08:45 AM	0	1	1	1	0	1	0	0	0	2
Total	1	11	12	10	0	10	15	1	16	38
Grand Total	2	25	27	21	3	24	25	6	31	82
Apprch %	7.4	92.6		87.5	12.5		80.6	19.4		
Total %	2.4	30.5	32.9	25.6	3.7	29.3	30.5	7.3	37.8	

Start Time	Ironwood Avenue Westbound			Theodore Street Northbound			Ironwood Avenue Eastbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
08:00 AM	0	4	4	1	0	1	6	0	6	11
08:15 AM	0	4	4	2	0	2	4	0	4	10
08:30 AM	1	2	3	6	0	6	5	1	6	15
08:45 AM	0	1	1	1	0	1	0	0	0	2
Total Volume	1	11	12	10	0	10	15	1	16	38
% App. Total	8.3	91.7		100	0		93.8	6.2		
PHF	.250	.688	.750	.417	.000	.417	.625	.250	.667	.633

Peak Hour Analysis From 08:00 AM to 08:45 AM - Peak 1 of 1
 Peak Hour for Entire Intersection Begins at 08:00 AM

City of Moreno Valley
 N/S: Theodore Street
 E/W: Ironwood Avenue
 Weather: Clear

File Name : 01_MRV_Theodore_Ironwood AM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- Large 2 Axle Vehicles

Start Time	Ironwood Avenue Westbound			Theodore Street Northbound			Ironwood Avenue Eastbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
07:00 AM	0	0	0	1	0	1	0	0	0	1
07:15 AM	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	2	2	2
Total	0	0	0	1	0	1	0	2	2	3
08:00 AM	1	0	1	1	0	1	1	1	2	4
08:15 AM	0	0	0	1	0	1	0	1	1	2
08:30 AM	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	1	1	1	1	2	3
Total	1	0	1	2	1	3	2	3	5	9
Grand Total	1	0	1	3	1	4	2	5	7	12
Apprch %	100	0		75	25		28.6	71.4		
Total %	8.3	0	8.3	25	8.3	33.3	16.7	41.7	58.3	

Start Time	Ironwood Avenue Westbound			Theodore Street Northbound			Ironwood Avenue Eastbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
08:00 AM	1	0	1	1	0	1	1	1	2	4
08:15 AM	0	0	0	1	0	1	0	1	1	2
08:30 AM	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	1	1	1	1	2	3
Total Volume	1	0	1	2	1	3	2	3	5	9
% App. Total	100	0		66.7	33.3		40	60		
PHF	.250	.000	.250	.500	.250	.750	.500	.750	.625	.563

Peak Hour Analysis From 08:00 AM to 08:45 AM - Peak 1 of 1
 Peak Hour for Entire Intersection Begins at 08:00 AM

City of Moreno Valley
 N/S: Theodore Street
 E/W: Ironwood Avenue
 Weather: Clear

File Name : 01_MRV_Theodore_Ironwood AM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- 3 Axle Vehicles

Start Time	Ironwood Avenue Westbound			Theodore Street Northbound			Ironwood Avenue Eastbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
07:00 AM	0	0	0	1	0	1	0	1	1	2
07:15 AM	0	0	0	1	0	1	0	0	0	1
07:30 AM	0	0	0	2	0	2	0	0	0	2
07:45 AM	0	0	0	0	0	0	0	1	1	1
Total	0	0	0	4	0	4	0	2	2	6
08:00 AM	0	0	0	0	0	0	0	1	1	1
08:15 AM	1	0	1	1	1	2	0	0	0	3
08:30 AM	0	0	0	1	0	1	0	0	0	1
08:45 AM	0	0	0	1	0	1	0	5	5	6
Total	1	0	1	3	1	4	0	6	6	11
Grand Total	1	0	1	7	1	8	0	8	8	17
Apprch %	100	0		87.5	12.5		0	100		
Total %	5.9	0	5.9	41.2	5.9	47.1	0	47.1	47.1	

Start Time	Ironwood Avenue Westbound			Theodore Street Northbound			Ironwood Avenue Eastbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
08:00 AM	0	0	0	0	0	0	0	1	1	1
08:15 AM	1	0	1	1	1	2	0	0	0	3
08:30 AM	0	0	0	1	0	1	0	0	0	1
08:45 AM	0	0	0	1	0	1	0	5	5	6
Total Volume	1	0	1	3	1	4	0	6	6	11
% App. Total	100	0		75	25		0	100		
PHF	.250	.000	.250	.750	.250	.500	.000	.300	.300	.458

Peak Hour Analysis From 08:00 AM to 08:45 AM - Peak 1 of 1
 Peak Hour for Entire Intersection Begins at 08:00 AM

City of Moreno Valley
 N/S: Theodore Street
 E/W: Ironwood Avenue
 Weather: Clear

File Name : 01_MRV_Theodore_Ironwood AM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- 4 Axle Trucks

Start Time	Ironwood Avenue Westbound			Theodore Street Northbound			Ironwood Avenue Eastbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
07:00 AM	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0
Apprch %	0	0		0	0		0	0		
Total %										

Start Time	Ironwood Avenue Westbound			Theodore Street Northbound			Ironwood Avenue Eastbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
Peak Hour Analysis From 08:00 AM to 08:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 08:00 AM										
08:00 AM	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0		0	0		0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

City of Moreno Valley
 N/S: Theodore Street
 E/W: Ironwood Avenue
 Weather: Clear

File Name : 01_MRV_Theodore_Ironwood AM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- 5 Axle Trucks

Start Time	Ironwood Avenue Westbound			Theodore Street Northbound			Ironwood Avenue Eastbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
07:00 AM	0	0	0	0	0	0	0	4	4	4
07:15 AM	0	0	0	1	0	1	1	5	6	7
07:30 AM	0	0	0	5	0	5	0	2	2	7
07:45 AM	0	0	0	4	0	4	0	1	1	5
Total	0	0	0	10	0	10	1	12	13	23
08:00 AM	0	0	0	1	0	1	0	2	2	3
08:15 AM	0	0	0	1	0	1	0	2	2	3
08:30 AM	0	0	0	3	1	4	0	1	1	5
08:45 AM	0	0	0	1	0	1	0	2	2	3
Total	0	0	0	6	1	7	0	7	7	14
Grand Total	0	0	0	16	1	17	1	19	20	37
Apprch %	0	0		94.1	5.9		5	95		
Total %	0	0		43.2	2.7	45.9	2.7	51.4	54.1	

Start Time	Ironwood Avenue Westbound			Theodore Street Northbound			Ironwood Avenue Eastbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
08:00 AM	0	0	0	1	0	1	0	2	2	3
08:15 AM	0	0	0	1	0	1	0	2	2	3
08:30 AM	0	0	0	3	1	4	0	1	1	5
08:45 AM	0	0	0	1	0	1	0	2	2	3
Total Volume	0	0	0	6	1	7	0	7	7	14
% App. Total	0	0		85.7	14.3		0	100		
PHF	.000	.000	.000	.500	.250	.438	.000	.875	.875	.700

Peak Hour Analysis From 08:00 AM to 08:45 AM - Peak 1 of 1
 Peak Hour for Entire Intersection Begins at 08:00 AM

City of Moreno Valley
 N/S: Theodore Street
 E/W: Ironwood Avenue
 Weather: Clear

File Name : 01_MRV_Theodore_Ironwood AM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- 6+ Axle Trucks

Start Time	Ironwood Avenue Westbound			Theodore Street Northbound			Ironwood Avenue Eastbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
07:00 AM	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0
Apprch %	0	0		0	0		0	0		
Total %										

Start Time	Ironwood Avenue Westbound			Theodore Street Northbound			Ironwood Avenue Eastbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
Peak Hour Analysis From 08:00 AM to 08:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 08:00 AM										
08:00 AM	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0		0	0		0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

City of Moreno Valley
 N/S: Theodore Street
 E/W: Ironwood Avenue
 Weather: Clear

File Name : 01_MRV_Theodore_Ironwood AM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- Buses & RV's

Start Time	Ironwood Avenue Westbound			Theodore Street Northbound			Ironwood Avenue Eastbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
07:00 AM	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	0	1	1	1
08:15 AM	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	1	1	1
Grand Total	0	0	0	0	0	0	0	1	1	1
Apprch %	0	0		0	0		0	100		
Total %	0	0		0	0		0	100	100	

Start Time	Ironwood Avenue Westbound			Theodore Street Northbound			Ironwood Avenue Eastbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
08:00 AM	0	0	0	0	0	0	0	1	1	1
08:15 AM	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	1	1	1
% App. Total	0	0		0	0		0	100		
PHF	.000	.000	.000	.000	.000	.000	.000	.250	.250	.250

Peak Hour Analysis From 08:00 AM to 08:45 AM - Peak 1 of 1
 Peak Hour for Entire Intersection Begins at 08:00 AM

City of Moreno Valley
 N/S: Theodore Street
 E/W: Ironwood Avenue
 Weather: Clear

File Name : 01_MRV_Theodore_Ironwood AM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- Motorcycles

Start Time	Ironwood Avenue Westbound			Theodore Street Northbound			Ironwood Avenue Eastbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
07:00 AM	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	2	0	2	2
Total	0	0	0	0	0	0	2	0	2	2
08:00 AM	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	2	0	2	2
Apprch %	0	0		0	0		100	0		
Total %	0	0		0	0		100	0	100	

Start Time	Ironwood Avenue Westbound			Theodore Street Northbound			Ironwood Avenue Eastbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
Peak Hour Analysis From 08:00 AM to 08:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 08:00 AM										
08:00 AM	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0		0	0		0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

City of Moreno Valley
 N/S: Theodore Street
 E/W: Ironwood Avenue
 Weather: Clear

File Name : 01_MRV_Theodore_Ironwood AM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- Bicycles

Start Time	Ironwood Avenue Westbound			Theodore Street Northbound			Ironwood Avenue Eastbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
07:00 AM	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	1	1	0	0	0	0	0	0	1
07:30 AM	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0
Total	0	1	1	0	0	0	0	0	0	1
08:00 AM	1	0	1	0	0	0	0	0	0	1
08:15 AM	1	0	1	0	0	0	0	0	0	1
08:30 AM	0	0	0	0	1	1	0	0	0	1
08:45 AM	0	0	0	0	0	0	1	0	1	1
Total	2	0	2	0	1	1	1	0	1	4
Grand Total	2	1	3	0	1	1	1	0	1	5
Apprch %	66.7	33.3		0	100		100	0		
Total %	40	20	60	0	20	20	20	0	20	

Start Time	Ironwood Avenue Westbound			Theodore Street Northbound			Ironwood Avenue Eastbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
08:00 AM	1	0	1	0	0	0	0	0	0	1
08:15 AM	1	0	1	0	0	0	0	0	0	1
08:30 AM	0	0	0	0	1	1	0	0	0	1
08:45 AM	0	0	0	0	0	0	1	0	1	1
Total Volume	2	0	2	0	1	1	1	0	1	4
% App. Total	100	0		0	100		100	0		
PHF	.500	.000	.500	.000	.250	.250	.250	.000	.250	1.00

Peak Hour Analysis From 08:00 AM to 08:45 AM - Peak 1 of 1
 Peak Hour for Entire Intersection Begins at 08:00 AM

City of Moreno Valley
 N/S: Theodore Street
 E/W: Ironwood Avenue
 Weather: Clear

File Name : 01_MRV_Theodore_Ironwood AM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- Medium Truck

Start Time	Ironwood Avenue Westbound			Theodore Street Northbound			Ironwood Avenue Eastbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
07:00 AM	1	0	1	2	1	3	0	3	3	7
07:15 AM	0	0	0	2	1	3	1	0	1	4
07:30 AM	0	0	0	0	0	0	0	1	1	1
07:45 AM	0	2	2	1	0	1	2	0	2	5
Total	1	2	3	5	2	7	3	4	7	17
08:00 AM	0	1	1	2	0	2	3	2	5	8
08:15 AM	1	0	1	2	0	2	0	2	2	5
08:30 AM	0	1	1	3	1	4	0	4	4	9
08:45 AM	2	1	3	3	1	4	2	1	3	10
Total	3	3	6	10	2	12	5	9	14	32
Grand Total	4	5	9	15	4	19	8	13	21	49
Apprch %	44.4	55.6		78.9	21.1		38.1	61.9		
Total %	8.2	10.2	18.4	30.6	8.2	38.8	16.3	26.5	42.9	

Start Time	Ironwood Avenue Westbound			Theodore Street Northbound			Ironwood Avenue Eastbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
08:00 AM	0	1	1	2	0	2	3	2	5	8
08:15 AM	1	0	1	2	0	2	0	2	2	5
08:30 AM	0	1	1	3	1	4	0	4	4	9
08:45 AM	2	1	3	3	1	4	2	1	3	10
Total Volume	3	3	6	10	2	12	5	9	14	32
% App. Total	50	50		83.3	16.7		35.7	64.3		
PHF	.375	.750	.500	.833	.500	.750	.417	.563	.700	.800

Peak Hour Analysis From 08:00 AM to 08:45 AM - Peak 1 of 1
 Peak Hour for Entire Intersection Begins at 08:00 AM

City of Moreno Valley
 N/S: Theodore Street
 E/W: Ironwood Avenue
 Weather: Clear

File Name : 01_MRV_Theodore_Ironwood PM
 Site Code : 09817323
 Start Date : 5/31/2017
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Groups Printed- Cars & Trailers - Large 2 Axle Vehicles - 3 Axle Vehicles - 4 Axle Trucks - 5 Axle Trucks - 6+ Axle Trucks - Buses & RV's -
 Motorcycles - Bicycles - Medium Truck

Start Time	Ironwood Avenue Westbound			Theodore Street Northbound			Ironwood Avenue Eastbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
04:00 PM	1	6	7	9	1	10	2	6	8	25
04:15 PM	0	7	7	10	1	11	6	3	9	27
04:30 PM	1	8	9	11	4	15	4	3	7	31
04:45 PM	1	2	3	10	0	10	4	1	5	18
Total	3	23	26	40	6	46	16	13	29	101
05:00 PM	1	6	7	2	1	3	6	0	6	16
05:15 PM	0	6	6	2	1	3	4	0	4	13
05:30 PM	1	2	3	7	0	7	6	1	7	17
05:45 PM	0	3	3	1	0	1	3	2	5	9
Total	2	17	19	12	2	14	19	3	22	55
Grand Total	5	40	45	52	8	60	35	16	51	156
Apprch %	11.1	88.9		86.7	13.3		68.6	31.4		
Total %	3.2	25.6	28.8	33.3	5.1	38.5	22.4	10.3	32.7	
Cars & Trailers	2	25	27	21	3	24	25	6	31	82
% Cars & Trailers	40	62.5	60	40.4	37.5	40	71.4	37.5	60.8	52.6
Large 2 Axle Vehicles	0	1	1	2	0	2	0	0	0	3
% Large 2 Axle Vehicles	0	2.5	2.2	3.8	0	3.3	0	0	0	1.9
3 Axle Vehicles	0	0	0	5	0	5	0	2	2	7
% 3 Axle Vehicles	0	0	0	9.6	0	8.3	0	12.5	3.9	4.5
4 Axle Trucks	0	0	0	0	0	0	0	0	0	0
% 4 Axle Trucks	0	0	0	0	0	0	0	0	0	0
5 Axle Trucks	0	0	0	4	0	4	1	2	3	7
% 5 Axle Trucks	0	0	0	7.7	0	6.7	2.9	12.5	5.9	4.5
6+ Axle Trucks	0	0	0	0	0	0	0	0	0	0
% 6+ Axle Trucks	0	0	0	0	0	0	0	0	0	0
Buses & RV's	0	0	0	0	0	0	0	0	0	0
% Buses & RV's	0	0	0	0	0	0	0	0	0	0
Motorcycles	0	0	0	0	0	0	0	0	0	0
% Motorcycles	0	0	0	0	0	0	0	0	0	0
Bicycles	0	0	0	0	1	1	0	0	0	1
% Bicycles	0	0	0	0	12.5	1.7	0	0	0	0.6
Medium Truck	3	14	17	20	4	24	9	6	15	56
% Medium Truck	60	35	37.8	38.5	50	40	25.7	37.5	29.4	35.9

Start Time	Ironwood Avenue Westbound			Theodore Street Northbound			Ironwood Avenue Eastbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
04:00 PM	1	6	7	9	1	10	2	6	8	25
04:15 PM	0	7	7	10	1	11	6	3	9	27
04:30 PM	1	8	9	11	4	15	4	3	7	31
04:45 PM	1	2	3	10	0	10	4	1	5	18
Total Volume	3	23	26	40	6	46	16	13	29	101
% App. Total	11.5	88.5		87	13		55.2	44.8		
PHF	.750	.719	.722	.909	.375	.767	.667	.542	.806	.815

Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
 Peak Hour for Entire Intersection Begins at 04:00 PM

City of Moreno Valley
 N/S: Theodore Street
 E/W: Ironwood Avenue
 Weather: Clear

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Groups Printed- Cars & Trailers

Start Time	Ironwood Avenue Westbound			Theodore Street Northbound			Ironwood Avenue Eastbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
04:00 PM	0	5	5	2	0	2	0	0	0	7
04:15 PM	0	2	2	1	1	2	3	2	5	9
04:30 PM	1	6	7	4	2	6	3	3	6	19
04:45 PM	0	1	1	4	0	4	4	0	4	9
Total	1	14	15	11	3	14	10	5	15	44
05:00 PM	0	4	4	1	0	1	6	0	6	11
05:15 PM	0	4	4	2	0	2	4	0	4	10
05:30 PM	1	2	3	6	0	6	5	1	6	15
05:45 PM	0	1	1	1	0	1	0	0	0	2
Total	1	11	12	10	0	10	15	1	16	38
Grand Total	2	25	27	21	3	24	25	6	31	82
Apprch %	7.4	92.6		87.5	12.5		80.6	19.4		
Total %	2.4	30.5	32.9	25.6	3.7	29.3	30.5	7.3	37.8	

Start Time	Ironwood Avenue Westbound			Theodore Street Northbound			Ironwood Avenue Eastbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
04:00 PM	0	5	5	2	0	2	0	0	0	7
04:15 PM	0	2	2	1	1	2	3	2	5	9
04:30 PM	1	6	7	4	2	6	3	3	6	19
04:45 PM	0	1	1	4	0	4	4	0	4	9
Total Volume	1	14	15	11	3	14	10	5	15	44
% App. Total	6.7	93.3		78.6	21.4		66.7	33.3		
PHF	.250	.583	.536	.688	.375	.583	.625	.417	.625	.579

Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1
 Peak Hour for Entire Intersection Begins at 04:00 PM

City of Moreno Valley
 N/S: Theodore Street
 E/W: Ironwood Avenue
 Weather: Clear

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Groups Printed- Large 2 Axle Vehicles

Start Time	Ironwood Avenue Westbound			Theodore Street Northbound			Ironwood Avenue Eastbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
04:00 PM	0	0	0	1	0	1	0	0	0	1
04:15 PM	0	0	0	1	0	1	0	0	0	1
04:30 PM	0	1	1	0	0	0	0	0	0	1
04:45 PM	0	0	0	0	0	0	0	0	0	0
Total	0	1	1	2	0	2	0	0	0	3
05:00 PM	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
Grand Total	0	1	1	2	0	2	0	0	0	3
Apprch %	0	100		100	0		0	0		
Total %	0	33.3	33.3	66.7	0	66.7	0	0	0	

Start Time	Ironwood Avenue Westbound			Theodore Street Northbound			Ironwood Avenue Eastbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
04:00 PM	0	0	0	1	0	1	0	0	0	1
04:15 PM	0	0	0	1	0	1	0	0	0	1
04:30 PM	0	1	1	0	0	0	0	0	0	1
04:45 PM	0	0	0	0	0	0	0	0	0	0
Total Volume	0	1	1	2	0	2	0	0	0	3
% App. Total	0	100		100	0		0	0		
PHF	.000	.250	.250	.500	.000	.500	.000	.000	.000	.750

Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1
 Peak Hour for Entire Intersection Begins at 04:00 PM

City of Moreno Valley
 N/S: Theodore Street
 E/W: Ironwood Avenue
 Weather: Clear

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Groups Printed- 3 Axle Vehicles

Start Time	Ironwood Avenue Westbound			Theodore Street Northbound			Ironwood Avenue Eastbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
04:00 PM	0	0	0	2	0	2	0	2	2	4
04:15 PM	0	0	0	1	0	1	0	0	0	1
04:30 PM	0	0	0	2	0	2	0	0	0	2
04:45 PM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	5	0	5	0	2	2	7
05:00 PM	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	5	0	5	0	2	2	7
Apprch %	0	0		100	0		0	100		
Total %	0	0		71.4	0	71.4	0	28.6	28.6	

Start Time	Ironwood Avenue Westbound			Theodore Street Northbound			Ironwood Avenue Eastbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
04:00 PM	0	0	0	2	0	2	0	2	2	4
04:15 PM	0	0	0	1	0	1	0	0	0	1
04:30 PM	0	0	0	2	0	2	0	0	0	2
04:45 PM	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	5	0	5	0	2	2	7
% App. Total	0	0		100	0		0	100		
PHF	.000	.000	.000	.625	.000	.625	.000	.250	.250	.438

Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1
 Peak Hour for Entire Intersection Begins at 04:00 PM

City of Moreno Valley
 N/S: Theodore Street
 E/W: Ironwood Avenue
 Weather: Clear

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Groups Printed- 4 Axle Trucks

Start Time	Ironwood Avenue Westbound			Theodore Street Northbound			Ironwood Avenue Eastbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
04:00 PM	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0
Apprch %	0	0		0	0		0	0		
Total %										

Start Time	Ironwood Avenue Westbound			Theodore Street Northbound			Ironwood Avenue Eastbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:00 PM										
04:00 PM	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0		0	0		0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

City of Moreno Valley
 N/S: Theodore Street
 E/W: Ironwood Avenue
 Weather: Clear

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Groups Printed- 5 Axle Trucks

Start Time	Ironwood Avenue Westbound			Theodore Street Northbound			Ironwood Avenue Eastbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
04:00 PM	0	0	0	0	0	0	1	0	1	1
04:15 PM	0	0	0	3	0	3	0	0	0	3
04:30 PM	0	0	0	1	0	1	0	0	0	1
04:45 PM	0	0	0	0	0	0	0	1	1	1
Total	0	0	0	4	0	4	1	1	2	6
05:00 PM	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	1	1	1
Total	0	0	0	0	0	0	0	1	1	1
Grand Total	0	0	0	4	0	4	1	2	3	7
Apprch %	0	0		100	0		33.3	66.7		
Total %	0	0		57.1	0	57.1	14.3	28.6	42.9	

Start Time	Ironwood Avenue Westbound			Theodore Street Northbound			Ironwood Avenue Eastbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:00 PM										
04:00 PM	0	0	0	0	0	0	1	0	1	1
04:15 PM	0	0	0	3	0	3	0	0	0	3
04:30 PM	0	0	0	1	0	1	0	0	0	1
04:45 PM	0	0	0	0	0	0	0	1	1	1
Total Volume	0	0	0	4	0	4	1	1	2	6
% App. Total	0	0		100	0		50	50		
PHF	.000	.000	.000	.333	.000	.333	.250	.250	.500	.500

City of Moreno Valley
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 E/W: Ironwood Avenue
 Weather: Clear

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Groups Printed- 6+ Axle Trucks

Start Time	Ironwood Avenue Westbound			Theodore Street Northbound			Ironwood Avenue Eastbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
04:00 PM	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0
Apprch %	0	0		0	0		0	0		
Total %										

Start Time	Ironwood Avenue Westbound			Theodore Street Northbound			Ironwood Avenue Eastbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:00 PM										
04:00 PM	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0		0	0		0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

City of Moreno Valley
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Groups Printed- Buses & RV's

Start Time	Ironwood Avenue Westbound			Theodore Street Northbound			Ironwood Avenue Eastbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
04:00 PM	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0
Apprch %	0	0		0	0		0	0		
Total %										

Start Time	Ironwood Avenue Westbound			Theodore Street Northbound			Ironwood Avenue Eastbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:00 PM										
04:00 PM	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0		0	0		0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

City of Moreno Valley
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 E/W: Ironwood Avenue
 Weather: Clear

File Name : 01_MRV_Theodore_Ironwood PM
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Groups Printed- Motorcycles

Start Time	Ironwood Avenue Westbound			Theodore Street Northbound			Ironwood Avenue Eastbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
04:00 PM	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0
Apprch %	0	0		0	0		0	0		
Total %										

Start Time	Ironwood Avenue Westbound			Theodore Street Northbound			Ironwood Avenue Eastbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:00 PM										
04:00 PM	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0		0	0		0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

City of Moreno Valley
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 Weather: Clear

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Groups Printed- Bicycles

Start Time	Ironwood Avenue Westbound			Theodore Street Northbound			Ironwood Avenue Eastbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
04:00 PM	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	1	1	0	0	0	1
04:45 PM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	1	1	0	0	0	1
05:00 PM	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	1	1	0	0	0	1
Apprch %	0	0		0	100		0	0		
Total %	0	0		0	100	100	0	0		

Start Time	Ironwood Avenue Westbound			Theodore Street Northbound			Ironwood Avenue Eastbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:00 PM										
04:00 PM	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	1	1	0	0	0	1
04:45 PM	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	1	1	0	0	0	1
% App. Total	0	0		0	100		0	0		
PHF	.000	.000	.000	.000	.250	.250	.000	.000	.000	.250

City of Moreno Valley
 N/S: Theodore Street
 E/W: Ironwood Avenue
 Weather: Clear

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 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- Medium Truck

Start Time	Ironwood Avenue Westbound			Theodore Street Northbound			Ironwood Avenue Eastbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
04:00 PM	1	1	2	4	1	5	1	4	5	12
04:15 PM	0	5	5	4	0	4	3	1	4	13
04:30 PM	0	1	1	4	1	5	1	0	1	7
04:45 PM	1	1	2	6	0	6	0	0	0	8
Total	2	8	10	18	2	20	5	5	10	40
05:00 PM	1	2	3	1	1	2	0	0	0	5
05:15 PM	0	2	2	0	1	1	0	0	0	3
05:30 PM	0	0	0	1	0	1	1	0	1	2
05:45 PM	0	2	2	0	0	0	3	1	4	6
Total	1	6	7	2	2	4	4	1	5	16
Grand Total	3	14	17	20	4	24	9	6	15	56
Apprch %	17.6	82.4		83.3	16.7		60	40		
Total %	5.4	25	30.4	35.7	7.1	42.9	16.1	10.7	26.8	

Start Time	Ironwood Avenue Westbound			Theodore Street Northbound			Ironwood Avenue Eastbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
04:00 PM	1	1	2	4	1	5	1	4	5	12
04:15 PM	0	5	5	4	0	4	3	1	4	13
04:30 PM	0	1	1	4	1	5	1	0	1	7
04:45 PM	1	1	2	6	0	6	0	0	0	8
Total Volume	2	8	10	18	2	20	5	5	10	40
% App. Total	20	80		90	10		50	50		
PHF	.500	.400	.500	.750	.500	.833	.417	.313	.500	.769

Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1
 Peak Hour for Entire Intersection Begins at 04:00 PM

City of Moreno Valley
 N/S: Redlands Boulevard
 E/W: Eucalyptus Avenue
 Weather: Clear

File Name : 08_MRV_Redlands_Eucalyptus AM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- Cars & Trailers - Large 2 Axle Vehicles - 3 Axle Vehicles - 4 Axle Trucks - 5 Axle Trucks - 6+ Axle Trucks - Buses & RV's -
 Motorcycles - Bicycles - Medium Truck

Start Time	Redlands Boulevard Southbound				Eucalyptus Avenue Westbound				Redlands Boulevard Northbound				Eucalyptus Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
07:00 AM	0	85	2	87	0	0	4	4	3	139	0	142	2	0	0	2	235
07:15 AM	0	81	4	85	1	0	2	3	1	133	0	134	2	0	0	2	224
07:30 AM	0	84	9	93	1	0	3	4	3	109	0	112	2	0	0	2	211
07:45 AM	0	114	6	120	0	1	3	4	4	108	0	112	5	0	0	5	241
Total	0	364	21	385	2	1	12	15	11	489	0	500	11	0	0	11	911
08:00 AM	0	77	8	85	0	0	4	4	2	108	0	110	2	0	0	2	201
08:15 AM	1	57	0	58	0	1	8	9	3	83	0	86	3	0	1	4	157
08:30 AM	0	42	6	48	0	0	22	22	2	80	0	82	3	0	0	3	155
08:45 AM	2	43	5	50	0	0	26	26	0	75	0	75	1	0	1	2	153
Total	3	219	19	241	0	1	60	61	7	346	0	353	9	0	2	11	666
Grand Total	3	583	40	626	2	2	72	76	18	835	0	853	20	0	2	22	1577
Apprch %	0.5	93.1	6.4		2.6	2.6	94.7		2.1	97.9	0		90.9	0	9.1		
Total %	0.2	37	2.5	39.7	0.1	0.1	4.6	4.8	1.1	52.9	0	54.1	1.3	0	0.1	1.4	
Cars & Trailers	2	570	31	603	2	2	59	63	18	821	0	839	20	0	1	21	1526
% Cars & Trailers	66.7	97.8	77.5	96.3	100	100	81.9	82.9	100	98.3	0	98.4	100	0	50	95.5	96.8
Large 2 Axle Vehicles	0	6	0	6	0	0	2	2	0	8	0	8	0	0	0	0	16
% Large 2 Axle Vehicles	0	1	0	1	0	0	2.8	2.6	0	1	0	0.9	0	0	0	0	1
3 Axle Vehicles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1
% 3 Axle Vehicles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	50	4.5	0.1
4 Axle Trucks	0	0	0	0	0	0	2	2	0	1	0	1	0	0	0	0	3
% 4 Axle Trucks	0	0	0	0	0	0	2.8	2.6	0	0.1	0	0.1	0	0	0	0	0.2
5 Axle Trucks	1	2	9	12	0	0	8	8	0	3	0	3	0	0	0	0	23
% 5 Axle Trucks	33.3	0.3	22.5	1.9	0	0	11.1	10.5	0	0.4	0	0.4	0	0	0	0	1.5
6+ Axle Trucks	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	1
% 6+ Axle Trucks	0	0	0	0	0	0	1.4	1.3	0	0	0	0	0	0	0	0	0.1
Buses & RV's	0	3	0	3	0	0	0	0	0	0	0	0	0	0	0	0	3
% Buses & RV's	0	0.5	0	0.5	0	0	0	0	0	0	0	0	0	0	0	0	0.2
Motorcycles	0	2	0	2	0	0	0	0	0	2	0	2	0	0	0	0	4
% Motorcycles	0	0.3	0	0.3	0	0	0	0	0	0.2	0	0.2	0	0	0	0	0.3
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Medium Truck	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Medium Truck	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Start Time	Redlands Boulevard Southbound				Eucalyptus Avenue Westbound				Redlands Boulevard Northbound				Eucalyptus Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	0	85	2	87	0	0	4	4	3	139	0	142	2	0	0	2	235
07:15 AM	0	81	4	85	1	0	2	3	1	133	0	134	2	0	0	2	224
07:30 AM	0	84	9	93	1	0	3	4	3	109	0	112	2	0	0	2	211
07:45 AM	0	114	6	120	0	1	3	4	4	108	0	112	5	0	0	5	241
Total Volume	0	364	21	385	2	1	12	15	11	489	0	500	11	0	0	11	911
% App. Total	0	94.5	5.5		13.3	6.7	80		2.2	97.8	0		100	0	0		
PHF	.000	.798	.583	.802	.500	.250	.750	.938	.688	.879	.000	.880	.550	.000	.000	.550	.945

City of Moreno Valley
 N/S: Redlands Boulevard
 E/W: Eucalyptus Avenue
 Weather: Clear

File Name : 08_MRV_Redlands_Eucalyptus AM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- Cars & Trailers

Start Time	Redlands Boulevard Southbound				Eucalyptus Avenue Westbound				Redlands Boulevard Northbound				Eucalyptus Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
07:00 AM	0	83	2	85	0	0	2	2	3	137	0	140	2	0	0	2	229
07:15 AM	0	79	3	82	1	0	1	2	1	130	0	131	2	0	0	2	217
07:30 AM	0	81	7	88	1	0	1	2	3	109	0	112	2	0	0	2	204
07:45 AM	0	113	4	117	0	1	1	2	4	106	0	110	5	0	0	5	234
Total	0	356	16	372	2	1	5	8	11	482	0	493	11	0	0	11	884
08:00 AM	0	76	7	83	0	0	3	3	2	105	0	107	2	0	0	2	195
08:15 AM	1	55	0	56	0	1	5	6	3	82	0	85	3	0	1	4	151
08:30 AM	0	40	6	46	0	0	22	22	2	79	0	81	3	0	0	3	152
08:45 AM	1	43	2	46	0	0	24	24	0	73	0	73	1	0	0	1	144
Total	2	214	15	231	0	1	54	55	7	339	0	346	9	0	1	10	642
Grand Total	2	570	31	603	2	2	59	63	18	821	0	839	20	0	1	21	1526
Apprch %	0.3	94.5	5.1		3.2	3.2	93.7		2.1	97.9	0		95.2	0	4.8		
Total %	0.1	37.4	2	39.5	0.1	0.1	3.9	4.1	1.2	53.8	0	55	1.3	0	0.1	1.4	

Start Time	Redlands Boulevard Southbound				Eucalyptus Avenue Westbound				Redlands Boulevard Northbound				Eucalyptus Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	0	83	2	85	0	0	2	2	3	137	0	140	2	0	0	2	229
07:15 AM	0	79	3	82	1	0	1	2	1	130	0	131	2	0	0	2	217
07:30 AM	0	81	7	88	1	0	1	2	3	109	0	112	2	0	0	2	204
07:45 AM	0	113	4	117	0	1	1	2	4	106	0	110	5	0	0	5	234
Total Volume	0	356	16	372	2	1	5	8	11	482	0	493	11	0	0	11	884
% App. Total	0	95.7	4.3		25	12.5	62.5		2.2	97.8	0		100	0	0		
PHF	.000	.788	.571	.795	.500	.250	.625	1.00	.688	.880	.000	.880	.550	.000	.000	.550	.944

City of Moreno Valley
 N/S: Redlands Boulevard
 E/W: Eucalyptus Avenue
 Weather: Clear

File Name : 08_MRV_Redlands_Eucalyptus AM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- Large 2 Axle Vehicles

Start Time	Redlands Boulevard Southbound				Eucalyptus Avenue Westbound				Redlands Boulevard Northbound				Eucalyptus Avenue Eastbound				Int. Total	
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total		
07:00 AM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
07:15 AM	0	1	0	1	0	0	0	0	0	2	0	2	0	0	0	0	0	3
07:30 AM	0	2	0	2	0	0	1	1	0	0	0	0	0	0	0	0	0	3
07:45 AM	0	1	0	1	0	0	0	0	0	2	0	2	0	0	0	0	0	3
Total	0	5	0	5	0	0	1	1	0	4	0	4	0	0	0	0	0	10
08:00 AM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	1
08:15 AM	0	0	0	0	0	0	1	1	0	1	0	1	0	0	0	0	0	2
08:30 AM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
08:45 AM	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	0	2
Total	0	1	0	1	0	0	1	1	0	4	0	4	0	0	0	0	0	6
Grand Total	0	6	0	6	0	0	2	2	0	8	0	8	0	0	0	0	0	16
Apprch %	0	100	0		0	0	100		0	100	0		0	0	0			
Total %	0	37.5	0	37.5	0	0	12.5	12.5	0	50	0	50	0	0	0	0	0	

Start Time	Redlands Boulevard Southbound				Eucalyptus Avenue Westbound				Redlands Boulevard Northbound				Eucalyptus Avenue Eastbound				Int. Total	
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total		
Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1																		
Peak Hour for Entire Intersection Begins at 07:00 AM																		
07:00 AM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
07:15 AM	0	1	0	1	0	0	0	0	0	2	0	2	0	0	0	0	0	3
07:30 AM	0	2	0	2	0	0	1	1	0	0	0	0	0	0	0	0	0	3
07:45 AM	0	1	0	1	0	0	0	0	0	2	0	2	0	0	0	0	0	3
Total Volume	0	5	0	5	0	0	1	1	0	4	0	4	0	0	0	0	0	10
% App. Total	0	100	0		0	0	100		0	100	0		0	0	0			
PHF	.000	.625	.000	.625	.000	.000	.250	.250	.000	.500	.000	.500	.000	.000	.000	.000	.000	.833

City of Moreno Valley
 N/S: Redlands Boulevard
 E/W: Eucalyptus Avenue
 Weather: Clear

File Name : 08_MRV_Redlands_Eucalyptus AM
 Site Code : 09817323
 Start Date : 5/31/2017
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Groups Printed- 3 Axle Vehicles

Start Time	Redlands Boulevard Southbound				Eucalyptus Avenue Westbound				Redlands Boulevard Northbound				Eucalyptus Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1
Apprch %	0	0	0		0	0	0		0	0	0		0	0	100		
Total %	0	0	0		0	0	0		0	0	0		0	0	100	100	

Start Time	Redlands Boulevard Southbound				Eucalyptus Avenue Westbound				Redlands Boulevard Northbound				Eucalyptus Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0		0	0	0		0	0	0		0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

City of Moreno Valley
 N/S: Redlands Boulevard
 E/W: Eucalyptus Avenue
 Weather: Clear

File Name : 08_MRV_Redlands_Eucalyptus AM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- 4 Axle Trucks

Start Time	Redlands Boulevard Southbound				Eucalyptus Avenue Westbound				Redlands Boulevard Northbound				Eucalyptus Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
08:15 AM	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	1
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	1
Total	0	0	0	0	0	0	2	2	0	1	0	1	0	0	0	0	3
Grand Total	0	0	0	0	0	0	2	2	0	1	0	1	0	0	0	0	3
Apprch %	0	0	0		0	0	100		0	100	0		0	0	0		
Total %	0	0	0		0	0	66.7	66.7	0	33.3	0	33.3	0	0	0		

Start Time	Redlands Boulevard Southbound				Eucalyptus Avenue Westbound				Redlands Boulevard Northbound				Eucalyptus Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0		0	0	0		0	0	0		0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

City of Moreno Valley
 N/S: Redlands Boulevard
 E/W: Eucalyptus Avenue
 Weather: Clear

File Name : 08_MRV_Redlands_Eucalyptus AM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- 5 Axle Trucks

Start Time	Redlands Boulevard Southbound				Eucalyptus Avenue Westbound				Redlands Boulevard Northbound				Eucalyptus Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
07:00 AM	0	0	0	0	0	0	2	2	0	1	0	1	0	0	0	0	3
07:15 AM	0	0	1	1	0	0	1	1	0	0	0	0	0	0	0	0	2
07:30 AM	0	1	2	3	0	0	1	1	0	0	0	0	0	0	0	0	4
07:45 AM	0	0	2	2	0	0	2	2	0	0	0	0	0	0	0	0	4
Total	0	1	5	6	0	0	6	6	0	1	0	1	0	0	0	0	13
08:00 AM	0	0	1	1	0	0	0	0	0	1	0	1	0	0	0	0	2
08:15 AM	0	1	0	1	0	0	1	1	0	0	0	0	0	0	0	0	2
08:30 AM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
08:45 AM	1	0	3	4	0	0	1	1	0	0	0	0	0	0	0	0	5
Total	1	1	4	6	0	0	2	2	0	2	0	2	0	0	0	0	10
Grand Total	1	2	9	12	0	0	8	8	0	3	0	3	0	0	0	0	23
Apprch %	8.3	16.7	75		0	0	100		0	100	0		0	0	0		
Total %	4.3	8.7	39.1	52.2	0	0	34.8	34.8	0	13	0	13	0	0	0	0	

Start Time	Redlands Boulevard Southbound				Eucalyptus Avenue Westbound				Redlands Boulevard Northbound				Eucalyptus Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	0	0	0	0	0	0	2	2	0	1	0	1	0	0	0	0	3
07:15 AM	0	0	1	1	0	0	1	1	0	0	0	0	0	0	0	0	2
07:30 AM	0	1	2	3	0	0	1	1	0	0	0	0	0	0	0	0	4
07:45 AM	0	0	2	2	0	0	2	2	0	0	0	0	0	0	0	0	4
Total Volume	0	1	5	6	0	0	6	6	0	1	0	1	0	0	0	0	13
% App. Total	0	16.7	83.3		0	0	100		0	100	0		0	0	0		
PHF	.000	.250	.625	.500	.000	.000	.750	.750	.000	.250	.000	.250	.000	.000	.000	.000	.813

City of Moreno Valley
 N/S: Redlands Boulevard
 E/W: Eucalyptus Avenue
 Weather: Clear

File Name : 08_MRV_Redlands_Eucalyptus AM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- 6+ Axle Trucks

Start Time	Redlands Boulevard Southbound				Eucalyptus Avenue Westbound				Redlands Boulevard Northbound				Eucalyptus Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	1
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	1
Grand Total	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	1
Apprch %	0	0	0		0	0	100		0	0	0		0	0	0		
Total %	0	0	0		0	0	100	100	0	0	0		0	0	0		

Start Time	Redlands Boulevard Southbound				Eucalyptus Avenue Westbound				Redlands Boulevard Northbound				Eucalyptus Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0		0	0	0		0	0	0		0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

City of Moreno Valley
 N/S: Redlands Boulevard
 E/W: Eucalyptus Avenue
 Weather: Clear

File Name : 08_MRV_Redlands_Eucalyptus AM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- Buses & RV's

Start Time	Redlands Boulevard Southbound				Eucalyptus Avenue Westbound				Redlands Boulevard Northbound				Eucalyptus Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
08:00 AM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
Grand Total	0	3	0	3	0	0	0	0	0	0	0	0	0	0	0	0	3
Apprch %	0	100	0		0	0	0		0	0	0		0	0	0		
Total %	0	100	0	100	0	0	0	0	0	0	0	0	0	0	0	0	

Start Time	Redlands Boulevard Southbound				Eucalyptus Avenue Westbound				Redlands Boulevard Northbound				Eucalyptus Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
% App. Total	0	100	0		0	0	0		0	0	0		0	0	0		
PHF	.000	.250	.000	.250	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.250

City of Moreno Valley
 N/S: Redlands Boulevard
 E/W: Eucalyptus Avenue
 Weather: Clear

File Name : 08_MRV_Redlands_Eucalyptus AM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- Motorcycles

Start Time	Redlands Boulevard Southbound				Eucalyptus Avenue Westbound				Redlands Boulevard Northbound				Eucalyptus Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
07:00 AM	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	2
07:15 AM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	1	0	1	0	0	0	0	0	2	0	2	0	0	0	0	3
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
Grand Total	0	2	0	2	0	0	0	0	0	2	0	2	0	0	0	0	4
Apprch %	0	100	0		0	0	0		0	100	0		0	0	0		
Total %	0	50	0	50	0	0	0	0	0	50	0	50	0	0	0	0	

Start Time	Redlands Boulevard Southbound				Eucalyptus Avenue Westbound				Redlands Boulevard Northbound				Eucalyptus Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	2
07:15 AM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	1	0	1	0	0	0	0	0	2	0	2	0	0	0	0	3
% App. Total	0	100	0		0	0	0		0	100	0		0	0	0		
PHF	.000	.250	.000	.250	.000	.000	.000	.000	.000	.500	.000	.500	.000	.000	.000	.000	.375

City of Moreno Valley
 N/S: Redlands Boulevard
 E/W: Eucalyptus Avenue
 Weather: Clear

File Name : 08_MRV_Redlands_Eucalyptus AM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- Bicycles

Start Time	Redlands Boulevard Southbound				Eucalyptus Avenue Westbound				Redlands Boulevard Northbound				Eucalyptus Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apprch %	0	0	0		0	0	0		0	0	0		0	0	0		
Total %																	

Start Time	Redlands Boulevard Southbound				Eucalyptus Avenue Westbound				Redlands Boulevard Northbound				Eucalyptus Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0		0	0	0		0	0	0		0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

City of Moreno Valley
 N/S: Redlands Boulevard
 E/W: Eucalyptus Avenue
 Weather: Clear

File Name : 08_MRV_Redlands_Eucalyptus AM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- Medium Truck

Start Time	Redlands Boulevard Southbound				Eucalyptus Avenue Westbound				Redlands Boulevard Northbound				Eucalyptus Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apprch %	0	0	0		0	0	0		0	0	0		0	0	0		
Total %																	

Start Time	Redlands Boulevard Southbound				Eucalyptus Avenue Westbound				Redlands Boulevard Northbound				Eucalyptus Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0		0	0	0		0	0	0		0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

City of Moreno Valley
 N/S: Redlands Boulevard
 E/W: Eucalyptus Avenue
 Weather: Clear

File Name : 08_MR_V_Redlands_Eucalyptus PM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- Cars & Trailers - Large 2 Axle Vehicles - 3 Axle Vehicles - 4 Axle Trucks - 5 Axle Trucks - 6+ Axle Trucks - Buses & RV's -
 Motorcycles - Bicycles - Medium Truck

Start Time	Redlands Boulevard Southbound				Eucalyptus Avenue Westbound				Redlands Boulevard Northbound				Eucalyptus Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
04:00 PM	0	110	0	110	1	0	7	8	0	82	0	82	5	0	1	6	206
04:15 PM	1	134	2	137	0	0	3	3	0	73	0	73	5	1	3	9	222
04:30 PM	0	123	6	129	1	1	9	11	1	84	0	85	8	0	6	14	239
04:45 PM	0	142	1	143	0	0	7	7	0	110	0	110	6	0	3	9	269
Total	1	509	9	519	2	1	26	29	1	349	0	350	24	1	13	38	936
05:00 PM	0	138	1	139	0	0	4	4	0	100	0	100	5	0	3	8	251
05:15 PM	0	132	2	134	1	0	11	12	1	90	0	91	5	0	4	9	246
05:30 PM	1	131	3	135	1	0	4	5	0	85	0	85	2	0	1	3	228
05:45 PM	0	145	4	149	0	0	14	14	0	80	0	80	1	0	3	4	247
Total	1	546	10	557	2	0	33	35	1	355	0	356	13	0	11	24	972
Grand Total	2	1055	19	1076	4	1	59	64	2	704	0	706	37	1	24	62	1908
Apprch %	0.2	98	1.8		6.2	1.6	92.2		0.3	99.7	0		59.7	1.6	38.7		
Total %	0.1	55.3	1	56.4	0.2	0.1	3.1	3.4	0.1	36.9	0	37	1.9	0.1	1.3	3.2	
Cars & Trailers	2	1044	15	1061	3	1	45	49	2	691	0	693	32	0	24	56	1859
% Cars & Trailers	100	99	78.9	98.6	75	100	76.3	76.6	100	98.2	0	98.2	86.5	0	100	90.3	97.4
Large 2 Axle Vehicles	0	7	1	8	1	0	2	3	0	7	0	7	1	1	0	2	20
% Large 2 Axle Vehicles	0	0.7	5.3	0.7	25	0	3.4	4.7	0	1	0	1	2.7	100	0	3.2	1
3 Axle Vehicles	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	1
% 3 Axle Vehicles	0	0	0	0	0	0	1.7	1.6	0	0	0	0	0	0	0	0	0.1
4 Axle Trucks	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	2
% 4 Axle Trucks	0	0	0	0	0	0	3.4	3.1	0	0	0	0	0	0	0	0	0.1
5 Axle Trucks	0	1	3	4	0	0	9	9	0	2	0	2	3	0	0	3	18
% 5 Axle Trucks	0	0.1	15.8	0.4	0	0	15.3	14.1	0	0.3	0	0.3	8.1	0	0	4.8	0.9
6+ Axle Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% 6+ Axle Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Buses & RV's	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
% Buses & RV's	0	0.1	0	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0.1
Motorcycles	0	2	0	2	0	0	0	0	0	4	0	4	0	0	0	0	6
% Motorcycles	0	0.2	0	0.2	0	0	0	0	0	0.6	0	0.6	0	0	0	0	0.3
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
% Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	2.7	0	0	1.6	0.1
Medium Truck	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Medium Truck	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Start Time	Redlands Boulevard Southbound				Eucalyptus Avenue Westbound				Redlands Boulevard Northbound				Eucalyptus Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	0	123	6	129	1	1	9	11	1	84	0	85	8	0	6	14	239
04:45 PM	0	142	1	143	0	0	7	7	0	110	0	110	6	0	3	9	269
05:00 PM	0	138	1	139	0	0	4	4	0	100	0	100	5	0	3	8	251
05:15 PM	0	132	2	134	1	0	11	12	1	90	0	91	5	0	4	9	246
Total Volume	0	535	10	545	2	1	31	34	2	384	0	386	24	0	16	40	1005
% App. Total	0	98.2	1.8		5.9	2.9	91.2		0.5	99.5	0		60	0	40		
PHF	.000	.942	.417	.953	.500	.250	.705	.708	.500	.873	.000	.877	.750	.000	.667	.714	.934

City of Moreno Valley
 N/S: Redlands Boulevard
 E/W: Eucalyptus Avenue
 Weather: Clear

File Name : 08_MRV_Redlands_Eucalyptus PM
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Groups Printed- Cars & Trailers

Start Time	Redlands Boulevard Southbound				Eucalyptus Avenue Westbound				Redlands Boulevard Northbound				Eucalyptus Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
04:00 PM	0	110	0	110	1	0	2	3	0	78	0	78	5	0	1	6	197
04:15 PM	1	132	2	135	0	0	3	3	0	71	0	71	5	0	3	8	217
04:30 PM	0	120	4	124	0	1	9	10	1	83	0	84	7	0	6	13	231
04:45 PM	0	141	1	142	0	0	7	7	0	107	0	107	6	0	3	9	265
Total	1	503	7	511	1	1	21	23	1	339	0	340	23	0	13	36	910
05:00 PM	0	135	1	136	0	0	4	4	0	99	0	99	3	0	3	6	245
05:15 PM	0	131	2	133	1	0	7	8	1	90	0	91	4	0	4	8	240
05:30 PM	1	130	1	132	1	0	2	3	0	84	0	84	2	0	1	3	222
05:45 PM	0	145	4	149	0	0	11	11	0	79	0	79	0	0	3	3	242
Total	1	541	8	550	2	0	24	26	1	352	0	353	9	0	11	20	949
Grand Total	2	1044	15	1061	3	1	45	49	2	691	0	693	32	0	24	56	1859
Apprch %	0.2	98.4	1.4		6.1	2	91.8		0.3	99.7	0		57.1	0	42.9		
Total %	0.1	56.2	0.8	57.1	0.2	0.1	2.4	2.6	0.1	37.2	0	37.3	1.7	0	1.3	3	

Start Time	Redlands Boulevard Southbound				Eucalyptus Avenue Westbound				Redlands Boulevard Northbound				Eucalyptus Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	0	120	4	124	0	1	9	10	1	83	0	84	7	0	6	13	231
04:45 PM	0	141	1	142	0	0	7	7	0	107	0	107	6	0	3	9	265
05:00 PM	0	135	1	136	0	0	4	4	0	99	0	99	3	0	3	6	245
05:15 PM	0	131	2	133	1	0	7	8	1	90	0	91	4	0	4	8	240
Total Volume	0	527	8	535	1	1	27	29	2	379	0	381	20	0	16	36	981
% App. Total	0	98.5	1.5		3.4	3.4	93.1		0.5	99.5	0		55.6	0	44.4		
PHF	.000	.934	.500	.942	.250	.250	.750	.725	.500	.886	.000	.890	.714	.000	.667	.692	.925

City of Moreno Valley
 N/S: Redlands Boulevard
 E/W: Eucalyptus Avenue
 Weather: Clear

File Name : 08_MRV_Redlands_Eucalyptus PM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- Large 2 Axle Vehicles

Start Time	Redlands Boulevard Southbound				Eucalyptus Avenue Westbound				Redlands Boulevard Northbound				Eucalyptus Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
04:00 PM	0	0	0	0	0	0	2	2	0	2	0	2	0	0	0	0	4
04:15 PM	0	2	0	2	0	0	0	0	0	0	0	0	0	1	0	1	3
04:30 PM	0	2	0	2	1	0	0	1	0	1	0	1	0	0	0	0	4
04:45 PM	0	1	0	1	0	0	0	0	0	2	0	2	0	0	0	0	3
Total	0	5	0	5	1	0	2	3	0	5	0	5	0	1	0	1	14
05:00 PM	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	2
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	1	1	2	0	0	0	0	0	1	0	1	0	0	0	0	3
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
Total	0	2	1	3	0	0	0	0	0	2	0	2	1	0	0	1	6
Grand Total	0	7	1	8	1	0	2	3	0	7	0	7	1	1	0	2	20
Apprch %	0	87.5	12.5		33.3	0	66.7		0	100	0		50	50	0		
Total %	0	35	5	40	5	0	10	15	0	35	0	35	5	5	0	10	

Start Time	Redlands Boulevard Southbound				Eucalyptus Avenue Westbound				Redlands Boulevard Northbound				Eucalyptus Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
04:30 PM	0	2	0	2	1	0	0	1	0	1	0	1	0	0	0	0	4
04:45 PM	0	1	0	1	0	0	0	0	0	2	0	2	0	0	0	0	3
05:00 PM	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	2
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	4	0	4	1	0	0	1	0	4	0	4	0	0	0	0	9
% App. Total	0	100	0		100	0	0		0	100	0		0	0	0		
PHF	.000	.500	.000	.500	.250	.000	.000	.250	.000	.500	.000	.500	.000	.000	.000	.000	.563

Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 04:30 PM

City of Moreno Valley
 N/S: Redlands Boulevard
 E/W: Eucalyptus Avenue
 Weather: Clear

File Name : 08_MRV_Redlands_Eucalyptus PM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- 3 Axle Vehicles

Start Time	Redlands Boulevard Southbound				Eucalyptus Avenue Westbound				Redlands Boulevard Northbound				Eucalyptus Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	1
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	1
Grand Total	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	1
Apprch %	0	0	0		0	0	100		0	0	0		0	0	0		
Total %	0	0	0		0	0	100	100	0	0	0		0	0	0		

Start Time	Redlands Boulevard Southbound				Eucalyptus Avenue Westbound				Redlands Boulevard Northbound				Eucalyptus Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	1
Total Volume	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	1
% App. Total	0	0	0		0	0	100		0	0	0		0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.250	.250	.000	.000	.000	.000	.000	.000	.000	.000	.250

City of Moreno Valley
 N/S: Redlands Boulevard
 E/W: Eucalyptus Avenue
 Weather: Clear

File Name : 08_MRV_Redlands_Eucalyptus PM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- 4 Axle Trucks

Start Time	Redlands Boulevard Southbound				Eucalyptus Avenue Westbound				Redlands Boulevard Northbound				Eucalyptus Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	1
05:30 PM	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	1
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	2
Grand Total	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	2
Apprch %	0	0	0		0	0	100		0	0	0		0	0	0		
Total %	0	0	0		0	0	100	100	0	0	0		0	0	0		

Start Time	Redlands Boulevard Southbound				Eucalyptus Avenue Westbound				Redlands Boulevard Northbound				Eucalyptus Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	1
Total Volume	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	1
% App. Total	0	0	0		0	0	100		0	0	0		0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.250	.250	.000	.000	.000	.000	.000	.000	.000	.000	.250

City of Moreno Valley
 N/S: Redlands Boulevard
 E/W: Eucalyptus Avenue
 Weather: Clear

File Name : 08_MRV_Redlands_Eucalyptus PM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- 5 Axle Trucks

Start Time	Redlands Boulevard Southbound				Eucalyptus Avenue Westbound				Redlands Boulevard Northbound				Eucalyptus Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
04:00 PM	0	0	0	0	0	0	3	3	0	2	0	2	0	0	0	0	5
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	2	2	0	0	0	0	0	0	0	0	1	0	0	1	3
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	2	2	0	0	3	3	0	2	0	2	1	0	0	1	8
05:00 PM	0	1	0	1	0	0	0	0	0	0	0	0	1	0	0	1	2
05:15 PM	0	0	0	0	0	0	2	2	0	0	0	0	1	0	0	1	3
05:30 PM	0	0	1	1	0	0	1	1	0	0	0	0	0	0	0	0	2
05:45 PM	0	0	0	0	0	0	3	3	0	0	0	0	0	0	0	0	3
Total	0	1	1	2	0	0	6	6	0	0	0	0	2	0	0	2	10
Grand Total	0	1	3	4	0	0	9	9	0	2	0	2	3	0	0	3	18
Apprch %	0	25	75		0	0	100		0	100	0		100	0	0		
Total %	0	5.6	16.7	22.2	0	0	50	50	0	11.1	0	11.1	16.7	0	0	16.7	

Start Time	Redlands Boulevard Southbound				Eucalyptus Avenue Westbound				Redlands Boulevard Northbound				Eucalyptus Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	0	0	2	2	0	0	0	0	0	0	0	0	1	0	0	1	3
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	1	0	1	0	0	0	0	0	0	0	0	1	0	0	1	2
05:15 PM	0	0	0	0	0	0	2	2	0	0	0	0	1	0	0	1	3
Total Volume	0	1	2	3	0	0	2	2	0	0	0	0	3	0	0	3	8
% App. Total	0	33.3	66.7		0	0	100		0	0	0		100	0	0		
PHF	.000	.250	.250	.375	.000	.000	.250	.250	.000	.000	.000	.000	.750	.000	.000	.750	.667

City of Moreno Valley
 N/S: Redlands Boulevard
 E/W: Eucalyptus Avenue
 Weather: Clear

File Name : 08_MRV_Redlands_Eucalyptus PM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- 6+ Axle Trucks

Start Time	Redlands Boulevard Southbound				Eucalyptus Avenue Westbound				Redlands Boulevard Northbound				Eucalyptus Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apprch %	0	0	0		0	0	0		0	0	0		0	0	0		
Total %																	

Start Time	Redlands Boulevard Southbound				Eucalyptus Avenue Westbound				Redlands Boulevard Northbound				Eucalyptus Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0		0	0	0		0	0	0		0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

City of Moreno Valley
 N/S: Redlands Boulevard
 E/W: Eucalyptus Avenue
 Weather: Clear

File Name : 08_MRV_Redlands_Eucalyptus PM
 Site Code : 09817323
 Start Date : 5/31/2017
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Groups Printed- Buses & RV's

Start Time	Redlands Boulevard Southbound				Eucalyptus Avenue Westbound				Redlands Boulevard Northbound				Eucalyptus Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
Apprch %	0	100	0		0	0	0		0	0	0		0	0	0		
Total %	0	100	0	100	0	0	0	0	0	0	0	0	0	0	0	0	

Start Time	Redlands Boulevard Southbound				Eucalyptus Avenue Westbound				Redlands Boulevard Northbound				Eucalyptus Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
% App. Total	0	100	0		0	0	0		0	0	0		0	0	0		
PHF	.000	.250	.000	.250	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.250

City of Moreno Valley
 N/S: Redlands Boulevard
 E/W: Eucalyptus Avenue
 Weather: Clear

File Name : 08_MRV_Redlands_Eucalyptus PM
 Site Code : 09817323
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Groups Printed- Motorcycles

Start Time	Redlands Boulevard Southbound				Eucalyptus Avenue Westbound				Redlands Boulevard Northbound				Eucalyptus Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	2
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
Total	0	0	0	0	0	0	0	0	0	3	0	3	0	0	0	0	3
05:00 PM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
05:15 PM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
Total	0	2	0	2	0	0	0	0	0	1	0	1	0	0	0	0	3
Grand Total	0	2	0	2	0	0	0	0	0	4	0	4	0	0	0	0	6
Apprch %	0	100	0		0	0	0		0	100	0		0	0	0		
Total %	0	33.3	0	33.3	0	0	0	0	0	66.7	0	66.7	0	0	0	0	

Start Time	Redlands Boulevard Southbound				Eucalyptus Avenue Westbound				Redlands Boulevard Northbound				Eucalyptus Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
05:00 PM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
05:15 PM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
Total Volume	0	2	0	2	0	0	0	0	0	1	0	1	0	0	0	0	3
% App. Total	0	100	0		0	0	0		0	100	0		0	0	0		
PHF	.000	.500	.000	.500	.000	.000	.000	.000	.000	.250	.000	.250	.000	.000	.000	.000	.750

City of Moreno Valley
 N/S: Redlands Boulevard
 E/W: Eucalyptus Avenue
 Weather: Clear

File Name : 08_MRV_Redlands_Eucalyptus PM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- Bicycles

Start Time	Redlands Boulevard Southbound				Eucalyptus Avenue Westbound				Redlands Boulevard Northbound				Eucalyptus Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
Apprch %	0	0	0		0	0	0		0	0	0		100	0	0		
Total %	0	0	0		0	0	0		0	0	0		100	0	0	100	

Start Time	Redlands Boulevard Southbound				Eucalyptus Avenue Westbound				Redlands Boulevard Northbound				Eucalyptus Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
% App. Total	0	0	0		0	0	0		0	0	0		100	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.250	.000	.000	.250	.250

City of Moreno Valley
 N/S: Redlands Boulevard
 E/W: Eucalyptus Avenue
 Weather: Clear

File Name : 08_MRV_Redlands_Eucalyptus PM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- Medium Truck

Start Time	Redlands Boulevard Southbound				Eucalyptus Avenue Westbound				Redlands Boulevard Northbound				Eucalyptus Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apprch %	0	0	0		0	0	0		0	0	0		0	0	0		
Total %																	

Start Time	Redlands Boulevard Southbound				Eucalyptus Avenue Westbound				Redlands Boulevard Northbound				Eucalyptus Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0		0	0	0		0	0	0		0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

City of Moreno Valley
 N/S: Redlands Boulevard
 E/W: SR-60 Eastbound Ramps
 Weather: Clear

File Name : 07_MR_V_Redlands_60E AM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- Cars & Trailers - Large 2 Axle Vehicles - 3 Axle Vehicles - 4 Axle Trucks - 5 Axle Trucks - 6+ Axle Trucks - Buses & RV's -
 Motorcycles - Bicycles - Medium Truck

Start Time	Redlands Boulevard Southbound			Redlands Boulevard Northbound			SR-60 Eastbound Ramps Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
07:00 AM	75	1	76	12	131	143	69	10	79	298
07:15 AM	62	6	68	16	125	141	48	15	63	272
07:30 AM	73	7	80	22	88	110	47	15	62	252
07:45 AM	103	7	110	15	100	115	43	20	63	288
Total	313	21	334	65	444	509	207	60	267	1110
08:00 AM	68	4	72	10	97	107	48	23	71	250
08:15 AM	44	2	46	3	93	96	65	15	80	222
08:30 AM	37	5	42	5	102	107	58	14	72	221
08:45 AM	36	3	39	10	88	98	51	9	60	197
Total	185	14	199	28	380	408	222	61	283	890
Grand Total	498	35	533	93	824	917	429	121	550	2000
Apprch %	93.4	6.6		10.1	89.9		78	22		
Total %	24.9	1.8	26.6	4.7	41.2	45.8	21.5	6.1	27.5	
Cars & Trailers	488	33	521	88	805	893	406	108	514	1928
% Cars & Trailers	98	94.3	97.7	94.6	97.7	97.4	94.6	89.3	93.5	96.4
Large 2 Axle Vehicles	3	1	4	3	7	10	13	3	16	30
% Large 2 Axle Vehicles	0.6	2.9	0.8	3.2	0.8	1.1	3	2.5	2.9	1.5
3 Axle Vehicles	0	0	0	0	0	0	1	1	2	2
% 3 Axle Vehicles	0	0	0	0	0	0	0.2	0.8	0.4	0.1
4 Axle Trucks	0	0	0	0	1	1	1	0	1	2
% 4 Axle Trucks	0	0	0	0	0.1	0.1	0.2	0	0.2	0.1
5 Axle Trucks	2	1	3	1	8	9	7	8	15	27
% 5 Axle Trucks	0.4	2.9	0.6	1.1	1	1	1.6	6.6	2.7	1.4
6+ Axle Trucks	0	0	0	1	1	2	0	0	0	2
% 6+ Axle Trucks	0	0	0	1.1	0.1	0.2	0	0	0	0.1
Buses & RV's	2	0	2	0	0	0	0	1	1	3
% Buses & RV's	0.4	0	0.4	0	0	0	0	0.8	0.2	0.2
Motorcycles	2	0	2	0	2	2	1	0	1	5
% Motorcycles	0.4	0	0.4	0	0.2	0.2	0.2	0	0.2	0.2
Bicycles	0	0	0	0	0	0	0	0	0	0
% Bicycles	0	0	0	0	0	0	0	0	0	0
Medium Truck	1	0	1	0	0	0	0	0	0	1
% Medium Truck	0.2	0	0.2	0	0	0	0	0	0	0.1

Start Time	Redlands Boulevard Southbound			Redlands Boulevard Northbound			SR-60 Eastbound Ramps Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:00 AM										
07:00 AM	75	1	76	12	131	143	69	10	79	298
07:15 AM	62	6	68	16	125	141	48	15	63	272
07:30 AM	73	7	80	22	88	110	47	15	62	252
07:45 AM	103	7	110	15	100	115	43	20	63	288
Total Volume	313	21	334	65	444	509	207	60	267	1110
% App. Total	93.7	6.3		12.8	87.2		77.5	22.5		
PHF	.760	.750	.759	.739	.847	.890	.750	.750	.845	.931

City of Moreno Valley
 N/S: Redlands Boulevard
 E/W: SR-60 Eastbound Ramps
 Weather: Clear

File Name : 07_MRV_Redlands_60E AM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- Cars & Trailers

Start Time	Redlands Boulevard Southbound			Redlands Boulevard Northbound			SR-60 Eastbound Ramps Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
07:00 AM	72	1	73	11	127	138	63	9	72	283
07:15 AM	62	6	68	16	123	139	46	13	59	266
07:30 AM	71	6	77	20	86	106	46	13	59	242
07:45 AM	103	6	109	14	98	112	43	17	60	281
Total	308	19	327	61	434	495	198	52	250	1072
08:00 AM	68	4	72	9	95	104	46	21	67	243
08:15 AM	42	2	44	3	90	93	58	14	72	209
08:30 AM	36	5	41	5	100	105	54	13	67	213
08:45 AM	34	3	37	10	86	96	50	8	58	191
Total	180	14	194	27	371	398	208	56	264	856
Grand Total	488	33	521	88	805	893	406	108	514	1928
Apprch %	93.7	6.3		9.9	90.1		79	21		
Total %	25.3	1.7	27	4.6	41.8	46.3	21.1	5.6	26.7	

Start Time	Redlands Boulevard Southbound			Redlands Boulevard Northbound			SR-60 Eastbound Ramps Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
07:00 AM	72	1	73	11	127	138	63	9	72	283
07:15 AM	62	6	68	16	123	139	46	13	59	266
07:30 AM	71	6	77	20	86	106	46	13	59	242
07:45 AM	103	6	109	14	98	112	43	17	60	281
Total Volume	308	19	327	61	434	495	198	52	250	1072
% App. Total	94.2	5.8		12.3	87.7		79.2	20.8		
PHF	.748	.792	.750	.763	.854	.890	.786	.765	.868	.947

Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1
 Peak Hour for Entire Intersection Begins at 07:00 AM

City of Moreno Valley
 N/S: Redlands Boulevard
 E/W: SR-60 Eastbound Ramps
 Weather: Clear

File Name : 07_MR_V_Redlands_60E AM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- Large 2 Axle Vehicles

Start Time	Redlands Boulevard Southbound			Redlands Boulevard Northbound			SR-60 Eastbound Ramps Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
07:00 AM	1	0	1	0	1	1	6	0	6	8
07:15 AM	0	0	0	0	0	0	1	0	1	1
07:30 AM	1	1	2	2	1	3	0	1	1	6
07:45 AM	0	0	0	1	0	1	0	1	1	2
Total	2	1	3	3	2	5	7	2	9	17
08:00 AM	0	0	0	0	1	1	1	0	1	2
08:15 AM	0	0	0	0	2	2	3	0	3	5
08:30 AM	0	0	0	0	0	0	2	1	3	3
08:45 AM	1	0	1	0	2	2	0	0	0	3
Total	1	0	1	0	5	5	6	1	7	13
Grand Total	3	1	4	3	7	10	13	3	16	30
Apprch %	75	25		30	70		81.2	18.8		
Total %	10	3.3	13.3	10	23.3	33.3	43.3	10	53.3	

Start Time	Redlands Boulevard Southbound			Redlands Boulevard Northbound			SR-60 Eastbound Ramps Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
07:00 AM	1	0	1	0	1	1	6	0	6	8
07:15 AM	0	0	0	0	0	0	1	0	1	1
07:30 AM	1	1	2	2	1	3	0	1	1	6
07:45 AM	0	0	0	1	0	1	0	1	1	2
Total Volume	2	1	3	3	2	5	7	2	9	17
% App. Total	66.7	33.3		60	40		77.8	22.2		
PHF	.500	.250	.375	.375	.500	.417	.292	.500	.375	.531

Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1
 Peak Hour for Entire Intersection Begins at 07:00 AM

City of Moreno Valley
 N/S: Redlands Boulevard
 E/W: SR-60 Eastbound Ramps
 Weather: Clear

File Name : 07_MR_V_Redlands_60E AM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- 3 Axle Vehicles

Start Time	Redlands Boulevard Southbound			Redlands Boulevard Northbound			SR-60 Eastbound Ramps Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
07:00 AM	0	0	0	0	0	0	0	1	1	1
07:15 AM	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	1	1	1
08:00 AM	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	1	0	1	1
08:30 AM	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	1	0	1	1
Grand Total	0	0	0	0	0	0	1	1	2	2
Apprch %	0	0		0	0		50	50		
Total %	0	0		0	0		50	50	100	

Start Time	Redlands Boulevard Southbound			Redlands Boulevard Northbound			SR-60 Eastbound Ramps Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
07:00 AM	0	0	0	0	0	0	0	1	1	1
07:15 AM	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	1	1	1
% App. Total	0	0		0	0		0	100		
PHF	.000	.000	.000	.000	.000	.000	.000	.250	.250	.250

Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1
 Peak Hour for Entire Intersection Begins at 07:00 AM

City of Moreno Valley
 N/S: Redlands Boulevard
 E/W: SR-60 Eastbound Ramps
 Weather: Clear

File Name : 07_MR_V_Redlands_60E AM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- 4 Axle Trucks

Start Time	Redlands Boulevard Southbound			Redlands Boulevard Northbound			SR-60 Eastbound Ramps Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
07:00 AM	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	1	0	1	1
07:45 AM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	1	0	1	1
08:00 AM	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	1	1	0	0	0	1
08:30 AM	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	1	1	0	0	0	1
Grand Total	0	0	0	0	1	1	1	0	1	2
Apprch %	0	0		0	100		100	0		
Total %	0	0		0	50	50	50	0	50	

Start Time	Redlands Boulevard Southbound			Redlands Boulevard Northbound			SR-60 Eastbound Ramps Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
07:00 AM	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	1	0	1	1
07:45 AM	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	1	0	1	1
% App. Total	0	0		0	0		100	0		
PHF	.000	.000	.000	.000	.000	.000	.250	.000	.250	.250

Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1
 Peak Hour for Entire Intersection Begins at 07:00 AM

City of Moreno Valley
 N/S: Redlands Boulevard
 E/W: SR-60 Eastbound Ramps
 Weather: Clear

File Name : 07_MR_V_Redlands_60E AM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- 5 Axle Trucks

Start Time	Redlands Boulevard Southbound			Redlands Boulevard Northbound			SR-60 Eastbound Ramps Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
07:00 AM	0	0	0	1	2	3	0	0	0	3
07:15 AM	0	0	0	0	1	1	1	1	2	3
07:30 AM	1	0	1	0	1	1	0	1	1	3
07:45 AM	0	1	1	0	2	2	0	2	2	5
Total	1	1	2	1	6	7	1	4	5	14
08:00 AM	0	0	0	0	0	0	1	2	3	3
08:15 AM	0	0	0	0	0	0	3	1	4	4
08:30 AM	0	0	0	0	2	2	1	0	1	3
08:45 AM	1	0	1	0	0	0	1	1	2	3
Total	1	0	1	0	2	2	6	4	10	13
Grand Total	2	1	3	1	8	9	7	8	15	27
Apprch %	66.7	33.3		11.1	88.9		46.7	53.3		
Total %	7.4	3.7	11.1	3.7	29.6	33.3	25.9	29.6	55.6	

Start Time	Redlands Boulevard Southbound			Redlands Boulevard Northbound			SR-60 Eastbound Ramps Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
07:00 AM	0	0	0	1	2	3	0	0	0	3
07:15 AM	0	0	0	0	1	1	1	1	2	3
07:30 AM	1	0	1	0	1	1	0	1	1	3
07:45 AM	0	1	1	0	2	2	0	2	2	5
Total Volume	1	1	2	1	6	7	1	4	5	14
% App. Total	50	50		14.3	85.7		20	80		
PHF	.250	.250	.500	.250	.750	.583	.250	.500	.625	.700

Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1
 Peak Hour for Entire Intersection Begins at 07:00 AM

City of Moreno Valley
 N/S: Redlands Boulevard
 E/W: SR-60 Eastbound Ramps
 Weather: Clear

File Name : 07_MRV_Redlands_60E AM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- 6+ Axle Trucks

Start Time	Redlands Boulevard Southbound			Redlands Boulevard Northbound			SR-60 Eastbound Ramps Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
07:00 AM	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	0	1	1	2	0	0	0	2
08:15 AM	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	1	1	2	0	0	0	2
Grand Total	0	0	0	1	1	2	0	0	0	2
Apprch %	0	0		50	50		0	0		
Total %	0	0		50	50	100	0	0		

Start Time	Redlands Boulevard Southbound			Redlands Boulevard Northbound			SR-60 Eastbound Ramps Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:00 AM										
07:00 AM	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0		0	0		0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

City of Moreno Valley
 N/S: Redlands Boulevard
 E/W: SR-60 Eastbound Ramps
 Weather: Clear

File Name : 07_MRV_Redlands_60E AM
 Site Code : 09817323
 Start Date : 5/31/2017
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Groups Printed- Buses & RV's

Start Time	Redlands Boulevard Southbound			Redlands Boulevard Northbound			SR-60 Eastbound Ramps Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
07:00 AM	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	1	1	1
07:30 AM	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	1	1	1
08:00 AM	0	0	0	0	0	0	0	0	0	0
08:15 AM	1	0	1	0	0	0	0	0	0	1
08:30 AM	1	0	1	0	0	0	0	0	0	1
08:45 AM	0	0	0	0	0	0	0	0	0	0
Total	2	0	2	0	0	0	0	0	0	2
Grand Total	2	0	2	0	0	0	0	1	1	3
Apprch %	100	0		0	0		0	100		
Total %	66.7	0	66.7	0	0	0	0	33.3	33.3	

Start Time	Redlands Boulevard Southbound			Redlands Boulevard Northbound			SR-60 Eastbound Ramps Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
07:00 AM	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	1	1	1
07:30 AM	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	1	1	1
% App. Total	0	0		0	0		0	100		
PHF	.000	.000	.000	.000	.000	.000	.000	.250	.250	.250

Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1
 Peak Hour for Entire Intersection Begins at 07:00 AM

City of Moreno Valley
 N/S: Redlands Boulevard
 E/W: SR-60 Eastbound Ramps
 Weather: Clear

File Name : 07_MRV_Redlands_60E AM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- Motorcycles

Start Time	Redlands Boulevard Southbound			Redlands Boulevard Northbound			SR-60 Eastbound Ramps Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
07:00 AM	1	0	1	0	1	1	0	0	0	2
07:15 AM	0	0	0	0	1	1	0	0	0	1
07:30 AM	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0
Total	1	0	1	0	2	2	0	0	0	3
08:00 AM	0	0	0	0	0	0	0	0	0	0
08:15 AM	1	0	1	0	0	0	0	0	0	1
08:30 AM	0	0	0	0	0	0	1	0	1	1
08:45 AM	0	0	0	0	0	0	0	0	0	0
Total	1	0	1	0	0	0	1	0	1	2
Grand Total	2	0	2	0	2	2	1	0	1	5
Apprch %	100	0		0	100		100	0		
Total %	40	0	40	0	40	40	20	0	20	

Start Time	Redlands Boulevard Southbound			Redlands Boulevard Northbound			SR-60 Eastbound Ramps Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
07:00 AM	1	0	1	0	1	1	0	0	0	2
07:15 AM	0	0	0	0	1	1	0	0	0	1
07:30 AM	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0
Total Volume	1	0	1	0	2	2	0	0	0	3
% App. Total	100	0		0	100		0	0		
PHF	.250	.000	.250	.000	.500	.500	.000	.000	.000	.375

Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1
 Peak Hour for Entire Intersection Begins at 07:00 AM

City of Moreno Valley
 N/S: Redlands Boulevard
 E/W: SR-60 Eastbound Ramps
 Weather: Clear

File Name : 07_MRV_Redlands_60E AM
 Site Code : 09817323
 Start Date : 5/31/2017
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Groups Printed- Bicycles

Start Time	Redlands Boulevard Southbound			Redlands Boulevard Northbound			SR-60 Eastbound Ramps Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
07:00 AM	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0
Apprch %	0	0		0	0		0	0		
Total %										

Start Time	Redlands Boulevard Southbound			Redlands Boulevard Northbound			SR-60 Eastbound Ramps Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:00 AM										
07:00 AM	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0		0	0		0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

City of Moreno Valley
 N/S: Redlands Boulevard
 E/W: SR-60 Eastbound Ramps
 Weather: Clear

File Name : 07_MRV_Redlands_60E AM
 Site Code : 09817323
 Start Date : 5/31/2017
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Groups Printed- Medium Truck

Start Time	Redlands Boulevard Southbound			Redlands Boulevard Northbound			SR-60 Eastbound Ramps Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
07:00 AM	1	0	1	0	0	0	0	0	0	1
07:15 AM	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0
Total	1	0	1	0	0	0	0	0	0	1
08:00 AM	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
Grand Total	1	0	1	0	0	0	0	0	0	1
Apprch %	100	0		0	0		0	0		
Total %	100	0	100	0	0	0	0	0	0	

Start Time	Redlands Boulevard Southbound			Redlands Boulevard Northbound			SR-60 Eastbound Ramps Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:00 AM										
07:00 AM	1	0	1	0	0	0	0	0	0	1
07:15 AM	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0
Total Volume	1	0	1	0	0	0	0	0	0	1
% App. Total	100	0		0	0		0	0		
PHF	.250	.000	.250	.000	.000	.000	.000	.000	.000	.250

City of Moreno Valley
 N/S: Redlands Boulevard
 E/W: SR-60 Eastbound Ramps
 Weather: Clear

File Name : 07_MR_V_Redlands_60E PM
 Site Code : 09817323
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Groups Printed- Cars & Trailers - Large 2 Axle Vehicles - 3 Axle Vehicles - 4 Axle Trucks - 5 Axle Trucks - 6+ Axle Trucks - Buses & RV's -
 Motorcycles - Bicycles - Medium Truck

Start Time	Redlands Boulevard Southbound			Redlands Boulevard Northbound			SR-60 Eastbound Ramps Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
04:00 PM	94	14	108	6	91	97	83	23	106	311
04:15 PM	101	17	118	11	75	86	92	36	128	332
04:30 PM	96	9	105	13	84	97	89	32	121	323
04:45 PM	87	17	104	13	107	120	114	46	160	384
Total	378	57	435	43	357	400	378	137	515	1350
05:00 PM	106	16	122	9	105	114	85	37	122	358
05:15 PM	100	19	119	8	90	98	117	40	157	374
05:30 PM	93	9	102	15	86	101	92	34	126	329
05:45 PM	113	19	132	8	78	86	87	42	129	347
Total	412	63	475	40	359	399	381	153	534	1408
Grand Total	790	120	910	83	716	799	759	290	1049	2758
Apprch %	86.8	13.2		10.4	89.6		72.4	27.6		
Total %	28.6	4.4	33	3	26	29	27.5	10.5	38	
Cars & Trailers	776	119	895	80	688	768	737	283	1020	2683
% Cars & Trailers	98.2	99.2	98.4	96.4	96.1	96.1	97.1	97.6	97.2	97.3
Large 2 Axle Vehicles	8	0	8	1	9	10	10	4	14	32
% Large 2 Axle Vehicles	1	0	0.9	1.2	1.3	1.3	1.3	1.4	1.3	1.2
3 Axle Vehicles	0	0	0	0	1	1	0	0	0	1
% 3 Axle Vehicles	0	0	0	0	0.1	0.1	0	0	0	0
4 Axle Trucks	0	0	0	0	1	1	0	0	0	1
% 4 Axle Trucks	0	0	0	0	0.1	0.1	0	0	0	0
5 Axle Trucks	3	1	4	2	13	15	7	1	8	27
% 5 Axle Trucks	0.4	0.8	0.4	2.4	1.8	1.9	0.9	0.3	0.8	1
6+ Axle Trucks	0	0	0	0	0	0	0	0	0	0
% 6+ Axle Trucks	0	0	0	0	0	0	0	0	0	0
Buses & RV's	0	0	0	0	0	0	0	1	1	1
% Buses & RV's	0	0	0	0	0	0	0	0.3	0.1	0
Motorcycles	1	0	1	0	3	3	3	1	4	8
% Motorcycles	0.1	0	0.1	0	0.4	0.4	0.4	0.3	0.4	0.3
Bicycles	0	0	0	0	1	1	0	0	0	1
% Bicycles	0	0	0	0	0.1	0.1	0	0	0	0
Medium Truck	2	0	2	0	0	0	2	0	2	4
% Medium Truck	0.3	0	0.2	0	0	0	0.3	0	0.2	0.1

Start Time	Redlands Boulevard Southbound			Redlands Boulevard Northbound			SR-60 Eastbound Ramps Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:45 PM										
04:45 PM	87	17	104	13	107	120	114	46	160	384
05:00 PM	106	16	122	9	105	114	85	37	122	358
05:15 PM	100	19	119	8	90	98	117	40	157	374
05:30 PM	93	9	102	15	86	101	92	34	126	329
Total Volume	386	61	447	45	388	433	408	157	565	1445
% App. Total	86.4	13.6		10.4	89.6		72.2	27.8		
PHF	.910	.803	.916	.750	.907	.902	.872	.853	.883	.941

City of Moreno Valley
 N/S: Redlands Boulevard
 E/W: SR-60 Eastbound Ramps
 Weather: Clear

File Name : 07_MRV_Redlands_60E PM
 Site Code : 09817323
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Groups Printed- Cars & Trailers

Start Time	Redlands Boulevard Southbound			Redlands Boulevard Northbound			SR-60 Eastbound Ramps Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
04:00 PM	93	14	107	6	82	88	79	23	102	297
04:15 PM	99	17	116	10	72	82	91	35	126	324
04:30 PM	92	9	101	12	84	96	86	30	116	313
04:45 PM	87	16	103	13	104	117	110	45	155	375
Total	371	56	427	41	342	383	366	133	499	1309
05:00 PM	102	16	118	8	105	113	82	37	119	350
05:15 PM	100	19	119	8	85	93	115	40	155	367
05:30 PM	91	9	100	15	82	97	91	32	123	320
05:45 PM	112	19	131	8	74	82	83	41	124	337
Total	405	63	468	39	346	385	371	150	521	1374
Grand Total	776	119	895	80	688	768	737	283	1020	2683
Apprch %	86.7	13.3		10.4	89.6		72.3	27.7		
Total %	28.9	4.4	33.4	3	25.6	28.6	27.5	10.5	38	

Start Time	Redlands Boulevard Southbound			Redlands Boulevard Northbound			SR-60 Eastbound Ramps Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
04:45 PM	87	16	103	13	104	117	110	45	155	375
05:00 PM	102	16	118	8	105	113	82	37	119	350
05:15 PM	100	19	119	8	85	93	115	40	155	367
05:30 PM	91	9	100	15	82	97	91	32	123	320
Total Volume	380	60	440	44	376	420	398	154	552	1412
% App. Total	86.4	13.6		10.5	89.5		72.1	27.9		
PHF	.931	.789	.924	.733	.895	.897	.865	.856	.890	.941

Peak Hour Analysis From 04:45 PM to 05:30 PM - Peak 1 of 1
 Peak Hour for Entire Intersection Begins at 04:45 PM

City of Moreno Valley
 N/S: Redlands Boulevard
 E/W: SR-60 Eastbound Ramps
 Weather: Clear

File Name : 07_MRV_Redlands_60E PM
 Site Code : 09817323
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Groups Printed- Large 2 Axle Vehicles

Start Time	Redlands Boulevard Southbound			Redlands Boulevard Northbound			SR-60 Eastbound Ramps Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
04:00 PM	0	0	0	0	3	3	2	0	2	5
04:15 PM	2	0	2	1	1	2	1	1	2	6
04:30 PM	3	0	3	0	0	0	0	0	0	3
04:45 PM	0	0	0	0	2	2	3	1	4	6
Total	5	0	5	1	6	7	6	2	8	20
05:00 PM	2	0	2	0	0	0	3	0	3	5
05:15 PM	0	0	0	0	1	1	0	0	0	1
05:30 PM	0	0	0	0	1	1	0	1	1	2
05:45 PM	1	0	1	0	1	1	1	1	2	4
Total	3	0	3	0	3	3	4	2	6	12
Grand Total	8	0	8	1	9	10	10	4	14	32
Apprch %	100	0		10	90		71.4	28.6		
Total %	25	0	25	3.1	28.1	31.2	31.2	12.5	43.8	

Start Time	Redlands Boulevard Southbound			Redlands Boulevard Northbound			SR-60 Eastbound Ramps Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
04:45 PM	0	0	0	0	2	2	3	1	4	6
05:00 PM	2	0	2	0	0	0	3	0	3	5
05:15 PM	0	0	0	0	1	1	0	0	0	1
05:30 PM	0	0	0	0	1	1	0	1	1	2
Total Volume	2	0	2	0	4	4	6	2	8	14
% App. Total	100	0		0	100		75	25		
PHF	.250	.000	.250	.000	.500	.500	.500	.500	.500	.583

Peak Hour Analysis From 04:45 PM to 05:30 PM - Peak 1 of 1
 Peak Hour for Entire Intersection Begins at 04:45 PM

City of Moreno Valley
 N/S: Redlands Boulevard
 E/W: SR-60 Eastbound Ramps
 Weather: Clear

File Name : 07_MRV_Redlands_60E PM
 Site Code : 09817323
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Groups Printed- 3 Axle Vehicles

Start Time	Redlands Boulevard Southbound			Redlands Boulevard Northbound			SR-60 Eastbound Ramps Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
04:00 PM	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	1	1	0	0	0	1
05:30 PM	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	1	1	0	0	0	1
Grand Total	0	0	0	0	1	1	0	0	0	1
Apprch %	0	0		0	100		0	0		
Total %	0	0		0	100	100	0	0		

Start Time	Redlands Boulevard Southbound			Redlands Boulevard Northbound			SR-60 Eastbound Ramps Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
04:45 PM	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	1	1	0	0	0	1
05:30 PM	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	1	1	0	0	0	1
% App. Total	0	0		0	100		0	0		
PHF	.000	.000	.000	.000	.250	.250	.000	.000	.000	.250

Peak Hour Analysis From 04:45 PM to 05:30 PM - Peak 1 of 1
 Peak Hour for Entire Intersection Begins at 04:45 PM

City of Moreno Valley
 N/S: Redlands Boulevard
 E/W: SR-60 Eastbound Ramps
 Weather: Clear

File Name : 07_MRV_Redlands_60E PM
 Site Code : 09817323
 Start Date : 5/31/2017
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Groups Printed- 4 Axle Trucks

Start Time	Redlands Boulevard Southbound			Redlands Boulevard Northbound			SR-60 Eastbound Ramps Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
04:00 PM	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	1	1	0	0	0	1
05:45 PM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	1	1	0	0	0	1
Grand Total	0	0	0	0	1	1	0	0	0	1
Apprch %	0	0		0	100		0	0		
Total %	0	0		0	100	100	0	0		

Start Time	Redlands Boulevard Southbound			Redlands Boulevard Northbound			SR-60 Eastbound Ramps Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
04:45 PM	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	1	1	0	0	0	1
Total Volume	0	0	0	0	1	1	0	0	0	1
% App. Total	0	0		0	100		0	0		
PHF	.000	.000	.000	.000	.250	.250	.000	.000	.000	.250

Peak Hour Analysis From 04:45 PM to 05:30 PM - Peak 1 of 1
 Peak Hour for Entire Intersection Begins at 04:45 PM

City of Moreno Valley
 N/S: Redlands Boulevard
 E/W: SR-60 Eastbound Ramps
 Weather: Clear

File Name : 07_MRV_Redlands_60E PM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- 5 Axle Trucks

Start Time	Redlands Boulevard Southbound			Redlands Boulevard Northbound			SR-60 Eastbound Ramps Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
04:00 PM	0	0	0	0	6	6	2	0	2	8
04:15 PM	0	0	0	0	0	0	0	0	0	0
04:30 PM	1	0	1	1	0	1	2	1	3	5
04:45 PM	0	1	1	0	0	0	0	0	0	1
Total	1	1	2	1	6	7	4	1	5	14
05:00 PM	1	0	1	1	0	1	0	0	0	2
05:15 PM	0	0	0	0	2	2	1	0	1	3
05:30 PM	1	0	1	0	2	2	1	0	1	4
05:45 PM	0	0	0	0	3	3	1	0	1	4
Total	2	0	2	1	7	8	3	0	3	13
Grand Total	3	1	4	2	13	15	7	1	8	27
Apprch %	75	25		13.3	86.7		87.5	12.5		
Total %	11.1	3.7	14.8	7.4	48.1	55.6	25.9	3.7	29.6	

Start Time	Redlands Boulevard Southbound			Redlands Boulevard Northbound			SR-60 Eastbound Ramps Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
04:45 PM	0	1	1	0	0	0	0	0	0	1
05:00 PM	1	0	1	1	0	1	0	0	0	2
05:15 PM	0	0	0	0	2	2	1	0	1	3
05:30 PM	1	0	1	0	2	2	1	0	1	4
Total Volume	2	1	3	1	4	5	2	0	2	10
% App. Total	66.7	33.3		20	80		100	0		
PHF	.500	.250	.750	.250	.500	.625	.500	.000	.500	.625

Peak Hour Analysis From 04:45 PM to 05:30 PM - Peak 1 of 1
 Peak Hour for Entire Intersection Begins at 04:45 PM

City of Moreno Valley
 N/S: Redlands Boulevard
 E/W: SR-60 Eastbound Ramps
 Weather: Clear

File Name : 07_MRV_Redlands_60E PM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- 6+ Axle Trucks

Start Time	Redlands Boulevard Southbound			Redlands Boulevard Northbound			SR-60 Eastbound Ramps Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
04:00 PM	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0
Apprch %	0	0		0	0		0	0		
Total %										

Start Time	Redlands Boulevard Southbound			Redlands Boulevard Northbound			SR-60 Eastbound Ramps Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
Peak Hour Analysis From 04:45 PM to 05:30 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:45 PM										
04:45 PM	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0		0	0		0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

City of Moreno Valley
 N/S: Redlands Boulevard
 E/W: SR-60 Eastbound Ramps
 Weather: Clear

File Name : 07_MR_V_Redlands_60E PM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- Buses & RV's

Start Time	Redlands Boulevard Southbound			Redlands Boulevard Northbound			SR-60 Eastbound Ramps Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
04:00 PM	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	1	1	1
04:45 PM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	1	1	1
05:00 PM	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	1	1	1
Apprch %	0	0		0	0		0	100		
Total %	0	0		0	0		0	100	100	

Start Time	Redlands Boulevard Southbound			Redlands Boulevard Northbound			SR-60 Eastbound Ramps Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
Peak Hour Analysis From 04:45 PM to 05:30 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:45 PM										
04:45 PM	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0		0	0		0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

City of Moreno Valley
 N/S: Redlands Boulevard
 E/W: SR-60 Eastbound Ramps
 Weather: Clear

File Name : 07_MRV_Redlands_60E PM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- Motorcycles

Start Time	Redlands Boulevard Southbound			Redlands Boulevard Northbound			SR-60 Eastbound Ramps Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
04:00 PM	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	2	2	0	0	0	2
04:30 PM	0	0	0	0	0	0	1	0	1	1
04:45 PM	0	0	0	0	1	1	1	0	1	2
Total	0	0	0	0	3	3	2	0	2	5
05:00 PM	1	0	1	0	0	0	0	0	0	1
05:15 PM	0	0	0	0	0	0	1	0	1	1
05:30 PM	0	0	0	0	0	0	0	1	1	1
05:45 PM	0	0	0	0	0	0	0	0	0	0
Total	1	0	1	0	0	0	1	1	2	3
Grand Total	1	0	1	0	3	3	3	1	4	8
Apprch %	100	0		0	100		75	25		
Total %	12.5	0	12.5	0	37.5	37.5	37.5	12.5	50	

Start Time	Redlands Boulevard Southbound			Redlands Boulevard Northbound			SR-60 Eastbound Ramps Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
Peak Hour Analysis From 04:45 PM to 05:30 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:45 PM										
04:45 PM	0	0	0	0	1	1	1	0	1	2
05:00 PM	1	0	1	0	0	0	0	0	0	1
05:15 PM	0	0	0	0	0	0	1	0	1	1
05:30 PM	0	0	0	0	0	0	0	1	1	1
Total Volume	1	0	1	0	1	1	2	1	3	5
% App. Total	100	0		0	100		66.7	33.3		
PHF	.250	.000	.250	.000	.250	.250	.500	.250	.750	.625

City of Moreno Valley
 N/S: Redlands Boulevard
 E/W: SR-60 Eastbound Ramps
 Weather: Clear

File Name : 07_MRV_Redlands_60E PM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- Bicycles

Start Time	Redlands Boulevard Southbound			Redlands Boulevard Northbound			SR-60 Eastbound Ramps Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
04:00 PM	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	1	1	0	0	0	1
05:30 PM	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	1	1	0	0	0	1
Grand Total	0	0	0	0	1	1	0	0	0	1
Apprch %	0	0		0	100		0	0		
Total %	0	0		0	100	100	0	0		

Start Time	Redlands Boulevard Southbound			Redlands Boulevard Northbound			SR-60 Eastbound Ramps Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
04:45 PM	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	1	1	0	0	0	1
05:30 PM	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	1	1	0	0	0	1
% App. Total	0	0		0	100		0	0		
PHF	.000	.000	.000	.000	.250	.250	.000	.000	.000	.250

Peak Hour Analysis From 04:45 PM to 05:30 PM - Peak 1 of 1
 Peak Hour for Entire Intersection Begins at 04:45 PM

City of Moreno Valley
 N/S: Redlands Boulevard
 E/W: SR-60 Eastbound Ramps
 Weather: Clear

File Name : 07_MRV_Redlands_60E PM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- Medium Truck

Start Time	Redlands Boulevard Southbound			Redlands Boulevard Northbound			SR-60 Eastbound Ramps Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
04:00 PM	1	0	1	0	0	0	0	0	0	1
04:15 PM	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0
Total	1	0	1	0	0	0	0	0	0	1
05:00 PM	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0
05:30 PM	1	0	1	0	0	0	0	0	0	1
05:45 PM	0	0	0	0	0	0	2	0	2	2
Total	1	0	1	0	0	0	2	0	2	3
Grand Total	2	0	2	0	0	0	2	0	2	4
Apprch %	100	0		0	0		100	0		
Total %	50	0	50	0	0	0	50	0	50	

Start Time	Redlands Boulevard Southbound			Redlands Boulevard Northbound			SR-60 Eastbound Ramps Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
Peak Hour Analysis From 04:45 PM to 05:30 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:45 PM										
04:45 PM	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0
05:30 PM	1	0	1	0	0	0	0	0	0	1
Total Volume	1	0	1	0	0	0	0	0	0	1
% App. Total	100	0		0	0		0	0		
PHF	.250	.000	.250	.000	.000	.000	.000	.000	.000	.250

City of Moreno Valley
 N/S: Redlands Boulevard
 E/W: Spruce Avenue/SR-60 Westbound Ramps
 Weather: Clear

File Name : 06_MR_V_Redlands_Spruce_60W AM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- Cars & Trailers - Large 2 Axle Vehicles - 3 Axle Vehicles - 4 Axle Trucks - 5 Axle Trucks - 6+ Axle Trucks - Buses & RV's -
 Motorcycles - Bicycles - Medium Truck

Start Time	Redlands Boulevard Southbound				SR-60 Westbound Ramps Westbound				Redlands Boulevard Northbound				Spruce Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
07:00 AM	72	67	0	139	11	0	20	31	0	174	40	214	0	0	0	0	384
07:15 AM	64	58	0	122	9	0	21	30	0	164	26	190	0	0	0	0	342
07:30 AM	62	72	0	134	10	0	6	16	2	116	33	151	0	1	0	1	302
07:45 AM	76	99	0	175	18	0	17	35	0	128	29	157	0	0	0	0	367
Total	274	296	0	570	48	0	64	112	2	582	128	712	0	1	0	1	1395
08:00 AM	44	64	0	108	7	0	8	15	1	135	30	166	0	1	0	1	290
08:15 AM	55	42	0	97	3	1	10	14	3	128	36	167	0	0	1	1	279
08:30 AM	61	33	1	95	4	0	7	11	0	136	37	173	1	0	3	4	283
08:45 AM	47	35	0	82	4	0	8	12	4	130	39	173	0	0	0	0	267
Total	207	174	1	382	18	1	33	52	8	529	142	679	1	1	4	6	1119
Grand Total	481	470	1	952	66	1	97	164	10	1111	270	1391	1	2	4	7	2514
Apprch %	50.5	49.4	0.1		40.2	0.6	59.1		0.7	79.9	19.4		14.3	28.6	57.1		
Total %	19.1	18.7	0	37.9	2.6	0	3.9	6.5	0.4	44.2	10.7	55.3	0	0.1	0.2	0.3	
Cars & Trailers	409	430	0	839	59	1	81	141	6	962	221	1189	0	1	3	4	2173
% Cars & Trailers	85	91.5	0	88.1	89.4	100	83.5	86	60	86.6	81.9	85.5	0	50	75	57.1	86.4
Large 2 Axle Vehicles	4	4	0	8	0	0	1	1	0	9	1	10	0	0	0	0	19
% Large 2 Axle Vehicles	0.8	0.9	0	0.8	0	0	1	0.6	0	0.8	0.4	0.7	0	0	0	0	0.8
3 Axle Vehicles	4	0	0	4	0	0	0	0	0	2	0	2	0	0	0	0	6
% 3 Axle Vehicles	0.8	0	0	0.4	0	0	0	0	0	0.2	0	0.1	0	0	0	0	0.2
4 Axle Trucks	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
% 4 Axle Trucks	0	0	0	0	0	0	0	0	0	0.1	0	0.1	0	0	0	0	0
5 Axle Trucks	2	1	0	3	1	0	0	1	1	5	9	15	0	0	0	0	19
% 5 Axle Trucks	0.4	0.2	0	0.3	1.5	0	0	0.6	10	0.5	3.3	1.1	0	0	0	0	0.8
6+ Axle Trucks	0	1	0	1	0	0	0	0	0	0	1	1	0	0	0	0	2
% 6+ Axle Trucks	0	0.2	0	0.1	0	0	0	0	0	0	0.4	0.1	0	0	0	0	0.1
Buses & RV's	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
% Buses & RV's	0	0	0	0	0	0	0	0	0	0.1	0	0.1	0	0	0	0	0
Motorcycles	3	2	0	5	0	0	0	0	0	1	2	3	0	0	0	0	8
% Motorcycles	0.6	0.4	0	0.5	0	0	0	0	0	0.1	0.7	0.2	0	0	0	0	0.3
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Medium Truck	59	32	1	92	6	0	15	21	3	130	36	169	1	1	1	3	285
% Medium Truck	12.3	6.8	100	9.7	9.1	0	15.5	12.8	30	11.7	13.3	12.1	100	50	25	42.9	11.3

Start Time	Redlands Boulevard Southbound				SR-60 Westbound Ramps Westbound				Redlands Boulevard Northbound				Spruce Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	72	67	0	139	11	0	20	31	0	174	40	214	0	0	0	0	384
07:15 AM	64	58	0	122	9	0	21	30	0	164	26	190	0	0	0	0	342
07:30 AM	62	72	0	134	10	0	6	16	2	116	33	151	0	1	0	1	302
07:45 AM	76	99	0	175	18	0	17	35	0	128	29	157	0	0	0	0	367
Total Volume	274	296	0	570	48	0	64	112	2	582	128	712	0	1	0	1	1395
% App. Total	48.1	51.9	0		42.9	0	57.1		0.3	81.7	18		0	100	0		
PHF	.901	.747	.000	.814	.667	.000	.762	.800	.250	.836	.800	.832	.000	.250	.000	.250	.908

City of Moreno Valley
 N/S: Redlands Boulevard
 E/W: Spruce Avenue/SR-60 Westbound Ramps
 Weather: Clear

File Name : 06_MRV_Redlands_Spruce_60W AM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- Cars & Trailers

Start Time	Redlands Boulevard Southbound				SR-60 Westbound Ramps Westbound				Redlands Boulevard Northbound				Spruce Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
07:00 AM	64	61	0	125	10	0	15	25	0	155	33	188	0	0	0	0	338
07:15 AM	54	57	0	111	9	0	17	26	0	142	21	163	0	0	0	0	300
07:30 AM	51	68	0	119	7	0	5	12	2	102	27	131	0	1	0	1	263
07:45 AM	64	90	0	154	18	0	15	33	0	114	26	140	0	0	0	0	327
Total	233	276	0	509	44	0	52	96	2	513	107	622	0	1	0	1	1228
08:00 AM	40	57	0	97	6	0	8	14	1	113	26	140	0	0	0	0	251
08:15 AM	44	37	0	81	3	1	9	13	1	112	27	140	0	0	1	1	235
08:30 AM	52	30	0	82	3	0	6	9	0	119	30	149	0	0	2	2	242
08:45 AM	40	30	0	70	3	0	6	9	2	105	31	138	0	0	0	0	217
Total	176	154	0	330	15	1	29	45	4	449	114	567	0	0	3	3	945
Grand Total	409	430	0	839	59	1	81	141	6	962	221	1189	0	1	3	4	2173
Apprch %	48.7	51.3	0		41.8	0.7	57.4		0.5	80.9	18.6		0	25	75		
Total %	18.8	19.8	0	38.6	2.7	0	3.7	6.5	0.3	44.3	10.2	54.7	0	0	0.1	0.2	

Start Time	Redlands Boulevard Southbound				SR-60 Westbound Ramps Westbound				Redlands Boulevard Northbound				Spruce Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	64	61	0	125	10	0	15	25	0	155	33	188	0	0	0	0	338
07:15 AM	54	57	0	111	9	0	17	26	0	142	21	163	0	0	0	0	300
07:30 AM	51	68	0	119	7	0	5	12	2	102	27	131	0	1	0	1	263
07:45 AM	64	90	0	154	18	0	15	33	0	114	26	140	0	0	0	0	327
Total Volume	233	276	0	509	44	0	52	96	2	513	107	622	0	1	0	1	1228
% App. Total	45.8	54.2	0		45.8	0	54.2		0.3	82.5	17.2		0	100	0		
PHF	.910	.767	.000	.826	.611	.000	.765	.727	.250	.827	.811	.827	.000	.250	.000	.250	.908

City of Moreno Valley
 N/S: Redlands Boulevard
 E/W: Spruce Avenue/SR-60 Westbound Ramps
 Weather: Clear

File Name : 06_MRV_Redlands_Spruce_60W AM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- Large 2 Axle Vehicles

Start Time	Redlands Boulevard Southbound				SR-60 Westbound Ramps Westbound				Redlands Boulevard Northbound				Spruce Avenue Eastbound				Int. Total	
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total		
07:00 AM	1	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2
07:15 AM	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
07:30 AM	0	0	0	0	0	0	1	1	0	1	0	1	0	0	0	0	0	2
07:45 AM	1	0	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	2
Total	3	1	0	4	0	0	1	1	0	2	0	2	0	0	0	0	0	7
08:00 AM	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	0	2
08:15 AM	1	1	0	2	0	0	0	0	0	2	1	3	0	0	0	0	0	5
08:30 AM	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	2
08:45 AM	0	1	0	1	0	0	0	0	0	2	0	2	0	0	0	0	0	3
Total	1	3	0	4	0	0	0	0	0	7	1	8	0	0	0	0	0	12
Grand Total	4	4	0	8	0	0	1	1	0	9	1	10	0	0	0	0	0	19
Apprch %	50	50	0		0	0	100		0	90	10		0	0	0			
Total %	21.1	21.1	0	42.1	0	0	5.3	5.3	0	47.4	5.3	52.6	0	0	0	0	0	

Start Time	Redlands Boulevard Southbound				SR-60 Westbound Ramps Westbound				Redlands Boulevard Northbound				Spruce Avenue Eastbound				Int. Total	
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total		
Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1																		
Peak Hour for Entire Intersection Begins at 07:00 AM																		
07:00 AM	1	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2
07:15 AM	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
07:30 AM	0	0	0	0	0	0	1	1	0	1	0	1	0	0	0	0	0	2
07:45 AM	1	0	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	2
Total Volume	3	1	0	4	0	0	1	1	0	2	0	2	0	0	0	0	0	7
% App. Total	75	25	0		0	0	100		0	100	0		0	0	0			
PHF	.750	.250	.000	.500	.000	.000	.250	.250	.000	.500	.000	.500	.000	.000	.000	.000	.000	.875

City of Moreno Valley
 N/S: Redlands Boulevard
 E/W: Spruce Avenue/SR-60 Westbound Ramps
 Weather: Clear

File Name : 06_MR_V_Redlands_Spruce_60W AM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- 3 Axle Vehicles

Start Time	Redlands Boulevard Southbound				SR-60 Westbound Ramps Westbound				Redlands Boulevard Northbound				Spruce Avenue Eastbound				Int. Total	
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total		
07:00 AM	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Total	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	1
08:30 AM	2	0	0	2	0	0	0	0	0	1	0	1	0	0	0	0	0	3
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	2	0	0	2	0	0	0	0	0	2	0	2	0	0	0	0	0	4
Grand Total	4	0	0	4	0	0	0	0	0	2	0	2	0	0	0	0	0	6
Apprch %	100	0	0		0	0	0		0	100	0		0	0	0			
Total %	66.7	0	0	66.7	0	0	0	0	0	33.3	0	33.3	0	0	0	0	0	

Start Time	Redlands Boulevard Southbound				SR-60 Westbound Ramps Westbound				Redlands Boulevard Northbound				Spruce Avenue Eastbound				Int. Total	
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total		
Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1																		
Peak Hour for Entire Intersection Begins at 07:00 AM																		
07:00 AM	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Total Volume	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2
% App. Total	100	0	0		0	0	0		0	0	0		0	0	0			
PHF	.500	.000	.000	.500	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.500

City of Moreno Valley
 N/S: Redlands Boulevard
 E/W: Spruce Avenue/SR-60 Westbound Ramps
 Weather: Clear

File Name : 06_MRV_Redlands_Spruce_60W AM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- 4 Axle Trucks

Start Time	Redlands Boulevard Southbound				SR-60 Westbound Ramps Westbound				Redlands Boulevard Northbound				Spruce Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
Apprch %	0	0	0		0	0	0		0	100	0		0	0	0		
Total %	0	0	0		0	0	0		0	100	0	100	0	0	0		

Start Time	Redlands Boulevard Southbound				SR-60 Westbound Ramps Westbound				Redlands Boulevard Northbound				Spruce Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
% App. Total	0	0	0		0	0	0		0	100	0		0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.250	.000	.250	.000	.000	.000	.000	.250

City of Moreno Valley
 N/S: Redlands Boulevard
 E/W: Spruce Avenue/SR-60 Westbound Ramps
 Weather: Clear

File Name : 06_MRV_Redlands_Spruce_60W AM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- 5 Axle Trucks

Start Time	Redlands Boulevard Southbound				SR-60 Westbound Ramps Westbound				Redlands Boulevard Northbound				Spruce Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
07:00 AM	0	0	0	0	0	0	0	0	0	0	2	2	0	0	0	0	2
07:15 AM	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1
07:30 AM	0	0	0	0	1	0	0	1	0	1	1	2	0	0	0	0	3
07:45 AM	0	0	0	0	0	0	0	0	0	0	2	2	0	0	0	0	2
Total	0	0	0	0	1	0	0	1	0	1	6	7	0	0	0	0	8
08:00 AM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
08:15 AM	0	0	0	0	0	0	0	0	0	3	1	4	0	0	0	0	4
08:30 AM	0	0	0	0	0	0	0	0	0	0	2	2	0	0	0	0	2
08:45 AM	2	1	0	3	0	0	0	0	1	0	0	1	0	0	0	0	4
Total	2	1	0	3	0	0	0	0	1	4	3	8	0	0	0	0	11
Grand Total	2	1	0	3	1	0	0	1	1	5	9	15	0	0	0	0	19
Apprch %	66.7	33.3	0		100	0	0		6.7	33.3	60		0	0	0		
Total %	10.5	5.3	0	15.8	5.3	0	0	5.3	5.3	26.3	47.4	78.9	0	0	0	0	

Start Time	Redlands Boulevard Southbound				SR-60 Westbound Ramps Westbound				Redlands Boulevard Northbound				Spruce Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	0	0	0	0	0	0	0	0	0	0	2	2	0	0	0	0	2
07:15 AM	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1
07:30 AM	0	0	0	0	1	0	0	1	0	1	1	2	0	0	0	0	3
07:45 AM	0	0	0	0	0	0	0	0	0	0	2	2	0	0	0	0	2
Total Volume	0	0	0	0	1	0	0	1	0	1	6	7	0	0	0	0	8
% App. Total	0	0	0		100	0	0		0	14.3	85.7		0	0	0		
PHF	.000	.000	.000	.000	.250	.000	.000	.250	.000	.250	.750	.875	.000	.000	.000	.000	.667

City of Moreno Valley
 N/S: Redlands Boulevard
 E/W: Spruce Avenue/SR-60 Westbound Ramps
 Weather: Clear

File Name : 06_MR_V_Redlands_Spruce_60W AM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- 6+ Axle Trucks

Start Time	Redlands Boulevard Southbound				SR-60 Westbound Ramps Westbound				Redlands Boulevard Northbound				Spruce Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
Total	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
08:00 AM	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1
Grand Total	0	1	0	1	0	0	0	0	0	0	1	1	0	0	0	0	2
Apprch %	0	100	0		0	0	0		0	0	100		0	0	0		
Total %	0	50	0	50	0	0	0	0	0	0	50	50	0	0	0	0	

Start Time	Redlands Boulevard Southbound				SR-60 Westbound Ramps Westbound				Redlands Boulevard Northbound				Spruce Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
Total Volume	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
% App. Total	0	100	0		0	0	0		0	0	0		0	0	0		
PHF	.000	.250	.000	.250	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.250

City of Moreno Valley
 N/S: Redlands Boulevard
 E/W: Spruce Avenue/SR-60 Westbound Ramps
 Weather: Clear

File Name : 06_MRV_Redlands_Spruce_60W AM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- Buses & RV's

Start Time	Redlands Boulevard Southbound				SR-60 Westbound Ramps Westbound				Redlands Boulevard Northbound				Spruce Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
Grand Total	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
Apprch %	0	0	0		0	0	0		0	100	0		0	0	0		
Total %	0	0	0		0	0	0		0	100	0	100	0	0	0		

Start Time	Redlands Boulevard Southbound				SR-60 Westbound Ramps Westbound				Redlands Boulevard Northbound				Spruce Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0		0	0	0		0	0	0		0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

City of Moreno Valley
 N/S: Redlands Boulevard
 E/W: Spruce Avenue/SR-60 Westbound Ramps
 Weather: Clear

File Name : 06_MRV_Redlands_Spruce_60W AM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- Motorcycles

Start Time	Redlands Boulevard Southbound				SR-60 Westbound Ramps Westbound				Redlands Boulevard Northbound				Spruce Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
07:00 AM	0	1	0	1	0	0	0	0	0	0	1	1	0	0	0	0	2
07:15 AM	1	0	0	1	0	0	0	0	0	0	1	1	0	0	0	0	2
07:30 AM	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	3	1	0	4	0	0	0	0	0	0	2	2	0	0	0	0	6
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
08:30 AM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	2
Grand Total	3	2	0	5	0	0	0	0	0	1	2	3	0	0	0	0	8
Apprch %	60	40	0		0	0	0		0	33.3	66.7		0	0	0		
Total %	37.5	25	0	62.5	0	0	0	0	0	12.5	25	37.5	0	0	0	0	

Start Time	Redlands Boulevard Southbound				SR-60 Westbound Ramps Westbound				Redlands Boulevard Northbound				Spruce Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	0	1	0	1	0	0	0	0	0	0	1	1	0	0	0	0	2
07:15 AM	1	0	0	1	0	0	0	0	0	0	1	1	0	0	0	0	2
07:30 AM	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	3	1	0	4	0	0	0	0	0	0	2	2	0	0	0	0	6
% App. Total	75	25	0		0	0	0		0	0	100		0	0	0		
PHF	.375	.250	.000	.500	.000	.000	.000	.000	.000	.000	.500	.500	.000	.000	.000	.000	.750

City of Moreno Valley
 N/S: Redlands Boulevard
 E/W: Spruce Avenue/SR-60 Westbound Ramps
 Weather: Clear

File Name : 06_MRV_Redlands_Spruce_60W AM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- Bicycles

Start Time	Redlands Boulevard Southbound				SR-60 Westbound Ramps Westbound				Redlands Boulevard Northbound				Spruce Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apprch %	0	0	0		0	0	0		0	0	0		0	0	0		
Total %																	

Start Time	Redlands Boulevard Southbound				SR-60 Westbound Ramps Westbound				Redlands Boulevard Northbound				Spruce Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0		0	0	0		0	0	0		0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

City of Moreno Valley
 N/S: Redlands Boulevard
 E/W: Spruce Avenue/SR-60 Westbound Ramps
 Weather: Clear

File Name : 06_MRV_Redlands_Spruce_60W AM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- Medium Truck

Start Time	Redlands Boulevard Southbound				SR-60 Westbound Ramps Westbound				Redlands Boulevard Northbound				Spruce Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
07:00 AM	6	4	0	10	1	0	5	6	0	19	4	23	0	0	0	0	39
07:15 AM	8	1	0	9	0	0	4	4	0	22	3	25	0	0	0	0	38
07:30 AM	9	4	0	13	2	0	0	2	0	11	5	16	0	0	0	0	31
07:45 AM	10	8	0	18	0	0	2	2	0	13	1	14	0	0	0	0	34
Total	33	17	0	50	3	0	11	14	0	65	13	78	0	0	0	0	142
08:00 AM	4	7	0	11	1	0	0	1	0	19	3	22	0	1	0	1	35
08:15 AM	10	3	0	13	0	0	1	1	2	9	7	18	0	0	0	0	32
08:30 AM	7	2	1	10	1	0	1	2	0	14	5	19	1	0	1	2	33
08:45 AM	5	3	0	8	1	0	2	3	1	23	8	32	0	0	0	0	43
Total	26	15	1	42	3	0	4	7	3	65	23	91	1	1	1	3	143
Grand Total	59	32	1	92	6	0	15	21	3	130	36	169	1	1	1	3	285
Apprch %	64.1	34.8	1.1		28.6	0	71.4		1.8	76.9	21.3		33.3	33.3	33.3		
Total %	20.7	11.2	0.4	32.3	2.1	0	5.3	7.4	1.1	45.6	12.6	59.3	0.4	0.4	0.4	1.1	

Start Time	Redlands Boulevard Southbound				SR-60 Westbound Ramps Westbound				Redlands Boulevard Northbound				Spruce Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	6	4	0	10	1	0	5	6	0	19	4	23	0	0	0	0	39
07:15 AM	8	1	0	9	0	0	4	4	0	22	3	25	0	0	0	0	38
07:30 AM	9	4	0	13	2	0	0	2	0	11	5	16	0	0	0	0	31
07:45 AM	10	8	0	18	0	0	2	2	0	13	1	14	0	0	0	0	34
Total Volume	33	17	0	50	3	0	11	14	0	65	13	78	0	0	0	0	142
% App. Total	66	34	0		21.4	0	78.6		0	83.3	16.7		0	0	0		
PHF	.825	.531	.000	.694	.375	.000	.550	.583	.000	.739	.650	.780	.000	.000	.000	.000	.910

City of Moreno Valley
 N/S: Redlands Boulevard
 E/W: Spruce Avenue/SR-60 Westbound Ramps
 Weather: Clear

File Name : 06_MR_V_Redlands_Spruce_60W PM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- Cars & Trailers - Large 2 Axle Vehicles - 3 Axle Vehicles - 4 Axle Trucks - 5 Axle Trucks - 6+ Axle Trucks - Buses & RV's -
 Motorcycles - Bicycles - Medium Truck

Start Time	Redlands Boulevard Southbound				SR-60 Westbound Ramps Westbound				Redlands Boulevard Northbound				Spruce Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
04:00 PM	76	109	1	186	1	0	6	7	4	153	34	191	3	0	0	3	387
04:15 PM	62	119	0	181	8	0	10	18	3	164	26	193	0	1	2	3	395
04:30 PM	74	112	1	187	9	0	7	16	2	173	25	200	1	1	2	4	407
04:45 PM	68	97	0	165	14	0	9	23	2	205	42	249	0	2	1	3	440
Total	280	437	2	719	32	0	32	64	11	695	127	833	4	4	5	13	1629
05:00 PM	67	106	1	174	15	3	9	27	0	186	21	207	1	3	1	5	413
05:15 PM	67	106	0	173	14	0	4	18	0	194	33	227	0	2	0	2	420
05:30 PM	86	90	2	178	13	0	6	19	3	159	34	196	0	1	1	2	395
05:45 PM	66	129	0	195	8	0	7	15	1	144	29	174	0	1	2	3	387
Total	286	431	3	720	50	3	26	79	4	683	117	804	1	7	4	12	1615
Grand Total	566	868	5	1439	82	3	58	143	15	1378	244	1637	5	11	9	25	3244
Apprch %	39.3	60.3	0.3		57.3	2.1	40.6		0.9	84.2	14.9		20	44	36		
Total %	17.4	26.8	0.2	44.4	2.5	0.1	1.8	4.4	0.5	42.5	7.5	50.5	0.2	0.3	0.3	0.8	
Cars & Trailers	480	777	4	1261	67	1	48	116	9	1184	195	1388	5	6	7	18	2783
% Cars & Trailers	84.8	89.5	80	87.6	81.7	33.3	82.8	81.1	60	85.9	79.9	84.8	100	54.5	77.8	72	85.8
Large 2 Axle Vehicles	4	5	0	9	1	1	2	4	0	8	6	14	0	0	0	0	27
% Large 2 Axle Vehicles	0.7	0.6	0	0.6	1.2	33.3	3.4	2.8	0	0.6	2.5	0.9	0	0	0	0	0.8
3 Axle Vehicles	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1
% 3 Axle Vehicles	0	0	0	0	0	0	0	0	0	0	0.4	0.1	0	0	0	0	0
4 Axle Trucks	0	0	0	0	0	0	0	0	0	1	1	2	0	0	0	0	2
% 4 Axle Trucks	0	0	0	0	0	0	0	0	0	0.1	0.4	0.1	0	0	0	0	0.1
5 Axle Trucks	3	2	0	5	2	1	0	3	0	7	15	22	0	1	0	1	31
% 5 Axle Trucks	0.5	0.2	0	0.3	2.4	33.3	0	2.1	0	0.5	6.1	1.3	0	9.1	0	4	1
6+ Axle Trucks	1	0	0	1	0	0	1	1	0	0	0	0	0	0	0	0	2
% 6+ Axle Trucks	0.2	0	0	0.1	0	0	1.7	0.7	0	0	0	0	0	0	0	0	0.1
Buses & RV's	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Buses & RV's	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Motorcycles	2	1	0	3	0	0	0	0	0	5	1	6	0	0	0	0	9
% Motorcycles	0.4	0.1	0	0.2	0	0	0	0	0	0.4	0.4	0.4	0	0	0	0	0.3
Bicycles	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
% Bicycles	0	0	0	0	0	0	0	0	0	0.1	0	0.1	0	0	0	0	0
Medium Truck	76	83	1	160	12	0	7	19	6	172	25	203	0	4	2	6	388
% Medium Truck	13.4	9.6	20	11.1	14.6	0	12.1	13.3	40	12.5	10.2	12.4	0	36.4	22.2	24	12

Start Time	Redlands Boulevard Southbound				SR-60 Westbound Ramps Westbound				Redlands Boulevard Northbound				Spruce Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	74	112	1	187	9	0	7	16	2	173	25	200	1	1	2	4	407
04:45 PM	68	97	0	165	14	0	9	23	2	205	42	249	0	2	1	3	440
05:00 PM	67	106	1	174	15	3	9	27	0	186	21	207	1	3	1	5	413
05:15 PM	67	106	0	173	14	0	4	18	0	194	33	227	0	2	0	2	420
Total Volume	276	421	2	699	52	3	29	84	4	758	121	883	2	8	4	14	1680
% App. Total	39.5	60.2	0.3		61.9	3.6	34.5		0.5	85.8	13.7		14.3	57.1	28.6		
PHF	.932	.940	.500	.934	.867	.250	.806	.778	.500	.924	.720	.887	.500	.667	.500	.700	.955

City of Moreno Valley
 N/S: Redlands Boulevard
 E/W: Spruce Avenue/SR-60 Westbound Ramps
 Weather: Clear

File Name : 06_MRV_Redlands_Spruce_60W PM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- Cars & Trailers

Start Time	Redlands Boulevard Southbound				SR-60 Westbound Ramps Westbound				Redlands Boulevard Northbound				Spruce Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
04:00 PM	58	99	0	157	0	0	4	4	2	131	19	152	3	0	0	3	316
04:15 PM	50	101	0	151	5	0	9	14	3	140	22	165	0	0	2	2	332
04:30 PM	63	97	1	161	6	0	4	10	0	142	23	165	1	0	1	2	338
04:45 PM	55	84	0	139	10	0	8	18	1	176	39	216	0	1	0	1	374
Total	226	381	1	608	21	0	25	46	6	589	103	698	4	1	3	8	1360
05:00 PM	62	98	1	161	13	1	8	22	0	162	18	180	1	2	1	4	367
05:15 PM	59	103	0	162	14	0	2	16	0	165	27	192	0	1	0	1	371
05:30 PM	73	81	2	156	11	0	6	17	2	139	26	167	0	1	1	2	342
05:45 PM	60	114	0	174	8	0	7	15	1	129	21	151	0	1	2	3	343
Total	254	396	3	653	46	1	23	70	3	595	92	690	1	5	4	10	1423
Grand Total	480	777	4	1261	67	1	48	116	9	1184	195	1388	5	6	7	18	2783
Apprch %	38.1	61.6	0.3		57.8	0.9	41.4		0.6	85.3	14		27.8	33.3	38.9		
Total %	17.2	27.9	0.1	45.3	2.4	0	1.7	4.2	0.3	42.5	7	49.9	0.2	0.2	0.3	0.6	

Start Time	Redlands Boulevard Southbound				SR-60 Westbound Ramps Westbound				Redlands Boulevard Northbound				Spruce Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	63	97	1	161	6	0	4	10	0	142	23	165	1	0	1	2	338
04:45 PM	55	84	0	139	10	0	8	18	1	176	39	216	0	1	0	1	374
05:00 PM	62	98	1	161	13	1	8	22	0	162	18	180	1	2	1	4	367
05:15 PM	59	103	0	162	14	0	2	16	0	165	27	192	0	1	0	1	371
Total Volume	239	382	2	623	43	1	22	66	1	645	107	753	2	4	2	8	1450
% App. Total	38.4	61.3	0.3		65.2	1.5	33.3		0.1	85.7	14.2		25	50	25		
PHF	.948	.927	.500	.961	.768	.250	.688	.750	.250	.916	.686	.872	.500	.500	.500	.500	.969

City of Moreno Valley
 N/S: Redlands Boulevard
 E/W: Spruce Avenue/SR-60 Westbound Ramps
 Weather: Clear

File Name : 06_MRV_Redlands_Spruce_60W PM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- Large 2 Axle Vehicles

Start Time	Redlands Boulevard Southbound				SR-60 Westbound Ramps Westbound				Redlands Boulevard Northbound				Spruce Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
04:00 PM	0	0	0	0	0	0	1	1	0	0	3	3	0	0	0	0	4
04:15 PM	0	2	0	2	0	0	1	1	0	0	1	1	0	0	0	0	4
04:30 PM	1	2	0	3	0	0	0	0	0	0	0	0	0	0	0	0	3
04:45 PM	0	1	0	1	0	0	0	0	0	4	0	4	0	0	0	0	5
Total	1	5	0	6	0	0	2	2	0	4	4	8	0	0	0	0	16
05:00 PM	0	0	0	0	0	1	0	1	0	3	0	3	0	0	0	0	4
05:15 PM	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
05:30 PM	2	0	0	2	1	0	0	1	0	0	1	1	0	0	0	0	4
05:45 PM	0	0	0	0	0	0	0	0	0	1	1	2	0	0	0	0	2
Total	3	0	0	3	1	1	0	2	0	4	2	6	0	0	0	0	11
Grand Total	4	5	0	9	1	1	2	4	0	8	6	14	0	0	0	0	27
Apprch %	44.4	55.6	0		25	25	50		0	57.1	42.9		0	0	0		
Total %	14.8	18.5	0	33.3	3.7	3.7	7.4	14.8	0	29.6	22.2	51.9	0	0	0	0	

Start Time	Redlands Boulevard Southbound				SR-60 Westbound Ramps Westbound				Redlands Boulevard Northbound				Spruce Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	1	2	0	3	0	0	0	0	0	0	0	0	0	0	0	0	3
04:45 PM	0	1	0	1	0	0	0	0	0	4	0	4	0	0	0	0	5
05:00 PM	0	0	0	0	0	1	0	1	0	3	0	3	0	0	0	0	4
05:15 PM	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
Total Volume	2	3	0	5	0	1	0	1	0	7	0	7	0	0	0	0	13
% App. Total	40	60	0		0	100	0		0	100	0		0	0	0		
PHF	.500	.375	.000	.417	.000	.250	.000	.250	.000	.438	.000	.438	.000	.000	.000	.000	.650

City of Moreno Valley
 N/S: Redlands Boulevard
 E/W: Spruce Avenue/SR-60 Westbound Ramps
 Weather: Clear

File Name : 06_MRV_Redlands_Spruce_60W PM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- 3 Axle Vehicles

Start Time	Redlands Boulevard Southbound				SR-60 Westbound Ramps Westbound				Redlands Boulevard Northbound				Spruce Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1
Grand Total	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1
Apprch %	0	0	0		0	0	0		0	0	100		0	0	0		
Total %	0	0	0		0	0	0		0	0	100	100	0	0	0		

Start Time	Redlands Boulevard Southbound				SR-60 Westbound Ramps Westbound				Redlands Boulevard Northbound				Spruce Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1
Total Volume	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1
% App. Total	0	0	0		0	0	0		0	0	100		0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.250	.250	.000	.000	.000	.000	.250

City of Moreno Valley
 N/S: Redlands Boulevard
 E/W: Spruce Avenue/SR-60 Westbound Ramps
 Weather: Clear

File Name : 06_MR_V_Redlands_Spruce_60W PM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- 4 Axle Trucks

Start Time	Redlands Boulevard Southbound				SR-60 Westbound Ramps Westbound				Redlands Boulevard Northbound				Spruce Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	1	1	2	0	0	0	0	2
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	1	1	2	0	0	0	0	2
Grand Total	0	0	0	0	0	0	0	0	0	1	1	2	0	0	0	0	2
Apprch %	0	0	0		0	0	0		0	50	50		0	0	0		
Total %	0	0	0		0	0	0		0	50	50	100	0	0	0		

Start Time	Redlands Boulevard Southbound				SR-60 Westbound Ramps Westbound				Redlands Boulevard Northbound				Spruce Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0		0	0	0		0	0	0		0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

City of Moreno Valley
 N/S: Redlands Boulevard
 E/W: Spruce Avenue/SR-60 Westbound Ramps
 Weather: Clear

File Name : 06_MRV_Redlands_Spruce_60W PM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- 5 Axle Trucks

Start Time	Redlands Boulevard Southbound				SR-60 Westbound Ramps Westbound				Redlands Boulevard Northbound				Spruce Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
04:00 PM	0	0	0	0	0	0	0	0	0	2	9	11	0	0	0	0	11
04:15 PM	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
04:30 PM	0	0	0	0	1	0	0	1	0	2	0	2	0	1	0	1	4
04:45 PM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
Total	1	1	0	2	1	0	0	1	0	4	9	13	0	1	0	1	17
05:00 PM	0	1	0	1	0	1	0	1	0	0	0	0	0	0	0	0	2
05:15 PM	0	0	0	0	0	0	0	0	0	1	2	3	0	0	0	0	3
05:30 PM	2	0	0	2	1	0	0	1	0	1	1	2	0	0	0	0	5
05:45 PM	0	0	0	0	0	0	0	0	0	1	3	4	0	0	0	0	4
Total	2	1	0	3	1	1	0	2	0	3	6	9	0	0	0	0	14
Grand Total	3	2	0	5	2	1	0	3	0	7	15	22	0	1	0	1	31
Apprch %	60	40	0		66.7	33.3	0		0	31.8	68.2		0	100	0		
Total %	9.7	6.5	0	16.1	6.5	3.2	0	9.7	0	22.6	48.4	71	0	3.2	0	3.2	

Start Time	Redlands Boulevard Southbound				SR-60 Westbound Ramps Westbound				Redlands Boulevard Northbound				Spruce Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	0	0	0	0	1	0	0	1	0	2	0	2	0	1	0	1	4
04:45 PM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
05:00 PM	0	1	0	1	0	1	0	1	0	0	0	0	0	0	0	0	2
05:15 PM	0	0	0	0	0	0	0	0	0	1	2	3	0	0	0	0	3
Total Volume	0	2	0	2	1	1	0	2	0	3	2	5	0	1	0	1	10
% App. Total	0	100	0		50	50	0		0	60	40		0	100	0		
PHF	.000	.500	.000	.500	.250	.250	.000	.500	.000	.375	.250	.417	.000	.250	.000	.250	.625

City of Moreno Valley
 N/S: Redlands Boulevard
 E/W: Spruce Avenue/SR-60 Westbound Ramps
 Weather: Clear

File Name : 06_MRV_Redlands_Spruce_60W PM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- 6+ Axle Trucks

Start Time	Redlands Boulevard Southbound				SR-60 Westbound Ramps Westbound				Redlands Boulevard Northbound				Spruce Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
04:00 PM	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	1
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	1
05:00 PM	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
Grand Total	1	0	0	1	0	0	1	1	0	0	0	0	0	0	0	0	2
Apprch %	100	0	0		0	0	100		0	0	0		0	0	0		
Total %	50	0	0	50	0	0	50	50	0	0	0	0	0	0	0	0	

Start Time	Redlands Boulevard Southbound				SR-60 Westbound Ramps Westbound				Redlands Boulevard Northbound				Spruce Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00 PM	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
% App. Total	100	0	0		0	0	0		0	0	0		0	0	0		
PHF	.250	.000	.000	.250	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.250

City of Moreno Valley
 N/S: Redlands Boulevard
 E/W: Spruce Avenue/SR-60 Westbound Ramps
 Weather: Clear

File Name : 06_MRV_Redlands_Spruce_60W PM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- Buses & RV's

Start Time	Redlands Boulevard Southbound				SR-60 Westbound Ramps Westbound				Redlands Boulevard Northbound				Spruce Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apprch %	0	0	0		0	0	0		0	0	0		0	0	0		
Total %																	

Start Time	Redlands Boulevard Southbound				SR-60 Westbound Ramps Westbound				Redlands Boulevard Northbound				Spruce Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0		0	0	0		0	0	0		0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

City of Moreno Valley
 N/S: Redlands Boulevard
 E/W: Spruce Avenue/SR-60 Westbound Ramps
 Weather: Clear

File Name : 06_MR_V_Redlands_Spruce_60W PM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- Motorcycles

Start Time	Redlands Boulevard Southbound				SR-60 Westbound Ramps Westbound				Redlands Boulevard Northbound				Spruce Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	2
04:30 PM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
04:45 PM	1	0	0	1	0	0	0	0	0	1	1	2	0	0	0	0	3
Total	1	0	0	1	0	0	0	0	0	4	1	5	0	0	0	0	6
05:00 PM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
05:15 PM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
05:30 PM	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	1	1	0	2	0	0	0	0	0	1	0	1	0	0	0	0	3
Grand Total	2	1	0	3	0	0	0	0	0	5	1	6	0	0	0	0	9
Apprch %	66.7	33.3	0		0	0	0		0	83.3	16.7		0	0	0		
Total %	22.2	11.1	0	33.3	0	0	0	0	0	55.6	11.1	66.7	0	0	0	0	

Start Time	Redlands Boulevard Southbound				SR-60 Westbound Ramps Westbound				Redlands Boulevard Northbound				Spruce Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
04:45 PM	1	0	0	1	0	0	0	0	0	1	1	2	0	0	0	0	3
05:00 PM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
05:15 PM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
Total Volume	1	1	0	2	0	0	0	0	0	3	1	4	0	0	0	0	6
% App. Total	50	50	0		0	0	0		0	75	25		0	0	0		
PHF	.250	.250	.000	.500	.000	.000	.000	.000	.000	.750	.250	.500	.000	.000	.000	.000	.500

City of Moreno Valley
 N/S: Redlands Boulevard
 E/W: Spruce Avenue/SR-60 Westbound Ramps
 Weather: Clear

File Name : 06_MR_V_Redlands_Spruce_60W PM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- Bicycles

Start Time	Redlands Boulevard Southbound				SR-60 Westbound Ramps Westbound				Redlands Boulevard Northbound				Spruce Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
Grand Total	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
Apprch %	0	0	0		0	0	0		0	100	0		0	0	0		
Total %	0	0	0		0	0	0		0	100	0	100	0	0	0		

Start Time	Redlands Boulevard Southbound				SR-60 Westbound Ramps Westbound				Redlands Boulevard Northbound				Spruce Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
Total Volume	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
% App. Total	0	0	0		0	0	0		0	100	0		0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.250	.000	.250	.000	.000	.000	.000	.250

City of Moreno Valley
 N/S: Redlands Boulevard
 E/W: Spruce Avenue/SR-60 Westbound Ramps
 Weather: Clear

File Name : 06_MRV_Redlands_Spruce_60W PM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- Medium Truck

Start Time	Redlands Boulevard Southbound				SR-60 Westbound Ramps Westbound				Redlands Boulevard Northbound				Spruce Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
04:00 PM	18	10	1	29	1	0	0	1	2	20	3	25	0	0	0	0	55
04:15 PM	11	16	0	27	3	0	0	3	0	22	3	25	0	1	0	1	56
04:30 PM	10	13	0	23	2	0	3	5	2	28	2	32	0	0	1	1	61
04:45 PM	12	11	0	23	4	0	1	5	1	24	2	27	0	1	1	2	57
Total	51	50	1	102	10	0	4	14	5	94	10	109	0	2	2	4	229
05:00 PM	4	6	0	10	2	0	1	3	0	21	3	24	0	1	0	1	38
05:15 PM	7	3	0	10	0	0	2	2	0	26	3	29	0	1	0	1	42
05:30 PM	8	9	0	17	0	0	0	0	1	18	5	24	0	0	0	0	41
05:45 PM	6	15	0	21	0	0	0	0	0	13	4	17	0	0	0	0	38
Total	25	33	0	58	2	0	3	5	1	78	15	94	0	2	0	2	159
Grand Total	76	83	1	160	12	0	7	19	6	172	25	203	0	4	2	6	388
Apprch %	47.5	51.9	0.6		63.2	0	36.8		3	84.7	12.3		0	66.7	33.3		
Total %	19.6	21.4	0.3	41.2	3.1	0	1.8	4.9	1.5	44.3	6.4	52.3	0	1	0.5	1.5	

Start Time	Redlands Boulevard Southbound				SR-60 Westbound Ramps Westbound				Redlands Boulevard Northbound				Spruce Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	10	13	0	23	2	0	3	5	2	28	2	32	0	0	1	1	61
04:45 PM	12	11	0	23	4	0	1	5	1	24	2	27	0	1	1	2	57
05:00 PM	4	6	0	10	2	0	1	3	0	21	3	24	0	1	0	1	38
05:15 PM	7	3	0	10	0	0	2	2	0	26	3	29	0	1	0	1	42
Total Volume	33	33	0	66	8	0	7	15	3	99	10	112	0	3	2	5	198
% App. Total	50	50	0		53.3	0	46.7		2.7	88.4	8.9		0	60	40		
PHF	.688	.635	.000	.717	.500	.000	.583	.750	.375	.884	.833	.875	.000	.750	.500	.625	.811

City of Moreno Valley
 N/S: Redlands Boulevard
 E/W: Ironwood Avenue
 Weather: Clear

File Name : 05_MRV_Redlands_Ironwood AM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- Cars & Trailers - Large 2 Axle Vehicles - 3 Axle Vehicles - 4 Axle Trucks - 5 Axle Trucks - 6+ Axle Trucks - Buses & RV's -
 Motorcycles - Bicycles - Medium Truck

Start Time	Redlands Boulevard Southbound				Ironwood Avenue Westbound				Redlands Boulevard Northbound				Ironwood Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
07:00 AM	1	140	16	157	0	2	0	2	2	164	1	167	37	1	2	40	366
07:15 AM	0	131	17	148	0	2	3	5	3	168	1	172	31	1	0	32	357
07:30 AM	0	123	25	148	1	4	1	6	6	103	1	110	22	0	5	27	291
07:45 AM	2	167	27	196	1	3	2	6	16	109	2	127	15	1	8	24	353
Total	3	561	85	649	2	11	6	19	27	544	5	576	105	3	15	123	1367
08:00 AM	0	88	19	107	0	4	2	6	7	105	2	114	30	2	13	45	272
08:15 AM	0	96	15	111	0	3	1	4	3	131	2	136	18	7	1	26	277
08:30 AM	1	95	11	107	1	4	2	7	3	128	1	132	20	0	2	22	268
08:45 AM	0	75	12	87	0	2	3	5	4	96	3	103	14	3	5	22	217
Total	1	354	57	412	1	13	8	22	17	460	8	485	82	12	21	115	1034
Grand Total	4	915	142	1061	3	24	14	41	44	1004	13	1061	187	15	36	238	2401
Apprch %	0.4	86.2	13.4		7.3	58.5	34.1		4.1	94.6	1.2		78.6	6.3	15.1		
Total %	0.2	38.1	5.9	44.2	0.1	1	0.6	1.7	1.8	41.8	0.5	44.2	7.8	0.6	1.5	9.9	
Cars & Trailers	3	897	141	1041	2	21	10	33	44	989	13	1046	182	13	36	231	2351
% Cars & Trailers	75	98	99.3	98.1	66.7	87.5	71.4	80.5	100	98.5	100	98.6	97.3	86.7	100	97.1	97.9
Large 2 Axle Vehicles	0	7	0	7	0	2	0	2	0	6	0	6	1	0	0	1	16
% Large 2 Axle Vehicles	0	0.8	0	0.7	0	8.3	0	4.9	0	0.6	0	0.6	0.5	0	0	0.4	0.7
3 Axle Vehicles	0	1	0	1	1	0	0	1	0	1	0	1	0	1	0	1	4
% 3 Axle Vehicles	0	0.1	0	0.1	33.3	0	0	2.4	0	0.1	0	0.1	0	6.7	0	0.4	0.2
4 Axle Trucks	0	3	0	3	0	0	0	0	0	1	0	1	0	0	0	0	4
% 4 Axle Trucks	0	0.3	0	0.3	0	0	0	0	0	0.1	0	0.1	0	0	0	0	0.2
5 Axle Trucks	0	1	0	1	0	0	2	2	0	6	0	6	0	0	0	0	9
% 5 Axle Trucks	0	0.1	0	0.1	0	0	14.3	4.9	0	0.6	0	0.6	0	0	0	0	0.4
6+ Axle Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% 6+ Axle Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Buses & RV's	0	2	0	2	0	0	0	0	0	0	0	0	3	0	0	3	5
% Buses & RV's	0	0.2	0	0.2	0	0	0	0	0	0	0	0	1.6	0	0	1.3	0.2
Motorcycles	0	4	0	4	0	0	2	2	0	1	0	1	1	0	0	1	8
% Motorcycles	0	0.4	0	0.4	0	0	14.3	4.9	0	0.1	0	0.1	0.5	0	0	0.4	0.3
Bicycles	0	0	1	1	0	1	0	1	0	0	0	0	0	1	0	1	3
% Bicycles	0	0	0.7	0.1	0	4.2	0	2.4	0	0	0	0	0	6.7	0	0.4	0.1
Medium Truck	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
% Medium Truck	25	0	0	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0

Start Time	Redlands Boulevard Southbound				Ironwood Avenue Westbound				Redlands Boulevard Northbound				Ironwood Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	1	140	16	157	0	2	0	2	2	164	1	167	37	1	2	40	366
07:15 AM	0	131	17	148	0	2	3	5	3	168	1	172	31	1	0	32	357
07:30 AM	0	123	25	148	1	4	1	6	6	103	1	110	22	0	5	27	291
07:45 AM	2	167	27	196	1	3	2	6	16	109	2	127	15	1	8	24	353
Total Volume	3	561	85	649	2	11	6	19	27	544	5	576	105	3	15	123	1367
% App. Total	0.5	86.4	13.1		10.5	57.9	31.6		4.7	94.4	0.9		85.4	2.4	12.2		
PHF	.375	.840	.787	.828	.500	.688	.500	.792	.422	.810	.625	.837	.709	.750	.469	.769	.934

City of Moreno Valley
 N/S: Redlands Boulevard
 E/W: Ironwood Avenue
 Weather: Clear

File Name : 05_MRV_Redlands_Ironwood AM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- Cars & Trailers

Start Time	Redlands Boulevard Southbound				Ironwood Avenue Westbound				Redlands Boulevard Northbound				Ironwood Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
07:00 AM	1	137	16	154	0	2	0	2	2	163	1	166	35	1	2	38	360
07:15 AM	0	129	17	146	0	2	2	4	3	168	1	172	30	1	0	31	353
07:30 AM	0	121	25	146	1	4	1	6	6	101	1	108	21	0	5	26	286
07:45 AM	2	165	27	194	1	3	0	4	16	109	2	127	15	1	8	24	349
Total	3	552	85	640	2	11	3	16	27	541	5	573	101	3	15	119	1348
08:00 AM	0	88	19	107	0	3	2	5	7	103	2	112	29	2	13	44	268
08:15 AM	0	92	15	107	0	3	1	4	3	125	2	130	18	5	1	24	265
08:30 AM	0	94	11	105	0	3	1	4	3	125	1	129	20	0	2	22	260
08:45 AM	0	71	11	82	0	1	3	4	4	95	3	102	14	3	5	22	210
Total	0	345	56	401	0	10	7	17	17	448	8	473	81	10	21	112	1003
Grand Total	3	897	141	1041	2	21	10	33	44	989	13	1046	182	13	36	231	2351
Apprch %	0.3	86.2	13.5		6.1	63.6	30.3		4.2	94.6	1.2		78.8	5.6	15.6		
Total %	0.1	38.2	6	44.3	0.1	0.9	0.4	1.4	1.9	42.1	0.6	44.5	7.7	0.6	1.5	9.8	

Start Time	Redlands Boulevard Southbound				Ironwood Avenue Westbound				Redlands Boulevard Northbound				Ironwood Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	1	137	16	154	0	2	0	2	2	163	1	166	35	1	2	38	360
07:15 AM	0	129	17	146	0	2	2	4	3	168	1	172	30	1	0	31	353
07:30 AM	0	121	25	146	1	4	1	6	6	101	1	108	21	0	5	26	286
07:45 AM	2	165	27	194	1	3	0	4	16	109	2	127	15	1	8	24	349
Total Volume	3	552	85	640	2	11	3	16	27	541	5	573	101	3	15	119	1348
% App. Total	0.5	86.2	13.3		12.5	68.8	18.8		4.7	94.4	0.9		84.9	2.5	12.6		
PHF	.375	.836	.787	.825	.500	.688	.375	.667	.422	.805	.625	.833	.721	.750	.469	.783	.936

City of Moreno Valley
 N/S: Redlands Boulevard
 E/W: Ironwood Avenue
 Weather: Clear

File Name : 05_MRV_Redlands_Ironwood AM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- Large 2 Axle Vehicles

Start Time	Redlands Boulevard Southbound				Ironwood Avenue Westbound				Redlands Boulevard Northbound				Ironwood Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
07:00 AM	0	3	0	3	0	0	0	0	0	1	0	1	1	0	0	1	5
07:15 AM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
07:30 AM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	4	0	4	0	0	0	0	0	2	0	2	1	0	0	1	7
08:00 AM	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	1
08:15 AM	0	2	0	2	0	0	0	0	0	2	0	2	0	0	0	0	4
08:30 AM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
08:45 AM	0	1	0	1	0	1	0	1	0	1	0	1	0	0	0	0	3
Total	0	3	0	3	0	2	0	2	0	4	0	4	0	0	0	0	9
Grand Total	0	7	0	7	0	2	0	2	0	6	0	6	1	0	0	1	16
Apprch %	0	100	0		0	100	0		0	100	0		100	0	0		
Total %	0	43.8	0	43.8	0	12.5	0	12.5	0	37.5	0	37.5	6.2	0	0	6.2	

Start Time	Redlands Boulevard Southbound				Ironwood Avenue Westbound				Redlands Boulevard Northbound				Ironwood Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	0	3	0	3	0	0	0	0	0	1	0	1	1	0	0	1	5
07:15 AM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
07:30 AM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	4	0	4	0	0	0	0	0	2	0	2	1	0	0	1	7
% App. Total	0	100	0		0	0	0		0	100	0		100	0	0		
PHF	.000	.333	.000	.333	.000	.000	.000	.000	.000	.500	.000	.500	.250	.000	.000	.250	.350

City of Moreno Valley
 N/S: Redlands Boulevard
 E/W: Ironwood Avenue
 Weather: Clear

File Name : 05_MRV_Redlands_Ironwood AM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- 3 Axle Vehicles

Start Time	Redlands Boulevard Southbound				Ironwood Avenue Westbound				Redlands Boulevard Northbound				Ironwood Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
Total	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	1	0	1	0	1	0	1	2
08:30 AM	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	1	0	0	1	0	1	0	1	0	1	0	1	3
Grand Total	0	1	0	1	1	0	0	1	0	1	0	1	0	1	0	1	4
Apprch %	0	100	0		100	0	0		0	100	0		0	100	0		
Total %	0	25	0	25	25	0	0	25	0	25	0	25	0	25	0	25	

Start Time	Redlands Boulevard Southbound				Ironwood Avenue Westbound				Redlands Boulevard Northbound				Ironwood Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
Total Volume	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
% App. Total	0	100	0		0	0	0		0	0	0		0	0	0		
PHF	.000	.250	.000	.250	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.250

City of Moreno Valley
 N/S: Redlands Boulevard
 E/W: Ironwood Avenue
 Weather: Clear

File Name : 05_MRV_Redlands_Ironwood AM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- 4 Axle Trucks

Start Time	Redlands Boulevard Southbound				Ironwood Avenue Westbound				Redlands Boulevard Northbound				Ironwood Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	3	0	3	0	0	0	0	0	0	0	0	0	0	0	0	3
Total	0	3	0	3	0	0	0	0	0	1	0	1	0	0	0	0	4
Grand Total	0	3	0	3	0	0	0	0	0	1	0	1	0	0	0	0	4
Apprch %	0	100	0		0	0	0		0	100	0		0	0	0		
Total %	0	75	0	75	0	0	0	0	0	25	0	25	0	0	0	0	

Start Time	Redlands Boulevard Southbound				Ironwood Avenue Westbound				Redlands Boulevard Northbound				Ironwood Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0		0	0	0		0	0	0		0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

City of Moreno Valley
 N/S: Redlands Boulevard
 E/W: Ironwood Avenue
 Weather: Clear

File Name : 05_MRV_Redlands_Ironwood AM
 Site Code : 09817323
 Start Date : 5/31/2017
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Groups Printed- 5 Axle Trucks

Start Time	Redlands Boulevard Southbound				Ironwood Avenue Westbound				Redlands Boulevard Northbound				Ironwood Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	1
07:30 AM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
07:45 AM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
Total	0	1	0	1	0	0	1	1	0	1	0	1	0	0	0	0	3
08:00 AM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
08:15 AM	0	0	0	0	0	0	0	0	0	3	0	3	0	0	0	0	3
08:30 AM	0	0	0	0	0	0	1	1	0	1	0	1	0	0	0	0	2
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	1	1	0	5	0	5	0	0	0	0	6
Grand Total	0	1	0	1	0	0	2	2	0	6	0	6	0	0	0	0	9
Apprch %	0	100	0		0	0	100		0	100	0		0	0	0		
Total %	0	11.1	0	11.1	0	0	22.2	22.2	0	66.7	0	66.7	0	0	0	0	

Start Time	Redlands Boulevard Southbound				Ironwood Avenue Westbound				Redlands Boulevard Northbound				Ironwood Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	1
07:30 AM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
07:45 AM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
Total Volume	0	1	0	1	0	0	1	1	0	1	0	1	0	0	0	0	3
% App. Total	0	100	0		0	0	100		0	100	0		0	0	0		
PHF	.000	.250	.000	.250	.000	.000	.250	.250	.000	.250	.000	.250	.000	.000	.000	.000	.750

City of Moreno Valley
 N/S: Redlands Boulevard
 E/W: Ironwood Avenue
 Weather: Clear

File Name : 05_MRV_Redlands_Ironwood AM
 Site Code : 09817323
 Start Date : 5/31/2017
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Groups Printed- 6+ Axle Trucks

Start Time	Redlands Boulevard Southbound				Ironwood Avenue Westbound				Redlands Boulevard Northbound				Ironwood Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apprch %	0	0	0		0	0	0		0	0	0		0	0	0		
Total %																	

Start Time	Redlands Boulevard Southbound				Ironwood Avenue Westbound				Redlands Boulevard Northbound				Ironwood Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0		0	0	0		0	0	0		0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

City of Moreno Valley
 N/S: Redlands Boulevard
 E/W: Ironwood Avenue
 Weather: Clear

File Name : 05_MRV_Redlands_Ironwood AM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- Buses & RV's

Start Time	Redlands Boulevard Southbound				Ironwood Avenue Westbound				Redlands Boulevard Northbound				Ironwood Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	2
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
08:15 AM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
08:30 AM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	2	0	2	0	0	0	0	0	0	0	0	1	0	0	1	3
Grand Total	0	2	0	2	0	0	0	0	0	0	0	0	3	0	0	3	5
Apprch %	0	100	0		0	0	0		0	0	0		100	0	0		
Total %	0	40	0	40	0	0	0	0	0	0	0	0	60	0	0	60	

Start Time	Redlands Boulevard Southbound				Ironwood Avenue Westbound				Redlands Boulevard Northbound				Ironwood Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	2
% App. Total	0	0	0		0	0	0		0	0	0		100	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.500	.000	.000	.500	.500

City of Moreno Valley
 N/S: Redlands Boulevard
 E/W: Ironwood Avenue
 Weather: Clear

File Name : 05_MRV_Redlands_Ironwood AM
 Site Code : 09817323
 Start Date : 5/31/2017
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Groups Printed- Motorcycles

Start Time	Redlands Boulevard Southbound				Ironwood Avenue Westbound				Redlands Boulevard Northbound				Ironwood Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
07:30 AM	0	2	0	2	0	0	0	0	0	0	0	0	1	0	0	1	3
07:45 AM	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	2
Total	0	3	0	3	0	0	2	2	0	0	0	0	1	0	0	1	6
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
08:30 AM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	2
Grand Total	0	4	0	4	0	0	2	2	0	1	0	1	1	0	0	1	8
Apprch %	0	100	0		0	0	100		0	100	0		100	0	0		
Total %	0	50	0	50	0	0	25	25	0	12.5	0	12.5	12.5	0	0	12.5	

Start Time	Redlands Boulevard Southbound				Ironwood Avenue Westbound				Redlands Boulevard Northbound				Ironwood Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
07:30 AM	0	2	0	2	0	0	0	0	0	0	0	0	1	0	0	1	3
07:45 AM	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	2
Total Volume	0	3	0	3	0	0	2	2	0	0	0	0	1	0	0	1	6
% App. Total	0	100	0		0	0	100		0	0	0		100	0	0		
PHF	.000	.375	.000	.375	.000	.000	.250	.250	.000	.000	.000	.000	.250	.000	.000	.250	.500

City of Moreno Valley
 N/S: Redlands Boulevard
 E/W: Ironwood Avenue
 Weather: Clear

File Name : 05_MRV_Redlands_Ironwood AM
 Site Code : 09817323
 Start Date : 5/31/2017
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Groups Printed- Bicycles

Start Time	Redlands Boulevard Southbound				Ironwood Avenue Westbound				Redlands Boulevard Northbound				Ironwood Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
08:30 AM	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	1
08:45 AM	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1
Total	0	0	1	1	0	1	0	1	0	0	0	0	0	1	0	1	3
Grand Total	0	0	1	1	0	1	0	1	0	0	0	0	0	1	0	1	3
Apprch %	0	0	100		0	100	0		0	0	0		0	100	0		
Total %	0	0	33.3	33.3	0	33.3	0	33.3	0	0	0	0	0	33.3	0	33.3	

Start Time	Redlands Boulevard Southbound				Ironwood Avenue Westbound				Redlands Boulevard Northbound				Ironwood Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0		0	0	0		0	0	0		0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

City of Moreno Valley
 N/S: Redlands Boulevard
 E/W: Ironwood Avenue
 Weather: Clear

File Name : 05_MRV_Redlands_Ironwood AM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- Medium Truck

Start Time	Redlands Boulevard Southbound				Ironwood Avenue Westbound				Redlands Boulevard Northbound				Ironwood Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30 AM	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
Grand Total	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
Apprch %	100	0	0		0	0	0		0	0	0		0	0	0		
Total %	100	0	0	100	0	0	0	0	0	0	0	0	0	0	0	0	

Start Time	Redlands Boulevard Southbound				Ironwood Avenue Westbound				Redlands Boulevard Northbound				Ironwood Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0		0	0	0		0	0	0		0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

City of Moreno Valley
 N/S: Redlands Boulevard
 E/W: Ironwood Avenue
 Weather: Clear

File Name : 05_MRV_Redlands_Ironwood PM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- Cars & Trailers - Large 2 Axle Vehicles - 3 Axle Vehicles - 4 Axle Trucks - 5 Axle Trucks - 6+ Axle Trucks - Buses & RV's -
 Motorcycles - Bicycles - Medium Truck

Start Time	Redlands Boulevard Southbound				Ironwood Avenue Westbound				Redlands Boulevard Northbound				Ironwood Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
04:00 PM	1	159	32	192	0	3	1	4	6	141	0	147	13	2	9	24	367
04:15 PM	0	156	34	190	1	2	0	3	3	147	4	154	19	4	9	32	379
04:30 PM	2	160	37	199	2	3	4	9	3	146	1	150	20	4	10	34	392
04:45 PM	0	153	46	199	1	2	0	3	4	181	2	187	24	0	5	29	418
Total	3	628	149	780	4	10	5	19	16	615	7	638	76	10	33	119	1556
05:00 PM	0	161	37	198	4	1	1	6	8	176	5	189	17	2	7	26	419
05:15 PM	1	160	50	211	0	1	0	1	1	164	0	165	22	2	6	30	407
05:30 PM	2	176	44	222	1	4	0	5	4	158	1	163	21	1	2	24	414
05:45 PM	0	180	30	210	0	0	1	1	3	134	0	137	21	1	7	29	377
Total	3	677	161	841	5	6	2	13	16	632	6	654	81	6	22	109	1617
Grand Total	6	1305	310	1621	9	16	7	32	32	1247	13	1292	157	16	55	228	3173
Apprch %	0.4	80.5	19.1		28.1	50	21.9		2.5	96.5	1		68.9	7	24.1		
Total %	0.2	41.1	9.8	51.1	0.3	0.5	0.2	1	1	39.3	0.4	40.7	4.9	0.5	1.7	7.2	
Cars & Trailers	6	1288	302	1596	9	15	5	29	29	1230	13	1272	152	16	55	223	3120
% Cars & Trailers	100	98.7	97.4	98.5	100	93.8	71.4	90.6	90.6	98.6	100	98.5	96.8	100	100	97.8	98.3
Large 2 Axle Vehicles	0	7	2	9	0	0	0	0	0	8	0	8	2	0	0	2	19
% Large 2 Axle Vehicles	0	0.5	0.6	0.6	0	0	0	0	0	0.6	0	0.6	1.3	0	0	0.9	0.6
3 Axle Vehicles	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	1
% 3 Axle Vehicles	0	0	0	0	0	0	14.3	3.1	0	0	0	0	0	0	0	0	0
4 Axle Trucks	0	1	0	1	0	0	0	0	1	0	0	1	0	0	0	0	2
% 4 Axle Trucks	0	0.1	0	0.1	0	0	0	0	3.1	0	0	0.1	0	0	0	0	0.1
5 Axle Trucks	0	5	0	5	0	0	0	0	0	7	0	7	0	0	0	0	12
% 5 Axle Trucks	0	0.4	0	0.3	0	0	0	0	0	0.6	0	0.5	0	0	0	0	0.4
6+ Axle Trucks	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	1
% 6+ Axle Trucks	0	0	0	0	0	0	0	0	3.1	0	0	0.1	0	0	0	0	0
Buses & RV's	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Buses & RV's	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Motorcycles	0	2	6	8	0	1	0	1	0	2	0	2	3	0	0	3	14
% Motorcycles	0	0.2	1.9	0.5	0	6.2	0	3.1	0	0.2	0	0.2	1.9	0	0	1.3	0.4
Bicycles	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	1
% Bicycles	0	0	0	0	0	0	0	0	3.1	0	0	0.1	0	0	0	0	0
Medium Truck	0	2	0	2	0	0	1	1	0	0	0	0	0	0	0	0	3
% Medium Truck	0	0.2	0	0.1	0	0	14.3	3.1	0	0	0	0	0	0	0	0	0.1

Start Time	Redlands Boulevard Southbound				Ironwood Avenue Westbound				Redlands Boulevard Northbound				Ironwood Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	0	153	46	199	1	2	0	3	4	181	2	187	24	0	5	29	418
05:00 PM	0	161	37	198	4	1	1	6	8	176	5	189	17	2	7	26	419
05:15 PM	1	160	50	211	0	1	0	1	1	164	0	165	22	2	6	30	407
05:30 PM	2	176	44	222	1	4	0	5	4	158	1	163	21	1	2	24	414
Total Volume	3	650	177	830	6	8	1	15	17	679	8	704	84	5	20	109	1658
% App. Total	0.4	78.3	21.3		40	53.3	6.7		2.4	96.4	1.1		77.1	4.6	18.3		
PHF	.375	.923	.885	.935	.375	.500	.250	.625	.531	.938	.400	.931	.875	.625	.714	.908	.989

City of Moreno Valley
 N/S: Redlands Boulevard
 E/W: Ironwood Avenue
 Weather: Clear

File Name : 05_MRV_Redlands_Ironwood PM
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 Start Date : 5/31/2017
 Page No : 1

Groups Printed- Cars & Trailers

Start Time	Redlands Boulevard Southbound				Ironwood Avenue Westbound				Redlands Boulevard Northbound				Ironwood Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
04:00 PM	1	158	31	190	0	3	0	3	5	138	0	143	11	2	9	22	358
04:15 PM	0	153	34	187	1	2	0	3	3	146	4	153	19	4	9	32	375
04:30 PM	2	157	36	195	2	3	4	9	3	143	1	147	19	4	10	33	384
04:45 PM	0	150	42	192	1	2	0	3	4	178	2	184	23	0	5	28	407
Total	3	618	143	764	4	10	4	18	15	605	7	627	72	10	33	115	1524
05:00 PM	0	160	37	197	4	1	1	6	8	173	5	186	17	2	7	26	415
05:15 PM	1	159	48	208	0	1	0	1	0	163	0	163	22	2	6	30	402
05:30 PM	2	171	44	217	1	3	0	4	3	158	1	162	20	1	2	23	406
05:45 PM	0	180	30	210	0	0	0	0	3	131	0	134	21	1	7	29	373
Total	3	670	159	832	5	5	1	11	14	625	6	645	80	6	22	108	1596
Grand Total	6	1288	302	1596	9	15	5	29	29	1230	13	1272	152	16	55	223	3120
Apprch %	0.4	80.7	18.9		31	51.7	17.2		2.3	96.7	1		68.2	7.2	24.7		
Total %	0.2	41.3	9.7	51.2	0.3	0.5	0.2	0.9	0.9	39.4	0.4	40.8	4.9	0.5	1.8	7.1	

Start Time	Redlands Boulevard Southbound				Ironwood Avenue Westbound				Redlands Boulevard Northbound				Ironwood Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 04:45 PM to 05:30 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	0	150	42	192	1	2	0	3	4	178	2	184	23	0	5	28	407
05:00 PM	0	160	37	197	4	1	1	6	8	173	5	186	17	2	7	26	415
05:15 PM	1	159	48	208	0	1	0	1	0	163	0	163	22	2	6	30	402
05:30 PM	2	171	44	217	1	3	0	4	3	158	1	162	20	1	2	23	406
Total Volume	3	640	171	814	6	7	1	14	15	672	8	695	82	5	20	107	1630
% App. Total	0.4	78.6	21		42.9	50	7.1		2.2	96.7	1.2		76.6	4.7	18.7		
PHF	.375	.936	.891	.938	.375	.583	.250	.583	.469	.944	.400	.934	.891	.625	.714	.892	.982

City of Moreno Valley
 N/S: Redlands Boulevard
 E/W: Ironwood Avenue
 Weather: Clear

File Name : 05_MRV_Redlands_Ironwood PM
 Site Code : 09817323
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 Page No : 1

Groups Printed- Large 2 Axle Vehicles

Start Time	Redlands Boulevard Southbound				Ironwood Avenue Westbound				Redlands Boulevard Northbound				Ironwood Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
04:00 PM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0
04:15 PM	0	2	0	2	0	0	0	0	0	1	0	1	0	0	0	0	0
04:30 PM	0	3	1	4	0	0	0	0	0	0	0	0	1	0	0	1	1
04:45 PM	0	0	1	1	0	0	0	0	0	2	0	2	1	0	0	1	1
Total	0	5	2	7	0	0	0	0	0	4	0	4	2	0	0	2	13
05:00 PM	0	0	0	0	0	0	0	0	0	3	0	3	0	0	0	0	0
05:15 PM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0
Total	0	2	0	2	0	0	0	0	0	4	0	4	0	0	0	0	6
Grand Total	0	7	2	9	0	0	0	0	0	8	0	8	2	0	0	2	19
Apprch %	0	77.8	22.2		0	0	0		0	100	0		100	0	0		
Total %	0	36.8	10.5	47.4	0	0	0	0	0	42.1	0	42.1	10.5	0	0	10.5	

Start Time	Redlands Boulevard Southbound				Ironwood Avenue Westbound				Redlands Boulevard Northbound				Ironwood Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 04:45 PM to 05:30 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	0	0	1	1	0	0	0	0	0	2	0	2	1	0	0	1	4
05:00 PM	0	0	0	0	0	0	0	0	0	3	0	3	0	0	0	0	3
05:15 PM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
05:30 PM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
Total Volume	0	2	1	3	0	0	0	0	0	5	0	5	1	0	0	1	9
% App. Total	0	66.7	33.3		0	0	0		0	100	0		100	0	0		
PHF	.000	.500	.250	.750	.000	.000	.000	.000	.000	.417	.000	.417	.250	.000	.000	.250	.563

City of Moreno Valley
 N/S: Redlands Boulevard
 E/W: Ironwood Avenue
 Weather: Clear

File Name : 05_MRV_Redlands_Ironwood PM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- 3 Axle Vehicles

Start Time	Redlands Boulevard Southbound				Ironwood Avenue Westbound				Redlands Boulevard Northbound				Ironwood Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
04:00 PM	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	1
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	1
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	1
Apprch %	0	0	0		0	0	100		0	0	0		0	0	0		
Total %	0	0	0	0	0	0	100	100	0	0	0	0	0	0	0	0	

Start Time	Redlands Boulevard Southbound				Ironwood Avenue Westbound				Redlands Boulevard Northbound				Ironwood Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 04:45 PM to 05:30 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0		0	0	0		0	0	0		0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

City of Moreno Valley
 N/S: Redlands Boulevard
 E/W: Ironwood Avenue
 Weather: Clear

File Name : 05_MRV_Redlands_Ironwood PM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- 4 Axle Trucks

Start Time	Redlands Boulevard Southbound				Ironwood Avenue Westbound				Redlands Boulevard Northbound				Ironwood Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	1	0	1	0	0	0	0	1	0	0	1	0	0	0	0	2
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	1	0	1	0	0	0	0	1	0	0	1	0	0	0	0	2
Grand Total	0	1	0	1	0	0	0	0	1	0	0	1	0	0	0	0	2
Apprch %	0	100	0		0	0	0		100	0	0		0	0	0		
Total %	0	50	0	50	0	0	0	0	50	0	0	50	0	0	0	0	

Start Time	Redlands Boulevard Southbound				Ironwood Avenue Westbound				Redlands Boulevard Northbound				Ironwood Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 04:45 PM to 05:30 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	1	0	1	0	0	0	0	1	0	0	1	0	0	0	0	2
Total Volume	0	1	0	1	0	0	0	0	1	0	0	1	0	0	0	0	2
% App. Total	0	100	0		0	0	0		100	0	0		0	0	0		
PHF	.000	.250	.000	.250	.000	.000	.000	.000	.250	.000	.000	.250	.000	.000	.000	.000	.250

City of Moreno Valley
 N/S: Redlands Boulevard
 E/W: Ironwood Avenue
 Weather: Clear

File Name : 05_MRV_Redlands_Ironwood PM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- 5 Axle Trucks

Start Time	Redlands Boulevard Southbound				Ironwood Avenue Westbound				Redlands Boulevard Northbound				Ironwood Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
04:00 PM	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	2
04:15 PM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
04:30 PM	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	2
04:45 PM	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
Total	0	3	0	3	0	0	0	0	0	4	0	4	0	0	0	0	7
05:00 PM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
05:15 PM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
05:30 PM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
05:45 PM	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	2
Total	0	2	0	2	0	0	0	0	0	3	0	3	0	0	0	0	5
Grand Total	0	5	0	5	0	0	0	0	0	7	0	7	0	0	0	0	12
Apprch %	0	100	0		0	0	0		0	100	0		0	0	0		
Total %	0	41.7	0	41.7	0	0	0	0	0	58.3	0	58.3	0	0	0	0	

Start Time	Redlands Boulevard Southbound				Ironwood Avenue Westbound				Redlands Boulevard Northbound				Ironwood Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 04:45 PM to 05:30 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
05:00 PM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
05:15 PM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
05:30 PM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
Total Volume	0	4	0	4	0	0	0	0	0	1	0	1	0	0	0	0	5
% App. Total	0	100	0		0	0	0		0	100	0		0	0	0		
PHF	.000	.500	.000	.500	.000	.000	.000	.000	.000	.250	.000	.250	.000	.000	.000	.000	.625

City of Moreno Valley
 N/S: Redlands Boulevard
 E/W: Ironwood Avenue
 Weather: Clear

File Name : 05_MRV_Redlands_Ironwood PM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- 6+ Axle Trucks

Start Time	Redlands Boulevard Southbound				Ironwood Avenue Westbound				Redlands Boulevard Northbound				Ironwood Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
04:00 PM	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	1
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	1
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	1
Apprch %	0	0	0		0	0	0		100	0	0		0	0	0		
Total %	0	0	0		0	0	0		100	0	0	100	0	0	0		

Start Time	Redlands Boulevard Southbound				Ironwood Avenue Westbound				Redlands Boulevard Northbound				Ironwood Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 04:45 PM to 05:30 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0		0	0	0		0	0	0		0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

City of Moreno Valley
 N/S: Redlands Boulevard
 E/W: Ironwood Avenue
 Weather: Clear

File Name : 05_MRV_Redlands_Ironwood PM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- Buses & RV's

Start Time	Redlands Boulevard Southbound				Ironwood Avenue Westbound				Redlands Boulevard Northbound				Ironwood Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apprch %	0	0	0		0	0	0		0	0	0		0	0	0		
Total %																	

Start Time	Redlands Boulevard Southbound				Ironwood Avenue Westbound				Redlands Boulevard Northbound				Ironwood Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 04:45 PM to 05:30 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0		0	0	0		0	0	0		0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

City of Moreno Valley
 N/S: Redlands Boulevard
 E/W: Ironwood Avenue
 Weather: Clear

File Name : 05_MRV_Redlands_Ironwood PM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- Motorcycles

Start Time	Redlands Boulevard Southbound				Ironwood Avenue Westbound				Redlands Boulevard Northbound				Ironwood Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
04:00 PM	0	0	1	1	0	0	0	0	0	0	0	0	2	0	0	2	3
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
04:45 PM	0	1	3	4	0	0	0	0	0	1	0	1	0	0	0	0	5
Total	0	1	4	5	0	0	0	0	0	2	0	2	2	0	0	2	9
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	2
05:30 PM	0	1	0	1	0	1	0	1	0	0	0	0	1	0	0	1	3
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	1	2	3	0	1	0	1	0	0	0	0	1	0	0	1	5
Grand Total	0	2	6	8	0	1	0	1	0	2	0	2	3	0	0	3	14
Apprch %	0	25	75		0	100	0		0	100	0		100	0	0		
Total %	0	14.3	42.9	57.1	0	7.1	0	7.1	0	14.3	0	14.3	21.4	0	0	21.4	

Start Time	Redlands Boulevard Southbound				Ironwood Avenue Westbound				Redlands Boulevard Northbound				Ironwood Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 04:45 PM to 05:30 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	0	1	3	4	0	0	0	0	0	1	0	1	0	0	0	0	5
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	2
05:30 PM	0	1	0	1	0	1	0	1	0	0	0	0	1	0	0	1	3
Total Volume	0	2	5	7	0	1	0	1	0	1	0	1	1	0	0	1	10
% App. Total	0	28.6	71.4		0	100	0		0	100	0		100	0	0		
PHF	.000	.500	.417	.438	.000	.250	.000	.250	.000	.250	.000	.250	.250	.000	.000	.250	.500

City of Moreno Valley
 N/S: Redlands Boulevard
 E/W: Ironwood Avenue
 Weather: Clear

File Name : 05_MRV_Redlands_Ironwood PM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- Bicycles

Start Time	Redlands Boulevard Southbound				Ironwood Avenue Westbound				Redlands Boulevard Northbound				Ironwood Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	1
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	1
Grand Total	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	1
Apprch %	0	0	0		0	0	0		100	0	0		0	0	0		
Total %	0	0	0		0	0	0		100	0	0	100	0	0	0		

Start Time	Redlands Boulevard Southbound				Ironwood Avenue Westbound				Redlands Boulevard Northbound				Ironwood Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 04:45 PM to 05:30 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	1
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	1
% App. Total	0	0	0		0	0	0		100	0	0		0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.250	.000	.000	.250	.000	.000	.000	.000	.250

City of Moreno Valley
 N/S: Redlands Boulevard
 E/W: Ironwood Avenue
 Weather: Clear

File Name : 05_MRV_Redlands_Ironwood PM
 Site Code : 09817323
 Start Date : 5/31/2017
 Page No : 1

Groups Printed- Medium Truck

Start Time	Redlands Boulevard Southbound				Ironwood Avenue Westbound				Redlands Boulevard Northbound				Ironwood Avenue Eastbound				Int. Total	
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total		
04:00 PM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
05:45 PM	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	1
Total	0	1	0	1	0	0	1	1	0	0	0	0	0	0	0	0	0	2
Grand Total	0	2	0	2	0	0	1	1	0	0	0	0	0	0	0	0	0	3
Apprch %	0	100	0		0	0	100		0	0	0		0	0	0			
Total %	0	66.7	0	66.7	0	0	33.3	33.3	0	0	0	0	0	0	0	0	0	

Start Time	Redlands Boulevard Southbound				Ironwood Avenue Westbound				Redlands Boulevard Northbound				Ironwood Avenue Eastbound				Int. Total	
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total		
Peak Hour Analysis From 04:45 PM to 05:30 PM - Peak 1 of 1																		
Peak Hour for Entire Intersection Begins at 04:45 PM																		
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Total Volume	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
% App. Total	0	100	0		0	0	0		0	0	0		0	0	0			
PHF	.000	.250	.000	.250	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.250

Appendix A-3c
Intersection Counts (2018)

INTERSECTION #1 AM

Start Date: 1/30/2018
 Comment 1: City of Moreno Valley
 Comment 2: N/S: Theodore Street
 Comment 3: E/W: Eucalyptus Avenue
 Comment 4: Weather: Clear

Cars	Theodore Street Southbound				Dead End Westbound				Theodore Street Northbound				Eucalyptus Avenue Eastbound			
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
07:00 AM	0	6	9	0	0	0	0	0	2	10	0	0	1	0	0	0
07:15 AM	0	5	4	0	0	0	0	0	8	9	0	0	0	0	1	0
07:30 AM	0	9	10	0	0	0	0	0	2	4	0	0	0	0	0	0
07:45 AM	0	5	17	0	0	0	0	0	7	5	0	0	1	0	1	0
08:00 AM	0	2	17	0	0	0	0	0	9	6	0	0	5	0	1	0
08:15 AM	0	2	31	0	0	0	0	0	22	6	0	0	4	0	6	0
08:30 AM	0	4	30	0	0	0	0	0	7	2	0	0	20	0	26	0
08:45 AM	0	4	14	0	0	0	0	0	1	5	0	0	8	0	6	0

2-Axle Trucks	Theodore Street Southbound				Dead End Westbound				Theodore Street Northbound				Eucalyptus Avenue Eastbound			
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0

3-Axle Trucks	Theodore Street Southbound				Dead End Westbound				Theodore Street Northbound				Eucalyptus Avenue Eastbound			
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
07:00 AM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

4+ Axle Trucks	Theodore Street Southbound				Dead End Westbound				Theodore Street Northbound				Eucalyptus Avenue Eastbound			
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
07:00 AM	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0
08:00 AM	0	0	3	0	0	0	0	0	0	1	0	0	0	0	0	0
08:15 AM	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	3	0	0	0	0	0	0	0	0	0	1	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

INTERSECTION #1 PM

Start Date: 1/30/2018
 Comment 1: City of Moreno Valley
 Comment 2: N/S: Theodore Street
 Comment 3: E/W: Eucalyptus Avenue
 Comment 4: Weather: Clear

Cars	Theodore Street Southbound				Dead End Westbound				Theodore Street Northbound				Eucalyptus Avenue Eastbound			
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
04:00 PM	0	10	11	0	0	0	0	0	2	7	0	0	5	0	5	0
04:15 PM	0	5	6	0	0	0	0	0	1	5	0	0	8	0	6	0
04:30 PM	0	5	3	0	0	0	0	0	1	1	0	0	13	0	7	0
04:45 PM	0	7	5	0	0	0	0	0	3	3	0	0	9	0	5	0
05:00 PM	0	7	5	0	0	0	0	0	0	7	0	0	10	0	13	0
05:15 PM	0	8	1	0	0	0	0	0	2	7	0	0	9	0	4	0
05:30 PM	0	7	4	0	0	0	0	0	2	5	0	0	12	0	3	0
05:45 PM	0	6	4	0	0	0	0	0	2	3	0	0	8	0	1	0

2-Axle Trucks	Theodore Street Southbound				Dead End Westbound				Theodore Street Northbound				Eucalyptus Avenue Eastbound			
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
04:00 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0
04:30 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
05:30 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

3-Axle Trucks	Theodore Street Southbound				Dead End Westbound				Theodore Street Northbound				Eucalyptus Avenue Eastbound			
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

4+ Axle Trucks	Theodore Street Southbound				Dead End Westbound				Theodore Street Northbound				Eucalyptus Avenue Eastbound			
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
04:00 PM	0	0	3	0	0	0	0	0	0	0	0	0	1	0	0	0
04:15 PM	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0
04:30 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
05:30 PM	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0

INTERSECTION #2 AM

Start Date: 1/30/2018
 Comment 1: City of Moreno Valley
 Comment 2: N/S: Theodore Street
 Comment 3: E/W: SR-60 Eastbound Ramps
 Comment 4: Weather: Clear

Cars	Theodore Street Southbound				Dead End Westbound				Theodore Street Northbound				SR-60 Eastbound Ramps Eastbound			
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
07:00 AM	0	7	2	0	0	0	0	0	8	3	0	0	2	0	8	0
07:15 AM	0	5	1	0	0	0	0	0	7	2	0	0	2	0	4	0
07:30 AM	0	8	2	0	0	0	0	0	4	2	0	0	0	0	10	0
07:45 AM	0	7	0	0	0	0	0	0	5	2	0	0	1	0	17	0
08:00 AM	0	3	2	0	0	0	0	0	5	5	0	0	6	0	16	0
08:15 AM	0	6	3	0	0	0	0	0	3	6	0	0	2	0	27	0
08:30 AM	0	4	4	0	0	0	0	0	6	17	0	0	5	0	30	0
08:45 AM	0	5	5	0	0	0	0	0	4	10	0	0	2	0	14	0

2-Axle Trucks	Theodore Street Southbound				Dead End Westbound				Theodore Street Northbound				SR-60 Eastbound Ramps Eastbound			
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	1	0	0	0	0	0	0	0	0	0	2	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0
08:30 AM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0
08:45 AM	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0

3-Axle Trucks	Theodore Street Southbound				Dead End Westbound				Theodore Street Northbound				SR-60 Eastbound Ramps Eastbound			
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
07:00 AM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	2	0	1	0
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

4+ Axle Trucks	Theodore Street Southbound				Dead End Westbound				Theodore Street Northbound				SR-60 Eastbound Ramps Eastbound			
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	4	0	2	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0
07:30 AM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	1	0	0	4	0	1	0
08:00 AM	0	1	1	0	0	0	0	0	0	1	0	0	0	0	2	0
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	4	0	2	0
08:30 AM	0	0	0	0	0	0	0	0	0	1	0	0	4	0	3	0
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0

INTERSECTION #2 PM

Start Date: 1/30/2018
 Comment 1: City of Moreno Valley
 Comment 2: N/S: Theodore Street
 Comment 3: E/W: SR-60 Eastbound Ramps
 Comment 4: Weather: Clear

Cars	Theodore Street Southbound				Dead End Westbound				Theodore Street Northbound				SR-60 Eastbound Ramps Eastbound			
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
04:00 PM	0	11	6	0	0	0	0	0	7	7	0	0	2	0	11	0
04:15 PM	0	8	5	0	0	0	0	0	4	9	0	0	1	0	5	0
04:30 PM	0	5	3	0	0	0	0	0	4	10	0	0	2	0	3	0
04:45 PM	0	7	2	0	0	0	0	0	3	9	0	0	3	0	4	0
05:00 PM	0	5	5	0	0	0	0	0	7	10	0	0	1	0	6	0
05:15 PM	0	6	4	0	0	0	0	0	9	7	0	0	2	0	4	0
05:30 PM	0	6	4	0	0	0	0	0	1	16	0	0	4	0	5	0
05:45 PM	0	7	1	0	0	0	0	0	2	9	0	0	1	0	2	0

2-Axle Trucks	Theodore Street Southbound				Dead End Westbound				Theodore Street Northbound				SR-60 Eastbound Ramps Eastbound			
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
04:30 PM	0	1	0	0	0	0	0	0	0	0	0	0	2	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

3-Axle Trucks	Theodore Street Southbound				Dead End Westbound				Theodore Street Northbound				SR-60 Eastbound Ramps Eastbound			
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

4+ Axle Trucks	Theodore Street Southbound				Dead End Westbound				Theodore Street Northbound				SR-60 Eastbound Ramps Eastbound			
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
04:00 PM	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	3
04:15 PM	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
04:45 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0
05:15 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0
05:45 PM	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0

INTERSECTION #3 AM

Start Date: 1/30/2018
 Comment 1: City of Moreno Valley
 Comment 2: N/S: Theodore Street
 Comment 3: E/W: SR-60 Westbound Ramps
 Comment 4: Weather: Clear

Cars	Theodore Street Southbound				SR-60 Westbound Ramps Westbound				Theodore Street Northbound				Dead End Eastbound			
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
07:00 AM	0	2	0	0	6	0	6	0	0	3	3	0	0	0	0	0
07:15 AM	0	3	0	0	4	0	4	0	0	3	1	0	0	0	0	0
07:30 AM	0	5	0	0	5	0	6	0	0	0	0	0	0	0	0	0
07:45 AM	0	1	0	0	6	0	2	0	0	1	1	0	0	0	0	0
08:00 AM	0	2	0	0	4	0	4	0	0	7	3	0	0	0	0	0
08:15 AM	1	4	0	0	4	0	1	0	0	5	5	0	0	0	0	0
08:30 AM	4	2	0	0	6	0	2	0	0	5	14	0	0	0	0	0
08:45 AM	4	5	0	0	5	0	7	0	0	5	10	0	0	0	0	0

2-Axle Trucks	Theodore Street Southbound				SR-60 Westbound Ramps Westbound				Theodore Street Northbound				Dead End Eastbound			
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	3	1	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0
08:00 AM	3	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0
08:30 AM	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0

3-Axle Trucks	Theodore Street Southbound				SR-60 Westbound Ramps Westbound				Theodore Street Northbound				Dead End Eastbound			
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
07:00 AM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	2	0	0	0	0	0	0	0	1	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45 AM	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

4+ Axle Trucks	Theodore Street Southbound				SR-60 Westbound Ramps Westbound				Theodore Street Northbound				Dead End Eastbound			
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
07:00 AM	2	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0
07:15 AM	5	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0
07:30 AM	5	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	6	0	0	0	0	0	0	0	0	3	1	0	0	0	0	0
08:00 AM	3	0	0	0	2	0	0	0	0	1	1	0	0	0	0	0
08:15 AM	3	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0
08:30 AM	1	0	0	0	0	0	0	0	0	4	1	0	0	0	0	0
08:45 AM	2	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0

INTERSECTION #3 PM

Start Date: 1/30/2018
 Comment 1: City of Moreno Valley
 Comment 2: N/S: Theodore Street
 Comment 3: E/W: SR-60 Westbound Ramps
 Comment 4: Weather: Clear

Cars	Theodore Street Southbound				SR-60 Westbound Ramps Westbound				Theodore Street Northbound				Dead End Eastbound			
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
04:00 PM	3	9	0	0	7	0	3	0	0	3	6	0	0	0	0	0
04:15 PM	1	7	0	0	6	0	2	0	0	4	5	0	0	0	0	0
04:30 PM	7	4	0	0	3	0	1	0	0	3	6	0	0	0	0	0
04:45 PM	3	4	0	0	4	0	2	0	0	3	8	0	0	0	0	0
05:00 PM	3	7	0	0	4	0	2	0	0	4	8	0	0	0	0	0
05:15 PM	0	3	0	0	5	0	4	0	0	2	6	0	0	0	0	0
05:30 PM	2	9	0	0	2	0	0	0	0	5	13	0	0	0	0	0
05:45 PM	1	2	0	0	4	0	1	0	0	5	5	0	0	0	0	0

2-Axle Trucks	Theodore Street Southbound				SR-60 Westbound Ramps Westbound				Theodore Street Northbound				Dead End Eastbound			
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
04:00 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
04:15 PM	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	1	0	0	0	0	0	0	0	0	2	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
05:15 PM	0	0	0	0	1	0	0	0	0	0	3	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0

3-Axle Trucks	Theodore Street Southbound				SR-60 Westbound Ramps Westbound				Theodore Street Northbound				Dead End Eastbound			
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
04:00 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

4+ Axle Trucks	Theodore Street Southbound				SR-60 Westbound Ramps Westbound				Theodore Street Northbound				Dead End Eastbound			
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
04:00 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	2	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0

INTERSECTION #4 AM

Start Date: 1/30/2018
 Comment 1: City of Moreno Valley
 Comment 2: N/S: Theodore Street
 Comment 3: E/W: Ironwood Avenue
 Comment 4: Weather: Clear

Cars	Dead End Southbound				Ironwood Avenue Westbound				Theodore Street Northbound				Ironwood Avenue Eastbound			
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
07:00 AM	0	0	0	0	0	0	0	0	5	0	5	0	0	0	1	0
07:15 AM	0	0	0	0	0	2	0	0	2	0	4	0	0	2	4	0
07:30 AM	0	0	0	0	1	1	0	0	4	0	1	0	0	1	3	0
07:45 AM	0	0	0	0	1	0	0	0	4	0	0	0	0	1	0	0
08:00 AM	0	0	0	0	2	0	0	0	4	0	5	0	0	1	2	0
08:15 AM	0	0	0	0	3	0	0	0	3	0	2	0	0	0	2	0
08:30 AM	0	0	0	0	1	1	0	0	3	0	4	0	0	0	3	0
08:45 AM	0	0	0	0	5	0	0	0	10	0	1	0	0	0	3	0

2-Axle Trucks	Dead End Southbound				Ironwood Avenue Westbound				Theodore Street Northbound				Ironwood Avenue Eastbound			
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0
08:00 AM	0	0	0	0	3	0	0	0	1	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	1	0	0	0	0	0	2	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

3-Axle Trucks	Dead End Southbound				Ironwood Avenue Westbound				Theodore Street Northbound				Ironwood Avenue Eastbound			
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
07:00 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	1	0	0	0	0	0	2	0	0	0	0	0
08:30 AM	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0
08:45 AM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0

4+ Axle Trucks	Dead End Southbound				Ironwood Avenue Westbound				Theodore Street Northbound				Ironwood Avenue Eastbound			
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
07:00 AM	0	0	0	0	1	0	0	0	0	0	3	0	0	0	0	0
07:15 AM	0	0	0	0	6	0	0	0	0	0	2	0	0	0	0	0
07:30 AM	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	6	0	0	0	0	0	4	0	0	0	0	0
08:00 AM	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	3	0	0	0	0	0	3	0	0	0	0	0
08:30 AM	0	0	0	0	1	0	0	0	0	0	5	0	0	0	0	0
08:45 AM	0	0	0	0	2	0	0	0	0	0	3	0	0	0	0	0

INTERSECTION #4 PM

Start Date: 1/30/2018
 Comment 1: City of Moreno Valley
 Comment 2: N/S: Theodore Street
 Comment 3: E/W: Ironwood Avenue
 Comment 4: Weather: Clear

Cars	Dead End Southbound				Ironwood Avenue Westbound				Theodore Street Northbound				Ironwood Avenue Eastbound			
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
04:00 PM	0	0	0	0	4	3	0	0	4	0	1	0	0	1	6	0
04:15 PM	0	0	0	0	2	2	0	0	8	0	0	0	0	1	7	0
04:30 PM	0	0	0	0	5	2	0	0	4	0	1	0	0	0	5	0
04:45 PM	0	0	0	0	2	3	0	0	6	0	0	0	0	0	5	0
05:00 PM	0	0	0	0	4	2	0	0	4	0	0	0	0	0	4	0
05:15 PM	0	0	0	0	0	0	0	0	4	0	0	0	0	0	3	0
05:30 PM	0	0	0	0	6	0	0	0	6	0	0	0	0	0	4	0
05:45 PM	0	0	0	0	0	0	0	0	3	0	0	0	0	0	1	0

2-Axle Trucks	Dead End Southbound				Ironwood Avenue Westbound				Theodore Street Northbound				Ironwood Avenue Eastbound			
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0

3-Axle Trucks	Dead End Southbound				Ironwood Avenue Westbound				Theodore Street Northbound				Ironwood Avenue Eastbound			
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
04:00 PM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

4+ Axle Trucks	Dead End Southbound				Ironwood Avenue Westbound				Theodore Street Northbound				Ironwood Avenue Eastbound			
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

INTERSECTION #5 AM

Start Date: 1/30/2018
 Comment 1: City of Moreno Valley
 Comment 2: N/S: Redlands Boulevard
 Comment 3: E/W: Eucalyptus Avenue
 Comment 4: Weather: Clear

Cars	Redlands Boulevard Southbound				Eucalyptus Avenue Westbound				Redlands Boulevard Northbound				Eucalyptus Avenue Eastbound				
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	
07:00 AM	0	59	6	0	1	0	2	0	9	132	0	0	0	0	0	0	0
07:15 AM	0	66	6	0	0	0	4	0	3	140	0	0	3	0	2	0	0
07:30 AM	0	91	8	0	1	0	1	0	2	100	0	0	0	0	0	0	0
07:45 AM	0	92	7	0	1	0	2	0	5	101	0	0	2	0	0	0	0
08:00 AM	1	80	6	0	0	0	2	0	4	83	0	0	6	0	1	0	0
08:15 AM	3	64	1	0	0	1	1	0	1	94	3	0	4	0	2	0	0
08:30 AM	1	61	2	0	1	0	20	0	2	78	0	0	2	0	4	0	0
08:45 AM	0	38	3	0	1	0	31	0	0	59	0	0	6	0	0	0	0

2-Axle Trucks	Redlands Boulevard Southbound				Eucalyptus Avenue Westbound				Redlands Boulevard Northbound				Eucalyptus Avenue Eastbound				
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	
07:00 AM	0	2	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0
07:15 AM	0	2	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	1	2	0	0	0	0	0	0	0
07:45 AM	0	1	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0
08:00 AM	0	1	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
08:30 AM	0	1	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0

3-Axle Trucks	Redlands Boulevard Southbound				Eucalyptus Avenue Westbound				Redlands Boulevard Northbound				Eucalyptus Avenue Eastbound				
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	
07:00 AM	0	1	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0
07:15 AM	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
08:45 AM	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0

4+ Axle Trucks	Redlands Boulevard Southbound				Eucalyptus Avenue Westbound				Redlands Boulevard Northbound				Eucalyptus Avenue Eastbound				
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
07:15 AM	0	0	2	0	0	0	1	0	0	0	0	0	2	0	0	0	0
07:30 AM	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0
07:45 AM	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0
08:00 AM	0	0	1	0	0	0	1	0	0	0	0	0	1	0	0	0	0
08:15 AM	0	0	1	0	0	0	3	0	0	2	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0

INTERSECTION #5 PM

Start Date: 1/30/2018
 Comment 1: City of Moreno Valley
 Comment 2: N/S: Redlands Boulevard
 Comment 3: E/W: Eucalyptus Avenue
 Comment 4: Weather: Clear

Cars	Redlands Boulevard Southbound				Eucalyptus Avenue Westbound				Redlands Boulevard Northbound				Eucalyptus Avenue Eastbound			
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
04:00 PM	0	114	0	0	0	0	4	0	0	84	0	0	6	0	3	0
04:15 PM	1	99	4	0	0	0	1	0	0	92	0	0	13	0	5	0
04:30 PM	0	125	0	0	0	0	11	0	0	83	0	0	3	1	1	0
04:45 PM	1	134	1	0	0	0	4	0	0	96	1	0	8	0	2	0
05:00 PM	0	118	0	0	2	0	9	0	0	94	0	0	2	0	5	0
05:15 PM	0	119	3	0	0	0	4	0	0	103	0	0	7	0	0	0
05:30 PM	0	136	2	0	0	0	10	0	0	91	0	0	5	0	0	0
05:45 PM	0	116	0	0	0	0	9	0	1	72	0	0	3	0	1	0

2-Axle Trucks	Redlands Boulevard Southbound				Eucalyptus Avenue Westbound				Redlands Boulevard Northbound				Eucalyptus Avenue Eastbound			
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
04:00 PM	0	3	0	0	0	0	0	0	0	0	0	0	1	0	0	0
04:15 PM	0	3	0	0	0	0	0	0	0	2	0	0	0	0	0	0
04:30 PM	0	2	0	0	0	0	1	0	0	2	0	0	0	0	0	0
04:45 PM	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0
05:00 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	3	0	0	0	0	1	0	0	0	0	0	0	0	0	0
05:30 PM	0	1	0	0	0	0	0	0	0	2	0	0	0	0	0	0
05:45 PM	0	2	0	0	0	0	0	0	0	2	0	0	0	0	0	0

3-Axle Trucks	Redlands Boulevard Southbound				Eucalyptus Avenue Westbound				Redlands Boulevard Northbound				Eucalyptus Avenue Eastbound			
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0
04:30 PM	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0

4+ Axle Trucks	Redlands Boulevard Southbound				Eucalyptus Avenue Westbound				Redlands Boulevard Northbound				Eucalyptus Avenue Eastbound			
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
04:00 PM	1	1	1	0	0	0	0	0	0	1	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0
04:30 PM	0	0	3	0	0	0	1	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0
05:00 PM	0	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0

INTERSECTION #6 AM

Start Date: 1/30/2018
 Comment 1: City of Moreno Valley
 Comment 2: N/S: Redlands Boulevard
 Comment 3: E/W: SR-60 Eastbound Ramps
 Comment 4: Weather: Clear

Cars	Redlands Boulevard Southbound				Dead End Westbound				Redlands Boulevard Northbound				SR-60 Eastbound Ramps Eastbound			
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
07:00 AM	0	48	4	0	0	0	0	0	10	140	0	0	50	0	11	0
07:15 AM	0	63	10	0	0	0	0	0	16	105	0	0	39	0	10	0
07:30 AM	0	79	4	0	0	0	0	0	14	95	0	0	35	0	25	0
07:45 AM	0	85	7	0	0	0	0	0	17	82	0	0	49	0	17	0
08:00 AM	0	70	7	0	0	0	0	0	15	77	0	0	64	0	16	0
08:15 AM	0	46	0	0	0	0	0	0	10	83	0	0	72	0	21	0
08:30 AM	0	42	8	0	0	0	0	0	9	106	0	0	61	0	12	0
08:45 AM	0	28	4	0	0	0	0	0	10	78	0	0	72	0	16	0

2-Axle Trucks	Redlands Boulevard Southbound				Dead End Westbound				Redlands Boulevard Northbound				SR-60 Eastbound Ramps Eastbound			
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
07:15 AM	0	2	0	0	0	0	0	0	0	2	0	0	2	0	0	0
07:30 AM	0	0	1	0	0	0	0	0	0	3	0	0	2	0	2	0
07:45 AM	0	2	0	0	0	0	0	0	0	5	0	0	4	0	0	0
08:00 AM	0	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	2	0	0	1	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	3	0	0	2	0	1	0
08:45 AM	0	0	0	0	0	0	0	0	0	1	0	0	1	0	1	0

3-Axle Trucks	Redlands Boulevard Southbound				Dead End Westbound				Redlands Boulevard Northbound				SR-60 Eastbound Ramps Eastbound			
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0
07:15 AM	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0

4+ Axle Trucks	Redlands Boulevard Southbound				Dead End Westbound				Redlands Boulevard Northbound				SR-60 Eastbound Ramps Eastbound			
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
07:00 AM	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	3	0	0	1	0	2	0
07:30 AM	0	0	0	0	0	0	0	0	0	2	0	0	3	0	1	0
07:45 AM	0	0	1	0	0	0	0	0	0	1	0	0	2	0	0	0
08:00 AM	0	0	1	0	0	0	0	0	1	2	0	0	2	0	2	0
08:15 AM	0	0	0	0	0	0	0	0	1	2	0	0	1	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0

INTERSECTION #6 PM

Start Date: 1/30/2018
 Comment 1: City of Moreno Valley
 Comment 2: N/S: Redlands Boulevard
 Comment 3: E/W: SR-60 Eastbound Ramps
 Comment 4: Weather: Clear

Cars	Redlands Boulevard Southbound				Dead End Westbound				Redlands Boulevard Northbound				SR-60 Eastbound Ramps Eastbound			
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
04:00 PM	0	85	8	0	0	0	0	0	10	84	0	0	95	0	26	0
04:15 PM	0	75	12	0	0	0	0	0	14	92	0	0	98	0	35	0
04:30 PM	0	93	9	0	0	0	0	0	10	79	0	0	102	0	31	0
04:45 PM	0	93	13	0	0	0	0	0	20	90	0	0	103	0	33	0
05:00 PM	0	97	9	0	0	0	0	0	14	87	0	0	110	0	33	0
05:15 PM	0	107	6	0	0	0	0	0	14	92	0	0	104	0	26	0
05:30 PM	0	103	13	0	0	0	0	0	5	104	0	0	99	0	24	0
05:45 PM	0	87	10	0	0	0	0	0	10	70	0	0	109	0	25	0

2-Axle Trucks	Redlands Boulevard Southbound				Dead End Westbound				Redlands Boulevard Northbound				SR-60 Eastbound Ramps Eastbound			
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
04:00 PM	0	5	1	0	0	0	0	0	1	3	0	0	1	0	2	0
04:15 PM	0	0	0	0	0	0	0	0	0	1	0	0	3	0	0	0
04:30 PM	0	1	0	0	0	0	0	0	0	3	0	0	1	0	2	0
04:45 PM	0	0	2	0	0	0	0	0	1	2	0	0	2	0	2	0
05:00 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	3	0	0	0	0	0	0	0	1	0	0	0	0	0	0
05:30 PM	0	2	1	0	0	0	0	0	0	2	0	0	1	0	0	0
05:45 PM	0	1	0	0	0	0	0	0	0	1	0	0	2	0	2	0

3-Axle Trucks	Redlands Boulevard Southbound				Dead End Westbound				Redlands Boulevard Northbound				SR-60 Eastbound Ramps Eastbound			
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	1	0	0	2	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0

4+ Axle Trucks	Redlands Boulevard Southbound				Dead End Westbound				Redlands Boulevard Northbound				SR-60 Eastbound Ramps Eastbound			
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
04:00 PM	0	1	0	0	0	0	0	0	0	1	0	0	0	0	2	0
04:15 PM	0	0	0	0	0	0	0	0	0	2	0	0	2	0	1	0
04:30 PM	0	1	1	0	0	0	0	0	0	1	0	0	0	0	1	0
04:45 PM	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1	0
05:00 PM	0	1	0	0	0	0	0	0	0	2	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	2	0	0	1	0	0	0
05:30 PM	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

INTERSECTION #7 AM

Start Date: 1/30/2018
 Comment 1: City of Moreno Valley
 Comment 2: N/S: Redlands Boulevard
 Comment 3: E/W: Spruce Avenue/SR-60 Westbound Ramps
 Comment 4: Weather: Clear

Cars	Redlands Boulevard Southbound				SR-60 Westbound Ramps Westbound				Redlands Boulevard Northbound				Spruce Avenue Eastbound			
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
07:00 AM	61	42	0	0	5	0	10	0	1	156	26	0	0	0	1	0
07:15 AM	72	64	1	0	11	0	5	0	1	123	27	0	0	3	0	0
07:30 AM	73	80	0	0	10	0	9	0	2	105	26	0	0	0	2	0
07:45 AM	76	72	1	0	9	0	12	0	7	101	14	0	1	1	1	0
08:00 AM	61	55	0	0	11	0	5	0	4	123	20	0	1	0	3	0
08:15 AM	53	46	0	0	8	0	4	0	0	137	17	0	0	2	1	0
08:30 AM	53	38	1	0	7	0	9	0	3	122	44	0	1	0	0	0
08:45 AM	38	26	3	0	3	0	5	0	0	108	39	0	3	0	0	0

2-Axle Trucks	Redlands Boulevard Southbound				SR-60 Westbound Ramps Westbound				Redlands Boulevard Northbound				Spruce Avenue Eastbound			
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	2	0	0	0	0	0	0	0	2	2	0	0	0	0	0
07:30 AM	2	1	0	0	0	0	0	0	0	2	2	0	0	0	0	0
07:45 AM	0	0	1	0	0	0	0	0	0	5	0	0	1	0	0	0
08:00 AM	0	0	0	0	1	0	0	0	0	2	0	0	0	0	1	0
08:15 AM	1	0	1	0	0	0	0	0	0	0	1	0	2	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0
08:45 AM	2	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0

3-Axle Trucks	Redlands Boulevard Southbound				SR-60 Westbound Ramps Westbound				Redlands Boulevard Northbound				Spruce Avenue Eastbound			
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
08:30 AM	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0

4+ Axle Trucks	Redlands Boulevard Southbound				SR-60 Westbound Ramps Westbound				Redlands Boulevard Northbound				Spruce Avenue Eastbound			
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
07:00 AM	0	1	0	0	0	0	1	0	0	0	1	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	1	3	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0
07:45 AM	1	1	0	0	0	0	0	0	0	3	1	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	0	0	0	3	1	0	0	0	0	0
08:15 AM	1	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0
08:30 AM	2	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0

INTERSECTION #7 PM

Start Date: 1/30/2018
 Comment 1: City of Moreno Valley
 Comment 2: N/S: Redlands Boulevard
 Comment 3: E/W: Spruce Avenue/SR-60 Westbound Ramps
 Comment 4: Weather: Clear

Cars	Redlands Boulevard Southbound				SR-60 Westbound Ramps Westbound				Redlands Boulevard Northbound				Spruce Avenue Eastbound			
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
04:00 PM	71	82	0	0	12	0	9	0	1	153	27	0	0	2	2	0
04:15 PM	73	80	0	0	8	0	7	0	4	158	29	0	1	2	2	0
04:30 PM	74	92	1	0	5	0	3	0	3	140	24	0	1	3	1	0
04:45 PM	66	94	1	0	15	0	4	0	0	176	24	0	0	2	0	0
05:00 PM	69	93	0	0	7	0	9	0	4	165	29	0	0	3	1	0
05:15 PM	72	104	0	0	13	0	4	0	0	175	37	0	0	2	2	0
05:30 PM	98	100	0	0	13	0	6	0	1	166	25	0	1	1	2	0
05:45 PM	72	93	0	0	5	0	7	0	2	158	25	0	0	0	0	0

2-Axle Trucks	Redlands Boulevard Southbound				SR-60 Westbound Ramps Westbound				Redlands Boulevard Northbound				Spruce Avenue Eastbound			
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
04:00 PM	0	4	0	0	0	1	0	0	0	1	1	0	0	0	0	0
04:15 PM	1	0	0	0	0	0	1	0	1	0	1	0	0	0	0	0
04:30 PM	1	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0
04:45 PM	0	2	0	0	0	0	0	0	0	1	0	0	0	1	0	0
05:00 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	2	0	0	0	0	1	0	0	0	1	0	0	0	0	0
05:30 PM	1	2	0	0	0	0	0	0	0	1	2	0	0	0	0	0
05:45 PM	3	1	0	0	0	0	0	0	1	1	0	0	0	1	0	0

3-Axle Trucks	Redlands Boulevard Southbound				SR-60 Westbound Ramps Westbound				Redlands Boulevard Northbound				Spruce Avenue Eastbound			
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	1	0	0	0	2	0	0	0	0	0
04:30 PM	1	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0

4+ Axle Trucks	Redlands Boulevard Southbound				SR-60 Westbound Ramps Westbound				Redlands Boulevard Northbound				Spruce Avenue Eastbound			
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
04:00 PM	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0
04:15 PM	0	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0
04:30 PM	1	1	0	0	1	0	0	0	0	0	1	0	0	0	0	0
04:45 PM	2	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
05:00 PM	2	0	0	0	0	0	0	0	0	0	2	0	0	0	1	0
05:15 PM	0	0	0	0	0	0	0	0	0	1	2	0	0	0	0	0
05:30 PM	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

INTERSECTION #8 AM

Start Date: 1/30/2018
 Comment 1: City of Moreno Valley
 Comment 2: N/S: Redlands Boulevard
 Comment 3: E/W: Ironwood Avenue
 Comment 4: Weather: Clear

Cars	Redlands Boulevard Southbound				Ironwood Avenue Westbound				Redlands Boulevard Northbound				Ironwood Avenue Eastbound			
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
07:00 AM	0	102	24	0	0	1	1	0	2	168	1	0	33	0	0	0
07:15 AM	0	139	33	0	1	1	0	0	7	129	2	0	21	1	5	0
07:30 AM	1	143	26	0	0	4	0	0	9	98	0	0	25	2	6	0
07:45 AM	0	139	25	0	2	2	1	0	11	106	0	0	20	1	11	0
08:00 AM	0	108	12	0	2	1	0	0	4	121	2	0	37	2	8	0
08:15 AM	0	88	11	0	1	0	2	0	2	131	0	0	23	1	1	0
08:30 AM	1	92	19	0	0	2	0	0	0	135	3	0	11	0	5	0
08:45 AM	0	54	21	0	0	1	5	0	0	134	4	0	0	0	24	0

2-Axle Trucks	Redlands Boulevard Southbound				Ironwood Avenue Westbound				Redlands Boulevard Northbound				Ironwood Avenue Eastbound			
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
07:00 AM	0	0	0	0	0	0	0	0	1	0	0	0	3	0	0	0
07:15 AM	0	2	0	0	0	0	0	0	1	1	0	0	0	1	0	0
07:30 AM	0	3	2	0	0	2	1	0	0	2	0	0	0	0	1	0
07:45 AM	0	1	0	0	0	0	0	0	0	4	0	0	0	1	1	0
08:00 AM	0	0	0	0	0	0	0	0	2	1	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	1	2	0	0	0	0	1	0
08:30 AM	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0
08:45 AM	0	2	0	0	0	0	0	0	0	4	0	0	0	0	0	0

3-Axle Trucks	Redlands Boulevard Southbound				Ironwood Avenue Westbound				Redlands Boulevard Northbound				Ironwood Avenue Eastbound			
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
07:00 AM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

4+ Axle Trucks	Redlands Boulevard Southbound				Ironwood Avenue Westbound				Redlands Boulevard Northbound				Ironwood Avenue Eastbound				
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	
07:00 AM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0
07:15 AM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0
07:45 AM	0	1	0	0	0	0	0	0	0	2	1	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0
08:15 AM	0	1	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0
08:30 AM	0	3	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0

INTERSECTION #8 PM

Start Date: 1/30/2018
 Comment 1: City of Moreno Valley
 Comment 2: N/S: Redlands Boulevard
 Comment 3: E/W: Ironwood Avenue
 Comment 4: Weather: Clear

Cars	Redlands Boulevard Southbound				Ironwood Avenue Westbound				Redlands Boulevard Northbound				Ironwood Avenue Eastbound			
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
04:00 PM	3	146	39	0	1	8	1	0	4	161	0	0	14	5	6	0
04:15 PM	2	152	44	0	0	9	1	0	5	149	1	0	26	2	3	0
04:30 PM	0	163	53	0	0	3	1	0	5	153	2	0	20	3	5	0
04:45 PM	1	160	41	0	1	1	3	0	1	171	0	0	26	4	3	0
05:00 PM	0	162	47	0	0	4	1	0	3	174	0	0	28	4	3	0
05:15 PM	2	181	39	0	0	3	1	0	3	170	4	0	21	6	5	0
05:30 PM	2	169	46	0	2	3	1	0	3	172	1	0	39	2	9	0
05:45 PM	0	154	47	0	0	2	0	0	5	168	0	0	24	2	6	0

2-Axle Trucks	Redlands Boulevard Southbound				Ironwood Avenue Westbound				Redlands Boulevard Northbound				Ironwood Avenue Eastbound			
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
04:00 PM	0	5	0	0	0	0	0	0	0	1	0	0	0	0	0	0
04:15 PM	0	1	2	0	0	0	0	0	0	2	0	0	0	0	0	0
04:30 PM	0	1	1	0	0	0	0	0	0	3	0	0	0	1	2	0
04:45 PM	0	2	1	0	0	0	0	0	0	2	0	0	0	0	0	0
05:00 PM	0	1	0	0	0	0	0	0	0	0	0	0	2	0	0	0
05:15 PM	0	3	0	0	0	0	0	0	0	1	0	0	1	0	0	0
05:30 PM	0	3	0	0	0	0	0	0	0	1	0	0	0	0	0	0
05:45 PM	0	5	0	0	0	1	0	0	0	1	0	0	0	0	0	0

3-Axle Trucks	Redlands Boulevard Southbound				Ironwood Avenue Westbound				Redlands Boulevard Northbound				Ironwood Avenue Eastbound			
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
04:00 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
04:30 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

4+ Axle Trucks	Redlands Boulevard Southbound				Ironwood Avenue Westbound				Redlands Boulevard Northbound				Ironwood Avenue Eastbound			
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
04:00 PM	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
04:30 PM	0	2	0	0	0	0	0	0	0	1	0	0	0	0	0	0
04:45 PM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
05:30 PM	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Appendix B

SR-60/Theodore IC PA/ED Methodology and Traffic Volumes Report

**SR-60/THEODORE INTERCHANGE PA/ED
METHODOLOGY AND TRAFFIC VOLUMES REPORT
EA OM590**

Prepared under Michael Baker International by:

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San Bernardino, CA 92408

August 2018



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1. INTRODUCTION

The SR-60/Theodore Interchange is currently a two-quadrant cloverleaf with side-street stop controlled ramp intersections (see Exhibit 1). This configuration is sufficient to handle the current low traffic demand. At present the interchange's catchment area is sparsely developed with the exception of the 1.8 million square-foot Skechers high-cube warehouse. Recently, the World Logistics Center (WLC) Specific Plan was approved for development to the south of the interchange. The WLC would consist primarily of 41 million square feet of high-cube logistics warehouse buildings. The area north of SR-60 is zoned for development as a mix of office buildings and single-family dwellings.



Exhibit 1: Existing Configuration of the SR-60/Theodore Interchange

With the development of the WLC and potential development of the area north of SR-60, the traffic demand at the SR-60/Theodore IC will be much greater than at present. The proposed project is to improve the capacity of the SR-60/Theodore IC to accommodate the anticipated increase in demand. The operations analysis will be based on traffic forecasts assuming development of the WLC, because that is the currently approved land use.

In September 2012 Caltrans District 8 issued a new Transportation Concept Report for SR-60 from the Los Angeles/San Bernardino County Line to the I-10 interchange. This report found that in the long term there appeared to be a need for additional general purpose lanes between Redlands Boulevard and Gilman Springs Road (i.e. the sections on either side of the Theodore IC).

2. METHODOLOGY

Study Years

The study covers Existing Conditions (2018), Opening Year conditions (2025) and a long-term Horizon Year forecast (2045). The ramp closure study will use the Existing Conditions traffic volumes while the traffic operations analysis and environmental impact analysis will use the Opening Year and Horizon Year volumes.

Geographic Scope of Study

The geography scope of the study is shown in Exhibit 2. The study intersections included the ramp intersections of the Theodore IC (intersections #2 and #3 in Exhibit 2), the intersections directly up- or down-stream of them along Theodore Street (#1, #4) and the corresponding intersections at the most likely diversion route during construction closures of the Theodore IC (the Redlands Boulevard IC, intersections #5 through #8). The eight study intersections are:

- 1) Theodore Street/Eucalyptus Avenue
- 2) Theodore Street/Eastbound SR-60 Ramps
- 3) Theodore Street/Westbound SR-60 Ramps
- 4) Theodore Street/Ironwood Avenue
- 5) Redlands Boulevard/Eucalyptus Avenue
- 6) Redlands Boulevard/Eastbound SR-60 Ramps
- 7) Redlands Boulevard/Westbound SR-60 Ramps
- 8) Redlands Boulevard/Ironwood Avenue

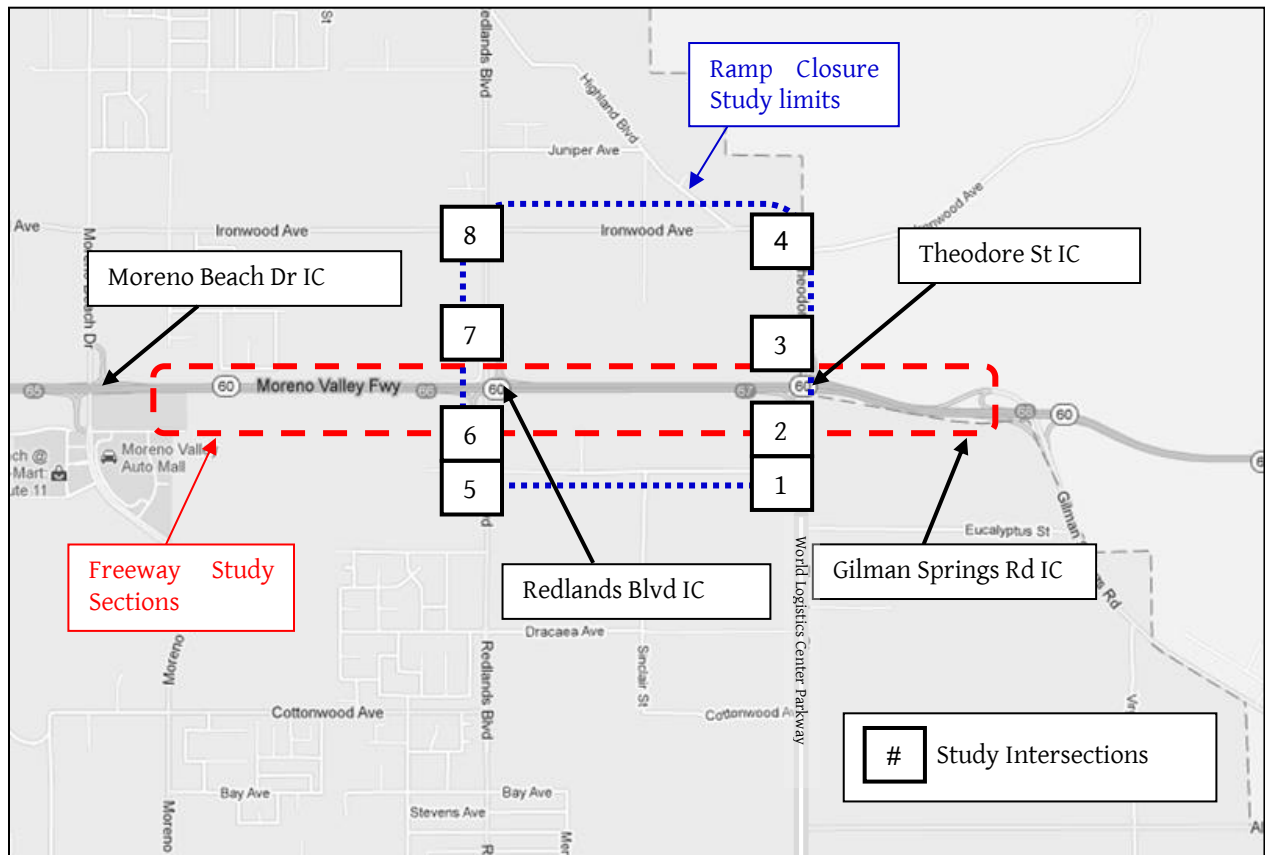


Exhibit 2: Study Area

The freeway study area consisted of SR-60 between the westbound ramps of the Moreno Beach Drive IC to the eastbound off-ramp at the Gilman Springs Road IC. This allows for analysis of weaving patterns between Theodore IC and the nearest interchanges upstream and downstream (Gilman Springs Rd IC and Redlands Blvd IC), as well as enabling us to determine if changes in the operations of the Theodore IC could result in diversion of traffic even further west (Moreno Beach Drive IC).

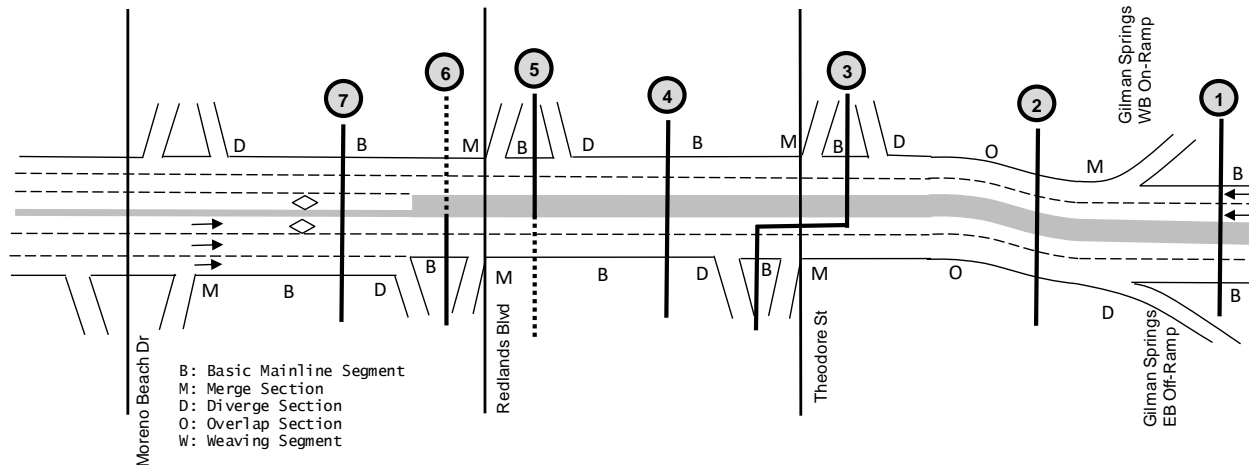


Exhibit 3: Existing Lane Configuration and Freeway Study Sections

The closure of the existing Theodore IC during construction of the new interchange necessitates a ramp closure study showing the detour routes that will be used while the interchange is closed. The geographic scope of the ramp closure study is based on the planned use of Eucalyptus Avenue, Redlands Boulevard, and Ironwood Avenue as the detour routes during construction of the Theodore Street IC.

Traffic Counts

Traffic counts were collected on Wednesday, May 31st, 2017. The study intersections and freeway sections were all counted on the same day. Some of the study intersections were also counted in January of 2018. For the ramp terminal intersections, 2017 intersection counts are almost all higher than 2018. And, since we only have the freeway counts for 2017, we will use the 2017 counts for the intersections and ramps along Theodore St. The Redlands Blvd/Ironwood Ave intersection counts are higher in 2018 than 2017 during the worse (PM) peak hour, so 2018 counts will be used for the intersections along Redlands Blvd.

Freeway ramp volumes were found using the ramp terminal intersection counts (except for Gilman Springs Rd, for which the ramps were counted directly). Freeway mainline volumes were collected at one location (between the on- and off-ramps of the Gilman Springs Rd IC), and calculated for other segments using ramp volumes assuming flow is conserved (no congestion in existing conditions).

Traffic Forecasting Approach

The macro-level traffic forecasting was conducted using the Riverside County Transportation Analysis Model (RivTAM)¹. RivTAM is a version of the SCAG's six-county model with additional detail (traffic analysis zones and local roads) added within Riverside County. It was developed for TIAs in Riverside County as a replacement for several older models that covered different portions of the county. RivTAM has both the geographic scope needed

¹ The modeling data in RivTAM is based upon modeling information originally developed by the Southern California Association of Governments (SCAG), which has been modified by WSP. The modeling data used in this study does not necessarily reflect the official views or policies of SCAG. WSP is wholly responsible for the modeling results and the content of the documentation.

to capture all likely impacts and conformity with regional planning assumptions. There is a memorandum of understanding² among the jurisdictions of Riverside County that encourages the use of the RivTAM model for TIAs. The MOU reads, in part,

"RivTAM was designed to address most city and county level modeling needs in Riverside County. The model inputs and zone system were designed with sufficient detail to support most city/county planning applications. The modeling methodology can support evaluation of a range of highway, HOV, and transit scenarios. The Agencies encourage the use of RivTAM by Cities, other governmental jurisdictions, and private entities for their own transportation planning purposes. Universal use of RivTAM by the Agencies, Cities, other governmental jurisdictions, and private entities, and their consultants will ensure that planning decisions in Riverside County are made on accurate and consistent travel forecasts." (MOU for RivTAM Model Maintenance, Update, and Usage, page 4)

The version of RivTAM model that was developed for the WLC EIR traffic analysis was used in this study. This version included several modifications from earlier versions of RivTAM, including:

- The traffic analysis zones (TAZs) within the WLC site were subdivided to allow for a detailed analysis of traffic distribution patterns.
- A 2018 model year was created by adding in land use changes and network changes completed between 2012 and 2018.
- A 2025 model year was created for analysis of the first phase of WLC by interpolating the land use growth assumptions found in SCAG's 2016 RTP/SCS, which had model years of 2012 and 2040. This model reflects all known development projects in the greater Moreno Valley area that will foreseeably be completed by 2025 including the first 23 million square feet of the WLC. The network includes roadway projects from the STIP, RTP, and City of Moreno Valley General Plan programmed to be completed by 2025. All the improvements listed in Exhibit 4 are included in the 2025 model network.
- A 2040 model year was created for the WLC traffic analysis using SCAG's 2016 RTP/SCS, which models 2040. This model also includes all foreseeable development projects in the greater Moreno Valley area including buildout (41 million square feet) of the WLC. The network is consistent with the SCAG 2040 RTP/SCS model network in the greater Moreno Valley area.
- Forecasts for the 2045 study year were developed by extrapolating the ambient (i.e. non-WLC) growth for the 2025-to-2040 period for an additional 5 years and then adding in the traffic from full build-out of the WLC. No roadway projects were added because no adopted plans are available beyond 2040 so any additions would have been speculative.
- Full build-out of the Moreno Valley General Plan was assumed, including the WLC Specific Plan land uses and network. Maps of the land uses and roadway network in the general plan are shown in Attachment 1.
- The 2040 network assumptions followed those in SCAG's 2040 financially constrained RTP project set. The 2040 Network is consistent with roadway improvements in the City of Moreno Valley General Plan including the World Logistics Center.
- RivTAM quantifies non-residential developments in units of employees rather than acres or square feet of building space. For developments in the City of Moreno Valley, future developments' acreage was converted into square feet of development using the existing developmental densities in Moreno Valley, and then the square footage was used to estimate the number of employees using the conversion factors in the City's General Plan. For areas outside Moreno Valley the conversion factors used in the Riverside County General Plan were used in this analysis.
- In the trip distribution stage of RivTAM the model assigns destinations to the trucks trips originating in the WLC warehouses. Since WLC warehouses are attractors of truck trips as well as generators of truck

² MOU for RivTAM Model Maintenance, Update, and Usage. Not dated, but signed by various parties between June and September, 2010. The signatories were Riverside County Transportation Department, Riverside County Transportation Commission, Western Riverside Council of Governments, Coachella Valley Association of Governments, Southern California Association of Governments, and Caltrans.

trips, the model assigns approximately 10% of WLC truck trips to destinations that are other warehouses within the project site. As this does not reflect the WLC's expected operations and might result in an under-estimation of truck trips entering and leaving the WLC site, these internal trips were replaced with an equal number of external trips that were distributed among the routes available to trucks leaving the site. Since some trucks may in fact have deliveries or pick-ups at more than one warehouse within the WLC site this represents a conservative assumption.

All other RivTAM parameters were left unchanged. The outputs from RivTAM were post-processed to generate forecasts for the traffic on the study segments of SR-60 and the turning movements at the ramp intersections. The post-processing included:

- RivTAM forecasts traffic for two peak periods; a three-hour period in the morning and a four-hour period in the evening. These were converted into forecasts for single peak hours using conversion factors in the *San Bernardino County CMP*.
- The link-level forecasts from RivTAM were converted into turning movements for the intersection-level analysis. The Furness method³ was used to allocate approach volumes among the possible turning movements based on traffic counts of existing traffic patterns.
- The RivTAM model was calibrated to ensure that its forecasts are reasonable. Nevertheless, a model covering a six-county area cannot be expected to be perfectly accurate on each of the hundreds of thousands of links in the model. For that reason, best industry practice is to use the model to forecast the change in traffic volumes and add this change to existing traffic volumes, rather than using the forecast volumes directly from model. This technique, called the “difference method”, was used in this TIA⁴. It was determined based on review of counts and model volumes to use the difference method rather than the ratio method. The difference method eliminates certain types of imperfections in the forecast of background traffic and so improves the accuracy of traffic forecasts.

The demand information generated by this task (for example westbound on-movements in the morning peak hour, eastbound off-movements in the evening peak hour, etc.) was then used as inputs for the intersection and freeway LOS analysis.

Assumptions Regarding SR-60

SCAG's 2016 RTP includes a number of improvement projects relevant to this study including improvements to Redlands Boulevard, Theodore Street, and Gilman Springs Road and their interchanges (see Exhibit 4). For this analysis we assumed that the improvements to Redland Blvd. and Gilman Springs Rd. would take place, while the improvements to Theodore Street and its interchange are to be determined in the current study and so were not assumed.

The 2016 RTP also calls for the section between Redlands Blvd. and Gilman Springs Rd. to be widened from 4 lanes to 6 lanes and this widening is assumed to take place before 2040.

Assumptions Regarding the WLC

The assumptions for the WLC were taken from the EIR update currently being prepared. The WLC road network (see Exhibit 5) is sparse due to the need for large blocks to accommodate the very large buildings that are the predominant feature of the plan. In accordance with an agreement between the City and the developer of the WLC

³ The Furness method is a technique for balancing the forecast turning movements in such a way as to match both the total approach volume and the total departure volume for each leg predicted in the traffic model. Furness K.P. *Time Function Interaction*. Traffic Engineering and Control, Vol. 7, No. 7, 1970, pp. 19-36

⁴ This is the “difference method” described in NCHRP Report 765 Analytical Travel Forecasting Approaches for Project-Level Planning and Design, Transportation Research Board, 2014.

to use the ITE trip-gen rates⁵ for the EIR, the trip generation in the RivTAM model was factored up within the model run to match the ITE rates.

⁵ The rates were taken from ITE's Trip Generation Manual 10th Edition for high-cube warehouses (ITE land use code 154). The rates were 1.400 vehicle-trips/day per 1,000 square feet of warehouse space, 0.08 VT/KSF for the AM peak hour, and 0.10 VT/KSF for the PM peak hour.

Exhibit 4: Relevant Projects as They Appear in the 2016 RTP

FTIP ID	Description	Project Cost (\$1,000's)
At Redlands Boulevard		
RIV080902	AT SR-60/REDLANDS BLVD – WIDEN OC FROM 2 TO 6 THRU LANES; WIDEN WB EXIT & ENTRY RAMP FROM 1 LANE TO 2 LANES AT EXIT/ENTRY, 3 LANES AT ARTERIAL AND HOV AT ENTRY; WIDEN EB EXIT & ENTRY RAMP FROM 1 LANE TO 2 LANES AT EXIT/ENTRY AND HOV AT ENTRY; ADD AUX LANES 1000' EACH DIRECTION WEST OF IC AND 1700' EACH DIRECTION EAST OF IC	\$52,000
RIV080918	IN THE CITY OF MORENO VALLEY – WIDEN REDLANDS BLVD BETWEEN SR-60 AND CACTUS AVE FROM 2 TO 4 LANES. IMPROVEMENTS INCLUDE MEDIANS, TRAFFIC SIGNALS, CHANNELIZATION, LEFT TURN POCKETS, DEDICATED RIGHT TURN, DRAINAGE, LANDSCAPING, SIDEWALKS, BIKE LANES, AND TRAILS.	\$18,300
3A07161	REDLANDS BLVD: FROM SPRUCE AVE TO IRONWOOD AVE: WIDEN 2 TO 4 LANES/STREET IMPROVEMENT	\$2,000
3A07159	REDLANDS BLVD: FROM KALMIA AVE TO LOCUST AVE: WIDEN 2 TO 4 LANES/STREET IMPROVEMENT	\$372
3A07148	REDLANDS BLVD: FROM IRONWOOD AVE TO KALMIA AVE: WIDEN 2 TO 4 LANES/STREET IMPROVEMENT	\$884
At Theodore Street		
RIV080904	AT SR-60/THEODORE ST IC: WIDEN OC FROM 2 TO 6 THRU LANES; WIDEN WB EXIT/ENTRY RAMP FROM 1 LN TO 2 LNS AT EXIT/ENTRY, 3 LNS AT ART. W/ HOV AT ENTRY; WIDEN EB EXIT RAMP FROM 1 LN TO 2 LNS AT EXIT AND 3 LNS AT ART.; WIDEN EB ENTRY RAMP FROM 1 LN TO 2 LNS W/HOV; ADD EB LOOP ENTRY WITH 2 LNS AT ART. AND 1 LN AT ENTRY; ADD AUX LNS 1700' EACH DIR WEST OF IC & 1200' EB AND 2200' WB EAST OF IC -RTP 3M0801	\$52,000
RIV090908	IN MORENO VALLEY, WIDEN THEODORE ST FROM 2 TO 4 LANES FROM ALESSANDRO BLVD TO EUCALYPTUS AVE, INCLUDING TRAFFIC SIGNALS, CHANNELIZATION IMPROVEMENTS, LEFT-TURN POCKETS, DEDICATED RIGHT-TURN LANES, DRAINAGE IMPROVEMENTS, LANDSCAPING, SIDEWALKS, AND BIKE LANES.	\$15,456
RIV090909	IN MORENO VALLEY, WIDEN THEODORE ST FROM 2 TO 4 LANES + 2 AUX LANES FROM EUCALYPTUS AVE TO SR-60 EB RAMP, INCLUDING MEDIANS, TRAFFIC SIGNALS, CHANNELIZATION IMPROVEMENTS, LEFT-TURN POCKETS, DEDICATED RIGHT-TURN LANES, DRAINAGE IMPROVEMENTS, LANDSCAPING, SIDEWALKS, AND BIKE LANES.	\$4,791
RIV090910	IN MORENO VALLEY, WIDEN THEODORE ST FROM 2 TO 4 LANES FROM SR-60 WB RAMP TO IRONWOOD AVE, INCLUDING TRAFFIC SIGNALS, CHANNELIZATION IMPROVEMENTS, LEFT-TURN POCKETS, DEDICATED RIGHT-TURN LANES, DRAINAGE IMPROVEMENTS, LANDSCAPING, SIDEWALKS, AND BIKE LANES.	\$4,791
At Gilman Springs Road		
RIV080903	AT SR-60/GILMAN SPRINGS RD IC – REALIGN GILMAN SPRINGS RD/REMOVE EXISTING EB/WB RAMP; WIDEN OC FROM 2 TO 6 THRU LANES; WB EXIT IS 1 LANE WIDENING TO 2 LANES THEN TO 3 LANES AT ARTERIAL, WB LOOP & EB ENTRY RAMP FROM 1 LANE TO 2 LANES W/ HOV; WIDEN EB EXIT RAMP FROM 1 LANE TO 2 LANES AT EXIT AND 3 LANES AT ARTERIAL; ADD AUX LANES TO WEST OF IC 1200' EB AND 2200' WB	\$70,000
RIV080908	IN THE CITY OF MORENO VALLEY – WIDEN GILMAN SPRINGS RD BETWEEN SR-60 AND ALESSANDRO BLVD FROM 2 TO 6 LANES. IMPROVEMENTS INCLUDE MEDIANS, TRAFFIC SIGNALS, CHANNELIZATION, LEFT TURN POCKETS, DEDICATED RIGHT TURN, DRAINAGE, ACCESS ROADS, LANDSCAPING, SIDEWALKS, AND BIKE LANES.	\$41,500

RIV080909	IN THE CITY OF MORENO VALLEY - WIDEN GILMAN SPRINGS RD BETWEEN ALESSANDRO BLVD AND BRIDGE ST FROM 2 TO 6 LANES. IMPROVEMENTS INCLUDE MEDIANS, TRAFFIC SIGNALS, CHANNELIZATION, LEFT TURN POCKETS, DEDICATED RIGHT TURN, DRAINAGE, ACCESS ROADS, LANDSCAPING, SIDEWALKS, AND BIKE LANES.	\$51,000
At Eucalyptus Avenue		
RIV091002	IN WESTERN RIVERSIDE COUNTY IN THE CITY OF MORENO VALLEY - EUCALYPTUS AVE. EXTENSION: CONSTRUCTION OF 3 THROUGH LANES (2 LANES WB & 1 LANE EB) BETWEEN REDLANDS BLVD. AND THEODORE STREET, INCLUDING THE INSTALLATION OF MEDIANS, LEFT TURN POCKETS, DEDICATED RIGHT TURN LANES, DRAINAGE IMPROVEMENTS, LANDSCAPING, SIDEWALKS, AND A CLASS I BIKE PATH.	\$7,266
RIV091003	IN WESTERN RIVERSIDE COUNTY IN THE CITY OF MORENO VALLEY - EUCALYPTUS AVE. WIDENING/EXTENSION: CONSTRUCTION OF A 4TH THROUGH LANE IN THE EASTERN DIRECTION FROM REDLANDS BLVD. TO THEODORE ST & EXTENSION OF EUCALYPTUS AVE. TO REDLANDS BLVD., WITH A SIGNALIZED INTERSECTION.	\$3,550
At SR-60		
RIV151220	IN WESTERN RIVERSIDE COUNTY IN THE CITY OF MORENO VALLEY ALONG SR 60 - WIDEN FROM TWO TO THREE LANES IN EACH DIRECTION IN THE EXISTING MEDIAN TO PROVIDE ONE ADDITIONAL GENERAL PURPOSE LANE IN EACH DIRECTION FROM REDLANDS BLVD. TO GILMAN SPRINGS RD.	\$7,500
RIV120201	ON SR-60 NEAR BEAUMONT: CONSTRUCT NEW EASTBOUND AND WESTBOUND TRUCK LANES FROM GILMAN SPRINGS RD TO 1.47 MILES WEST OF JACK RABBIT TRAIL AND UPGRADE EXISTING INSIDE AND OUTSIDE SHOULDERS TO STANDARD WIDTHS (10-FT INSIDE SHOULDER AND 10-FT OUTSIDE SHOULDER) (EA: 0N69U) - CMAQ PM2.5 BENEFITS PROJECT. \$802.9 TC WILL BE UTILIZED FOR CMAQ ENG IN FY 14/15.	\$126,282

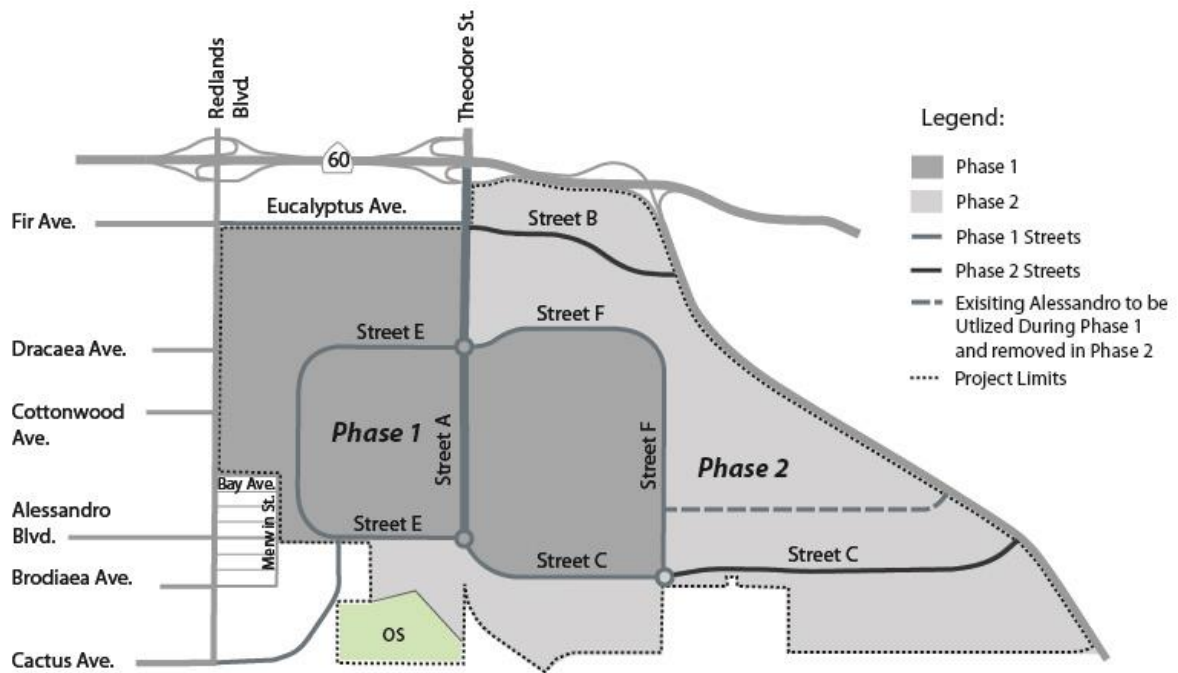


Exhibit 5: WLC Road Network

Level of Service (LOS) Analysis

The level of service (LOS) for study intersections will be determined using the Highway Capacity Manual 6th Edition methodology found in Synchro 10. HCM 6th Edition Approach C, multiperiod analysis, is expected to not be necessary because forecasts are lower than previous forecasts that found no intersections exceeding capacity.

The LOS analysis for freeways will be performed using HCM 6th Edition Approach C. Each direction of travel will be analyzed using the freeway facility function in HCS 7.

Vehicle Classification

The traffic, air quality, and noise analyses use different systems for categorizing vehicles. In general, the traffic analysis categorizes vehicles based on the number of axles, the air quality analysis is based on vehicle weight, and the noise analysis is based on the number of tires. Exhibit 6 shows the correspondence table used to convert the traffic forecasts from the RivTAM model, which uses the 4-class system shown in Column F, into the 8-class system used for air quality analysis (Columns G and H), and the 5-class system used for noise analysis (Columns I and J). Note that what RivTAM calls “light trucks” are considered “medium trucks” for the noise analysis, and what RivTAM calls “Medium trucks” are considered “heavy trucks” for the noise analysis. The noise analysis does not have a “light trucks” category.

Description	FHWA System	EMFAC 2007	CalEEMOD Assumed % of Category	Intersection Counts	Road Segment Counts	For Traffic Analysis RivTAM Model	For Air Quality Analysis		For Noise Analysis											
	(A)	(B)	(C)	(D)	(E)	(F)	AQ Category	CalEEMOD Assumed % of Category	Caltrans Noise Supplement	CalEEMOD Assumed % of Category										
Motorcycles	Class 1, Motorcycles	MCY	0.60%	Passenger Cars	Bikes	Passenger Cars	LDA	69.30%	Auto	Motorcycles	0.60%									
Passenger Cars	Class 2, Passenger Cars	LDA	68.70%		Cars & Trailers					Light Trucks	MDT	100.00%	Buses	4.4% of Light Trucks						
Light-Duty Trucks (GVWR <6000 lbs. and ETW <= 3750 lbs)	Class 3, 4 tire single unit	LDT1	5.11%												2-Axle 6 Tire	Medium Trucks	LHDT1	67.53%	Heavy Trucks	100% of Medium Trucks
Light-Duty Trucks (GVWR <6000 lbs. and ETW 3751-5750 lbs)		LDT2	25.59%																	
School Buses	Class 4, Buses	SBUS	0.61%	3-Axle Trucks	3-Axle Single	Medium Trucks	LHDT2	32.47%	Heavy Trucks	100% of Heavy Trucks										
Urban Buses		UBUS	1.21%																	
Motor Coach		OBUS	1.94%																	
Other Buses																				
All Other Buses																				
Motor Homes	MH	0.63%																		
Medium-Duty Trucks (GVWR 6000-8500 lbs)	Class 5, 2-axle 6-tire single unit	MDV	95.61%	3-Axle Trucks	3-Axle Single	Medium Trucks	LHDT1	67.53%	Heavy Trucks	100% of Medium Trucks										
Light-Heavy-Duty Trucks (GVWR 8501-10000 lbs)	Class 6, 3-axle single unit	LHDT1	67.53%																	
Light-Heavy-Duty Trucks (GVWR 10001-14000 lbs)		LHDT2	32.47%																	
4 or More Axles, Single Unit	Class 7	MHDT	37.49%	4+ Axle Trucks	4+ Axle, Single <5 Axle, Double 5 Axle, Double >6 Axle, Double <6 Axle, Multi 6 Axle, Multi >6 Axle, Multi	Heavy Trucks	MHDT	37.49%	Heavy Trucks	100% of Heavy Trucks										
4 or Less Axles, Single Trailer	Class 8																			
5 Axles Tractor Semitrailer	Class 9																			
6+ axles, Single Trailer	Class 10																			
5 or Less Axles, Multi-Trailer	Class 11																			
6 Axle, Multi-Trailer	Class 12																			
7+ Axles, Multi-Trailer	Class 13																			

Exhibit 6: Vehicle Classification Correspondence Table

Note: The color code used in the exhibit above is based on the 4-class system used by RivTAM (Column F) and the intersection traffic counts (Column D).

Time Periods

The traffic forecasts will be produced for 2025 and 2045 for the AM and PM peak hours (only). However certain analyses, such as the Traffic Index used in pavement design, require ADT, while other analyses require traffic for different times of the day. This will be done by factoring the percentage of traffic that occurs in the peak hour with the percentage occurring in the multi-hour period of interest (see Attachment 2 for freeway, ramp, and arterial volumes by AM peak hour, PM peak hour and day).

For SR-60, Exhibit 7 shows the percentage of passenger vehicles that occurs in the peak hours and in each of the 5 multi-hour periods. The same calculation is done separately for trucks. This came from the PeMS site on SR-60 nearest the Theodore IC. Exhibit 8 shows similar data for the surface streets, the data came from counts on Theodore Rd between Eucalyptus and SR-60, which is the closest proxy we have for the traffic that will eventually be generated at by the WLC.

Start	End	Cars	% of Daily Passenger Vehicles		Trucks	% of Daily Trucks	
			Period	Peak Hour		Period	Peak Hour
10PM	11PM	1,632	13.9%		201	23.6%	
11PM	12MidN	1,127			163		
12MidN	1AM	757			133		
1AM	2AM	569			112		
2AM	3AM	625			127		
3AM	4AM	1,010			169		
4AM	5AM	1,846			194		
5AM	6AM	2,872			214		
6AM	7AM	3,860			16.1%		
7AM	8AM	4,257	260				
8AM	9AM	3,962	307				
9AM	10AM	3,807	33.5%		338	35.2%	
10AM	11AM	4,016			349		
11AM	12NOON	4,088			332		
12NOON	1PM	4,207			322		
1PM	2PM	4,380			317		
2PM	3PM	4,651	26.0%	6.9%	303	15.9%	3.7%
3PM	4PM	4,978			257		
4PM	5PM	5,131			233		
5PM	6PM	5,184			204		
6PM	7PM	4,237	10.6%		194	10.9%	
7PM	8PM	3,053			196		
8PM	9PM	2,599			204		
9PM	10PM	2,332			205		
Total for 24 Hours		75,180	100.0%		5,574	100.0%	

Color Code:








	Night		Mid-Day
	AM Peak Period		PM Peak Period
	AM Peak Hour		PM Peak Hour
	Evening		

Exhibit 7: SR-60 Traffic Volume by Vehicle Class and Hour of Day

Start	End	Bikes	Cars & Trailers	2 Axle Long	% of Daily Passenger Vehicles	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	% of Daily Trucks
10PM	11PM	4	28	8	15.9%	0	0	5	0	0	9	0	0	0	0	14.7%
11PM	12MidN	4	9	3		0	1	3	0	0	3	0	0	0	0	
12MidN	1AM	1	12	1		0	2	1	0	0	1	0	0	0	0	
1AM	2AM	2	9	0		0	0	2	0	0	2	0	0	0	0	
2AM	3AM	2	6	2		0	1	2	0	0	2	0	0	0	0	
3AM	4AM	2	11	3		0	0	2	0	0	1	0	1	0	0	
4AM	5AM	1	69	24		0	3	1	0	0	0	0	0	0	0	
5AM	6AM	1	86	15		0	3	1	0	2	2	0	0	0	0	
6AM	7AM	3	48	10	17.1%	0	8	3	0	0	0	0	0	0	0	12.3%
7AM	8AM	6	74	17		0	6	7	0	2	0	0	0	0	0	
8AM	9AM	6	127	35		1	5	6	0	1	3	0	0	0	0	
9AM	10AM	9	38	25	31.7%	1	12	8	0	2	4	0	0	0	0	40.5%
10AM	11AM	5	56	23		3	10	6	0	2	3	0	0	0	0	
11AM	12NOON	8	67	25		1	7	7	0	0	8	0	0	0	0	
12NOON	1PM	6	79	22		1	3	6	0	2	10	0	1	0	0	
1PM	2PM	10	94	27		1	6	9	0	1	2	0	1	0	0	
2PM	3PM	11	78	21		1	8	10	0	1	1	0	0	0	0	
3PM	4PM	6	85	17	21.8%	1	8	4	0	2	2	0	0	0	0	17.3%
4PM	5PM	12	82	18		0	5	5	0	2	2	0	0	0	0	
5PM	6PM	12	77	15		0	10	7	0	0	0	0	0	0	0	
6PM	7PM	5	72	14		0	3	6	1	1	0	0	0	0	0	
7PM	8PM	3	61	7	13.5%	0	1	4	0	1	2	0	0	0	0	15.2%
8PM	9PM	5	47	14		1	1	4	0	1	16	0	0	0	0	
9PM	10PM	5	101	14		0	2	5	0	1	13	0	0	0	0	
24-Hour Total		129	1416	360	100.0%	11	105	114	1	21	86	0	3	0	0	100.0%
7AM	8AM	6	74	17	5.1%	0	6	7	0	2	0	0	0	0	0	4.4%
4:30PM	5:30PM	10	74	17	5.3%	0	8	3	0	0	1	0	0	0	0	3.5%

Color Code:








 AM Peak Period	 PM Peak Period	 Night	 Evening
 AM Peak Hour	 PM Peak Hour	 Mid-Day	

Exhibit 8: Surface Street Traffic Volume by Vehicle Class and Hour of Day

3. EXISTING CONDITIONS

This section reports traffic conditions as they exist in 2018. This is the base condition for analysis.

Land Use

Land uses in the area were reviewed in February 2018 to identify the type of land use, location, and access to the roadway network. Specific attention was given to those land uses that rely on Theodore Street to access the local and regional roadway network. The land uses in the area of Theodore Street consist primarily of dry-land agriculture, with twelve residences, a landfill, and one large distribution center (see Exhibit 9). The large distribution center is the 1.8 million square-foot Skechers facility, which includes a retail store and is the largest trip generator along Theodore Street. Vehicle trips from Skechers account for approximately half of existing peak hour traffic at the SR-60 Eastbound ramp intersection with Theodore Street.

In addition to the Skechers distribution facility, the other large traffic generating land use in the vicinity of the Theodore Street interchange is the Badlands Landfill (located northwest of the Theodore Street/Ironwood Avenue intersection). Vehicle trips accessing both land uses primarily travel to/from SR-60, although several trips for the Badlands Landfill were observed using local streets parallel to SR-60.

Land uses along Redlands Boulevard were reviewed to determine if the Theodore Interchange ramp closures and detour routes would significantly affect the land uses. Land uses along, and in the vicinity of, Redlands Boulevard include the Aldi warehouse, residences, a nursery, a church, and a mini-market.

Roadway Network

The existing Theodore Street interchange is a two-quadrant cloverleaf in which westbound SR-60 on and off ramp traffic connects to Theodore Street at a side-street stop-controlled intersection on the northern side of the interchange. Eastbound SR-60 on and off ramp traffic connects at a side-street stop-controlled intersection on the southern side of the interchange. Through traffic on Theodore Street passes over SR-60 on a two-lane overpass.

There are no bicycle or pedestrian facilities on the overpass, the ramp terminal intersections, or the roadways connecting to the interchange. There is no transit service in the catchment area of the Theodore IC, though transit buses pass by the site on SR-60 (see Exhibit 10).

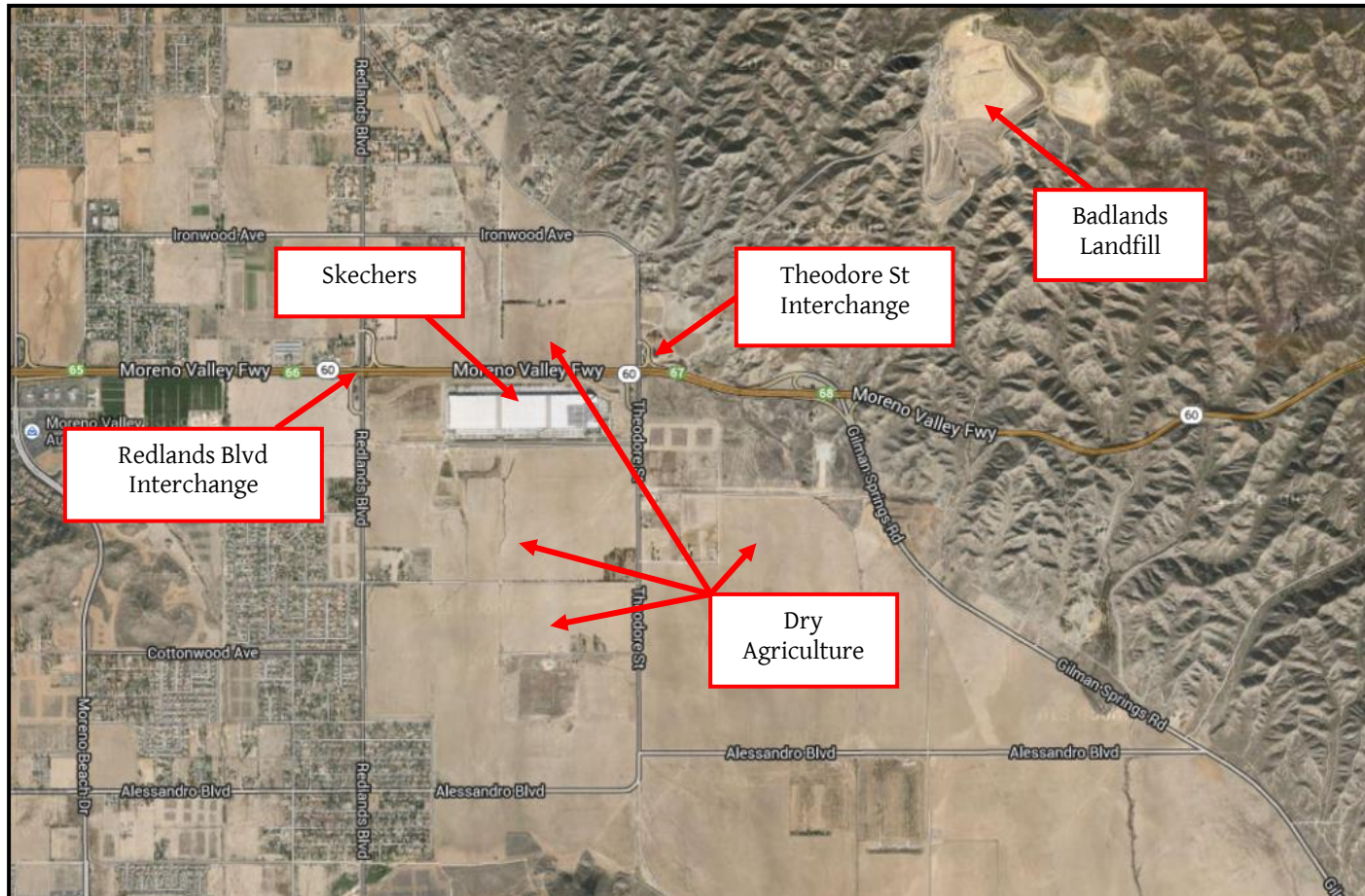
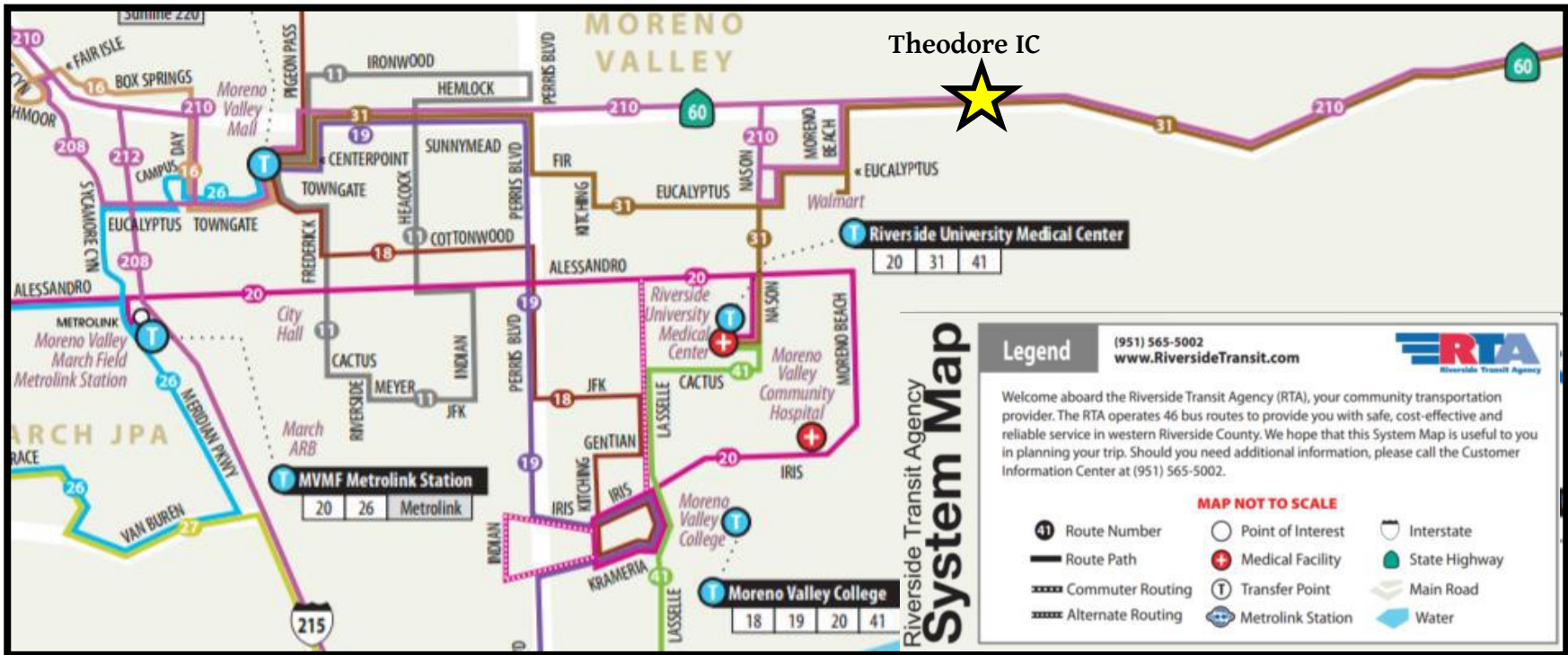


Exhibit 9: Existing Conditions in Study Area



Source: Riverside Transit Agency Service Map

Exhibit 10: Existing Transit Services in Moreno Valley

4. EXISTING AND FORECAST FREEWAY VOLUMES

Exhibit 11 shows AM peak hour demand volume forecasts and the percent growth from existing on SR-60. Exhibit 12 and Exhibit 13 show similar forecasts for the PM peak hour and daily traffic volumes, respectively. Growth is highest in the early years due to the assumed widening of SR-60 from 2 to 3 lanes per direction, the addition of truck climbing lanes in the Badlands, and residential development in Beaumont.

The Transportation Concept Report (TCR) for SR-60⁶ estimates a two-way peak-hour volume of over 7,600 vehicles as compared to the 10,000-12,000 vehicles forecast in this study. The forecasts in the TCR are for 2035 and are based on land use in SCAG's (now superseded) 2012 Sustainable Communities Strategy. The forecasts for the Theodore IC study are for 2045 and are based on the 2016 Sustainable Communities Strategy and includes full build-out of the Moreno Valley General Plan as well as other reasonably foreseeable development projects such as the widening of SR-60 from 2 to 3 lanes per direction, the addition of truck climbing lanes in the Badlands, and residential development in Beaumont. The removal of constraints and the increase in demand affect the peak direction (WB in the morning) more than the off-peak direction. These differences in assumptions account for the higher volumes used in this study.

Truck percentages by mainline segment are shown in Exhibit 14. Existing truck percentages were calculated from the classified traffic counts collected on May 31, 2017. The forecast volumes are based on the counts and the change in model volumes for each of four vehicle classes: Cars, 2-axle trucks, 3-axle trucks, and 4-or-more-axle trucks (See Attachment 2 for freeway traffic volumes by vehicle classification). Truck percentages west of Theodore Street are higher for the future conditions compared to existing conditions due to the high truck trip generation rates of the WLC.

⁶ Transportation Concept Report, State Route 60, Caltrans District 8, September 2012

Exhibit T1: Existing and Future Mainline Volumes on SR-60, AM Peak Hour

Freeway Section		Existing Conditions	2025 Conditions		2045 Conditions		
		Demand Volume	Demand Volume	Growth 2018-to-2025	Demand Volume	Growth 2018-to-2045	
Westbound	1	SR-60 east of Gilman Springs Rd On Ramp	1,118	1,920	72%	3,980	256%
	2	SR-60 between Gilman Springs Rd and Theodore St	1,878	2,680	43%	5,740	206%
	3	SR-60 between Theodore St Off and Theodore St On Ramps	1,812	2,480	37%	5,270	191%
	4	SR-60 between Theodore St and Redlands Blvd	1,836	3,070	67%	6,320	244%
	5	SR-60 between Redlands Blvd Off and NB Redlands Blvd On Ramp	1,763	2,730	55%	5,300	201%
	6	SR-60 between SB Redlands Blvd On and NB Redlands Blvd On Ramp	2,158	2,920	35%	5,410	151%
	7	SR-60 between Redlands Blvd and Moreno Beach Rd	2,158	3,380	57%	5,600	159%
Eastbound	7	SR-60 between Moreno Beach Rd and Redlands Blvd	2,057	2,930	42%	3,780	84%
	6	SR-60 between Redlands Blvd Off and SB Redlands Blvd On Ramp	1,799	2,560	42%	3,410	90%
	5	SR-60 between SB Redlands Blvd Off and NB Redlands Blvd On Ramp	1,885	2,630	40%	3,570	89%
	4	SR-60 between Redlands Blvd and Theodore St	1,885	2,690	43%	3,780	101%
	3	SR-60 between Theodore St Off and Theodore St On Ramps	1,809	2,160	19%	3,120	72%
	2	SR-60 between Theodore St and Gilman Springs Rd	1,850	2,350	27%	3,460	87%
	1	SR-60 east of Gilman Springs Rd Off Ramp	1,434	1,930	35%	2,230	56%
WB total growth from 2018 >					51%	196%	
EB total growth from 2018 >					36%	84%	

Exhibit 12: Existing and Future Mainline Volumes on SR-60, PM Peak Hour

Freeway Section		Existing Conditions	2025 Conditions		2045 Conditions		
		Demand Volume	Demand Volume	Growth 2018-to-2025	Demand Volume	Growth 2018-to-2045	
Westbound	1	SR-60 east of Gilman Springs Rd On Ramp	1,702	2,410	116%	2,900	159%
	2	SR-60 between Gilman Springs Rd and Theodore St	2,159	2,890	54%	4,450	137%
	3	SR-60 between Theodore St Off and Theodore St On Ramps	2,128	2,710	50%	4,060	124%
	4	SR-60 between Theodore St and Redlands Blvd	2,177	3,120	70%	4,900	167%
	5	SR-60 between Redlands Blvd Off and NB Redlands Blvd On Ramp	2,115	2,980	69%	4,060	130%
	6	SR-60 between SB Redlands Blvd On and NB Redlands Blvd On Ramp	2,539	3,180	47%	4,240	96%
	7	SR-60 between Redlands Blvd and Moreno Beach Rd	2,539	3,540	64%	4,540	110%
Eastbound	7	SR-60 between Moreno Beach Rd and Redlands Blvd	2,893	4,080	98%	5,450	165%
	6	SR-60 between Redlands Blvd Off and SB Redlands Blvd On Ramp	2,338	3,270	82%	4,830	168%
	5	SR-60 between SB Redlands Blvd Off and NB Redlands Blvd On Ramp	2,438	3,540	88%	5,330	183%
	4	SR-60 between Redlands Blvd and Theodore St	2,438	3,600	91%	6,370	238%
	3	SR-60 between Theodore St Off and Theodore St On Ramps	2,393	3,060	69%	5,520	205%
	2	SR-60 between Theodore St and Gilman Springs Rd	2,437	3,310	79%	5,930	221%
1	SR-60 east of Gilman Springs Rd Off Ramp	1,533	2,320	62%	3,850	168%	
WB total growth from 2018 >					65%	130%	
EB total growth from 2018 >					83%	193%	

Exhibit 13: Existing and Future Mainline Volumes on SR-60, Daily

		Freeway Section	Existing Conditions	2025 Conditions		2045 Conditions	
			Demand Volume	Demand Volume	Growth 2018-to-2025	Demand Volume	Growth 2018-to-2045
Westbound	2	SR-60 between Gilman Springs Rd and Theodore St	33,272	40,700	22%	74,800	125%
	4	SR-60 between Theodore St and Redlands Blvd	33,036	46,100	40%	83,000	151%
	7	SR-60 between Redlands Blvd and Moreno Beach Rd	29,809	44,700	50%	70,600	137%
Eastbound	7	SR-60 between Moreno Beach Rd and Redlands Blvd	29,607	46,100	56%	69,900	136%
	4	SR-60 between Redlands Blvd and Theodore St	35,387	48,900	38%	85,400	141%
	2	SR-60 between Theodore St and Gilman Springs Rd	35,036	44,800	28%	78,300	123%
WB total growth from 2018 >					37%		138%
EB total growth from 2018 >					40%		134%

The Transportation Concept Report forecasts 107,000 ADT (for 2035) versus ~150,000 ADT (for 2045) in this study. This is due to the fact that the current study includes full build-out of the Moreno Valley General Plan including the WLC, compared to a partial build-out in the TCR. The higher forecast is considered conservative for design purposes; i.e. less likely to result in an under-estimate of demand.

Exhibit 14: SR-60 Mainline Truck Percentages

Truck percentage declines over time as residential develop east of the Badlands adds more auto commute traffic.

SR-60 Section		Peak Hour Truck Percentage						
		Existing Conditions		2025 Conditions		2045 Conditions		
		AM	PM	AM	PM	AM	PM	
Westbound	2	SR-60 between Gilman Springs Rd and Theodore St	9%	10%	7%	10%	4%	7%
	4	SR-60 between Theodore St and Redland Blvd	9%	10%	13%	14%	8%	11%
	7	SR-60 between Redlands Blvd and Moreno Beach Dr	8%	9%	11%	13%	9%	12%
Eastbound	7	SR-60 between Redlands Blvd and Moreno Beach Dr	11%	6%	15%	9%	14%	10%
	4	SR-60 between Theodore St and Redland Blvd	12%	7%	16%	9%	13%	8%
	2	SR-60 between Gilman Springs Rd and Theodore St	11%	7%	16%	10%	12%	8%

Truck percentages west of Theodore increase with the addition of the WLC.

5. EXISTING AND FUTURE INTERSECTION VOLUMES

Traffic Counts

Traffic counts were collected on Wednesday, May 31st, 2017 for the hours 7:00-9:00 a.m. and 4:00-6:00 p.m. The counts were disaggregated into four vehicle classes: passenger vehicles, large 2-axle trucks, 3-axle trucks, and trucks with 4 or more axles. The counts on SR-60 were collected just east of the westbound on-ramp and eastbound off-ramp at Gilman Springs Road. Intersection counts were collected at each of the eight study intersections, and ramp counts were collected at Gilman Springs Road. The peak hours were found to be 7:00-8:00 a.m. and 4:30-5:30 p.m.

Some of the study intersections were also counted in January of 2018 as part of analysis for the WLC. Nearly all the 2017 counts were the same or slightly higher than the 2018 counts, and since the 2017 counts were all collected at once they are better suited for this study and will be used for all forecasting and analysis conservatively representing 2018 conditions.

The existing turning movements are shown in Exhibit 15. Intersection turning movement volumes are shown in PCEs. In accordance with the HCM, a PCE factor of 3.0 was used for heavy trucks on surface streets. A truck PCE factor of 2.0 will be used for freeways analysis on flat terrain⁷.

Forecasts of Future Volumes

Exhibit 16 and Exhibit 17 show the peak-hour turning forecasts for the 2025 Without Project and With Project scenarios. Exhibit 18 and Exhibit 19 show the peak hour turning movement forecasts for the 2045 Without Project and Without conditions. As shown in the exhibits, the peak hour demand volumes at the SR-60/Theodore Street IC increase over time.

⁷ The study sections of SR-60 fall within the category of flat terrain.

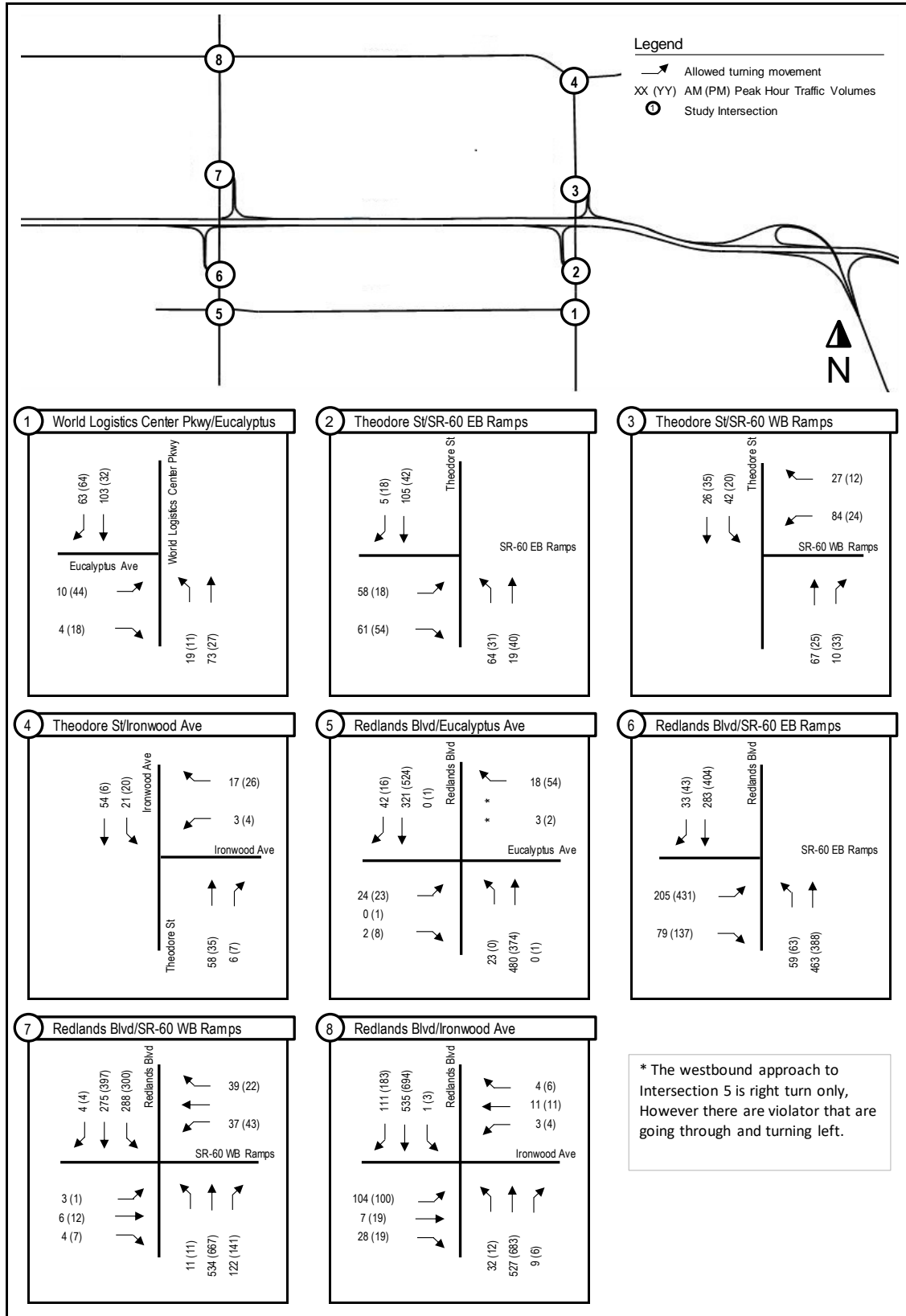


Exhibit 15: Existing Turning Movements

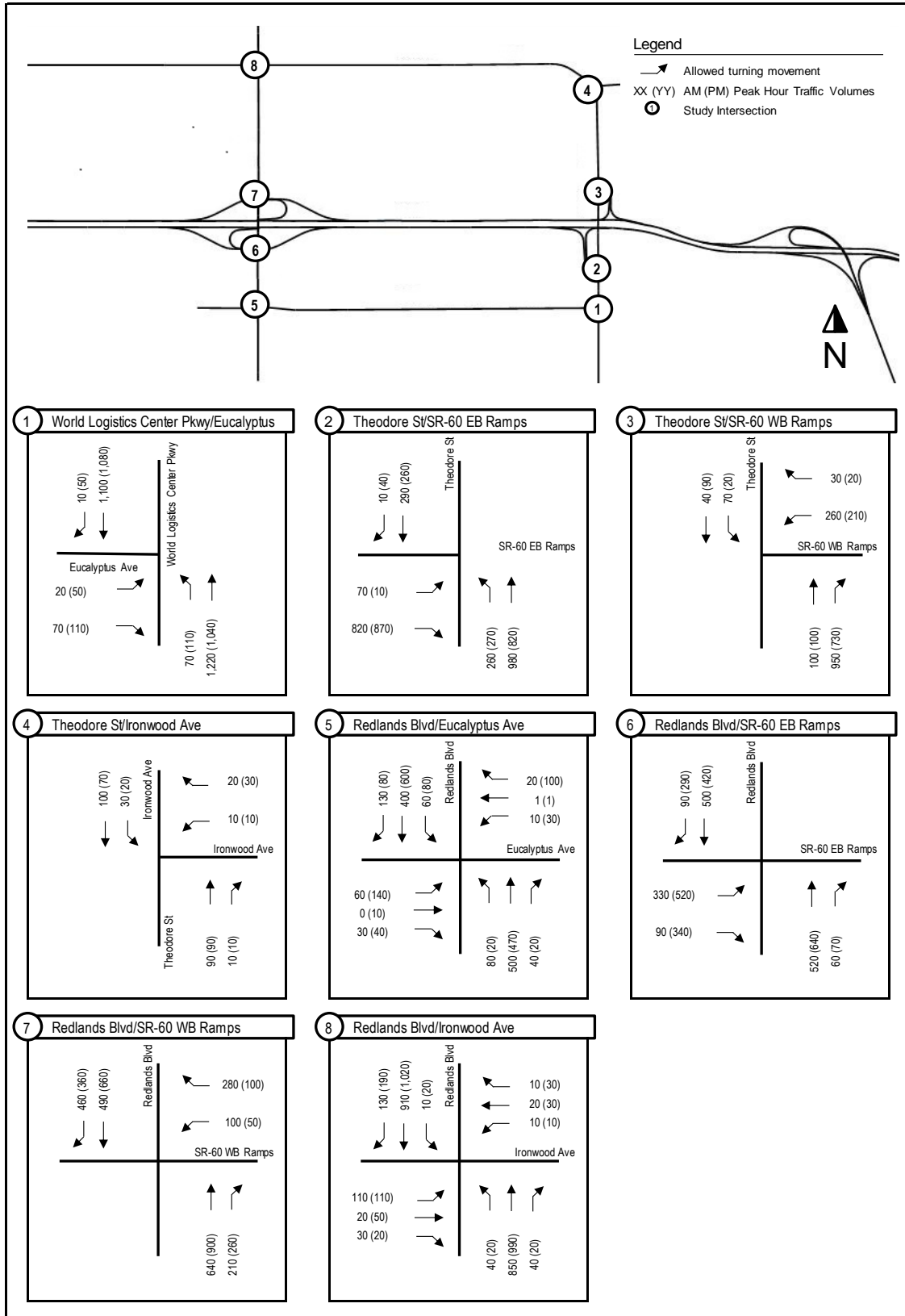


Exhibit 16: 2025 Without Project Turning Movements

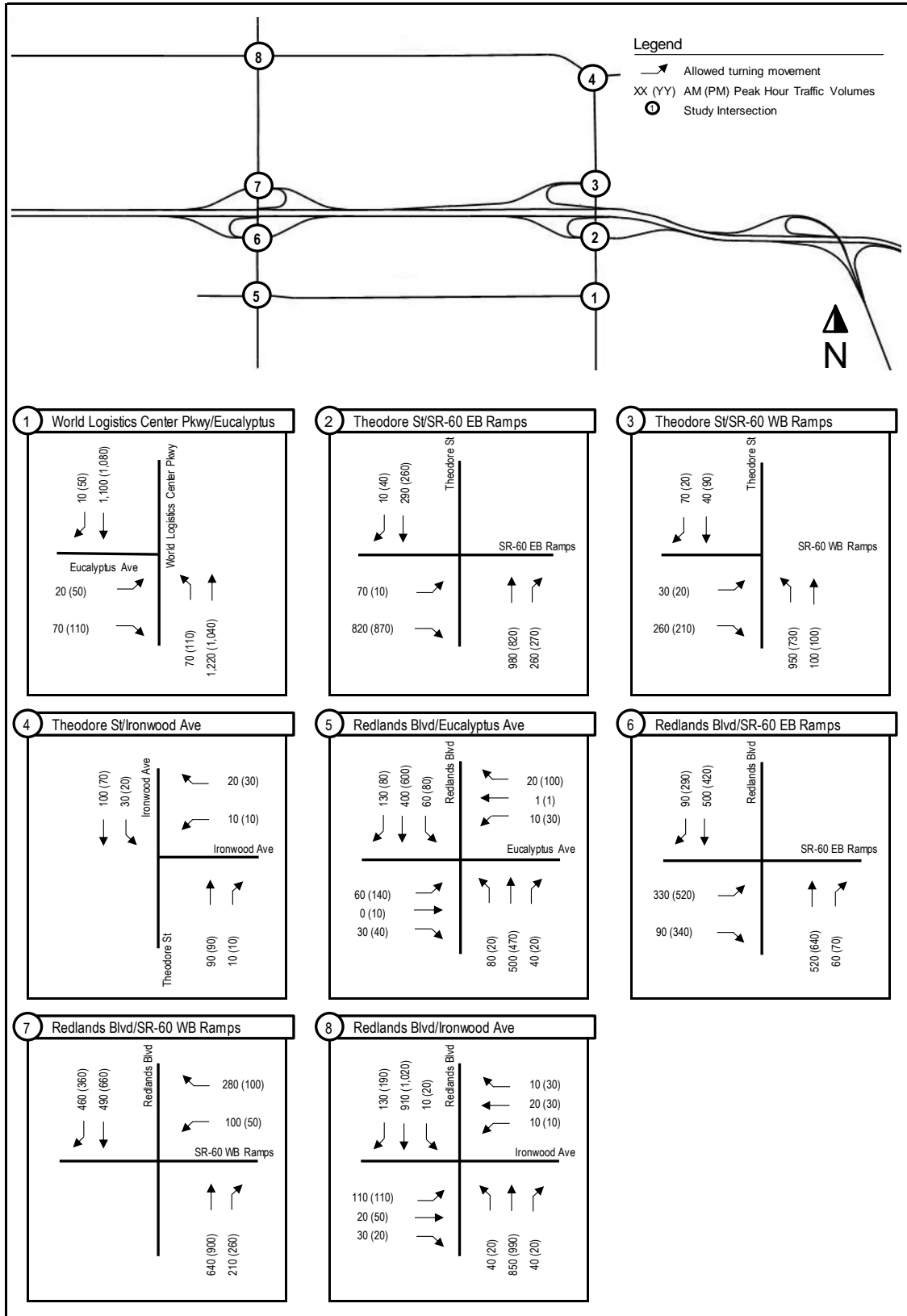


Exhibit 17: 2025 With Project Turning Movements

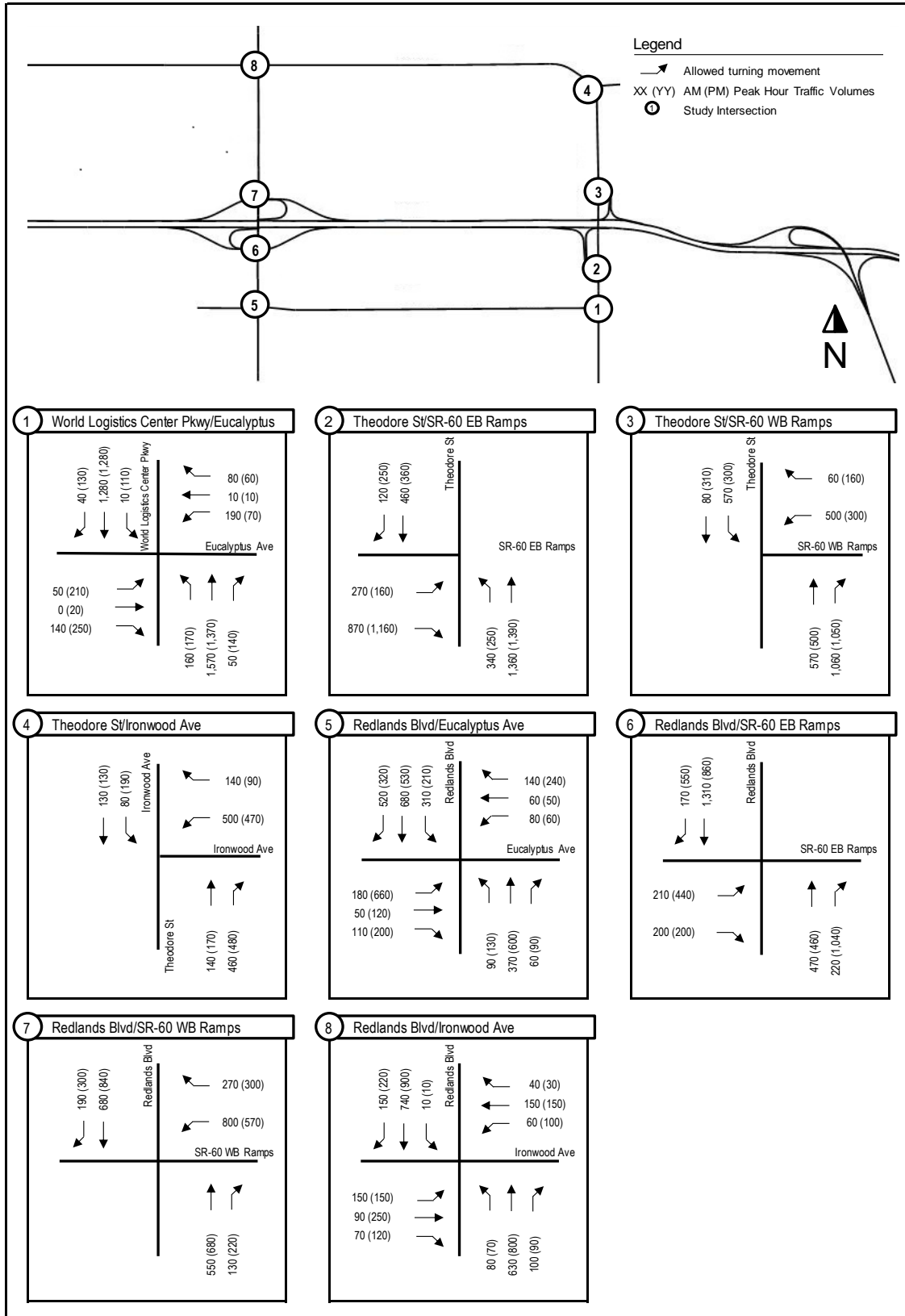


Exhibit 18: 2045 Without Project Turning Movements

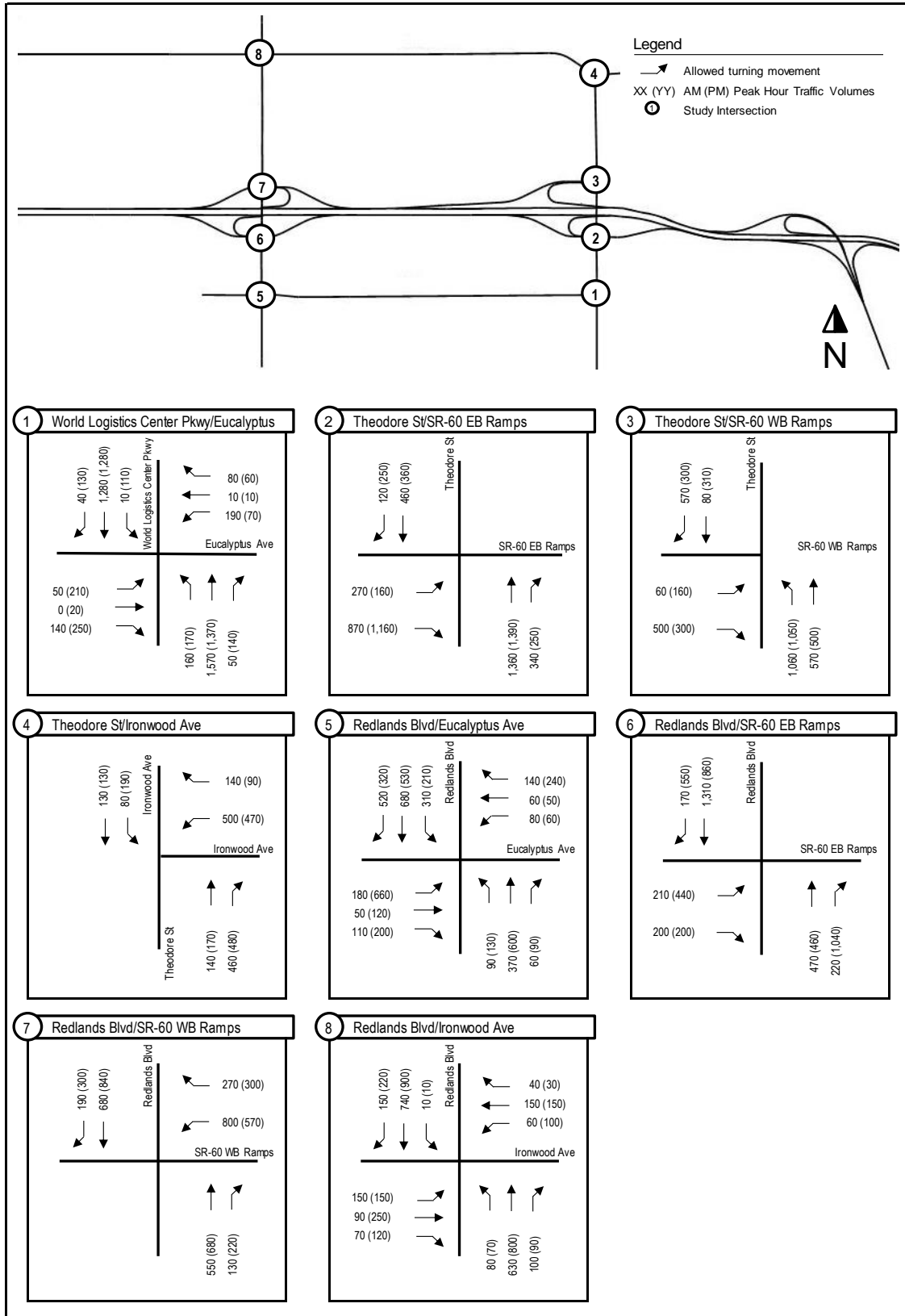
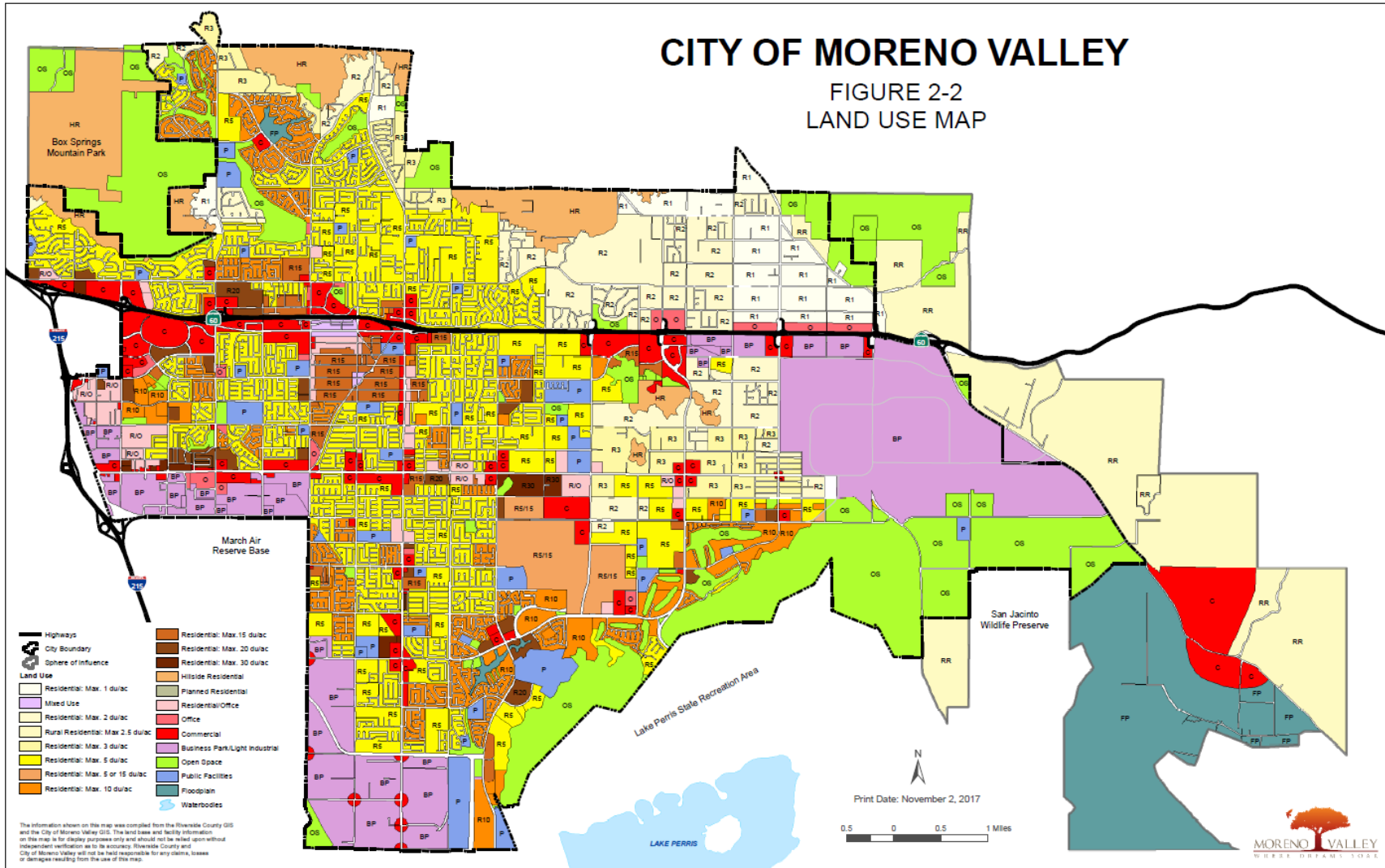
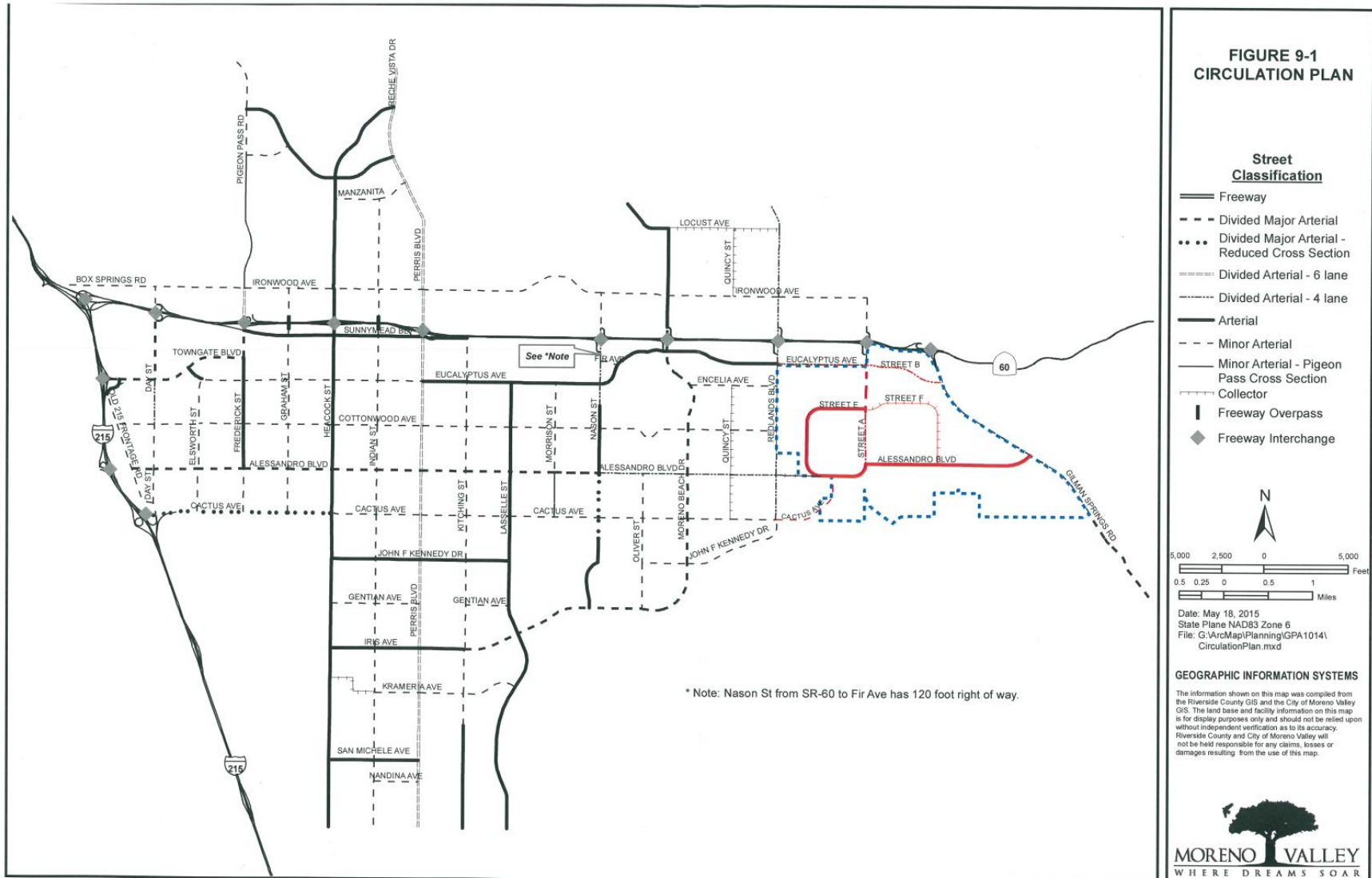


Exhibit 19: 2045 With Project Turning Movements

ATTACHMENT 1: GENERAL PLAN LAND USE AND ROAD NETWORK MAPS



General Plan Land Use Map



General Plan Road Network Map

ATTACHMENT 2: VEHICLE CLASSIFICATION DISTRIBUTION

Vehicle Classification Distribution on SR-60 Between Theodore Rd and Gilman Springs Rd Interchange

Car		Light Trucks			Medium Trucks	Heavy Trucks		
Motorcycles	Cars & Trailers	Large 2 Axle	Buses & RV's	Medium Trucks	3 Axle	4 Axle	5 Axle	6+ Axle
64	14,182	309	50	89	58	27	995	34
0.4%	97.4%	2.1%	36.0%	64.0%	100.0%	2.6%	94.2%	3.2%
100.0%		100.0%			100.0%	100.0%		

Vehicle Classification Distribution at Theodore Street South of SR-60 Interchange

Car			Light Trucks		Medium Trucks	Heavy Trucks						
Motorcycles	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi
129	1,416	360	11	105	114	1	21	86	0	3	0	0
6.8%	74.3%	18.9%	9.5%	90.5%	100.0%	0.9%	18.9%	77.5%	0.0%	2.7%	0.0%	0.0%
100.0%			100.0%		100.0%	100.0%						

ATTACHMENT 3: FREEWAY, RAMP, AND ARTERIAL VOLUMES BY VEHICLE CLASSIFICATION FOR NOISE, AIR QUALITY AND TRAFFIC INDEX AND OTHER ENVIRONMENTAL ANALYSES

Mainline Traffic Volumes for AM Peak Hour, PM Peak hour and Daily by Vehicle Classification

SR-60 Mainline			AM Peak Hour					PM Peak Hour					Daily				
			Car	Light Truck	Medium Truck	Heavy Truck	Total Veh	Car	Light Truck	Medium Truck	Heavy Truck	Total Veh	Car	Light Truck	Medium Truck	Heavy Truck	Total Veh
Existing																	
WB	2	SR-60 between Gilman Springs Rd and Theodore St	1,710	39	3	126	1,878	1,942	59	6	152	2,159	29,080	780	72	3,340	33,272
	4	SR-60 between Theodore St and Redlands Blvd	1,676	40	3	117	1,836	1,958	62	7	150	2,177	28,937	812	80	3,207	33,036
EB	4	SR-60 between Redlands Blvd and Theodore St	1,668	84	16	117	1,885	2,262	48	7	121	2,438	31,294	1,051	183	2,859	35,387
	2	SR-60 between Theodore St and Gilman Springs Rd	1,643	81	15	111	1,850	2,274	45	7	111	2,437	31,191	1,003	175	2,667	35,036
Year 2025																	
WB	2	SR-60 between Gilman Springs Rd and Theodore St	2,493	43	7	141	2,684	2,614	64	12	200	2,890	35,876	866	213	3,698	40,653
	4	SR-60 between Theodore St and Redlands Blvd	2,684	60	27	299	3,070	2,681	77	26	335	3,119	38,325	1,138	700	5,918	46,081
EB	4	SR-60 between Redlands Blvd and Theodore St	2,283	95	33	279	2,690	3,261	59	20	262	3,602	41,080	1,354	788	5,633	48,855
	2	SR-60 between Theodore St and Gilman Springs Rd	2,094	83	20	150	2,347	3,121	47	9	132	3,309	40,403	1,082	321	3,006	44,812
Year 2045																	
WB	2	SR-60 between Gilman Springs Rd and Theodore St	5,467	55	20	196	5,738	4,122	76	35	212	4,445	67,012	1,157	807	5,775	74,751
	4	SR-60 between Theodore St and Redlands Blvd	5,776	72	40	428	6,316	4,342	91	51	417	4,901	71,211	1,429	1,335	9,040	83,015
EB	4	SR-60 between Redlands Blvd and Theodore St	3,271	113	51	346	3,781	5,819	71	45	432	6,367	73,474	1,616	1,414	8,865	85,369
	2	SR-60 between Theodore St and Gilman Springs Rd	3,151	102	37	174	3,464	5,585	64	35	247	5,931	70,637	1,372	896	5,435	78,340

Ramp Traffic Volumes for AM Peak Hour, PM Peak hour and Daily by Vehicle Classification

SR-60 Ramp			AM Peak Hour					PM Peak Hour					Daily				
			Car	Light Truck	Medium Truck	Heavy Truck	Total Veh	Car	Light Truck	Medium Truck	Heavy Truck	Total Veh	Car	Light Truck	Medium Truck	Heavy Truck	Total Veh
Existing																	
WB	R2	Off-Ramp to Theodore St	43	1	0	22	66	28	0	1	2	31	683	13	13	303	1,012
	R3	On-Ramp from Theodore St	9	2	0	13	24	44	3	2	0	49	510	63	25	164	762
EB	R4	Off-Ramp to Theodore St	52	3	1	20	76	29	4	0	12	45	779	88	13	404	1,284
	R3	On-Ramp from SB Theodore St (Loop)	27	0	0	14	41	41	1	0	2	44	654	13	0	202	869
	R2	On-Ramp from NB Theodore St	Does not exist in this Scenario														
Year 2025																	
WB	R2	Off-Ramp to Theodore St	164	4	3	38	209	151	4	5	21	181	2,539	73	147	617	3,376
	R3	On-Ramp from Theodore St	355	21	23	196	595	218	17	19	156	410	4,707	362	640	2,808	8,517
EB	R4	Off-Ramp to Theodore St	335	16	18	165	534	357	17	16	155	545	5,375	389	617	3,144	9,525
	R3	On-Ramp from SB Theodore St (Loop)	10	0	0	0	10	37	0	0	1	38	105	0	0	2	107
	R2	On-Ramp from NB Theodore St	136	4	5	36	181	180	5	5	24	214	3,084	83	146	536	3,849
Year 2045																	
WB	R2	Off-Ramp to Theodore St	415	6	5	42	468	336	6	8	33	383	4,883	120	217	824	6,044
	R3	On-Ramp from Theodore St	724	23	25	274	1,046	556	21	24	238	839	9,029	410	750	4,085	14,274
EB	R4	Off-Ramp to Theodore St	402	18	21	223	664	591	15	17	224	847	8,226	468	783	4,406	13,883
	R3	On-Ramp from SB Theodore St (Loop)	117	0	0	1	118	247	0	0	1	248	1,739	8	4	14	1,765
	R2	On-Ramp from NB Theodore St	165	7	7	50	229	110	8	7	38	163	3,976	127	223	769	5,095

Arterial Traffic Volumes for AM Peak Hour, PM Peak hour and Daily by Vehicle Classification

Arterial		AM Peak Hour					PM Peak Hour					Daily				
		Car	Light Truck	Medium Truck	Heavy Truck	Total Veh	Car	Light Truck	Medium Truck	Heavy Truck	Total Veh	Car	Light Truck	Medium Truck	Heavy Truck	Total Veh
Existing																
NB	Theodore St - SR-60 WB Ramps to Ironwood Ave	39	5	1	15	60	25	6	0	1	32	677	117	69	311	1,174
SB		18	7	0	13	38	44	4	1	1	50					
NB	Theodore St - Eucalyptus Ave to SR-60 EB Ramps	33	3	0	15	51	57	6	1	1	65	1,905	116	114	111	2,246
SB		71	7	0	28	106	48	4	1	13	66					
Year 2025																
NB	Theodore St - SR-60 WB Ramps to Ironwood Ave	72	7	1	15	95	92	11	4	1	108	1,612	170	174	311	2,267
SB		53	8	3	13	77	88	7	4	1	100					
NB	Theodore St - Eucalyptus Ave to SR-60 EB Ramps	483	27	28	220	758	454	28	27	180	689	15,498	897	1,715	6,132	24,242
SB		462	23	23	189	697	523	23	24	175	745					
Year 2045																
NB	Theodore St - SR-60 WB Ramps to Ironwood Ave	545	14	8	16	583	616	16	7	2	641	13,564	360	348	346	14,618
SB		568	20	5	14	607	564	16	8	2	590					
NB	Theodore St - Eucalyptus Ave to SR-60 EB Ramps	628	38	38	313	1,017	680	38	36	277	1,031	19,304	1,179	2,230	9,103	31,816
SB		462	38	29	251	780	642	30	31	257	960					

Memorandum

*Make Conservation
a California Way of Life*

To: JUSTINE NIU
Office Chief
Design J, Oversight

Date: September 13, 2018

Cc: ELAHEH HADIPOUR
Senior Project Manager
Program/Project Management

File: 08-Riv-60 PM 20-22
EA M590
PN: 0813000109

AAH

From: RENA TANG 
Branch Chief
System Planning and Forecasting, MS 726

Subject: SR-60/Theodore Interchange (dated August 2018) – Methodology and Traffic Volumes Report
2nd Review

Per your request, the Branch of System Planning and Forecasting has reviewed the Methodology and Traffic Volumes Report for the above referenced project. We have no further comments and we look forward in reviewing the TOAR. If you have any questions regarding the information above, you may reach me at (909) 806-3927 or Afshin Karimi at (909) 383-6441.

Memorandum

*Flex your power!
Be energy efficient!*

To: Justin Niu.
Office Chief
Design Oversight

Date: September 26, 2018

File: Riv-60 PM 20.0/22.0
Theodore St IC
EA 0M590

From: Moe Bhuyian 
Operations Surveillance Region A

Subject: SR-60/Theodore Interchange PA/ED Methodology and Traffic Volumes Report (August 2018)

Operations Surveillance Region A has no comments regarding the Methodology and Traffic Volumes Report dated August 2018 for the SR-60/Theodore Interchange PA/ED project.

If you have questions, you may call me at ext. 4226 or Thomas Tu of my staff at ext. 4277.

Appendix C

Intersection LOS Worksheets for Existing Conditions

HCM 6th TWSC
1: WLC Pkwy & Eucalyptus Avenue

Existing
AM Peak Hour

Intersection

Int Delay, s/veh 1.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	10	4	19	73	103	63
Future Vol, veh/h	10	4	19	73	103	63
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	250	0	100	-	-	100
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	72	72	72	72	72	72
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	14	6	26	101	143	88

Major/Minor

	Minor2	Major1	Major2			
Conflicting Flow All	296	143	231	0	-	0
Stage 1	143	-	-	-	-	-
Stage 2	153	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	699	910	1349	-	-	-
Stage 1	889	-	-	-	-	-
Stage 2	880	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	686	910	1349	-	-	-
Mov Cap-2 Maneuver	686	-	-	-	-	-
Stage 1	872	-	-	-	-	-
Stage 2	880	-	-	-	-	-

Approach

	EB	NB	SB
HCM Control Delay, s	10	1.6	0
HCM LOS	B		

Minor Lane/Major Mvmt

	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1349	-	686	910	-	-
HCM Lane V/C Ratio	0.02	-	0.02	0.006	-	-
HCM Control Delay (s)	7.7	-	10.4	9	-	-
HCM Lane LOS	A	-	B	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0.1	0	-	-

HCM 6th TWSC
2: WLC Pkwy & SR-60 EB Ramps

Existing
AM Peak Hour

Intersection						
Int Delay, s/veh	5.4					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	58	61	64	19	105	5
Future Vol, veh/h	58	61	64	19	105	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	250	250	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	84	84	84	84	84	84
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	69	73	76	23	125	6

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	303	128	131	0	0
Stage 1	128	-	-	-	-
Stage 2	175	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-
Pot Cap-1 Maneuver	693	927	1467	-	-
Stage 1	903	-	-	-	-
Stage 2	860	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	657	927	1467	-	-
Mov Cap-2 Maneuver	657	-	-	-	-
Stage 1	856	-	-	-	-
Stage 2	860	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10.1	5.9	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1467	-	657	927	-	-
HCM Lane V/C Ratio	0.052	-	0.105	0.078	-	-
HCM Control Delay (s)	7.6	-	11.1	9.2	-	-
HCM Lane LOS	A	-	B	A	-	-
HCM 95th %tile Q(veh)	0.2	-	0.4	0.3	-	-

HCM 6th TWSC
3: WLC Pkwy/Theodore St & SR-60 WB Ramps

Existing
AM Peak Hour

Intersection						
Int Delay, s/veh	5.7					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	TT		TT			TT
Traffic Vol, veh/h	84	27	67	10	42	26
Future Vol, veh/h	84	27	67	10	42	26
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	95	31	76	11	48	30

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	208	82	0	0	87
Stage 1	82	-	-	-	-
Stage 2	126	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1
Critical Hdwy Stg 1	5.4	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2
Pot Cap-1 Maneuver	785	983	-	-	1522
Stage 1	946	-	-	-	-
Stage 2	905	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	760	983	-	-	1522
Mov Cap-2 Maneuver	760	-	-	-	-
Stage 1	916	-	-	-	-
Stage 2	905	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.3	0	4.6
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	804	1522
HCM Lane V/C Ratio	-	-	0.157	0.031
HCM Control Delay (s)	-	-	10.3	7.4
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0.6	0.1

Intersection						
Int Delay, s/veh	2.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↘↗		↑	↗↘	↘↗	↑
Traffic Vol, veh/h	3	17	58	6	21	54
Future Vol, veh/h	3	17	58	6	21	54
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	130	130	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	3	19	66	7	24	61

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	175	66	0	0	73
Stage 1	66	-	-	-	-
Stage 2	109	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1
Critical Hdwy Stg 1	5.4	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2
Pot Cap-1 Maneuver	819	1003	-	-	1540
Stage 1	962	-	-	-	-
Stage 2	921	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	806	1003	-	-	1540
Mov Cap-2 Maneuver	806	-	-	-	-
Stage 1	947	-	-	-	-
Stage 2	921	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.8	0	2.1
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	968	1540
HCM Lane V/C Ratio	-	-	0.023	0.015
HCM Control Delay (s)	-	-	8.8	7.4
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0

HCM 6th Signalized Intersection Summary

5: Redlands Blvd & Eucalyptus Ave

Existing
AM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	24	0	2	3	0	18	23	480	0	0	321	42
Future Volume (veh/h)	24	0	2	3	0	18	23	480	0	0	321	42
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	0	1900	1900	1900	1900	1900	1900	0	0	1900	1900
Adj Flow Rate, veh/h	26	0	2	3	0	20	25	522	0	0	349	46
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	83	0	0	147	0	0	80	911	0	0	552	542
Arrive On Green	0.05	0.00	0.00	0.04	0.00	0.04	0.04	0.48	0.00	0.00	0.29	0.29
Sat Flow, veh/h	1810	26		0	0	0	1810	1900	0	0	1900	1610
Grp Volume(v), veh/h	26	14.9		23	0	0	25	522	0	0	349	46
Grp Sat Flow(s),veh/h/ln	1810	B		0	0	0	1810	1900	0	0	1900	1610
Q Serve(g_s), s	0.4			0.0	0.0	0.0	0.4	5.5	0.0	0.0	4.4	0.5
Cycle Q Clear(g_c), s	0.4			0.1	0.0	0.0	0.4	5.5	0.0	0.0	4.4	0.5
Prop In Lane	1.00			0.13		0.87	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h	83			147	0	0	80	911	0	0	552	542
V/C Ratio(X)	0.31			0.16	0.00	0.00	0.31	0.57	0.00	0.00	0.63	0.08
Avail Cap(c_a), veh/h	458			1113	0	0	458	2266	0	0	1511	1354
HCM Platoon Ratio	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	1.00	1.00
Uniform Delay (d), s/veh	12.8			12.8	0.0	0.0	12.8	5.2	0.0	0.0	8.5	6.3
Incr Delay (d2), s/veh	2.1			0.5	0.0	0.0	2.2	0.6	0.0	0.0	1.2	0.1
Initial Q Delay(d3),s/veh	0.0			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2			0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.8	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	14.9			13.3	0.0	0.0	15.0	5.7	0.0	0.0	9.7	6.3
LnGrp LOS	B			B	A	A	B	A	A	A	A	A
Approach Vol, veh/h					23			547			395	
Approach Delay, s/veh					13.3			6.2			9.3	
Approach LOS					B			A			A	
Timer - Assigned Phs		2			5	6	7	8				
Phs Duration (G+Y+Rc), s		17.3			5.2	12.0	5.3	5.1				
Change Period (Y+Rc), s		4.0			4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s		33.0			7.0	22.0	7.0	18.0				
Max Q Clear Time (g_c+1), s		7.5			2.4	6.4	2.4	2.1				
Green Ext Time (p_c), s		2.9			0.0	1.6	0.0	0.0				
Intersection Summary												
HCM 6th Ctrl Delay				7.8								
HCM 6th LOS				A								

HCM 6th Signalized Intersection Summary

6: Redlands Blvd & SR-60 EB Ramps

Existing
AM Peak Hour



Movement	EBL	EBR	NBL	NBT	SBT	SBR	
Lane Configurations							
Traffic Volume (veh/h)	205	79	59	463	283	33	
Future Volume (veh/h)	205	79	59	463	283	33	
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	211	81	61	477	292	34	
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	254	97	739	1264	361	630	
Arrive On Green	0.20	0.20	0.41	0.67	0.38	0.38	
Sat Flow, veh/h	1260	484	1810	1900	1900	1610	
Grp Volume(v), veh/h	293	0	61	477	292	34	
Grp Sat Flow(s),veh/h/ln	750	0	1810	1900	1900	1610	
Q Serve(g_s), s	9.6	0.0	1.2	6.7	8.3	0.0	
Cycle Q Clear(g_c), s	9.6	0.0	1.2	6.7	8.3	0.0	
Prop In Lane	0.72	0.28	1.00			1.00	
Lane Grp Cap(c), veh/h	353	0	739	1264	361	630	
V/C Ratio(X)	0.83	0.00	0.08	0.38	0.81	0.05	
Avail Cap(c_a), veh/h	554	0	739	1264	697	915	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	2.00	2.00	
Upstream Filter(l)	1.00	0.00	0.94	0.94	0.99	0.99	
Uniform Delay (d), s/veh	23.0	0.0	10.9	4.5	17.6	5.3	
Incr Delay (d2), s/veh	6.1	0.0	0.0	0.8	17.4	0.2	
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	
%ile BackOfQ(50%),veh/ln	4.3	0.0	0.4	1.3	4.1	0.2	
Unsig. Movement Delay, s/veh							
LnGrp Delay(d),s/veh	29.1	0.0	10.9	5.3	35.0	5.4	
LnGrp LOS	C	A	B	A	D	A	
Approach Vol, veh/h	293			538	326		
Approach Delay, s/veh	29.1			5.9	31.9		
Approach LOS	C			A	C		
Timer - Assigned Phs		2			5	6	8
Phs Duration (G+Y+Rc), s		43.9			28.5	15.4	16.1
Change Period (Y+Rc), s		4.0			4.0	4.0	4.0
Max Green Setting (Gmax), s		33.0			7.0	22.0	19.0
Max Q Clear Time (g_c+1), s		8.7			3.2	10.3	11.6
Green Ext Time (p_c), s		2.5			0.0	1.1	0.5

Intersection Summary

HCM 6th Ctrl Delay	19.1
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

HCM 6th Signalized Intersection Summary

7: Redlands Blvd & SR-60 WB Ramps

Existing
AM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↗	↖	↗	↖	↗	↖
Traffic Volume (veh/h)	3	6	4	37	0	39	11	534	122	288	275	4
Future Volume (veh/h)	3	6	4	37	0	39	11	534	122	288	275	4
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	3	6	4	38	0	40	11	545	124	294	281	4
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	8	17	11	49	0	51	32	574	581	878	1438	20
Arrive On Green	0.02	0.02	0.02	0.06	0.00	0.06	0.04	0.60	0.60	0.49	0.77	0.77
Sat Flow, veh/h	411	822	548	829	0	873	1810	1900	1610	1810	1869	27
Grp Volume(v), veh/h	13	0	0	78	0	0	11	545	124	294	0	285
Grp Sat Flow(s),veh/h/lnl	781	0	0	1701	0	0	1810	1900	1610	1810	0	1895
Q Serve(g_s), s	0.9	0.0	0.0	5.4	0.0	0.0	0.7	31.9	4.0	12.0	0.0	4.9
Cycle Q Clear(g_c), s	0.9	0.0	0.0	5.4	0.0	0.0	0.7	31.9	4.0	12.0	0.0	4.9
Prop In Lane	0.23		0.31	0.49		0.51	1.00		1.00	1.00		0.01
Lane Grp Cap(c), veh/h	37	0	0	100	0	0	32	574	581	878	0	1458
V/C Ratio(X)	0.36	0.00	0.00	0.78	0.00	0.00	0.34	0.95	0.21	0.33	0.00	0.20
Avail Cap(c_a), veh/h	267	0	0	255	0	0	106	681	672	878	0	1458
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	0.00	0.00	1.00	0.00	0.00	0.86	0.86	0.86	0.87	0.00	0.87
Uniform Delay (d), s/veh	58.0	0.0	0.0	55.7	0.0	0.0	57.2	22.9	14.6	19.0	0.0	3.8
Incr Delay (d2), s/veh	5.8	0.0	0.0	12.1	0.0	0.0	5.2	24.4	0.7	0.2	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	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	0.0	2.7	0.0	0.0	0.4	11.0	1.5	4.7	0.0	1.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	63.8	0.0	0.0	67.8	0.0	0.0	62.4	47.3	15.3	19.2	0.0	4.0
LnGrp LOS	E	A	A	E	A	A	E	D	B	B	A	A
Approach Vol, veh/h		13			78			680				579
Approach Delay, s/veh		63.8			67.8			41.7				11.7
Approach LOS		E			E			D				B
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	62.2	40.3		6.5	6.1	96.3		11.1				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	25.0	43.0		18.0	7.0	61.0		18.0				
Max Q Clear Time (g_c+1),s	11.0	33.9		2.9	2.7	6.9		7.4				
Green Ext Time (p_c), s	0.6	2.3		0.0	0.0	1.5		0.2				
Intersection Summary												
HCM 6th Ctrl Delay				30.6								
HCM 6th LOS				C								

HCM 6th Signalized Intersection Summary
8: Redlands Blvd & Ironwood Ave

Existing
AM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕		↕	↕	↕
Traffic Volume (veh/h)	104	7	28	3	11	4	32	527	9	1	535	111
Future Volume (veh/h)	104	7	28	3	11	4	32	527	9	1	535	111
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		0.99	1.00		0.99
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	106	7	29	3	11	4	33	538	9	1	546	113
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	191	13	52	15	54	20	96	807	13	4	726	611
Arrive On Green	0.15	0.15	0.15	0.05	0.05	0.05	0.05	0.43	0.43	0.00	0.38	0.38
Sat Flow, veh/h	1316	87	360	301	1103	401	1810	1863	31	1810	1900	1600
Grp Volume(v), veh/h	142	0	0	18	0	0	33	0	547	1	546	113
Grp Sat Flow(s),veh/h/ln	763	0	0	1805	0	0	1810	0	1894	1810	1900	1600
Q Serve(g_s), s	3.2	0.0	0.0	0.4	0.0	0.0	0.8	0.0	9.9	0.0	10.7	2.0
Cycle Q Clear(g_c), s	3.2	0.0	0.0	0.4	0.0	0.0	0.8	0.0	9.9	0.0	10.7	2.0
Prop In Lane	0.75		0.20	0.17		0.22	1.00		0.02	1.00		1.00
Lane Grp Cap(c), veh/h	256	0	0	88	0	0	96	0	820	4	726	611
V/C Ratio(X)	0.55	0.00	0.00	0.20	0.00	0.00	0.34	0.00	0.67	0.24	0.75	0.18
Avail Cap(c_a), veh/h	981	0	0	1088	0	0	294	0	1625	294	1630	1372
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	17.1	0.0	0.0	19.7	0.0	0.0	19.7	0.0	9.7	21.5	11.6	8.9
Incr Delay (d2), s/veh	1.9	0.0	0.0	1.1	0.0	0.0	2.1	0.0	0.9	26.9	1.6	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	0.0	0.0	0.2	0.0	0.0	0.3	0.0	2.4	0.0	2.9	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	19.0	0.0	0.0	20.9	0.0	0.0	21.8	0.0	10.7	48.4	13.2	9.0
LnGrp LOS	B	A	A	C	A	A	C	A	B	D	B	A
Approach Vol, veh/h		142			18			580			660	
Approach Delay, s/veh		19.0			20.9			11.3			12.5	
Approach LOS		B			C			B			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	4.1	22.7		10.3	6.3	20.5		6.1				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	37.0			24.0	7.0	37.0		26.0				
Max Q Clear Time (g_c+I), s	11.9			5.2	2.8	12.7		2.4				
Green Ext Time (p_c), s	0.0	3.0		0.6	0.0	3.4		0.0				
Intersection Summary												
HCM 6th Ctrl Delay				12.8								
HCM 6th LOS				B								

HCM 6th TWSC
1: WLC Pkwy & Eucalyptus Avenue

Existing
PM Peak Hour

Intersection						
Int Delay, s/veh	3.3					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↖	↗	↖	↗	↗	↖
Traffic Vol, veh/h	44	18	11	27	32	64
Future Vol, veh/h	44	18	11	27	32	64
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	250	0	100	-	-	100
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	75	75	75	75	75	75
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	59	24	15	36	43	85

Major/Minor	Minor2	Major1	Major2		
Conflicting Flow All	109	43	128	0	0
Stage 1	43	-	-	-	-
Stage 2	66	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-
Pot Cap-1 Maneuver	893	1033	1470	-	-
Stage 1	985	-	-	-	-
Stage 2	962	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	884	1033	1470	-	-
Mov Cap-2 Maneuver	884	-	-	-	-
Stage 1	975	-	-	-	-
Stage 2	962	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.2	2.2	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1470	-	884	1033	-	-
HCM Lane V/C Ratio	0.01	-	0.066	0.023	-	-
HCM Control Delay (s)	7.5	-	9.4	8.6	-	-
HCM Lane LOS	A	-	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.2	0.1	-	-

HCM 6th TWSC
2: WLC Pkwy & SR-60 EB Ramps

Existing
PM Peak Hour

Intersection						
Int Delay, s/veh	4.3					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	18	54	31	40	42	18
Future Vol, veh/h	18	54	31	40	42	18
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	250	250	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	21	62	36	46	48	21

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	177	59	69	0	0
Stage 1	59	-	-	-	-
Stage 2	118	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-
Pot Cap-1 Maneuver	817	1012	1545	-	-
Stage 1	969	-	-	-	-
Stage 2	912	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	798	1012	1545	-	-
Mov Cap-2 Maneuver	798	-	-	-	-
Stage 1	947	-	-	-	-
Stage 2	912	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9	3.2	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1545	-	798	1012	-	-
HCM Lane V/C Ratio	0.023	-	0.026	0.061	-	-
HCM Control Delay (s)	7.4	-	9.6	8.8	-	-
HCM Lane LOS	A	-	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0.1	0.2	-	-

HCM 6th TWSC
3: WLC Pkwy/Theodore St & SR-60 WB Ramps

Existing
PM Peak Hour

Intersection						
Int Delay, s/veh	3.3					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	TT		TT			TT
Traffic Vol, veh/h	24	12	25	33	20	35
Future Vol, veh/h	24	12	25	33	20	35
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	68	68	68	68	68	68
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	35	18	37	49	29	51

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	171	62	0	0	86
Stage 1	62	-	-	-	-
Stage 2	109	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1
Critical Hdwy Stg 1	5.4	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2
Pot Cap-1 Maneuver	824	1009	-	-	1523
Stage 1	966	-	-	-	-
Stage 2	921	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	808	1009	-	-	1523
Mov Cap-2 Maneuver	808	-	-	-	-
Stage 1	947	-	-	-	-
Stage 2	921	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.4	0	2.7
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	865	1523
HCM Lane V/C Ratio	-	-	0.061	0.019
HCM Control Delay (s)	-	-	9.4	7.4
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	0.2	0.1

HCM 6th TWSC
4: Theodore St & Ironwood Ave

Existing
PM Peak Hour

Intersection						
Int Delay, s/veh	4.2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↘		↑	↗	↘	↑
Traffic Vol, veh/h	4	26	35	7	20	6
Future Vol, veh/h	4	26	35	7	20	6
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	-	-	130	130	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	64	64	64	64	64	64
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	6	41	55	11	31	9

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	126	55	0	0	66
Stage 1	55	-	-	-	-
Stage 2	71	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1
Critical Hdwy Stg 1	5.4	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2
Pot Cap-1 Maneuver	874	1018	-	-	1549
Stage 1	973	-	-	-	-
Stage 2	957	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	857	1018	-	-	1549
Mov Cap-2 Maneuver	857	-	-	-	-
Stage 1	954	-	-	-	-
Stage 2	957	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.8	0	5.7
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	993	1549
HCM Lane V/C Ratio	-	-	0.047	0.02
HCM Control Delay (s)	-	-	8.8	7.4
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0.1

HCM 6th Signalized Intersection Summary

5: Redlands Blvd & Eucalyptus Avenue

Existing
PM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	23	1	8	2	0	54	0	374	1	1	524	16
Future Volume (veh/h)	23	1	8	2	0	54	0	374	1	1	524	16
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	24	1	8	2	0	56	0	386	1	1	540	16
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	77	0	234	144	1	159	7	767	2	135	769	721
Arrive On Green	0.04	0.30	0.30	0.10	0.00	0.10	0.00	0.41	0.41	0.41	0.41	0.41
Sat Flow, veh/h	1810	0	1610	44	12	1551	1810	1894	5	1	1899	1610
Grp Volume(v), veh/h	24	0	8	58	0	0	0	0	387	541	0	16
Grp Sat Flow(s),veh/h/ln	1810	0	1610	1606	0	0	1810	0	1899	1899	0	1610
Q Serve(g_s), s	0.3	0.0	4.1	0.3	0.0	0.0	0.0	0.0	4.1	0.0	0.0	0.1
Cycle Q Clear(g_c), s	0.3	0.0	4.1	0.9	0.0	0.0	0.0	0.0	4.1	6.3	0.0	0.1
Prop In Lane	1.00		1.00	0.03		0.97	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h	77	0	234	304	0	0	7	0	769	905	0	721
V/C Ratio(X)	0.31	0.00	0.03	0.19	0.00	0.00	0.00	0.00	0.50	0.60	0.00	0.02
Avail Cap(c_a), veh/h	474	0	1508	1221	0	0	474	0	2347	1699	0	1396
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	1.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	12.4	0.0	757.8	11.1	0.0	0.0	0.0	0.0	5.9	6.6	0.0	4.1
Incr Delay (d2), s/veh	2.2	0.0	0.1	0.3	0.0	0.0	0.0	0.0	0.5	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	0.2	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.3	0.4	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	14.6	0.0	757.9	11.5	0.0	0.0	0.0	0.0	6.4	7.2	0.0	4.1
LnGrp LOS	B	A	F	B	A	A	A	A	A	A	A	A
Approach Vol, veh/h		32			58			387			557	
Approach Delay, s/veh		200.5			11.5			6.4			7.2	
Approach LOS		F			B			A			A	
Timer - Assigned Phs		2		4	5	6	7	8				
Phs Duration (G+Y+Rc), s		14.8		11.9	0.0	14.8	5.1	6.7				
Change Period (Y+Rc), s		4.0		4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s		33.0		29.0	7.0	22.0	7.0	18.0				
Max Q Clear Time (g_c+1), s		6.1		6.1	0.0	8.3	2.3	2.9				
Green Ext Time (p_c), s		2.0		0.0	0.0	2.5	0.0	0.2				
Intersection Summary												
HCM 6th Ctrl Delay			13.1									
HCM 6th LOS			B									

HCM 6th Signalized Intersection Summary

6: Redlands Blvd & SR-60 EB Ramps

Existing
PM Peak Hour



Movement	EBL	EBR	NBL	NBT	SBT	SBR	
Lane Configurations							
Traffic Volume (veh/h)	431	137	63	388	404	43	
Future Volume (veh/h)	431	137	63	388	404	43	
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	449	143	66	404	421	45	
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	484	154	340	955	472	986	
Arrive On Green	0.36	0.36	0.19	0.50	0.50	0.50	
Sat Flow, veh/h	1330	424	1810	1900	1900	1610	
Grp Volume(v), veh/h	593	0	66	404	421	45	
Grp Sat Flow(s),veh/h/ln	1757	0	1810	1900	1900	1610	
Q Serve(g_s), s	19.4	0.0	1.8	8.1	12.0	0.0	
Cycle Q Clear(g_c), s	19.4	0.0	1.8	8.1	12.0	0.0	
Prop In Lane	0.76	0.24	1.00			1.00	
Lane Grp Cap(c), veh/h	640	0	340	955	472	986	
V/C Ratio(X)	0.93	0.00	0.19	0.42	0.89	0.05	
Avail Cap(c_a), veh/h	674	0	340	955	570	1069	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	2.00	2.00	
Upstream Filter(l)	1.00	0.00	0.96	0.96	0.97	0.97	
Uniform Delay (d), s/veh	18.3	0.0	20.5	9.4	14.4	1.3	
Incr Delay (d2), s/veh	18.5	0.0	0.3	1.3	21.3	0.1	
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	
%ile BackOfQ(50%),veh/ln	10.2	0.0	0.7	2.5	5.6	0.1	
Unsig. Movement Delay, s/veh							
LnGrp Delay(d),s/veh	36.8	0.0	20.8	10.7	35.7	1.4	
LnGrp LOS	D	A	C	B	D	A	
Approach Vol, veh/h	593			470	466		
Approach Delay, s/veh	36.8			12.2	32.4		
Approach LOS	D			B	C		
Timer - Assigned Phs		2			5	6	8
Phs Duration (G+Y+Rc), s		34.2			15.3	18.9	25.8
Change Period (Y+Rc), s		4.0			4.0	4.0	4.0
Max Green Setting (Gmax), s		29.0			7.0	18.0	23.0
Max Q Clear Time (g_c+l1), s		10.1			3.8	14.0	21.4
Green Ext Time (p_c), s		1.9			0.0	0.9	0.4

Intersection Summary

HCM 6th Ctrl Delay	27.9
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

HCM 6th Signalized Intersection Summary

7: Redlands Blvd & SR-60 WB Ramps

Existing
PM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↑	↕	↕	↕	↕
Traffic Volume (veh/h)	1	12	7	43	0	22	11	667	141	300	397	4
Future Volume (veh/h)	1	12	7	43	0	22	11	667	141	300	397	4
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	1	13	7	46	0	23	12	710	150	319	422	4
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	3	33	18	61	0	30	35	720	695	734	1439	14
Arrive On Green	0.03	0.03	0.03	0.05	0.00	0.05	0.04	0.76	0.76	0.41	0.77	0.77
Sat Flow, veh/h	85	1107	596	1159	0	579	1810	1900	1610	1810	1879	18
Grp Volume(v), veh/h	21	0	0	69	0	0	12	710	150	319	0	426
Grp Sat Flow(s),veh/h/ln	788	0	0	1738	0	0	1810	1900	1610	1810	0	1897
Q Serve(g_s), s	1.4	0.0	0.0	4.7	0.0	0.0	0.8	43.0	3.0	15.3	0.0	8.1
Cycle Q Clear(g_c), s	1.4	0.0	0.0	4.7	0.0	0.0	0.8	43.0	3.0	15.3	0.0	8.1
Prop In Lane	0.05		0.33	0.67		0.33	1.00		1.00	1.00		0.01
Lane Grp Cap(c), veh/h	53	0	0	91	0	0	35	720	695	734	0	1452
V/C Ratio(X)	0.40	0.00	0.00	0.76	0.00	0.00	0.34	0.99	0.22	0.43	0.00	0.29
Avail Cap(c_a), veh/h	268	0	0	261	0	0	106	728	702	734	0	1452
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	0.00	0.00	1.00	0.00	0.00	0.65	0.65	0.65	0.77	0.00	0.77
Uniform Delay (d), s/veh	57.2	0.0	0.0	56.1	0.0	0.0	57.0	14.2	7.9	25.7	0.0	4.3
Incr Delay (d2), s/veh	4.8	0.0	0.0	11.9	0.0	0.0	3.8	23.9	0.5	0.3	0.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.0	0.0	2.4	0.0	0.0	0.4	10.2	1.1	6.2	0.0	2.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	62.0	0.0	0.0	68.0	0.0	0.0	60.7	38.1	8.4	26.0	0.0	4.6
LnGrp LOS	E	A	A	E	A	A	E	D	A	C	A	A
Approach Vol, veh/h		21			69			872			745	
Approach Delay, s/veh		62.0			68.0			33.3			13.8	
Approach LOS		E			E			C			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	52.7	49.5		7.5	6.3	95.9		10.3				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	20.0	46.0		18.0	7.0	61.0		18.0				
Max Q Clear Time (g_c+1),s	17.3	45.0		3.4	2.8	10.1		6.7				
Green Ext Time (p_c), s	0.4	0.5		0.0	0.0	2.4		0.2				
Intersection Summary												
HCM 6th Ctrl Delay				26.5								
HCM 6th LOS				C								

HCM 6th Signalized Intersection Summary

8: Redlands Blvd & Ironwood Ave

Existing
PM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕		↕	↕	↕
Traffic Volume (veh/h)	100	19	19	4	11	6	12	683	6	3	694	183
Future Volume (veh/h)	100	19	19	4	11	6	12	683	6	3	694	183
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		0.99	1.00		0.99
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	103	20	20	4	11	6	12	704	6	3	715	189
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	174	34	34	18	49	27	39	899	8	10	878	740
Arrive On Green	0.14	0.14	0.14	0.05	0.05	0.05	0.02	0.48	0.48	0.01	0.46	0.46
Sat Flow, veh/h	1286	250	250	339	933	509	1810	1881	16	1810	1900	1601
Grp Volume(v), veh/h	143	0	0	21	0	0	12	0	710	3	715	189
Grp Sat Flow(s),veh/h/ln	786	0	0	1781	0	0	1810	0	1897	1810	1900	1601
Q Serve(g_s), s	3.7	0.0	0.0	0.6	0.0	0.0	0.3	0.0	15.2	0.1	15.8	3.5
Cycle Q Clear(g_c), s	3.7	0.0	0.0	0.6	0.0	0.0	0.3	0.0	15.2	0.1	15.8	3.5
Prop In Lane	0.72		0.14	0.19		0.29	1.00		0.01	1.00		1.00
Lane Grp Cap(c), veh/h	242	0	0	93	0	0	39	0	907	10	878	740
V/C Ratio(X)	0.59	0.00	0.00	0.22	0.00	0.00	0.31	0.00	0.78	0.29	0.81	0.26
Avail Cap(c_a), veh/h	880	0	0	950	0	0	260	0	1441	260	1443	1216
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	19.8	0.0	0.0	22.1	0.0	0.0	23.5	0.0	10.6	24.1	11.3	8.0
Incr Delay (d2), s/veh	2.3	0.0	0.0	1.2	0.0	0.0	4.4	0.0	1.5	14.7	1.9	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	0.0	0.0	0.2	0.0	0.0	0.2	0.0	3.9	0.1	4.2	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	22.1	0.0	0.0	23.3	0.0	0.0	27.9	0.0	12.1	38.8	13.2	8.2
LnGrp LOS	C	A	A	C	A	A	C	A	B	D	B	A
Approach Vol, veh/h		143			21			722			907	
Approach Delay, s/veh		22.1			23.3			12.4			12.2	
Approach LOS		C			C			B			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	4.3	27.3		10.6	5.0	26.5		6.6				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	37.0			24.0	7.0	37.0		26.0				
Max Q Clear Time (g_c+I),s	17.2			5.7	2.3	17.8		2.6				
Green Ext Time (p_c), s	0.0	4.1		0.6	0.0	4.7		0.0				
Intersection Summary												
HCM 6th Ctrl Delay				13.2								
HCM 6th LOS				B								

Appendix D

Freeway LOS Worksheets for Existing Conditions

HCS7 Freeway Facilities Report

Project Information

Analyst	WSP	Date	7/3/2018
Agency	City of Moreno Valley	Analysis Year	2018 Alt 1
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	WLC Pkwy IC - Eastbound SR-60		

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	11
Total Time Periods	8	Time Period Duration, min	15

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic	Moreno Beach Rd to Redlands Blvd	1350	3
2	Diverge	Basic	Off-Ramp to Redlands Blvd	1500	3
3	Basic	Basic	between Redlands Blvd Off and SB Redlands Blvd On Ramp	1270	2
4	Merge	Merge	On-Ramp from SB Redlands Blvd (Loop)	1500	2
5	Basic	Basic	Redlands Blvd to Theodore St	1155	2
6	Diverge	Diverge	Off-Ramp to Theodore St	1500	2
7	Basic	Basic	between Theodore St Off and Theodore St On Ramps	900	2
8	Merge	Merge	On-Ramp from Theodore St	1220	2
9	Overlap	Overlap	Theodore St to Gilman Springs	280	2
10	Diverge	Diverge	Off-Ramp to Gilman Spring	1220	2
11	Basic	Basic	east of Gilman Springs Rd Off Ramp	1850	2

Facility Segment Data

Segment 1: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	1.00	0.901	2286	7200	0.32	75.4	10.1	A
2	1.00	0.901	2180	7200	0.30	75.4	9.6	A
3	1.00	0.901	2371	7200	0.33	75.4	10.5	A
4	1.00	0.901	2295	7200	0.32	75.4	10.1	A
5	1.00	0.901	1936	7200	0.27	75.4	8.6	A
6	1.00	0.901	2024	7200	0.28	75.4	9.0	A
7	1.00	0.901	2198	7200	0.31	75.4	9.7	A
8	1.00	0.901	2420	7200	0.34	75.4	10.7	A

Segment 2: Diverge

Time Period	PHF	fHV	Flow Rate (pc/h)	D-1 Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
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	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	1.00	1.00	0.901	0.917	2286	279	7200	2000	0.32	0.14	75.4	-	10.1	-	A
2	1.00	1.00	0.901	0.917	2180	236	7200	2000	0.30	0.12	75.4	-	9.6	-	A
3	1.00	1.00	0.901	0.917	2371	297	7200	2000	0.33	0.15	75.4	-	10.5	-	A
4	1.00	1.00	0.901	0.917	2295	314	7200	2000	0.32	0.16	75.4	-	10.1	-	A
5	1.00	1.00	0.901	0.917	1936	366	7200	2000	0.27	0.18	75.4	-	8.6	-	A
6	1.00	1.00	0.901	0.917	2024	414	7200	2000	0.28	0.21	75.4	-	9.0	-	A
7	1.00	1.00	0.901	0.917	2198	336	7200	2000	0.31	0.17	75.4	-	9.7	-	A
8	1.00	1.00	0.901	0.917	2420	401	7200	2000	0.34	0.20	75.4	-	10.7	-	A

Segment 3: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	1.00	0.893	2020	4800	0.42	72.6	13.9	B
2	1.00	0.893	1957	4800	0.41	72.6	13.5	B
3	1.00	0.893	2087	4800	0.43	72.6	14.4	B
4	1.00	0.893	1993	4800	0.42	72.6	13.7	B
5	1.00	0.893	1577	4800	0.33	72.6	10.9	A
6	1.00	0.893	1617	4800	0.34	72.6	11.1	B
7	1.00	0.893	1872	4800	0.39	72.6	12.9	B
8	1.00	0.893	2029	4800	0.42	72.6	14.0	B

Segment 4: Merge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	1.00	1.00	0.893	0.952	2083	63	4800	2000	0.43	0.03	65.5	65.5	15.9	16.7	B
2	1.00	1.00	0.893	0.952	2070	113	4800	2000	0.43	0.06	65.5	65.5	15.8	16.6	B
3	1.00	1.00	0.893	0.952	2167	80	4800	2000	0.45	0.04	65.4	65.4	16.6	17.4	B
4	1.00	1.00	0.893	0.952	2098	105	4800	2000	0.44	0.05	65.5	65.5	16.0	16.8	B
5	1.00	1.00	0.893	0.952	1682	105	4800	2000	0.35	0.05	65.8	65.8	12.8	13.6	B
6	1.00	1.00	0.893	0.952	1663	46	4800	2000	0.35	0.02	65.8	65.8	12.6	13.5	B
7	1.00	1.00	0.893	0.952	1943	71	4800	2000	0.40	0.04	65.6	65.6	14.8	15.7	B
8	1.00	1.00	0.893	0.952	2088	59	4800	2000	0.44	0.03	65.5	65.5	15.9	16.8	B

Segment 5: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	1.00	0.893	2087	4800	0.43	72.6	14.4	B
2	1.00	0.893	2078	4800	0.43	72.6	14.3	B
3	1.00	0.893	2172	4800	0.45	72.6	15.0	B
4	1.00	0.893	2105	4800	0.44	72.6	14.5	B
5	1.00	0.893	1689	4800	0.35	72.6	11.6	B
6	1.00	0.893	1666	4800	0.35	72.6	11.5	B
7	1.00	0.893	1948	4800	0.41	72.6	13.4	B

8	1.00	0.893	2092	4800	0.44	72.6	14.4	B							
Segment 6: Diverge															
Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	1.00	1.00	0.893	0.758	2087	90	4800	2000	0.43	0.05	60.8	60.8	17.2	20.6	C
2	1.00	1.00	0.893	0.758	2078	106	4800	2000	0.43	0.05	60.8	60.8	17.1	20.5	C
3	1.00	1.00	0.893	0.758	2172	100	4800	2000	0.45	0.05	60.8	60.8	17.9	21.3	C
4	1.00	1.00	0.893	0.758	2105	106	4800	2000	0.44	0.05	60.8	60.8	17.3	20.7	C
5	1.00	1.00	0.893	0.758	1689	142	4800	2000	0.35	0.07	60.7	60.7	13.9	17.2	B
6	1.00	1.00	0.893	0.758	1666	179	4800	2000	0.35	0.09	60.6	60.6	13.7	17.0	B
7	1.00	1.00	0.893	0.758	1948	169	4800	2000	0.41	0.08	60.6	60.6	16.1	19.4	B
8	1.00	1.00	0.893	0.758	2092	132	4800	2000	0.44	0.07	60.7	60.7	17.2	20.6	C
Segment 7: Basic															
Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	1.00		0.901		1993		4800		0.42		72.6		13.7		B
2	1.00		0.901		1971		4800		0.41		72.6		13.6		B
3	1.00		0.901		2069		4800		0.43		72.6		14.2		B
4	1.00		0.901		1998		4800		0.42		72.6		13.8		B
5	1.00		0.901		1554		4800		0.32		72.6		10.7		A
6	1.00		0.901		1501		4800		0.31		72.6		10.3		A
7	1.00		0.901		1789		4800		0.37		72.6		12.3		B
8	1.00		0.901		1962		4800		0.41		72.6		13.5		B
Segment 8: Merge															
Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	1.00	1.00	0.901	0.746	2020	27	4800	2000	0.42	0.01	64.4	64.4	15.7	19.4	B
2	1.00	1.00	0.901	0.746	2030	59	4800	2000	0.42	0.03	64.4	64.4	15.8	19.5	B
3	1.00	1.00	0.901	0.746	2128	59	4800	2000	0.44	0.03	64.3	64.3	16.5	20.2	C
4	1.00	1.00	0.901	0.746	2073	75	4800	2000	0.43	0.04	64.3	64.3	16.1	19.8	B
5	1.00	1.00	0.901	0.746	1613	59	4800	2000	0.34	0.03	64.7	64.7	12.5	16.2	B
6	1.00	1.00	0.901	0.746	1539	38	4800	2000	0.32	0.02	64.8	64.8	11.9	15.7	B
7	1.00	1.00	0.901	0.746	1837	48	4800	2000	0.38	0.02	64.6	64.6	14.2	18.0	B
8	1.00	1.00	0.901	0.746	2042	80	4800	2000	0.43	0.04	64.4	64.4	15.9	19.6	B
Segment 9: Overlap															
Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	1.00		0.901		2016		4800		0.42		59.8		16.9		B
2	1.00		0.901		2020		4800		0.42		59.8		16.9		B
3	1.00		0.901		2118		4800		0.44		59.7		17.7		B

4	1.00	0.901	2060	4800	0.43	59.8	17.2	B
5	1.00	0.901	1603	4800	0.33	60.1	13.3	B
6	1.00	0.901	1532	4800	0.32	60.1	12.7	B
7	1.00	0.901	1829	4800	0.38	59.9	15.3	B
8	1.00	0.901	2029	4800	0.42	59.9	16.9	B

Segment 10: Diverge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	1.00	1.00	0.901	0.935	2016	419	4800	2000	0.42	0.21	59.8	59.8	16.9	20.0	B
2	1.00	1.00	0.901	0.935	2020	436	4800	2000	0.42	0.22	59.8	59.8	16.9	20.0	B
3	1.00	1.00	0.901	0.935	2118	479	4800	2000	0.44	0.24	59.7	59.7	17.7	20.8	C
4	1.00	1.00	0.901	0.935	2060	445	4800	2000	0.43	0.22	59.8	59.8	17.2	20.3	C
5	1.00	1.00	0.901	0.935	1603	325	4800	2000	0.33	0.16	60.1	60.1	13.3	16.4	B
6	1.00	1.00	0.901	0.935	1532	321	4800	2000	0.32	0.16	60.1	60.1	12.7	15.8	B
7	1.00	1.00	0.901	0.935	1829	406	4800	2000	0.38	0.20	59.9	59.9	15.3	18.4	B
8	1.00	1.00	0.901	0.935	2029	398	4800	2000	0.42	0.20	59.9	59.9	16.9	20.1	C

Segment 11: Basic

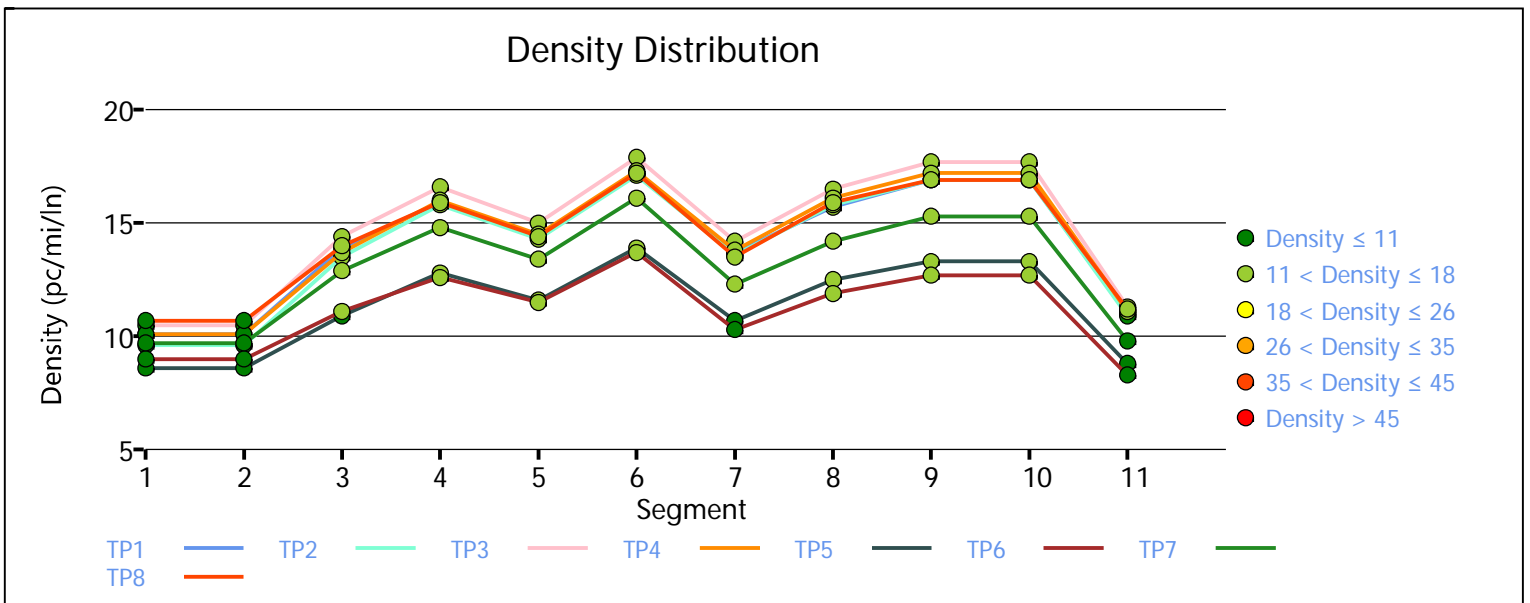
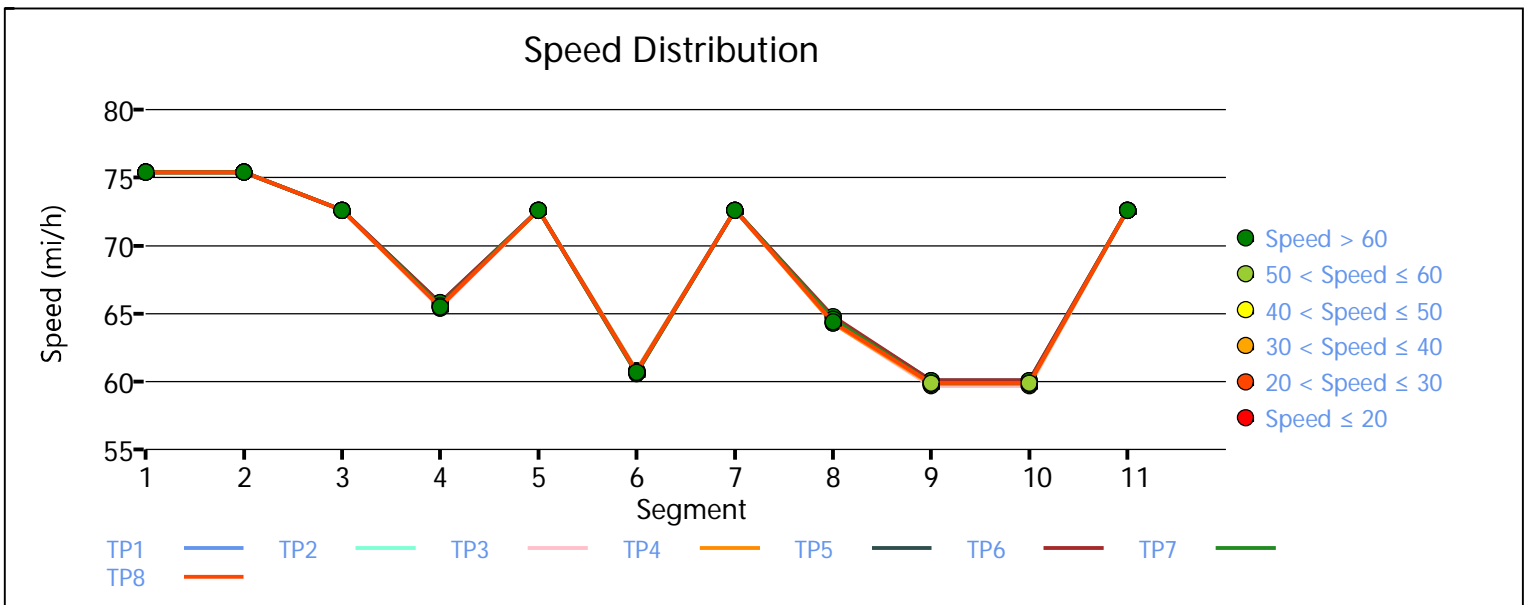
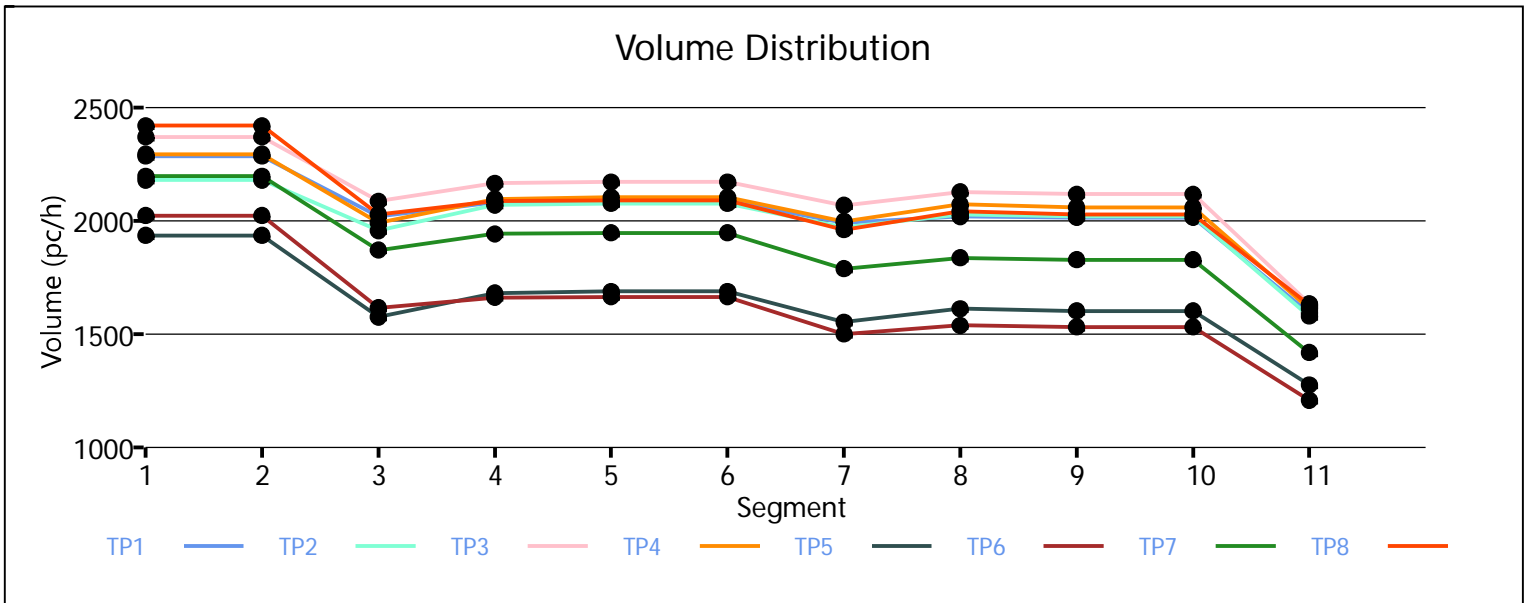
Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	1.00	0.893	1595	4800	0.33	72.6	11.0	A
2	1.00	0.893	1581	4800	0.33	72.6	10.9	A
3	1.00	0.893	1635	4800	0.34	72.6	11.3	B
4	1.00	0.893	1613	4800	0.34	72.6	11.1	B
5	1.00	0.893	1277	4800	0.27	72.6	8.8	A
6	1.00	0.893	1209	4800	0.25	72.6	8.3	A
7	1.00	0.893	1420	4800	0.30	72.6	9.8	A
8	1.00	0.893	1630	4800	0.34	72.6	11.2	B

Facility Time Period Results

T	Speed, mi/h	Density, pc/mi/ln	Density, veh/mi/ln	Travel Time, min	LOS
1	68.5	13.5	12.1	2.3	B
2	68.4	13.3	11.9	2.3	B
3	68.5	14.0	12.6	2.3	B
4	68.5	13.6	12.2	2.3	B
5	68.7	10.9	9.8	2.3	A
6	68.8	10.8	9.7	2.3	A
7	68.6	12.5	11.2	2.3	B
8	68.6	13.7	12.3	2.3	B

Facility Overall Results

Space Mean Speed, mi/h	68.6	Density, veh/mi/ln	11.4
Average Travel Time, min	2.3	Density, pc/mi/ln	12.8



HCS7 Freeway Facilities Report

Project Information

Analyst	WSP	Date	7/3/2018
Agency	City of Moreno Valley	Analysis Year	2018 Alt 1
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	WLC Pkwy IC - Eastbound SR-60		

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	11
Total Time Periods	8	Time Period Duration, min	15

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic	Moreno Beach Rd to Redlands Blvd	1350	3
2	Diverge	Basic	Off-Ramp to Redlands Blvd	1500	3
3	Basic	Basic	between Redlands Blvd Off and SB Redlands Blvd On Ramp	1270	2
4	Merge	Merge	On-Ramp from SB Redlands Blvd (Loop)	1500	2
5	Basic	Basic	Redlands Blvd to Theodore St	1155	2
6	Diverge	Diverge	Off-Ramp to Theodore St	1500	2
7	Basic	Basic	between Theodore St Off and Theodore St On Ramps	900	2
8	Merge	Merge	On-Ramp from Theodore St	1220	2
9	Overlap	Overlap	Theodore St to Gilman Springs	280	2
10	Diverge	Diverge	Off-Ramp to Gilman Spring	1220	2
11	Basic	Basic	east of Gilman Springs Rd Off Ramp	1850	2

Facility Segment Data

Segment 1: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	1.00	0.943	2834	7200	0.39	75.4	12.5	B
2	1.00	0.943	3033	7200	0.42	75.4	13.4	B
3	1.00	0.943	3084	7200	0.43	75.4	13.6	B
4	1.00	0.943	3067	7200	0.43	75.4	13.6	B
5	1.00	0.943	2990	7200	0.42	75.4	13.2	B
6	1.00	0.943	3130	7200	0.43	75.4	13.8	B
7	1.00	0.943	2770	7200	0.38	75.4	12.2	B
8	1.00	0.943	3215	7200	0.45	75.3	14.2	B

Segment 2: Diverge

Time Period	PHF	fHV	Flow Rate (pc/h)	D-6 Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
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	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	1.00	1.00	0.943	0.980	2834	514	7200	2000	0.39	0.26	75.4	-	12.5	-	B
2	1.00	1.00	0.943	0.980	3033	567	7200	2000	0.42	0.28	75.4	-	13.4	-	B
3	1.00	1.00	0.943	0.980	3084	559	7200	2000	0.43	0.28	75.4	-	13.6	-	B
4	1.00	1.00	0.943	0.980	3067	584	7200	2000	0.43	0.29	75.4	-	13.6	-	B
5	1.00	1.00	0.943	0.980	2990	588	7200	2000	0.42	0.29	75.4	-	13.2	-	B
6	1.00	1.00	0.943	0.980	3130	535	7200	2000	0.43	0.27	75.4	-	13.8	-	B
7	1.00	1.00	0.943	0.980	2770	510	7200	2000	0.38	0.26	75.4	-	12.2	-	B
8	1.00	1.00	0.943	0.980	3215	563	7200	2000	0.45	0.28	75.3	-	14.2	-	B

Segment 3: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	1.00	0.935	2319	4800	0.48	72.6	16.0	B
2	1.00	0.935	2464	4800	0.51	72.4	17.0	B
3	1.00	0.935	2524	4800	0.53	72.3	17.5	B
4	1.00	0.935	2481	4800	0.52	72.4	17.1	B
5	1.00	0.935	2400	4800	0.50	72.5	16.6	B
6	1.00	0.935	2597	4800	0.54	72.1	18.0	B
7	1.00	0.935	2259	4800	0.47	72.6	15.6	B
8	1.00	0.935	2652	4800	0.55	72.0	18.4	C

Segment 4: Merge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	1.00	1.00	0.935	0.952	2403	84	4800	2000	0.50	0.04	65.1	65.1	18.5	19.2	B
2	1.00	1.00	0.935	0.952	2573	109	4800	2000	0.54	0.05	64.8	64.8	19.9	20.6	C
3	1.00	1.00	0.935	0.952	2608	84	4800	2000	0.54	0.04	64.8	64.8	20.1	20.8	C
4	1.00	1.00	0.935	0.952	2636	155	4800	2000	0.55	0.08	64.7	64.7	20.4	21.0	C
5	1.00	1.00	0.935	0.952	2497	97	4800	2000	0.52	0.05	65.0	65.0	19.2	20.0	B
6	1.00	1.00	0.935	0.952	2681	84	4800	2000	0.56	0.04	64.6	64.6	20.8	21.4	C
7	1.00	1.00	0.935	0.952	2339	80	4800	2000	0.49	0.04	65.2	65.2	17.9	18.7	B
8	1.00	1.00	0.935	0.952	2736	84	4800	2000	0.57	0.04	64.5	64.5	21.2	21.8	C

Segment 5: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	1.00	0.935	2404	4800	0.50	72.5	16.6	B
2	1.00	0.935	2575	4800	0.54	72.2	17.8	B
3	1.00	0.935	2610	4800	0.54	72.1	18.1	C
4	1.00	0.935	2640	4800	0.55	72.0	18.3	C
5	1.00	0.935	2498	4800	0.52	72.3	17.3	B
6	1.00	0.935	2682	4800	0.56	71.9	18.7	C
7	1.00	0.935	2340	4800	0.49	72.5	16.1	B

8	1.00	0.935	2738	4800	0.57	71.8	19.1	C							
Segment 6: Diverge															
Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	1.00	1.00	0.935	0.735	2404	33	4800	2000	0.50	0.02	61.0	61.0	19.7	23.3	C
2	1.00	1.00	0.935	0.735	2575	38	4800	2000	0.54	0.02	61.0	61.0	21.1	24.8	C
3	1.00	1.00	0.935	0.735	2610	82	4800	2000	0.54	0.04	60.9	60.9	21.4	25.1	C
4	1.00	1.00	0.935	0.735	2640	60	4800	2000	0.55	0.03	60.9	60.9	21.7	25.3	C
5	1.00	1.00	0.935	0.735	2498	54	4800	2000	0.52	0.03	60.9	60.9	20.5	24.1	C
6	1.00	1.00	0.935	0.735	2682	49	4800	2000	0.56	0.02	61.0	61.0	22.0	25.7	C
7	1.00	1.00	0.935	0.735	2340	65	4800	2000	0.49	0.03	60.9	60.9	19.2	22.8	C
8	1.00	1.00	0.935	0.735	2738	44	4800	2000	0.57	0.02	61.0	61.0	22.4	26.2	C
Segment 7: Basic															
Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	1.00		0.935		2379		4800		0.50		72.5		16.4		B
2	1.00		0.935		2545		4800		0.53		72.2		17.6		B
3	1.00		0.935		2545		4800		0.53		72.2		17.6		B
4	1.00		0.935		2593		4800		0.54		72.1		18.0		B
5	1.00		0.935		2456		4800		0.51		72.4		17.0		B
6	1.00		0.935		2644		4800		0.55		72.0		18.4		C
7	1.00		0.935		2289		4800		0.48		72.6		15.8		B
8	1.00		0.935		2704		4800		0.56		71.9		18.8		C
Segment 8: Merge															
Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	1.00	1.00	0.935	0.935	2422	43	4800	2000	0.50	0.02	63.9	63.9	19.0	22.5	C
2	1.00	1.00	0.935	0.935	2579	34	4800	2000	0.54	0.02	63.7	63.7	20.2	23.8	C
3	1.00	1.00	0.935	0.935	2605	60	4800	2000	0.54	0.03	63.6	63.6	20.5	24.0	C
4	1.00	1.00	0.935	0.935	2653	60	4800	2000	0.55	0.03	63.5	63.5	20.9	24.3	C
5	1.00	1.00	0.935	0.935	2490	34	4800	2000	0.52	0.02	63.8	63.8	19.5	23.1	C
6	1.00	1.00	0.935	0.935	2678	34	4800	2000	0.56	0.02	63.5	63.5	21.1	24.5	C
7	1.00	1.00	0.935	0.935	2336	47	4800	2000	0.49	0.02	64.0	64.0	18.2	21.9	C
8	1.00	1.00	0.935	0.935	2734	30	4800	2000	0.57	0.02	63.4	63.4	21.6	25.0	C
Segment 9: Overlap															
Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	1.00		0.935		2421		4800		0.50		58.9		20.6		C
2	1.00		0.935		2580		4800		0.54		58.4		22.1		C
3	1.00		0.935		2605		4800		0.54		58.3		22.3		C

4	1.00	0.935	2652	4800	0.55	58.4	22.7	C
5	1.00	0.935	2490	4800	0.52	58.7	21.2	C
6	1.00	0.935	2678	4800	0.56	58.0	23.1	C
7	1.00	0.935	2336	4800	0.49	58.4	20.0	C
8	1.00	0.935	2734	4800	0.57	57.9	23.6	C

Segment 10: Diverge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	1.00	1.00	0.935	0.980	2421	727	4800	2000	0.50	0.36	58.9	58.9	20.6	23.5	C
2	1.00	1.00	0.935	0.980	2580	914	4800	2000	0.54	0.46	58.4	58.4	22.1	24.8	C
3	1.00	1.00	0.935	0.980	2605	939	4800	2000	0.54	0.47	58.3	58.3	22.3	25.0	C
4	1.00	1.00	0.935	0.980	2652	914	4800	2000	0.55	0.46	58.4	58.4	22.7	25.4	C
5	1.00	1.00	0.935	0.980	2490	812	4800	2000	0.52	0.41	58.7	58.7	21.2	24.0	C
6	1.00	1.00	0.935	0.980	2678	1024	4800	2000	0.56	0.51	58.0	58.0	23.1	25.7	C
7	1.00	1.00	0.935	0.980	2336	886	4800	2000	0.49	0.44	58.4	58.4	20.0	22.7	C
8	1.00	1.00	0.935	0.980	2734	1061	4800	2000	0.57	0.53	57.9	57.9	23.6	26.1	C

Segment 11: Basic

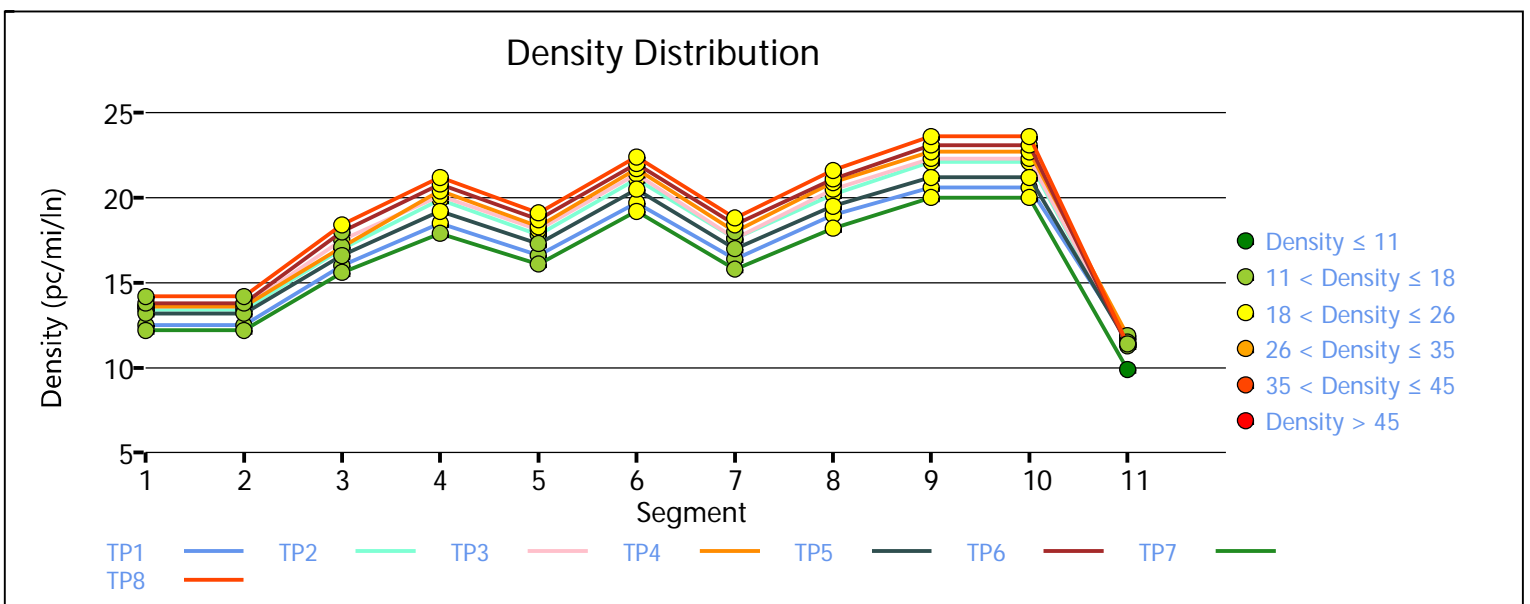
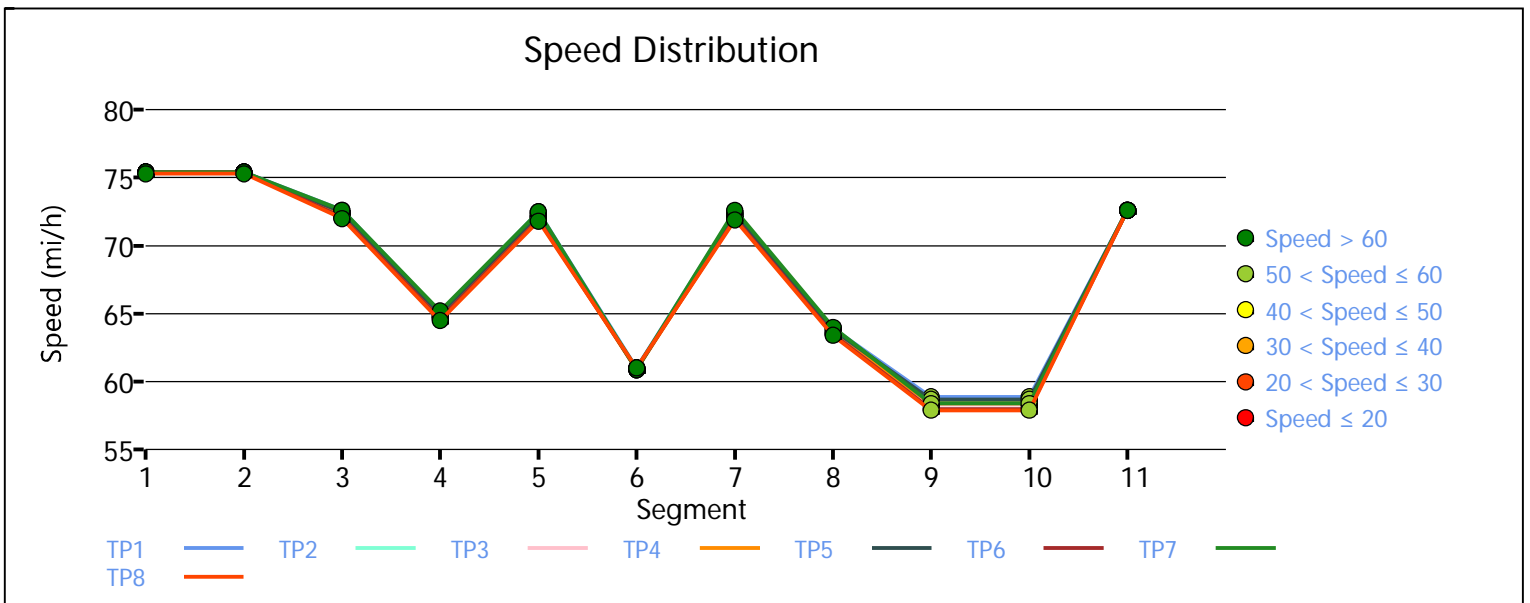
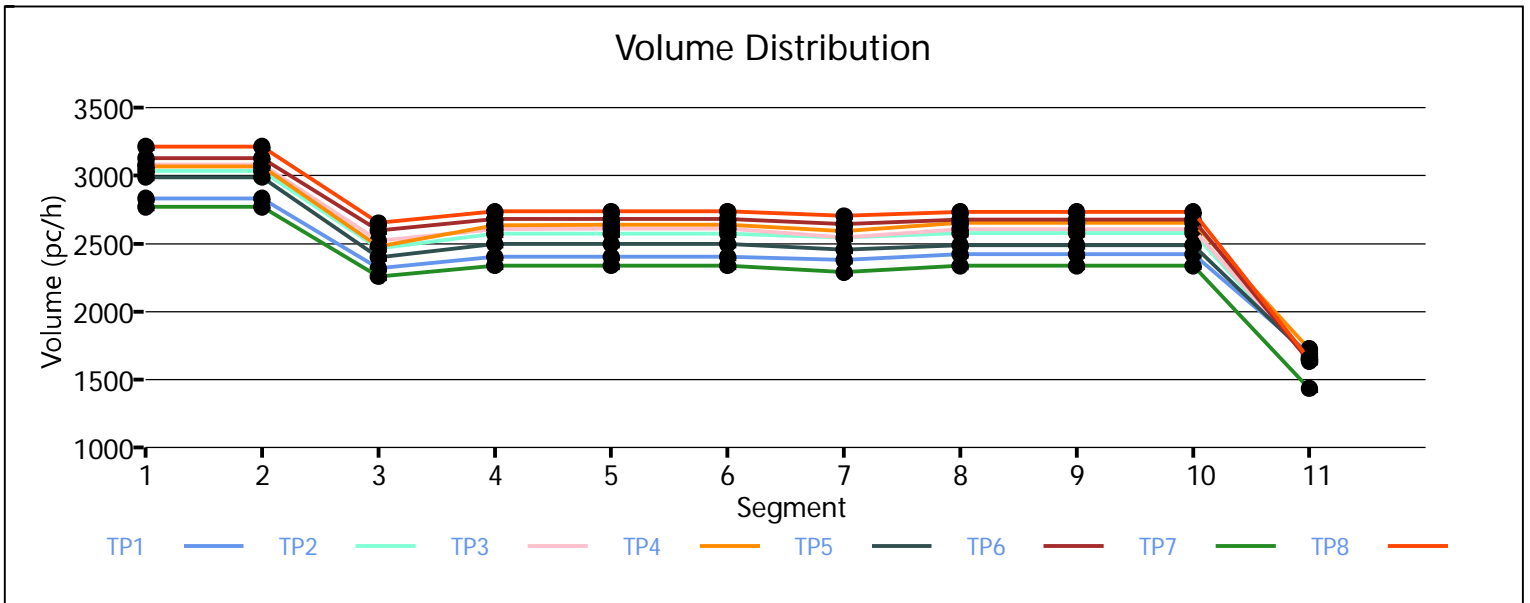
Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	1.00	0.917	1692	4800	0.35	72.6	11.7	B
2	1.00	0.917	1653	4800	0.34	72.6	11.4	B
3	1.00	0.917	1653	4800	0.34	72.6	11.4	B
4	1.00	0.917	1727	4800	0.36	72.6	11.9	B
5	1.00	0.917	1671	4800	0.35	72.6	11.5	B
6	1.00	0.917	1636	4800	0.34	72.6	11.3	B
7	1.00	0.917	1435	4800	0.30	72.6	9.9	A
8	1.00	0.917	1653	4800	0.34	72.6	11.4	B

Facility Time Period Results

T	Speed, mi/h	Density, pc/mi/ln	Density, veh/mi/ln	Travel Time, min	LOS
1	68.3	15.9	14.8	2.3	B
2	68.1	16.9	15.8	2.3	B
3	68.1	17.1	16.0	2.3	B
4	68.0	17.3	16.1	2.3	B
5	68.3	16.4	15.4	2.3	B
6	67.9	17.5	16.4	2.3	B
7	68.2	15.2	14.3	2.3	B
8	67.9	17.9	16.7	2.3	B

Facility Overall Results

Space Mean Speed, mi/h	68.1	Density, veh/mi/ln	15.7
Average Travel Time, min	2.3	Density, pc/mi/ln	16.8



HCS7 Freeway Facilities Report

Project Information

Analyst	WSP	Date	7/3/2018
Agency	City of Moreno Valley	Analysis Year	2018 Alt 1
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	WLC Pkwy IC - Westbound SR-60		

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	10
Total Time Periods	8	Time Period Duration, min	15

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic	east of Gilman Springs Rd On Ramp	1600	2
2	Merge	Merge	On-Ramp from Gilman Spring	610	2
3	Diverge	Diverge	Off-Ramp to Theodore St	610	2
4	Basic	Basic	between Theodore St Off and Theodore St On Ramps	980	2
5	Merge	Merge	On-Ramp from Theodore St	1500	2
6	Basic	Basic	Theodore St to Redlands Blvd	1210	2
7	Diverge	Diverge	Off-Ramp to Redlands Blvd	1500	2
8	Basic	Basic	between Redlands Blvd Off and On Ramps	1060	2
9	Merge	Merge	On-Ramp from Redlands Blvd	1500	2
10	Basic	Basic	Redlands Blvd to Moreno Beach Rd	2470	2

Facility Segment Data

Segment 1: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	1.00	0.893	1250	4800	0.26	75.4	8.3	A
2	1.00	0.893	1415	4800	0.29	75.4	9.4	A
3	1.00	0.893	1151	4800	0.24	75.4	7.6	A
4	1.00	0.893	1191	4800	0.25	75.4	7.9	A
5	1.00	0.893	1017	4800	0.21	75.4	6.7	A
6	1.00	0.893	1102	4800	0.23	75.4	7.3	A
7	1.00	0.893	1030	4800	0.21	75.4	6.8	A
8	1.00	0.893	1142	4800	0.24	75.4	7.6	A

Segment 2: Merge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	

1	1.00	1.00	0.917	0.962	2173	956	4800	2000	0.45	0.48	64.5	64.5	16.8	19.4	B
2	1.00	1.00	0.917	0.962	2135	757	4800	2000	0.44	0.38	64.5	64.5	16.6	19.2	B
3	1.00	1.00	0.917	0.962	1882	761	4800	2000	0.39	0.38	64.8	64.8	14.5	17.2	B
4	1.00	1.00	0.917	0.962	1846	686	4800	2000	0.38	0.34	64.8	64.8	14.2	17.0	B
5	1.00	1.00	0.917	0.962	1630	640	4800	2000	0.34	0.32	65.0	65.0	12.5	15.3	B
6	1.00	1.00	0.917	0.962	1705	632	4800	2000	0.36	0.32	64.9	64.9	13.1	15.9	B
7	1.00	1.00	0.917	0.962	1456	453	4800	2000	0.30	0.23	65.1	65.1	11.2	14.1	B
8	1.00	1.00	0.917	0.962	1590	478	4800	2000	0.33	0.24	65.0	65.0	12.2	15.1	B

Segment 3: Diverge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	1.00	1.00	0.917	0.741	2220	49	4800	2000	0.46	0.02	61.0	61.0	18.2	21.7	C
2	1.00	1.00	0.917	0.741	2172	103	4800	2000	0.45	0.05	60.8	60.8	17.9	21.3	C
3	1.00	1.00	0.917	0.741	1919	76	4800	2000	0.40	0.04	60.9	60.9	15.8	19.1	B
4	1.00	1.00	0.917	0.741	1880	130	4800	2000	0.39	0.07	60.7	60.7	15.5	18.8	B
5	1.00	1.00	0.917	0.741	1662	76	4800	2000	0.35	0.04	60.9	60.9	13.6	16.9	B
6	1.00	1.00	0.917	0.741	1736	65	4800	2000	0.36	0.03	60.9	60.9	14.3	17.6	B
7	1.00	1.00	0.917	0.741	1479	59	4800	2000	0.31	0.03	60.9	60.9	12.1	15.4	B
8	1.00	1.00	0.917	0.741	1614	81	4800	2000	0.34	0.04	60.9	60.9	13.3	16.5	B

Segment 4: Basic

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
1	1.00		0.926		2160		4800		0.45		72.6		14.9	B	
2	1.00		0.926		2069		4800		0.43		72.6		14.2	B	
3	1.00		0.926		1840		4800		0.38		72.6		12.7	B	
4	1.00		0.926		1758		4800		0.37		72.6		12.1	B	
5	1.00		0.926		1585		4800		0.33		72.6		10.9	A	
6	1.00		0.926		1667		4800		0.35		72.6		11.5	B	
7	1.00		0.926		1417		4800		0.30		72.6		9.8	A	
8	1.00		0.926		1533		4800		0.32		72.6		10.6	A	

Segment 5: Merge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	1.00	1.00	0.917	0.613	2214	33	4800	2000	0.46	0.02	65.6	65.6	16.9	17.2	B
2	1.00	1.00	0.917	0.613	2128	39	4800	2000	0.44	0.02	65.7	65.7	16.2	16.5	B
3	1.00	1.00	0.917	0.613	1910	52	4800	2000	0.40	0.03	65.9	65.9	14.5	14.8	B
4	1.00	1.00	0.917	0.613	1808	33	4800	2000	0.38	0.02	66.0	66.0	13.7	14.0	B
5	1.00	1.00	0.917	0.613	1660	59	4800	2000	0.35	0.03	66.1	66.1	12.6	12.8	B
6	1.00	1.00	0.917	0.613	1743	59	4800	2000	0.36	0.03	66.0	66.0	13.2	13.5	B
7	1.00	1.00	0.917	0.613	1516	85	4800	2000	0.32	0.04	66.2	66.2	11.5	11.7	B

8	1.00	1.00	0.917	0.613	1588	39	4800	2000	0.33	0.02	66.1	66.1	12.0	12.3	B
Segment 6: Basic															
Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
1	1.00		0.917		2203		4800		0.46		72.6		15.2		B
2	1.00		0.917		2116		4800		0.44		72.6		14.6		B
3	1.00		0.917		1893		4800		0.39		72.6		13.0		B
4	1.00		0.917		1797		4800		0.37		72.6		12.4		B
5	1.00		0.917		1640		4800		0.34		72.6		11.3		B
6	1.00		0.917		1723		4800		0.36		72.6		11.9		B
7	1.00		0.917		1487		4800		0.31		72.6		10.2		A
8	1.00		0.917		1575		4800		0.33		72.6		10.9		A
Segment 7: Diverge															
Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	1.00	1.00	0.917	0.971	2203	66	4800	2000	0.46	0.03	60.9	60.9	18.1	21.6	C
2	1.00	1.00	0.917	0.971	2116	66	4800	2000	0.44	0.03	60.9	60.9	17.4	20.8	C
3	1.00	1.00	0.917	0.971	1893	78	4800	2000	0.39	0.04	60.9	60.9	15.5	18.9	B
4	1.00	1.00	0.917	0.971	1797	91	4800	2000	0.37	0.05	60.8	60.8	14.8	18.1	B
5	1.00	1.00	0.917	0.971	1640	70	4800	2000	0.34	0.04	60.9	60.9	13.5	16.7	B
6	1.00	1.00	0.917	0.971	1723	49	4800	2000	0.36	0.02	61.0	61.0	14.1	17.4	B
7	1.00	1.00	0.917	0.971	1487	66	4800	2000	0.31	0.03	60.9	60.9	12.2	15.4	B
8	1.00	1.00	0.917	0.971	1575	37	4800	2000	0.33	0.02	61.0	61.0	12.9	16.2	B
Segment 8: Basic															
Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
1	1.00		0.917		2133		4800		0.44		72.6		14.7		B
2	1.00		0.917		2046		4800		0.43		72.6		14.1		B
3	1.00		0.917		1810		4800		0.38		72.6		12.5		B
4	1.00		0.917		1701		4800		0.35		72.6		11.7		B
5	1.00		0.917		1566		4800		0.33		72.6		10.8		A
6	1.00		0.917		1671		4800		0.35		72.6		11.5		B
7	1.00		0.917		1418		4800		0.30		72.6		9.8		A
8	1.00		0.917		1535		4800		0.32		72.6		10.6		A
Segment 9: Merge															
Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	1.00	1.00	0.926	0.962	2478	366	4800	2000	0.52	0.18	65.1	65.1	19.0	19.4	B
2	1.00	1.00	0.926	0.962	2475	449	4800	2000	0.52	0.22	65.1	65.1	19.0	19.3	B
3	1.00	1.00	0.926	0.962	2230	437	4800	2000	0.46	0.22	65.4	65.4	17.0	17.4	B

4	1.00	1.00	0.926	0.962	2076	391	4800	2000	0.43	0.20	65.6	65.6	15.8	16.2	B
5	1.00	1.00	0.926	0.962	1896	345	4800	2000	0.40	0.17	65.8	65.8	14.4	14.8	B
6	1.00	1.00	0.926	0.962	1978	324	4800	2000	0.41	0.16	65.7	65.7	15.1	15.5	B
7	1.00	1.00	0.926	0.962	1832	428	4800	2000	0.38	0.21	65.8	65.8	13.9	14.3	B
8	1.00	1.00	0.926	0.962	1862	341	4800	2000	0.39	0.17	65.8	65.8	14.1	14.6	B

Segment 10: Basic

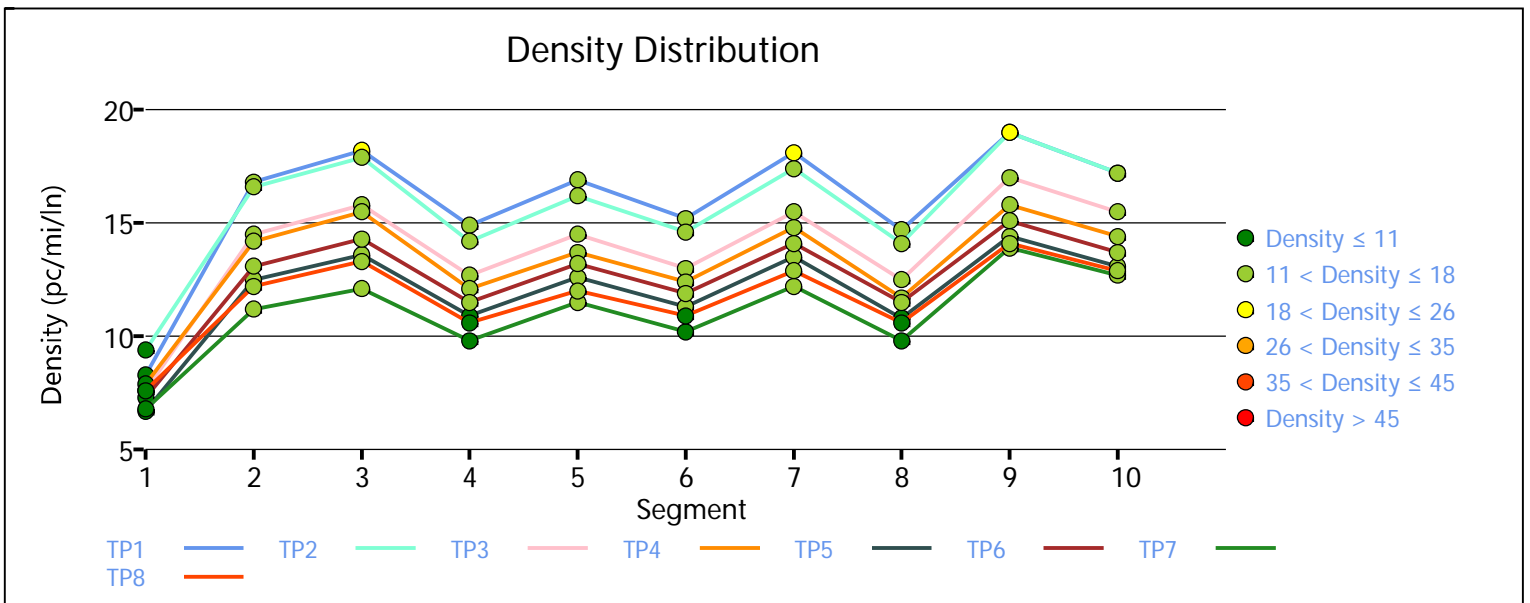
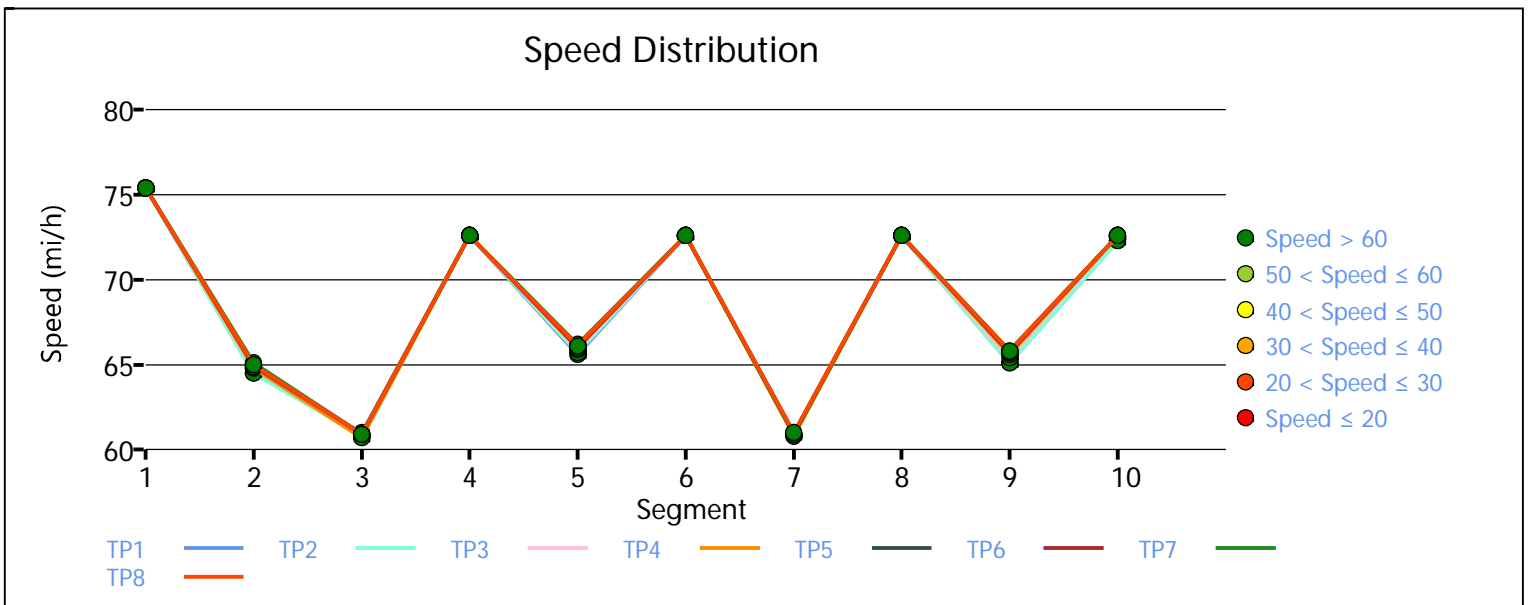
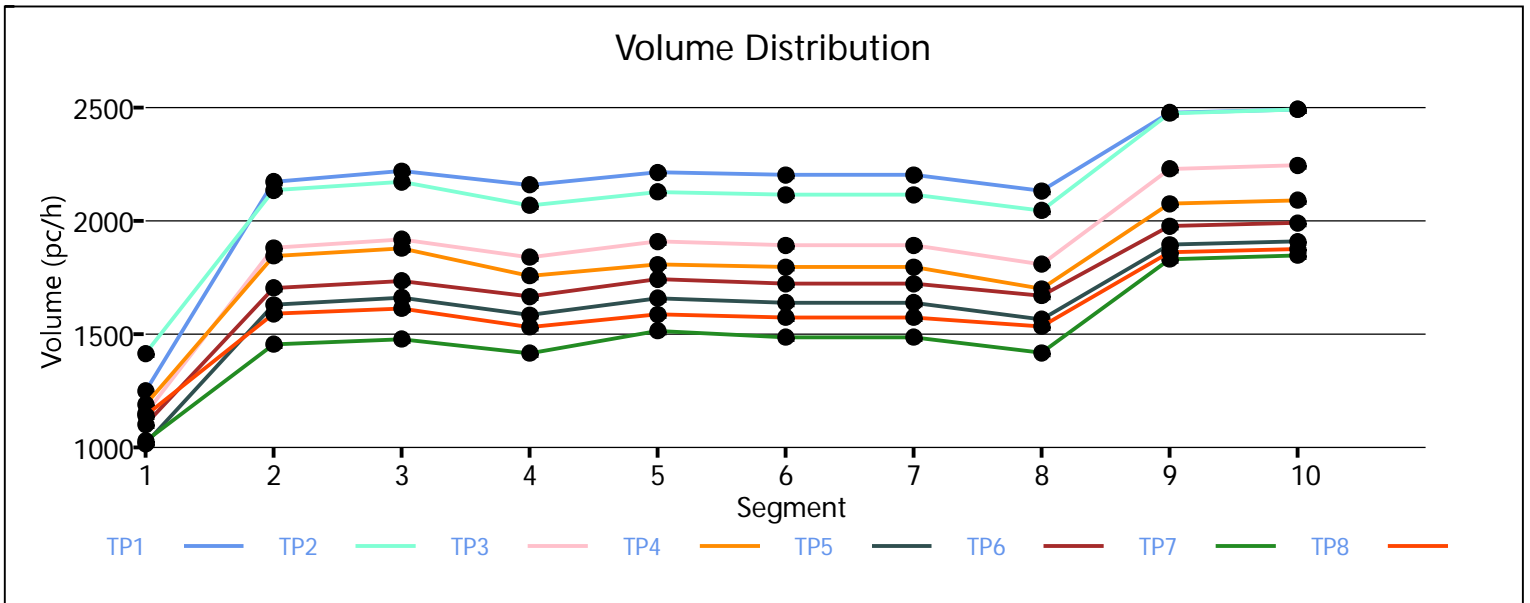
Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	1.00	0.926	2492	4800	0.52	72.3	17.2	B
2	1.00	0.926	2492	4800	0.52	72.3	17.2	B
3	1.00	0.926	2246	4800	0.47	72.6	15.5	B
4	1.00	0.926	2091	4800	0.44	72.6	14.4	B
5	1.00	0.926	1909	4800	0.40	72.6	13.1	B
6	1.00	0.926	1991	4800	0.41	72.6	13.7	B
7	1.00	0.926	1849	4800	0.39	72.6	12.7	B
8	1.00	0.926	1875	4800	0.39	72.6	12.9	B

Facility Time Period Results

T	Speed, mi/h	Density, pc/mi/ln	Density, veh/mi/ln	Travel Time, min	LOS
1	68.3	15.9	14.6	2.2	B
2	68.3	15.6	14.4	2.2	B
3	68.5	13.9	12.8	2.2	B
4	68.5	13.2	12.1	2.2	B
5	68.5	11.9	11.0	2.2	B
6	68.5	12.6	11.5	2.2	B
7	68.7	11.1	10.3	2.2	B
8	68.7	11.7	10.8	2.2	B

Facility Overall Results

Space Mean Speed, mi/h	68.5	Density, veh/mi/ln	12.2
Average Travel Time, min	2.2	Density, pc/mi/ln	13.2



HCS7 Freeway Facilities Report

Project Information

Analyst	WSP	Date	7/3/2018
Agency	City of Moreno Valley	Analysis Year	2018 Alt 1
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	WLC Pkwy IC - Westbound SR-60		

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	10
Total Time Periods	8	Time Period Duration, min	15

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic	east of Gilman Springs Rd On Ramp	1600	2
2	Merge	Merge	On-Ramp from Gilman Spring	610	2
3	Diverge	Diverge	Off-Ramp to Theodore St	610	2
4	Basic	Basic	between Theodore St Off and Theodore St On Ramps	980	2
5	Merge	Merge	On-Ramp from Theodore St	1500	2
6	Basic	Basic	Theodore St to Redlands Blvd	1210	2
7	Diverge	Diverge	Off-Ramp to Redlands Blvd	1500	2
8	Basic	Basic	between Redlands Blvd Off and On Ramps	1060	2
9	Merge	Merge	On-Ramp from Redlands Blvd	1500	2
10	Basic	Basic	Redlands Blvd to Moreno Beach Rd	2470	2

Facility Segment Data

Segment 1: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	1.00	0.893	1617	4800	0.34	75.4	10.7	A
2	1.00	0.893	2047	4800	0.43	75.4	13.6	B
3	1.00	0.893	1769	4800	0.37	75.4	11.7	B
4	1.00	0.893	1805	4800	0.38	75.4	12.0	B
5	1.00	0.893	2034	4800	0.42	75.4	13.5	B
6	1.00	0.893	2016	4800	0.42	75.4	13.4	B
7	1.00	0.893	1756	4800	0.37	75.4	11.6	B
8	1.00	0.893	1845	4800	0.38	75.4	12.2	B

Segment 2: Merge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	

1	1.00	1.00	0.917	0.962	2032	457	4800	2000	0.42	0.23	64.7	64.7	15.7	18.6	B
2	1.00	1.00	0.917	0.962	2504	511	4800	2000	0.52	0.26	64.1	64.1	19.5	22.2	C
3	1.00	1.00	0.917	0.962	2305	582	4800	2000	0.48	0.29	64.3	64.3	17.9	20.6	C
4	1.00	1.00	0.917	0.962	2161	403	4800	2000	0.45	0.20	64.5	64.5	16.8	19.6	B
5	1.00	1.00	0.917	0.962	2446	466	4800	2000	0.51	0.23	64.1	64.1	19.1	21.8	C
6	1.00	1.00	0.917	0.962	2412	449	4800	2000	0.50	0.22	64.2	64.2	18.8	21.5	C
7	1.00	1.00	0.917	0.962	2213	503	4800	2000	0.46	0.25	64.5	64.5	17.2	19.9	B
8	1.00	1.00	0.917	0.962	2175	378	4800	2000	0.45	0.19	64.5	64.5	16.9	19.7	B

Segment 3: Diverge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	1.00	1.00	0.917	0.909	2055	18	4800	2000	0.43	0.01	61.0	61.0	16.8	20.3	C
2	1.00	1.00	0.917	0.909	2530	62	4800	2000	0.53	0.03	60.9	60.9	20.8	24.4	C
3	1.00	1.00	0.917	0.909	2334	31	4800	2000	0.49	0.02	61.0	61.0	19.1	22.7	C
4	1.00	1.00	0.917	0.909	2181	35	4800	2000	0.45	0.02	61.0	61.0	17.9	21.4	C
5	1.00	1.00	0.917	0.909	2469	40	4800	2000	0.51	0.02	61.0	61.0	20.2	23.9	C
6	1.00	1.00	0.917	0.909	2434	31	4800	2000	0.51	0.02	61.0	61.0	20.0	23.6	C
7	1.00	1.00	0.917	0.909	2238	22	4800	2000	0.47	0.01	61.0	61.0	18.3	21.9	C
8	1.00	1.00	0.917	0.909	2194	35	4800	2000	0.46	0.02	61.0	61.0	18.0	21.5	C

Segment 4: Basic

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	1.00	1.00	0.909	0.909	2055		4800		0.43		72.6		14.2		B
2	1.00	1.00	0.909	0.909	2491		4800		0.52		72.3		17.2		B
3	1.00	1.00	0.909	0.909	2323		4800		0.48		72.6		16.0		B
4	1.00	1.00	0.909	0.909	2165		4800		0.45		72.6		14.9		B
5	1.00	1.00	0.909	0.909	2451		4800		0.51		72.4		16.9		B
6	1.00	1.00	0.909	0.909	2425		4800		0.51		72.4		16.7		B
7	1.00	1.00	0.909	0.909	2235		4800		0.47		72.6		15.4		B
8	1.00	1.00	0.909	0.909	2178		4800		0.45		72.6		15.0		B

Segment 5: Merge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	1.00	1.00	0.909	0.909	2161	106	4800	2000	0.45	0.05	65.6	65.6	16.5	16.7	B
2	1.00	1.00	0.909	0.909	2570	79	4800	2000	0.54	0.04	65.1	65.1	19.7	19.9	B
3	1.00	1.00	0.909	0.909	2411	88	4800	2000	0.50	0.04	65.3	65.3	18.5	18.7	B
4	1.00	1.00	0.909	0.909	2213	48	4800	2000	0.46	0.02	65.6	65.6	16.9	17.1	B
5	1.00	1.00	0.909	0.909	2499	48	4800	2000	0.52	0.02	65.2	65.2	19.2	19.4	B
6	1.00	1.00	0.909	0.909	2456	31	4800	2000	0.51	0.02	65.3	65.3	18.8	19.0	B
7	1.00	1.00	0.909	0.909	2301	66	4800	2000	0.48	0.03	65.5	65.5	17.6	17.8	B

8	1.00	1.00	0.909	0.909	2213	35	4800	2000	0.46	0.02	65.6	65.6	16.9	17.1	B
Segment 6: Basic															
Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
1	1.00		0.909		2161		4800		0.45		72.6		14.9		B
2	1.00		0.909		2570		4800		0.54		72.2		17.8		B
3	1.00		0.909		2411		4800		0.50		72.5		16.6		B
4	1.00		0.909		2213		4800		0.46		72.6		15.2		B
5	1.00		0.909		2499		4800		0.52		72.3		17.3		B
6	1.00		0.909		2455		4800		0.51		72.4		17.0		B
7	1.00		0.909		2301		4800		0.48		72.6		15.8		B
8	1.00		0.909		2213		4800		0.46		72.6		15.2		B
Segment 7: Diverge															
Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	1.00	1.00	0.909	0.971	2161	91	4800	2000	0.45	0.05	60.8	60.8	17.8	21.2	C
2	1.00	1.00	0.909	0.971	2570	70	4800	2000	0.54	0.04	60.9	60.9	21.1	24.7	C
3	1.00	1.00	0.909	0.971	2411	37	4800	2000	0.50	0.02	61.0	61.0	19.8	23.4	C
4	1.00	1.00	0.909	0.971	2213	78	4800	2000	0.46	0.04	60.9	60.9	18.2	21.7	C
5	1.00	1.00	0.909	0.971	2499	66	4800	2000	0.52	0.03	60.9	60.9	20.5	24.1	C
6	1.00	1.00	0.909	0.971	2455	74	4800	2000	0.51	0.04	60.9	60.9	20.2	23.7	C
7	1.00	1.00	0.909	0.971	2301	82	4800	2000	0.48	0.04	60.9	60.9	18.9	22.4	C
8	1.00	1.00	0.909	0.971	2213	49	4800	2000	0.46	0.02	61.0	61.0	18.1	21.7	C
Segment 8: Basic															
Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
1	1.00		0.909		2064		4800		0.43		72.6		14.2		B
2	1.00		0.909		2495		4800		0.52		72.3		17.3		B
3	1.00		0.909		2372		4800		0.49		72.5		16.4		B
4	1.00		0.909		2130		4800		0.44		72.6		14.7		B
5	1.00		0.909		2429		4800		0.51		72.4		16.8		B
6	1.00		0.909		2376		4800		0.50		72.5		16.4		B
7	1.00		0.909		2213		4800		0.46		72.6		15.2		B
8	1.00		0.909		2161		4800		0.45		72.6		14.9		B
Segment 9: Merge															
Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	1.00	1.00	0.917	0.962	2470	424	4800	2000	0.51	0.21	65.1	65.1	19.0	19.3	B
2	1.00	1.00	0.917	0.962	2930	457	4800	2000	0.61	0.23	64.2	64.2	22.8	22.9	C
3	1.00	1.00	0.917	0.962	2804	453	4800	2000	0.58	0.23	64.5	64.5	21.7	21.9	C

4	1.00	1.00	0.917	0.962	2510	399	4800	2000	0.52	0.20	65.1	65.1	19.3	19.6	B
5	1.00	1.00	0.917	0.962	2845	437	4800	2000	0.59	0.22	64.4	64.4	22.1	22.2	C
6	1.00	1.00	0.917	0.962	2830	474	4800	2000	0.59	0.24	64.4	64.4	22.0	22.1	C
7	1.00	1.00	0.917	0.962	2726	532	4800	2000	0.57	0.27	64.7	64.7	21.1	21.2	C
8	1.00	1.00	0.917	0.962	2566	424	4800	2000	0.53	0.21	65.0	65.0	19.7	20.0	B

Segment 10: Basic

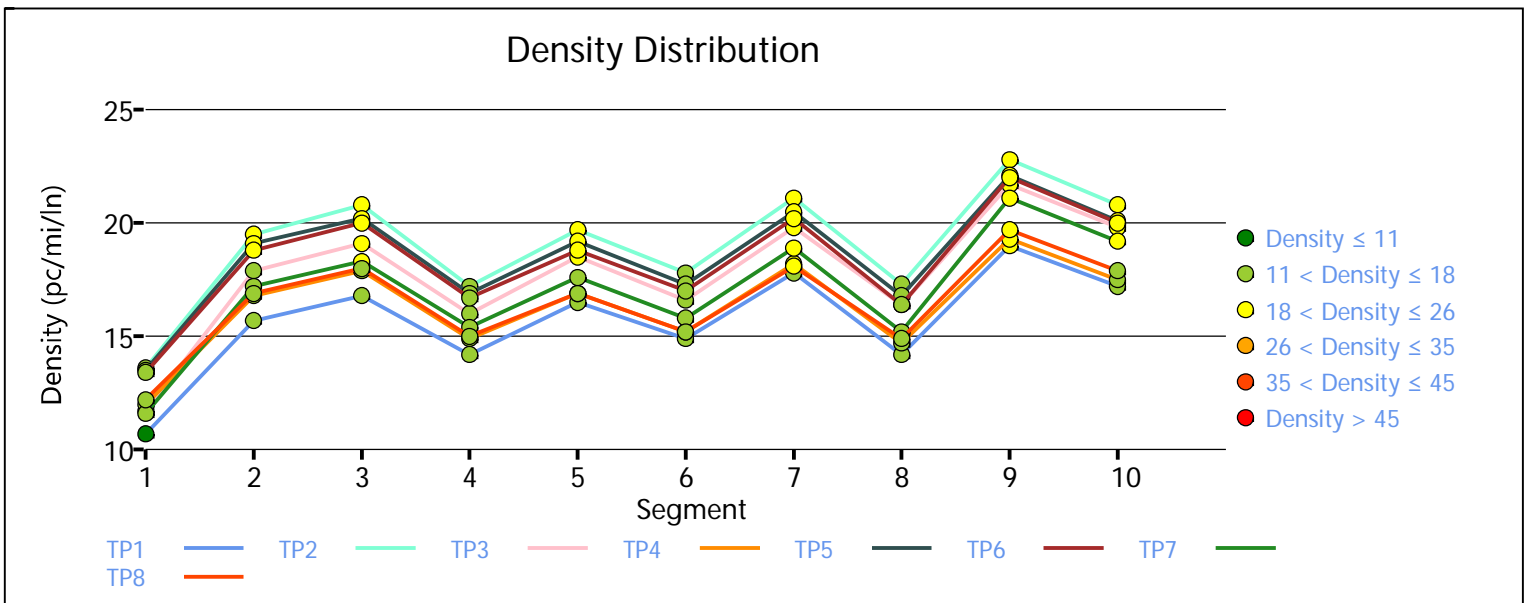
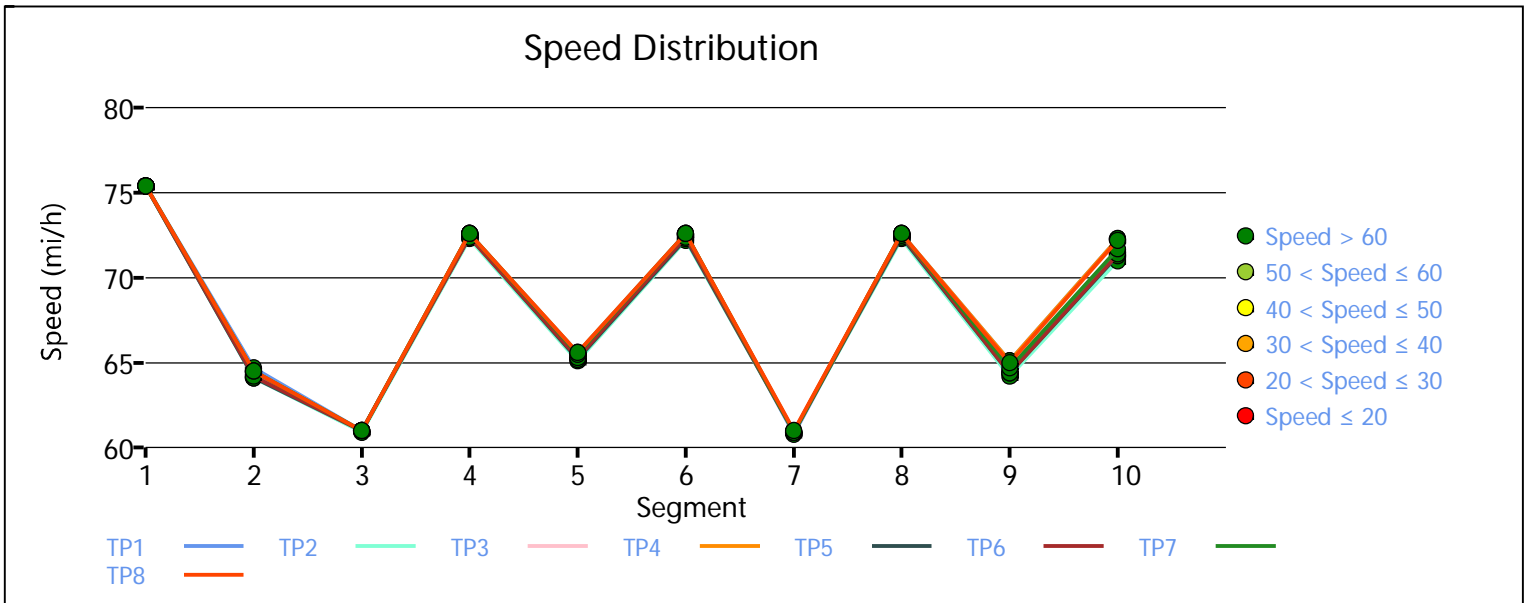
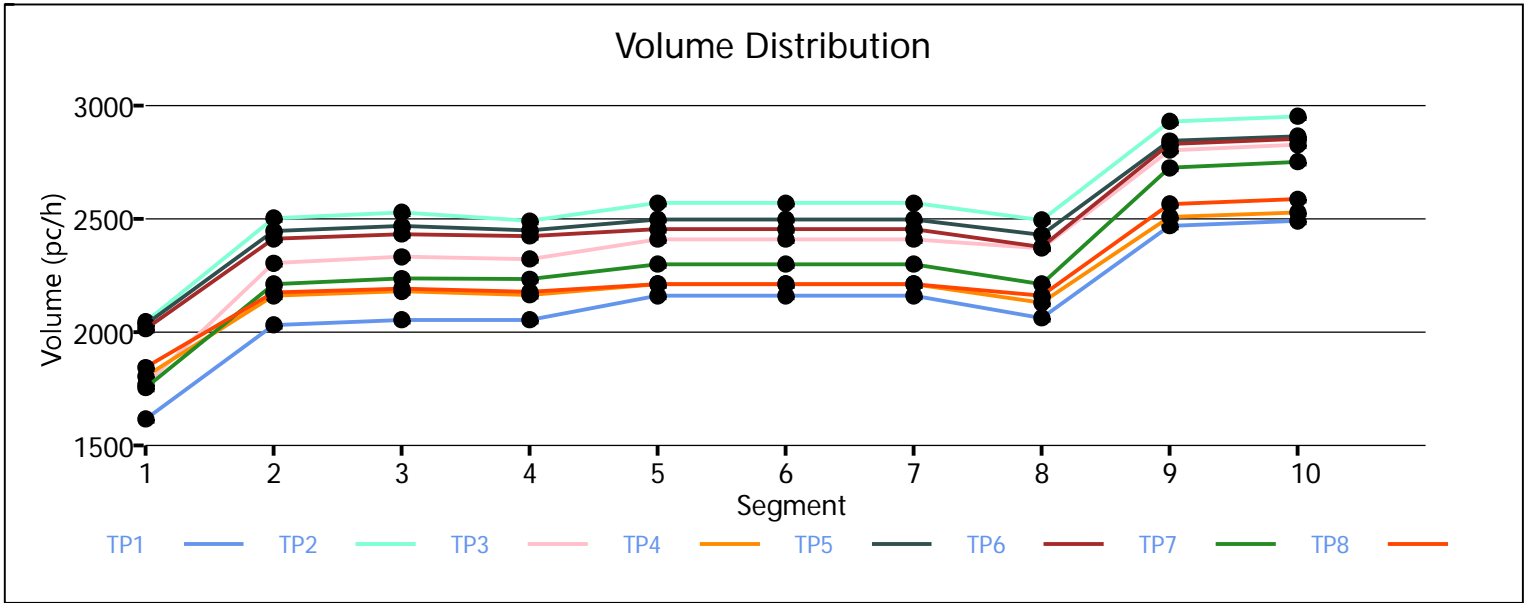
Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	1.00	0.917	2491	4800	0.52	72.3	17.2	B
2	1.00	0.917	2953	4800	0.62	71.0	20.8	C
3	1.00	0.917	2827	4800	0.59	71.5	19.8	C
4	1.00	0.917	2530	4800	0.53	72.3	17.5	B
5	1.00	0.917	2866	4800	0.60	71.3	20.1	C
6	1.00	0.917	2853	4800	0.59	71.4	20.0	C
7	1.00	0.917	2752	4800	0.57	71.7	19.2	C
8	1.00	0.917	2587	4800	0.54	72.2	17.9	B

Facility Time Period Results

T	Speed, mi/h	Density, pc/mi/ln	Density, veh/mi/ln	Travel Time, min	LOS
1	68.4	15.8	14.4	2.2	B
2	67.9	19.2	17.5	2.2	C
3	68.1	17.9	16.3	2.2	B
4	68.5	16.4	14.9	2.2	B
5	68.0	18.7	17.0	2.2	C
6	68.1	18.4	16.8	2.2	C
7	68.3	17.2	15.7	2.2	B
8	68.5	16.6	15.1	2.2	B

Facility Overall Results

Space Mean Speed, mi/h	68.2	Density, veh/mi/ln	16.0
Average Travel Time, min	2.2	Density, pc/mi/ln	17.5



Appendix E

Intersection LOS Worksheets for No-Build

Appendix E-1

Intersection LOS Worksheets for No-Build, 2025

Intersection						
Int Delay, s/veh	24.9					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↖	↗	↖	↗	↗	↖
Traffic Vol, veh/h	20	70	70	1220	1100	10
Future Vol, veh/h	20	70	70	1220	1100	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	250	0	250	-	-	250
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	72	72	72	72	72	72
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	28	97	97	1694	1528	14

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	3416	1528	1542	0	-	0
Stage 1	1528	-	-	-	-	-
Stage 2	1888	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	~ 8	146	436	-	-	-
Stage 1	200	-	-	-	-	-
Stage 2	132	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 6	146	436	-	-	-
Mov Cap-2 Maneuver	~ 6	-	-	-	-	-
Stage 1	156	-	-	-	-	-
Stage 2	132	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	\$ 677	0.8	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	436	-	6	146	-	-
HCM Lane V/C Ratio	0.223	-	4.63	0.666	-	-
HCM Control Delay (s)	15.6	\$ 2806.2	68.7	-	-	-
HCM Lane LOS	C	-	F	F	-	-
HCM 95th %tile Q(veh)	0.8	-	4.9	3.7	-	-

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

Intersection						
Int Delay, s/veh	90.7					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↖	↗	↖	↑	↗	
Traffic Vol, veh/h	70	820	260	980	290	10
Future Vol, veh/h	70	820	260	980	290	10
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	250	250	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	84	84	84	84	84	84
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	83	976	310	1167	345	12

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	2138	351	357	0	-	0
Stage 1	351	-	-	-	-	-
Stage 2	1787	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	~ 55	~ 697	1213	-	-	-
Stage 1	717	-	-	-	-	-
Stage 2	149	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 41	~ 697	1213	-	-	-
Mov Cap-2 Maneuver	~ 41	-	-	-	-	-
Stage 1	533	-	-	-	-	-
Stage 2	149	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	245.1	1.9	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1213	-	41	697	-	-
HCM Lane V/C Ratio	0.255	-	2.033	1.401	-	-
HCM Control Delay (s)	9	-	\$ 691.6	207	-	-
HCM Lane LOS	A	-	F	F	-	-
HCM 95th %tile Q(veh)	1	-	8.8	43.3	-	-

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

Intersection						
Int Delay, s/veh	25.8					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W	W	T	T		T
Traffic Vol, veh/h	260	30	100	950	70	40
Future Vol, veh/h	260	30	100	950	70	40
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	295	34	114	1080	80	45

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	859	654	0	0	1194
Stage 1	654	-	-	-	-
Stage 2	205	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1
Critical Hdwy Stg 1	5.4	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2
Pot Cap-1 Maneuver	329	470	-	-	592
Stage 1	521	-	-	-	-
Stage 2	834	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	~ 283	470	-	-	592
Mov Cap-2 Maneuver	~ 283	-	-	-	-
Stage 1	449	-	-	-	-
Stage 2	834	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	126.2	0	7.7
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	295	592
HCM Lane V/C Ratio	-	-	1.117	0.134
HCM Control Delay (s)	-	-	126.2	12
HCM Lane LOS	-	-	F	B
HCM 95th %tile Q(veh)	-	-	13.5	0.5

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

Intersection						
Int Delay, s/veh	1.9					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↘↗		↑	↗↘	↘↗	↑
Traffic Vol, veh/h	10	20	90	10	30	100
Future Vol, veh/h	10	20	90	10	30	100
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	-	-	0	130	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	11	23	102	11	34	114

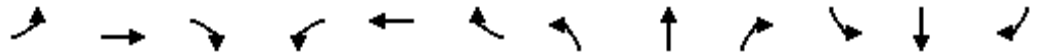
Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	284	102	0	0	113
Stage 1	102	-	-	-	-
Stage 2	182	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1
Critical Hdwy Stg 1	5.4	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2
Pot Cap-1 Maneuver	710	959	-	-	1489
Stage 1	927	-	-	-	-
Stage 2	854	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	694	959	-	-	1489
Mov Cap-2 Maneuver	694	-	-	-	-
Stage 1	906	-	-	-	-
Stage 2	854	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.4	0	1.7
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	851	1489
HCM Lane V/C Ratio	-	-	0.04	0.023
HCM Control Delay (s)	-	-	9.4	7.5
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0.1

HCM 6th Signalized Intersection Summary
 5: Redlands Blvd & Eucalyptus Avenue

No Build, 2025
 AM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↶	↷		↶	↷		↶	↷		↶	↷	
Traffic Volume (veh/h)	60	0	30	10	1	20	80	500	40	60	400	130
Future Volume (veh/h)	60	0	30	10	1	20	80	500	40	60	400	130
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	65	0	33	11	1	22	87	543	43	65	435	141
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	167	299	267	37	170	151	202	987	78	167	730	234
Arrive On Green	0.09	0.00	0.17	0.02	0.09	0.09	0.11	0.29	0.29	0.09	0.27	0.27
Sat Flow, veh/h	1810	1805	1610	1810	1805	1610	1810	3389	268	1810	2687	863
Grp Volume(v), veh/h	65	0	33	11	1	22	87	289	297	65	291	285
Grp Sat Flow(s),veh/h/ln	1810	1805	1610	1810	1805	1610	1810	1805	1852	1810	1805	1745
Q Serve(g_s), s	1.3	0.0	0.6	0.2	0.0	0.5	1.7	5.0	5.0	1.3	5.2	5.3
Cycle Q Clear(g_c), s	1.3	0.0	0.6	0.2	0.0	0.5	1.7	5.0	5.0	1.3	5.2	5.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.14	1.00		0.49
Lane Grp Cap(c), veh/h	167	299	267	37	170	151	202	526	539	167	490	474
V/C Ratio(X)	0.39	0.00	0.12	0.30	0.01	0.15	0.43	0.55	0.55	0.39	0.59	0.60
Avail Cap(c_a), veh/h	438	972	867	341	874	780	536	1360	1396	438	1263	1221
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	15.9	0.0	13.2	17.9	15.3	15.5	15.4	11.1	11.1	15.9	11.8	11.8
Incr Delay (d2), s/veh	1.5	0.0	0.2	4.5	0.0	0.4	1.4	0.9	0.9	1.5	1.2	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.0	0.2	0.1	0.0	0.2	0.6	1.3	1.3	0.4	1.4	1.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	17.4	0.0	13.4	22.4	15.3	15.9	16.8	12.0	12.0	17.4	12.9	13.0
LnGrp LOS	B	A	B	C	B	B	B	B	B	B	B	B
Approach Vol, veh/h		98			34			673			641	
Approach Delay, s/veh		16.0			18.0			12.6			13.4	
Approach LOS		B			B			B			B	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	7.4	14.8	4.8	10.2	8.1	14.1	7.4	7.5				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	9.0	28.0	7.0	20.0	11.0	26.0	9.0	18.0				
Max Q Clear Time (g_c+1), s	3.3	7.0	2.2	2.6	3.7	7.3	3.3	2.5				
Green Ext Time (p_c), s	0.0	2.9	0.0	0.1	0.1	2.8	0.0	0.0				
Intersection Summary												
HCM 6th Ctrl Delay				13.3								
HCM 6th LOS				B								

HCM 6th Signalized Intersection Summary
 6: Redlands Blvd & SR-60 EB Ramps

No Build, 2025
 AM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	330	0	90	0	0	0	0	520	60	0	500	90
Future Volume (veh/h)	330	0	90	0	0	0	0	520	60	0	500	90
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	1900				0	1900	1900	0	1900	1900
Adj Flow Rate, veh/h	369	0	62				0	536	62	0	515	93
Peak Hour Factor	0.97	0.97	0.97				0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0				0	0	0	0	0	0
Cap, veh/h	599	0	267				0	2370	1057	0	2370	1324
Arrive On Green	0.17	0.00	0.17				0.00	0.66	0.66	0.00	0.87	0.87
Sat Flow, veh/h	3619	0	1610				0	3705	1610	0	3705	1610
Grp Volume(v), veh/h	369	0	62				0	536	62	0	515	93
Grp Sat Flow(s),veh/h/ln	1810	0	1610				0	1805	1610	0	1805	1610
Q Serve(g_s), s	4.3	0.0	1.5				0.0	2.7	0.6	0.0	1.0	0.2
Cycle Q Clear(g_c), s	4.3	0.0	1.5				0.0	2.7	0.6	0.0	1.0	0.2
Prop In Lane	1.00		1.00				0.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h	599	0	267				0	2370	1057	0	2370	1324
V/C Ratio(X)	0.62	0.00	0.23				0.00	0.23	0.06	0.00	0.22	0.07
Avail Cap(c_a), veh/h	1448	0	644				0	2370	1057	0	2370	1324
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.33	1.33
Upstream Filter(l)	1.00	0.00	1.00				0.00	0.98	0.98	0.00	0.99	0.99
Uniform Delay (d), s/veh	17.4	0.0	16.3				0.0	3.1	2.8	0.0	1.0	0.3
Incr Delay (d2), s/veh	1.0	0.0	0.4				0.0	0.2	0.1	0.0	0.2	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	6	0.0	0.5				0.0	0.2	0.0	0.0	0.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	18.5	0.0	16.7				0.0	3.3	2.9	0.0	1.3	0.4
LnGrp LOS	B	A	B				A	A	A	A	A	A
Approach Vol, veh/h	431						598			608		
Approach Delay, s/veh	18.2						3.3			1.1		
Approach LOS	B						A			A		
Timer - Assigned Phs	2		4		6							
Phs Duration (G+Y+Rc), s	33.5		11.5		33.5							
Change Period (Y+Rc), s	4.0		4.0		4.0							
Max Green Setting (Gmax), s	19.0		18.0		19.0							
Max Q Clear Time (g_c+1), s	4.7		6.3		3.0							
Green Ext Time (p_c), s	2.8		1.2		2.9							

Intersection Summary

HCM 6th Ctrl Delay	6.4
HCM 6th LOS	A

Notes

User approved volume balancing among the lanes for turning movement.

HCM 6th Signalized Intersection Summary
7: Redlands Blvd & SR-60 WB Ramps

No Build, 2025
AM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↖	↔	↗		↑↑	↗		↑↑	↗
Traffic Volume (veh/h)	0	0	0	100	0	280	0	640	210	0	490	460
Future Volume (veh/h)	0	0	0	100	0	280	0	640	210	0	490	460
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach				No		No		No		No		No
Adj Sat Flow, veh/h/ln				1900	1900	1900	0	1900	1900	0	1900	1900
Adj Flow Rate, veh/h				68	0	322	0	653	214	0	500	469
Peak Hour Factor				0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %				0	0	0	0	0	0	0	0	0
Cap, veh/h				294	0	523	0	2382	1063	0	2382	1063
Arrive On Green				0.16	0.00	0.16	0.00	0.66	0.66	0.00	0.66	0.66
Sat Flow, veh/h				1810	0	3220	0	3705	1610	0	3705	1610
Grp Volume(v), veh/h				68	0	322	0	653	214	0	500	469
Grp Sat Flow(s),veh/h/ln				1810	0	1610	0	1805	1610	0	1805	1610
Q Serve(g_s), s				1.5	0.0	4.2	0.0	3.4	2.3	0.0	2.5	6.3
Cycle Q Clear(g_c), s				1.5	0.0	4.2	0.0	3.4	2.3	0.0	2.5	6.3
Prop In Lane				1.00		1.00	0.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h				294	0	523	0	2382	1063	0	2382	1063
V/C Ratio(X)				0.23	0.00	0.62	0.00	0.27	0.20	0.00	0.21	0.44
Avail Cap(c_a), veh/h				724	0	1288	0	2382	1063	0	2382	1063
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.00	0.97	0.97	0.00	1.00	1.00
Uniform Delay (d), s/veh				16.4	0.0	17.5	0.0	3.2	3.0	0.0	3.0	3.7
Incr Delay (d2), s/veh				0.4	0.0	1.2	0.0	0.3	0.4	0.0	0.2	1.3
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				0.6	0.0	1.4	0.0	0.2	0.2	0.0	0.1	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				16.8	0.0	18.7	0.0	3.5	3.4	0.0	3.2	5.0
LnGrp LOS				B	A	B	A	A	A	A	A	A
Approach Vol, veh/h						390		867			969	
Approach Delay, s/veh						18.4		3.4			4.1	
Approach LOS						B		A			A	
Timer - Assigned Phs		2				6		8				
Phs Duration (G+Y+Rc), s		33.7				33.7		11.3				
Change Period (Y+Rc), s		4.0				4.0		4.0				
Max Green Setting (Gmax), s		19.0				19.0		18.0				
Max Q Clear Time (g_c+I1), s		5.4				8.3		6.2				
Green Ext Time (p_c), s		3.8				3.4		1.2				
Intersection Summary												
HCM 6th Ctrl Delay				6.3								
HCM 6th LOS				A								
Notes												
User approved volume balancing among the lanes for turning movement.												

HCM 6th Signalized Intersection Summary
 8: Redlands Blvd & Ironwood Ave

No Build, 2025
 AM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↕			↕		↕	↕↕		↕	↕↕	
Traffic Volume (veh/h)	110	20	30	10	20	10	40	850	40	10	910	130
Future Volume (veh/h)	110	20	30	10	20	10	40	850	40	10	910	130
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		0.99	1.00		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	112	20	31	10	20	10	41	867	41	10	929	133
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	248	91	142	34	68	34	110	1586	75	33	1298	186
Arrive On Green	0.14	0.14	0.14	0.08	0.08	0.08	0.06	0.45	0.45	0.02	0.41	0.41
Sat Flow, veh/h	1810	667	1034	448	896	448	1810	3508	166	1810	3168	453
Grp Volume(v), veh/h	112	0	51	40	0	0	41	446	462	10	529	533
Grp Sat Flow(s),veh/h/ln	1810	0	1701	1791	0	0	1810	1805	1869	1810	1805	1816
Q Serve(g_s), s	2.9	0.0	1.3	1.1	0.0	0.0	1.1	9.1	9.1	0.3	12.4	12.4
Cycle Q Clear(g_c), s	2.9	0.0	1.3	1.1	0.0	0.0	1.1	9.1	9.1	0.3	12.4	12.4
Prop In Lane	1.00		0.61	0.25		0.25	1.00		0.09	1.00		0.25
Lane Grp Cap(c), veh/h	248	0	233	135	0	0	110	816	845	33	739	744
V/C Ratio(X)	0.45	0.00	0.22	0.30	0.00	0.00	0.37	0.55	0.55	0.30	0.72	0.72
Avail Cap(c_a), veh/h	861	0	809	923	0	0	251	1324	1371	251	1324	1333
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	20.0	0.0	19.4	22.0	0.0	0.0	22.8	10.1	10.1	24.4	12.4	12.4
Incr Delay (d2), s/veh	1.3	0.0	0.5	1.2	0.0	0.0	2.1	0.6	0.6	5.1	1.3	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	0.0	0.5	0.4	0.0	0.0	0.4	2.3	2.4	0.1	3.4	3.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	21.3	0.0	19.8	23.2	0.0	0.0	24.9	10.6	10.6	29.6	13.7	13.7
LnGrp LOS	C	A	B	C	A	A	C	B	B	C	B	B
Approach Vol, veh/h		163			40			949			1072	
Approach Delay, s/veh		20.8			23.2			11.2			13.9	
Approach LOS		C			C			B			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	4.9	26.8		10.9	7.1	24.7		7.8				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	37.0			24.0	7.0	37.0		26.0				
Max Q Clear Time (g_c+I), s	11.1			4.9	3.1	14.4		3.1				
Green Ext Time (p_c), s	0.0	5.2		0.7	0.0	6.2		0.1				
Intersection Summary												
HCM 6th Ctrl Delay				13.4								
HCM 6th LOS				B								

HCM 6th TWSC
1: WLC Pkwy & Eucalyptus Avenue

No Build, 2025
PM Peak Hour

Intersection						
Int Delay, s/veh	80.9					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↖	↗	↖	↗	↗	↖
Traffic Vol, veh/h	50	110	110	1040	1080	50
Future Vol, veh/h	50	110	110	1040	1080	50
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	250	0	250	-	-	250
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	75	75	75	75	75	75
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	67	147	147	1387	1440	67

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	3121	1440	1507	0	-	0
Stage 1	1440	-	-	-	-	-
Stage 2	1681	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	~ 13	165	450	-	-	-
Stage 1	220	-	-	-	-	-
Stage 2	168	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 9	165	450	-	-	-
Mov Cap-2 Maneuver	~ 9	-	-	-	-	-
Stage 1	148	-	-	-	-	-
Stage 2	168	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s\$	1222	1.6	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	450	-	9	165	-	-
HCM Lane V/C Ratio	0.326	-	7.407	0.889	-	-
HCM Control Delay (s)	16.8	\$	3693.8	98.5	-	-
HCM Lane LOS	C	-	F	F	-	-
HCM 95th %tile Q(veh)	1.4	-	9.8	6.4	-	-

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

Intersection						
Int Delay, s/veh	77.3					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↖	↗	↖	↑	↗	
Traffic Vol, veh/h	10	870	270	820	260	40
Future Vol, veh/h	10	870	270	820	260	40
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	250	250	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	11	1000	310	943	299	46

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1885	322	345	0	-	0
Stage 1	322	-	-	-	-	-
Stage 2	1563	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	79	~ 724	1225	-	-	-
Stage 1	739	-	-	-	-	-
Stage 2	192	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	59	~ 724	1225	-	-	-
Mov Cap-2 Maneuver	59	-	-	-	-	-
Stage 1	552	-	-	-	-	-
Stage 2	192	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	196.7	2.2	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1225	-	59	724	-	-
HCM Lane V/C Ratio	0.253	-	0.195	1.381	-	-
HCM Control Delay (s)	8.9	-	80.2	198	-	-
HCM Lane LOS	A	-	F	F	-	-
HCM 95th %tile Q(veh)	1	-	0.7	43.2	-	-

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

Intersection						
Int Delay, s/veh	21.7					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W	W	T			T
Traffic Vol, veh/h	210	20	100	730	20	90
Future Vol, veh/h	210	20	100	730	20	90
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	68	68	68	68	68	68
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	309	29	147	1074	29	132

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	874	684	0	0	1221
Stage 1	684	-	-	-	-
Stage 2	190	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1
Critical Hdwy Stg 1	5.4	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2
Pot Cap-1 Maneuver	323	452	-	-	578
Stage 1	505	-	-	-	-
Stage 2	847	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	~ 306	452	-	-	578
Mov Cap-2 Maneuver	~ 306	-	-	-	-
Stage 1	478	-	-	-	-
Stage 2	847	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	109.2	0	2.1
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	315	578
HCM Lane V/C Ratio	-	-	1.074	0.051
HCM Control Delay (s)	-	-	109.2	11.6
HCM Lane LOS	-	-	F	B
HCM 95th %tile Q(veh)	-	-	12.8	0.2

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

Intersection						
Int Delay, s/veh	2.4					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↘↗		↑	↗↘	↘↗	↑
Traffic Vol, veh/h	10	30	90	10	20	70
Future Vol, veh/h	10	30	90	10	20	70
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	-	-	0	130	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	64	64	64	64	64	64
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	16	47	141	16	31	109

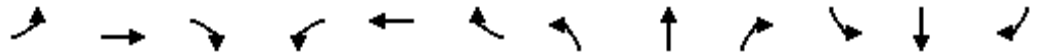
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	312	141	0	0	157	0
Stage 1	141	-	-	-	-	-
Stage 2	171	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	685	912	-	-	1435	-
Stage 1	891	-	-	-	-	-
Stage 2	864	-	-	-	-	-
Platoon blocked, %			-	-		
Mov Cap-1 Maneuver	670	912	-	-	1435	-
Mov Cap-2 Maneuver	670	-	-	-	-	-
Stage 1	871	-	-	-	-	-
Stage 2	864	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.7	0	1.7
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	836	1435
HCM Lane V/C Ratio	-	-	0.075	0.022
HCM Control Delay (s)	-	-	9.7	7.6
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	0.2	0.1

HCM 6th Signalized Intersection Summary
 5: Redlands Blvd & Eucalyptus Avenue

No Build, 2025
 PM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↕		↖	↕		↖	↕		↖	↕	
Traffic Volume (veh/h)	140	10	40	30	1	100	20	470	20	80	600	80
Future Volume (veh/h)	140	10	40	30	1	100	20	470	20	80	600	80
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	144	10	41	31	1	103	21	485	21	82	619	82
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	245	419	373	91	266	237	66	831	36	185	967	128
Arrive On Green	0.14	0.23	0.23	0.05	0.15	0.15	0.04	0.24	0.24	0.10	0.30	0.30
Sat Flow, veh/h	1810	1805	1610	1810	1805	1610	1810	3525	152	1810	3205	424
Grp Volume(v), veh/h	144	10	41	31	1	103	21	248	258	82	348	353
Grp Sat Flow(s),veh/h/ln	1810	1805	1610	1810	1805	1610	1810	1805	1873	1810	1805	1824
Q Serve(g_s), s	3.2	0.2	0.8	0.7	0.0	2.5	0.5	5.1	5.2	1.8	7.0	7.1
Cycle Q Clear(g_c), s	3.2	0.2	0.8	0.7	0.0	2.5	0.5	5.1	5.2	1.8	7.0	7.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.08	1.00		0.23
Lane Grp Cap(c), veh/h	245	419	373	91	266	237	66	425	441	185	545	551
V/C Ratio(X)	0.59	0.02	0.11	0.34	0.00	0.43	0.32	0.58	0.58	0.44	0.64	0.64
Avail Cap(c_a), veh/h	300	771	687	300	771	687	300	771	799	901	1370	1384
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	17.1	12.5	12.8	19.3	15.3	16.4	19.8	14.3	14.3	17.8	12.7	12.7
Incr Delay (d2), s/veh	2.2	0.0	0.1	2.2	0.0	1.3	2.8	1.3	1.2	1.7	1.3	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	0.1	0.3	0.3	0.0	0.9	0.2	1.6	1.6	0.6	2.0	2.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	19.4	12.5	12.9	21.5	15.3	17.6	22.6	15.6	15.5	19.4	14.0	14.0
LnGrp LOS	B	B	B	C	B	B	C	B	B	B	B	B
Approach Vol, veh/h		195			135			527			783	
Approach Delay, s/veh		17.7			18.5			15.8			14.6	
Approach LOS		B			B			B			B	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	8.3	13.9	6.1	13.8	5.5	16.7	9.7	10.2				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	21.0	18.0	7.0	18.0	7.0	32.0	7.0	18.0				
Max Q Clear Time (g_c+I1), s	3.8	7.2	2.7	2.8	2.5	9.1	5.2	4.5				
Green Ext Time (p_c), s	0.1	1.9	0.0	0.2	0.0	3.7	0.1	0.4				
Intersection Summary												
HCM 6th Ctrl Delay				15.7								
HCM 6th LOS				B								

HCM 6th Signalized Intersection Summary
6: Redlands Blvd & SR-60 EB Ramps

No Build, 2025
PM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	520	0	340	0	0	0	0	640	70	0	420	290
Future Volume (veh/h)	520	0	340	0	0	0	0	640	70	0	420	290
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	1900				0	1900	1900	0	1900	1900
Adj Flow Rate, veh/h	652	0	236				0	667	73	0	438	302
Peak Hour Factor	0.96	0.96	0.96				0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0				0	0	0	0	0	0
Cap, veh/h	942	0	419				0	2029	905	0	2029	1324
Arrive On Green	0.26	0.00	0.26				0.00	0.56	0.56	0.00	1.00	1.00
Sat Flow, veh/h	3619	0	1610				0	3705	1610	0	3705	1610
Grp Volume(v), veh/h	652	0	236				0	667	73	0	438	302
Grp Sat Flow(s),veh/h/ln	1810	0	1610				0	1805	1610	0	1805	1610
Q Serve(g_s), s	7.3	0.0	5.7				0.0	4.5	0.9	0.0	0.0	0.0
Cycle Q Clear(g_c), s	7.3	0.0	5.7				0.0	4.5	0.9	0.0	0.0	0.0
Prop In Lane	1.00		1.00				0.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h	942	0	419				0	2029	905	0	2029	1324
V/C Ratio(X)	0.69	0.00	0.56				0.00	0.33	0.08	0.00	0.22	0.23
Avail Cap(c_a), veh/h	1448	0	644				0	2029	905	0	2029	1324
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	0.88	0.88	0.00	0.97	0.97
Uniform Delay (d), s/veh	15.0	0.0	14.4				0.0	5.3	4.5	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.9	0.0	1.2				0.0	0.4	0.2	0.0	0.2	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.6	0.0	1.9				0.0	0.7	0.2	0.0	0.1	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	15.9	0.0	15.6				0.0	5.7	4.7	0.0	0.2	0.4
LnGrp LOS	B	A	B				A	A	A	A	A	A
Approach Vol, veh/h	888						740			740		
Approach Delay, s/veh	15.9						5.6			0.3		
Approach LOS	B						A			A		
Timer - Assigned Phs	2		4		6							
Phs Duration (G+Y+Rc), s	29.3		15.7		29.3							
Change Period (Y+Rc), s	4.0		4.0		4.0							
Max Green Setting (Gmax), s	19.0		18.0		19.0							
Max Q Clear Time (g_c+I1), s	6.5		9.3		2.0							
Green Ext Time (p_c), s	3.3		2.4		3.2							

Intersection Summary

HCM 6th Ctrl Delay	7.8
HCM 6th LOS	A

Notes

User approved volume balancing among the lanes for turning movement.

HCM 6th Signalized Intersection Summary
7: Redlands Blvd & SR-60 WB Ramps

No Build, 2025
PM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↶	↷	↶		↶	↶	↶	↶	↶
Traffic Volume (veh/h)	0	0	0	50	0	100	0	900	260	0	660	360
Future Volume (veh/h)	0	0	0	50	0	100	0	900	260	0	660	360
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach				No		No		No		No		No
Adj Sat Flow, veh/h/ln				1900	1900	1900	0	1900	1900	0	1900	1900
Adj Flow Rate, veh/h				35	0	125	0	957	277	0	702	383
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				243	0	433	0	2483	1324	0	2483	1107
Arrive On Green				0.13	0.00	0.13	0.00	0.23	0.23	0.00	0.69	0.69
Sat Flow, veh/h				1810	0	3220	0	3705	1610	0	3705	1610
Grp Volume(v), veh/h				35	0	125	0	957	277	0	702	383
Grp Sat Flow(s),veh/h/ln				1810	0	1610	0	1805	1610	0	1805	1610
Q Serve(g_s), s				0.8	0.0	1.6	0.0	10.1	3.6	0.0	3.4	4.4
Cycle Q Clear(g_c), s				0.8	0.0	1.6	0.0	10.1	3.6	0.0	3.4	4.4
Prop In Lane				1.00		1.00	0.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h				243	0	433	0	2483	1324	0	2483	1107
V/C Ratio(X)				0.14	0.00	0.29	0.00	0.39	0.21	0.00	0.28	0.35
Avail Cap(c_a), veh/h				724	0	1288	0	2483	1324	0	2483	1107
HCM Platoon Ratio				1.00	1.00	1.00	1.00	0.33	0.33	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.00	0.90	0.90	0.00	1.00	1.00
Uniform Delay (d), s/veh				17.2	0.0	17.5	0.0	9.3	2.6	0.0	2.7	2.9
Incr Delay (d2), s/veh				0.3	0.0	0.4	0.0	0.4	0.3	0.0	0.3	0.9
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				0.3	0.0	0.5	0.0	0.1	0.1	0.0	0.1	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				17.5	0.0	17.9	0.0	9.7	2.9	0.0	3.0	3.7
LnGrp LOS				B	A	B	A	A	A	A	A	A
Approach Vol, veh/h						160		1234			1085	
Approach Delay, s/veh						17.8		8.2			3.3	
Approach LOS						B		A			A	
Timer - Assigned Phs		2				6		8				
Phs Duration (G+Y+Rc), s		34.9				34.9		10.1				
Change Period (Y+Rc), s		4.0				4.0		4.0				
Max Green Setting (Gmax), s		19.0				19.0		18.0				
Max Q Clear Time (g_c+I1), s		12.1				6.4		3.6				
Green Ext Time (p_c), s		3.7				4.5		0.4				

Intersection Summary

HCM 6th Ctrl Delay	6.7
HCM 6th LOS	A

Notes

User approved volume balancing among the lanes for turning movement.

HCM 6th Signalized Intersection Summary
 8: Redlands Blvd & Ironwood Ave

No Build, 2025
 PM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔↔			↔		↔	↔↔		↔	↔↔	
Traffic Volume (veh/h)	110	50	20	10	30	30	20	990	20	20	1020	190
Future Volume (veh/h)	110	50	20	10	30	30	20	990	20	20	1020	190
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		0.99	1.00		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	113	52	21	10	31	31	21	1021	21	21	1052	196
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	234	166	67	24	74	74	63	1639	34	63	1377	256
Arrive On Green	0.13	0.13	0.13	0.10	0.10	0.10	0.03	0.45	0.45	0.03	0.45	0.45
Sat Flow, veh/h	1810	1282	518	242	750	750	1810	3617	74	1810	3037	564
Grp Volume(v), veh/h	113	0	73	72	0	0	21	510	532	21	624	624
Grp Sat Flow(s),veh/h/ln	1810	0	1800	1742	0	0	1810	1805	1886	1810	1805	1796
Q Serve(g_s), s	3.3	0.0	2.1	2.2	0.0	0.0	0.6	12.1	12.1	0.6	16.3	16.4
Cycle Q Clear(g_c), s	3.3	0.0	2.1	2.2	0.0	0.0	0.6	12.1	12.1	0.6	16.3	16.4
Prop In Lane	1.00		0.29	0.14		0.43	1.00		0.04	1.00		0.31
Lane Grp Cap(c), veh/h	234	0	233	172	0	0	63	818	855	63	818	814
V/C Ratio(X)	0.48	0.00	0.31	0.42	0.00	0.00	0.33	0.62	0.62	0.33	0.76	0.77
Avail Cap(c_a), veh/h	770	0	766	803	0	0	225	1184	1238	225	1184	1179
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	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.8	0.0	22.3	23.9	0.0	0.0	26.6	11.7	11.7	26.6	12.9	12.9
Incr Delay (d2), s/veh	1.5	0.0	0.8	1.6	0.0	0.0	3.1	0.8	0.7	3.1	1.8	1.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	0.0	0.8	0.8	0.0	0.0	0.3	3.4	3.5	0.3	4.8	4.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	24.3	0.0	23.0	25.5	0.0	0.0	29.6	12.5	12.5	29.6	14.7	14.8
LnGrp LOS	C	A	C	C	A	A	C	B	B	C	B	B
Approach Vol, veh/h		186			72			1063			1269	
Approach Delay, s/veh		23.8			25.5			12.8			15.0	
Approach LOS		C			C			B			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.0	29.6		11.3	6.0	29.6		9.6				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	37.0			24.0	7.0	37.0		26.0				
Max Q Clear Time (g_c+I), s	14.1			5.3	2.6	18.4		4.2				
Green Ext Time (p_c), s	0.0	6.0		0.8	0.0	7.2		0.2				
Intersection Summary												
HCM 6th Ctrl Delay				15.0								
HCM 6th LOS				B								

Appendix E-2

Intersection LOS Worksheets for No-Build, 2045

HCM 6th TWSC
1: WLC Pkwy & Eucalyptus Avenue

No Build, 2045
AM Peak Hour

Intersection												
Int Delay, s/veh	1.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↑	↗	↖	↑	↗
Traffic Vol, veh/h	50	0	140	190	10	80	160	1570	50	10	1280	40
Future Vol, veh/h	50	0	140	190	10	80	160	1570	50	10	1280	40
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	250	-	-	250	-	-	250	-	250	200	-	200
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	72	72	72	72	72	72	72	72	72	72	72	72
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	69	0	194	264	14	111	222	2181	69	14	1778	56

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	4528	4500	1778	4556	4487	2181	1834	0	0	2250	0	0
Stage 1	1806	1806	-	2625	2625	-	-	-	-	-	-	-
Stage 2	2722	2694	-	1931	1862	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	~ 1	1	~ 103	~ 1	~ 1	~ 59	337	-	-	232	-	-
Stage 1	102	132	-	~ 33	50	-	-	-	-	-	-	-
Stage 2	~ 29	46	-	~ 86	124	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	-	0	~ 103	-	0	~ 59	337	-	-	232	-	-
Mov Cap-2 Maneuver	-	0	-	-	0	-	-	-	-	-	-	-
Stage 1	~ 35	124	-	~ 11	17	-	-	-	-	-	-	-
Stage 2	-	16	-	-	117	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s			3.1	0.2
HCM LOS	-	-		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	337	-	-	-	103	-	59	232	-	-
HCM Lane V/C Ratio	0.659	-	-	-	1.888	-	2.119	0.06	-	-
HCM Control Delay (s)	34.1	-	-	-	\$ 503.5	-	\$ 666.3	21.5	-	-
HCM Lane LOS	D	-	-	-	F	-	F	C	-	-
HCM 95th %tile Q(veh)	4.4	-	-	-	16	-	12.1	0.2	-	-

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

Intersection						
Int Delay, s/veh	1597.6					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↖	↗	↖	↑	↗	
Traffic Vol, veh/h	270	870	340	1360	460	120
Future Vol, veh/h	270	870	340	1360	460	120
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	200	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	84	84	84	84	84	84
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	321	1036	405	1619	548	143

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	3049	620	691	0	-	0
Stage 1	620	-	-	-	-	-
Stage 2	2429	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	~ 14	~ 492	913	-	-	-
Stage 1	540	-	-	-	-	-
Stage 2	~ 70	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 8	~ 492	913	-	-	-
Mov Cap-2 Maneuver	~ 8	-	-	-	-	-
Stage 1	~ 300	-	-	-	-	-
Stage 2	~ 70	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, \$	4789.2	2.4	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	913	-	8	492	-	-
HCM Lane V/C Ratio	0.443	-	40.179	2.105	-	-
HCM Control Delay (s)	12	\$	18535.4	\$ 523.2	-	-
HCM Lane LOS	B	-	F	F	-	-
HCM 95th %tile Q(veh)	2.3	-	42	73.3	-	-

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

HCM 6th TWSC
 3: WLC Pkwy/Theodore St & SR-60 WB Ramps

No Build, 2045
 AM Peak Hour

Intersection						
Int Delay, s/veh	279.4					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W	R	T	R	L	T
Traffic Vol, veh/h	500	60	570	1060	570	80
Future Vol, veh/h	500	60	570	1060	570	80
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	568	68	648	1205	648	91

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	2638	1251	0	0	1853
Stage 1	1251	-	-	-	-
Stage 2	1387	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1
Critical Hdwy Stg 1	5.4	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2
Pot Cap-1 Maneuver	~ 26	213	-	-	~ 331
Stage 1	~ 272	-	-	-	-
Stage 2	~ 234	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	0	213	-	-	~ 331
Mov Cap-2 Maneuver	0	-	-	-	-
Stage 1	0	-	-	-	-
Stage 2	~ 234	-	-	-	-












Approach	WB	NB	SB
HCM Control Delay, \$	941.1	0	410.1
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	213 ~ 331	-
HCM Lane V/C Ratio	-	-	2.988 1.957	-
HCM Control Delay (s)	-	-	\$ 941.1\$ 467.7	0
HCM Lane LOS	-	-	F F	A
HCM 95th %tile Q(veh)	-	-	57.1 45	-

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

HCM 6th Signalized Intersection Summary
4: Theodore St & Ironwood Ave

No Build, 2045
AM Peak Hour

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	500	140	140	460	80	130
Future Volume (veh/h)	500	140	140	460	80	130
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	568	159	159	523	91	148
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	0	0	0	0	0	719
Arrive On Green	0.00	0.00	0.00	0.00	0.38	0.38
Sat Flow, veh/h	0		0		0	1900
Grp Volume(v), veh/h	0.0		0.0		0	148
Grp Sat Flow(s),veh/h/ln					0	1900
Q Serve(g_s), s					0.0	0.3
Cycle Q Clear(g_c), s					0.0	0.3
Prop In Lane					0.00	
Lane Grp Cap(c), veh/h					0	719
V/C Ratio(X)					0.00	0.21
Avail Cap(c_a), veh/h					0	5316
HCM Platoon Ratio					1.00	1.00
Upstream Filter(l)					0.00	1.00
Uniform Delay (d), s/veh					0.0	1.3
Incr Delay (d2), s/veh					0.0	0.1
Initial Q Delay(d3),s/veh					0.0	0.0
%ile BackOfQ(50%),veh/ln					0.0	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh					0.0	1.5
LnGrp LOS					A	A
Approach Vol, veh/h						148
Approach Delay, s/veh						1.5
Approach LOS						A
Timer - Assigned Phs				4		
Phs Duration (G+Y+Rc), s				6.4		
Change Period (Y+Rc), s				4.0		
Max Green Setting (Gmax), s				18.0		
Max Q Clear Time (g_c+I1), s				2.3		
Green Ext Time (p_c), s				0.6		
Intersection Summary						
HCM 6th Ctrl Delay			1.5			
HCM 6th LOS			A			
Notes						
User approved volume balancing among the lanes for turning movement.						

HCM 6th Signalized Intersection Summary
5: Redlands Blvd & Eucalyptus Avenue

No Build, 2045
AM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖↗	↑↘		↖	↑↑	↗	↖	↑↑	↗	↖↗	↑↑	↗
Traffic Volume (veh/h)	180	50	110	80	60	140	90	370	60	310	680	520
Future Volume (veh/h)	180	50	110	80	60	140	90	370	60	310	680	520
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No		No		No		No		No		No
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	196	54	120	87	65	152	98	402	65	337	739	565
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	416	271	242	167	448	420	176	1216	542	480	1357	796
Arrive On Green	0.12	0.15	0.15	0.09	0.12	0.12	0.10	0.34	0.34	0.14	0.38	0.38
Sat Flow, veh/h	3510	1805	1610	1810	3610	1610	1810	3610	1610	3510	3610	1610
Grp Volume(v), veh/h	196	54	120	87	65	152	98	402	65	337	739	565
Grp Sat Flow(s),veh/h/ln	1755	1805	1610	1810	1805	1610	1810	1805	1610	1755	1805	1610
Q Serve(g_s), s	2.9	1.5	3.9	2.6	0.9	4.3	2.9	4.7	1.6	5.2	9.1	15.4
Cycle Q Clear(g_c), s	2.9	1.5	3.9	2.6	0.9	4.3	2.9	4.7	1.6	5.2	9.1	15.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	416	271	242	167	448	420	176	1216	542	480	1357	796
V/C Ratio(X)	0.47	0.20	0.50	0.52	0.14	0.36	0.56	0.33	0.12	0.70	0.54	0.71
Avail Cap(c_a), veh/h	1059	833	743	289	1153	734	289	1666	743	810	1922	1048
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.2	21.0	22.0	24.4	22.0	17.0	24.3	13.9	12.9	23.2	13.8	11.1
Incr Delay (d2), s/veh	0.8	0.4	1.6	2.5	0.1	0.5	2.7	0.2	0.1	1.9	0.3	1.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	0.6	1.5	1.2	0.4	1.5	1.2	1.5	0.5	1.9	2.7	4.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	24.0	21.3	23.5	26.9	22.1	17.5	27.0	14.1	13.0	25.1	14.1	12.6
LnGrp LOS	C	C	C	C	C	B	C	B	B	C	B	B
Approach Vol, veh/h		370			304			565			1641	
Approach Delay, s/veh		23.5			21.2			16.2			15.9	
Approach LOS		C			C			B			B	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	17.7	23.0	9.2	12.5	9.5	25.2	10.7	11.0				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	26.0	26.0	9.0	26.0	9.0	30.0	17.0	18.0				
Max Q Clear Time (g_c+I1),s	6.7	6.7	4.6	5.9	4.9	17.4	4.9	6.3				
Green Ext Time (p_c), s	0.6	1.3	0.1	0.4	0.1	3.8	0.5	0.5				
Intersection Summary												
HCM 6th Ctrl Delay											17.5	
HCM 6th LOS											B	

HCM 6th Signalized Intersection Summary
6: Redlands Blvd & SR-60 EB Ramps

No Build, 2045
AM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	210	0	200	0	0	0	0	470	220	0	1310	170
Future Volume (veh/h)	210	0	200	0	0	0	0	470	220	0	1310	170
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	1900				0	1900	1900	0	1900	1900
Adj Flow Rate, veh/h	280	0	137				0	485	227	0	1351	175
Peak Hour Factor	0.97	0.97	0.97				0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0				0	0	0	0	0	0
Cap, veh/h	497	0	221				0	2589	1155	0	2589	1376
Arrive On Green	0.14	0.00	0.14				0.00	0.72	0.72	0.00	0.72	0.72
Sat Flow, veh/h	3619	0	1610				0	3705	1610	0	3705	1610
Grp Volume(v), veh/h	280	0	137				0	485	227	0	1351	175
Grp Sat Flow(s),veh/h/ln	1810	0	1610				0	1805	1610	0	1805	1610
Q Serve(g_s), s	4.0	0.0	4.4				0.0	2.4	2.6	0.0	9.3	1.0
Cycle Q Clear(g_c), s	4.0	0.0	4.4				0.0	2.4	2.6	0.0	9.3	1.0
Prop In Lane	1.00		1.00				0.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h	497	0	221				0	2589	1155	0	2589	1376
V/C Ratio(X)	0.56	0.00	0.62				0.00	0.19	0.20	0.00	0.52	0.13
Avail Cap(c_a), veh/h	1184	0	527				0	2589	1155	0	2589	1376
HCM Platoon Ratio	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	0.94	0.94	0.00	0.86	0.86
Uniform Delay (d), s/veh	22.2	0.0	22.4				0.0	2.5	2.6	0.0	3.5	0.7
Incr Delay (d2), s/veh	1.0	0.0	2.8				0.0	0.2	0.4	0.0	0.7	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6	0.0	1.7				0.0	0.1	0.2	0.0	0.6	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.2	0.0	25.2				0.0	2.7	2.9	0.0	4.2	0.8
LnGrp LOS	C	A	C				A	A	A	A	A	A
Approach Vol, veh/h	417						712			1526		
Approach Delay, s/veh	23.8						2.8			3.8		
Approach LOS	C						A			A		
Timer - Assigned Phs	2		4		6							
Phs Duration (G+Y+Rc), s	43.4		11.6		43.4							
Change Period (Y+Rc), s	4.0		4.0		4.0							
Max Green Setting (Gmax), s	29.0		18.0		29.0							
Max Q Clear Time (g_c+I1), s	4.6		6.4		11.3							
Green Ext Time (p_c), s	3.5		1.2		8.9							

Intersection Summary

HCM 6th Ctrl Delay	6.7
HCM 6th LOS	A

Notes

User approved volume balancing among the lanes for turning movement.

HCM 6th Signalized Intersection Summary
7: Redlands Blvd & SR-60 WB Ramps

No Build, 2045
AM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↖	↔	↗		↑↑	↗		↑↑	↗
Traffic Volume (veh/h)	0	0	0	800	0	270	0	550	130	0	680	190
Future Volume (veh/h)	0	0	0	800	0	270	0	550	130	0	680	190
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach				No		No		No		No		No
Adj Sat Flow, veh/h/ln				1900	1900	1900	0	1900	1900	0	1900	1900
Adj Flow Rate, veh/h				902	0	184	0	561	133	0	694	194
Peak Hour Factor				0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %				0	0	0	0	0	0	0	0	0
Cap, veh/h				1167	0	519	0	1921	1376	0	1921	857
Arrive On Green				0.32	0.00	0.32	0.00	1.00	1.00	0.00	0.53	0.53
Sat Flow, veh/h				3619	0	1610	0	3705	1610	0	3705	1610
Grp Volume(v), veh/h				902	0	184	0	561	133	0	694	194
Grp Sat Flow(s),veh/h/ln				1810	0	1610	0	1805	1610	0	1805	1610
Q Serve(g_s), s				12.4	0.0	4.8	0.0	0.0	0.0	0.0	6.1	3.5
Cycle Q Clear(g_c), s				12.4	0.0	4.8	0.0	0.0	0.0	0.0	6.1	3.5
Prop In Lane				1.00		1.00	0.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h				1167	0	519	0	1921	1376	0	1921	857
V/C Ratio(X)				0.77	0.00	0.35	0.00	0.29	0.10	0.00	0.36	0.23
Avail Cap(c_a), veh/h				1645	0	732	0	1921	1376	0	1921	857
HCM Platoon Ratio				1.00	1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.00	0.98	0.98	0.00	1.00	1.00
Uniform Delay (d), s/veh				16.8	0.0	14.3	0.0	0.0	0.0	0.0	7.5	6.8
Incr Delay (d2), s/veh				1.5	0.0	0.4	0.0	0.4	0.1	0.0	0.5	0.6
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				4.7	0.0	1.6	0.0	0.1	0.1	0.0	1.5	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				18.3	0.0	14.7	0.0	0.4	0.1	0.0	8.0	7.5
LnGrp LOS				B	A	B	A	A	A	A	A	A
Approach Vol, veh/h				1086			694			888		
Approach Delay, s/veh				17.7			0.3			7.9		
Approach LOS				B			A			A		
Timer - Assigned Phs		2			6			8				
Phs Duration (G+Y+Rc), s		33.3			33.3			21.7				
Change Period (Y+Rc), s		4.0			4.0			4.0				
Max Green Setting (Gmax), s		22.0			22.0			25.0				
Max Q Clear Time (g_c+I1), s		2.0			8.1			14.4				
Green Ext Time (p_c), s		3.5			4.0			3.4				

Intersection Summary

HCM 6th Ctrl Delay	9.9
HCM 6th LOS	A

Notes

User approved volume balancing among the lanes for turning movement.

HCM 6th Signalized Intersection Summary
 8: Redlands Blvd & Ironwood Ave

No Build, 2045
 AM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔↔			↔↔		↔	↔↔		↔	↔↔	↔
Traffic Volume (veh/h)	150	90	70	60	150	40	80	630	100	10	740	150
Future Volume (veh/h)	150	90	70	60	150	40	80	630	100	10	740	150
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		1.00	1.00		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	153	92	71	61	153	41	82	643	102	10	755	153
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	265	170	132	119	311	86	167	1188	188	33	1107	491
Arrive On Green	0.16	0.16	0.16	0.14	0.14	0.14	0.09	0.38	0.38	0.02	0.31	0.31
Sat Flow, veh/h	1661	1065	831	841	2192	608	1810	3120	494	1810	3610	1602
Grp Volume(v), veh/h	167	0	149	135	0	120	82	372	373	10	755	153
Grp Sat Flow(s),veh/h/ln	1817	0	1741	1858	0	1783	1810	1805	1809	1810	1805	1602
Q Serve(g_s), s	4.5	0.0	4.2	3.6	0.0	3.3	2.3	8.6	8.6	0.3	9.8	3.9
Cycle Q Clear(g_c), s	4.5	0.0	4.2	3.6	0.0	3.3	2.3	8.6	8.6	0.3	9.8	3.9
Prop In Lane	0.91		0.48	0.45		0.34	1.00		0.27	1.00		1.00
Lane Grp Cap(c), veh/h	289	0	277	263	0	253	167	687	689	33	1107	491
V/C Ratio(X)	0.58	0.00	0.54	0.51	0.00	0.48	0.49	0.54	0.54	0.31	0.68	0.31
Avail Cap(c_a), veh/h	852	0	817	906	0	870	272	881	882	238	1694	752
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	20.7	0.0	20.6	21.2	0.0	21.1	23.0	12.9	12.9	25.8	16.2	14.2
Incr Delay (d2), s/veh	1.8	0.0	1.6	1.5	0.0	1.4	2.2	0.7	0.7	5.2	0.8	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	0.0	1.5	1.4	0.0	1.2	0.9	2.5	2.6	0.2	3.1	1.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	22.6	0.0	22.2	22.7	0.0	22.4	25.2	13.5	13.5	31.0	17.0	14.5
LnGrp LOS	C	A	C	C	A	C	C	B	B	C	B	B
Approach Vol, veh/h		316			255			827			918	
Approach Delay, s/veh		22.4			22.6			14.7			16.7	
Approach LOS		C			C			B			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.0	24.3		12.5	8.9	20.3		11.5				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	26.0			25.0	8.0	25.0		26.0				
Max Q Clear Time (g_c+I), s	10.6			6.5	4.3	11.8		5.6				
Green Ext Time (p_c), s	0.0	3.5		1.4	0.0	4.1		1.1				
Intersection Summary												
HCM 6th Ctrl Delay											17.4	
HCM 6th LOS											B	

Intersection												
Int Delay, s/veh	2.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↑	↗	↖	↑	↗
Traffic Vol, veh/h	210	20	250	70	10	60	170	1370	140	110	1280	130
Future Vol, veh/h	210	20	250	70	10	60	170	1370	140	110	1280	130
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	250	-	-	250	-	-	250	-	250	200	-	200
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	75	75	75	75	75	75	75	75	75	75	75	75
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	280	27	333	93	13	80	227	1827	187	147	1707	173

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	4422	4469	1707	4549	4455	1827	1880	0	0	2014	0	0
Stage 1	2001	2001	-	2281	2281	-	-	-	-	-	-	-
Stage 2	2421	2468	-	2268	2174	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	~ 1	~ 1	~ 114	~ 1	~ 1	97	323	-	-	287	-	-
Stage 1	~ 79	106	-	~ 54	76	-	-	-	-	-	-	-
Stage 2	~ 44	61	-	~ 55	86	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	0	0	~ 114	-	0	97	323	-	-	287	-	-
Mov Cap-2 Maneuver	0	0	-	-	0	-	-	-	-	-	-	-
Stage 1	~ 23	52	-	~ 16	23	-	-	-	-	-	-	-
Stage 2	~ 1	~ 18	-	-	42	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB		
HCM Control Delay, s					3.9		2.2		
HCM LOS	-		-						

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	323	-	-	-	114	-	97	287	-	-
HCM Lane V/C Ratio	0.702	-	-	-	3.158	-	0.962	0.511	-	-
HCM Control Delay (s)	38.6	-	-	-	\$ 1051.8	-	160.7	30	-	-
HCM Lane LOS	E	-	-	-	F	-	F	D	-	-
HCM 95th %tile Q(veh)	5	-	-	-	34.6	-	5.7	2.7	-	-

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

Intersection						
Int Delay, s/veh	460.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↖	↗	↖	↑	↗	
Traffic Vol, veh/h	160	1160	250	1390	360	250
Future Vol, veh/h	160	1160	250	1390	360	250
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	200	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	184	1333	287	1598	414	287

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	2730	558	701	0	-	0
Stage 1	558	-	-	-	-	-
Stage 2	2172	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	~ 23	~ 533	905	-	-	-
Stage 1	577	-	-	-	-	-
Stage 2	~ 95	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 16	~ 533	905	-	-	-
Mov Cap-2 Maneuver	~ 16	-	-	-	-	-
Stage 1	394	-	-	-	-	-
Stage 2	~ 95	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	1242.6	1.6	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	905	-	16	533	-	-
HCM Lane V/C Ratio	0.318	-	11.494	2.502	-	-
HCM Control Delay (s)	10.8	\$	5187.2	698.5	-	-
HCM Lane LOS	B	-	F	F	-	-
HCM 95th %tile Q(veh)	1.4	-	23.9	104.8	-	-

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

Intersection						
Int Delay, s/veh	342.7					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W	W	T	T	T	T
Traffic Vol, veh/h	300	160	500	1050	300	310
Future Vol, veh/h	300	160	500	1050	300	310
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	68	68	68	68	68	68
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	441	235	735	1544	441	456

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	2845	1507	0	0	2279	0
Stage 1	1507	-	-	-	-	-
Stage 2	1338	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	~ 19	~ 150	-	-	~ 226	-
Stage 1	~ 204	-	-	-	-	-
Stage 2	~ 247	-	-	-	-	-
Platoon blocked, %			-	-	-	-
Mov Cap-1 Maneuver	0	~ 150	-	-	~ 226	-
Mov Cap-2 Maneuver	0	-	-	-	-	-
Stage 1	0	-	-	-	-	-
Stage 2	~ 247	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, \$	1638.7	0	236
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	150	~ 226
HCM Lane V/C Ratio	-	-	4.51	1.952
HCM Control Delay (s)	-	\$ 1638.7	\$ 479.9	0
HCM Lane LOS	-	-	F	F A
HCM 95th %tile Q(veh)	-	-	69.5	32.1

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

HCM 6th Signalized Intersection Summary
4: Theodore St & Ironwood Ave

No Build, 2045
10/22/2018



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↘		↑	↗	↘	↑
Traffic Volume (veh/h)	470	90	170	480	190	130
Future Volume (veh/h)	470	90	170	480	190	130
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	734	141	266	750	297	203
Peak Hour Factor	0.64	0.64	0.64	0.64	0.64	0.64
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	0	0	0	0	0	1055
Arrive On Green	0.00	0.00	0.00	0.00	0.56	0.56
Sat Flow, veh/h	0		0		0	1900
Grp Volume(v), veh/h	0.0		0.0		0	203
Grp Sat Flow(s),veh/h/ln					0	1900
Q Serve(g_s), s					0.0	0.5
Cycle Q Clear(g_c), s					0.0	0.5
Prop In Lane					0.00	
Lane Grp Cap(c), veh/h					0	1055
V/C Ratio(X)					0.00	0.19
Avail Cap(c_a), veh/h					0	3803
HCM Platoon Ratio					1.00	1.00
Upstream Filter(l)					0.00	1.00
Uniform Delay (d), s/veh					0.0	1.0
Incr Delay (d2), s/veh					0.0	0.1
Initial Q Delay(d3),s/veh					0.0	0.0
%ile BackOfQ(50%),veh/ln					0.0	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh					0.0	1.1
LnGrp LOS					A	A
Approach Vol, veh/h						203
Approach Delay, s/veh						1.1
Approach LOS						A
Timer - Assigned Phs				4		
Phs Duration (G+Y+Rc), s				9.0		
Change Period (Y+Rc), s				4.0		
Max Green Setting (Gmax), s				18.0		
Max Q Clear Time (g_c+I1), s				2.5		
Green Ext Time (p_c), s				0.9		
Intersection Summary						
HCM 6th Ctrl Delay			1.1			
HCM 6th LOS			A			

Notes

User approved volume balancing among the lanes for turning movement.

HCM 6th Signalized Intersection Summary
 5: Redlands Blvd & Eucalyptus Avenue

No Build, 2045
 10/22/2018



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖↗	↕		↖	↕↕	↗	↖	↕↕	↗	↖↗	↕↕	↗
Traffic Volume (veh/h)	660	120	200	60	50	240	130	600	90	210	530	320
Future Volume (veh/h)	660	120	200	60	50	240	130	600	90	210	530	320
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No		No		No		No		No		No
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	680	124	206	62	52	247	134	619	93	216	546	330
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	848	616	549	131	621	446	177	854	381	369	880	782
Arrive On Green	0.24	0.34	0.34	0.07	0.17	0.17	0.10	0.24	0.24	0.10	0.24	0.24
Sat Flow, veh/h	3510	1805	1610	1810	3610	1610	1810	3610	1610	3510	3610	1610
Grp Volume(v), veh/h	680	124	206	62	52	247	134	619	93	216	546	330
Grp Sat Flow(s),veh/h/ln	755	1805	1610	1810	1805	1610	1810	1805	1610	1755	1805	1610
Q Serve(g_s), s	11.9	3.2	6.3	2.2	0.8	8.6	4.7	10.3	3.1	3.8	8.8	8.7
Cycle Q Clear(g_c), s	11.9	3.2	6.3	2.2	0.8	8.6	4.7	10.3	3.1	3.8	8.8	8.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	848	616	549	131	621	446	177	854	381	369	880	782
V/C Ratio(X)	0.80	0.20	0.37	0.47	0.08	0.55	0.76	0.72	0.24	0.59	0.62	0.42
Avail Cap(c_a), veh/h	1235	911	813	221	994	612	305	1381	616	430	1215	931
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.3	15.2	16.3	29.1	22.7	20.2	28.7	23.0	20.2	27.9	22.0	10.9
Incr Delay (d2), s/veh	2.5	0.2	0.4	2.6	0.1	1.1	6.5	1.2	0.3	1.5	0.7	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.9	1.2	2.2	1.0	0.3	3.1	2.1	3.8	1.1	1.5	3.2	2.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	25.8	15.4	16.7	31.8	22.8	21.3	35.2	24.2	20.5	29.4	22.7	11.2
LnGrp LOS	C	B	B	C	C	C	D	C	C	C	C	B
Approach Vol, veh/h		1010			361			846			1092	
Approach Delay, s/veh		22.6			23.3			25.5			20.6	
Approach LOS		C			C			C			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	10.9	19.5	8.7	26.3	10.4	19.9	19.8	15.2				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	25.0	8.0	33.0	11.0	22.0	23.0	18.0					
Max Q Clear Time (g_c+I), s	12.3	4.2	8.3	6.7	10.8	13.9	10.6					
Green Ext Time (p_c), s	0.1	3.1	0.0	2.1	0.1	3.3	1.9	0.7				
Intersection Summary												
HCM 6th Ctrl Delay											22.8	
HCM 6th LOS											C	

HCM 6th Signalized Intersection Summary
6: Redlands Blvd & SR-60 EB Ramps

No Build, 2045
10/22/2018



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	440	0	200	0	0	0	0	460	1040	0	860	550
Future Volume (veh/h)	440	0	200	0	0	0	0	460	1040	0	860	550
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	1900				0	1900	1900	0	1900	1900
Adj Flow Rate, veh/h	523	0	139				0	479	1083	0	896	573
Peak Hour Factor	0.96	0.96	0.96				0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0				0	0	0	0	0	0
Cap, veh/h	711	0	316				0	2420	1079	0	2420	1395
Arrive On Green	0.20	0.00	0.20				0.00	0.67	0.67	0.00	1.00	1.00
Sat Flow, veh/h	3619	0	1610				0	3705	1610	0	3705	1610
Grp Volume(v), veh/h	523	0	139				0	479	1083	0	896	573
Grp Sat Flow(s),veh/h/ln	1810	0	1610				0	1805	1610	0	1805	1610
Q Serve(g_s), s	8.1	0.0	4.6				0.0	3.0	40.2	0.0	0.0	0.0
Cycle Q Clear(g_c), s	8.1	0.0	4.6				0.0	3.0	40.2	0.0	0.0	0.0
Prop In Lane	1.00		1.00				0.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h	711	0	316				0	2420	1079	0	2420	1395
V/C Ratio(X)	0.74	0.00	0.44				0.00	0.20	1.00	0.00	0.37	0.41
Avail Cap(c_a), veh/h	1086	0	483				0	2420	1079	0	2420	1395
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	2.00	2.00
Upstream Filter(l)	1.00	0.00	1.00				0.00	0.74	0.74	0.00	0.87	0.87
Uniform Delay (d), s/veh	22.6	0.0	21.2				0.0	3.8	9.9	0.0	0.0	0.0
Incr Delay (d2), s/veh	1.5	0.0	1.0				0.0	0.1	24.4	0.0	0.4	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/l	3.4	0.0	1.7				0.0	0.5	12.2	0.0	0.1	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	24.2	0.0	22.2				0.0	3.9	34.3	0.0	0.4	0.8
LnGrp LOS	C	A	C				A	A	F	A	A	A
Approach Vol, veh/h	662						1562			1469		
Approach Delay, s/veh	23.7						25.0			0.5		
Approach LOS	C						C			A		
Timer - Assigned Phs	2		4		6							
Phs Duration (G+Y+Rc), s	44.2		15.8		44.2							
Change Period (Y+Rc), s	4.0		4.0		4.0							
Max Green Setting (Gmax), s	34.0		18.0		34.0							
Max Q Clear Time (g_c+l1), s	42.2		10.1		2.0							
Green Ext Time (p_c), s	0.0		1.6		9.0							

Intersection Summary

HCM 6th Ctrl Delay	15.0
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

HCM 6th Signalized Intersection Summary

No Build, 2045

7: Redlands Blvd & SR-60 WB Ramps

10/22/2018



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↶	↷	↶		↶	↷		↶	↷
Traffic Volume (veh/h)	0	0	0	570	0	300	0	680	220	0	840	300
Future Volume (veh/h)	0	0	0	570	0	300	0	680	220	0	840	300
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach				No		No		No		No		No
Adj Sat Flow, veh/h/ln				1900	1900	1900	0	1900	1900	0	1900	1900
Adj Flow Rate, veh/h				705	0	213	0	723	234	0	894	319
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				940	0	418	0	2191	977	0	2191	977
Arrive On Green				0.26	0.00	0.26	0.00	1.00	1.00	0.00	0.61	0.61
Sat Flow, veh/h				3619	0	1610	0	3705	1610	0	3705	1610
Grp Volume(v), veh/h				705	0	213	0	723	234	0	894	319
Grp Sat Flow(s),veh/h/ln				1810	0	1610	0	1805	1610	0	1805	1610
Q Serve(g_s), s				10.7	0.0	6.8	0.0	0.0	0.0	0.0	7.8	5.8
Cycle Q Clear(g_c), s				10.7	0.0	6.8	0.0	0.0	0.0	0.0	7.8	5.8
Prop In Lane				1.00		1.00	0.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h				940	0	418	0	2191	977	0	2191	977
V/C Ratio(X)				0.75	0.00	0.51	0.00	0.33	0.24	0.00	0.41	0.33
Avail Cap(c_a), veh/h				1448	0	644	0	2191	977	0	2191	977
HCM Platoon Ratio				1.00	1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.00	0.96	0.96	0.00	1.00	1.00
Uniform Delay (d), s/veh				20.4	0.0	18.9	0.0	0.0	0.0	0.0	6.2	5.8
Incr Delay (d2), s/veh				1.2	0.0	1.0	0.0	0.4	0.6	0.0	0.6	0.9
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				4.3	0.0	2.4	0.0	0.1	0.2	0.0	1.7	1.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				21.6	0.0	19.9	0.0	0.4	0.6	0.0	6.7	6.7
LnGrp LOS				C	A	B	A	A	A	A	A	A
Approach Vol, veh/h						918		957			1213	
Approach Delay, s/veh						21.2		0.4			6.7	
Approach LOS						C		A			A	
Timer - Assigned Phs		2				6		8				
Phs Duration (G+Y+Rc), s		40.4				40.4		19.6				
Change Period (Y+Rc), s		4.0				4.0		4.0				
Max Green Setting (Gmax), s		28.0				28.0		24.0				
Max Q Clear Time (g_c+I1), s		2.0				9.8		12.7				
Green Ext Time (p_c), s		5.3				6.3		2.8				

Intersection Summary

HCM 6th Ctrl Delay	9.1
HCM 6th LOS	A

Notes

User approved volume balancing among the lanes for turning movement.

HCM 6th Signalized Intersection Summary
 8: Redlands Blvd & Ironwood Ave

No Build, 2045
 10/22/2018



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↕			↕↕		↕	↕↕		↕	↕↕	↕
Traffic Volume (veh/h)	150	250	120	100	150	30	70	800	90	10	900	220
Future Volume (veh/h)	150	250	120	100	150	30	70	800	90	10	900	220
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		1.00	1.00		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	155	258	124	103	155	31	72	825	93	10	928	227
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	214	372	186	172	276	57	140	1268	143	32	1185	526
Arrive On Green	0.22	0.22	0.22	0.14	0.14	0.14	0.08	0.39	0.39	0.02	0.33	0.33
Sat Flow, veh/h	996	1726	865	1248	1999	411	1810	3269	368	1810	3610	1603
Grp Volume(v), veh/h	288	0	249	152	0	137	72	456	462	10	928	227
Grp Sat Flow(s),veh/h/ln	1850	0	1737	1838	0	1821	1810	1805	1832	1810	1805	1603
Q Serve(g_s), s	9.6	0.0	8.7	5.2	0.0	4.7	2.5	13.7	13.7	0.4	15.4	7.4
Cycle Q Clear(g_c), s	9.6	0.0	8.7	5.2	0.0	4.7	2.5	13.7	13.7	0.4	15.4	7.4
Prop In Lane	0.54		0.50	0.68		0.23	1.00		0.20	1.00		1.00
Lane Grp Cap(c), veh/h	398	0	374	254	0	252	140	700	711	32	1185	526
V/C Ratio(X)	0.72	0.00	0.67	0.60	0.00	0.55	0.51	0.65	0.65	0.31	0.78	0.43
Avail Cap(c_a), veh/h	668	0	627	719	0	712	191	733	744	191	1467	651
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	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.2	0.0	23.9	26.9	0.0	26.7	29.4	16.6	16.6	32.2	20.2	17.5
Incr Delay (d2), s/veh	2.5	0.0	2.0	2.2	0.0	1.8	2.9	1.9	1.9	5.4	2.3	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/l	8.8	0.0	3.3	2.1	0.0	1.9	1.1	4.8	4.9	0.2	5.6	2.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	26.7	0.0	25.9	29.1	0.0	28.5	32.3	18.6	18.5	37.6	22.4	18.0
LnGrp LOS	C	A	C	C	A	C	C	B	B	D	C	B
Approach Vol, veh/h		537			289			990			1165	
Approach Delay, s/veh		26.4			28.9			19.6			21.7	
Approach LOS		C			C			B			C	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.2	29.8		18.3	9.1	25.8		13.2				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	27.0			24.0	7.0	27.0		26.0				
Max Q Clear Time (g_c+I), s	15.7			11.6	4.5	17.4		7.2				
Green Ext Time (p_c), s	0.0	3.8		2.2	0.0	4.4		1.3				
Intersection Summary												
HCM 6th Ctrl Delay											22.5	
HCM 6th LOS											C	

Appendix F

Freeway LOS Worksheets for No-Build

Appendix F-1

Freeway LOS Worksheets for No-Build, 2025

HCS7 Freeway Facilities Report

Project Information

Analyst	WSP	Date	7/3/2018
Agency	City of Moreno Valley	Analysis Year	2025 Alt 1
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	WLC Pkwy IC - Eastbound SR-60		

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	12
Total Time Periods	8	Time Period Duration, min	15

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic	Moreno Beach Rd to Redlands Blvd	600	3
2	Diverge	Diverge	Off-Ramp to Redlands Blvd	1500	3
3	Basic	Basic	between Redlands Blvd Off and SB Redlands Blvd On Ramp	2150	3
4	Merge	Merge	On-Ramp from SB Redlands Blvd (Loop)	1250	3
5	Merge	Merge	On-Ramp from NB Redlands Blvd	1275	3
6	Overlap	Overlap	Redlands Blvd to Theodore St	225	3
7	Diverge	Diverge	Off-Ramp to Theodore St	1275	3
8	Basic	Basic	between Theodore St Off and Theodore St On Ramps	900	3
9	Merge	Merge	On-Ramp from Theodore St	1500	3
10	Basic	Basic	Theodore St to Gilman Springs	200	3
11	Diverge	Basic	Off-Ramp to Gilman Spring	1500	3
12	Basic	Basic	east of Gilman Springs Rd Off Ramp	1850	2

Facility Segment Data

Segment 1: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	1.00	0.870	3344	7200	0.46	75.2	14.8	B
2	1.00	0.870	3236	7200	0.45	75.3	14.3	B
3	1.00	0.870	3491	7200	0.48	75.0	15.5	B
4	1.00	0.870	3401	7200	0.47	75.2	15.1	B
5	1.00	0.870	2885	7200	0.40	75.4	12.8	B
6	1.00	0.870	2975	7200	0.41	75.4	13.2	B
7	1.00	0.870	3210	7200	0.45	75.3	14.2	B
8	1.00	0.870	3534	7200	0.49	75.0	15.7	B

Segment 2: Diverge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	1.00	1.00	0.870	0.909	3344	404	7200	4000	0.46	0.10	67.4	59.9	16.5	7.2	A
2	1.00	1.00	0.870	0.909	3236	341	7200	4000	0.45	0.09	67.6	60.1	16.0	6.7	A
3	1.00	1.00	0.870	0.909	3491	429	7200	4000	0.48	0.11	67.3	59.8	17.3	7.9	A
4	1.00	1.00	0.870	0.909	3401	454	7200	4000	0.47	0.11	67.3	59.7	16.8	7.5	A
5	1.00	1.00	0.870	0.909	2885	530	7200	4000	0.40	0.13	67.4	59.5	14.3	4.9	A
6	1.00	1.00	0.870	0.909	2975	600	7200	4000	0.41	0.15	67.2	59.3	14.8	5.4	A
7	1.00	1.00	0.870	0.909	3210	486	7200	4000	0.45	0.12	67.3	59.6	15.9	6.5	A
8	1.00	1.00	0.870	0.909	3534	581	7200	4000	0.49	0.15	67.0	59.4	17.6	8.1	A

Segment 3: Basic

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	1.00		0.870		2922		7200		0.41		72.2		13.5		B
2	1.00		0.870		2879		7200		0.40		72.2		13.3		B
3	1.00		0.870		3043		7200		0.42		72.2		14.0		B
4	1.00		0.870		2926		7200		0.41		72.2		13.5		B
5	1.00		0.870		2331		7200		0.32		72.2		10.8		A
6	1.00		0.870		2348		7200		0.33		72.2		10.8		A
7	1.00		0.870		2702		7200		0.38		72.2		12.5		B
8	1.00		0.870		2928		7200		0.41		72.2		13.5		B

Segment 4: Merge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	1.00	1.00	0.870	0.877	2979	57	7200	2000	0.41	0.03	67.7	64.6	14.7	17.4	B
2	1.00	1.00	0.870	0.877	2993	114	7200	2000	0.42	0.06	67.7	64.6	14.7	17.7	B
3	1.00	1.00	0.870	0.877	3100	57	7200	2000	0.43	0.03	67.6	64.5	15.3	18.0	B
4	1.00	1.00	0.870	0.877	3017	91	7200	2000	0.42	0.05	67.7	64.6	14.9	17.7	B
5	1.00	1.00	0.870	0.877	2422	91	7200	2000	0.34	0.05	68.1	64.8	11.9	15.0	B
6	1.00	1.00	0.870	0.877	2348	0	7200	2000	0.33	0.00	68.3	64.9	11.5	14.4	B
7	1.00	1.00	0.870	0.877	2793	91	7200	2000	0.39	0.05	67.9	64.7	13.7	16.7	B
8	1.00	1.00	0.870	0.877	2974	46	7200	2000	0.41	0.02	67.7	64.6	14.6	17.4	B

Segment 5: Merge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	1.00	1.00	0.870	0.952	3022	43	7200	2000	0.42	0.02	69.4	67.3	14.5	10.9	B
2	1.00	1.00	0.870	0.952	3068	74	7200	2000	0.43	0.04	69.3	67.3	14.8	11.2	B
3	1.00	1.00	0.870	0.952	3161	61	7200	2000	0.44	0.03	69.3	67.3	15.2	11.6	B
4	1.00	1.00	0.870	0.952	3092	74	7200	2000	0.43	0.04	69.3	67.3	14.9	11.3	B
5	1.00	1.00	0.870	0.952	2497	74	7200	2000	0.35	0.04	69.8	67.6	11.9	8.4	A

6	1.00	1.00	0.870	0.952	2396	48	7200	2000	0.33	0.02	69.8	67.6	11.4	7.9	A
7	1.00	1.00	0.870	0.952	2833	39	7200	2000	0.39	0.02	69.5	67.4	13.6	9.9	A
8	1.00	1.00	0.870	0.952	3017	43	7200	2000	0.42	0.02	69.4	67.3	14.5	10.8	B
Segment 6: Overlap															
Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
1	1.00		0.870		3026		7200		0.42		64.2		15.7		B
2	1.00		0.870		3075		7200		0.43		63.7		16.1		B
3	1.00		0.870		3167		7200		0.44		63.9		16.5		B
4	1.00		0.870		3099		7200		0.43		63.7		16.2		B
5	1.00		0.870		2503		7200		0.35		61.8		13.5		B
6	1.00		0.870		2401		7200		0.33		60.3		13.3		B
7	1.00		0.870		2837		7200		0.39		61.3		15.4		B
8	1.00		0.870		3021		7200		0.42		62.8		16.0		B
Segment 7: Diverge															
Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	1.00	1.00	0.870	0.730	3026	649	7200	2000	0.42	0.32	64.2	59.2	15.7	21.6	C
2	1.00	1.00	0.870	0.730	3075	764	7200	2000	0.43	0.38	63.7	58.8	16.1	22.1	C
3	1.00	1.00	0.870	0.730	3167	726	7200	2000	0.44	0.36	63.9	58.9	16.5	22.5	C
4	1.00	1.00	0.870	0.730	3099	764	7200	2000	0.43	0.38	63.7	58.8	16.2	22.2	C
5	1.00	1.00	0.870	0.730	2503	1032	7200	2000	0.35	0.52	61.8	58.0	13.5	19.7	B
6	1.00	1.00	0.870	0.730	2401	1299	7200	2000	0.33	0.65	60.3	57.2	13.3	19.9	B
7	1.00	1.00	0.870	0.730	2837	1223	7200	2000	0.39	0.61	61.3	57.4	15.4	21.9	C
8	1.00	1.00	0.870	0.730	3021	955	7200	2000	0.42	0.48	62.8	58.2	16.0	22.2	C
Segment 8: Basic															
Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
1	1.00		0.909		2375		7200		0.33		72.2		11.0		A
2	1.00		0.909		2329		7200		0.32		72.2		10.7		A
3	1.00		0.909		2448		7200		0.34		72.2		11.3		B
4	1.00		0.909		2352		7200		0.33		72.2		10.9		A
5	1.00		0.909		1568		7200		0.22		72.2		7.2		A
6	1.00		0.909		1255		7200		0.17		72.2		5.8		A
7	1.00		0.909		1733		7200		0.24		72.2		8.0		A
8	1.00		0.909		2124		7200		0.30		72.2		9.8		A
Segment 9: Merge															
Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	1.00	1.00	0.909	0.806	2490	115	7200	2000	0.35	0.06	68.0	64.8	12.2	15.4	B

2	1.00	1.00	0.909	0.806	2582	253	7200	2000	0.36	0.13	67.8	64.7	12.7	16.2	B
3	1.00	1.00	0.909	0.806	2701	253	7200	2000	0.38	0.13	67.8	64.7	13.3	16.7	B
4	1.00	1.00	0.909	0.806	2675	323	7200	2000	0.37	0.16	67.7	64.7	13.2	16.8	B
5	1.00	1.00	0.909	0.806	1821	253	7200	2000	0.25	0.13	68.1	64.9	8.9	12.7	B
6	1.00	1.00	0.909	0.806	1416	161	7200	2000	0.20	0.08	68.4	65.0	6.9	10.6	B
7	1.00	1.00	0.909	0.806	1940	207	7200	2000	0.27	0.10	68.2	64.9	9.5	13.1	B
8	1.00	1.00	0.909	0.806	2469	345	7200	2000	0.34	0.17	67.7	64.7	12.2	15.9	B

Segment 10: Basic

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
1	1.00		0.909		2477		7200		0.34		72.2		11.4		B
2	1.00		0.909		2553		7200		0.35		72.2		11.8		B
3	1.00		0.909		2672		7200		0.37		72.2		12.3		B
4	1.00		0.909		2638		7200		0.37		72.2		12.2		B
5	1.00		0.909		1792		7200		0.25		72.2		8.3		A
6	1.00		0.909		1398		7200		0.19		72.2		6.5		A
7	1.00		0.909		1916		7200		0.27		72.2		8.9		A
8	1.00		0.909		2430		7200		0.34		72.2		11.2		B

Segment 11: Diverge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	1.00	1.00	0.909	0.926	2477	428	7200	4000	0.34	0.11	75.4	-	11.0	-	A
2	1.00	1.00	0.909	0.926	2553	445	7200	4000	0.35	0.11	75.4	-	11.3	-	B
3	1.00	1.00	0.909	0.926	2672	488	7200	4000	0.37	0.12	75.4	-	11.8	-	B
4	1.00	1.00	0.909	0.926	2638	454	7200	4000	0.37	0.11	75.4	-	11.7	-	B
5	1.00	1.00	0.909	0.926	1792	332	7200	4000	0.25	0.08	75.4	-	7.9	-	A
6	1.00	1.00	0.909	0.926	1398	327	7200	4000	0.19	0.08	75.4	-	6.2	-	A
7	1.00	1.00	0.909	0.926	1916	415	7200	4000	0.27	0.10	75.4	-	8.5	-	A
8	1.00	1.00	0.909	0.926	2430	406	7200	4000	0.34	0.10	75.4	-	10.7	-	A

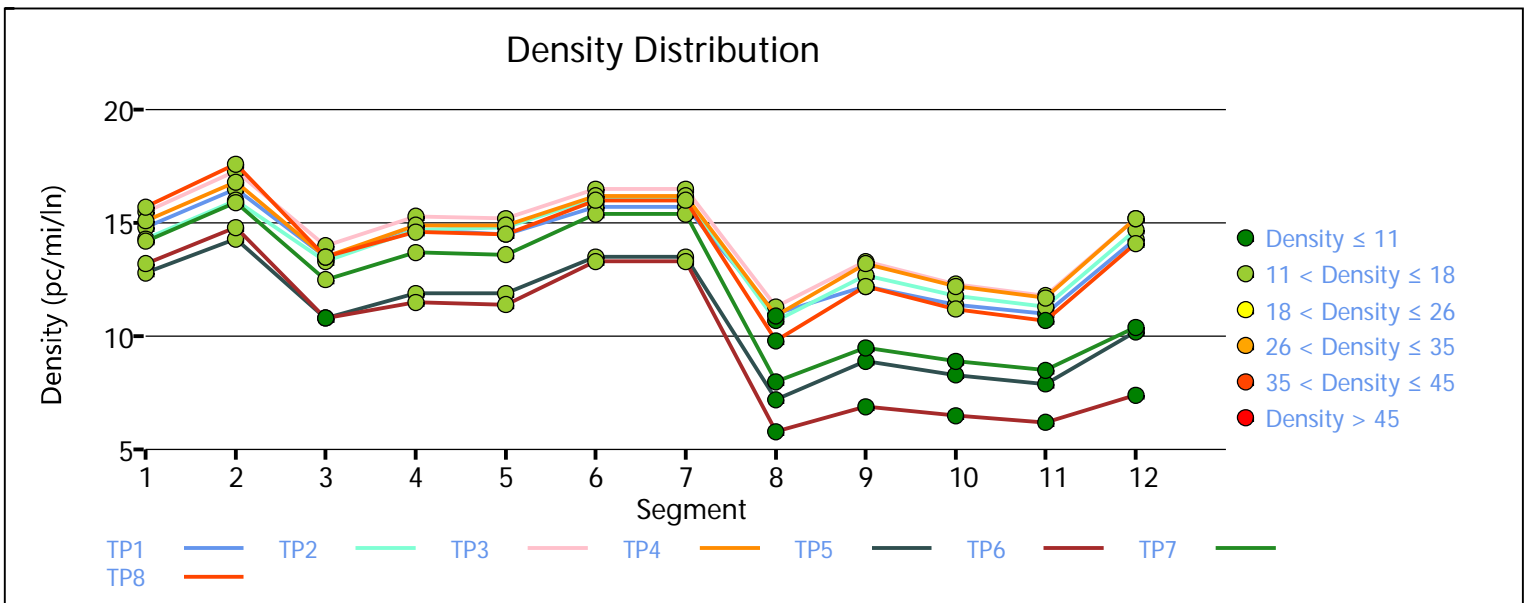
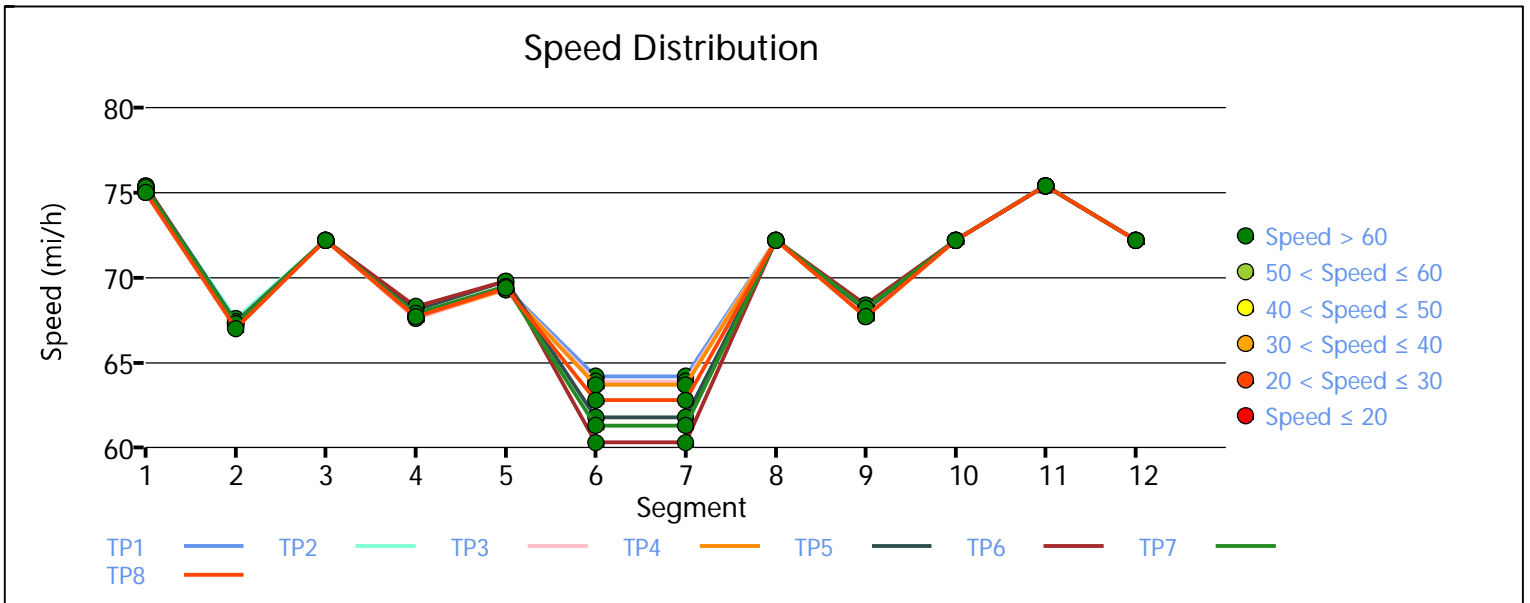
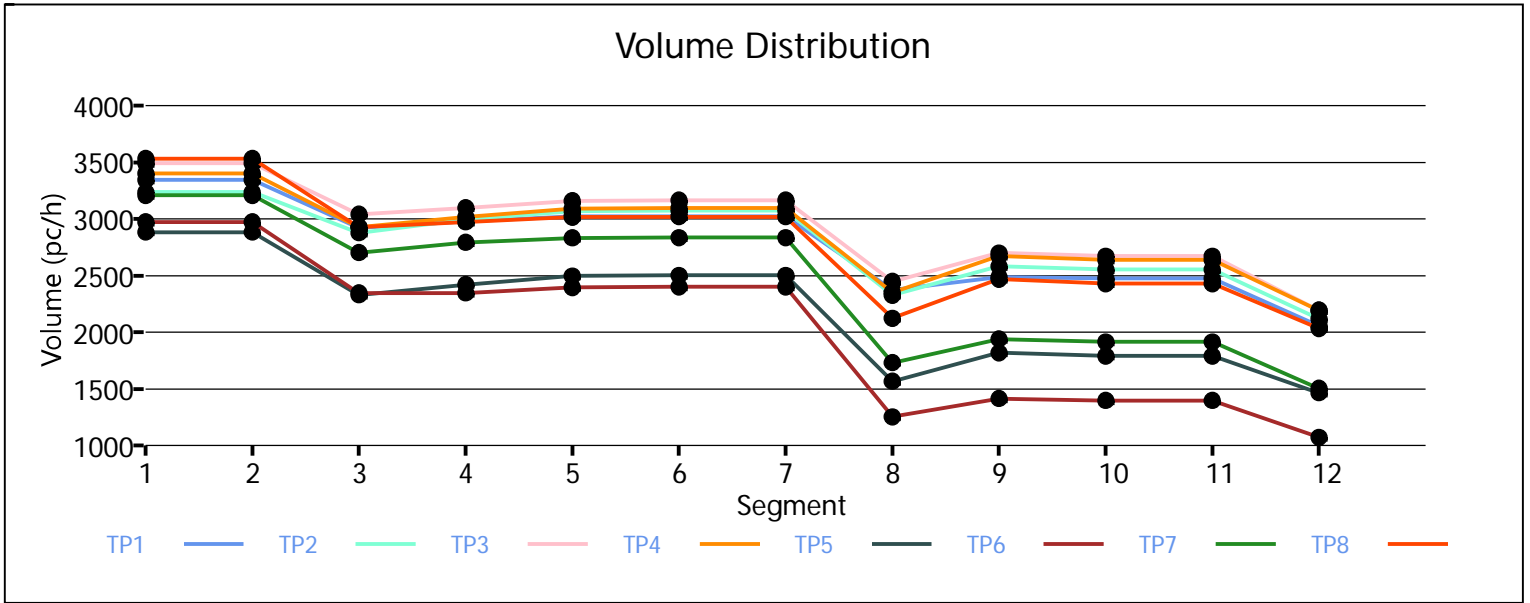
Segment 12: Basic

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
1	1.00		0.901		2060		4800		0.43		72.2		14.3		B
2	1.00		0.901		2119		4800		0.44		72.2		14.7		B
3	1.00		0.901		2194		4800		0.46		72.2		15.2		B
4	1.00		0.901		2195		4800		0.46		72.2		15.2		B
5	1.00		0.901		1467		4800		0.31		72.2		10.2		A
6	1.00		0.901		1074		4800		0.22		72.2		7.4		A
7	1.00		0.901		1507		4800		0.31		72.2		10.4		A
8	1.00		0.901		2034		4800		0.42		72.2		14.1		B

T	Speed, mi/h	Density, pc/mi/ln	Density, veh/mi/ln	Travel Time, min	LOS
1	69.9	13.8	12.2	2.3	B
2	69.8	13.9	12.2	2.3	B
3	69.8	14.5	12.8	2.3	B
4	69.8	14.2	12.6	2.3	B
5	69.5	10.9	9.6	2.3	A
6	69.2	10.1	8.9	2.3	A
7	69.3	12.2	10.7	2.3	B
8	69.6	13.8	12.2	2.3	B

Facility Overall Results

Space Mean Speed, mi/h	69.6	Density, veh/mi/ln	11.4
Average Travel Time, min	2.3	Density, pc/mi/ln	12.9



HCS7 Freeway Facilities Report

Project Information

Analyst	WSP	Date	7/3/2018
Agency	City of Moreno Valley	Analysis Year	2025 Alt 1
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	WLC Pkwy IC - Eastbound SR-60		

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	12
Total Time Periods	8	Time Period Duration, min	15

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic	Moreno Beach Rd to Redlands Blvd	600	3
2	Diverge	Diverge	Off-Ramp to Redlands Blvd	1500	3
3	Basic	Basic	between Redlands Blvd Off and SB Redlands Blvd On Ramp	2150	3
4	Merge	Merge	On-Ramp from SB Redlands Blvd (Loop)	1250	3
5	Merge	Merge	On-Ramp from NB Redlands Blvd	1275	3
6	Overlap	Overlap	Redlands Blvd to Theodore St	225	3
7	Diverge	Diverge	Off-Ramp to Theodore St	1275	3
8	Basic	Basic	between Theodore St Off and Theodore St On Ramps	900	3
9	Merge	Merge	On-Ramp from Theodore St	1500	3
10	Basic	Basic	Theodore St to Gilman Springs	200	3
11	Diverge	Basic	Off-Ramp to Gilman Spring	1500	3
12	Basic	Basic	east of Gilman Springs Rd Off Ramp	1850	2

Facility Segment Data

Segment 1: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	1.00	0.917	4093	7200	0.57	73.8	18.5	C
2	1.00	0.917	4394	7200	0.61	72.9	20.1	C
3	1.00	0.917	4442	7200	0.62	72.7	20.4	C
4	1.00	0.917	4490	7200	0.62	72.5	20.6	C
5	1.00	0.917	4334	7200	0.60	73.1	19.8	C
6	1.00	0.917	4532	7200	0.63	72.3	20.9	C
7	1.00	0.917	3965	7200	0.55	74.1	17.8	B
8	1.00	0.917	4628	7200	0.64	72.0	21.4	C

Segment 2: Diverge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	1.00	1.00	0.917	0.962	4093	774	7200	4000	0.57	0.19	66.3	58.8	20.6	10.9	B
2	1.00	1.00	0.917	0.962	4394	853	7200	4000	0.61	0.21	65.9	58.5	22.2	12.3	B
3	1.00	1.00	0.917	0.962	4442	842	7200	4000	0.62	0.21	66.0	58.6	22.4	12.6	B
4	1.00	1.00	0.917	0.962	4490	878	7200	4000	0.62	0.22	65.8	58.5	22.7	12.8	B
5	1.00	1.00	0.917	0.962	4334	885	7200	4000	0.60	0.22	65.9	58.4	21.9	12.1	B
6	1.00	1.00	0.917	0.962	4532	805	7200	4000	0.63	0.20	66.0	58.7	22.9	13.0	B
7	1.00	1.00	0.917	0.962	3965	768	7200	4000	0.55	0.19	66.3	58.8	19.9	10.2	B
8	1.00	1.00	0.917	0.962	4628	848	7200	4000	0.64	0.21	65.9	58.6	23.4	13.5	B

Segment 3: Basic

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	1.00		0.909		3309		7200		0.46		72.2		15.3		B
2	1.00		0.909		3529		7200		0.49		72.2		16.3		B
3	1.00		0.909		3590		7200		0.50		72.1		16.6		B
4	1.00		0.909		3600		7200		0.50		72.1		16.6		B
5	1.00		0.909		3436		7200		0.48		72.2		15.9		B
6	1.00		0.909		3721		7200		0.52		72.0		17.2		B
7	1.00		0.909		3187		7200		0.44		72.2		14.7		B
8	1.00		0.909		3771		7200		0.52		72.0		17.5		B

Segment 4: Merge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	1.00	1.00	0.917	0.952	3535	255	7200	2000	0.49	0.13	67.1	64.2	17.6	20.5	C
2	1.00	1.00	0.917	0.952	3838	340	7200	2000	0.53	0.17	66.7	63.9	19.2	22.2	C
3	1.00	1.00	0.917	0.952	3842	284	7200	2000	0.53	0.14	66.8	64.0	19.2	22.0	C
4	1.00	1.00	0.917	0.952	3993	425	7200	2000	0.55	0.21	66.6	63.8	20.0	23.1	C
5	1.00	1.00	0.917	0.952	3661	255	7200	2000	0.51	0.13	67.0	64.1	18.2	21.1	C
6	1.00	1.00	0.917	0.952	3858	170	7200	2000	0.54	0.09	66.8	64.0	19.3	21.8	C
7	1.00	1.00	0.917	0.952	3556	397	7200	2000	0.49	0.20	67.0	64.1	17.7	21.0	C
8	1.00	1.00	0.917	0.952	4022	284	7200	2000	0.56	0.14	66.6	63.8	20.1	22.8	C

Segment 5: Merge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	1.00	1.00	0.917	0.962	3598	53	7200	2000	0.50	0.03	68.9	66.9	17.4	13.7	B
2	1.00	1.00	0.917	0.962	3920	68	7200	2000	0.54	0.03	68.6	66.7	19.0	15.3	B
3	1.00	1.00	0.917	0.962	3902	49	7200	2000	0.54	0.02	68.6	66.7	19.0	15.1	B
4	1.00	1.00	0.917	0.962	4117	107	7200	2000	0.57	0.05	68.3	66.4	20.1	16.3	B
5	1.00	1.00	0.917	0.962	3739	68	7200	2000	0.52	0.03	68.7	66.8	18.1	14.4	B

6	1.00	1.00	0.917	0.962	3933	68	7200	2000	0.55	0.03	68.5	66.6	19.1	15.3	B
7	1.00	1.00	0.917	0.962	3595	24	7200	2000	0.50	0.01	68.8	66.9	17.4	13.6	B
8	1.00	1.00	0.917	0.962	4082	49	7200	2000	0.57	0.02	68.4	66.5	19.9	16.0	B
Segment 6: Overlap															
Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
1	1.00		0.917		3601		7200		0.50		65.4		18.4		C
2	1.00		0.917		3923		7200		0.54		65.3		20.0		C
3	1.00		0.917		3904		7200		0.54		63.5		20.5		C
4	1.00		0.917		4122		7200		0.57		64.5		21.3		C
5	1.00		0.917		3742		7200		0.52		64.5		19.3		C
6	1.00		0.917		3936		7200		0.55		64.9		20.2		C
7	1.00		0.917		3597		7200		0.50		64.0		18.7		C
8	1.00		0.917		4084		7200		0.57		65.1		20.9		C
Segment 7: Diverge															
Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	1.00	1.00	0.917	0.746	3601	393	7200	2000	0.50	0.20	65.4	59.9	18.4	24.0	C
2	1.00	1.00	0.917	0.746	3923	458	7200	2000	0.54	0.23	65.3	59.7	20.0	25.7	C
3	1.00	1.00	0.917	0.746	3904	983	7200	2000	0.54	0.49	63.5	58.2	20.5	26.6	C
4	1.00	1.00	0.917	0.746	4122	721	7200	2000	0.57	0.36	64.5	58.9	21.3	27.1	C
5	1.00	1.00	0.917	0.746	3742	655	7200	2000	0.52	0.33	64.5	59.1	19.3	25.1	C
6	1.00	1.00	0.917	0.746	3936	590	7200	2000	0.55	0.30	64.9	59.3	20.2	25.9	C
7	1.00	1.00	0.917	0.746	3597	787	7200	2000	0.50	0.39	64.0	58.7	18.7	24.7	C
8	1.00	1.00	0.917	0.746	4084	524	7200	2000	0.57	0.26	65.1	59.5	20.9	26.5	C
Segment 8: Basic															
Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
1	1.00		0.952		3161		7200		0.44		72.2		14.6		B
2	1.00		0.952		3419		7200		0.47		72.2		15.8		B
3	1.00		0.952		2991		7200		0.42		72.2		13.8		B
4	1.00		0.952		3405		7200		0.47		72.2		15.7		B
5	1.00		0.952		3090		7200		0.43		72.2		14.3		B
6	1.00		0.952		3329		7200		0.46		72.2		15.4		B
7	1.00		0.952		2848		7200		0.40		72.2		13.1		B
8	1.00		0.952		3523		7200		0.49		72.2		16.3		B
Segment 9: Merge															
Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	1.00	1.00	0.952	0.877	3420	259	7200	2000	0.48	0.13	67.2	64.3	17.0	20.0	B

2	1.00	1.00	0.952	0.877	3627	208	7200	2000	0.50	0.10	67.1	64.2	18.0	20.8	C
3	1.00	1.00	0.952	0.877	3354	363	7200	2000	0.47	0.18	67.2	64.3	16.6	20.0	B
4	1.00	1.00	0.952	0.877	3768	363	7200	2000	0.52	0.18	66.8	64.0	18.8	21.9	C
5	1.00	1.00	0.952	0.877	3298	208	7200	2000	0.46	0.10	67.4	64.4	16.3	19.3	B
6	1.00	1.00	0.952	0.877	3537	208	7200	2000	0.49	0.10	67.1	64.2	17.6	20.4	C
7	1.00	1.00	0.952	0.877	3133	285	7200	2000	0.44	0.14	67.4	64.4	15.5	18.8	B
8	1.00	1.00	0.952	0.877	3704	181	7200	2000	0.51	0.09	67.0	64.1	18.4	21.1	C

Segment 10: Basic

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
1	1.00		0.952		3399		7200		0.47		72.2		15.7		B
2	1.00		0.952		3610		7200		0.50		72.1		16.7		B
3	1.00		0.952		3325		7200		0.46		72.2		15.3		B
4	1.00		0.952		3739		7200		0.52		72.0		17.3		B
5	1.00		0.952		3282		7200		0.46		72.2		15.2		B
6	1.00		0.952		3520		7200		0.49		72.2		16.2		B
7	1.00		0.952		3110		7200		0.43		72.2		14.4		B
8	1.00		0.952		3690		7200		0.51		72.0		17.1		B

Segment 11: Diverge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	1.00	1.00	0.952	0.971	3399	803	7200	4000	0.47	0.20	75.2	-	15.1	-	B
2	1.00	1.00	0.952	0.971	3610	1010	7200	4000	0.50	0.25	74.9	-	16.1	-	B
3	1.00	1.00	0.952	0.971	3325	1038	7200	4000	0.46	0.26	75.2	-	14.7	-	B
4	1.00	1.00	0.952	0.971	3739	1010	7200	4000	0.52	0.25	74.6	-	16.7	-	B
5	1.00	1.00	0.952	0.971	3282	898	7200	4000	0.46	0.22	75.3	-	14.5	-	B
6	1.00	1.00	0.952	0.971	3520	1133	7200	4000	0.49	0.28	75.0	-	15.6	-	B
7	1.00	1.00	0.952	0.971	3110	979	7200	4000	0.43	0.24	75.4	-	13.8	-	B
8	1.00	1.00	0.952	0.971	3690	1173	7200	4000	0.51	0.29	74.7	-	16.5	-	B

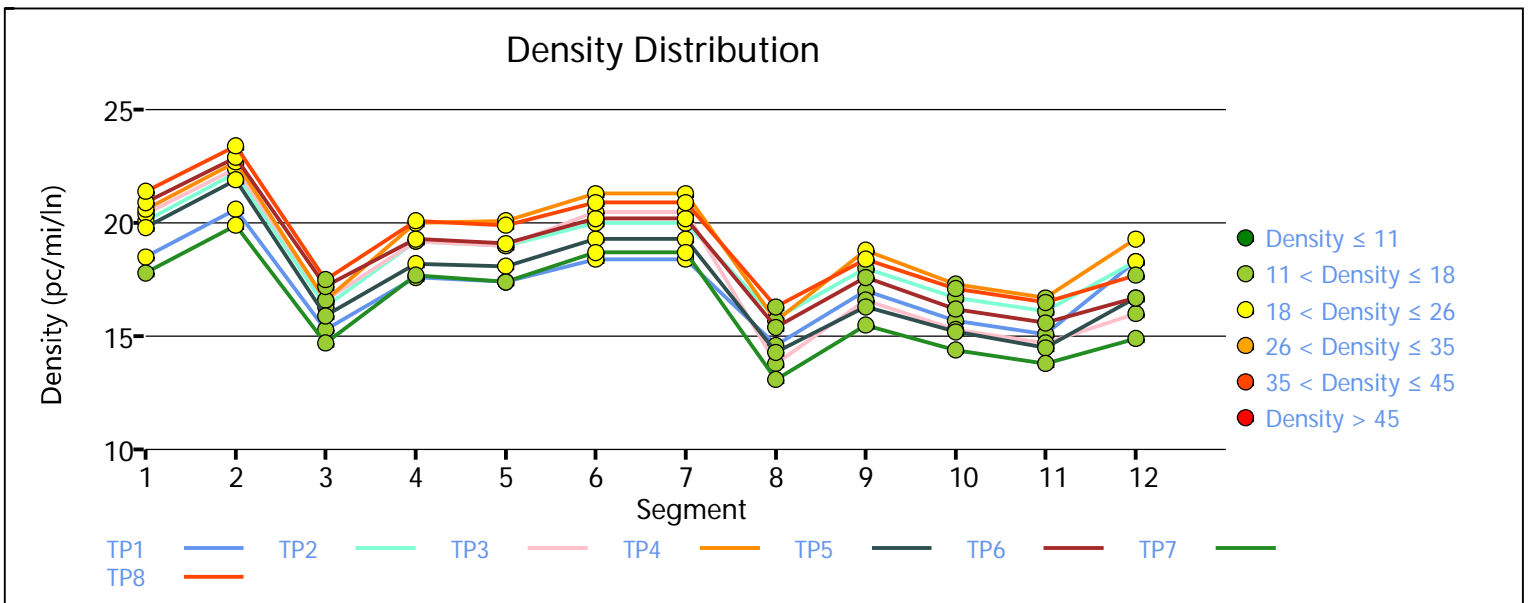
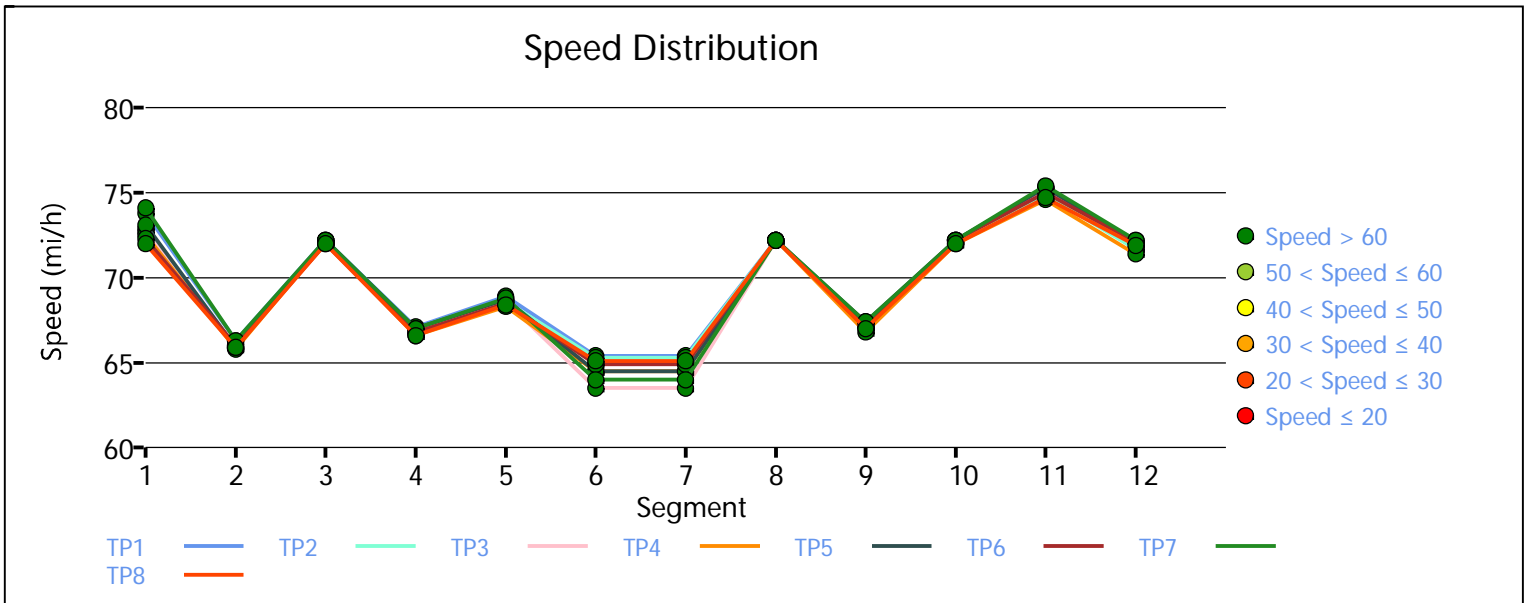
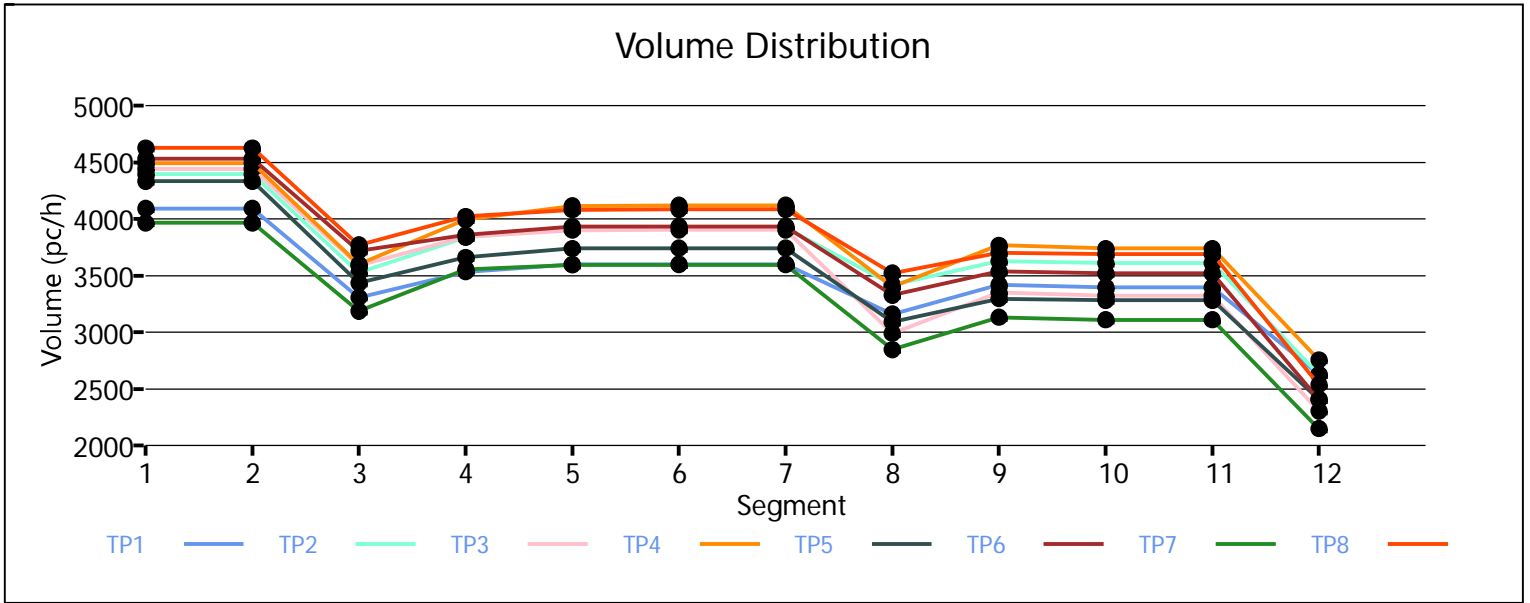
Segment 12: Basic

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
1	1.00		0.935		2627		4800		0.55		71.7		18.3		C
2	1.00		0.935		2627		4800		0.55		71.7		18.3		C
3	1.00		0.935		2307		4800		0.48		72.2		16.0		B
4	1.00		0.935		2758		4800		0.57		71.4		19.3		C
5	1.00		0.935		2409		4800		0.50		72.1		16.7		B
6	1.00		0.935		2407		4800		0.50		72.1		16.7		B
7	1.00		0.935		2150		4800		0.45		72.2		14.9		B
8	1.00		0.935		2539		4800		0.53		71.9		17.7		B

T	Speed, mi/h	Density, pc/mi/ln	Density, veh/mi/ln	Travel Time, min	LOS
1	69.6	17.2	15.9	2.3	B
2	69.4	18.4	17.0	2.3	C
3	69.1	17.8	16.5	2.3	B
4	69.1	19.1	17.7	2.3	C
5	69.4	17.4	16.1	2.3	B
6	69.3	18.4	17.0	2.3	C
7	69.4	16.3	15.1	2.3	B
8	69.2	19.1	17.7	2.3	C

Facility Overall Results

Space Mean Speed, mi/h	69.3	Density, veh/mi/ln	16.6
Average Travel Time, min	2.3	Density, pc/mi/ln	17.9



HCS7 Freeway Facilities Report

Project Information

Analyst	WSP	Date	7/3/2018
Agency	City of Moreno Valley	Analysis Year	2025 Alt 1
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	WLC Pkwy IC - Westbound SR-60		

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	12
Total Time Periods	8	Time Period Duration, min	15

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic	east of Gilman Springs Rd On Ramp	2700	3
2	Merge	Merge	On-Ramp from Gilman Spring	220	3
3	Overlap	Overlap	Gilman Spring to Theodore St	1280	3
4	Diverge	Diverge	Off-Ramp to Theodore St	220	3
5	Basic	Basic	between Theodore St Off and Theodore St On Ramps	980	3
6	Merge	Merge	On-Ramp from Theodore St	1500	3
7	Basic	Basic	Theodore St to Redlands Blvd	410	3
8	Diverge	Diverge	Off-Ramp to Redlands Blvd	1500	3
9	Basic	Basic	between Redlands Blvd Off and On Ramps	2000	3
10	Merge	Merge	On-Ramp from northbound Redlands Blvd	1300	3
11	Merge	Merge	On-Ramp from southbound Redlands Blvd	1500	3
12	Basic	Basic	Redlands Blvd to Moreno Beach Rd	1070	3

Facility Segment Data

Segment 1: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	1.00	0.926	2070	7200	0.29	75.4	9.2	A
2	1.00	0.926	2344	7200	0.33	75.4	10.4	A
3	1.00	0.926	1906	7200	0.26	75.4	8.4	A
4	1.00	0.926	1973	7200	0.27	75.4	8.7	A
5	1.00	0.926	1684	7200	0.23	75.4	7.4	A
6	1.00	0.926	1825	7200	0.25	75.4	8.1	A
7	1.00	0.926	1706	7200	0.24	75.4	7.5	A
8	1.00	0.926	1892	7200	0.26	75.4	8.4	A

Segment 2: Merge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	1.00	1.00	0.935	0.962	3006	956	7200	2000	0.42	0.48	68.8	67.0	14.6	13.1	B
2	1.00	1.00	0.935	0.962	3079	757	7200	2000	0.43	0.38	68.9	67.0	14.9	12.9	B
3	1.00	1.00	0.935	0.962	2649	761	7200	2000	0.37	0.38	69.1	67.3	12.8	10.9	B
4	1.00	1.00	0.935	0.962	2640	686	7200	2000	0.37	0.34	69.2	67.3	12.7	10.6	B
5	1.00	1.00	0.935	0.962	2307	640	7200	2000	0.32	0.32	69.4	67.5	11.1	8.9	A
6	1.00	1.00	0.935	0.962	2439	632	7200	2000	0.34	0.32	69.4	67.5	11.7	9.5	A
7	1.00	1.00	0.935	0.962	2143	453	7200	2000	0.30	0.23	69.6	67.6	10.3	7.6	A
8	1.00	1.00	0.935	0.962	2352	478	7200	2000	0.33	0.24	69.5	67.5	11.3	8.7	A

Segment 3: Overlap

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	1.00	1.00	0.935	0.962	3034	140	7200	2000	0.42	0.07	66.1	60.7	15.3	20.7	B
2	1.00	1.00	0.935	0.962	3101	295	7200	2000	0.43	0.15	65.5	60.2	15.8	21.3	B
3	1.00	1.00	0.935	0.962	2671	217	7200	2000	0.37	0.11	65.5	60.4	13.6	18.9	B
4	1.00	1.00	0.935	0.962	2660	372	7200	2000	0.37	0.19	65.0	60.0	13.6	19.1	B
5	1.00	1.00	0.935	0.962	2326	217	7200	2000	0.32	0.11	65.3	60.4	11.9	17.0	B
6	1.00	1.00	0.935	0.962	2458	187	7200	2000	0.34	0.09	65.5	60.5	12.5	17.7	B
7	1.00	1.00	0.935	0.962	2156	171	7200	2000	0.30	0.09	65.5	60.6	11.0	16.0	A
8	1.00	1.00	0.935	0.962	2366	233	7200	2000	0.33	0.12	65.3	60.4	12.1	17.3	B

Segment 4: Diverge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	1.00	1.00	0.935	0.820	2887	140	7200	2000	0.40	0.07	72.2	60.7	13.3	20.7	B
2	1.00	1.00	0.935	0.820	2818	295	7200	2000	0.39	0.15	72.2	60.2	13.0	21.3	B
3	1.00	1.00	0.935	0.820	2459	217	7200	2000	0.34	0.11	72.2	60.4	11.4	18.9	B
4	1.00	1.00	0.935	0.820	2314	372	7200	2000	0.32	0.19	72.2	60.0	10.7	19.1	A
5	1.00	1.00	0.935	0.820	2118	217	7200	2000	0.29	0.11	72.2	60.4	9.8	17.0	A
6	1.00	1.00	0.935	0.820	2275	187	7200	2000	0.32	0.09	72.2	60.5	10.5	17.7	A
7	1.00	1.00	0.935	0.820	2156	171	7200	2000	0.30	0.09	72.2	60.6	11.0	16.0	A
8	1.00	1.00	0.935	0.820	2366	233	7200	2000	0.33	0.12	72.2	60.4	12.1	17.3	A

Segment 5: Basic

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	1.00	1.00	0.943	0.962	2887	140	7200	2000	0.40	0.07	72.2	60.7	13.3	20.7	B
2	1.00	1.00	0.943	0.962	2818	295	7200	2000	0.39	0.15	72.2	60.2	13.0	21.3	B
3	1.00	1.00	0.943	0.962	2459	217	7200	2000	0.34	0.11	72.2	60.4	11.4	18.9	B
4	1.00	1.00	0.943	0.962	2314	372	7200	2000	0.32	0.19	72.2	60.0	10.7	19.1	A
5	1.00	1.00	0.943	0.962	2118	217	7200	2000	0.29	0.11	72.2	60.4	9.8	17.0	A
6	1.00	1.00	0.943	0.962	2275	187	7200	2000	0.32	0.09	72.2	60.5	10.5	17.7	A
7	1.00	1.00	0.943	0.962	2156	171	7200	2000	0.30	0.09	72.2	60.6	11.0	16.0	A
8	1.00	1.00	0.943	0.962	2366	233	7200	2000	0.33	0.12	72.2	60.4	12.1	17.3	A

7	1.00	0.943	1989	7200	0.28	72.2	9.2	A
8	1.00	0.943	2143	7200	0.30	72.2	9.9	A

Segment 6: Merge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	1.00	1.00	0.885	0.714	3776	700	7200	2000	0.52	0.35	67.4	65.1	18.7	19.5	B
2	1.00	1.00	0.885	0.714	3842	840	7200	2000	0.53	0.42	67.2	64.9	19.1	20.2	C
3	1.00	1.00	0.885	0.714	3740	1120	7200	2000	0.52	0.56	67.0	64.8	18.6	20.4	C
4	1.00	1.00	0.885	0.714	3166	700	7200	2000	0.44	0.35	67.9	65.6	15.5	16.6	B
5	1.00	1.00	0.885	0.714	3517	1261	7200	2000	0.49	0.63	67.1	65.0	17.5	19.8	B
6	1.00	1.00	0.885	0.714	3685	1261	7200	2000	0.51	0.63	66.9	64.8	18.4	20.6	C
7	1.00	1.00	0.885	0.714	3941	1821	7200	2000	0.55	0.91	65.9	63.9	19.9	23.2	C
8	1.00	1.00	0.885	0.714	3124	840	7200	2000	0.43	0.42	67.8	65.6	15.4	16.8	B

Segment 7: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	1.00	0.885	3641	7200	0.51	72.1	16.8	B
2	1.00	0.885	3680	7200	0.51	72.0	17.0	B
3	1.00	0.885	3524	7200	0.49	72.2	16.3	B
4	1.00	0.885	3031	7200	0.42	72.2	14.0	B
5	1.00	0.885	3273	7200	0.45	72.2	15.1	B
6	1.00	0.885	3441	7200	0.48	72.2	15.9	B
7	1.00	0.885	3589	7200	0.50	72.1	16.6	B
8	1.00	0.885	2962	7200	0.41	72.2	13.7	B

Segment 8: Diverge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	1.00	1.00	0.885	0.926	3641	322	7200	4000	0.51	0.08	67.4	60.1	18.0	8.6	A
2	1.00	1.00	0.885	0.926	3680	322	7200	4000	0.51	0.08	67.4	60.1	18.2	8.8	A
3	1.00	1.00	0.885	0.926	3524	382	7200	4000	0.49	0.10	67.4	60.0	17.4	8.1	A
4	1.00	1.00	0.885	0.926	3031	443	7200	4000	0.42	0.11	67.5	59.8	15.0	5.6	A
5	1.00	1.00	0.885	0.926	3273	342	7200	4000	0.45	0.09	67.6	60.1	16.1	6.8	A
6	1.00	1.00	0.885	0.926	3441	242	7200	4000	0.48	0.06	67.8	60.4	16.9	7.7	A
7	1.00	1.00	0.885	0.926	3589	322	7200	4000	0.50	0.08	67.5	60.1	17.7	8.4	A
8	1.00	1.00	0.885	0.926	2962	181	7200	4000	0.41	0.05	68.1	60.6	14.5	5.3	A

Segment 9: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	1.00	0.885	3304	7200	0.46	72.2	15.2	B
2	1.00	0.885	3344	7200	0.46	72.2	15.4	B

3	1.00	0.885	3124	7200	0.43	72.2	14.4	B
4	1.00	0.885	2567	7200	0.36	72.2	11.9	B
5	1.00	0.885	2915	7200	0.40	72.2	13.5	B
6	1.00	0.885	3188	7200	0.44	72.2	14.7	B
7	1.00	0.885	3252	7200	0.45	72.2	15.0	B
8	1.00	0.885	2772	7200	0.39	72.2	12.8	B

Segment 10: Merge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	1.00	1.00	0.901	0.909	3449	204	7200	2000	0.48	0.10	67.2	64.3	17.1	20.0	B
2	1.00	1.00	0.901	0.909	3525	241	7200	2000	0.49	0.12	67.1	64.2	17.5	20.4	C
3	1.00	1.00	0.901	0.909	3296	227	7200	2000	0.46	0.11	67.3	64.4	16.3	19.4	B
4	1.00	1.00	0.901	0.909	2643	121	7200	2000	0.37	0.06	67.9	64.7	13.0	16.1	B
5	1.00	1.00	0.901	0.909	3029	166	7200	2000	0.42	0.08	67.5	64.5	15.0	18.0	B
6	1.00	1.00	0.901	0.909	3289	158	7200	2000	0.46	0.08	67.4	64.4	16.3	19.1	B
7	1.00	1.00	0.901	0.909	3548	354	7200	2000	0.49	0.18	67.0	64.2	17.7	20.9	C
8	1.00	1.00	0.901	0.909	3032	309	7200	2000	0.42	0.15	67.4	64.5	15.0	18.4	B

Segment 11: Merge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	1.00	1.00	0.901	0.980	3846	395	7200	2000	0.53	0.20	67.7	65.4	18.9	18.5	B
2	1.00	1.00	0.901	0.980	4019	492	7200	2000	0.56	0.25	67.5	65.2	19.8	19.6	B
3	1.00	1.00	0.901	0.980	3783	486	7200	2000	0.53	0.24	67.7	65.4	18.6	18.4	B
4	1.00	1.00	0.901	0.980	3149	505	7200	2000	0.44	0.25	68.2	65.9	15.4	15.5	B
5	1.00	1.00	0.901	0.980	3426	395	7200	2000	0.48	0.20	68.1	65.8	16.8	16.5	B
6	1.00	1.00	0.901	0.980	3660	369	7200	2000	0.51	0.18	67.9	65.6	18.0	17.5	B
7	1.00	1.00	0.901	0.980	3914	362	7200	2000	0.54	0.18	67.7	65.4	19.3	18.7	B
8	1.00	1.00	0.901	0.980	3299	265	7200	2000	0.46	0.13	68.3	65.9	16.1	15.6	B

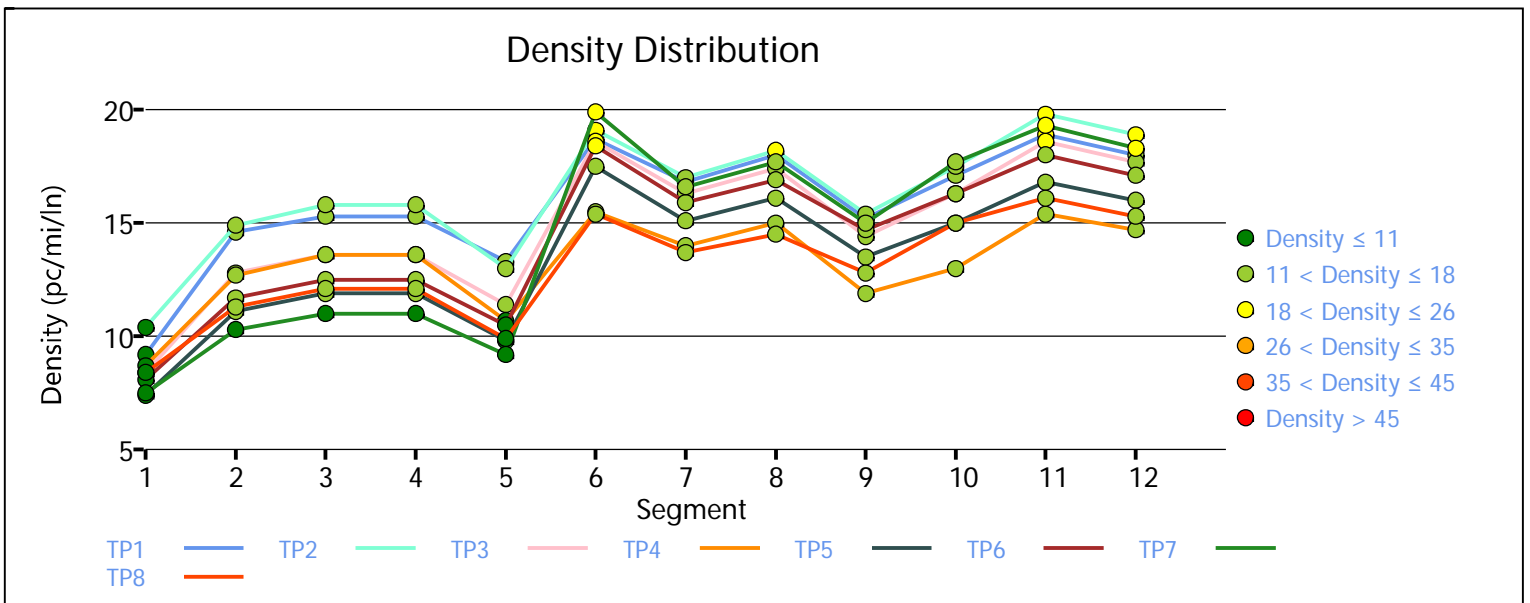
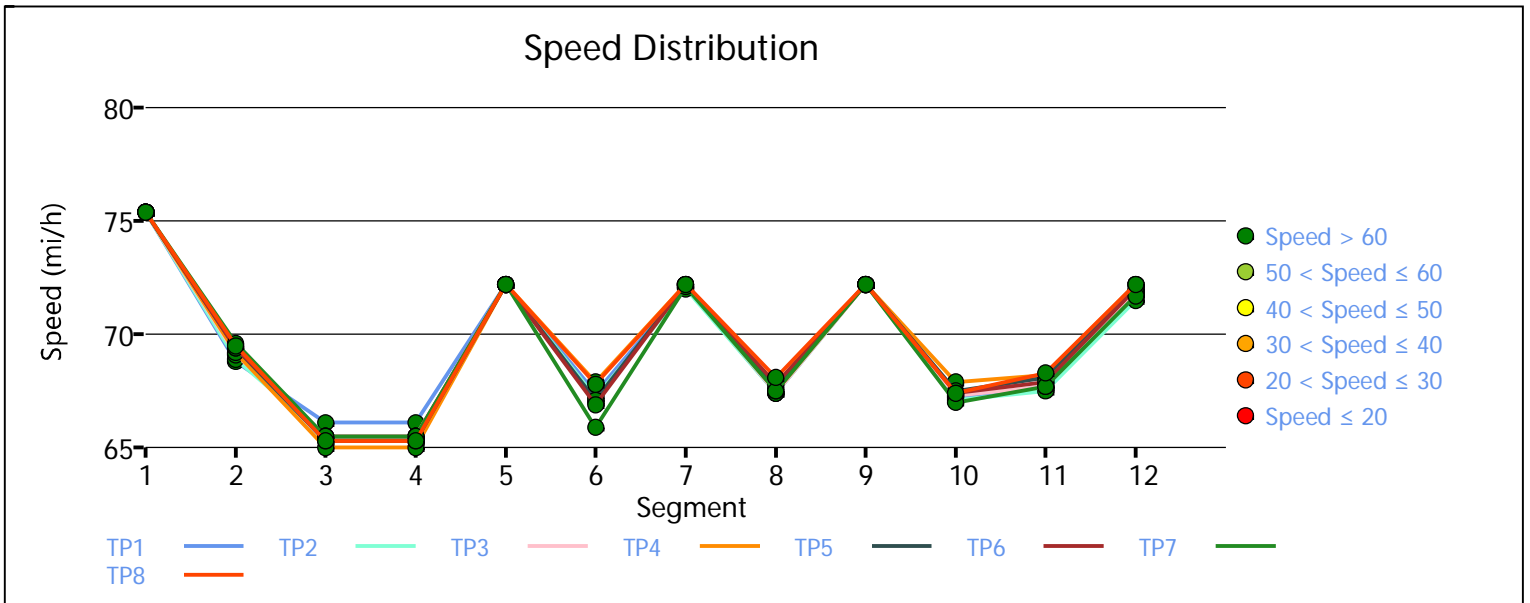
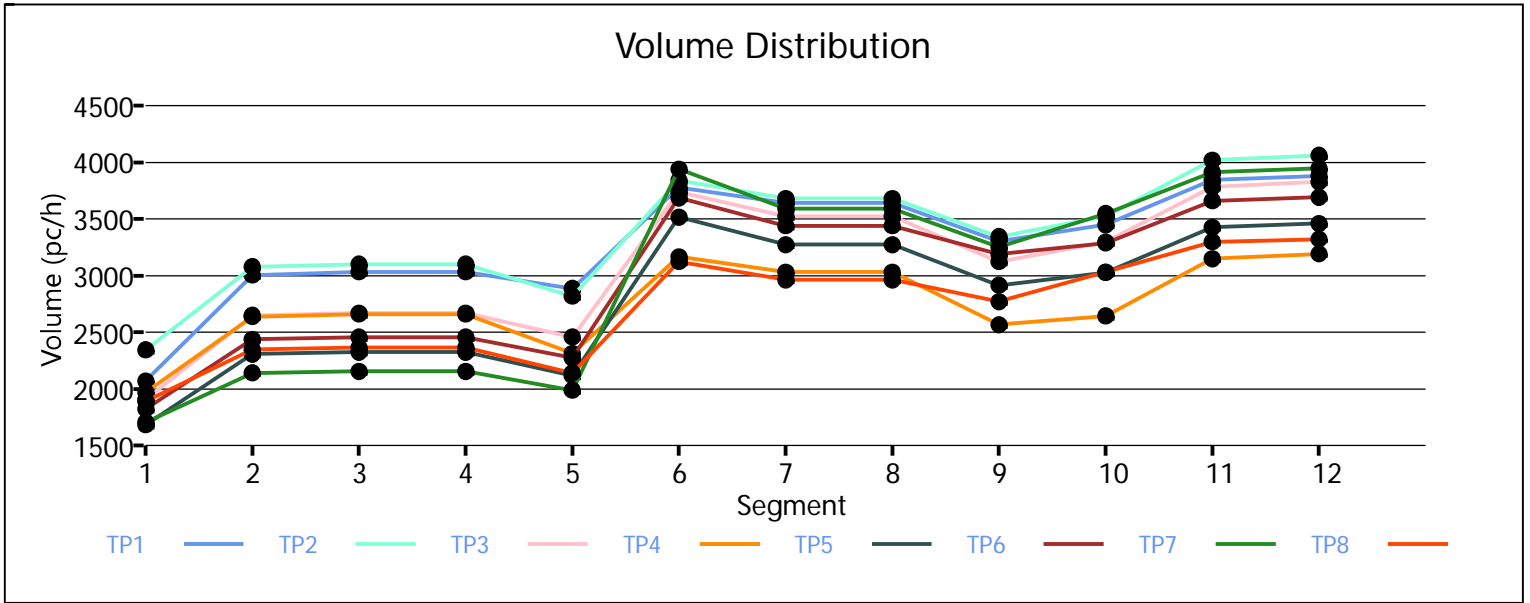
Segment 12: Basic

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	1.00		0.901		3880		7200		0.54		71.8		18.0		B
2	1.00		0.901		4062		7200		0.56		71.5		18.9		C
3	1.00		0.901		3826		7200		0.53		71.9		17.7		B
4	1.00		0.901		3193		7200		0.44		72.2		14.7		B
5	1.00		0.901		3461		7200		0.48		72.2		16.0		B
6	1.00		0.901		3693		7200		0.51		72.0		17.1		B
7	1.00		0.901		3946		7200		0.55		71.7		18.3		C
8	1.00		0.901		3323		7200		0.46		72.2		15.3		B

T	Speed, mi/h	Density, pc/mi/ln	Density, veh/mi/ln	Travel Time, min	LOS
1	69.6	15.4	13.9	2.4	B
2	69.5	16.0	14.4	2.4	B
3	69.5	14.6	13.2	2.4	B
4	69.8	12.8	11.6	2.4	B
5	69.6	13.3	12.0	2.4	B
6	69.6	14.2	12.8	2.4	B
7	69.3	14.5	13.1	2.4	B
8	69.9	12.9	11.6	2.4	B

Facility Overall Results

Space Mean Speed, mi/h	69.6	Density, veh/mi/ln	12.8
Average Travel Time, min	2.4	Density, pc/mi/ln	14.2



HCS7 Freeway Facilities Report

Project Information

Analyst	WSP	Date	7/3/2018
Agency	City of Moreno Valley	Analysis Year	2025 Alt 1
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	WLC Pkwy IC - Westbound SR-60		

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	12
Total Time Periods	8	Time Period Duration, min	15

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic	east of Gilman Springs Rd On Ramp	2700	3
2	Merge	Merge	On-Ramp from Gilman Spring	210	3
3	Overlap	Overlap	Gilman Spring to Theodore St	1290	3
4	Diverge	Diverge	Off-Ramp to Theodore St	210	3
5	Basic	Basic	between Theodore St Off and Theodore St On Ramps	1000	3
6	Merge	Merge	On-Ramp from Theodore St	1500	3
7	Basic	Basic	Theodore St to Redlands Blvd	410	3
8	Diverge	Diverge	Off-Ramp to Redlands Blvd	1500	3
9	Basic	Basic	between Redlands Blvd Off and On Ramps	2000	3
10	Merge	Merge	On-Ramp from northbound Redlands Blvd	1300	3
11	Merge	Merge	On-Ramp from southbound Redlands Blvd	1500	3
12	Basic	Basic	Redlands Blvd to Moreno Beach Rd	1070	3

Facility Segment Data

Segment 1: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	1.00	0.901	2270	7200	0.32	75.4	10.0	A
2	1.00	0.901	2872	7200	0.40	75.4	12.7	B
3	1.00	0.901	2483	7200	0.34	75.4	11.0	A
4	1.00	0.901	2534	7200	0.35	75.4	11.2	B
5	1.00	0.901	2853	7200	0.40	75.4	12.6	B
6	1.00	0.901	2829	7200	0.39	75.4	12.5	B
7	1.00	0.901	2464	7200	0.34	75.4	10.9	A
8	1.00	0.901	2590	7200	0.36	75.4	11.4	B

Segment 2: Merge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	1.00	1.00	0.909	0.952	2735	485	7200	2000	0.38	0.24	69.3	67.3	13.2	10.6	B
2	1.00	1.00	0.909	0.952	3390	543	7200	2000	0.47	0.27	68.8	66.9	16.4	13.9	B
3	1.00	1.00	0.909	0.952	3079	618	7200	2000	0.43	0.31	69.0	67.1	14.9	12.6	B
4	1.00	1.00	0.909	0.952	2941	429	7200	2000	0.41	0.21	69.3	67.3	14.1	11.4	B
5	1.00	1.00	0.909	0.952	3323	495	7200	2000	0.46	0.25	68.8	66.9	16.1	13.4	B
6	1.00	1.00	0.909	0.952	3281	477	7200	2000	0.46	0.24	69.0	67.0	15.9	13.2	B
7	1.00	1.00	0.909	0.952	2976	534	7200	2000	0.41	0.27	69.2	67.2	14.3	11.9	B
8	1.00	1.00	0.909	0.952	2969	401	7200	2000	0.41	0.20	69.2	67.2	14.3	11.5	B

Segment 3: Overlap

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	1.00		0.909		2758		7200		0.38		66.1		13.9		B
2	1.00		0.909		3416		7200		0.47		65.5		17.4		B
3	1.00		0.909		3108		7200		0.43		65.9		15.7		B
4	1.00		0.909		2960		7200		0.41		65.7		15.0		B
5	1.00		0.909		3347		7200		0.46		65.9		16.9		B
6	1.00		0.909		3304		7200		0.46		66.0		16.7		B
7	1.00		0.909		3001		7200		0.42		66.1		15.1		B
8	1.00		0.909		2988		7200		0.42		65.7		15.2		B

Segment 4: Diverge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	1.00	1.00	0.909	0.855	2758	109	7200	2000	0.38	0.05	66.1	60.8	13.9	19.2	B
2	1.00	1.00	0.909	0.855	3416	380	7200	2000	0.47	0.19	65.5	60.0	17.4	23.1	C
3	1.00	1.00	0.909	0.855	3108	191	7200	2000	0.43	0.10	65.9	60.5	15.7	21.2	C
4	1.00	1.00	0.909	0.855	2960	218	7200	2000	0.41	0.11	65.7	60.4	15.0	20.5	C
5	1.00	1.00	0.909	0.855	3347	244	7200	2000	0.46	0.12	65.9	60.4	16.9	22.5	C
6	1.00	1.00	0.909	0.855	3304	191	7200	2000	0.46	0.10	66.0	60.5	16.7	22.2	C
7	1.00	1.00	0.909	0.855	3001	136	7200	2000	0.42	0.07	66.1	60.7	15.1	20.5	C
8	1.00	1.00	0.909	0.855	2988	218	7200	2000	0.42	0.11	65.7	60.4	15.2	20.6	C

Segment 5: Basic

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	1.00		0.917		2632		7200		0.37		72.2		12.1		B
2	1.00		0.917		3032		7200		0.42		72.2		14.0		B
3	1.00		0.917		2903		7200		0.40		72.2		13.4		B
4	1.00		0.917		2732		7200		0.38		72.2		12.6		B
5	1.00		0.917		3089		7200		0.43		72.2		14.3		B
6	1.00		0.917		3097		7200		0.43		72.2		14.3		B

7	1.00	0.917	2848	7200	0.40	72.2	13.1	B
8	1.00	0.917	2759	7200	0.38	72.2	12.7	B

Segment 6: Merge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	1.00	1.00	0.877	0.680	3934	1181	7200	2000	0.55	0.59	66.7	64.5	19.7	21.5	C
2	1.00	1.00	0.877	0.680	4055	885	7200	2000	0.56	0.44	66.9	64.6	20.2	21.3	C
3	1.00	1.00	0.877	0.680	4019	984	7200	2000	0.56	0.49	66.9	64.6	20.0	21.4	C
4	1.00	1.00	0.877	0.680	3397	541	7200	2000	0.47	0.27	67.9	65.5	16.7	17.3	B
5	1.00	1.00	0.877	0.680	3771	541	7200	2000	0.52	0.27	67.5	65.2	18.6	19.1	B
6	1.00	1.00	0.877	0.680	3582	344	7200	2000	0.50	0.17	67.9	65.5	17.6	17.7	B
7	1.00	1.00	0.877	0.680	3716	738	7200	2000	0.52	0.37	67.4	65.1	18.4	19.3	B
8	1.00	1.00	0.877	0.680	3279	394	7200	2000	0.46	0.20	68.1	65.7	16.0	16.4	B

Segment 7: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	1.00	0.877	3668	7200	0.51	72.1	17.0	B
2	1.00	0.877	3856	7200	0.54	71.9	17.9	B
3	1.00	0.877	3798	7200	0.53	71.9	17.6	B
4	1.00	0.877	3276	7200	0.46	72.2	15.1	B
5	1.00	0.877	3650	7200	0.51	72.1	16.9	B
6	1.00	0.877	3505	7200	0.49	72.2	16.2	B
7	1.00	0.877	3551	7200	0.49	72.1	16.4	B
8	1.00	0.877	3190	7200	0.44	72.2	14.7	B

Segment 8: Diverge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	1.00	1.00	0.877	0.952	3668	209	7200	4000	0.51	0.05	67.7	60.5	18.1	8.8	A
2	1.00	1.00	0.877	0.952	3856	162	7200	4000	0.54	0.04	67.7	60.6	19.0	9.7	A
3	1.00	1.00	0.877	0.952	3798	85	7200	4000	0.53	0.02	67.9	60.8	18.6	9.4	A
4	1.00	1.00	0.877	0.952	3276	181	7200	4000	0.46	0.05	68.0	60.6	16.1	6.9	A
5	1.00	1.00	0.877	0.952	3650	152	7200	4000	0.51	0.04	67.8	60.6	17.9	8.7	A
6	1.00	1.00	0.877	0.952	3505	171	7200	4000	0.49	0.04	67.9	60.6	17.2	8.0	A
7	1.00	1.00	0.877	0.952	3551	190	7200	4000	0.49	0.05	67.8	60.5	17.5	8.2	A
8	1.00	1.00	0.877	0.952	3190	113	7200	4000	0.44	0.03	68.2	60.8	15.6	6.4	A

Segment 9: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	1.00	0.877	3441	7200	0.48	72.2	15.9	B
2	1.00	0.877	3681	7200	0.51	72.0	17.0	B

3	1.00	0.877	3706	7200	0.51	72.0	17.2	B
4	1.00	0.877	3080	7200	0.43	72.2	14.2	B
5	1.00	0.877	3485	7200	0.48	72.2	16.1	B
6	1.00	0.877	3319	7200	0.46	72.2	15.3	B
7	1.00	0.877	3344	7200	0.46	72.2	15.4	B
8	1.00	0.877	3067	7200	0.43	72.2	14.2	B

Segment 10: Merge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	1.00	1.00	0.885	0.840	3623	213	7200	2000	0.50	0.11	67.1	64.2	18.0	20.8	C
2	1.00	1.00	0.885	0.840	3907	260	7200	2000	0.54	0.13	66.7	63.9	19.5	22.2	C
3	1.00	1.00	0.885	0.840	3893	221	7200	2000	0.54	0.11	66.8	64.0	19.4	22.1	C
4	1.00	1.00	0.885	0.840	3242	190	7200	2000	0.45	0.10	67.4	64.4	16.0	19.0	B
5	1.00	1.00	0.885	0.840	3689	236	7200	2000	0.51	0.12	67.0	64.1	18.4	21.2	C
6	1.00	1.00	0.885	0.840	3594	305	7200	2000	0.50	0.15	67.0	64.2	17.9	20.9	C
7	1.00	1.00	0.885	0.840	3520	206	7200	2000	0.49	0.10	67.2	64.3	17.5	20.3	C
8	1.00	1.00	0.885	0.840	3238	198	7200	2000	0.45	0.10	67.4	64.4	16.0	19.0	B

Segment 11: Merge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	1.00	1.00	0.885	0.980	3975	363	7200	2000	0.55	0.18	67.6	65.3	19.6	19.0	B
2	1.00	1.00	0.885	0.980	4267	373	7200	2000	0.59	0.19	67.3	65.0	21.1	20.4	C
3	1.00	1.00	0.885	0.980	4275	393	7200	2000	0.59	0.20	67.2	65.0	21.2	20.5	C
4	1.00	1.00	0.885	0.980	3582	349	7200	2000	0.50	0.17	68.0	65.7	17.6	17.1	B
5	1.00	1.00	0.885	0.980	4040	363	7200	2000	0.56	0.18	67.6	65.3	19.9	19.3	B
6	1.00	1.00	0.885	0.980	3942	363	7200	2000	0.55	0.18	67.6	65.4	19.4	18.9	B
7	1.00	1.00	0.885	0.980	4006	496	7200	2000	0.56	0.25	67.5	65.2	19.8	19.5	B
8	1.00	1.00	0.885	0.980	3600	373	7200	2000	0.50	0.19	68.0	65.7	17.6	17.3	B

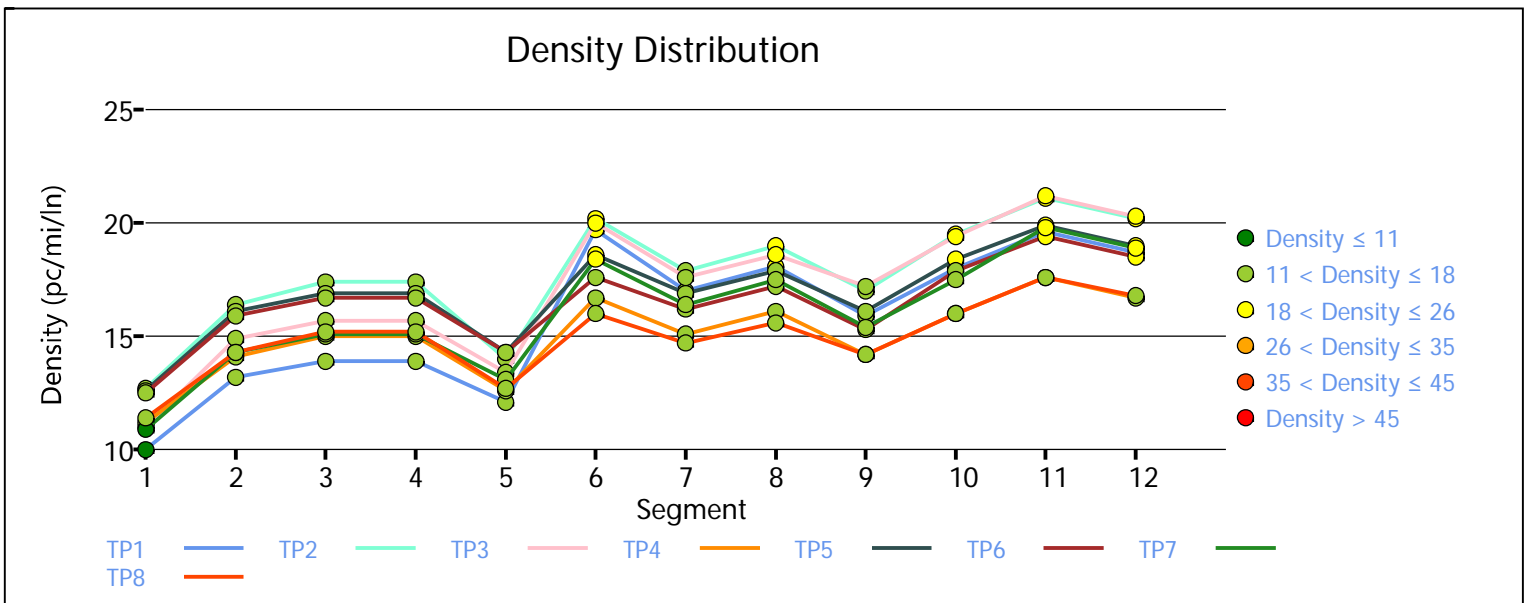
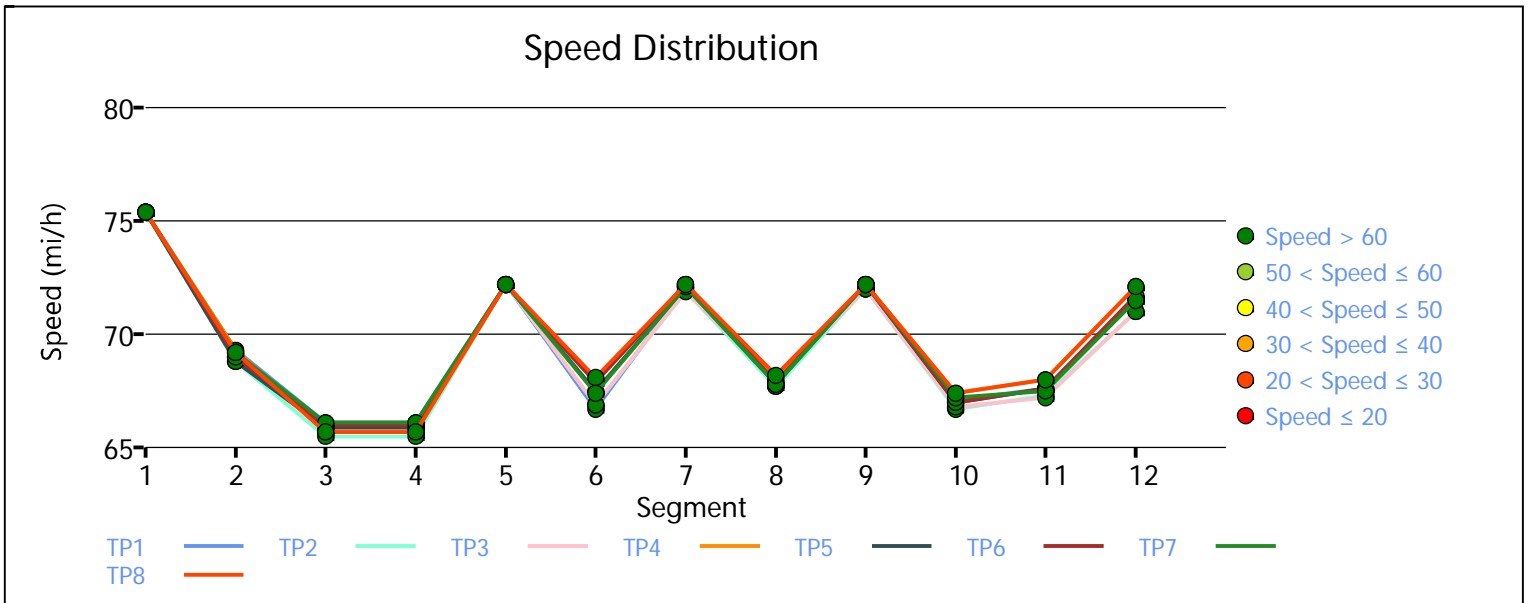
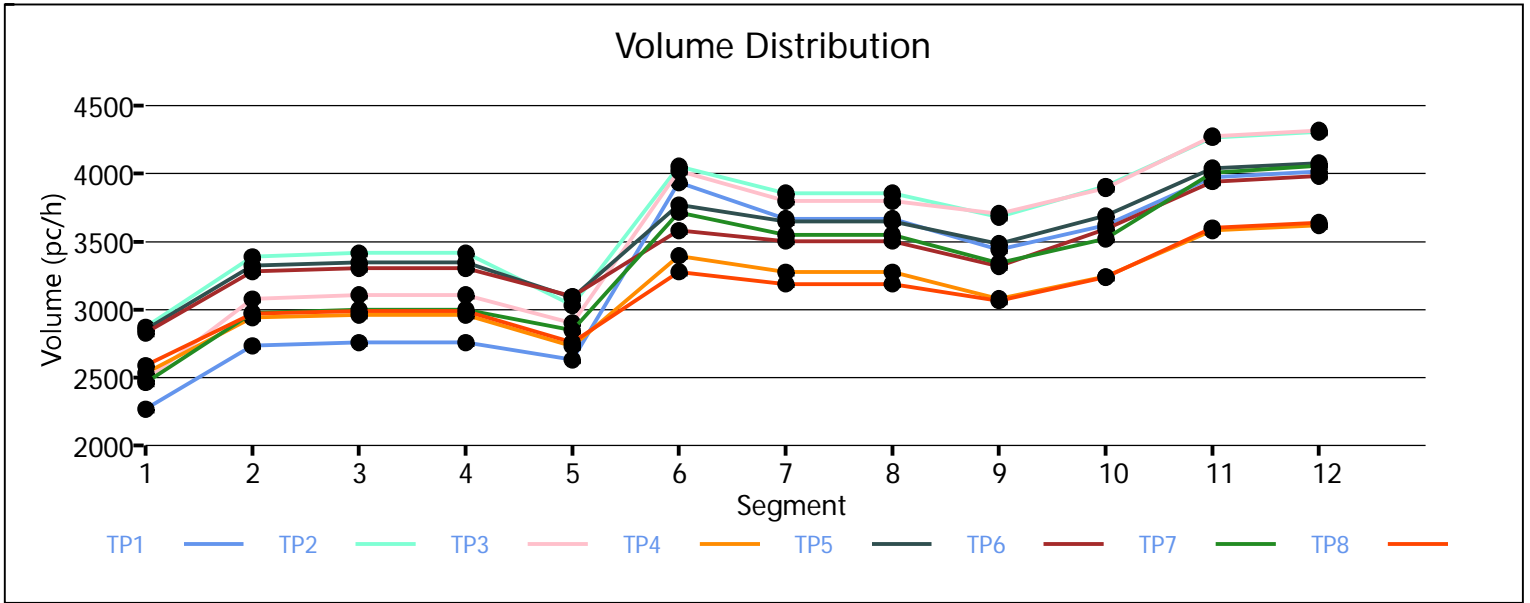
Segment 12: Basic

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	1.00		0.885		4015		7200		0.56		71.6		18.7		C
2	1.00		0.885		4307		7200		0.60		71.0		20.2		C
3	1.00		0.885		4318		7200		0.60		71.0		20.3		C
4	1.00		0.885		3619		7200		0.50		72.1		16.7		B
5	1.00		0.885		4079		7200		0.57		71.5		19.0		C
6	1.00		0.885		3981		7200		0.55		71.7		18.5		C
7	1.00		0.885		4059		7200		0.56		71.5		18.9		C
8	1.00		0.885		3641		7200		0.51		72.1		16.8		B

T	Speed, mi/h	Density, pc/mi/ln	Density, veh/mi/ln	Travel Time, min	LOS
1	69.6	15.7	13.9	2.4	B
2	69.5	17.5	15.5	2.4	B
3	69.5	16.9	15.0	2.4	B
4	70.0	14.8	13.2	2.4	B
5	69.8	16.7	14.8	2.4	B
6	69.9	16.2	14.4	2.4	B
7	69.8	15.8	14.0	2.4	B
8	70.1	14.7	13.1	2.4	B

Facility Overall Results

Space Mean Speed, mi/h	69.8	Density, veh/mi/ln	14.3
Average Travel Time, min	2.4	Density, pc/mi/ln	16.0



Appendix F-2

Freeway LOS Worksheets for No-Build, 2045

HCS7 Freeway Facilities Report

Project Information

Analyst	WSP	Date	7/3/2018
Agency	City of Moreno Valley	Analysis Year	2045 Alternative 1 No Build
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	WLC Pkwy IC - Eastbound SR-60		

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	12
Total Time Periods	8	Time Period Duration, min	15

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic	Moreno Beach Rd to Redlands Blvd	600	3
2	Diverge	Diverge	Off-Ramp to Redlands Blvd	1500	3
3	Basic	Basic	between Redlands Blvd Off and SB Redlands Blvd On Ramp	2150	3
4	Merge	Merge	On-Ramp from SB Redlands Blvd (Loop)	1250	3
5	Merge	Merge	On-Ramp from NB Redlands Blvd	1275	3
6	Overlap	Overlap	Redlands Blvd to Theodore St	225	3
7	Diverge	Diverge	Off-Ramp to Theodore St	1275	3
8	Basic	Basic	between Theodore St Off and Theodore St On Ramps	900	3
9	Merge	Merge	On-Ramp from Theodore St	1500	3
10	Basic	Basic	Theodore St to Gilman Springs	220	3
11	Diverge	Basic	Off-Ramp to Gilman Spring	1500	3
12	Basic	Basic	east of Gilman Springs Rd Off Ramp	1850	2

Facility Segment Data

Segment 1: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	1.00	0.877	4279	7200	0.59	73.2	19.5	C
2	1.00	0.877	4141	7200	0.58	73.7	18.7	C
3	1.00	0.877	4468	7200	0.62	72.6	20.5	C
4	1.00	0.877	4353	7200	0.60	73.0	19.9	C
5	1.00	0.877	3692	7200	0.51	74.7	16.5	B
6	1.00	0.877	3807	7200	0.53	74.5	17.0	B
7	1.00	0.877	4108	7200	0.57	73.8	18.6	C
8	1.00	0.877	4525	7200	0.63	72.4	20.8	C

Segment 2: Diverge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	1.00	1.00	0.877	0.926	4279	396	7200	4000	0.59	0.10	67.0	59.9	21.3	11.8	B
2	1.00	1.00	0.877	0.926	4141	335	7200	4000	0.58	0.08	67.2	60.1	20.5	11.1	B
3	1.00	1.00	0.877	0.926	4468	421	7200	4000	0.62	0.11	66.8	59.8	22.3	12.7	B
4	1.00	1.00	0.877	0.926	4353	446	7200	4000	0.60	0.11	66.8	59.8	21.7	12.1	B
5	1.00	1.00	0.877	0.926	3692	521	7200	4000	0.51	0.13	67.0	59.5	18.4	8.9	A
6	1.00	1.00	0.877	0.926	3807	589	7200	4000	0.53	0.15	66.8	59.3	19.0	9.5	A
7	1.00	1.00	0.877	0.926	4108	477	7200	4000	0.57	0.12	66.9	59.7	20.5	10.9	B
8	1.00	1.00	0.877	0.926	4525	570	7200	4000	0.63	0.14	66.5	59.4	22.7	13.0	B

Segment 3: Basic

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	1.00		0.877		3861		7200		0.54		71.9		17.9		B
2	1.00		0.877		3788		7200		0.53		71.9		17.6		B
3	1.00		0.877		4023		7200		0.56		71.6		18.7		C
4	1.00		0.877		3883		7200		0.54		71.8		18.0		B
5	1.00		0.877		3143		7200		0.44		72.2		14.5		B
6	1.00		0.877		3186		7200		0.44		72.2		14.7		B
7	1.00		0.877		3604		7200		0.50		72.1		16.7		B
8	1.00		0.877		3922		7200		0.54		71.8		18.2		C

Segment 4: Merge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	1.00	1.00	0.885	0.962	3945	119	7200	2000	0.55	0.06	66.8	64.0	19.7	22.0	C
2	1.00	1.00	0.885	0.962	3992	238	7200	2000	0.55	0.12	66.7	63.9	20.0	22.6	C
3	1.00	1.00	0.885	0.962	4105	119	7200	2000	0.57	0.06	66.7	63.9	20.5	22.8	C
4	1.00	1.00	0.885	0.962	4037	190	7200	2000	0.56	0.10	66.7	63.9	20.2	22.6	C
5	1.00	1.00	0.885	0.962	3304	190	7200	2000	0.46	0.10	67.4	64.4	16.3	19.3	B
6	1.00	1.00	0.885	0.962	3157	0	7200	2000	0.44	0.00	67.6	64.5	15.6	18.1	B
7	1.00	1.00	0.885	0.962	3762	190	7200	2000	0.52	0.10	67.0	64.1	18.7	21.4	C
8	1.00	1.00	0.885	0.962	3982	95	7200	2000	0.55	0.05	66.8	64.0	19.9	22.1	C

Segment 5: Merge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	1.00	1.00	0.885	0.962	4106	151	7200	2000	0.57	0.08	68.3	66.4	20.0	16.4	B
2	1.00	1.00	0.885	0.962	4268	256	7200	2000	0.59	0.13	68.0	66.1	20.9	17.4	B
3	1.00	1.00	0.885	0.962	4326	211	7200	2000	0.60	0.11	68.0	66.1	21.2	17.6	B
4	1.00	1.00	0.885	0.962	4310	256	7200	2000	0.60	0.13	68.0	66.1	21.1	17.6	B
5	1.00	1.00	0.885	0.962	3577	256	7200	2000	0.50	0.13	68.8	66.9	17.3	14.1	B

6	1.00	1.00	0.885	0.962	3322	165	7200	2000	0.46	0.08	69.1	67.1	16.0	12.6	B
7	1.00	1.00	0.885	0.962	3914	135	7200	2000	0.54	0.07	68.5	66.6	19.0	15.4	B
8	1.00	1.00	0.885	0.962	4141	151	7200	2000	0.58	0.08	68.2	66.4	20.2	16.5	B
Segment 6: Overlap															
Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
1	1.00		0.885		4119		7200		0.57		64.1		21.4		C
2	1.00		0.885		4290		7200		0.60		63.7		22.4		C
3	1.00		0.885		4345		7200		0.60		63.9		22.7		C
4	1.00		0.885		4332		7200		0.60		63.8		22.6		C
5	1.00		0.885		3599		7200		0.50		62.0		19.3		C
6	1.00		0.885		3337		7200		0.46		60.1		18.5		C
7	1.00		0.885		3925		7200		0.55		61.3		21.3		C
8	1.00		0.885		4154		7200		0.58		62.8		22.0		C
Segment 7: Diverge															
Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	1.00	1.00	0.885	0.719	4119	822	7200	2000	0.57	0.41	64.1	58.6	21.4	27.3	C
2	1.00	1.00	0.885	0.719	4290	967	7200	2000	0.60	0.48	63.7	58.2	22.4	28.3	D
3	1.00	1.00	0.885	0.719	4345	918	7200	2000	0.60	0.46	63.9	58.3	22.7	28.5	D
4	1.00	1.00	0.885	0.719	4332	967	7200	2000	0.60	0.48	63.8	58.2	22.6	28.5	D
5	1.00	1.00	0.885	0.719	3599	1305	7200	2000	0.50	0.65	62.0	57.2	19.3	25.9	C
6	1.00	1.00	0.885	0.719	3337	1643	7200	2000	0.46	0.82	60.1	56.2	18.5	25.5	C
7	1.00	1.00	0.885	0.719	3925	1547	7200	2000	0.55	0.77	61.3	56.5	21.3	28.0	C
8	1.00	1.00	0.885	0.719	4154	1207	7200	2000	0.58	0.60	62.8	57.5	22.0	28.2	D
Segment 8: Basic															
Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
1	1.00		0.926		3298		7200		0.46		72.2		15.2		B
2	1.00		0.926		3350		7200		0.47		72.2		15.5		B
3	1.00		0.926		3440		7200		0.48		72.2		15.9		B
4	1.00		0.926		3390		7200		0.47		72.2		15.7		B
5	1.00		0.926		2427		7200		0.34		72.2		11.2		B
6	1.00		0.926		1914		7200		0.27		72.2		8.8		A
7	1.00		0.926		2551		7200		0.35		72.2		11.8		B
8	1.00		0.926		3032		7200		0.42		72.2		14.0		B
Segment 9: Merge															
Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	1.00	1.00	0.926	0.840	3502	204	7200	2000	0.49	0.10	67.2	64.3	17.4	20.2	C

2	1.00	1.00	0.926	0.840	3798	448	7200	2000	0.53	0.22	66.7	63.9	19.0	22.3	C
3	1.00	1.00	0.926	0.840	3888	448	7200	2000	0.54	0.22	66.6	63.8	19.5	22.7	C
4	1.00	1.00	0.926	0.840	3959	569	7200	2000	0.55	0.28	66.4	63.7	19.9	23.3	C
5	1.00	1.00	0.926	0.840	2875	448	7200	2000	0.40	0.22	67.4	64.5	14.2	18.0	B
6	1.00	1.00	0.926	0.840	2199	285	7200	2000	0.31	0.14	67.9	64.8	10.8	14.5	B
7	1.00	1.00	0.926	0.840	2916	365	7200	2000	0.40	0.18	67.5	64.5	14.4	18.0	B
8	1.00	1.00	0.926	0.840	3642	610	7200	2000	0.51	0.31	66.8	64.0	18.2	22.0	C

Segment 10: Basic

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
1	1.00		0.926		3483		7200		0.48		72.2		16.1		B
2	1.00		0.926		3756		7200		0.52		72.0		17.4		B
3	1.00		0.926		3846		7200		0.53		71.9		17.8		B
4	1.00		0.926		3906		7200		0.54		71.8		18.1		C
5	1.00		0.926		2833		7200		0.39		72.2		13.1		B
6	1.00		0.926		2172		7200		0.30		72.2		10.0		A
7	1.00		0.926		2882		7200		0.40		72.2		13.3		B
8	1.00		0.926		3585		7200		0.50		72.1		16.6		B

Segment 11: Diverge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	1.00	1.00	0.926	0.952	3483	1227	7200	4000	0.48	0.31	75.1	-	15.5	-	B
2	1.00	1.00	0.926	0.952	3756	1277	7200	4000	0.52	0.32	74.6	-	16.8	-	B
3	1.00	1.00	0.926	0.952	3846	1402	7200	4000	0.53	0.35	74.4	-	17.2	-	B
4	1.00	1.00	0.926	0.952	3906	1303	7200	4000	0.54	0.33	74.3	-	17.5	-	B
5	1.00	1.00	0.926	0.952	2833	952	7200	4000	0.39	0.24	75.4	-	12.5	-	B
6	1.00	1.00	0.926	0.952	2172	939	7200	4000	0.30	0.23	75.4	-	9.6	-	A
7	1.00	1.00	0.926	0.952	2882	1190	7200	4000	0.40	0.30	75.4	-	12.7	-	B
8	1.00	1.00	0.926	0.952	3585	1165	7200	4000	0.50	0.29	74.9	-	16.0	-	B

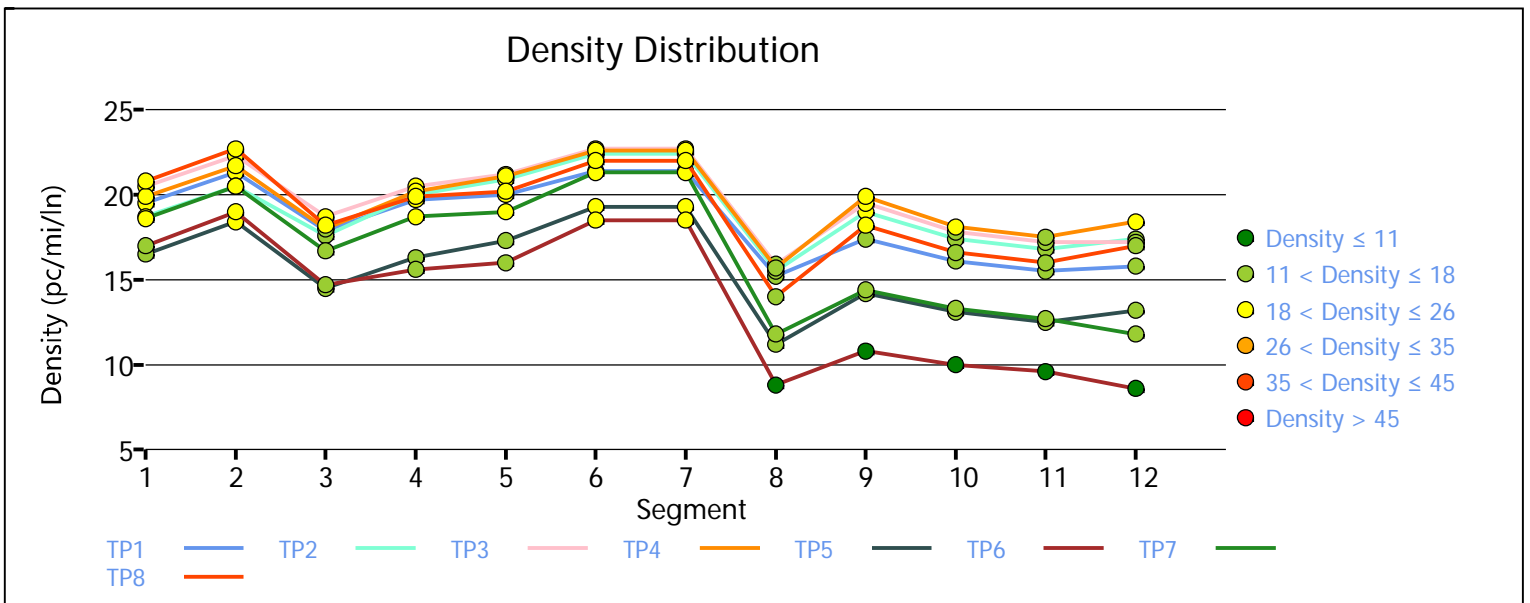
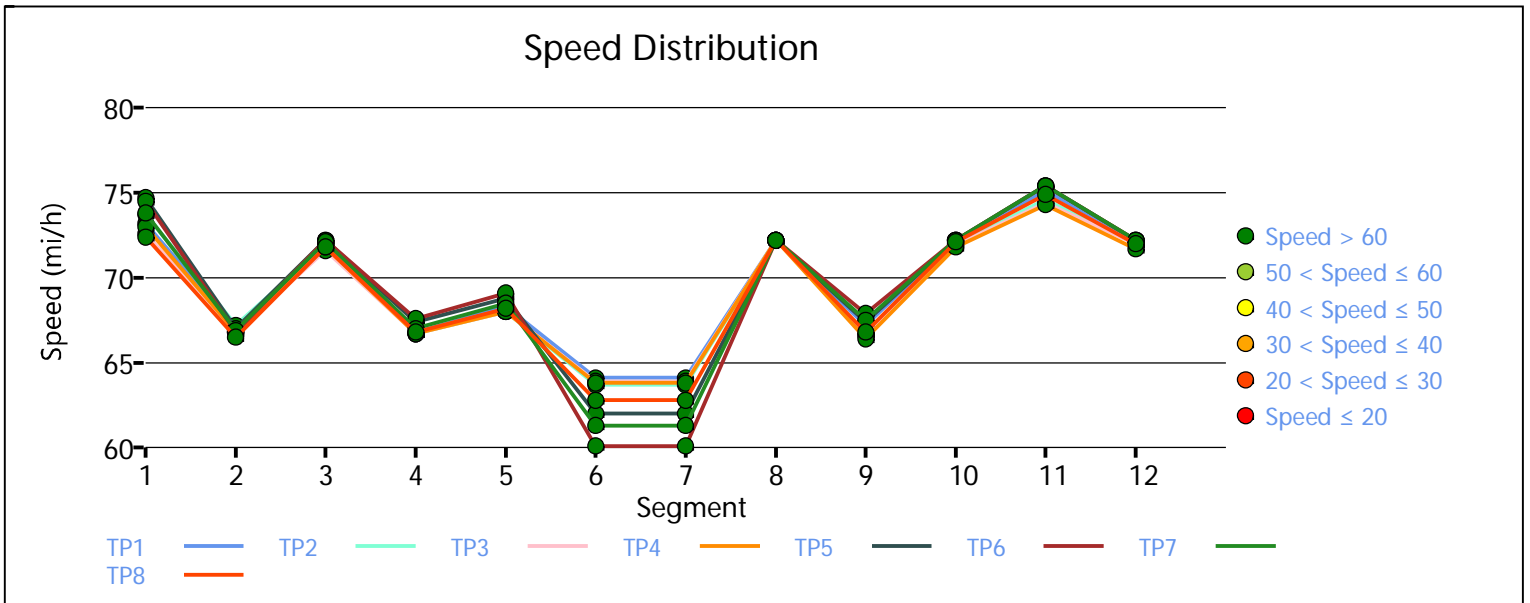
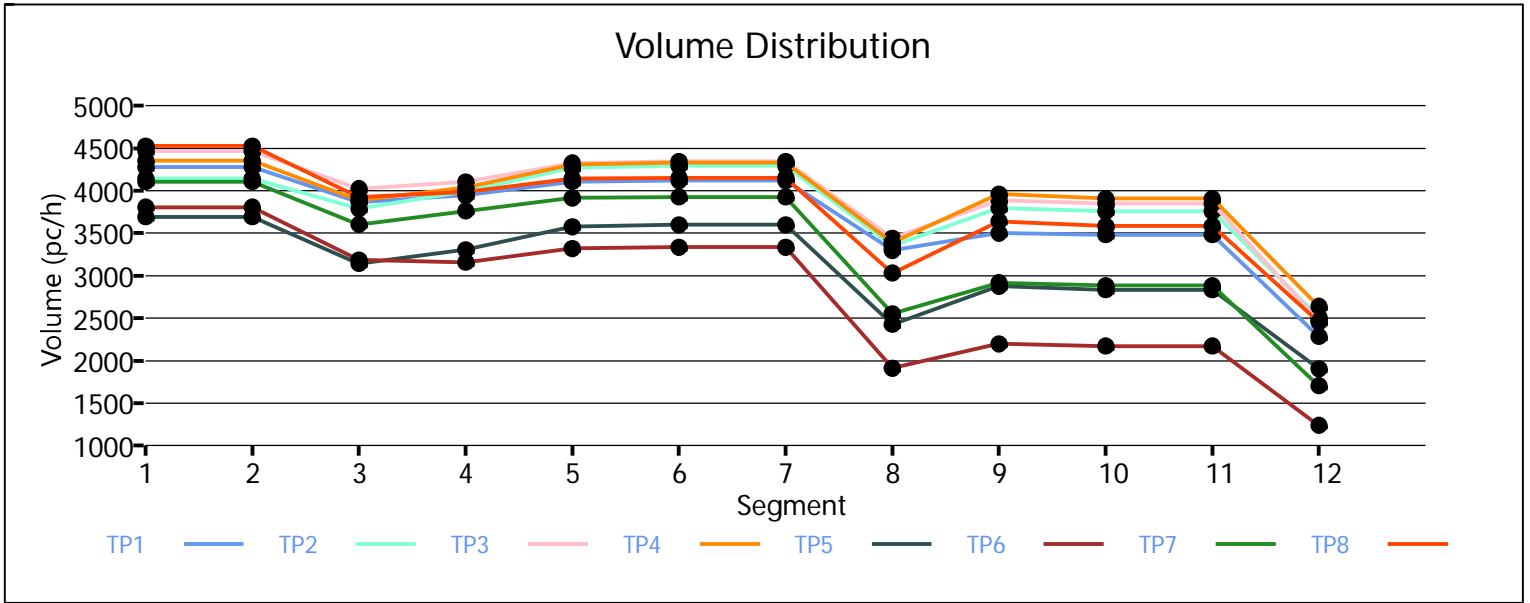
Segment 12: Basic

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
1	1.00		0.901		2283		4800		0.48		72.2		15.8		B
2	1.00		0.901		2511		4800		0.52		72.0		17.4		B
3	1.00		0.901		2471		4800		0.51		72.0		17.2		B
4	1.00		0.901		2638		4800		0.55		71.7		18.4		C
5	1.00		0.901		1906		4800		0.40		72.2		13.2		B
6	1.00		0.901		1240		4800		0.26		72.2		8.6		A
7	1.00		0.901		1705		4800		0.36		72.2		11.8		B
8	1.00		0.901		2454		4800		0.51		72.0		17.0		B

T	Speed, mi/h	Density, pc/mi/ln	Density, veh/mi/ln	Travel Time, min	LOS
1	69.3	18.4	16.4	2.3	C
2	69.2	18.9	17.0	2.3	C
3	69.1	19.6	17.6	2.3	C
4	69.0	19.5	17.5	2.3	C
5	69.2	15.4	13.7	2.3	B
6	68.8	13.9	12.4	2.4	B
7	68.9	16.6	14.8	2.3	B
8	69.0	18.9	16.9	2.3	C

Facility Overall Results

Space Mean Speed, mi/h	69.1	Density, veh/mi/ln	15.8
Average Travel Time, min	2.3	Density, pc/mi/ln	17.7



HCS7 Freeway Facilities Report

Project Information

Analyst	WSP	Date	7/3/2018
Agency	City of Moreno Valley	Analysis Year	2045 Alternative 1 No Build
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	WLC Pkwy IC - Eastbound SR-60		

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	12
Total Time Periods	8	Time Period Duration, min	15

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic	Moreno Beach Rd to Redlands Blvd	600	3
2	Diverge	Diverge	Off-Ramp to Redlands Blvd	1500	3
3	Basic	Basic	between Redlands Blvd Off and SB Redlands Blvd On Ramp	2150	3
4	Merge	Merge	On-Ramp from SB Redlands Blvd (Loop)	1250	3
5	Merge	Merge	On-Ramp from NB Redlands Blvd	1275	3
6	Overlap	Overlap	Redlands Blvd to Theodore St	225	3
7	Diverge	Diverge	Off-Ramp to Theodore St	1275	3
8	Basic	Basic	between Theodore St Off and Theodore St On Ramps	900	3
9	Merge	Merge	On-Ramp from Theodore St	1500	3
10	Basic	Basic	Theodore St to Gilman Springs	220	3
11	Diverge	Basic	Off-Ramp to Gilman Spring	1500	3
12	Basic	Basic	east of Gilman Springs Rd Off Ramp	1850	2

Facility Segment Data

Segment 1: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	1.00	0.909	5515	7200	0.77	67.4	27.3	D
2	1.00	0.909	5921	7200	0.82	64.6	30.6	D
3	1.00	0.909	5986	7200	0.83	64.2	31.1	D
4	1.00	0.909	6051	7200	0.84	63.7	31.7	D
5	1.00	0.909	5839	7200	0.81	65.2	29.8	D
6	1.00	0.909	6108	7200	0.85	63.2	32.2	D
7	1.00	0.909	5344	7200	0.74	68.4	26.0	C
8	1.00	0.909	6238	7200	0.87	62.2	33.4	D

Segment 2: Diverge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	1.00	1.00	0.909	0.971	5515	580	7200	4000	0.77	0.15	66.0	59.4	27.9	17.9	B
2	1.00	1.00	0.909	0.971	5921	640	7200	4000	0.82	0.16	65.6	59.2	30.1	19.8	B
3	1.00	1.00	0.909	0.971	5986	630	7200	4000	0.83	0.16	65.6	59.2	30.4	20.2	C
4	1.00	1.00	0.909	0.971	5893	658	7200	4000	0.84	0.16	65.6	59.1	29.9	19.7	B
5	1.00	1.00	0.909	0.971	5705	662	7200	4000	0.81	0.17	25.8	59.1	73.7	19.5	F
6	1.00	1.00	0.909	0.971	5896	602	7200	4000	0.85	0.15	28.3	59.3	69.5	20.8	F
7	1.00	1.00	0.909	0.971	5676	576	7200	4000	0.74	0.14	65.9	59.4	28.7	18.6	B
8	1.00	1.00	0.909	0.971	6238	635	7200	4000	0.87	0.16	65.5	59.2	31.7	21.4	C

Segment 3: Basic

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	1.00		0.909		4895		7200		0.68		69.1		23.6		C
2	1.00		0.909		5238		7200		0.73		67.6		25.8		C
3	1.00		0.909		5312		7200		0.74		67.3		26.3		D
4	1.00		0.909		4907		7200		0.74		26.3		62.3		F
5	1.00		0.909		5110		7200		0.71		19.6		87.1		F
6	1.00		0.909		5256		7200		0.76		20.8		84.1		F
7	1.00		0.909		5407		7200		0.66		68.0		26.5		D
8	1.00		0.909		5521		7200		0.77		67.3		27.3		D

Segment 4: Merge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	1.00	1.00	0.917	0.917	5334	481	7200	2000	0.74	0.24	64.7	61.8	27.5	29.4	D
2	1.00	1.00	0.917	0.917	5833	641	7200	2000	0.81	0.32	63.3	60.2	30.7	32.1	D
3	1.00	1.00	0.917	0.917	5800	534	7200	2000	0.81	0.27	63.6	60.5	30.4	31.7	D
4	1.00	1.00	0.917	0.917	5582	802	7200	2000	0.85	0.40	25.4	58.9	73.2	33.8	F
5	1.00	1.00	0.917	0.917	5580	481	7200	2000	0.77	0.24	24.0	61.2	77.4	30.4	F
6	1.00	1.00	0.917	0.917	5580	321	7200	2000	0.80	0.16	24.0	61.1	77.6	30.8	F
7	1.00	1.00	0.917	0.917	6237	748	7200	2000	0.76	0.37	32.6	61.1	63.7	30.6	F
8	1.00	1.00	0.917	0.917	6003	534	7200	2000	0.84	0.27	31.1	59.8	64.3	32.8	F

Segment 5: Merge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	1.00	1.00	0.917	1.000	6097	763	7200	2000	0.85	0.38	63.4	60.6	32.1	27.5	C
2	1.00	1.00	0.917	1.000	6804	971	7200	2000	0.94	0.49	59.3	55.4	38.2	31.5	D
3	1.00	1.00	0.917	1.000	6493	693	7200	2000	0.90	0.35	61.9	58.7	35.0	29.3	D
4	1.00	1.00	0.917	1.000	6704	1525	7200	2000	1.06	0.76	57.3	53.3	39.0	32.4	F
5	1.00	1.00	0.917	1.000	6696	971	7200	2000	0.91	0.49	59.9	56.2	37.3	31.0	D

6	1.00	1.00	0.917	1.000	6696	971	7200	2000	0.93	0.49	59.9	56.2	37.3	31.0	D
7	1.00	1.00	0.917	1.000	6696	347	7200	2000	0.80	0.17	61.8	58.7	36.1	29.4	D
8	1.00	1.00	0.917	1.000	6696	693	7200	2000	0.94	0.35	60.9	57.4	36.7	30.3	D
Segment 6: Overlap															
Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
1	1.00		0.917		6166		7200		0.86		63.4		32.1		D
2	1.00		0.917		6892		7200		0.96		59.3		38.2		E
3	1.00		0.917		6556		7200		0.91		61.9		35.0		D
4	1.00		0.917		6704		7200		1.08		57.3		39.0		F
5	1.00		0.917		6696		7200		0.92		59.9		37.3		E
6	1.00		0.917		6696		7200		0.94		59.9		37.3		E
7	1.00		0.917		6696		7200		0.81		61.8		36.1		E
8	1.00		0.917		6696		7200		0.94		60.9		36.7		E
Segment 7: Diverge															
Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	1.00	1.00	0.917	0.769	6166	589	7200	2000	0.86	0.29	65.1	59.3	31.6	35.5	E
2	1.00	1.00	0.917	0.769	6892	688	7200	2000	0.96	0.34	64.7	59.0	35.5	38.7	E
3	1.00	1.00	0.917	0.769	6556	1473	7200	2000	0.91	0.74	62.8	56.7	34.8	38.4	E
4	1.00	1.00	0.917	0.769	6704	1081	7200	2000	1.08	0.54	63.9	57.9	35.0	38.2	F
5	1.00	1.00	0.917	0.769	6696	983	7200	2000	0.92	0.49	64.1	58.2	34.8	38.0	E
6	1.00	1.00	0.917	0.769	6696	884	7200	2000	0.94	0.44	64.3	58.4	34.7	37.8	E
7	1.00	1.00	0.917	0.769	6696	1179	7200	2000	0.81	0.59	63.6	57.6	35.1	38.3	E
8	1.00	1.00	0.917	0.769	6696	785	7200	2000	0.94	0.39	64.6	58.7	34.6	37.7	E
Segment 8: Basic															
Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
1	1.00		0.952		5463		7200		0.76		66.5		27.4		D
2	1.00		0.952		6083		7200		0.84		62.7		32.3		D
3	1.00		0.952		5125		7200		0.71		68.2		25.0		C
4	1.00		0.952		5771		7200		0.92		65.7		29.3		D
5	1.00		0.952		5764		7200		0.78		65.7		29.2		D
6	1.00		0.952		5703		7200		0.81		66.1		28.7		D
7	1.00		0.952		5825		7200		0.65		65.3		29.7		D
8	1.00		0.952		5338		7200		0.82		68.4		26.0		C
Segment 9: Merge															
Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	1.00	1.00	0.952	0.885	5884	421	7200	2000	0.82	0.21	63.5	60.5	30.9	31.7	D

2	1.00	1.00	0.952	0.885	6420	337	7200	2000	0.89	0.17	62.0	58.9	34.5	33.9	D
3	1.00	1.00	0.952	0.885	5715	590	7200	2000	0.79	0.30	63.7	60.6	29.9	31.4	D
4	1.00	1.00	0.952	0.885	6361	590	7200	2000	1.00	0.30	61.8	58.5	34.3	34.4	D
5	1.00	1.00	0.952	0.885	6101	337	7200	2000	0.82	0.17	63.0	60.0	32.3	32.5	D
6	1.00	1.00	0.952	0.885	6040	337	7200	2000	0.86	0.17	63.2	60.2	31.9	32.2	D
7	1.00	1.00	0.952	0.885	6288	463	7200	2000	0.71	0.23	62.3	59.1	33.6	33.7	D
8	1.00	1.00	0.952	0.885	5633	295	7200	2000	0.86	0.15	64.2	61.4	29.2	30.2	D

Segment 10: Basic

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
1	1.00		0.952		5855		7200		0.81		64.2		30.4		D
2	1.00		0.952		6396		7200		0.89		60.4		35.3		E
3	1.00		0.952		5673		7200		0.79		65.3		29.0		D
4	1.00		0.952		6361		7200		0.99		61.2		34.7		D
5	1.00		0.952		6101		7200		0.82		63.3		32.1		D
6	1.00		0.952		6040		7200		0.85		63.7		31.6		D
7	1.00		0.952		6288		7200		0.71		61.8		33.9		D
8	1.00		0.952		5633		7200		0.86		66.6		28.2		D

Segment 11: Diverge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	1.00	1.00	0.952	0.971	5855	1687	7200	4000	0.81	0.42	65.1	-	30.0	-	D
2	1.00	1.00	0.952	0.971	6396	2124	7200	4000	0.89	0.53	60.9	-	35.0	-	D
3	1.00	1.00	0.952	0.971	5673	2180	7200	4000	0.79	0.55	66.3	-	28.5	-	D
4	1.00	1.00	0.952	0.971	6361	2124	7200	4000	0.99	0.53	61.3	-	34.6	-	D
5	1.00	1.00	0.952	0.971	6101	1887	7200	4000	0.82	0.47	62.2	-	32.7	-	D
6	1.00	1.00	0.952	0.971	6040	2379	7200	4000	0.85	0.59	60.3	-	33.4	-	D
7	1.00	1.00	0.952	0.971	6288	2057	7200	4000	0.71	0.51	61.5	-	34.1	-	D
8	1.00	1.00	0.952	0.971	5633	2464	7200	4000	0.86	0.62	59.7	-	31.5	-	D

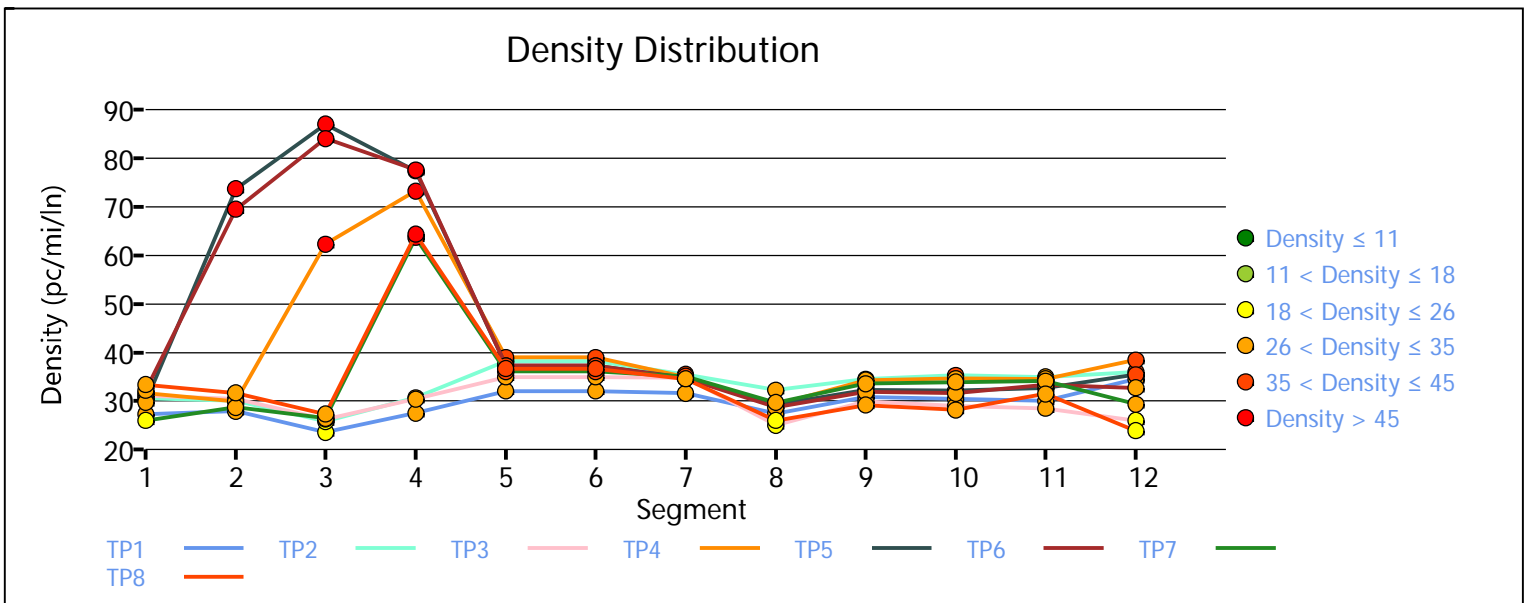
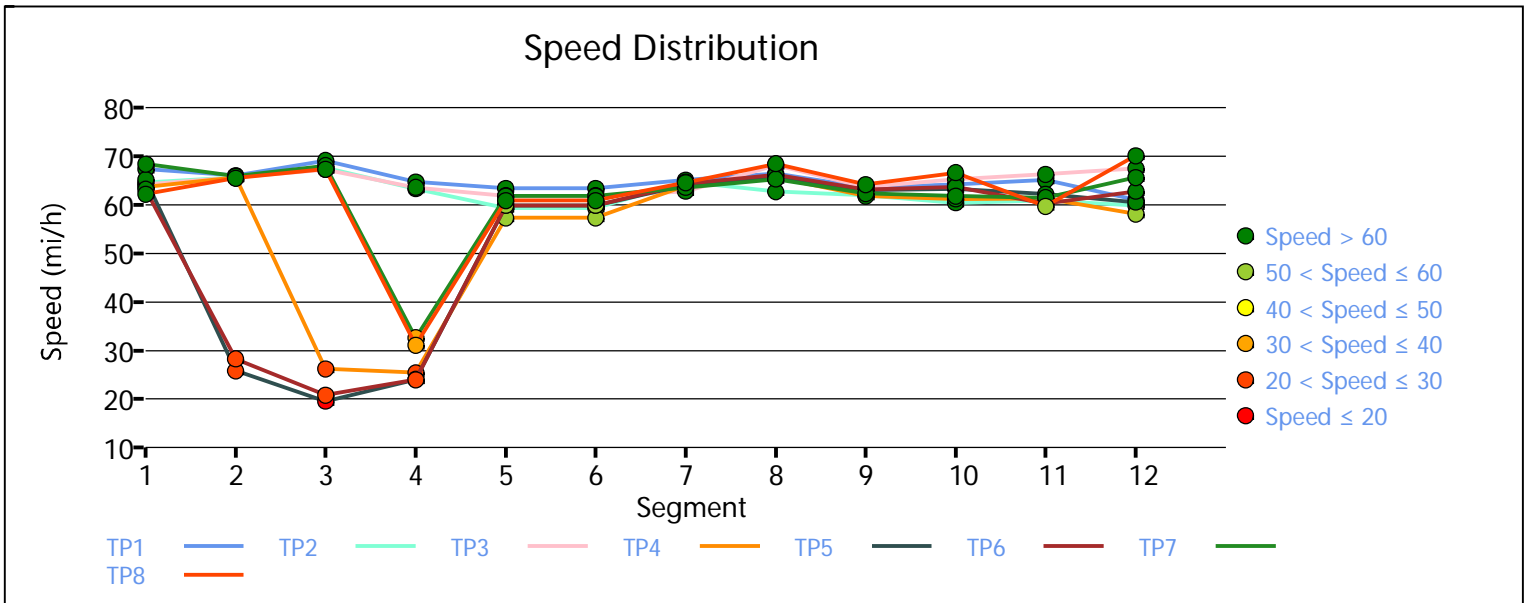
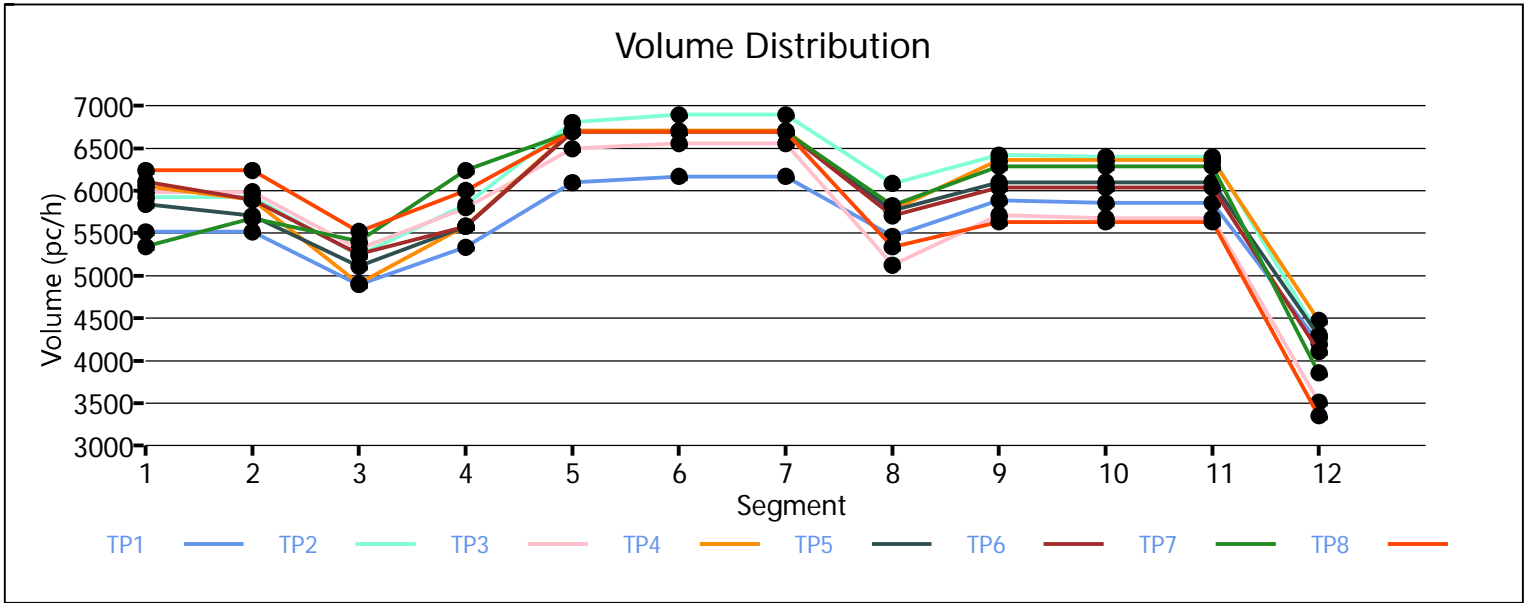
Segment 12: Basic

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
1	1.00		0.935		4210		4800		0.88		61.0		34.5		D
2	1.00		0.935		4307		4800		0.90		59.9		36.0		E
3	1.00		0.935		3512		4800		0.73		67.5		26.0		C
4	1.00		0.935		4473		4800		1.06		58.1		38.5		F
5	1.00		0.935		4290		4800		0.84		60.6		35.4		E
6	1.00		0.935		4109		4800		0.79		62.8		32.7		D
7	1.00		0.935		3854		4800		0.63		65.6		29.4		D
8	1.00		0.935		3352		4800		0.78		70.1		23.9		C

T	Speed, mi/h	Density, pc/mi/ln	Density, veh/mi/ln	Travel Time, min	LOS
1	65.0	29.1	27.0	2.5	D
2	62.9	32.7	30.3	2.6	D
3	65.0	29.7	27.5	2.5	D
4	47.8	42.4	39.1	3.4	F
5	38.2	52.4	48.3	4.2	F
6	39.2	51.1	47.1	4.1	F
7	58.9	34.3	31.8	2.7	D
8	58.7	33.5	31.0	2.8	D

Facility Overall Results

Space Mean Speed, mi/h	52.1	Density, veh/mi/ln	35.3
Average Travel Time, min	3.1	Density, pc/mi/ln	38.1



HCS7 Freeway Facilities Report

Project Information

Analyst	WSP	Date	7/3/2018
Agency	City of Moreno Valley	Analysis Year	2045 Alternative 1 No Build
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	WLC Pkwy IC - Westbound SR-60		

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	12
Total Time Periods	8	Time Period Duration, min	15

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic	east of Gilman Springs Rd On Ramp	2700	3
2	Merge	Merge	On-Ramp from Gilman Spring	220	3
3	Overlap	Overlap	Gilman Spring to Theodore St	1280	3
4	Diverge	Diverge	Off-Ramp to Theodore St	220	3
5	Basic	Basic	between Theodore St Off and Theodore St On Ramps	980	3
6	Merge	Merge	On-Ramp from Theodore St	1500	3
7	Basic	Basic	Theodore St to Redlands Blvd	410	3
8	Diverge	Diverge	Off-Ramp to Redlands Blvd	1500	3
9	Basic	Basic	between Redlands Blvd Off and On Ramps	2000	3
10	Merge	Merge	On-Ramp from northbound Redlands Blvd	1300	3
11	Merge	Merge	On-Ramp from southbound Redlands Blvd	1500	3
12	Basic	Basic	Redlands Blvd to Moreno Beach Rd	1070	3

Facility Segment Data

Segment 1: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	1.00	0.952	4173	7200	0.58	73.6	18.9	C
2	1.00	0.952	4727	7200	0.66	71.5	22.0	C
3	1.00	0.952	3845	7200	0.53	74.4	17.2	B
4	1.00	0.952	3979	7200	0.55	74.1	17.9	B
5	1.00	0.952	3395	7200	0.47	75.2	15.1	B
6	1.00	0.952	3680	7200	0.51	74.8	16.4	B
7	1.00	0.952	3440	7200	0.48	75.1	15.3	B
8	1.00	0.952	3814	7200	0.53	74.5	17.1	B

Segment 2: Merge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	1.00	1.00	0.952	0.962	6096	2215	7200	2000	0.89	1.11	42.0	52.3	48.4	32.6	F
2	1.00	1.00	0.952	0.962	5846	1753	7200	2000	0.90	0.88	28.4	54.1	68.6	31.9	F
3	1.00	1.00	0.952	0.962	6122	1762	7200	2000	0.78	0.88	60.2	56.9	33.9	30.2	D
4	1.00	1.00	0.952	0.962	5978	1588	7200	2000	0.77	0.79	61.6	58.5	32.3	29.0	D
5	1.00	1.00	0.952	0.962	4878	1483	7200	2000	0.68	0.74	65.7	63.5	24.7	23.4	C
6	1.00	1.00	0.952	0.962	5144	1464	7200	2000	0.71	0.73	65.0	62.7	26.4	24.7	C
7	1.00	1.00	0.952	0.962	4490	1050	7200	2000	0.62	0.53	67.0	65.0	22.3	20.5	C
8	1.00	1.00	0.952	0.962	4921	1107	7200	2000	0.68	0.55	66.2	64.0	24.8	22.7	C

Segment 3: Overlap

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	1.00	0.952	5998	7200	0.89	31.7	62.9	F
2	1.00	0.952	5843	7200	0.90	27.0	72.1	F
3	1.00	0.952	6160	7200	0.78	31.7	64.9	F
4	1.00	0.952	6042	7200	0.78	61.6	32.3	D
5	1.00	0.952	4878	7200	0.68	65.5	24.8	C
6	1.00	0.952	5144	7200	0.72	65.0	26.4	D
7	1.00	0.952	4490	7200	0.63	65.8	22.7	C
8	1.00	0.952	4921	7200	0.69	65.5	25.0	C

Segment 4: Diverge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	1.00	1.00	0.952	0.901	5978	284	7200	2000	0.89	0.14	31.7	60.2	62.9	36.0	F
2	1.00	1.00	0.952	0.901	5843	600	7200	2000	0.90	0.30	27.0	59.3	72.1	36.7	F
3	1.00	1.00	0.952	0.901	6161	443	7200	2000	0.78	0.22	31.7	59.8	64.9	33.1	F
4	1.00	1.00	0.952	0.901	6061	759	7200	2000	0.78	0.38	64.7	58.8	31.2	35.3	E
5	1.00	1.00	0.952	0.901	4878	443	7200	2000	0.68	0.22	65.5	59.8	24.8	30.0	D
6	1.00	1.00	0.952	0.901	5144	380	7200	2000	0.72	0.19	65.7	60.0	26.1	31.1	D
7	1.00	1.00	0.952	0.901	4490	347	7200	2000	0.63	0.17	65.8	60.1	22.7	28.1	D
8	1.00	1.00	0.952	0.901	4921	474	7200	2000	0.69	0.24	65.5	59.7	25.0	30.2	D

Segment 5: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	1.00	0.962	5593	7200	0.84	25.7	72.5	F
2	1.00	0.962	5580	7200	0.82	24.0	77.6	F
3	1.00	0.962	5580	7200	0.72	24.0	77.4	F
4	1.00	0.962	5580	7200	0.67	24.0	77.6	F
5	1.00	0.962	4337	7200	0.62	69.7	19.8	C
6	1.00	0.962	4678	7200	0.66	69.7	21.7	C

7	1.00	0.962	4159	7200	0.57	69.8	18.8	C
8	1.00	0.962	4542	7200	0.62	69.7	20.9	C

Segment 6: Merge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	1.00	1.00	0.917	0.763	6710	1147	7200	2000	1.04	0.57	59.1	55.1	37.8	34.5	F
2	1.00	1.00	0.917	0.763	6696	1376	7200	2000	1.05	0.69	58.1	54.0	38.4	35.0	F
3	1.00	1.00	0.917	0.763	6696	1835	7200	2000	1.01	0.92	55.8	51.5	40.0	36.2	F
4	1.00	1.00	0.917	0.763	6696	1147	7200	2000	0.86	0.57	59.1	55.1	37.8	34.4	D
5	1.00	1.00	0.917	0.763	7150	2064	7200	2000	0.93	1.03	49.8	44.7	47.9	39.0	F
6	1.00	1.00	0.917	0.763	7033	2064	7200	2000	0.98	1.03	51.1	46.2	45.9	38.4	F
7	1.00	1.00	0.917	0.763	7141	2982	7200	2000	1.02	1.49	39.9	35.2	59.7	41.4	F
8	1.00	1.00	0.917	0.763	5918	1376	7200	2000	0.84	0.69	62.0	58.8	31.8	31.4	D

Segment 7: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	1.00	0.917	6710	7200	1.02	58.1	38.5	F
2	1.00	0.917	6696	7200	1.01	58.3	38.3	F
3	1.00	0.917	6696	7200	0.96	58.3	38.3	E
4	1.00	0.917	6696	7200	0.83	58.3	38.3	E
5	1.00	0.917	7150	7200	0.88	53.8	44.3	E
6	1.00	0.917	7033	7200	0.93	55.0	42.6	E
7	1.00	0.917	7141	7200	0.95	53.9	44.1	E
8	1.00	0.917	5918	7200	0.81	64.6	30.5	D

Segment 8: Diverge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	1.00	1.00	0.917	0.971	6710	921	7200	4000	1.02	0.23	64.4	58.3	34.7	25.2	F
2	1.00	1.00	0.917	0.971	6696	921	7200	4000	1.01	0.23	64.4	58.3	34.7	25.1	F
3	1.00	1.00	0.917	0.971	6696	1094	7200	4000	0.96	0.27	64.0	57.8	34.9	25.1	C
4	1.00	1.00	0.917	0.971	6696	1267	7200	4000	0.83	0.32	63.6	57.3	35.1	25.1	C
5	1.00	1.00	0.917	0.971	7150	978	7200	4000	0.88	0.24	63.9	58.2	37.3	29.0	D
6	1.00	1.00	0.917	0.971	7033	691	7200	4000	0.93	0.17	64.6	59.0	36.3	28.0	C
7	1.00	1.00	0.917	0.971	7141	921	7200	4000	0.95	0.23	64.0	58.3	37.2	28.9	D
8	1.00	1.00	0.917	0.971	5918	518	7200	4000	0.81	0.13	65.8	59.5	30.0	19.8	B

Segment 9: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	1.00	0.909	5789	7200	0.89	65.6	29.4	D
2	1.00	0.909	5855	7200	0.89	65.1	30.0	D

3	1.00	0.909	5851	7200	0.81	65.1	29.9	D
4	1.00	0.909	5639	7200	0.65	66.6	28.2	D
5	1.00	0.909	5641	7200	0.75	66.6	28.3	D
6	1.00	0.909	5952	7200	0.84	64.4	30.8	D
7	1.00	0.909	6405	7200	0.82	60.8	35.1	E
8	1.00	0.909	5118	7200	0.74	69.7	24.5	C

Segment 10: Merge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	1.00	1.00	0.917	0.901	5914	125	7200	2000	0.90	0.06	63.8	61.0	30.9	31.0	D
2	1.00	1.00	0.917	0.901	6004	149	7200	2000	0.90	0.07	63.5	60.7	31.5	31.5	D
3	1.00	1.00	0.917	0.901	5991	140	7200	2000	0.82	0.07	63.6	60.8	31.4	31.4	D
4	1.00	1.00	0.917	0.901	5713	74	7200	2000	0.66	0.04	64.3	61.6	29.6	30.0	D
5	1.00	1.00	0.917	0.901	5743	102	7200	2000	0.75	0.05	64.2	61.4	29.8	30.2	D
6	1.00	1.00	0.917	0.901	6050	98	7200	2000	0.84	0.05	63.4	60.7	31.8	31.6	D
7	1.00	1.00	0.917	0.901	6624	219	7200	2000	0.84	0.11	61.6	58.5	35.8	34.5	D
8	1.00	1.00	0.917	0.901	5309	191	7200	2000	0.76	0.10	65.0	62.2	27.2	28.5	D

Segment 11: Merge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	1.00	1.00	0.917	0.980	6077	163	7200	2000	0.92	0.08	64.1	61.5	31.6	28.4	D
2	1.00	1.00	0.917	0.980	6207	203	7200	2000	0.93	0.10	63.6	60.9	32.5	29.1	D
3	1.00	1.00	0.917	0.980	6192	201	7200	2000	0.85	0.10	63.7	61.0	32.4	29.1	D
4	1.00	1.00	0.917	0.980	5921	208	7200	2000	0.69	0.10	64.5	61.9	30.6	27.8	C
5	1.00	1.00	0.917	0.980	5906	163	7200	2000	0.78	0.08	64.5	62.0	30.5	27.6	C
6	1.00	1.00	0.917	0.980	6202	152	7200	2000	0.86	0.08	63.7	61.1	32.5	29.0	D
7	1.00	1.00	0.917	0.980	6774	150	7200	2000	0.86	0.08	61.6	58.6	36.7	31.7	D
8	1.00	1.00	0.917	0.980	5418	109	7200	2000	0.77	0.05	65.7	63.4	27.5	25.2	C

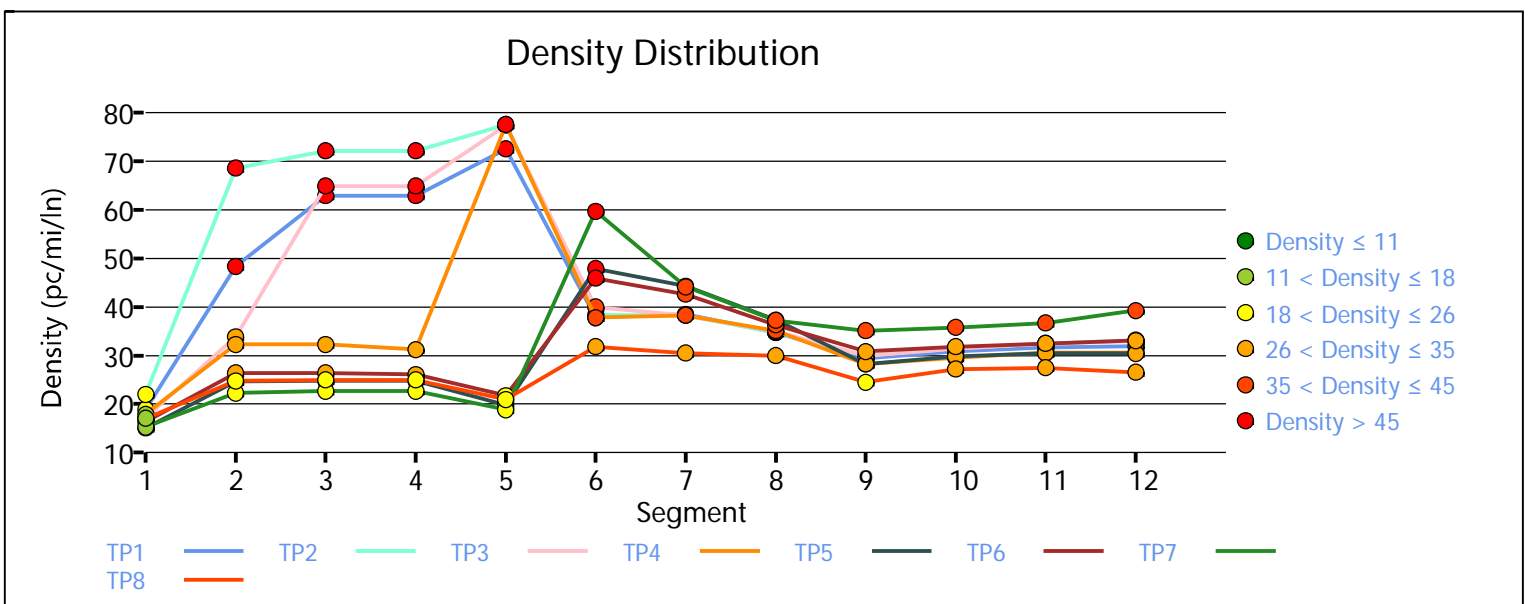
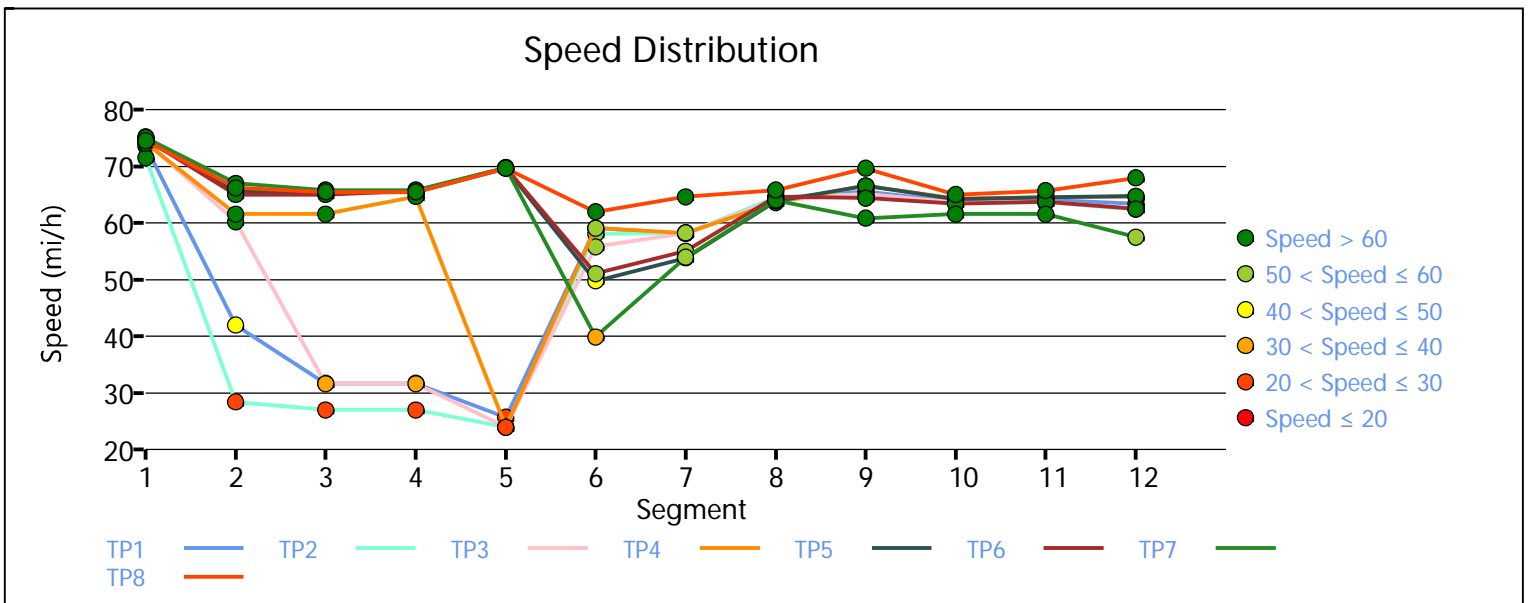
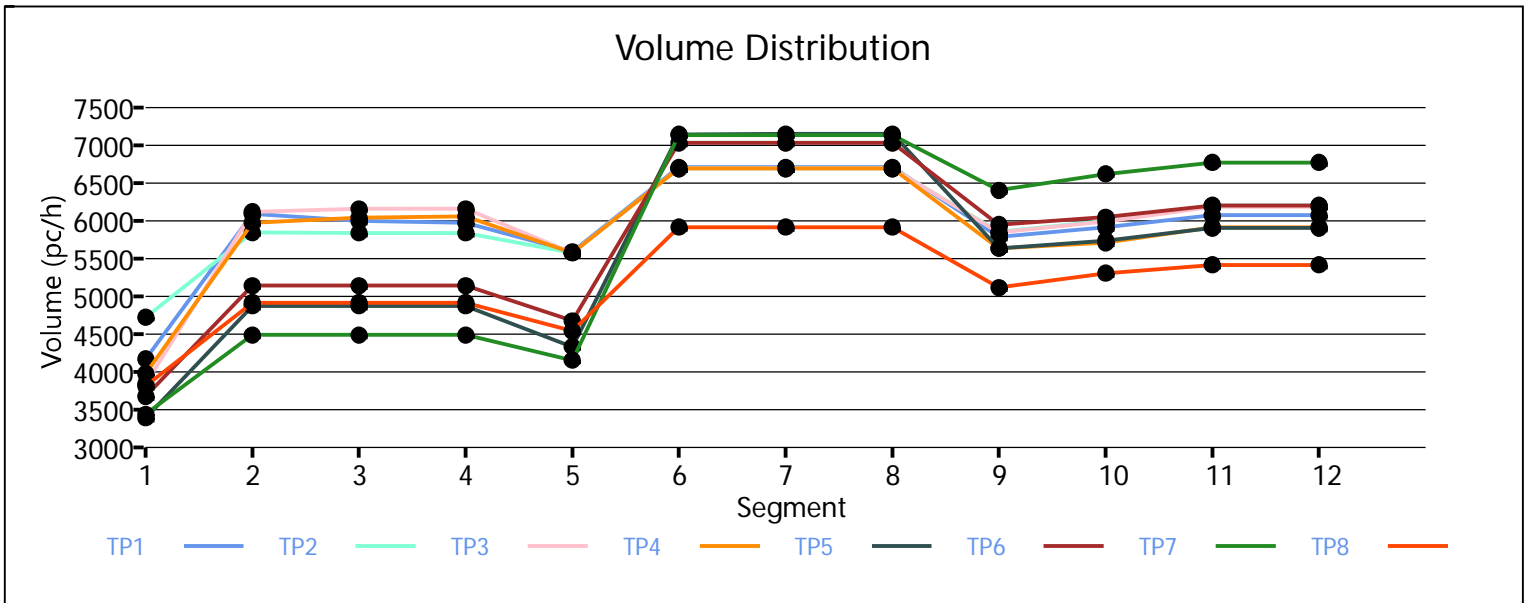
Segment 12: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	1.00	0.917	6077	7200	0.92	63.5	31.9	D
2	1.00	0.917	6207	7200	0.93	62.4	33.1	D
3	1.00	0.917	6192	7200	0.85	62.6	33.0	D
4	1.00	0.917	5921	7200	0.69	64.6	30.5	D
5	1.00	0.917	5906	7200	0.78	64.7	30.4	D
6	1.00	0.917	6202	7200	0.86	62.5	33.1	D
7	1.00	0.917	6774	7200	0.86	57.5	39.2	E
8	1.00	0.917	5418	7200	0.77	68.0	26.6	D

T	Speed, mi/h	Density, pc/mi/ln	Density, veh/mi/ln	Travel Time, min	LOS
1	52.8	36.2	33.8	3.2	F
2	50.4	38.7	36.2	3.3	F
3	52.0	36.8	34.3	3.2	F
4	57.9	32.6	30.4	2.9	D
5	63.2	28.8	26.6	2.6	D
6	63.1	29.9	27.7	2.6	D
7	59.0	32.4	29.9	2.8	F
8	67.2	25.1	23.3	2.5	C

Facility Overall Results

Space Mean Speed, mi/h	57.4	Density, veh/mi/ln	30.3
Average Travel Time, min	2.9	Density, pc/mi/ln	32.6



HCS7 Freeway Facilities Report

Project Information

Analyst	WSP	Date	7/3/2018
Agency	City of Moreno Valley	Analysis Year	2045 Alternative 1 No Build
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	WLC Pkwy IC - Westbound SR-60		

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	12
Total Time Periods	8	Time Period Duration, min	15

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic	east of Gilman Springs Rd On Ramp	2700	3
2	Merge	Merge	On-Ramp from Gilman Spring	220	3
3	Overlap	Overlap	Gilman Spring to Theodore St	1280	3
4	Diverge	Diverge	Off-Ramp to Theodore St	220	3
5	Basic	Basic	between Theodore St Off and Theodore St On Ramps	980	3
6	Merge	Merge	On-Ramp from Theodore St	1500	3
7	Basic	Basic	Theodore St to Redlands Blvd	410	3
8	Diverge	Diverge	Off-Ramp to Redlands Blvd	1500	3
9	Basic	Basic	between Redlands Blvd Off and On Ramps	2000	3
10	Merge	Merge	On-Ramp from northbound Redlands Blvd	1300	3
11	Merge	Merge	On-Ramp from southbound Redlands Blvd	1500	3
12	Basic	Basic	Redlands Blvd to Moreno Beach Rd	1070	3

Facility Segment Data

Segment 1: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	1.00	0.917	2683	7200	0.37	75.4	11.9	B
2	1.00	0.917	3397	7200	0.47	75.2	15.1	B
3	1.00	0.917	2936	7200	0.41	75.4	13.0	B
4	1.00	0.917	2996	7200	0.42	75.4	13.2	B
5	1.00	0.917	3374	7200	0.47	75.2	15.0	B
6	1.00	0.917	3345	7200	0.46	75.2	14.8	B
7	1.00	0.917	2914	7200	0.40	75.4	12.9	B
8	1.00	0.917	3062	7200	0.43	75.4	13.5	B

Segment 2: Merge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	1.00	1.00	0.935	0.962	4173	1542	7200	2000	0.58	0.77	67.0	65.1	20.8	20.2	C
2	1.00	1.00	0.935	0.962	5055	1723	7200	2000	0.70	0.86	64.7	62.4	26.0	24.9	C
3	1.00	1.00	0.935	0.962	4841	1962	7200	2000	0.67	0.98	64.8	62.7	24.9	24.5	C
4	1.00	1.00	0.935	0.962	4297	1359	7200	2000	0.60	0.68	66.9	65.0	21.4	20.3	C
5	1.00	1.00	0.935	0.962	4879	1570	7200	2000	0.68	0.79	65.5	63.3	24.8	23.7	C
6	1.00	1.00	0.935	0.962	4794	1514	7200	2000	0.67	0.76	65.7	63.6	24.3	23.1	C
7	1.00	1.00	0.935	0.962	4553	1695	7200	2000	0.63	0.85	66.0	64.0	23.0	22.4	C
8	1.00	1.00	0.935	0.962	4278	1275	7200	2000	0.59	0.64	67.1	65.2	21.3	20.0	B

Segment 3: Overlap

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	1.00	0.935	4217	7200	0.59	66.1	21.3	C
2	1.00	0.935	5105	7200	0.71	64.6	26.3	D
3	1.00	0.935	4897	7200	0.68	64.8	24.9	C
4	1.00	0.935	4336	7200	0.60	65.5	22.1	C
5	1.00	0.935	4924	7200	0.68	65.4	25.1	C
6	1.00	0.935	4837	7200	0.67	65.7	24.5	C
7	1.00	0.935	4602	7200	0.64	66.0	23.2	C
8	1.00	0.935	4316	7200	0.60	65.5	22.0	C

Segment 4: Diverge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	1.00	1.00	0.935	0.893	4217	219	7200	2000	0.59	0.11	66.1	60.4	21.3	26.7	C
2	1.00	1.00	0.935	0.893	5105	768	7200	2000	0.71	0.38	64.6	58.8	26.3	31.5	D
3	1.00	1.00	0.935	0.893	4897	384	7200	2000	0.68	0.19	65.7	59.9	24.8	30.0	D
4	1.00	1.00	0.935	0.893	4336	439	7200	2000	0.60	0.22	65.5	59.8	22.1	27.6	C
5	1.00	1.00	0.935	0.893	4924	494	7200	2000	0.68	0.25	65.4	59.6	25.1	30.3	D
6	1.00	1.00	0.935	0.893	4837	384	7200	2000	0.67	0.19	65.7	59.9	24.5	29.7	D
7	1.00	1.00	0.935	0.893	4602	274	7200	2000	0.64	0.14	66.0	60.3	23.2	28.5	D
8	1.00	1.00	0.935	0.893	4316	439	7200	2000	0.60	0.22	65.5	59.8	22.0	27.5	C

Segment 5: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	1.00	0.935	4007	7200	0.56	71.6	18.7	C
2	1.00	0.935	4371	7200	0.61	70.8	20.6	C
3	1.00	0.935	4530	7200	0.63	70.4	21.4	C
4	1.00	0.935	3917	7200	0.54	71.8	18.2	C
5	1.00	0.935	4452	7200	0.62	70.6	21.0	C
6	1.00	0.935	4471	7200	0.62	70.6	21.1	C

7	1.00	0.935	4340	7200	0.60	70.9	20.4	C
8	1.00	0.935	3896	7200	0.54	71.8	18.1	C

Segment 6: Merge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	1.00	1.00	0.901	0.746	6365	2206	7200	2000	0.88	1.10	56.2	52.3	37.8	35.7	E
2	1.00	1.00	0.901	0.746	6190	1654	7200	2000	0.86	0.83	59.8	56.3	34.5	33.4	D
3	1.00	1.00	0.901	0.746	6539	1838	7200	2000	0.91	0.92	57.0	52.9	38.2	35.5	E
4	1.00	1.00	0.901	0.746	5075	1011	7200	2000	0.70	0.51	65.2	62.6	25.9	26.4	C
5	1.00	1.00	0.901	0.746	5631	1011	7200	2000	0.78	0.51	63.8	61.0	29.4	29.1	D
6	1.00	1.00	0.901	0.746	5282	643	7200	2000	0.73	0.32	65.2	62.7	27.0	26.4	C
7	1.00	1.00	0.901	0.746	5883	1379	7200	2000	0.82	0.69	62.1	59.0	31.6	31.2	D
8	1.00	1.00	0.901	0.746	4779	736	7200	2000	0.66	0.37	66.1	63.7	24.1	24.3	C

Segment 7: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	1.00	0.901	5986	7200	0.83	63.3	31.5	D
2	1.00	0.901	5906	7200	0.82	63.8	30.9	D
3	1.00	0.901	6223	7200	0.86	61.7	33.6	D
4	1.00	0.901	4901	7200	0.68	69.1	23.6	C
5	1.00	0.901	5457	7200	0.76	66.5	27.4	D
6	1.00	0.901	5172	7200	0.72	67.9	25.4	C
7	1.00	0.901	5646	7200	0.78	65.5	28.7	D
8	1.00	0.901	4653	7200	0.65	70.0	22.2	C

Segment 8: Diverge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	1.00	1.00	0.901	0.971	5986	1228	7200	4000	0.83	0.31	64.3	57.4	31.0	20.2	C
2	1.00	1.00	0.901	0.971	5906	949	7200	4000	0.82	0.24	65.0	58.3	30.3	19.8	B
3	1.00	1.00	0.901	0.971	6223	503	7200	4000	0.86	0.13	65.7	59.6	31.6	21.3	C
4	1.00	1.00	0.901	0.971	4901	1061	7200	4000	0.68	0.27	65.2	57.9	25.1	14.8	B
5	1.00	1.00	0.901	0.971	5457	893	7200	4000	0.76	0.22	65.3	58.4	27.9	17.6	B
6	1.00	1.00	0.901	0.971	5172	1004	7200	4000	0.72	0.25	65.2	58.1	26.4	16.2	B
7	1.00	1.00	0.901	0.971	5646	1116	7200	4000	0.78	0.28	64.8	57.8	29.0	18.5	B
8	1.00	1.00	0.901	0.971	4653	669	7200	4000	0.65	0.17	66.2	59.1	23.4	13.6	B

Segment 9: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	1.00	0.885	4747	7200	0.66	69.7	22.7	C
2	1.00	0.885	4972	7200	0.69	68.8	24.1	C

3	1.00	0.885	5784	7200	0.80	64.6	29.8	D
4	1.00	0.885	3826	7200	0.53	71.9	17.7	B
5	1.00	0.885	4576	7200	0.64	70.3	21.7	C
6	1.00	0.885	4164	7200	0.58	71.3	19.5	C
7	1.00	0.885	4523	7200	0.63	70.4	21.4	C
8	1.00	0.885	4002	7200	0.56	71.6	18.6	C

Segment 10: Merge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	1.00	1.00	0.893	0.893	4884	180	7200	2000	0.68	0.09	65.6	62.9	24.8	26.5	C
2	1.00	1.00	0.893	0.893	5146	219	7200	2000	0.71	0.11	65.2	62.5	26.3	27.8	C
3	1.00	1.00	0.893	0.893	5919	187	7200	2000	0.82	0.09	63.7	60.9	31.0	31.2	D
4	1.00	1.00	0.893	0.893	3953	161	7200	2000	0.55	0.08	66.8	64.0	19.7	22.2	C
5	1.00	1.00	0.893	0.893	4735	200	7200	2000	0.66	0.10	65.8	63.1	24.0	25.9	C
6	1.00	1.00	0.893	0.893	4385	258	7200	2000	0.61	0.13	66.2	63.5	22.1	24.4	C
7	1.00	1.00	0.893	0.893	4658	175	7200	2000	0.65	0.09	65.9	63.2	23.6	25.4	C
8	1.00	1.00	0.893	0.893	4134	168	7200	2000	0.57	0.08	66.6	63.8	20.7	23.0	C

Segment 11: Merge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	1.00	1.00	0.893	0.980	5188	303	7200	2000	0.72	0.15	65.9	63.6	26.2	24.6	C
2	1.00	1.00	0.893	0.980	5458	311	7200	2000	0.76	0.16	65.4	63.0	27.8	25.9	C
3	1.00	1.00	0.893	0.980	6247	328	7200	2000	0.87	0.16	63.3	60.5	32.9	29.7	D
4	1.00	1.00	0.893	0.980	4244	291	7200	2000	0.59	0.15	67.3	65.1	21.0	20.1	C
5	1.00	1.00	0.893	0.980	5039	303	7200	2000	0.70	0.15	66.2	63.9	25.4	23.9	C
6	1.00	1.00	0.893	0.980	4687	303	7200	2000	0.65	0.15	66.8	64.5	23.4	22.2	C
7	1.00	1.00	0.893	0.980	5070	413	7200	2000	0.70	0.21	66.0	63.7	25.6	24.3	C
8	1.00	1.00	0.893	0.980	4445	311	7200	2000	0.62	0.16	67.0	64.8	22.1	21.1	C

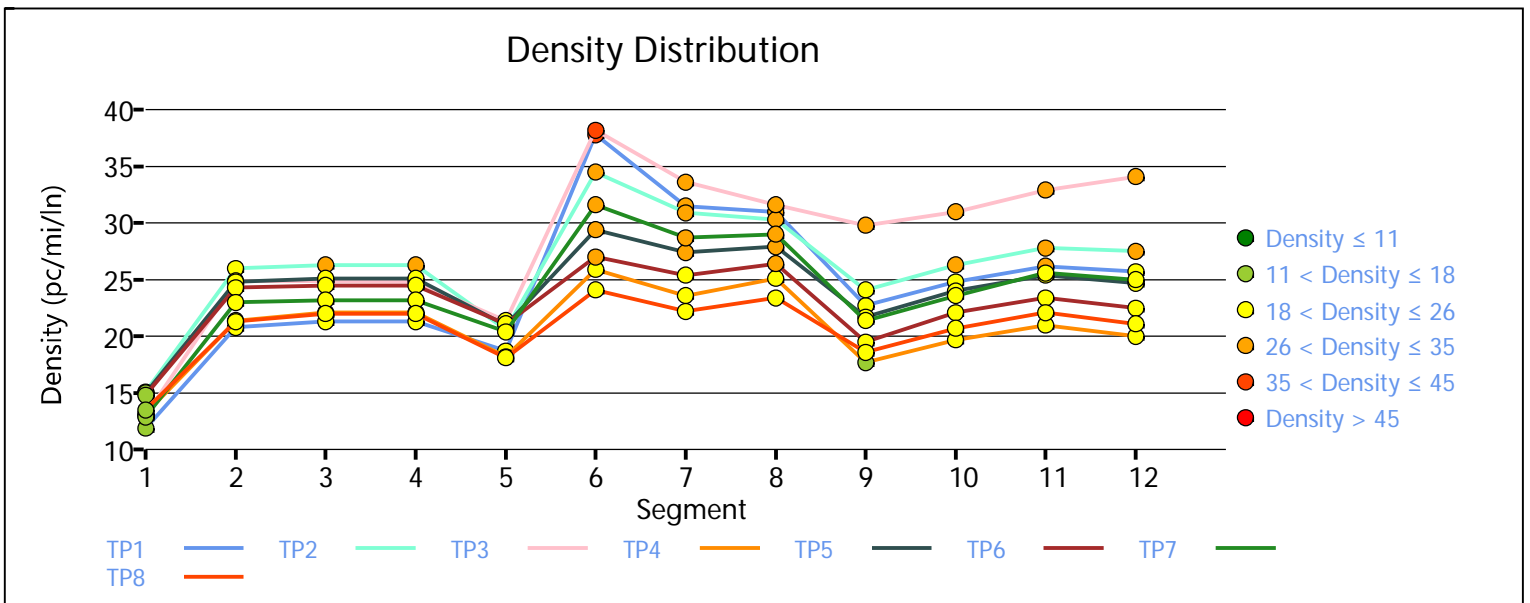
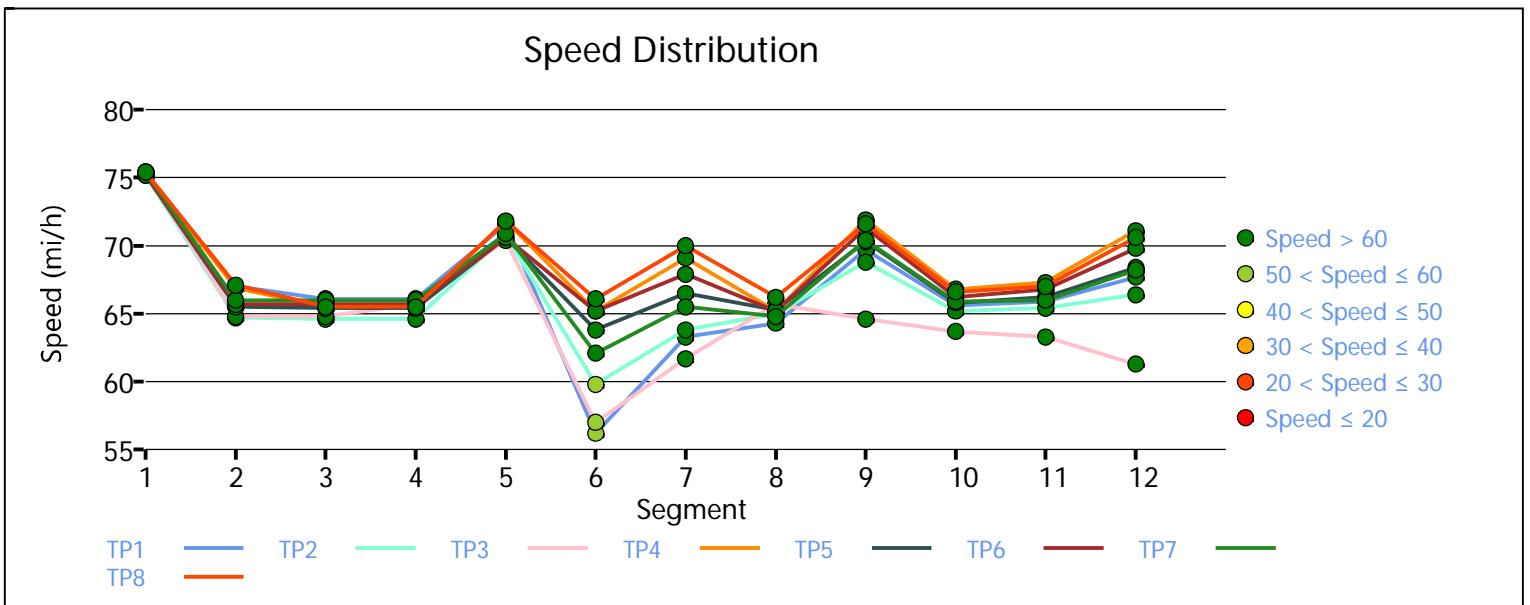
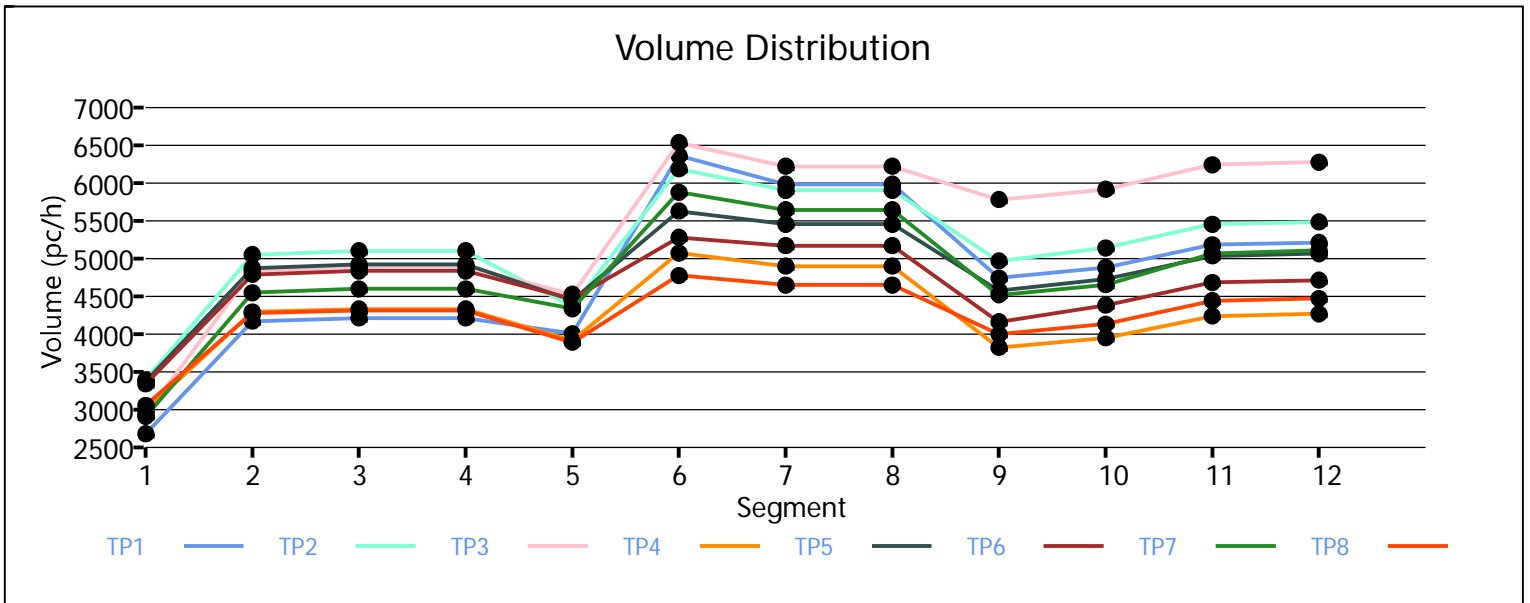
Segment 12: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	1.00	0.893	5217	7200	0.72	67.7	25.7	C
2	1.00	0.893	5488	7200	0.76	66.4	27.5	D
3	1.00	0.893	6279	7200	0.87	61.3	34.1	D
4	1.00	0.893	4272	7200	0.59	71.1	20.0	C
5	1.00	0.893	5068	7200	0.70	68.4	24.7	C
6	1.00	0.893	4717	7200	0.66	69.8	22.5	C
7	1.00	0.893	5111	7200	0.71	68.2	25.0	C
8	1.00	0.893	4476	7200	0.62	70.6	21.1	C

T	Speed, mi/h	Density, pc/mi/ln	Density, veh/mi/ln	Travel Time, min	LOS
1	65.9	23.7	21.4	2.5	C
2	66.3	25.2	22.8	2.5	C
3	64.3	27.5	24.8	2.6	D
4	68.7	19.9	18.0	2.4	C
5	67.7	23.2	21.0	2.5	C
6	68.3	21.8	19.8	2.4	C
7	67.3	22.9	20.7	2.5	C
8	68.9	19.9	18.0	2.4	C

Facility Overall Results

Space Mean Speed, mi/h	67.0	Density, veh/mi/ln	20.8
Average Travel Time, min	2.5	Density, pc/mi/ln	23.0



Appendix G

Intersection LOS Worksheets for Alternative 2

Appendix G-1

Intersection LOS Worksheets for Alternative 2, Existing

HCM 6th Signalized Intersection Summary
1: WLC Pkwy & Eucalyptus Ave

Alternative 2, Existing
AM Peak Hour



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	10	4	19	73	103	63
Future Volume (veh/h)	10	4	19	73	103	63
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	14	6	26	101	143	88
Peak Hour Factor	0.72	0.72	0.72	0.72	0.72	0.72
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	61	54	762	2964	1181	527
Arrive On Green	0.03	0.03	0.42	0.82	0.33	0.33
Sat Flow, veh/h	1810	1610	1810	3705	3705	1610
Grp Volume(v), veh/h	14	6	26	101	143	88
Grp Sat Flow(s),veh/h/ln	1810	1610	1810	1805	1805	1610
Q Serve(g_s), s	0.4	0.2	0.5	0.3	1.5	2.1
Cycle Q Clear(g_c), s	0.4	0.2	0.5	0.3	1.5	2.1
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	61	54	762	2964	1181	527
V/C Ratio(X)	0.23	0.11	0.03	0.03	0.12	0.17
Avail Cap(c_a), veh/h	592	527	762	2964	1181	527
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.9	25.8	9.4	0.9	13.0	13.2
Incr Delay (d2), s/veh	1.9	0.9	0.0	0.0	0.2	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.2	0.1	0.0	0.5	0.7
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	27.8	26.7	9.4	0.9	13.2	13.8
LnGrp LOS	C	C	A	A	B	B
Approach Vol, veh/h	20			127	231	
Approach Delay, s/veh	27.5			2.7	13.4	
Approach LOS	C			A	B	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		49.2		5.8	27.2	22.0
Change Period (Y+Rc), s		4.0		4.0	4.0	4.0
Max Green Setting (Gmax), s		29.0		18.0	7.0	18.0
Max Q Clear Time (g_c+l1), s		2.3		2.4	2.5	4.1
Green Ext Time (p_c), s		0.5		0.0	0.0	0.8
Intersection Summary						
HCM 6th Ctrl Delay			10.6			
HCM 6th LOS			B			

Queues
1: WLC Pkwy & Eucalyptus Ave

Alternative 2, Existing
AM Peak Hour



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	10	4	19	73	103	63
Future Volume (vph)	10	4	19	73	103	63
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	300	0	300			100
Storage Lanes	1	1	1			0
Taper Length (ft)	25		25			
Right Turn on Red		Yes				Yes
Link Speed (mph)	30			55	55	
Link Distance (ft)	1499			3308	699	
Travel Time (s)	34.1			41.0	8.7	
Confl. Peds. (#/hr)						
Peak Hour Factor	0.72	0.72	0.72	0.72	0.72	0.72
Shared Lane Traffic (%)						
Lane Group Flow (vph)	14	6	26	101	143	88
v/c Ratio	0.06	0.03	0.11	0.03	0.04	0.06
Control Delay	21.9	14.2	22.6	0.9	2.0	1.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	21.9	14.2	22.6	0.9	2.0	1.0
Queue Length 50th (ft)	4	0	8	0	0	0
Queue Length 95th (ft)	14	7	21	5	14	1
Internal Link Dist (ft)	1419			3228	619	
Turn Bay Length (ft)	300		300			100
Base Capacity (vph)	590	532	229	3413	3269	1471
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.02	0.01	0.11	0.03	0.04	0.06

Intersection Summary

Area Type: Other

HCM 6th Signalized Intersection Summary
2: WLC Pkwy & SR-60 EB Ramps























Alternative 2, Existing
AM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	58	0	61	0	0	0	0	19	64	0	105	5
Future Volume (veh/h)	58	0	61	0	0	0	0	19	64	0	105	5
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	0	1900				0	1900	1900	0	1900	1900
Adj Flow Rate, veh/h	69	0	73				0	23	76	0	125	6
Peak Hour Factor	0.84	0.84	0.84				0.84	0.84	0.84	0.84	0.84	0.84
Percent Heavy Veh, %	0	0	0				0	0	0	0	0	0
Cap, veh/h	204	0	319				0	4848	1194	0	2678	1194
Arrive On Green	0.11	0.00	0.11				0.00	0.74	0.74	0.00	0.74	0.74
Sat Flow, veh/h	1810	0	2834				0	6802	1610	0	3705	1610
Grp Volume(v), veh/h	69	0	73				0	23	76	0	125	6
Grp Sat Flow(s),veh/h/ln	1810	0	1417				0	1634	1610	0	1805	1610
Q Serve(g_s), s	1.9	0.0	1.3				0.0	0.1	0.7	0.0	0.5	0.1
Cycle Q Clear(g_c), s	1.9	0.0	1.3				0.0	0.1	0.7	0.0	0.5	0.1
Prop In Lane	1.00		1.00				0.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h	204	0	319				0	4848	1194	0	2678	1194
V/C Ratio(X)	0.34	0.00	0.23				0.00	0.00	0.06	0.00	0.05	0.01
Avail Cap(c_a), veh/h	724	0	1134				0	4848	1194	0	2678	1194
HCM Platoon Ratio	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	0.99	0.99
Uniform Delay (d), s/veh	22.5	0.0	22.2				0.0	1.8	1.9	0.0	1.9	1.8
Incr Delay (d2), s/veh	1.0	0.0	0.4				0.0	0.0	0.1	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	0.0	0.4				0.0	0.0	0.0	0.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.5	0.0	22.6				0.0	1.8	2.0	0.0	1.9	1.8
LnGrp LOS	C	A	C				A	A	A	A	A	A
Approach Vol, veh/h		142						99			131	
Approach Delay, s/veh		23.0						2.0			1.9	
Approach LOS		C						A			A	
Timer - Assigned Phs		2		4				6				
Phs Duration (G+Y+Rc), s		44.8		10.2				44.8				
Change Period (Y+Rc), s		4.0		4.0				4.0				
Max Green Setting (Gmax), s		25.0		22.0				25.0				
Max Q Clear Time (g_c+l1), s		2.7		3.9				2.5				
Green Ext Time (p_c), s		0.3		0.4				0.6				
Intersection Summary												
HCM 6th Ctrl Delay			10.0									
HCM 6th LOS			A									

Queues
2: WLC Pkwy & SR-60 EB Ramps

Alternative 2, Existing
AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations			 					  			 	
Traffic Volume (vph)	58	0	61	0	0	0	0	19	64	0	105	5
Future Volume (vph)	58	0	61	0	0	0	0	19	64	0	105	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	300		250	0		0	250		250	0		600
Storage Lanes	1		0	0		0	2		0	0		1
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			55			55	
Link Distance (ft)		719			222			699			1284	
Travel Time (s)		16.3			5.0			8.7			15.9	
Confl. Peds. (#/hr)												
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Shared Lane Traffic (%)												
Lane Group Flow (vph)	69	0	73	0	0	0	0	23	76	0	125	6
v/c Ratio	0.26		0.15					0.00	0.06		0.05	0.00
Control Delay	23.1		7.0					2.4	0.8		2.1	0.0
Queue Delay	0.0		0.0					0.0	0.0		0.0	0.0
Total Delay	23.1		7.0					2.4	0.8		2.1	0.0
Queue Length 50th (ft)	21		0					0	0		4	0
Queue Length 95th (ft)	45		13					1	6		6	m0
Internal Link Dist (ft)		639			142			619			1204	
Turn Bay Length (ft)	300		250						250			600
Base Capacity (vph)	722		1180					4991	1251		2756	1238
Starvation Cap Reductn	0		0					0	0		0	0
Spillback Cap Reductn	0		0					0	0		0	0
Storage Cap Reductn	0		0					0	0		0	0
Reduced v/c Ratio	0.10		0.06					0.00	0.06		0.05	0.00

Intersection Summary

Area Type: Other

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

HCM 6th Signalized Intersection Summary
 3: WLC Pkwy/Theodore St & SR-60 WB Ramps

Alternative 2, Existing
 AM Peak Hour



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	27	84	10	67	26	42
Future Volume (veh/h)	27	84	10	67	26	42
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	31	95	11	76	30	48
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	197	207	69	2692	1242	1227
Arrive On Green	0.11	0.11	0.02	0.75	0.65	0.65
Sat Flow, veh/h	1810	1610	3510	3705	1900	1610
Grp Volume(v), veh/h	31	95	11	76	30	48
Grp Sat Flow(s),veh/h/ln	1810	1610	1755	1805	1900	1610
Q Serve(g_s), s	0.9	3.0	0.2	0.3	0.3	0.4
Cycle Q Clear(g_c), s	0.9	3.0	0.2	0.3	0.3	0.4
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	197	207	69	2692	1242	1227
V/C Ratio(X)	0.16	0.46	0.16	0.03	0.02	0.04
Avail Cap(c_a), veh/h	592	559	447	2692	1242	1227
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	0.99	0.99	1.00	1.00
Uniform Delay (d), s/veh	22.2	22.2	26.5	1.8	3.4	1.6
Incr Delay (d2), s/veh	0.4	1.6	1.1	0.0	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	2.8	0.1	0.0	0.1	0.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	22.6	23.8	27.6	1.8	3.4	1.7
LnGrp LOS	C	C	C	A	A	A
Approach Vol, veh/h	126			87	78	
Approach Delay, s/veh	23.5			5.1	2.3	
Approach LOS	C			A	A	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		45.0		10.0	5.1	39.9
Change Period (Y+Rc), s		4.0		4.0	4.0	4.0
Max Green Setting (Gmax), s		29.0		18.0	7.0	18.0
Max Q Clear Time (g_c+l1), s		2.3		5.0	2.2	2.4
Green Ext Time (p_c), s		0.3		0.3	0.0	0.2
Intersection Summary						
HCM 6th Ctrl Delay			12.3			
HCM 6th LOS			B			

Queues
3: WLC Pkwy/Theodore St & SR-60 WB Ramps

Alternative 2, Existing
AM Peak Hour



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	27	84	10	67	26	42
Future Volume (vph)	27	84	10	67	26	42
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	250			250
Storage Lanes	1	1	0			1
Taper Length (ft)	25		25			
Right Turn on Red		Yes				Yes
Link Speed (mph)	30			55	55	
Link Distance (ft)	650			1284	579	
Travel Time (s)	14.8			15.9	7.2	
Confl. Peds. (#/hr)						
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Shared Lane Traffic (%)						
Lane Group Flow (vph)	31	95	11	76	30	48
v/c Ratio	0.13	0.20	0.02	0.03	0.02	0.04
Control Delay	22.4	4.7	8.9	0.6	6.5	0.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	22.4	4.7	8.9	0.6	6.5	0.9
Queue Length 50th (ft)	9	0	0	1	4	0
Queue Length 95th (ft)	28	23	3	1	14	5
Internal Link Dist (ft)	570			1204	499	
Turn Bay Length (ft)			250			250
Base Capacity (vph)	590	476	445	3006	1250	1586
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.05	0.20	0.02	0.03	0.02	0.03

Intersection Summary

Area Type: Other

Intersection						
Int Delay, s/veh	2.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↘↗		↑	↗↘	↘↗	↑
Traffic Vol, veh/h	3	17	58	6	21	54
Future Vol, veh/h	3	17	58	6	21	54
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	130	130	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	3	19	66	7	24	61

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	175	66	0	0	73
Stage 1	66	-	-	-	-
Stage 2	109	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1
Critical Hdwy Stg 1	5.4	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2
Pot Cap-1 Maneuver	819	1003	-	-	1540
Stage 1	962	-	-	-	-
Stage 2	921	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	806	1003	-	-	1540
Mov Cap-2 Maneuver	806	-	-	-	-
Stage 1	947	-	-	-	-
Stage 2	921	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.8	0	2.1
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	968	1540
HCM Lane V/C Ratio	-	-	0.023	0.015
HCM Control Delay (s)	-	-	8.8	7.4
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0

HCM 6th Signalized Intersection Summary
5: Redlands Blvd & Eucalyptus Ave

Alternative 2, Existing
AM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	24	0	2	3	0	18	23	480	0	0	321	42
Future Volume (veh/h)	24	0	2	3	0	18	23	480	0	0	321	42
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	0	1900	1900	1900	1900	1900	1900	0	0	1900	1900
Adj Flow Rate, veh/h	26	0	2	3	0	20	25	522	0	0	349	46
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	83	0	0	147	0	0	80	911	0	0	552	542
Arrive On Green	0.05	0.00	0.00	0.04	0.00	0.04	0.04	0.48	0.00	0.00	0.29	0.29
Sat Flow, veh/h	1810	26		0	0	0	1810	1900	0	0	1900	1610
Grp Volume(v), veh/h	26	14.9		23	0	0	25	522	0	0	349	46
Grp Sat Flow(s),veh/h/ln	1810	B		0	0	0	1810	1900	0	0	1900	1610
Q Serve(g_s), s	0.4			0.0	0.0	0.0	0.4	5.5	0.0	0.0	4.4	0.5
Cycle Q Clear(g_c), s	0.4			0.1	0.0	0.0	0.4	5.5	0.0	0.0	4.4	0.5
Prop In Lane	1.00			0.13		0.87	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h	83			147	0	0	80	911	0	0	552	542
V/C Ratio(X)	0.31			0.16	0.00	0.00	0.31	0.57	0.00	0.00	0.63	0.08
Avail Cap(c_a), veh/h	458			1113	0	0	458	2266	0	0	1511	1354
HCM Platoon Ratio	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	1.00	1.00
Uniform Delay (d), s/veh	12.8			12.8	0.0	0.0	12.8	5.2	0.0	0.0	8.5	6.3
Incr Delay (d2), s/veh	2.1			0.5	0.0	0.0	2.2	0.6	0.0	0.0	1.2	0.1
Initial Q Delay(d3),s/veh	0.0			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2			0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.8	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	14.9			13.3	0.0	0.0	15.0	5.7	0.0	0.0	9.7	6.3
LnGrp LOS	B			B	A	A	B	A	A	A	A	A
Approach Vol, veh/h					23			547			395	
Approach Delay, s/veh					13.3			6.2			9.3	
Approach LOS					B			A			A	
Timer - Assigned Phs		2			5	6	7	8				
Phs Duration (G+Y+Rc), s		17.3			5.2	12.0	5.3	5.1				
Change Period (Y+Rc), s		4.0			4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s		33.0			7.0	22.0	7.0	18.0				
Max Q Clear Time (g_c+l1), s		7.5			2.4	6.4	2.4	2.1				
Green Ext Time (p_c), s		2.9			0.0	1.6	0.0	0.0				
Intersection Summary												
HCM 6th Ctrl Delay					7.8							
HCM 6th LOS					A							

HCM 6th Signalized Intersection Summary
6: Redlands Blvd & SR-60 EB Ramps

Alternative 2, Existing
AM Peak Hour



Movement	EBL	EBR	NBL	NBT	SBT	SBR	
Lane Configurations							
Traffic Volume (veh/h)	205	79	59	463	283	33	
Future Volume (veh/h)	205	79	59	463	283	33	
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	211	81	61	477	292	34	
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	254	97	739	1264	361	630	
Arrive On Green	0.20	0.20	0.41	0.67	0.38	0.38	
Sat Flow, veh/h	1260	484	1810	1900	1900	1610	
Grp Volume(v), veh/h	293	0	61	477	292	34	
Grp Sat Flow(s),veh/h/ln	1750	0	1810	1900	1900	1610	
Q Serve(g_s), s	9.6	0.0	1.2	6.7	8.3	0.0	
Cycle Q Clear(g_c), s	9.6	0.0	1.2	6.7	8.3	0.0	
Prop In Lane	0.72	0.28	1.00			1.00	
Lane Grp Cap(c), veh/h	353	0	739	1264	361	630	
V/C Ratio(X)	0.83	0.00	0.08	0.38	0.81	0.05	
Avail Cap(c_a), veh/h	554	0	739	1264	697	915	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	2.00	2.00	
Upstream Filter(l)	1.00	0.00	0.94	0.94	0.99	0.99	
Uniform Delay (d), s/veh	23.0	0.0	10.9	4.5	17.6	5.3	
Incr Delay (d2), s/veh	6.1	0.0	0.0	0.8	17.4	0.2	
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	
%ile BackOfQ(50%),veh/ln	4.3	0.0	0.4	1.3	4.1	0.2	
Unsig. Movement Delay, s/veh							
LnGrp Delay(d),s/veh	29.1	0.0	10.9	5.3	35.0	5.4	
LnGrp LOS	C	A	B	A	D	A	
Approach Vol, veh/h	293			538	326		
Approach Delay, s/veh	29.1			5.9	31.9		
Approach LOS	C			A	C		
Timer - Assigned Phs		2			5	6	8
Phs Duration (G+Y+Rc), s		43.9			28.5	15.4	16.1
Change Period (Y+Rc), s		4.0			4.0	4.0	4.0
Max Green Setting (Gmax), s		33.0			7.0	22.0	19.0
Max Q Clear Time (g_c+1), s		8.7			3.2	10.3	11.6
Green Ext Time (p_c), s		2.5			0.0	1.1	0.5

Intersection Summary

HCM 6th Ctrl Delay	19.1
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

HCM 6th Signalized Intersection Summary
 7: Redlands Blvd & SR-60 WB Ramps

Alternative 2, Existing
 AM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↗	↖	↗	↗	↗	↖
Traffic Volume (veh/h)	3	6	4	37	0	39	11	534	122	288	275	4
Future Volume (veh/h)	3	6	4	37	0	39	11	534	122	288	275	4
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	3	6	4	38	0	40	11	545	124	294	281	4
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	8	17	11	49	0	51	32	574	581	878	1438	20
Arrive On Green	0.02	0.02	0.02	0.06	0.00	0.06	0.04	0.60	0.60	0.49	0.77	0.77
Sat Flow, veh/h	411	822	548	829	0	873	1810	1900	1610	1810	1869	27
Grp Volume(v), veh/h	13	0	0	78	0	0	11	545	124	294	0	285
Grp Sat Flow(s),veh/h/lnl	781	0	0	1701	0	0	1810	1900	1610	1810	0	1895
Q Serve(g_s), s	0.9	0.0	0.0	5.4	0.0	0.0	0.7	31.9	4.0	12.0	0.0	4.9
Cycle Q Clear(g_c), s	0.9	0.0	0.0	5.4	0.0	0.0	0.7	31.9	4.0	12.0	0.0	4.9
Prop In Lane	0.23		0.31	0.49		0.51	1.00		1.00	1.00		0.01
Lane Grp Cap(c), veh/h	37	0	0	100	0	0	32	574	581	878	0	1458
V/C Ratio(X)	0.36	0.00	0.00	0.78	0.00	0.00	0.34	0.95	0.21	0.33	0.00	0.20
Avail Cap(c_a), veh/h	267	0	0	255	0	0	106	681	672	878	0	1458
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	0.00	0.00	1.00	0.00	0.00	0.86	0.86	0.86	0.87	0.00	0.87
Uniform Delay (d), s/veh	58.0	0.0	0.0	55.7	0.0	0.0	57.2	22.9	14.6	19.0	0.0	3.8
Incr Delay (d2), s/veh	5.8	0.0	0.0	12.1	0.0	0.0	5.2	24.4	0.7	0.2	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	0.0	0.0	0.0
%ile BackOfQ(50%),veh/l	0.4	0.0	0.0	2.7	0.0	0.0	0.4	11.0	1.5	4.7	0.0	1.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	63.8	0.0	0.0	67.8	0.0	0.0	62.4	47.3	15.3	19.2	0.0	4.0
LnGrp LOS	E	A	A	E	A	A	E	D	B	B	A	A
Approach Vol, veh/h		13			78			680				579
Approach Delay, s/veh		63.8			67.8			41.7				11.7
Approach LOS		E			E			D				B
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	62.2	40.3		6.5	6.1	96.3		11.1				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	25.0	43.0		18.0	7.0	61.0		18.0				
Max Q Clear Time (g_c+1), s	11.0	33.9		2.9	2.7	6.9		7.4				
Green Ext Time (p_c), s	0.6	2.3		0.0	0.0	1.5		0.2				

Intersection Summary

HCM 6th Ctrl Delay		30.6										
HCM 6th LOS			C									

HCM 6th Signalized Intersection Summary
8: Redlands Blvd & Ironwood Ave

Alternative 2, Existing
AM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕		↕	↕	↕
Traffic Volume (veh/h)	104	7	28	3	11	4	32	527	9	1	535	111
Future Volume (veh/h)	104	7	28	3	11	4	32	527	9	1	535	111
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		0.99	1.00		0.99
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	106	7	29	3	11	4	33	538	9	1	546	113
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	191	13	52	15	54	20	96	807	13	4	726	611
Arrive On Green	0.15	0.15	0.15	0.05	0.05	0.05	0.05	0.43	0.43	0.00	0.38	0.38
Sat Flow, veh/h	1316	87	360	301	1103	401	1810	1863	31	1810	1900	1600
Grp Volume(v), veh/h	142	0	0	18	0	0	33	0	547	1	546	113
Grp Sat Flow(s),veh/h/ln	763	0	0	1805	0	0	1810	0	1894	1810	1900	1600
Q Serve(g_s), s	3.2	0.0	0.0	0.4	0.0	0.0	0.8	0.0	9.9	0.0	10.7	2.0
Cycle Q Clear(g_c), s	3.2	0.0	0.0	0.4	0.0	0.0	0.8	0.0	9.9	0.0	10.7	2.0
Prop In Lane	0.75		0.20	0.17		0.22	1.00		0.02	1.00		1.00
Lane Grp Cap(c), veh/h	256	0	0	88	0	0	96	0	820	4	726	611
V/C Ratio(X)	0.55	0.00	0.00	0.20	0.00	0.00	0.34	0.00	0.67	0.24	0.75	0.18
Avail Cap(c_a), veh/h	981	0	0	1088	0	0	294	0	1625	294	1630	1372
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	17.1	0.0	0.0	19.7	0.0	0.0	19.7	0.0	9.7	21.5	11.6	8.9
Incr Delay (d2), s/veh	1.9	0.0	0.0	1.1	0.0	0.0	2.1	0.0	0.9	26.9	1.6	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	0.0	0.0	0.2	0.0	0.0	0.3	0.0	2.4	0.0	2.9	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	19.0	0.0	0.0	20.9	0.0	0.0	21.8	0.0	10.7	48.4	13.2	9.0
LnGrp LOS	B	A	A	C	A	A	C	A	B	D	B	A
Approach Vol, veh/h		142			18			580			660	
Approach Delay, s/veh		19.0			20.9			11.3			12.5	
Approach LOS		B			C			B			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	4.1	22.7		10.3	6.3	20.5		6.1				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	37.0			24.0	7.0	37.0		26.0				
Max Q Clear Time (g_c+I), s	11.9			5.2	2.8	12.7		2.4				
Green Ext Time (p_c), s	0.0	3.0		0.6	0.0	3.4		0.0				

Intersection Summary

HCM 6th Ctrl Delay	12.8
HCM 6th LOS	B

HCM 6th Signalized Intersection Summary
 1: WLC Pkwy & Eucalyptus Ave

Alternative 2, Existing
 PM Peak Hour



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	44	18	11	27	32	64
Future Volume (veh/h)	44	18	11	27	32	64
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	59	24	15	36	43	85
Peak Hour Factor	0.75	0.75	0.75	0.75	0.75	0.75
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	166	147	47	2755	2398	1070
Arrive On Green	0.09	0.09	0.03	0.76	0.66	0.66
Sat Flow, veh/h	1810	1610	1810	3705	3705	1610
Grp Volume(v), veh/h	59	24	15	36	43	85
Grp Sat Flow(s),veh/h/ln	1810	1610	1810	1805	1805	1610
Q Serve(g_s), s	1.7	0.8	0.4	0.1	0.2	1.0
Cycle Q Clear(g_c), s	1.7	0.8	0.4	0.1	0.2	1.0
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	166	147	47	2755	2398	1070
V/C Ratio(X)	0.36	0.16	0.32	0.01	0.02	0.08
Avail Cap(c_a), veh/h	592	527	230	2755	2398	1070
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.5	23.0	26.3	1.6	3.1	3.3
Incr Delay (d2), s/veh	1.3	0.5	3.8	0.0	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.7	0.2	0.0	0.0	0.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	24.8	23.6	30.1	1.6	3.2	3.4
LnGrp LOS	C	C	C	A	A	A
Approach Vol, veh/h	83			51	128	
Approach Delay, s/veh	24.4			10.0	3.3	
Approach LOS	C			A	A	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		46.0		9.0	5.4	40.5
Change Period (Y+Rc), s		4.0		4.0	4.0	4.0
Max Green Setting (Gmax), s		29.0		18.0	7.0	18.0
Max Q Clear Time (g_c+I1), s		2.1		3.7	2.4	3.0
Green Ext Time (p_c), s		0.1		0.1	0.0	0.3
Intersection Summary						
HCM 6th Ctrl Delay			11.3			
HCM 6th LOS			B			

Queues
1: WLC Pkwy & Eucalyptus Ave

Alternative 2, Existing
PM Peak Hour



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	44	18	11	27	32	64
Future Volume (vph)	44	18	11	27	32	64
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	300	0	300			100
Storage Lanes	1	1	1			0
Taper Length (ft)	25		25			
Right Turn on Red		Yes				Yes
Link Speed (mph)	30			55	55	
Link Distance (ft)	1499			3308	699	
Travel Time (s)	34.1			41.0	8.7	
Confl. Peds. (#/hr)						
Peak Hour Factor	0.75	0.75	0.75	0.75	0.75	0.75
Shared Lane Traffic (%)						
Lane Group Flow (vph)	59	24	15	36	43	85
v/c Ratio	0.23	0.10	0.07	0.01	0.02	0.07
Control Delay	23.0	10.4	22.0	2.4	3.8	1.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	23.0	10.4	22.0	2.4	3.8	1.5
Queue Length 50th (ft)	18	0	4	1	1	0
Queue Length 95th (ft)	36	12	15	3	7	11
Internal Link Dist (ft)	1419			3228	619	
Turn Bay Length (ft)	300		300			100
Base Capacity (vph)	590	544	229	2969	2825	1282
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.10	0.04	0.07	0.01	0.02	0.07

Intersection Summary

Area Type: Other

HCM 6th Signalized Intersection Summary
2: WLC Pkwy & SR-60 EB Ramps























Alternative 2, Existing
PM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	18	0	54	0	0	0	0	40	31	0	42	18
Future Volume (veh/h)	18	0	54	0	0	0	0	40	31	0	42	18
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	0	1900				0	1900	1900	0	1900	1900
Adj Flow Rate, veh/h	21	0	62				0	46	36	0	48	21
Peak Hour Factor	0.87	0.87	0.87				0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	0	0	0				0	0	0	0	0	0
Cap, veh/h	166	0	259				0	4988	1229	0	2755	1229
Arrive On Green	0.09	0.00	0.09				0.00	0.76	0.76	0.00	0.76	0.76
Sat Flow, veh/h	1810	0	2834				0	6802	1610	0	3705	1610
Grp Volume(v), veh/h	21	0	62				0	46	36	0	48	21
Grp Sat Flow(s),veh/h/ln	1810	0	1417				0	1634	1610	0	1805	1610
Q Serve(g_s), s	0.6	0.0	1.1				0.0	0.1	0.3	0.0	0.2	0.2
Cycle Q Clear(g_c), s	0.6	0.0	1.1				0.0	0.1	0.3	0.0	0.2	0.2
Prop In Lane	1.00		1.00				0.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h	166	0	259				0	4988	1229	0	2755	1229
V/C Ratio(X)	0.13	0.00	0.24				0.00	0.01	0.03	0.00	0.02	0.02
Avail Cap(c_a), veh/h	724	0	1134				0	4988	1229	0	2755	1229
HCM Platoon Ratio	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	0.99	0.99	0.00	1.00	1.00
Uniform Delay (d), s/veh	23.0	0.0	23.2				0.0	1.6	1.6	0.0	1.6	1.6
Incr Delay (d2), s/veh	0.3	0.0	0.5				0.0	0.0	0.0	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	0.4				0.0	0.0	0.0	0.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.3	0.0	23.7				0.0	1.6	1.6	0.0	1.6	1.6
LnGrp LOS	C	A	C				A	A	A	A	A	A
Approach Vol, veh/h		83						82			69	
Approach Delay, s/veh		23.6						1.6			1.6	
Approach LOS		C						A			A	
Timer - Assigned Phs		2		4				6				
Phs Duration (G+Y+Rc), s		46.0		9.0				46.0				
Change Period (Y+Rc), s		4.0		4.0				4.0				
Max Green Setting (Gmax), s		25.0		22.0				25.0				
Max Q Clear Time (g_c+l1), s		2.3		3.1				2.2				
Green Ext Time (p_c), s		0.3		0.2				0.2				
Intersection Summary												
HCM 6th Ctrl Delay			9.4									
HCM 6th LOS			A									

Queues
2: WLC Pkwy & SR-60 EB Ramps

Alternative 2, Existing
PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations			 					  			 	
Traffic Volume (vph)	18	0	54	0	0	0	0	40	31	0	42	18
Future Volume (vph)	18	0	54	0	0	0	0	40	31	0	42	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	300		250	0		0	250		250	0		600
Storage Lanes	1		0	0		0	2		0	0		1
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			55			55	
Link Distance (ft)		435			222			699			1284	
Travel Time (s)		9.9			5.0			8.7			15.9	
Confl. Peds. (#/hr)												
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Shared Lane Traffic (%)												
Lane Group Flow (vph)	21	0	62	0	0	0	0	46	36	0	48	21
v/c Ratio	0.09		0.15					0.01	0.03		0.02	0.02
Control Delay	22.1		8.1					0.8	0.1		1.8	1.3
Queue Delay	0.0		0.0					0.0	0.0		0.0	0.0
Total Delay	22.1		8.1					0.8	0.1		1.8	1.3
Queue Length 50th (ft)	6		0					0	0		0	0
Queue Length 95th (ft)	21		14					0	1		5	5
Internal Link Dist (ft)		355			142			619			1204	
Turn Bay Length (ft)	300		250						250			600
Base Capacity (vph)	722		1174					5454	1354		3012	1351
Starvation Cap Reductn	0		0					0	0		0	0
Spillback Cap Reductn	0		0					0	0		0	0
Storage Cap Reductn	0		0					0	0		0	0
Reduced v/c Ratio	0.03		0.05					0.01	0.03		0.02	0.02

Intersection Summary

Area Type: Other

HCM 6th Signalized Intersection Summary
 3: WLC Pkwy/Theodore St & SR-60 WB Ramps

Alternative 2, Existing
 PM Peak Hour



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	12	24	33	25	35	20
Future Volume (veh/h)	12	24	33	25	35	20
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	18	35	49	37	51	29
Peak Hour Factor	0.68	0.68	0.68	0.68	0.68	0.68
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	128	1054	2050	2830	242	319
Arrive On Green	0.07	0.07	0.58	0.78	0.13	0.13
Sat Flow, veh/h	1810	1610	3510	3705	1900	1610
Grp Volume(v), veh/h	18	35	49	37	51	29
Grp Sat Flow(s),veh/h/ln	1810	1610	1755	1805	1900	1610
Q Serve(g_s), s	0.5	0.0	0.3	0.1	1.3	0.8
Cycle Q Clear(g_c), s	0.5	0.0	0.3	0.1	1.3	0.8
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	128	1054	2050	2830	242	319
V/C Ratio(X)	0.14	0.03	0.02	0.01	0.21	0.09
Avail Cap(c_a), veh/h	592	1467	2050	2830	622	641
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.0	3.4	4.8	1.3	21.5	18.0
Incr Delay (d2), s/veh	0.5	0.0	0.0	0.0	2.0	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.5	0.1	0.0	0.6	0.3
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	24.5	3.4	4.8	1.3	23.5	18.6
LnGrp LOS	C	A	A	A	C	B
Approach Vol, veh/h	53			86	80	
Approach Delay, s/veh	10.5			3.3	21.7	
Approach LOS	B			A	C	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		47.1		7.9	36.1	11.0
Change Period (Y+Rc), s		4.0		4.0	4.0	4.0
Max Green Setting (Gmax), s		29.0		18.0	7.0	18.0
Max Q Clear Time (g_c+l1), s		2.1		2.5	2.3	3.3
Green Ext Time (p_c), s		0.1		0.1	0.0	0.2
Intersection Summary						
HCM 6th Ctrl Delay			11.8			
HCM 6th LOS			B			

Queues
3: WLC Pkwy/Theodore St & SR-60 WB Ramps

Alternative 2, Existing
PM Peak Hour



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	12	24	33	25	35	20
Future Volume (vph)	12	24	33	25	35	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	250			250
Storage Lanes	1	1	0			1
Taper Length (ft)	25		25			
Right Turn on Red		Yes				Yes
Link Speed (mph)	30			55	55	
Link Distance (ft)	305			1284	510	
Travel Time (s)	6.9			15.9	6.3	
Confl. Peds. (#/hr)						
Peak Hour Factor	0.68	0.68	0.68	0.68	0.68	0.68
Shared Lane Traffic (%)						
Lane Group Flow (vph)	18	35	49	37	51	29
v/c Ratio	0.08	0.10	0.11	0.01	0.04	0.02
Control Delay	22.1	5.9	16.4	1.0	5.4	1.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	22.1	5.9	16.4	1.0	5.4	1.0
Queue Length 50th (ft)	5	0	5	0	3	0
Queue Length 95th (ft)	15	9	11	2	15	3
Internal Link Dist (ft)	225			1204	430	
Turn Bay Length (ft)			250			250
Base Capacity (vph)	590	365	449	3213	1433	1353
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.03	0.10	0.11	0.01	0.04	0.02

Intersection Summary

Area Type:	Other
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Intersection						
Int Delay, s/veh	4.2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↘		↑	↗	↘	↑
Traffic Vol, veh/h	4	26	35	7	20	6
Future Vol, veh/h	4	26	35	7	20	6
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	-	-	130	130	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	64	64	64	64	64	64
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	6	41	55	11	31	9

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	126	55	0	0	66
Stage 1	55	-	-	-	-
Stage 2	71	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1
Critical Hdwy Stg 1	5.4	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2
Pot Cap-1 Maneuver	874	1018	-	-	1549
Stage 1	973	-	-	-	-
Stage 2	957	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	857	1018	-	-	1549
Mov Cap-2 Maneuver	857	-	-	-	-
Stage 1	954	-	-	-	-
Stage 2	957	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.8	0	5.7
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	993	1549
HCM Lane V/C Ratio	-	-	0.047	0.02
HCM Control Delay (s)	-	-	8.8	7.4
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0.1

HCM 6th Signalized Intersection Summary
5: Redlands Blvd & Eucalyptus Ave

Alternative 2, Existing
PM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	23	1	8	2	0	54	0	374	1	1	524	16
Future Volume (veh/h)	23	1	8	2	0	54	0	374	1	1	524	16
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	24	1	8	2	0	56	0	386	1	1	540	16
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	77	0	233	0	0	164	7	787	2	132	789	738
Arrive On Green	0.04	0.29	0.29	0.00	0.00	0.10	0.00	0.42	0.42	0.42	0.42	0.42
Sat Flow, veh/h	1810	0	1610	0	0	1610	1810	1894	5	1	1899	1610
Grp Volume(v), veh/h	24	0	8	0	0	56	0	0	387	541	0	16
Grp Sat Flow(s),veh/h/ln	1810	0	1610	0	0	1610	1810	0	1899	1899	0	1610
Q Serve(g_s), s	0.4	0.0	4.1	0.0	0.0	0.9	0.0	0.0	4.1	0.0	0.0	0.1
Cycle Q Clear(g_c), s	0.4	0.0	4.1	0.0	0.0	0.9	0.0	0.0	4.1	6.4	0.0	0.1
Prop In Lane	1.00		1.00	0.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h	77	0	233	0	0	164	7	0	789	921	0	738
V/C Ratio(X)	0.31	0.00	0.03	0.00	0.00	0.34	0.00	0.00	0.49	0.59	0.00	0.02
Avail Cap(c_a), veh/h	464	0	826	0	0	1062	464	0	1252	2357	0	1956
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	0.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	12.7	0.0	757.2	0.0	0.0	11.4	0.0	0.0	5.9	6.5	0.0	4.0
Incr Delay (d2), s/veh	2.3	0.0	0.1	0.0	0.0	1.2	0.0	0.0	0.5	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	0.2	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.3	0.5	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	14.9	0.0	757.3	0.0	0.0	12.6	0.0	0.0	6.3	7.1	0.0	4.1
LnGrp LOS	B	A	F	A	A	B	A	A	A	A	A	A
Approach Vol, veh/h		32			56			387				557
Approach Delay, s/veh		200.5			12.6			6.3				7.0
Approach LOS		F			B			A				A
Timer - Assigned Phs		2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s		15.3	0.0	12.0	0.0	15.3	5.2	6.8				
Change Period (Y+Rc), s		4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s		18.0	7.0	18.0	7.0	32.0	7.0	18.0				
Max Q Clear Time (g_c+l1), s		6.1	0.0	6.1	0.0	8.4	2.4	2.9				
Green Ext Time (p_c), s		1.5	0.0	0.0	0.0	3.0	0.0	0.2				
Intersection Summary												
HCM 6th Ctrl Delay			13.1									
HCM 6th LOS			B									

HCM 6th Signalized Intersection Summary
6: Redlands Blvd & SR-60 EB Ramps

Alternative 2, Existing
PM Peak Hour



Movement	EBL	EBR	NBL	NBT	SBT	SBR	
Lane Configurations							
Traffic Volume (veh/h)	431	137	63	388	404	43	
Future Volume (veh/h)	431	137	63	388	404	43	
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	449	143	66	404	421	45	
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	484	154	340	955	472	986	
Arrive On Green	0.36	0.36	0.19	0.50	0.50	0.50	
Sat Flow, veh/h	1330	424	1810	1900	1900	1610	
Grp Volume(v), veh/h	593	0	66	404	421	45	
Grp Sat Flow(s),veh/h/ln	1757	0	1810	1900	1900	1610	
Q Serve(g_s), s	19.4	0.0	1.8	8.1	12.0	0.0	
Cycle Q Clear(g_c), s	19.4	0.0	1.8	8.1	12.0	0.0	
Prop In Lane	0.76	0.24	1.00			1.00	
Lane Grp Cap(c), veh/h	640	0	340	955	472	986	
V/C Ratio(X)	0.93	0.00	0.19	0.42	0.89	0.05	
Avail Cap(c_a), veh/h	674	0	340	955	570	1069	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	2.00	2.00	
Upstream Filter(l)	1.00	0.00	0.96	0.96	0.97	0.97	
Uniform Delay (d), s/veh	18.3	0.0	20.5	9.4	14.4	1.3	
Incr Delay (d2), s/veh	18.5	0.0	0.3	1.3	21.3	0.1	
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	
%ile BackOfQ(50%),veh/ln	10.2	0.0	0.7	2.5	5.6	0.1	
Unsig. Movement Delay, s/veh							
LnGrp Delay(d),s/veh	36.8	0.0	20.8	10.7	35.7	1.4	
LnGrp LOS	D	A	C	B	D	A	
Approach Vol, veh/h	593			470	466		
Approach Delay, s/veh	36.8			12.2	32.4		
Approach LOS	D			B	C		
Timer - Assigned Phs		2			5	6	8
Phs Duration (G+Y+Rc), s		34.2			15.3	18.9	25.8
Change Period (Y+Rc), s		4.0			4.0	4.0	4.0
Max Green Setting (Gmax), s		29.0			7.0	18.0	23.0
Max Q Clear Time (g_c+l1), s		10.1			3.8	14.0	21.4
Green Ext Time (p_c), s		1.9			0.0	0.9	0.4

Intersection Summary

HCM 6th Ctrl Delay	27.9
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

HCM 6th Signalized Intersection Summary
7: Redlands Blvd & SR-60 WB Ramps

Alternative 2, Existing
PM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↗	↖	↗	↗	↖	↖
Traffic Volume (veh/h)	1	12	7	43	0	22	11	667	141	300	397	4
Future Volume (veh/h)	1	12	7	43	0	22	11	667	141	300	397	4
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	1	13	7	46	0	23	12	710	150	319	422	4
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	3	33	18	61	0	30	35	720	695	734	1439	14
Arrive On Green	0.03	0.03	0.03	0.05	0.00	0.05	0.04	0.76	0.76	0.41	0.77	0.77
Sat Flow, veh/h	85	1107	596	1159	0	579	1810	1900	1610	1810	1879	18
Grp Volume(v), veh/h	21	0	0	69	0	0	12	710	150	319	0	426
Grp Sat Flow(s),veh/h/ln	788	0	0	1738	0	0	1810	1900	1610	1810	0	1897
Q Serve(g_s), s	1.4	0.0	0.0	4.7	0.0	0.0	0.8	43.0	3.0	15.3	0.0	8.1
Cycle Q Clear(g_c), s	1.4	0.0	0.0	4.7	0.0	0.0	0.8	43.0	3.0	15.3	0.0	8.1
Prop In Lane	0.05		0.33	0.67		0.33	1.00		1.00	1.00		0.01
Lane Grp Cap(c), veh/h	53	0	0	91	0	0	35	720	695	734	0	1452
V/C Ratio(X)	0.40	0.00	0.00	0.76	0.00	0.00	0.34	0.99	0.22	0.43	0.00	0.29
Avail Cap(c_a), veh/h	268	0	0	261	0	0	106	728	702	734	0	1452
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	0.00	0.00	1.00	0.00	0.00	0.65	0.65	0.65	0.77	0.00	0.77
Uniform Delay (d), s/veh	57.2	0.0	0.0	56.1	0.0	0.0	57.0	14.2	7.9	25.7	0.0	4.3
Incr Delay (d2), s/veh	4.8	0.0	0.0	11.9	0.0	0.0	3.8	23.9	0.5	0.3	0.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.0	0.0	2.4	0.0	0.0	0.4	10.2	1.1	6.2	0.0	2.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	62.0	0.0	0.0	68.0	0.0	0.0	60.7	38.1	8.4	26.0	0.0	4.6
LnGrp LOS	E	A	A	E	A	A	E	D	A	C	A	A
Approach Vol, veh/h		21			69			872			745	
Approach Delay, s/veh		62.0			68.0			33.3			13.8	
Approach LOS		E			E			C			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	52.7	49.5		7.5	6.3	95.9		10.3				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	20.0	46.0		18.0	7.0	61.0		18.0				
Max Q Clear Time (g_c+1),s	17.3	45.0		3.4	2.8	10.1		6.7				
Green Ext Time (p_c), s	0.4	0.5		0.0	0.0	2.4		0.2				

Intersection Summary

HCM 6th Ctrl Delay	26.5
HCM 6th LOS	C

HCM 6th Signalized Intersection Summary
8: Redlands Blvd & Ironwood Ave

Alternative 2, Existing
PM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕		↕	↕	↕
Traffic Volume (veh/h)	100	19	19	4	11	6	12	683	6	3	694	183
Future Volume (veh/h)	100	19	19	4	11	6	12	683	6	3	694	183
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		0.99	1.00		0.99
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	103	20	20	4	11	6	12	704	6	3	715	189
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	174	34	34	18	49	27	39	899	8	10	878	740
Arrive On Green	0.14	0.14	0.14	0.05	0.05	0.05	0.02	0.48	0.48	0.01	0.46	0.46
Sat Flow, veh/h	1286	250	250	339	933	509	1810	1881	16	1810	1900	1601
Grp Volume(v), veh/h	143	0	0	21	0	0	12	0	710	3	715	189
Grp Sat Flow(s),veh/h/ln	786	0	0	1781	0	0	1810	0	1897	1810	1900	1601
Q Serve(g_s), s	3.7	0.0	0.0	0.6	0.0	0.0	0.3	0.0	15.2	0.1	15.8	3.5
Cycle Q Clear(g_c), s	3.7	0.0	0.0	0.6	0.0	0.0	0.3	0.0	15.2	0.1	15.8	3.5
Prop In Lane	0.72		0.14	0.19		0.29	1.00		0.01	1.00		1.00
Lane Grp Cap(c), veh/h	242	0	0	93	0	0	39	0	907	10	878	740
V/C Ratio(X)	0.59	0.00	0.00	0.22	0.00	0.00	0.31	0.00	0.78	0.29	0.81	0.26
Avail Cap(c_a), veh/h	880	0	0	950	0	0	260	0	1441	260	1443	1216
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	0.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	19.8	0.0	0.0	22.1	0.0	0.0	23.5	0.0	10.6	24.1	11.3	8.0
Incr Delay (d2), s/veh	2.3	0.0	0.0	1.2	0.0	0.0	4.4	0.0	1.5	14.7	1.9	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	0.0	0.0	0.2	0.0	0.0	0.2	0.0	3.9	0.1	4.2	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	22.1	0.0	0.0	23.3	0.0	0.0	27.9	0.0	12.1	38.8	13.2	8.2
LnGrp LOS	C	A	A	C	A	A	C	A	B	D	B	A
Approach Vol, veh/h		143			21			722			907	
Approach Delay, s/veh		22.1			23.3			12.4			12.2	
Approach LOS		C			C			B			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	4.3	27.3		10.6	5.0	26.5		6.6				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	37.0			24.0	7.0	37.0		26.0				
Max Q Clear Time (g_c+l),s	17.2			5.7	2.3	17.8		2.6				
Green Ext Time (p_c), s	0.0	4.1		0.6	0.0	4.7		0.0				

Intersection Summary

HCM 6th Ctrl Delay		13.2										
HCM 6th LOS			B									

Appendix G-2

Intersection LOS Worksheets for Alternative 2, 2025

HCM 6th Signalized Intersection Summary
 1: WLC Pkwy & Eucalyptus Ave

Alternative 2, 2025
 AM Peak Hour



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	20	70	70	1220	1100	10
Future Volume (veh/h)	20	70	70	1220	1100	10
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	28	97	97	1694	1528	14
Peak Hour Factor	0.72	0.72	0.72	0.72	0.72	0.72
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	165	147	533	2868	1599	713
Arrive On Green	0.09	0.09	0.29	0.79	0.15	0.15
Sat Flow, veh/h	1810	1610	1810	3705	3705	1610
Grp Volume(v), veh/h	28	97	97	1694	1528	14
Grp Sat Flow(s),veh/h/ln	1810	1610	1810	1805	1805	1610
Q Serve(g_s), s	1.0	4.1	2.8	12.7	29.4	0.5
Cycle Q Clear(g_c), s	1.0	4.1	2.8	12.7	29.4	0.5
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	165	147	533	2868	1599	713
V/C Ratio(X)	0.17	0.66	0.18	0.59	0.96	0.02
Avail Cap(c_a), veh/h	465	414	533	2868	1599	713
HCM Platoon Ratio	1.00	1.00	1.00	1.00	0.33	0.33
Upstream Filter(l)	1.00	1.00	1.00	1.00	0.72	0.72
Uniform Delay (d), s/veh	29.4	30.8	18.4	2.8	29.2	16.9
Incr Delay (d2), s/veh	0.5	5.0	0.2	0.9	11.2	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	0.4	3.8	1.0	0.4	16.1	0.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	29.8	35.8	18.6	3.7	40.4	16.9
LnGrp LOS	C	D	B	A	D	B
Approach Vol, veh/h	125			1791	1542	
Approach Delay, s/veh	34.4			4.5	40.2	
Approach LOS	C			A	D	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		59.6		10.4	24.6	35.0
Change Period (Y+Rc), s		4.0		4.0	4.0	4.0
Max Green Setting (Gmax), s		44.0		18.0	9.0	31.0
Max Q Clear Time (g_c+l1), s		14.7		6.1	4.8	31.4
Green Ext Time (p_c), s		14.4		0.2	0.1	0.0
Intersection Summary						
HCM 6th Ctrl Delay			21.5			
HCM 6th LOS			C			

Queues
1: WLC Pkwy & Eucalyptus Ave

Alternative 2, 2025
AM Peak Hour



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	20	70	70	1220	1100	10
Future Volume (vph)	20	70	70	1220	1100	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	300	0	300			100
Storage Lanes	1	1	1			0
Taper Length (ft)	25		25			
Right Turn on Red		Yes				Yes
Link Speed (mph)	30			55	55	
Link Distance (ft)	1499			3308	699	
Travel Time (s)	34.1			41.0	8.7	
Confl. Peds. (#/hr)						
Peak Hour Factor	0.72	0.72	0.72	0.72	0.72	0.72
Shared Lane Traffic (%)						
Lane Group Flow (vph)	28	97	97	1694	1528	14
v/c Ratio	0.14	0.37	0.45	0.57	0.63	0.01
Control Delay	29.6	11.5	35.6	3.9	10.0	3.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	29.6	11.5	35.6	3.9	10.0	3.6
Queue Length 50th (ft)	11	0	39	104	238	0
Queue Length 95th (ft)	26	22	64	117	178	m3
Internal Link Dist (ft)	1419			3228	619	
Turn Bay Length (ft)	300		300			100
Base Capacity (vph)	464	487	232	2963	2440	1096
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.06	0.20	0.42	0.57	0.63	0.01

Intersection Summary

Area Type: Other

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

HCM 6th Signalized Intersection Summary
 2: WLC Pkwy & SR-60 EB Ramps























Alternative 2, 2025
 AM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘		↗↗					↑↑↑	↗		↑↑	↗
Traffic Volume (veh/h)	70	0	820	0	0	0	0	980	260	0	290	10
Future Volume (veh/h)	70	0	820	0	0	0	0	980	260	0	290	10
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	0	1900				0	1900	1900	0	1900	1900
Adj Flow Rate, veh/h	83	0	976				0	1167	310	0	345	12
Peak Hour Factor	0.84	0.84	0.84				0.84	0.84	0.84	0.84	0.84	0.84
Percent Heavy Veh, %	0	0	0				0	0	0	0	0	0
Cap, veh/h	708	0	1108				0	3233	796	0	1786	796
Arrive On Green	0.39	0.00	0.39				0.00	0.33	0.33	0.00	0.99	0.99
Sat Flow, veh/h	1810	0	2834				0	6802	1610	0	3705	1610
Grp Volume(v), veh/h	83	0	976				0	1167	310	0	345	12
Grp Sat Flow(s),veh/h/ln	1810	0	1417				0	1634	1610	0	1805	1610
Q Serve(g_s), s	2.0	0.0	22.4				0.0	9.5	10.3	0.0	0.1	0.0
Cycle Q Clear(g_c), s	2.0	0.0	22.4				0.0	9.5	10.3	0.0	0.1	0.0
Prop In Lane	1.00		1.00				0.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h	708	0	1108				0	3233	796	0	1786	796
V/C Ratio(X)	0.12	0.00	0.88				0.00	0.36	0.39	0.00	0.19	0.02
Avail Cap(c_a), veh/h	827	0	1295				0	3233	796	0	1786	796
HCM Platoon Ratio	1.00	1.00	1.00				1.00	0.67	0.67	1.00	2.00	2.00
Upstream Filter(l)	1.00	0.00	1.00				0.00	0.80	0.80	0.00	0.98	0.98
Uniform Delay (d), s/veh	13.6	0.0	19.8				0.0	15.0	15.3	0.0	0.2	0.2
Incr Delay (d2), s/veh	0.1	0.0	6.6				0.0	0.3	1.1	0.0	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	0.0	7.7				0.0	3.0	3.5	0.0	0.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	13.7	0.0	26.4				0.0	15.2	16.4	0.0	0.4	0.2
LnGrp LOS	B	A	C				A	B	B	A	A	A
Approach Vol, veh/h		1059						1477			357	
Approach Delay, s/veh		25.4						15.5			0.4	
Approach LOS		C						B			A	
Timer - Assigned Phs		2		4			6					
Phs Duration (G+Y+Rc), s		38.6		31.4			38.6					
Change Period (Y+Rc), s		4.0		4.0			4.0					
Max Green Setting (Gmax), s		30.0		32.0			30.0					
Max Q Clear Time (g_c+l1), s		12.3		24.4			2.1					
Green Ext Time (p_c), s		7.9		3.0			2.0					
Intersection Summary												
HCM 6th Ctrl Delay			17.2									
HCM 6th LOS			B									

Queues
2: WLC Pkwy & SR-60 EB Ramps

Alternative 2, 2025
AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations			 					  			 	
Traffic Volume (vph)	70	0	820	0	0	0	0	980	260	0	290	10
Future Volume (vph)	70	0	820	0	0	0	0	980	260	0	290	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	300		250	0		0	250		250	0		600
Storage Lanes	1		0	0		0	2		0	0		1
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			55			55	
Link Distance (ft)		787			222			699			1284	
Travel Time (s)		17.9			5.0			8.7			15.9	
Confl. Peds. (#/hr)												
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Shared Lane Traffic (%)												
Lane Group Flow (vph)	83	0	976	0	0	0	0	1167	310	0	345	12
v/c Ratio	0.19		0.82					0.28	0.27		0.15	0.01
Control Delay	19.1		12.6					4.8	2.6		5.7	3.1
Queue Delay	0.0		0.0					0.0	0.0		0.0	0.0
Total Delay	19.1		12.6					4.8	2.6		5.7	3.1
Queue Length 50th (ft)	29		61					16	0		22	0
Queue Length 95th (ft)	45		82					114	70		50	m5
Internal Link Dist (ft)		707			142			619			1204	
Turn Bay Length (ft)	300		250						250			600
Base Capacity (vph)	825		1667					4226	1153		2334	1049
Starvation Cap Reductn	0		0					0	0		0	0
Spillback Cap Reductn	0		0					0	0		0	0
Storage Cap Reductn	0		0					0	0		0	0
Reduced v/c Ratio	0.10		0.59					0.28	0.27		0.15	0.01

Intersection Summary

Area Type: Other

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

HCM 6th Signalized Intersection Summary
 3: WLC Pkwy/Theodore St & SR-60 WB Ramps

Alternative 2, 2025
 AM Peak Hour



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	30	260	950	100	40	70
Future Volume (veh/h)	30	260	950	100	40	70
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	34	295	1080	114	45	80
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	181	1173	2207	2837	190	322
Arrive On Green	0.10	0.10	0.63	0.79	0.10	0.10
Sat Flow, veh/h	1810	1610	3510	3705	1900	1610
Grp Volume(v), veh/h	34	295	1080	114	45	80
Grp Sat Flow(s),veh/h/ln	1810	1610	1755	1805	1900	1610
Q Serve(g_s), s	1.2	0.0	11.5	0.5	1.5	2.9
Cycle Q Clear(g_c), s	1.2	0.0	11.5	0.5	1.5	2.9
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	181	1173	2207	2837	190	322
V/C Ratio(X)	0.19	0.25	0.49	0.04	0.24	0.25
Avail Cap(c_a), veh/h	465	1426	2207	2837	489	575
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	0.97	0.97	1.00	1.00
Uniform Delay (d), s/veh	28.9	3.2	7.0	1.7	29.0	23.6
Incr Delay (d2), s/veh	0.5	0.1	0.2	0.0	2.9	1.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	5.8	2.6	0.0	0.8	1.3
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	29.4	3.3	7.1	1.7	32.0	25.4
LnGrp LOS	C	A	A	A	C	C
Approach Vol, veh/h	329			1194	125	
Approach Delay, s/veh	6.0			6.6	27.8	
Approach LOS	A			A	C	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		59.0		11.0	48.0	11.0
Change Period (Y+Rc), s		4.0		4.0	4.0	4.0
Max Green Setting (Gmax), s		44.0		18.0	22.0	18.0
Max Q Clear Time (g_c+l1), s		2.5		3.2	13.5	4.9
Green Ext Time (p_c), s		0.6		1.0	2.9	0.3
Intersection Summary						
HCM 6th Ctrl Delay			8.1			
HCM 6th LOS			A			

Queues
3: WLC Pkwy/Theodore St & SR-60 WB Ramps

Alternative 2, 2025
AM Peak Hour



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	30	260	950	100	40	70
Future Volume (vph)	30	260	950	100	40	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	250			250
Storage Lanes	1	1	0			0
Taper Length (ft)	25		25			
Right Turn on Red		Yes				Yes
Link Speed (mph)	30			55	55	
Link Distance (ft)	724			1284	1648	
Travel Time (s)	16.5			15.9	20.4	
Confl. Peds. (#/hr)						
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Shared Lane Traffic (%)						
Lane Group Flow (vph)	34	295	1080	114	45	80
v/c Ratio	0.17	0.29	0.74	0.04	0.07	0.11
Control Delay	29.7	1.5	15.3	0.7	20.1	10.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	29.7	1.5	15.3	0.7	20.1	10.9
Queue Length 50th (ft)	14	0	201	1	14	16
Queue Length 95th (ft)	36	21	77	2	38	40
Internal Link Dist (ft)	644			1204	1568	
Turn Bay Length (ft)			250			250
Base Capacity (vph)	464	1030	1468	2949	634	757
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.07	0.29	0.74	0.04	0.07	0.11

Intersection Summary

Area Type:	Other
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Intersection						
Int Delay, s/veh	1.9					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↘↗		↑	↗↘	↘↗	↑
Traffic Vol, veh/h	10	20	90	10	30	100
Future Vol, veh/h	10	20	90	10	30	100
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	-	-	0	130	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	11	23	102	11	34	114






















Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	284	102	0	0	113	0
Stage 1	102	-	-	-	-	-
Stage 2	182	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	710	959	-	-	1489	-
Stage 1	927	-	-	-	-	-
Stage 2	854	-	-	-	-	-
Platoon blocked, %			-	-	-	-
Mov Cap-1 Maneuver	694	959	-	-	1489	-
Mov Cap-2 Maneuver	694	-	-	-	-	-
Stage 1	906	-	-	-	-	-
Stage 2	854	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.4	0	1.7
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	851	1489
HCM Lane V/C Ratio	-	-	0.04	0.023
HCM Control Delay (s)	-	-	9.4	7.5
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0.1

HCM 6th Signalized Intersection Summary
5: Redlands Blvd & Eucalyptus Ave

Alternative 2, 2025
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	60	0	30	10	1	20	80	500	40	60	400	130
Future Volume (veh/h)	60	0	30	10	1	20	80	500	40	60	400	130
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	65	0	33	11	1	22	87	543	43	65	435	141
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	166	299	267	37	169	151	201	999	79	166	740	238
Arrive On Green	0.09	0.00	0.17	0.02	0.09	0.09	0.11	0.29	0.29	0.09	0.28	0.28
Sat Flow, veh/h	1810	1805	1610	1810	1805	1610	1810	3389	268	1810	2687	863
Grp Volume(v), veh/h	65	0	33	11	1	22	87	289	297	65	291	285
Grp Sat Flow(s),veh/h/ln	1810	1805	1610	1810	1805	1610	1810	1805	1852	1810	1805	1745
Q Serve(g_s), s	1.3	0.0	0.7	0.2	0.0	0.5	1.7	5.0	5.0	1.3	5.2	5.3
Cycle Q Clear(g_c), s	1.3	0.0	0.7	0.2	0.0	0.5	1.7	5.0	5.0	1.3	5.2	5.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.14	1.00		0.49
Lane Grp Cap(c), veh/h	166	299	267	37	169	151	201	532	546	166	497	480
V/C Ratio(X)	0.39	0.00	0.12	0.30	0.01	0.15	0.43	0.54	0.54	0.39	0.59	0.59
Avail Cap(c_a), veh/h	339	868	775	339	868	775	339	868	891	1016	1544	1492
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	16.0	0.0	13.3	18.1	15.4	15.6	15.5	11.1	11.1	16.0	11.7	11.7
Incr Delay (d2), s/veh	1.5	0.0	0.2	4.5	0.0	0.4	1.5	0.9	0.8	1.5	1.1	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.0	0.2	0.1	0.0	0.2	0.6	1.3	1.3	0.4	1.4	1.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	17.5	0.0	13.5	22.6	15.4	16.0	17.0	11.9	11.9	17.5	12.8	12.9
LnGrp LOS	B	A	B	C	B	B	B	B	B	B	B	B
Approach Vol, veh/h		98			34			673			641	
Approach Delay, s/veh		16.2			18.1			12.6			13.3	
Approach LOS		B			B			B			B	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	7.4	15.0	4.8	10.2	8.2	14.3	7.4	7.5				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	21.0	18.0	7.0	18.0	7.0	32.0	7.0	18.0				
Max Q Clear Time (g_c+I1), s	3.3	7.0	2.2	2.7	3.7	7.3	3.3	2.5				
Green Ext Time (p_c), s	0.1	2.2	0.0	0.1	0.0	3.0	0.0	0.0				
Intersection Summary												
HCM 6th Ctrl Delay				13.3								
HCM 6th LOS				B								

HCM 6th Signalized Intersection Summary
6: Redlands Blvd & SR-60 EB Ramps

Alternative 2, 2025
AM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	330	0	90	0	0	0	0	520	60	0	500	90
Future Volume (veh/h)	330	0	90	0	0	0	0	520	60	0	500	90
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	1900				0	1900	1900	0	1900	1900
Adj Flow Rate, veh/h	369	0	62				0	536	62	0	515	93
Peak Hour Factor	0.97	0.97	0.97				0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0				0	0	0	0	0	0
Cap, veh/h	599	0	267				0	2370	1057	0	2370	1324
Arrive On Green	0.17	0.00	0.17				0.00	0.66	0.66	0.00	0.87	0.87
Sat Flow, veh/h	3619	0	1610				0	3705	1610	0	3705	1610
Grp Volume(v), veh/h	369	0	62				0	536	62	0	515	93
Grp Sat Flow(s),veh/h/ln	1810	0	1610				0	1805	1610	0	1805	1610
Q Serve(g_s), s	4.3	0.0	1.5				0.0	2.7	0.6	0.0	1.0	0.2
Cycle Q Clear(g_c), s	4.3	0.0	1.5				0.0	2.7	0.6	0.0	1.0	0.2
Prop In Lane	1.00		1.00				0.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h	599	0	267				0	2370	1057	0	2370	1324
V/C Ratio(X)	0.62	0.00	0.23				0.00	0.23	0.06	0.00	0.22	0.07
Avail Cap(c_a), veh/h	1448	0	644				0	2370	1057	0	2370	1324
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.33	1.33
Upstream Filter(l)	1.00	0.00	1.00				0.00	0.98	0.98	0.00	0.99	0.99
Uniform Delay (d), s/veh	17.4	0.0	16.3				0.0	3.1	2.8	0.0	1.0	0.3
Incr Delay (d2), s/veh	1.0	0.0	0.4				0.0	0.2	0.1	0.0	0.2	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	6	0.0	0.5				0.0	0.2	0.0	0.0	0.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	18.5	0.0	16.7				0.0	3.3	2.9	0.0	1.3	0.4
LnGrp LOS	B	A	B				A	A	A	A	A	A
Approach Vol, veh/h	431						598			608		
Approach Delay, s/veh	18.2						3.3			1.1		
Approach LOS	B						A			A		
Timer - Assigned Phs	2		4		6							
Phs Duration (G+Y+Rc), s	33.5		11.5		33.5							
Change Period (Y+Rc), s	4.0		4.0		4.0							
Max Green Setting (Gmax), s	19.0		18.0		19.0							
Max Q Clear Time (g_c+1), s	4.7		6.3		3.0							
Green Ext Time (p_c), s	2.8		1.2		2.9							

Intersection Summary

HCM 6th Ctrl Delay	6.4
HCM 6th LOS	A

Notes

User approved volume balancing among the lanes for turning movement.

HCM 6th Signalized Intersection Summary
7: Redlands Blvd & SR-60 WB Ramps

Alternative 2, 2025
AM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↖	↔	↗		↑↑	↗		↑↑	↗
Traffic Volume (veh/h)	0	0	0	100	0	280	0	640	210	0	490	460
Future Volume (veh/h)	0	0	0	100	0	280	0	640	210	0	490	460
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach				No		No		No		No		No
Adj Sat Flow, veh/h/ln				1900	1900	1900	0	1900	1900	0	1900	1900
Adj Flow Rate, veh/h				68	0	322	0	653	214	0	500	469
Peak Hour Factor				0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %				0	0	0	0	0	0	0	0	0
Cap, veh/h				294	0	523	0	2382	1063	0	2382	1063
Arrive On Green				0.16	0.00	0.16	0.00	0.66	0.66	0.00	0.66	0.66
Sat Flow, veh/h				1810	0	3220	0	3705	1610	0	3705	1610
Grp Volume(v), veh/h				68	0	322	0	653	214	0	500	469
Grp Sat Flow(s),veh/h/ln				1810	0	1610	0	1805	1610	0	1805	1610
Q Serve(g_s), s				1.5	0.0	4.2	0.0	3.4	2.3	0.0	2.5	6.3
Cycle Q Clear(g_c), s				1.5	0.0	4.2	0.0	3.4	2.3	0.0	2.5	6.3
Prop In Lane				1.00		1.00	0.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h				294	0	523	0	2382	1063	0	2382	1063
V/C Ratio(X)				0.23	0.00	0.62	0.00	0.27	0.20	0.00	0.21	0.44
Avail Cap(c_a), veh/h				724	0	1288	0	2382	1063	0	2382	1063
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.00	0.97	0.97	0.00	1.00	1.00
Uniform Delay (d), s/veh				16.4	0.0	17.5	0.0	3.2	3.0	0.0	3.0	3.7
Incr Delay (d2), s/veh				0.4	0.0	1.2	0.0	0.3	0.4	0.0	0.2	1.3
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				0.6	0.0	1.4	0.0	0.2	0.2	0.0	0.1	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				16.8	0.0	18.7	0.0	3.5	3.4	0.0	3.2	5.0
LnGrp LOS				B	A	B	A	A	A	A	A	A
Approach Vol, veh/h						390		867			969	
Approach Delay, s/veh						18.4		3.4			4.1	
Approach LOS						B		A			A	
Timer - Assigned Phs		2				6		8				
Phs Duration (G+Y+Rc), s		33.7				33.7		11.3				
Change Period (Y+Rc), s		4.0				4.0		4.0				
Max Green Setting (Gmax), s		19.0				19.0		18.0				
Max Q Clear Time (g_c+I1), s		5.4				8.3		6.2				
Green Ext Time (p_c), s		3.8				3.4		1.2				

Intersection Summary

HCM 6th Ctrl Delay	6.3
HCM 6th LOS	A

Notes

User approved volume balancing among the lanes for turning movement.

HCM 6th Signalized Intersection Summary
 8: Redlands Blvd & Ironwood Ave

Alternative 2, 2025
 AM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔↔			↔		↔	↔↔		↔	↔↔	
Traffic Volume (veh/h)	110	20	30	10	20	10	40	850	40	10	910	130
Future Volume (veh/h)	110	20	30	10	20	10	40	850	40	10	910	130
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		0.99	1.00		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	112	20	31	10	20	10	41	867	41	10	929	133
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	248	91	142	34	68	34	110	1586	75	33	1298	186
Arrive On Green	0.14	0.14	0.14	0.08	0.08	0.08	0.06	0.45	0.45	0.02	0.41	0.41
Sat Flow, veh/h	1810	667	1034	448	896	448	1810	3508	166	1810	3168	453
Grp Volume(v), veh/h	112	0	51	40	0	0	41	446	462	10	529	533
Grp Sat Flow(s),veh/h/ln	1810	0	1701	1791	0	0	1810	1805	1869	1810	1805	1816
Q Serve(g_s), s	2.9	0.0	1.3	1.1	0.0	0.0	1.1	9.1	9.1	0.3	12.4	12.4
Cycle Q Clear(g_c), s	2.9	0.0	1.3	1.1	0.0	0.0	1.1	9.1	9.1	0.3	12.4	12.4
Prop In Lane	1.00		0.61	0.25		0.25	1.00		0.09	1.00		0.25
Lane Grp Cap(c), veh/h	248	0	233	135	0	0	110	816	845	33	739	744
V/C Ratio(X)	0.45	0.00	0.22	0.30	0.00	0.00	0.37	0.55	0.55	0.30	0.72	0.72
Avail Cap(c_a), veh/h	861	0	809	923	0	0	251	1324	1371	251	1324	1333
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	20.0	0.0	19.4	22.0	0.0	0.0	22.8	10.1	10.1	24.4	12.4	12.4
Incr Delay (d2), s/veh	1.3	0.0	0.5	1.2	0.0	0.0	2.1	0.6	0.6	5.1	1.3	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	0.0	0.5	0.4	0.0	0.0	0.4	2.3	2.4	0.1	3.4	3.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	21.3	0.0	19.8	23.2	0.0	0.0	24.9	10.6	10.6	29.6	13.7	13.7
LnGrp LOS	C	A	B	C	A	A	C	B	B	C	B	B
Approach Vol, veh/h		163			40			949			1072	
Approach Delay, s/veh		20.8			23.2			11.2			13.9	
Approach LOS		C			C			B			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	4.9	26.8		10.9	7.1	24.7		7.8				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	37.0			24.0	7.0	37.0		26.0				
Max Q Clear Time (g_c+I), s	11.1			4.9	3.1	14.4		3.1				
Green Ext Time (p_c), s	0.0	5.2		0.7	0.0	6.2		0.1				
Intersection Summary												
HCM 6th Ctrl Delay				13.4								
HCM 6th LOS				B								

HCM 6th Signalized Intersection Summary
 1: WLC Pkwy & Eucalyptus Ave

Alternative 2, 2025
 PM Peak Hour



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	50	110	110	1040	1080	50
Future Volume (veh/h)	50	110	110	1040	1080	50
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	67	147	147	1387	1440	67
Peak Hour Factor	0.75	0.75	0.75	0.75	0.75	0.75
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	219	195	185	2760	2185	975
Arrive On Green	0.12	0.12	0.10	0.76	1.00	1.00
Sat Flow, veh/h	1810	1610	1810	3705	3705	1610
Grp Volume(v), veh/h	67	147	147	1387	1440	67
Grp Sat Flow(s),veh/h/ln	1810	1610	1810	1805	1805	1610
Q Serve(g_s), s	2.4	6.2	5.6	10.3	0.0	0.0
Cycle Q Clear(g_c), s	2.4	6.2	5.6	10.3	0.0	0.0
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	219	195	185	2760	2185	975
V/C Ratio(X)	0.31	0.75	0.80	0.50	0.66	0.07
Avail Cap(c_a), veh/h	465	414	207	2760	2185	975
HCM Platoon Ratio	1.00	1.00	1.00	1.00	2.00	2.00
Upstream Filter(l)	1.00	1.00	1.00	1.00	0.70	0.70
Uniform Delay (d), s/veh	28.1	29.7	30.7	3.2	0.0	0.0
Incr Delay (d2), s/veh	0.8	5.8	17.5	0.7	1.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	5.7	3.0	0.9	0.3	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	28.8	35.5	48.2	3.8	1.1	0.1
LnGrp LOS	C	D	D	A	A	A
Approach Vol, veh/h	214			1534	1507	
Approach Delay, s/veh	33.4			8.1	1.1	
Approach LOS	C			A	A	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		57.5		12.5	11.1	46.4
Change Period (Y+Rc), s		4.0		4.0	4.0	4.0
Max Green Setting (Gmax), s		44.0		18.0	8.0	32.0
Max Q Clear Time (g_c+l1), s		12.3		8.2	7.6	2.0
Green Ext Time (p_c), s		11.1		0.4	0.0	11.8
Intersection Summary						
HCM 6th Ctrl Delay			6.5			
HCM 6th LOS			A			

Queues
1: WLC Pkwy & Eucalyptus Ave

Alternative 2, 2025
PM Peak Hour



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	50	110	110	1040	1080	50
Future Volume (vph)	50	110	110	1040	1080	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	300	0	300			100
Storage Lanes	1	1	1			0
Taper Length (ft)	25		25			
Right Turn on Red		Yes				Yes
Link Speed (mph)	30			55	55	
Link Distance (ft)	1499			3308	699	
Travel Time (s)	34.1			41.0	8.7	
Confl. Peds. (#/hr)						
Peak Hour Factor	0.75	0.75	0.75	0.75	0.75	0.75
Shared Lane Traffic (%)						
Lane Group Flow (vph)	67	147	147	1387	1440	67
v/c Ratio	0.31	0.46	0.51	0.47	0.69	0.07
Control Delay	31.5	10.4	32.4	3.6	15.3	4.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	31.5	10.4	32.4	3.6	15.3	4.9
Queue Length 50th (ft)	27	0	58	82	191	0
Queue Length 95th (ft)	49	27	85	103	305	m20
Internal Link Dist (ft)	1419			3228	619	
Turn Bay Length (ft)	300		300			100
Base Capacity (vph)	464	524	294	2920	2090	963
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.14	0.28	0.50	0.47	0.69	0.07

Intersection Summary

Area Type: Other

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

HCM 6th Signalized Intersection Summary
 2: WLC Pkwy & SR-60 EB Ramps























Alternative 2, 2025
 PM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘		↗↗					↑↑↑	↗		↑↑	↗
Traffic Volume (veh/h)	10	0	870	0	0	0	0	820	270	0	260	40
Future Volume (veh/h)	10	0	870	0	0	0	0	820	270	0	260	40
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No					No		No			No
Adj Sat Flow, veh/h/ln	1900	0	1900				0	1900	1900	0	1900	1900
Adj Flow Rate, veh/h	11	0	1000				0	943	310	0	299	46
Peak Hour Factor	0.87	0.87	0.87				0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	0	0	0				0	0	0	0	0	0
Cap, veh/h	730	0	1144				0	3152	776	0	1741	776
Arrive On Green	0.40	0.00	0.40				0.00	0.96	0.96	0.00	0.48	0.48
Sat Flow, veh/h	1810	0	2834				0	6802	1610	0	3705	1610
Grp Volume(v), veh/h	11	0	1000				0	943	310	0	299	46
Grp Sat Flow(s),veh/h/ln	1810	0	1417				0	1634	1610	0	1805	1610
Q Serve(g_s), s	0.3	0.0	22.8				0.0	0.5	0.8	0.0	3.3	1.1
Cycle Q Clear(g_c), s	0.3	0.0	22.8				0.0	0.5	0.8	0.0	3.3	1.1
Prop In Lane	1.00		1.00				0.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h	730	0	1144				0	3152	776	0	1741	776
V/C Ratio(X)	0.02	0.00	0.87				0.00	0.30	0.40	0.00	0.17	0.06
Avail Cap(c_a), veh/h	905	0	1417				0	3152	776	0	1741	776
HCM Platoon Ratio	1.00	1.00	1.00				1.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	0.00	1.00				0.00	0.88	0.88	0.00	0.84	0.84
Uniform Delay (d), s/veh	12.5	0.0	19.2				0.0	0.7	0.7	0.0	10.2	9.7
Incr Delay (d2), s/veh	0.0	0.0	5.4				0.0	0.2	1.3	0.0	0.2	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	0.1	0.0	7.6				0.0	0.1	0.4	0.0	1.0	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	12.5	0.0	24.6				0.0	0.9	2.0	0.0	10.4	9.8
LnGrp LOS	B	A	C				A	A	A	A	B	A
Approach Vol, veh/h		1011						1253			345	
Approach Delay, s/veh		24.5						1.2			10.3	
Approach LOS		C						A			B	
Timer - Assigned Phs		2		4			6					
Phs Duration (G+Y+Rc), s		37.8		32.2			37.8					
Change Period (Y+Rc), s		4.0		4.0			4.0					
Max Green Setting (Gmax), s		27.0		35.0			27.0					
Max Q Clear Time (g_c+l1), s		2.8		24.8			5.3					
Green Ext Time (p_c), s		7.2		3.5			1.7					
Intersection Summary												
HCM 6th Ctrl Delay			11.4									
HCM 6th LOS			B									

Queues
2: WLC Pkwy & SR-60 EB Ramps

Alternative 2, 2025
PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations			 					  			 	
Traffic Volume (vph)	10	0	870	0	0	0	0	820	270	0	260	40
Future Volume (vph)	10	0	870	0	0	0	0	820	270	0	260	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	300		250	0		0	250		250	0		600
Storage Lanes	1		0	0		0	2		0	0		1
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			55			55	
Link Distance (ft)		816			222			699			1284	
Travel Time (s)		18.5			5.0			8.7			15.9	
Confl. Peds. (#/hr)												
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Shared Lane Traffic (%)												
Lane Group Flow (vph)	11	0	1000	0	0	0	0	943	310	0	299	46
v/c Ratio	0.03		0.82					0.22	0.27		0.13	0.04
Control Delay	15.7		12.4					5.6	1.3		3.8	0.5
Queue Delay	0.0		0.0					0.0	0.0		0.0	0.0
Total Delay	15.7		12.4					5.6	1.3		3.8	0.5
Queue Length 50th (ft)	4		60					39	0		15	0
Queue Length 95th (ft)	12		93					58	16		33	m1
Internal Link Dist (ft)		736			142			619			1204	
Turn Bay Length (ft)	300		250						250			600
Base Capacity (vph)	902		1774					4218	1152		2329	1058
Starvation Cap Reductn	0		0					0	0		0	0
Spillback Cap Reductn	0		0					0	0		0	0
Storage Cap Reductn	0		0					0	0		0	0
Reduced v/c Ratio	0.01		0.56					0.22	0.27		0.13	0.04

Intersection Summary

Area Type: Other

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

HCM 6th Signalized Intersection Summary
 3: WLC Pkwy/Theodore St & SR-60 WB Ramps

Alternative 2, 2025
 PM Peak Hour



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	20	210	730	100	90	20
Future Volume (veh/h)	20	210	730	100	90	20
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	29	309	1074	147	132	29
Peak Hour Factor	0.68	0.68	0.68	0.68	0.68	0.68
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	396	353	1783	2407	194	517
Arrive On Green	0.22	0.22	0.51	0.67	0.10	0.10
Sat Flow, veh/h	1810	1610	3510	3705	1900	1610
Grp Volume(v), veh/h	29	309	1074	147	132	29
Grp Sat Flow(s),veh/h/ln	1810	1610	1755	1805	1900	1610
Q Serve(g_s), s	0.9	13.0	15.2	1.0	4.7	0.9
Cycle Q Clear(g_c), s	0.9	13.0	15.2	1.0	4.7	0.9
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	396	353	1783	2407	194	517
V/C Ratio(X)	0.07	0.88	0.60	0.06	0.68	0.06
Avail Cap(c_a), veh/h	465	414	1783	2407	489	767
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	0.98	0.98	1.00	1.00
Uniform Delay (d), s/veh	21.7	26.4	12.2	4.1	30.3	16.4
Incr Delay (d2), s/veh	0.1	16.8	0.6	0.0	17.7	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	12.3	4.5	0.2	2.9	0.4
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	21.8	43.2	12.8	4.1	48.1	16.6
LnGrp LOS	C	D	B	A	D	B
Approach Vol, veh/h	338			1221	161	
Approach Delay, s/veh	41.4			11.7	42.4	
Approach LOS	D			B	D	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		50.7		19.3	39.5	11.1
Change Period (Y+Rc), s		4.0		4.0	4.0	4.0
Max Green Setting (Gmax), s		44.0		18.0	22.0	18.0
Max Q Clear Time (g_c+l1), s		3.0		15.0	17.2	6.7
Green Ext Time (p_c), s		0.8		0.4	2.0	0.4
Intersection Summary						
HCM 6th Ctrl Delay			20.4			
HCM 6th LOS			C			

Queues

Alternative 2, 2025

3: WLC Pkwy/Theodore St & SR-60 WB Ramps

PM Peak Hour



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	20	210	730	100	90	20
Future Volume (vph)	20	210	730	100	90	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	250			250
Storage Lanes	1	1	0			0
Taper Length (ft)	25		25			
Right Turn on Red		Yes				Yes
Link Speed (mph)	30			55	55	
Link Distance (ft)	874			1284	1648	
Travel Time (s)	19.9			15.9	20.4	
Confl. Peds. (#/hr)						
Peak Hour Factor	0.68	0.68	0.68	0.68	0.68	0.68
Shared Lane Traffic (%)						
Lane Group Flow (vph)	29	309	1074	147	132	29
v/c Ratio	0.13	0.65	0.79	0.05	0.22	0.04
Control Delay	27.1	10.8	17.5	1.2	20.4	7.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	27.1	10.8	17.5	1.2	20.4	7.5
Queue Length 50th (ft)	12	0	142	1	41	4
Queue Length 95th (ft)	23	15	127	6	65	11
Internal Link Dist (ft)	794			1204	1568	
Turn Bay Length (ft)			250			250
Base Capacity (vph)	464	644	1357	2746	603	808
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.06	0.48	0.79	0.05	0.22	0.04

Intersection Summary

Area Type:	Other
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Intersection						
Int Delay, s/veh	2.4					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔		↑	↗	↘	↑
Traffic Vol, veh/h	10	30	90	10	20	70
Future Vol, veh/h	10	30	90	10	20	70
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	-	-	0	130	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	64	64	64	64	64	64
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	16	47	141	16	31	109

























Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	312	141	0	0	157	0
Stage 1	141	-	-	-	-	-
Stage 2	171	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	685	912	-	-	1435	-
Stage 1	891	-	-	-	-	-
Stage 2	864	-	-	-	-	-
Platoon blocked, %			-	-	-	-
Mov Cap-1 Maneuver	670	912	-	-	1435	-
Mov Cap-2 Maneuver	670	-	-	-	-	-
Stage 1	871	-	-	-	-	-
Stage 2	864	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.7	0	1.7
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	836	1435
HCM Lane V/C Ratio	-	-	0.075	0.022
HCM Control Delay (s)	-	-	9.7	7.6
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	0.2	0.1

HCM 6th Signalized Intersection Summary
5: Redlands Blvd & Eucalyptus Ave

Alternative 2, 2025
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 			 			 	
Traffic Volume (veh/h)	140	10	40	30	1	100	20	470	20	80	600	80
Future Volume (veh/h)	140	10	40	30	1	100	20	470	20	80	600	80
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	144	10	41	31	1	103	21	485	21	82	619	82
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	245	419	373	91	266	237	66	831	36	185	967	128
Arrive On Green	0.14	0.23	0.23	0.05	0.15	0.15	0.04	0.24	0.24	0.10	0.30	0.30
Sat Flow, veh/h	1810	1805	1610	1810	1805	1610	1810	3525	152	1810	3205	424
Grp Volume(v), veh/h	144	10	41	31	1	103	21	248	258	82	348	353
Grp Sat Flow(s),veh/h/ln	1810	1805	1610	1810	1805	1610	1810	1805	1873	1810	1805	1824
Q Serve(g_s), s	3.2	0.2	0.8	0.7	0.0	2.5	0.5	5.1	5.2	1.8	7.0	7.1
Cycle Q Clear(g_c), s	3.2	0.2	0.8	0.7	0.0	2.5	0.5	5.1	5.2	1.8	7.0	7.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.08	1.00		0.23
Lane Grp Cap(c), veh/h	245	419	373	91	266	237	66	425	441	185	545	551
V/C Ratio(X)	0.59	0.02	0.11	0.34	0.00	0.43	0.32	0.58	0.58	0.44	0.64	0.64
Avail Cap(c_a), veh/h	300	771	687	300	771	687	300	771	799	901	1370	1384
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	17.1	12.5	12.8	19.3	15.3	16.4	19.8	14.3	14.3	17.8	12.7	12.7
Incr Delay (d2), s/veh	2.2	0.0	0.1	2.2	0.0	1.3	2.8	1.3	1.2	1.7	1.3	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	0.1	0.3	0.3	0.0	0.9	0.2	1.6	1.6	0.6	2.0	2.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	19.4	12.5	12.9	21.5	15.3	17.6	22.6	15.6	15.5	19.4	14.0	14.0
LnGrp LOS	B	B	B	C	B	B	C	B	B	B	B	B
Approach Vol, veh/h		195			135			527			783	
Approach Delay, s/veh		17.7			18.5			15.8			14.6	
Approach LOS		B			B			B			B	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	8.3	13.9	6.1	13.8	5.5	16.7	9.7	10.2				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	21.0	18.0	7.0	18.0	7.0	32.0	7.0	18.0				
Max Q Clear Time (g_c+I1), s	3.8	7.2	2.7	2.8	2.5	9.1	5.2	4.5				
Green Ext Time (p_c), s	0.1	1.9	0.0	0.2	0.0	3.7	0.1	0.4				
Intersection Summary												
HCM 6th Ctrl Delay				15.7								
HCM 6th LOS				B								

HCM 6th Signalized Intersection Summary
6: Redlands Blvd & SR-60 EB Ramps

Alternative 2, 2025
PM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	520	0	340	0	0	0	0	640	70	0	420	290
Future Volume (veh/h)	520	0	340	0	0	0	0	640	70	0	420	290
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	1900				0	1900	1900	0	1900	1900
Adj Flow Rate, veh/h	652	0	236				0	667	73	0	438	302
Peak Hour Factor	0.96	0.96	0.96				0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0				0	0	0	0	0	0
Cap, veh/h	942	0	419				0	2029	905	0	2029	1324
Arrive On Green	0.26	0.00	0.26				0.00	0.56	0.56	0.00	1.00	1.00
Sat Flow, veh/h	3619	0	1610				0	3705	1610	0	3705	1610
Grp Volume(v), veh/h	652	0	236				0	667	73	0	438	302
Grp Sat Flow(s),veh/h/ln	1810	0	1610				0	1805	1610	0	1805	1610
Q Serve(g_s), s	7.3	0.0	5.7				0.0	4.5	0.9	0.0	0.0	0.0
Cycle Q Clear(g_c), s	7.3	0.0	5.7				0.0	4.5	0.9	0.0	0.0	0.0
Prop In Lane	1.00		1.00				0.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h	942	0	419				0	2029	905	0	2029	1324
V/C Ratio(X)	0.69	0.00	0.56				0.00	0.33	0.08	0.00	0.22	0.23
Avail Cap(c_a), veh/h	1448	0	644				0	2029	905	0	2029	1324
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	2.00	2.00
Upstream Filter(l)	1.00	0.00	1.00				0.00	0.88	0.88	0.00	0.97	0.97
Uniform Delay (d), s/veh	15.0	0.0	14.4				0.0	5.3	4.5	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.9	0.0	1.2				0.0	0.4	0.2	0.0	0.2	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.6	0.0	1.9				0.0	0.7	0.2	0.0	0.1	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	15.9	0.0	15.6				0.0	5.7	4.7	0.0	0.2	0.4
LnGrp LOS	B	A	B				A	A	A	A	A	A
Approach Vol, veh/h	888						740			740		
Approach Delay, s/veh	15.9						5.6			0.3		
Approach LOS	B						A			A		
Timer - Assigned Phs	2		4		6							
Phs Duration (G+Y+Rc), s	29.3		15.7		29.3							
Change Period (Y+Rc), s	4.0		4.0		4.0							
Max Green Setting (Gmax), s	19.0		18.0		19.0							
Max Q Clear Time (g_c+1), s	6.5		9.3		2.0							
Green Ext Time (p_c), s	3.3		2.4		3.2							

Intersection Summary

HCM 6th Ctrl Delay	7.8
HCM 6th LOS	A

Notes

User approved volume balancing among the lanes for turning movement.

HCM 6th Signalized Intersection Summary
 7: Redlands Blvd & SR-60 WB Ramps

Alternative 2, 2025
 PM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↙	↔	↗		↑↑	↗		↑↑	↗
Traffic Volume (veh/h)	0	0	0	50	0	100	0	900	260	0	660	360
Future Volume (veh/h)	0	0	0	50	0	100	0	900	260	0	660	360
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach				No		No		No		No		No
Adj Sat Flow, veh/h/ln				1900	1900	1900	0	1900	1900	0	1900	1900
Adj Flow Rate, veh/h				35	0	125	0	957	277	0	702	383
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				243	0	433	0	2483	1324	0	2483	1107
Arrive On Green				0.13	0.00	0.13	0.00	0.23	0.23	0.00	0.69	0.69
Sat Flow, veh/h				1810	0	3220	0	3705	1610	0	3705	1610
Grp Volume(v), veh/h				35	0	125	0	957	277	0	702	383
Grp Sat Flow(s),veh/h/ln				1810	0	1610	0	1805	1610	0	1805	1610
Q Serve(g_s), s				0.8	0.0	1.6	0.0	10.1	3.6	0.0	3.4	4.4
Cycle Q Clear(g_c), s				0.8	0.0	1.6	0.0	10.1	3.6	0.0	3.4	4.4
Prop In Lane				1.00		1.00	0.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h				243	0	433	0	2483	1324	0	2483	1107
V/C Ratio(X)				0.14	0.00	0.29	0.00	0.39	0.21	0.00	0.28	0.35
Avail Cap(c_a), veh/h				724	0	1288	0	2483	1324	0	2483	1107
HCM Platoon Ratio				1.00	1.00	1.00	1.00	0.33	0.33	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.00	0.90	0.90	0.00	1.00	1.00
Uniform Delay (d), s/veh				17.2	0.0	17.5	0.0	9.3	2.6	0.0	2.7	2.9
Incr Delay (d2), s/veh				0.3	0.0	0.4	0.0	0.4	0.3	0.0	0.3	0.9
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				0.3	0.0	0.5	0.0	0.1	0.1	0.0	0.1	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				17.5	0.0	17.9	0.0	9.7	2.9	0.0	3.0	3.7
LnGrp LOS				B	A	B	A	A	A	A	A	A
Approach Vol, veh/h						160		1234			1085	
Approach Delay, s/veh						17.8		8.2			3.3	
Approach LOS						B		A			A	
Timer - Assigned Phs		2				6		8				
Phs Duration (G+Y+Rc), s		34.9				34.9		10.1				
Change Period (Y+Rc), s		4.0				4.0		4.0				
Max Green Setting (Gmax), s		19.0				19.0		18.0				
Max Q Clear Time (g_c+I1), s		12.1				6.4		3.6				
Green Ext Time (p_c), s		3.7				4.5		0.4				

Intersection Summary

HCM 6th Ctrl Delay	6.7
HCM 6th LOS	A

Notes

User approved volume balancing among the lanes for turning movement.

HCM 6th Signalized Intersection Summary
8: Redlands Blvd & Ironwood Ave

Alternative 2, 2025
PM Peak Hour


























Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔↔			↔		↔	↔↔		↔	↔↔	
Traffic Volume (veh/h)	110	50	20	10	30	30	20	990	20	20	1020	190
Future Volume (veh/h)	110	50	20	10	30	30	20	990	20	20	1020	190
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		0.99	1.00		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	113	52	21	10	31	31	21	1021	21	21	1052	196
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	234	166	67	24	74	74	63	1639	34	63	1377	256
Arrive On Green	0.13	0.13	0.13	0.10	0.10	0.10	0.03	0.45	0.45	0.03	0.45	0.45
Sat Flow, veh/h	1810	1282	518	242	750	750	1810	3617	74	1810	3037	564
Grp Volume(v), veh/h	113	0	73	72	0	0	21	510	532	21	624	624
Grp Sat Flow(s),veh/h/ln	1810	0	1800	1742	0	0	1810	1805	1886	1810	1805	1796
Q Serve(g_s), s	3.3	0.0	2.1	2.2	0.0	0.0	0.6	12.1	12.1	0.6	16.3	16.4
Cycle Q Clear(g_c), s	3.3	0.0	2.1	2.2	0.0	0.0	0.6	12.1	12.1	0.6	16.3	16.4
Prop In Lane	1.00		0.29	0.14		0.43	1.00		0.04	1.00		0.31
Lane Grp Cap(c), veh/h	234	0	233	172	0	0	63	818	855	63	818	814
V/C Ratio(X)	0.48	0.00	0.31	0.42	0.00	0.00	0.33	0.62	0.62	0.33	0.76	0.77
Avail Cap(c_a), veh/h	770	0	766	803	0	0	225	1184	1238	225	1184	1179
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.8	0.0	22.3	23.9	0.0	0.0	26.6	11.7	11.7	26.6	12.9	12.9
Incr Delay (d2), s/veh	1.5	0.0	0.8	1.6	0.0	0.0	3.1	0.8	0.7	3.1	1.8	1.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	0.0	0.8	0.8	0.0	0.0	0.3	3.4	3.5	0.3	4.8	4.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	24.3	0.0	23.0	25.5	0.0	0.0	29.6	12.5	12.5	29.6	14.7	14.8
LnGrp LOS	C	A	C	C	A	A	C	B	B	C	B	B
Approach Vol, veh/h		186			72			1063			1269	
Approach Delay, s/veh		23.8			25.5			12.8			15.0	
Approach LOS		C			C			B			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.0	29.6		11.3	6.0	29.6		9.6				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	37.0			24.0	7.0	37.0		26.0				
Max Q Clear Time (g_c+I), s	14.1			5.3	2.6	18.4		4.2				
Green Ext Time (p_c), s	0.0	6.0		0.8	0.0	7.2		0.2				
Intersection Summary												
HCM 6th Ctrl Delay				15.0								
HCM 6th LOS				B								

Appendix G-3

Intersection LOS Worksheets for Alternative 2, 2045

HCM 6th Signalized Intersection Summary
1: WLC Pkwy & Eucalyptus Avenue

Alternative 2, 2045
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	50	0	140	190	10	80	160	1570	50	10	1280	40
Future Volume (veh/h)	50	0	140	190	10	80	160	1570	50	10	1280	40
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	0	194	264	14	111	222	2181	69	14	1778	56
Peak Hour Factor	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	93	0	176	253	26	208	365	2118	945	393	1794	800
Arrive On Green	0.05	0.00	0.05	0.14	0.14	0.14	0.20	0.59	0.59	0.22	0.99	0.99
Sat Flow, veh/h	1810	0	3220	1810	183	1455	1810	3610	1610	3510	3610	1610
Grp Volume(v), veh/h	69	0	194	264	0	125	222	2181	69	14	1778	56
Grp Sat Flow(s),veh/h/ln	1810	0	1610	1810	0	1638	1810	1805	1610	1755	1805	1610
Q Serve(g_s), s	5.6	0.0	6.0	21.0	0.0	10.6	16.7	88.0	1.5	0.5	31.3	0.0
Cycle Q Clear(g_c), s	5.6	0.0	6.0	21.0	0.0	10.6	16.7	88.0	1.5	0.5	31.3	0.0
Prop In Lane	1.00		1.00	1.00		0.89	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	93	0	176	253	0	235	365	2118	945	393	1794	800
V/C Ratio(X)	0.74	0.00	1.10	1.04	0.00	0.53	0.61	1.03	0.07	0.04	0.99	0.07
Avail Cap(c_a), veh/h	217	0	386	253	0	235	365	2118	945	393	1829	816
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	0.93	0.00	0.93	1.00	0.00	1.00	1.00	1.00	1.00	0.74	0.74	0.74
Uniform Delay (d), s/veh	70.1	0.0	37.8	64.5	0.0	59.6	54.5	31.0	3.8	51.9	0.3	0.1
Incr Delay (d2), s/veh	10.2	0.0	62.3	68.0	0.0	2.3	2.9	27.7	0.2	0.0	16.4	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.9	0.0	3.9	14.5	0.0	4.6	7.7	42.0	1.0	0.2	4.3	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	80.3	0.0	100.1	132.5	0.0	61.9	57.4	58.7	3.9	51.9	16.7	0.3
LnGrp LOS	F	A	F	F	A	E	E	F	A	D	B	A
Approach Vol, veh/h		263			389			2472			1848	
Approach Delay, s/veh		94.9			109.8			57.0			16.5	
Approach LOS		F			F			E			B	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	20.7	92.0	25.0	12.3	45.4	67.3	11.7	25.6				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	7.0	88.0	21.0	18.0	19.0	76.0	18.0	21.0				
Max Q Clear Time (g_c+I1), s	2.5	90.0	23.0	8.0	18.7	33.3	7.6	12.6				
Green Ext Time (p_c), s	0.0	0.0	0.0	0.5	0.0	18.7	0.1	0.4				

Intersection Summary
























HCM 6th Ctrl Delay	48.1
HCM 6th LOS	D

Notes

- User approved pedestrian interval to be less than phase max green.
- User approved volume balancing among the lanes for turning movement.

Queues
1: WLC Pkwy & Eucalyptus Avenue

Alternative 2, 2045
AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	50	0	140	190	10	80	160	1570	50	10	1280	40
Future Volume (vph)	50	0	140	190	10	80	160	1570	50	10	1280	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	300		0	250		0	300		250	300		200
Storage Lanes	1		1	1		0	1		1	2		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			55			55	
Link Distance (ft)		5291			1314			3301			699	
Travel Time (s)		120.3			29.9			40.9			8.7	
Confl. Peds. (#/hr)												
Peak Hour Factor	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72
Shared Lane Traffic (%)			50%									
Lane Group Flow (vph)	69	97	97	264	125	0	222	2181	69	14	1778	56
v/c Ratio	0.51	0.41	0.41	1.00	0.39		0.94	0.87	0.06	0.09	0.87	0.06
Control Delay	79.7	5.3	5.3	117.4	18.1		109.7	23.2	2.3	72.2	30.9	0.7
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	7.7	0.0
Total Delay	79.7	5.3	5.3	117.4	18.1		109.7	23.2	2.3	72.2	38.5	0.7
Queue Length 50th (ft)	66	0	0	~279	13		220	685	1	6	702	0
Queue Length 95th (ft)	93	0	0	#320	41		#267	630	11	m13	521	1
Internal Link Dist (ft)		5211			1234			3221			619	
Turn Bay Length (ft)	300			250			300		250	300		200
Base Capacity (vph)	216	334	334	265	359		235	2512	1143	163	2050	958
Starvation Cap Reductn	0	0	0	0	0		0	0	0	0	252	0
Spillback Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.32	0.29	0.29	1.00	0.35		0.94	0.87	0.06	0.09	0.99	0.06

Intersection Summary

Area Type: Other

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

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

HCM 6th Signalized Intersection Summary
 2: WLC Pkwy & SR-60 EB Ramps























Alternative 2, 2045
 AM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	270	0	870	0	0	0	0	1360	340	0	460	120
Future Volume (veh/h)	270	0	870	0	0	0	0	1360	340	0	460	120
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	0	1900				0	1900	1900	0	1900	1900
Adj Flow Rate, veh/h	321	0	1036				0	1619	405	0	548	143
Peak Hour Factor	0.84	0.84	0.84				0.84	0.84	0.84	0.84	0.84	0.84
Percent Heavy Veh, %	0	0	0				0	0	0	0	0	0
Cap, veh/h	758	0	1187				0	3101	764	0	1713	764
Arrive On Green	0.42	0.00	0.42				0.00	0.95	0.95	0.00	0.95	0.95
Sat Flow, veh/h	1810	0	2834				0	6802	1610	0	3705	1610
Grp Volume(v), veh/h	321	0	1036				0	1619	405	0	548	143
Grp Sat Flow(s),veh/h/ln	1810	0	1417				0	1634	1610	0	1805	1610
Q Serve(g_s), s	9.4	0.0	25.1				0.0	1.9	1.9	0.0	0.8	0.4
Cycle Q Clear(g_c), s	9.4	0.0	25.1				0.0	1.9	1.9	0.0	0.8	0.4
Prop In Lane	1.00		1.00				0.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h	758	0	1187				0	3101	764	0	1713	764
V/C Ratio(X)	0.42	0.00	0.87				0.00	0.52	0.53	0.00	0.32	0.19
Avail Cap(c_a), veh/h	893	0	1398				0	3101	764	0	1713	764
HCM Platoon Ratio	1.00	1.00	1.00				1.00	2.00	2.00	1.00	2.00	2.00
Upstream Filter(l)	1.00	0.00	1.00				0.00	0.40	0.40	0.00	0.92	0.92
Uniform Delay (d), s/veh	15.4	0.0	20.0				0.0	1.1	1.1	0.0	1.0	1.0
Incr Delay (d2), s/veh	0.4	0.0	5.6				0.0	0.3	1.1	0.0	0.5	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/l	3.7	0.0	8.5				0.0	0.3	0.5	0.0	0.3	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	15.8	0.0	25.6				0.0	1.3	2.1	0.0	1.5	1.5
LnGrp LOS	B	A	C				A	A	A	A	A	A
Approach Vol, veh/h		1357						2024			691	
Approach Delay, s/veh		23.3						1.5			1.5	
Approach LOS		C						A			A	
Timer - Assigned Phs		2		4				6				
Phs Duration (G+Y+Rc), s		39.6		35.4				39.6				
Change Period (Y+Rc), s		4.0		4.0				4.0				
Max Green Setting (Gmax), s		30.0		37.0				30.0				
Max Q Clear Time (g_c+l1), s		3.9		27.1				2.8				
Green Ext Time (p_c), s		14.1		4.3				3.7				
Intersection Summary												
HCM 6th Ctrl Delay			8.7									
HCM 6th LOS			A									

Queues
2: WLC Pkwy & SR-60 EB Ramps

Alternative 2, 2045
AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations			 					  			 	
Traffic Volume (vph)	270	0	870	0	0	0	0	1360	340	0	460	120
Future Volume (vph)	270	0	870	0	0	0	0	1360	340	0	460	120
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	300		250	0		0	250		250	0		600
Storage Lanes	1		0	0		0	2		0	0		1
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			55			55	
Link Distance (ft)		1959			402			699			1302	
Travel Time (s)		44.5			9.1			8.7			16.1	
Confl. Peds. (#/hr)												
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Shared Lane Traffic (%)												
Lane Group Flow (vph)	321	0	1036	0	0	0	0	1619	405	0	548	143
v/c Ratio	0.46		0.80					0.49	0.40		0.30	0.16
Control Delay	18.4		18.5					11.9	4.1		10.7	2.2
Queue Delay	0.0		0.1					0.0	0.0		0.1	0.0
Total Delay	18.4		18.6					11.9	4.1		10.8	2.2
Queue Length 50th (ft)	107		164					166	15		63	0
Queue Length 95th (ft)	130		172					245	m95		102	18
Internal Link Dist (ft)		1879			322			619			1222	
Turn Bay Length (ft)	300		250						250			600
Base Capacity (vph)	890		1563					3320	1019		1834	890
Starvation Cap Reductn	0		0					0	0		0	0
Spillback Cap Reductn	0		69					0	0		230	0
Storage Cap Reductn	0		0					0	0		0	0
Reduced v/c Ratio	0.36		0.69					0.49	0.40		0.34	0.16

Intersection Summary

Area Type: Other

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

HCM 6th Signalized Intersection Summary
 3: WLC Pkwy/Theodore St & SR-60 WB Ramps

Alternative 2, 2045
 AM Peak Hour



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	60	500	1060	570	80	570
Future Volume (veh/h)	60	500	1060	570	80	570
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	68	568	1205	648	91	648
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	169	966	1779	2888	456	537
Arrive On Green	0.09	0.09	0.85	1.00	0.24	0.24
Sat Flow, veh/h	1810	1610	3510	3705	1900	1610
Grp Volume(v), veh/h	68	568	1205	648	91	648
Grp Sat Flow(s),veh/h/ln	1810	1610	1755	1805	1900	1610
Q Serve(g_s), s	2.7	0.0	9.3	0.0	2.9	18.0
Cycle Q Clear(g_c), s	2.7	0.0	9.3	0.0	2.9	18.0
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	169	966	1779	2888	456	537
V/C Ratio(X)	0.40	0.59	0.68	0.22	0.20	1.21
Avail Cap(c_a), veh/h	434	1202	1779	2888	456	537
HCM Platoon Ratio	1.00	1.00	1.67	1.67	1.00	1.00
Upstream Filter(l)	1.00	1.00	0.87	0.87	0.09	0.09
Uniform Delay (d), s/veh	32.0	9.3	3.6	0.0	22.7	22.7
Incr Delay (d2), s/veh	1.5	0.6	0.9	0.2	0.1	95.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	12.0	1.5	0.1	1.1	23.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	33.6	9.8	4.5	0.2	22.8	117.7
LnGrp LOS	C	A	A	A	C	F
Approach Vol, veh/h	636			1853	739	
Approach Delay, s/veh	12.4			3.0	106.0	
Approach LOS	B			A	F	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		64.0		11.0	42.0	22.0
Change Period (Y+Rc), s		4.0		4.0	4.0	4.0
Max Green Setting (Gmax), s		49.0		18.0	27.0	18.0
Max Q Clear Time (g_c+l1), s		2.0		4.7	11.3	20.0
Green Ext Time (p_c), s		4.2		2.1	4.4	0.0
Intersection Summary						
HCM 6th Ctrl Delay			28.4			
HCM 6th LOS			C			

Queues
3: WLC Pkwy/Theodore St & SR-60 WB Ramps

Alternative 2, 2045
AM Peak Hour



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	60	500	1060	570	80	570
Future Volume (vph)	60	500	1060	570	80	570
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	250			250
Storage Lanes	1	1	0			0
Taper Length (ft)	25		25			
Right Turn on Red		Yes				Yes
Link Speed (mph)	30			55	55	
Link Distance (ft)	1201			1302	1630	
Travel Time (s)	27.3			16.1	20.2	
Confl. Peds. (#/hr)						
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Shared Lane Traffic (%)						
Lane Group Flow (vph)	68	568	1205	648	91	648
v/c Ratio	0.15	0.42	0.79	0.28	0.33	0.88
Control Delay	23.2	1.3	13.7	3.5	32.9	34.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	23.2	1.3	13.7	3.5	32.9	34.5
Queue Length 50th (ft)	25	0	76	36	40	281
Queue Length 95th (ft)	55	19	79	37	77	#447
Internal Link Dist (ft)	1121			1222	1550	
Turn Bay Length (ft)			250			250
Base Capacity (vph)	460	1350	1535	2358	456	740
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.15	0.42	0.79	0.27	0.20	0.88

Intersection Summary

Area Type: Other

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

HCM 6th Signalized Intersection Summary
 4: Theodore St/Ironwood Ave

Alternative 2, 2045
 AM Peak Hour



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↙		↑	↘	↙	↑
Traffic Volume (veh/h)	500	140	140	460	80	130
Future Volume (veh/h)	500	140	140	460	80	130
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	568	159	159	523	91	148
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	0	0	0	0	0	719
Arrive On Green	0.00	0.00	0.00	0.00	0.38	0.38
Sat Flow, veh/h	0		0		0	1900
Grp Volume(v), veh/h	0.0		0.0		0	148
Grp Sat Flow(s),veh/h/ln					0	1900
Q Serve(g_s), s					0.0	0.3
Cycle Q Clear(g_c), s					0.0	0.3
Prop In Lane					0.00	
Lane Grp Cap(c), veh/h					0	719
V/C Ratio(X)					0.00	0.21
Avail Cap(c_a), veh/h					0	5316
HCM Platoon Ratio					1.00	1.00
Upstream Filter(l)					0.00	1.00
Uniform Delay (d), s/veh					0.0	1.3
Incr Delay (d2), s/veh					0.0	0.1
Initial Q Delay(d3),s/veh					0.0	0.0
%ile BackOfQ(50%),veh/ln					0.0	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh					0.0	1.5
LnGrp LOS					A	A
Approach Vol, veh/h						148
Approach Delay, s/veh						1.5
Approach LOS						A
Timer - Assigned Phs						4
Phs Duration (G+Y+Rc), s						6.4
Change Period (Y+Rc), s						4.0
Max Green Setting (Gmax), s						18.0
Max Q Clear Time (g_c+1), s						2.3
Green Ext Time (p_c), s						0.6
Intersection Summary						
HCM 6th Ctrl Delay						1.5
HCM 6th LOS						A

Notes

User approved volume balancing among the lanes for turning movement.

HCM 6th Signalized Intersection Summary
5: Redlands Blvd & Eucalyptus Avenue

Alternative 2, 2045
AM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖↗	↑↘		↖	↑↑	↗	↖	↑↑	↗	↖↗	↑↑	↗
Traffic Volume (veh/h)	180	50	110	80	60	140	90	370	60	310	680	520
Future Volume (veh/h)	180	50	110	80	60	140	90	370	60	310	680	520
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No		No		No		No		No		No
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	196	54	120	87	65	152	98	402	65	337	739	565
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	416	271	242	167	448	420	176	1216	542	480	1357	796
Arrive On Green	0.12	0.15	0.15	0.09	0.12	0.12	0.10	0.34	0.34	0.14	0.38	0.38
Sat Flow, veh/h	3510	1805	1610	1810	3610	1610	1810	3610	1610	3510	3610	1610
Grp Volume(v), veh/h	196	54	120	87	65	152	98	402	65	337	739	565
Grp Sat Flow(s),veh/h/ln	1755	1805	1610	1810	1805	1610	1810	1805	1610	1755	1805	1610
Q Serve(g_s), s	2.9	1.5	3.9	2.6	0.9	4.3	2.9	4.7	1.6	5.2	9.1	15.4
Cycle Q Clear(g_c), s	2.9	1.5	3.9	2.6	0.9	4.3	2.9	4.7	1.6	5.2	9.1	15.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	416	271	242	167	448	420	176	1216	542	480	1357	796
V/C Ratio(X)	0.47	0.20	0.50	0.52	0.14	0.36	0.56	0.33	0.12	0.70	0.54	0.71
Avail Cap(c_a), veh/h	1059	833	743	289	1153	734	289	1666	743	810	1922	1048
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.2	21.0	22.0	24.4	22.0	17.0	24.3	13.9	12.9	23.2	13.8	11.1
Incr Delay (d2), s/veh	0.8	0.4	1.6	2.5	0.1	0.5	2.7	0.2	0.1	1.9	0.3	1.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	0.6	1.5	1.2	0.4	1.5	1.2	1.5	0.5	1.9	2.7	4.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	24.0	21.3	23.5	26.9	22.1	17.5	27.0	14.1	13.0	25.1	14.1	12.6
LnGrp LOS	C	C	C	C	C	B	C	B	B	C	B	B
Approach Vol, veh/h		370			304			565			1641	
Approach Delay, s/veh		23.5			21.2			16.2			15.9	
Approach LOS		C			C			B			B	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	17.7	23.0	9.2	12.5	9.5	25.2	10.7	11.0				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	26.0	26.0	9.0	26.0	9.0	30.0	17.0	18.0				
Max Q Clear Time (g_c+I1),s	6.7	6.7	4.6	5.9	4.9	17.4	4.9	6.3				
Green Ext Time (p_c), s	0.6	1.3	0.1	0.4	0.1	3.8	0.5	0.5				
Intersection Summary												
HCM 6th Ctrl Delay											17.5	
HCM 6th LOS											B	

HCM 6th Signalized Intersection Summary
6: Redlands Blvd & SR-60 EB Ramps

Alternative 2, 2045
AM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	210	0	200	0	0	0	0	470	220	0	1310	170
Future Volume (veh/h)	210	0	200	0	0	0	0	470	220	0	1310	170
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	1900				0	1900	1900	0	1900	1900
Adj Flow Rate, veh/h	280	0	137				0	485	227	0	1351	175
Peak Hour Factor	0.97	0.97	0.97				0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0				0	0	0	0	0	0
Cap, veh/h	497	0	221				0	2589	1155	0	2589	1376
Arrive On Green	0.14	0.00	0.14				0.00	0.72	0.72	0.00	0.72	0.72
Sat Flow, veh/h	3619	0	1610				0	3705	1610	0	3705	1610
Grp Volume(v), veh/h	280	0	137				0	485	227	0	1351	175
Grp Sat Flow(s),veh/h/ln	1810	0	1610				0	1805	1610	0	1805	1610
Q Serve(g_s), s	4.0	0.0	4.4				0.0	2.4	2.6	0.0	9.3	1.0
Cycle Q Clear(g_c), s	4.0	0.0	4.4				0.0	2.4	2.6	0.0	9.3	1.0
Prop In Lane	1.00		1.00				0.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h	497	0	221				0	2589	1155	0	2589	1376
V/C Ratio(X)	0.56	0.00	0.62				0.00	0.19	0.20	0.00	0.52	0.13
Avail Cap(c_a), veh/h	1184	0	527				0	2589	1155	0	2589	1376
HCM Platoon Ratio	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	0.94	0.94	0.00	0.86	0.86
Uniform Delay (d), s/veh	22.2	0.0	22.4				0.0	2.5	2.6	0.0	3.5	0.7
Incr Delay (d2), s/veh	1.0	0.0	2.8				0.0	0.2	0.4	0.0	0.7	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6	0.0	1.7				0.0	0.1	0.2	0.0	0.6	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.2	0.0	25.2				0.0	2.7	2.9	0.0	4.2	0.8
LnGrp LOS	C	A	C				A	A	A	A	A	A
Approach Vol, veh/h	417						712			1526		
Approach Delay, s/veh	23.8						2.8			3.8		
Approach LOS	C						A			A		
Timer - Assigned Phs	2		4		6							
Phs Duration (G+Y+Rc), s	43.4		11.6		43.4							
Change Period (Y+Rc), s	4.0		4.0		4.0							
Max Green Setting (Gmax), s	29.0		18.0		29.0							
Max Q Clear Time (g_c+l1), s	4.6		6.4		11.3							
Green Ext Time (p_c), s	3.5		1.2		8.9							

Intersection Summary

HCM 6th Ctrl Delay	6.7
HCM 6th LOS	A

Notes

User approved volume balancing among the lanes for turning movement.

HCM 6th Signalized Intersection Summary
7: Redlands Blvd & SR-60 WB Ramps

Alternative 2, 2045
AM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↖	↔	↗		↑↑	↗		↑↑	↗
Traffic Volume (veh/h)	0	0	0	800	0	270	0	550	130	0	680	190
Future Volume (veh/h)	0	0	0	800	0	270	0	550	130	0	680	190
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach				No		No		No		No		No
Adj Sat Flow, veh/h/ln				1900	1900	1900	0	1900	1900	0	1900	1900
Adj Flow Rate, veh/h				902	0	184	0	561	133	0	694	194
Peak Hour Factor				0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %				0	0	0	0	0	0	0	0	0
Cap, veh/h				1167	0	519	0	1921	1376	0	1921	857
Arrive On Green				0.32	0.00	0.32	0.00	1.00	1.00	0.00	0.53	0.53
Sat Flow, veh/h				3619	0	1610	0	3705	1610	0	3705	1610
Grp Volume(v), veh/h				902	0	184	0	561	133	0	694	194
Grp Sat Flow(s),veh/h/ln				1810	0	1610	0	1805	1610	0	1805	1610
Q Serve(g_s), s				12.4	0.0	4.8	0.0	0.0	0.0	0.0	6.1	3.5
Cycle Q Clear(g_c), s				12.4	0.0	4.8	0.0	0.0	0.0	0.0	6.1	3.5
Prop In Lane				1.00		1.00	0.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h				1167	0	519	0	1921	1376	0	1921	857
V/C Ratio(X)				0.77	0.00	0.35	0.00	0.29	0.10	0.00	0.36	0.23
Avail Cap(c_a), veh/h				1645	0	732	0	1921	1376	0	1921	857
HCM Platoon Ratio				1.00	1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(l)				1.00	0.00	1.00	0.00	0.98	0.98	0.00	1.00	1.00
Uniform Delay (d), s/veh				16.8	0.0	14.3	0.0	0.0	0.0	0.0	7.5	6.8
Incr Delay (d2), s/veh				1.5	0.0	0.4	0.0	0.4	0.1	0.0	0.5	0.6
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				4.7	0.0	1.6	0.0	0.1	0.1	0.0	1.5	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				18.3	0.0	14.7	0.0	0.4	0.1	0.0	8.0	7.5
LnGrp LOS				B	A	B	A	A	A	A	A	A
Approach Vol, veh/h				1086				694			888	
Approach Delay, s/veh				17.7				0.3			7.9	
Approach LOS				B				A			A	
Timer - Assigned Phs		2				6		8				
Phs Duration (G+Y+Rc), s		33.3				33.3		21.7				
Change Period (Y+Rc), s		4.0				4.0		4.0				
Max Green Setting (Gmax), s		22.0				22.0		25.0				
Max Q Clear Time (g_c+1), s		2.0				8.1		14.4				
Green Ext Time (p_c), s		3.5				4.0		3.4				

Intersection Summary

HCM 6th Ctrl Delay	9.9
HCM 6th LOS	A

Notes

User approved volume balancing among the lanes for turning movement.

HCM 6th Signalized Intersection Summary
8: Redlands Blvd & Ironwood Ave
























Alternative 2, 2045
AM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔↔			↔↔		↔	↔↔		↔	↔↔	↔
Traffic Volume (veh/h)	150	90	70	60	150	40	80	630	100	10	740	150
Future Volume (veh/h)	150	90	70	60	150	40	80	630	100	10	740	150
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		0.99	1.00		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	153	92	71	61	153	41	82	643	102	10	755	153
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	265	170	132	119	311	86	167	1187	188	33	1107	491
Arrive On Green	0.16	0.16	0.16	0.14	0.14	0.14	0.09	0.38	0.38	0.02	0.31	0.31
Sat Flow, veh/h	1661	1065	831	841	2192	608	1810	3118	494	1810	3610	1602
Grp Volume(v), veh/h	167	0	149	135	0	120	82	372	373	10	755	153
Grp Sat Flow(s),veh/h/ln	1817	0	1741	1858	0	1783	1810	1805	1807	1810	1805	1602
Q Serve(g_s), s	4.5	0.0	4.2	3.6	0.0	3.3	2.3	8.6	8.6	0.3	9.8	3.9
Cycle Q Clear(g_c), s	4.5	0.0	4.2	3.6	0.0	3.3	2.3	8.6	8.6	0.3	9.8	3.9
Prop In Lane	0.91		0.48	0.45		0.34	1.00		0.27	1.00		1.00
Lane Grp Cap(c), veh/h	289	0	277	263	0	253	167	687	688	33	1107	491
V/C Ratio(X)	0.58	0.00	0.54	0.51	0.00	0.48	0.49	0.54	0.54	0.31	0.68	0.31
Avail Cap(c_a), veh/h	852	0	817	906	0	870	272	881	882	238	1694	752
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	20.7	0.0	20.6	21.2	0.0	21.1	23.0	12.9	12.9	25.8	16.2	14.2
Incr Delay (d2), s/veh	1.8	0.0	1.6	1.5	0.0	1.4	2.2	0.7	0.7	5.2	0.8	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	0.0	1.5	1.4	0.0	1.2	0.9	2.5	2.6	0.2	3.1	1.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	22.6	0.0	22.2	22.7	0.0	22.4	25.2	13.5	13.5	31.0	17.0	14.5
LnGrp LOS	C	A	C	C	A	C	C	B	B	C	B	B
Approach Vol, veh/h		316			255			827			918	
Approach Delay, s/veh		22.4			22.6			14.7			16.7	
Approach LOS		C			C			B			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.0	24.3		12.5	8.9	20.3		11.5				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	26.0			25.0	8.0	25.0		26.0				
Max Q Clear Time (g_c+l), s	10.6			6.5	4.3	11.8		5.6				
Green Ext Time (p_c), s	0.0	3.5		1.4	0.0	4.1		1.1				
Intersection Summary												
HCM 6th Ctrl Delay											17.4	
HCM 6th LOS											B	
























HCM 6th Signalized Intersection Summary
 1: WLC Pkwy & Eucalyptus Avenue

Alternative 2, 2045
 PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	210	20	250	70	10	60	170	1370	140	110	1280	130
Future Volume (veh/h)	210	20	250	70	10	60	170	1370	140	110	1280	130
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	280	0	351	93	13	80	227	1827	187	147	1707	173
Peak Hour Factor	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	278	0	523	116	17	103	341	1900	848	435	1666	743
Arrive On Green	0.15	0.00	0.16	0.06	0.07	0.07	0.19	0.53	0.53	0.12	0.46	0.46
Sat Flow, veh/h	1810	0	3220	1810	230	1415	1810	3610	1610	3510	3610	1610
Grp Volume(v), veh/h	280	0	351	93	0	93	227	1827	187	147	1707	173
Grp Sat Flow(s),veh/h/ln	1810	0	1610	1810	0	1645	1810	1805	1610	1755	1805	1610
Q Serve(g_s), s	20.0	0.0	9.3	6.6	0.0	7.2	15.1	63.1	5.9	5.0	60.0	5.1
Cycle Q Clear(g_c), s	20.0	0.0	9.3	6.6	0.0	7.2	15.1	63.1	5.9	5.0	60.0	5.1
Prop In Lane	1.00		1.00	1.00		0.86	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	278	0	523	116	0	120	341	1900	848	435	1666	743
V/C Ratio(X)	1.01	0.00	0.67	0.80	0.00	0.78	0.66	0.96	0.22	0.34	1.02	0.23
Avail Cap(c_a), veh/h	278	0	619	181	0	228	341	1916	855	435	1666	743
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)	0.95	0.00	0.95	1.00	0.00	1.00	1.00	1.00	1.00	0.63	0.63	0.63
Uniform Delay (d), s/veh	55.0	0.0	25.2	60.0	0.0	59.2	48.9	29.5	8.9	52.1	35.0	7.6
Incr Delay (d2), s/veh	54.0	0.0	2.1	12.8	0.0	10.2	4.8	13.3	0.6	0.3	24.1	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	13.3	0.0	3.8	3.4	0.0	3.4	7.0	27.8	3.0	2.1	29.5	3.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	109.0	0.0	27.3	72.8	0.0	69.4	53.7	42.9	9.5	52.4	59.1	8.1
LnGrp LOS	F	A	C	E	A	E	D	D	A	D	F	A
Approach Vol, veh/h		631			186			2241			2027	
Approach Delay, s/veh		63.6			71.1			41.2			54.2	
Approach LOS		E			E			D			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	20.1	72.4	12.4	25.1	28.5	64.0	24.0	13.5				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	7.0	69.0	13.0	25.0	16.0	60.0	20.0	18.0				
Max Q Clear Time (g_c+l1), s	7.0	65.1	8.6	11.3	17.1	62.0	22.0	9.2				
Green Ext Time (p_c), s	0.0	3.3	0.1	1.2	0.0	0.0	0.0	0.2				
Intersection Summary												
HCM 6th Ctrl Delay			50.3									
HCM 6th LOS			D									
Notes												
User approved volume balancing among the lanes for turning movement.												

Queues
1: WLC Pkwy & Eucalyptus Avenue

Alternative 2, 2045
PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	210	20	250	70	10	60	170	1370	140	110	1280	130
Future Volume (vph)	210	20	250	70	10	60	170	1370	140	110	1280	130
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	300		0	250		0	300		250	300		200
Storage Lanes	1		1	1		0	1		1	2		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			55			55	
Link Distance (ft)		5291			650			3301			699	
Travel Time (s)		120.3			14.8			40.9			8.7	
Confl. Peds. (#/hr)												
Peak Hour Factor	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75
Shared Lane Traffic (%)			47%									
Lane Group Flow (vph)	280	184	176	93	93	0	227	1827	187	147	1707	173
v/c Ratio	1.01	0.53	0.50	0.60	0.52		1.02	0.86	0.19	0.62	0.88	0.19
Control Delay	111.1	17.7	12.2	73.6	26.4		121.9	27.1	4.6	67.1	27.5	2.6
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	4.4	0.0
Total Delay	111.1	17.7	12.2	73.6	26.4		121.9	27.1	4.6	67.1	31.9	2.6
Queue Length 50th (ft)	~242	22	0	76	11		~203	595	19	64	582	10
Queue Length 95th (ft)	#315	55	33	110	42		#275	541	37	#85	565	17
Internal Link Dist (ft)		5211			570			3221			619	
Turn Bay Length (ft)	300			250			300		250	300		200
Base Capacity (vph)	277	429	437	180	298		222	2133	1006	238	1935	931
Starvation Cap Reductn	0	0	0	0	0		0	0	0	0	171	0
Spillback Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Reduced v/c Ratio	1.01	0.43	0.40	0.52	0.31		1.02	0.86	0.19	0.62	0.97	0.19

Intersection Summary

Area Type: Other

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

HCM 6th Signalized Intersection Summary
 2: WLC Pkwy & SR-60 EB Ramps























Alternative 2, 2045
 PM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	160	0	1160	0	0	0	0	1390	250	0	360	250
Future Volume (veh/h)	160	0	1160	0	0	0	0	1390	250	0	360	250
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No					No		No			No
Adj Sat Flow, veh/h/ln	1900	0	1900				0	1900	1900	0	1900	1900
Adj Flow Rate, veh/h	184	0	1333				0	1598	287	0	414	287
Peak Hour Factor	0.87	0.87	0.87				0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	0	0	0				0	0	0	0	0	0
Cap, veh/h	933	0	1461				0	2362	582	0	1305	582
Arrive On Green	0.52	0.00	0.52				0.00	0.72	0.72	0.00	0.48	0.48
Sat Flow, veh/h	1810	0	2834				0	6802	1610	0	3705	1610
Grp Volume(v), veh/h	184	0	1333				0	1598	287	0	414	287
Grp Sat Flow(s),veh/h/ln	1810	0	1417				0	1634	1610	0	1805	1610
Q Serve(g_s), s	3.6	0.0	28.0				0.0	8.6	5.0	0.0	4.6	7.9
Cycle Q Clear(g_c), s	3.6	0.0	28.0				0.0	8.6	5.0	0.0	4.6	7.9
Prop In Lane	1.00		1.00				0.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h	933	0	1461				0	2362	582	0	1305	582
V/C Ratio(X)	0.20	0.00	0.91				0.00	0.68	0.49	0.00	0.32	0.49
Avail Cap(c_a), veh/h	1002	0	1570				0	2362	582	0	1305	582
HCM Platoon Ratio	1.00	1.00	1.00				1.00	2.00	2.00	1.00	1.33	1.33
Upstream Filter(l)	1.00	0.00	1.00				0.00	0.36	0.36	0.00	0.73	0.73
Uniform Delay (d), s/veh	8.5	0.0	14.4				0.0	6.9	6.4	0.0	12.0	12.8
Incr Delay (d2), s/veh	0.1	0.0	8.1				0.0	0.6	1.1	0.0	0.1	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	1.2	0.0	9.0				0.0	1.6	1.2	0.0	1.4	2.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	8.6	0.0	22.5				0.0	7.5	7.5	0.0	12.1	13.3
LnGrp LOS	A	A	C				A	A	A	A	B	B
Approach Vol, veh/h		1517						1885			701	
Approach Delay, s/veh		20.8						7.5			12.6	
Approach LOS		C						A			B	
Timer - Assigned Phs		2		4			6					
Phs Duration (G+Y+Rc), s		27.5		37.5			27.5					
Change Period (Y+Rc), s		4.0		4.0			4.0					
Max Green Setting (Gmax), s		21.0		36.0			21.0					
Max Q Clear Time (g_c+l1), s		10.6		30.0			9.9					
Green Ext Time (p_c), s		7.2		3.5			2.5					
Intersection Summary												
HCM 6th Ctrl Delay			13.3									
HCM 6th LOS			B									

Queues
2: WLC Pkwy & SR-60 EB Ramps

Alternative 2, 2045
PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations			 					  			 	
Traffic Volume (vph)	160	0	1160	0	0	0	0	1390	250	0	360	250
Future Volume (vph)	160	0	1160	0	0	0	0	1390	250	0	360	250
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	300		250	0		0	250		250	0		600
Storage Lanes	1		0	0		0	2		0	0		1
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			55			55	
Link Distance (ft)		877			402			699			1302	
Travel Time (s)		19.9			9.1			8.7			16.1	
Confl. Peds. (#/hr)												
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Shared Lane Traffic (%)												
Lane Group Flow (vph)	184	0	1333	0	0	0	0	1598	287	0	414	287
v/c Ratio	0.21		0.84					0.64	0.36		0.30	0.36
Control Delay	9.0		15.5					19.7	5.2		19.4	9.2
Queue Delay	0.0		0.1					0.0	0.0		0.0	0.0
Total Delay	9.0		15.6					19.7	5.2		19.4	9.2
Queue Length 50th (ft)	36		167					206	28		118	75
Queue Length 95th (ft)	59		218					m261	m59		m148	m103
Internal Link Dist (ft)		797			322			619			1222	
Turn Bay Length (ft)	300		250						250			600
Base Capacity (vph)	999		1734					2511	797		1387	797
Starvation Cap Reductn	0		0					0	0		0	0
Spillback Cap Reductn	0		29					0	0		79	0
Storage Cap Reductn	0		0					0	0		0	0
Reduced v/c Ratio	0.18		0.78					0.64	0.36		0.32	0.36

Intersection Summary

Area Type: Other

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

HCM 6th Signalized Intersection Summary
 3: WLC Pkwy/Theodore St & SR-60 WB Ramps

Alternative 2, 2045
 PM Peak Hour



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	160	300	1050	500	310	300
Future Volume (veh/h)	160	300	1050	500	310	300
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	235	441	1544	735	456	441
Peak Hour Factor	0.68	0.68	0.68	0.68	0.68	0.68
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	264	1042	1760	2860	495	654
Arrive On Green	0.15	0.15	0.84	1.00	0.26	0.26
Sat Flow, veh/h	1810	1610	3510	3705	1900	1610
Grp Volume(v), veh/h	235	441	1544	735	456	441
Grp Sat Flow(s),veh/h/ln	1810	1610	1755	1805	1900	1610
Q Serve(g_s), s	16.6	0.0	35.1	0.0	30.4	29.1
Cycle Q Clear(g_c), s	16.6	0.0	35.1	0.0	30.4	29.1
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	264	1042	1760	2860	495	654
V/C Ratio(X)	0.89	0.42	0.88	0.26	0.92	0.67
Avail Cap(c_a), veh/h	278	1055	1760	2860	526	681
HCM Platoon Ratio	1.00	1.00	1.67	1.67	1.00	1.00
Upstream Filter(l)	1.00	1.00	0.78	0.78	0.09	0.09
Uniform Delay (d), s/veh	54.5	11.1	8.1	0.0	46.8	31.5
Incr Delay (d2), s/veh	26.7	0.3	4.3	0.2	3.5	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	19.5	16.0	5.2	0.1	14.1	13.9
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	81.2	11.4	12.4	0.2	50.3	32.0
LnGrp LOS	F	B	B	A	D	C
Approach Vol, veh/h	676			2279	897	
Approach Delay, s/veh	35.7			8.5	41.3	
Approach LOS	D			A	D	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s	107.0			23.0	69.2	37.8
Change Period (Y+Rc), s		4.0		4.0	4.0	4.0
Max Green Setting (Gmax), s	102.0			20.0	62.0	36.0
Max Q Clear Time (g_c+l1), s		2.0		18.6	37.1	32.4
Green Ext Time (p_c), s		4.9		0.4	7.1	1.5
Intersection Summary						
HCM 6th Ctrl Delay			20.9			
HCM 6th LOS			C			

Queues
3: WLC Pkwy/Theodore St & SR-60 WB Ramps

Alternative 2, 2045
PM Peak Hour



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	160	300	1050	500	310	300
Future Volume (vph)	160	300	1050	500	310	300
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	250			250
Storage Lanes	1	1	0			0
Taper Length (ft)	25		25			
Right Turn on Red		Yes				Yes
Link Speed (mph)	30			55	55	
Link Distance (ft)	825			1302	1630	
Travel Time (s)	18.8			16.1	20.2	
Confl. Peds. (#/hr)						
Peak Hour Factor	0.68	0.68	0.68	0.68	0.68	0.68
Shared Lane Traffic (%)						
Lane Group Flow (vph)	235	441	1544	735	456	441
v/c Ratio	0.83	0.40	0.93	0.26	0.86	0.58
Control Delay	77.5	8.1	36.8	1.8	61.8	28.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	77.5	8.1	36.8	1.8	61.8	28.5
Queue Length 50th (ft)	195	108	418	22	367	261
Queue Length 95th (ft)	210	100	353	21	346	247
Internal Link Dist (ft)	745			1222	1550	
Turn Bay Length (ft)			250			250
Base Capacity (vph)	283	1106	1672	2833	537	751
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.83	0.40	0.92	0.26	0.85	0.59

Intersection Summary

Area Type:	Other
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HCM 6th Signalized Intersection Summary
 4: Theodore St/Ironwood Ave

Alternative 2, 2045
 PM Peak Hour



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↘		↑	↗	↘	↑
Traffic Volume (veh/h)	470	90	170	480	190	130
Future Volume (veh/h)	470	90	170	480	190	130
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	734	141	266	750	297	203
Peak Hour Factor	0.64	0.64	0.64	0.64	0.64	0.64
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	0	0	0	0	0	1055
Arrive On Green	0.00	0.00	0.00	0.00	0.56	0.56
Sat Flow, veh/h	0		0		0	1900
Grp Volume(v), veh/h	0.0		0.0		0	203
Grp Sat Flow(s),veh/h/ln					0	1900
Q Serve(g_s), s					0.0	0.5
Cycle Q Clear(g_c), s					0.0	0.5
Prop In Lane					0.00	
Lane Grp Cap(c), veh/h					0	1055
V/C Ratio(X)					0.00	0.19
Avail Cap(c_a), veh/h					0	3803
HCM Platoon Ratio					1.00	1.00
Upstream Filter(l)					0.00	1.00
Uniform Delay (d), s/veh					0.0	1.0
Incr Delay (d2), s/veh					0.0	0.1
Initial Q Delay(d3),s/veh					0.0	0.0
%ile BackOfQ(50%),veh/ln					0.0	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh					0.0	1.1
LnGrp LOS					A	A
Approach Vol, veh/h						203
Approach Delay, s/veh						1.1
Approach LOS						A
Timer - Assigned Phs				4		
Phs Duration (G+Y+Rc), s				9.0		
Change Period (Y+Rc), s				4.0		
Max Green Setting (Gmax), s				18.0		
Max Q Clear Time (g_c+1), s				2.5		
Green Ext Time (p_c), s				0.9		
Intersection Summary						
HCM 6th Ctrl Delay			1.1			
HCM 6th LOS			A			
Notes						
User approved volume balancing among the lanes for turning movement.						

HCM 6th Signalized Intersection Summary
 5: Redlands Blvd & Eucalyptus Avenue

Alternative 2, 2045
 PM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖↗	↖↗		↖	↖↗	↖	↖	↖↗	↖	↖↗	↖↗	↖
Traffic Volume (veh/h)	660	120	200	60	50	240	130	600	90	210	530	320
Future Volume (veh/h)	660	120	200	60	50	240	130	600	90	210	530	320
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No		No		No		No		No		No
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	680	124	206	62	52	247	134	619	93	216	546	330
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	848	616	549	131	621	446	177	854	381	369	880	782
Arrive On Green	0.24	0.34	0.34	0.07	0.17	0.17	0.10	0.24	0.24	0.10	0.24	0.24
Sat Flow, veh/h	3510	1805	1610	1810	3610	1610	1810	3610	1610	3510	3610	1610
Grp Volume(v), veh/h	680	124	206	62	52	247	134	619	93	216	546	330
Grp Sat Flow(s),veh/h/ln	1755	1805	1610	1810	1805	1610	1810	1805	1610	1755	1805	1610
Q Serve(g_s), s	11.9	3.2	6.3	2.2	0.8	8.6	4.7	10.3	3.1	3.8	8.8	8.7
Cycle Q Clear(g_c), s	11.9	3.2	6.3	2.2	0.8	8.6	4.7	10.3	3.1	3.8	8.8	8.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	848	616	549	131	621	446	177	854	381	369	880	782
V/C Ratio(X)	0.80	0.20	0.37	0.47	0.08	0.55	0.76	0.72	0.24	0.59	0.62	0.42
Avail Cap(c_a), veh/h	1235	911	813	221	994	612	305	1381	616	430	1215	931
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.3	15.2	16.3	29.1	22.7	20.2	28.7	23.0	20.2	27.9	22.0	10.9
Incr Delay (d2), s/veh	2.5	0.2	0.4	2.6	0.1	1.1	6.5	1.2	0.3	1.5	0.7	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.9	1.2	2.2	1.0	0.3	3.1	2.1	3.8	1.1	1.5	3.2	2.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	25.8	15.4	16.7	31.8	22.8	21.3	35.2	24.2	20.5	29.4	22.7	11.2
LnGrp LOS	C	B	B	C	C	C	D	C	C	C	C	B
Approach Vol, veh/h		1010			361			846			1092	
Approach Delay, s/veh		22.6			23.3			25.5			20.6	
Approach LOS		C			C			C			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	10.9	19.5	8.7	26.3	10.4	19.9	19.8	15.2				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	25.0	8.0	33.0	11.0	22.0	23.0	18.0					
Max Q Clear Time (g_c+I), s	12.3	4.2	8.3	6.7	10.8	13.9	10.6					
Green Ext Time (p_c), s	0.1	3.1	0.0	2.1	0.1	3.3	1.9	0.7				
Intersection Summary												
HCM 6th Ctrl Delay											22.8	
HCM 6th LOS											C	

HCM 6th Signalized Intersection Summary
6: Redlands Blvd & SR-60 EB Ramps

Alternative 2, 2045
PM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	440	0	200	0	0	0	0	460	1040	0	860	550
Future Volume (veh/h)	440	0	200	0	0	0	0	460	1040	0	860	550
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	1900				0	1900	1900	0	1900	1900
Adj Flow Rate, veh/h	523	0	139				0	479	1083	0	896	573
Peak Hour Factor	0.96	0.96	0.96				0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0				0	0	0	0	0	0
Cap, veh/h	711	0	316				0	2420	1079	0	2420	1395
Arrive On Green	0.20	0.00	0.20				0.00	0.67	0.67	0.00	1.00	1.00
Sat Flow, veh/h	3619	0	1610				0	3705	1610	0	3705	1610
Grp Volume(v), veh/h	523	0	139				0	479	1083	0	896	573
Grp Sat Flow(s),veh/h/ln	1810	0	1610				0	1805	1610	0	1805	1610
Q Serve(g_s), s	8.1	0.0	4.6				0.0	3.0	40.2	0.0	0.0	0.0
Cycle Q Clear(g_c), s	8.1	0.0	4.6				0.0	3.0	40.2	0.0	0.0	0.0
Prop In Lane	1.00		1.00				0.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h	711	0	316				0	2420	1079	0	2420	1395
V/C Ratio(X)	0.74	0.00	0.44				0.00	0.20	1.00	0.00	0.37	0.41
Avail Cap(c_a), veh/h	1086	0	483				0	2420	1079	0	2420	1395
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	2.00	2.00
Upstream Filter(l)	1.00	0.00	1.00				0.00	0.74	0.74	0.00	0.87	0.87
Uniform Delay (d), s/veh	22.6	0.0	21.2				0.0	3.8	9.9	0.0	0.0	0.0
Incr Delay (d2), s/veh	1.5	0.0	1.0				0.0	0.1	24.4	0.0	0.4	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/l	3.4	0.0	1.7				0.0	0.5	12.2	0.0	0.1	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	24.2	0.0	22.2				0.0	3.9	34.3	0.0	0.4	0.8
LnGrp LOS	C	A	C				A	A	F	A	A	A
Approach Vol, veh/h	662						1562			1469		
Approach Delay, s/veh	23.7						25.0			0.5		
Approach LOS	C						C			A		
Timer - Assigned Phs	2		4		6							
Phs Duration (G+Y+Rc), s	44.2		15.8		44.2							
Change Period (Y+Rc), s	4.0		4.0		4.0							
Max Green Setting (Gmax), s	34.0		18.0		34.0							
Max Q Clear Time (g_c+l1), s	42.2		10.1		2.0							
Green Ext Time (p_c), s	0.0		1.6		9.0							

Intersection Summary

HCM 6th Ctrl Delay	15.0
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

HCM 6th Signalized Intersection Summary
 7: Redlands Blvd & SR-60 WB Ramps

Alternative 2, 2045
 PM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↖	↔	↗		↑↑	↗		↑↑	↗
Traffic Volume (veh/h)	0	0	0	570	0	300	0	680	220	0	840	300
Future Volume (veh/h)	0	0	0	570	0	300	0	680	220	0	840	300
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach				No		No		No		No		No
Adj Sat Flow, veh/h/ln				1900	1900	1900	0	1900	1900	0	1900	1900
Adj Flow Rate, veh/h				705	0	213	0	723	234	0	894	319
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				940	0	418	0	2191	977	0	2191	977
Arrive On Green				0.26	0.00	0.26	0.00	1.00	1.00	0.00	0.61	0.61
Sat Flow, veh/h				3619	0	1610	0	3705	1610	0	3705	1610
Grp Volume(v), veh/h				705	0	213	0	723	234	0	894	319
Grp Sat Flow(s),veh/h/ln				1810	0	1610	0	1805	1610	0	1805	1610
Q Serve(g_s), s				10.7	0.0	6.8	0.0	0.0	0.0	0.0	7.8	5.8
Cycle Q Clear(g_c), s				10.7	0.0	6.8	0.0	0.0	0.0	0.0	7.8	5.8
Prop In Lane				1.00		1.00	0.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h				940	0	418	0	2191	977	0	2191	977
V/C Ratio(X)				0.75	0.00	0.51	0.00	0.33	0.24	0.00	0.41	0.33
Avail Cap(c_a), veh/h				1448	0	644	0	2191	977	0	2191	977
HCM Platoon Ratio				1.00	1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.00	0.96	0.96	0.00	1.00	1.00
Uniform Delay (d), s/veh				20.4	0.0	18.9	0.0	0.0	0.0	0.0	6.2	5.8
Incr Delay (d2), s/veh				1.2	0.0	1.0	0.0	0.4	0.6	0.0	0.6	0.9
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				4.3	0.0	2.4	0.0	0.1	0.2	0.0	1.7	1.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				21.6	0.0	19.9	0.0	0.4	0.6	0.0	6.7	6.7
LnGrp LOS				C	A	B	A	A	A	A	A	A
Approach Vol, veh/h						918		957			1213	
Approach Delay, s/veh						21.2		0.4			6.7	
Approach LOS						C		A			A	
Timer - Assigned Phs		2				6		8				
Phs Duration (G+Y+Rc), s		40.4				40.4		19.6				
Change Period (Y+Rc), s		4.0				4.0		4.0				
Max Green Setting (Gmax), s		28.0				28.0		24.0				
Max Q Clear Time (g_c+I1), s		2.0				9.8		12.7				
Green Ext Time (p_c), s		5.3				6.3		2.8				

Intersection Summary

HCM 6th Ctrl Delay	9.1
HCM 6th LOS	A

Notes

User approved volume balancing among the lanes for turning movement.

HCM 6th Signalized Intersection Summary
8: Redlands Blvd & Ironwood Ave

Alternative 2, 2045
PM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↕			↕↕		↕	↕↕		↕	↕↕	↕
Traffic Volume (veh/h)	150	250	120	100	150	30	70	800	90	10	900	220
Future Volume (veh/h)	150	250	120	100	150	30	70	800	90	10	900	220
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		0.99	1.00		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	155	258	124	103	155	31	72	825	93	10	928	227
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	214	372	186	172	276	57	140	1268	143	32	1185	526
Arrive On Green	0.22	0.22	0.22	0.14	0.14	0.14	0.08	0.39	0.39	0.02	0.33	0.33
Sat Flow, veh/h	996	1726	865	1248	1999	411	1810	3268	368	1810	3610	1603
Grp Volume(v), veh/h	288	0	249	152	0	137	72	456	462	10	928	227
Grp Sat Flow(s),veh/h/ln	1850	0	1737	1838	0	1821	1810	1805	1831	1810	1805	1603
Q Serve(g_s), s	9.6	0.0	8.7	5.2	0.0	4.7	2.5	13.7	13.7	0.4	15.4	7.4
Cycle Q Clear(g_c), s	9.6	0.0	8.7	5.2	0.0	4.7	2.5	13.7	13.7	0.4	15.4	7.4
Prop In Lane	0.54		0.50	0.68		0.23	1.00		0.20	1.00		1.00
Lane Grp Cap(c), veh/h	398	0	374	254	0	252	140	700	710	32	1185	526
V/C Ratio(X)	0.72	0.00	0.67	0.60	0.00	0.55	0.51	0.65	0.65	0.31	0.78	0.43
Avail Cap(c_a), veh/h	668	0	627	719	0	712	191	733	744	191	1467	651
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	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.2	0.0	23.9	26.9	0.0	26.7	29.4	16.6	16.6	32.2	20.2	17.5
Incr Delay (d2), s/veh	2.5	0.0	2.0	2.2	0.0	1.8	2.9	1.9	1.9	5.4	2.3	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/l	8.8	0.0	3.3	2.1	0.0	1.9	1.1	4.8	4.9	0.2	5.6	2.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	26.7	0.0	25.9	29.1	0.0	28.5	32.3	18.6	18.5	37.6	22.4	18.0
LnGrp LOS	C	A	C	C	A	C	C	B	B	D	C	B
Approach Vol, veh/h		537			289			990			1165	
Approach Delay, s/veh		26.4			28.9			19.6			21.7	
Approach LOS		C			C			B			C	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.2	29.8		18.3	9.1	25.8		13.2				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	27.0			24.0	7.0	27.0		26.0				
Max Q Clear Time (g_c+l), s	15.7			11.6	4.5	17.4		7.2				
Green Ext Time (p_c), s	0.0	3.8		2.2	0.0	4.4		1.3				
Intersection Summary												
HCM 6th Ctrl Delay											22.5	
HCM 6th LOS											C	

Appendix H

Freeway LOS Worksheets for Alternative 2

Appendix H-1

Freeway LOS Worksheets for Alternative 2, Existing

HCS7 Freeway Facilities Report

Project Information

Analyst	WSP	Date	10/15/2018
Agency	City of Moreno Valley	Analysis Year	2018 with Alternative 2
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	WLC Pkwy IC - Eastbound SR-60		

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	8
Total Time Periods	8	Time Period Duration, min	15

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic	Moreno Beach Rd to Redlands Blvd	1350	3
2	Diverge	Basic	Off-Ramp to Redlands Blvd	1500	3
3	Basic	Basic	between Redlands Blvd Off and SB Redlands Blvd On Ramp	770	2
4	Weaving	Basic	Redlands Blvd to WLC Pkwy	3925	3
5	Basic	Basic	between WLC Pkwy Off- and On-Ramps	2350	2
6	Merge	Basic	On-Ramp from SB WLC Pkwy	550	2
7	Weaving	Weaving	NB WLC Pkwy On-Ramp to Gilman Springs Off-Ramp	1950	3
8	Basic	Basic	east of Gilman Springs Rd Off Ramp	1350	2

Facility Segment Data

Segment 1: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	1.00	0.901	2240	7200	0.31	75.4	9.9	A
2	1.00	0.901	2215	7200	0.31	75.4	9.8	A
3	1.00	0.901	2357	7200	0.33	75.4	10.4	A
4	1.00	0.901	2320	7200	0.32	75.4	10.3	A
5	1.00	0.901	1972	7200	0.27	75.4	8.7	A
6	1.00	0.901	1980	7200	0.28	75.4	8.8	A
7	1.00	0.901	2178	7200	0.30	75.4	9.6	A
8	1.00	0.901	2391	7200	0.33	75.4	10.6	A

Segment 2: Diverge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	1.00	1.00	0.901	0.917	2240	279	7200	2000	0.31	0.14	75.4	-	9.9	-	A
2	1.00	1.00	0.901	0.917	2215	236	7200	2000	0.31	0.12	75.4	-	9.8	-	A

3	1.00	1.00	0.901	0.917	2357	297	7200	2000	0.33	0.15	75.4	-	10.4	-	A
4	1.00	1.00	0.901	0.917	2320	314	7200	2000	0.32	0.16	75.4	-	10.3	-	A
5	1.00	1.00	0.901	0.917	1972	366	7200	2000	0.27	0.18	75.4	-	8.7	-	A
6	1.00	1.00	0.901	0.917	1980	414	7200	2000	0.28	0.21	75.4	-	8.8	-	A
7	1.00	1.00	0.901	0.917	2178	336	7200	2000	0.30	0.17	75.4	-	9.6	-	A
8	1.00	1.00	0.901	0.917	2391	401	7200	2000	0.33	0.20	75.4	-	10.6	-	A

Segment 3: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	1.00	0.893	1973	4800	0.41	72.2	13.7	B
2	1.00	0.893	1993	4800	0.42	72.2	13.8	B
3	1.00	0.893	2074	4800	0.43	72.2	14.4	B
4	1.00	0.893	2018	4800	0.42	72.2	14.0	B
5	1.00	0.893	1614	4800	0.34	72.2	11.2	B
6	1.00	0.893	1572	4800	0.33	72.2	10.9	A
7	1.00	0.893	1852	4800	0.39	72.2	12.8	B
8	1.00	0.893	2000	4800	0.42	72.2	13.9	B

Segment 4: Weaving

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	1.00	0.893	2049	7200	0.28	75.4	9.1	A
2	1.00	0.893	2121	7200	0.28	75.4	8.8	A
3	1.00	0.893	2168	7200	0.29	75.4	9.2	A
4	1.00	0.893	2138	7200	0.28	75.4	8.9	A
5	1.00	0.893	1739	7200	0.22	75.4	7.1	A
6	1.00	0.893	1645	7200	0.22	75.4	6.9	A
7	1.00	0.893	1948	7200	0.26	75.4	8.2	A
8	1.00	0.893	2078	7200	0.28	75.4	8.8	A

Segment 5: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	1.00	0.901	1947	4800	0.41	72.2	13.5	B
2	1.00	0.901	2007	4800	0.42	72.2	13.9	B
3	1.00	0.901	2055	4800	0.43	72.2	14.2	B
4	1.00	0.901	2022	4800	0.42	72.2	14.0	B
5	1.00	0.901	1590	4800	0.33	72.2	11.0	A
6	1.00	0.901	1456	4800	0.30	72.2	10.1	A
7	1.00	0.901	1769	4800	0.37	72.2	12.2	B
8	1.00	0.901	1933	4800	0.40	72.2	13.4	B

Segment 6: Merge

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
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	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	1.00	1.00	0.901	0.752	1947	0	4800	2000	0.41	0.00	75.4	-	12.9	-	B
2	1.00	1.00	0.901	0.752	2007	0	4800	2000	0.42	0.00	75.4	-	13.3	-	B
3	1.00	1.00	0.901	0.752	2060	5	4800	2000	0.43	0.00	75.4	-	13.6	-	B
4	1.00	1.00	0.901	0.752	2033	11	4800	2000	0.42	0.01	75.4	-	13.4	-	B
5	1.00	1.00	0.901	0.752	1595	5	4800	2000	0.33	0.00	75.4	-	10.5	-	A
6	1.00	1.00	0.901	0.752	1461	5	4800	2000	0.30	0.00	75.4	-	9.7	-	A
7	1.00	1.00	0.901	0.752	1774	5	4800	2000	0.37	0.00	75.4	-	11.7	-	B
8	1.00	1.00	0.901	0.752	1949	16	4800	2000	0.40	0.01	75.4	-	12.8	-	B

Segment 7: Weaving

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	1.00	0.901	1957	6315	0.31	68.1	9.6	A
2	1.00	0.901	2048	6285	0.33	67.6	10.1	B
3	1.00	0.901	2095	6252	0.34	67.2	10.4	B
4	1.00	0.901	2079	6276	0.33	67.4	10.3	B
5	1.00	0.901	1636	6309	0.26	69.1	7.9	A
6	1.00	0.901	1481	6288	0.24	69.5	7.1	A
7	1.00	0.901	1800	6264	0.29	68.3	8.8	A
8	1.00	0.901	1996	6309	0.32	67.9	9.8	A

Segment 8: Basic

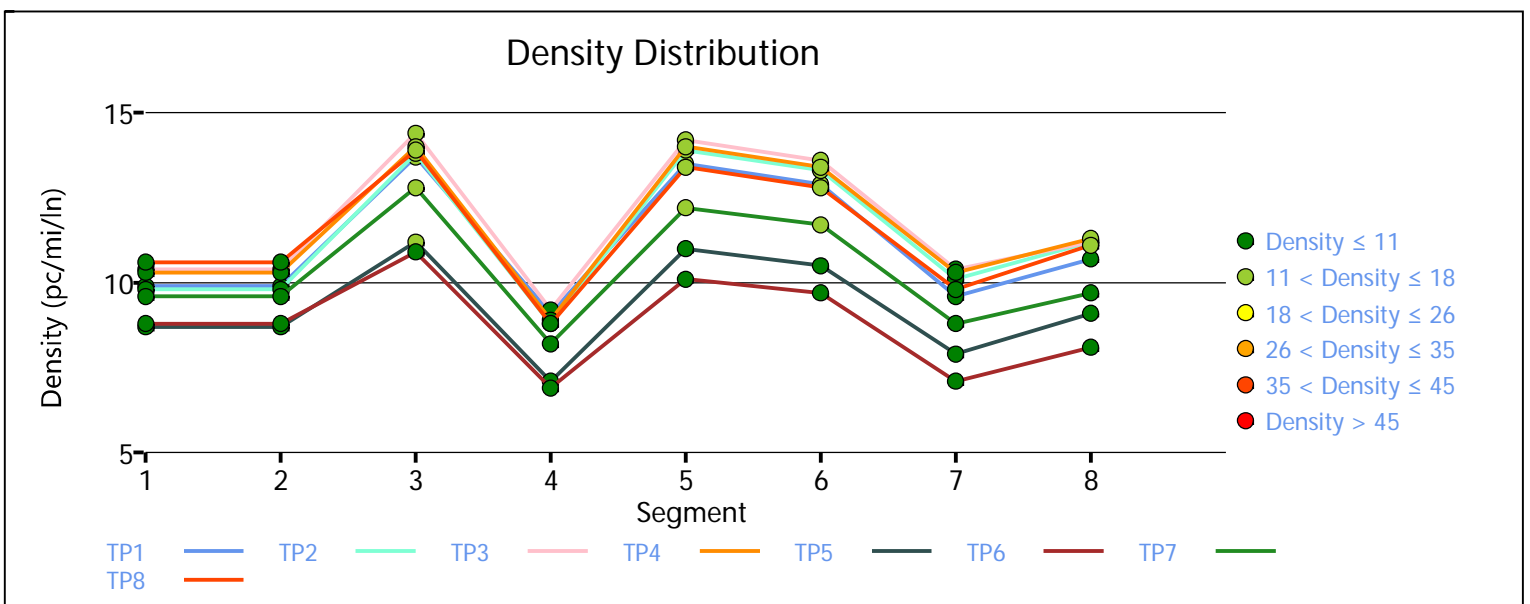
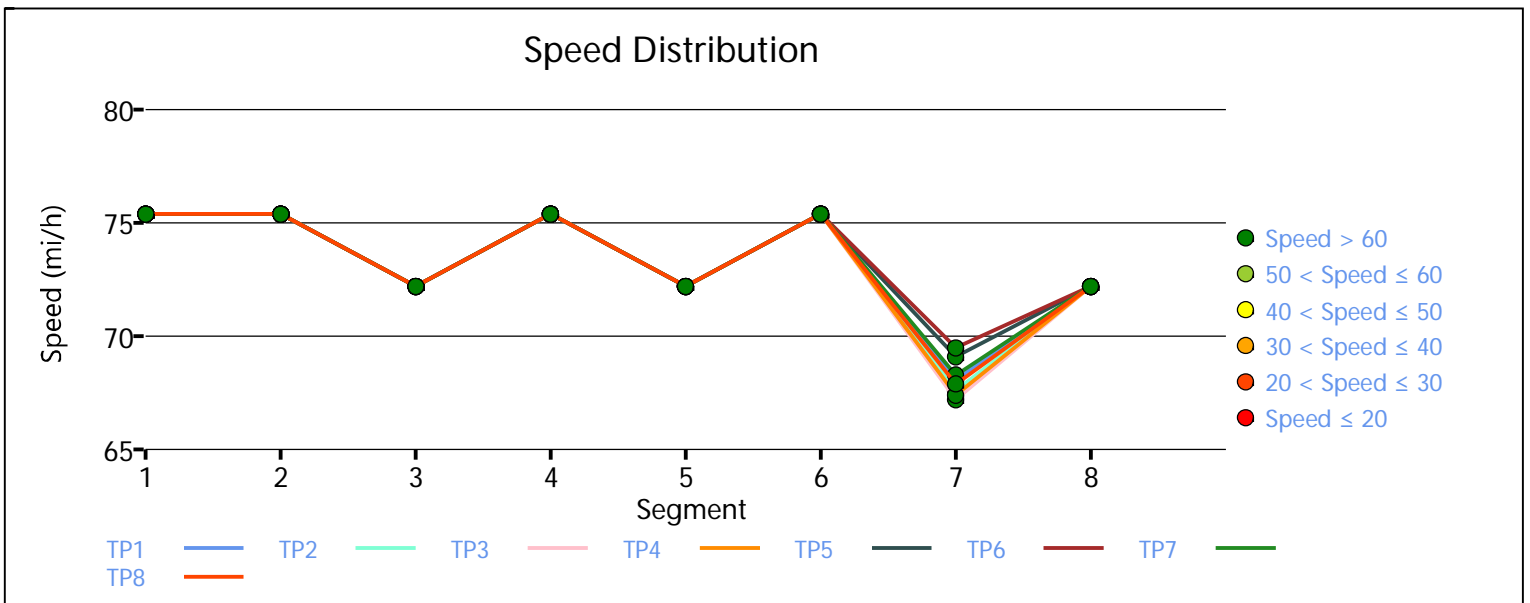
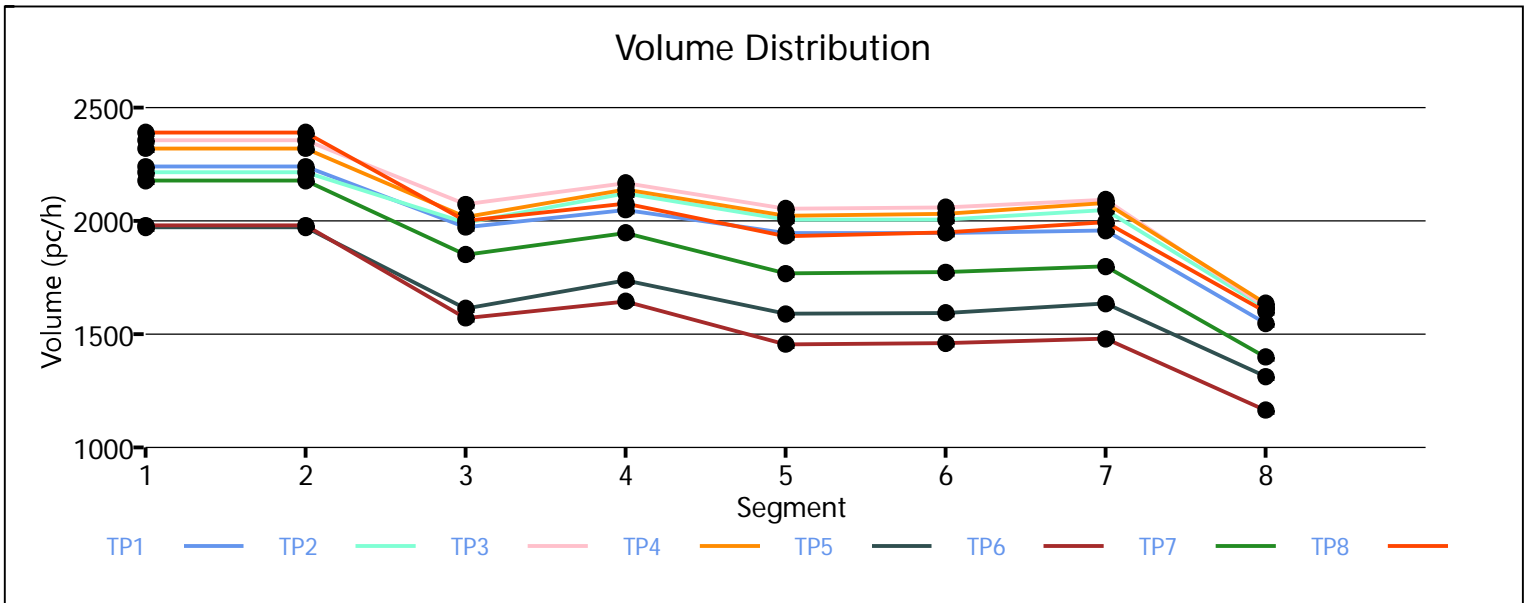
Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	1.00	0.893	1548	4800	0.32	72.2	10.7	A
2	1.00	0.893	1617	4800	0.34	72.2	11.2	B
3	1.00	0.893	1622	4800	0.34	72.2	11.2	B
4	1.00	0.893	1637	4800	0.34	72.2	11.3	B
5	1.00	0.893	1314	4800	0.27	72.2	9.1	A
6	1.00	0.893	1165	4800	0.24	72.2	8.1	A
7	1.00	0.893	1400	4800	0.29	72.2	9.7	A
8	1.00	0.893	1601	4800	0.33	72.2	11.1	B

Facility Time Period Results

T	Speed, mi/h	Density, pc/mi/ln	Density, veh/mi/ln	Travel Time, min	LOS
1	73.3	10.4	9.3	2.1	A
2	73.2	10.4	9.4	2.1	A
3	73.2	10.8	9.7	2.1	A
4	73.2	10.7	9.6	2.1	A
5	73.5	8.5	7.6	2.1	A
6	73.7	8.1	7.3	2.1	A
7	73.4	9.6	8.6	2.1	A
8	73.3	10.5	H-1-3 _{9.4}	2.1	A

Facility Overall Results

Space Mean Speed, mi/h	73.3	Density, veh/mi/ln	8.9
Average Travel Time, min	2.1	Density, pc/mi/ln	9.9



HCS7 Freeway Facilities Report

Project Information

Analyst	WSP	Date	10/15/2018
Agency	City of Moreno Valley	Analysis Year	2018 with Alternative 2
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	WLC Pkwy IC - Eastbound SR-60		

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	8
Total Time Periods	8	Time Period Duration, min	15

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic	Moreno Beach Rd to Redlands Blvd	1350	3
2	Diverge	Basic	Off-Ramp to Redlands Blvd	1500	3
3	Basic	Basic	between Redlands Blvd Off and SB Redlands Blvd On Ramp	770	2
4	Weaving	Basic	Redlands Blvd to WLC Pkwy	3925	3
5	Basic	Basic	between WLC Pkwy Off- and On-Ramps	2350	2
6	Merge	Basic	On-Ramp from SB WLC Pkwy	550	2
7	Weaving	Weaving	NB WLC Pkwy On-Ramp to Gilman Springs Off-Ramp	1950	3
8	Basic	Basic	east of Gilman Springs Rd Off Ramp	1350	2

Facility Segment Data

Segment 1: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	1.00	0.943	2822	7200	0.39	75.4	12.5	B
2	1.00	0.943	3025	7200	0.42	75.4	13.4	B
3	1.00	0.943	3074	7200	0.43	75.4	13.6	B
4	1.00	0.943	3130	7200	0.43	75.4	13.8	B
5	1.00	0.943	2977	7200	0.41	75.4	13.2	B
6	1.00	0.943	3090	7200	0.43	75.4	13.7	B
7	1.00	0.943	2761	7200	0.38	75.4	12.2	B
8	1.00	0.943	3188	7200	0.44	75.3	14.1	B

Segment 2: Diverge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	1.00	1.00	0.943	0.980	2822	514	7200	2000	0.39	0.26	75.4	-	12.5	-	B
2	1.00	1.00	0.943	0.980	3025	567	7200	2000	0.42	0.28	75.4	-	13.4	-	B

3	1.00	1.00	0.943	0.980	3074	559	7200	2000	0.43	0.28	75.4	-	13.6	-	B
4	1.00	1.00	0.943	0.980	3130	584	7200	2000	0.43	0.29	75.4	-	13.8	-	B
5	1.00	1.00	0.943	0.980	2977	588	7200	2000	0.41	0.29	75.4	-	13.2	-	B
6	1.00	1.00	0.943	0.980	3090	535	7200	2000	0.43	0.27	75.4	-	13.7	-	B
7	1.00	1.00	0.943	0.980	2761	510	7200	2000	0.38	0.26	75.4	-	12.2	-	B
8	1.00	1.00	0.943	0.980	3188	563	7200	2000	0.44	0.28	75.3	-	14.1	-	B

Segment 3: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	1.00	0.935	2307	4800	0.48	72.2	16.0	B
2	1.00	0.935	2457	4800	0.51	72.0	17.1	B
3	1.00	0.935	2514	4800	0.52	72.0	17.5	B
4	1.00	0.935	2545	4800	0.53	71.9	17.7	B
5	1.00	0.935	2386	4800	0.50	72.1	16.5	B
6	1.00	0.935	2556	4800	0.53	71.9	17.8	B
7	1.00	0.935	2250	4800	0.47	72.2	15.6	B
8	1.00	0.935	2625	4800	0.55	71.7	18.3	C

Segment 4: Weaving

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	1.00	0.935	2397	7200	0.33	75.4	10.6	A
2	1.00	0.935	2574	7200	0.34	75.4	10.9	A
3	1.00	0.935	2615	7200	0.35	75.4	11.1	B
4	1.00	0.935	2713	7200	0.35	75.4	11.2	B
5	1.00	0.935	2494	7200	0.33	75.4	10.5	A
6	1.00	0.935	2650	7200	0.36	75.4	11.3	B
7	1.00	0.935	2344	7200	0.31	75.4	9.9	A
8	1.00	0.935	2718	7200	0.36	75.4	11.6	B

Segment 5: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	1.00	0.935	2367	4800	0.49	72.1	16.4	B
2	1.00	0.935	2538	4800	0.53	71.9	17.6	B
3	1.00	0.935	2536	4800	0.53	71.9	17.6	B
4	1.00	0.935	2657	4800	0.55	71.7	18.5	C
5	1.00	0.935	2442	4800	0.51	72.1	16.9	B
6	1.00	0.935	2603	4800	0.54	71.8	18.1	C
7	1.00	0.935	2280	4800	0.48	72.2	15.8	B
8	1.00	0.935	2676	4800	0.56	71.6	18.7	C

Segment 6: Merge

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
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	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	1.00	1.00	0.935	0.935	2380	13	4800	2000	0.49	0.01	75.0	-	15.8	-	B
2	1.00	1.00	0.935	0.935	2555	17	4800	2000	0.53	0.01	74.5	-	17.0	-	B
3	1.00	1.00	0.935	0.935	2553	17	4800	2000	0.53	0.01	74.5	-	17.0	-	B
4	1.00	1.00	0.935	0.935	2670	13	4800	2000	0.55	0.01	74.1	-	17.9	-	B
5	1.00	1.00	0.935	0.935	2455	13	4800	2000	0.51	0.01	74.8	-	16.3	-	B
6	1.00	1.00	0.935	0.935	2624	21	4800	2000	0.54	0.01	74.3	-	17.5	-	B
7	1.00	1.00	0.935	0.935	2293	13	4800	2000	0.48	0.01	75.1	-	15.2	-	B
8	1.00	1.00	0.935	0.935	2676	0	4800	2000	0.56	0.00	74.0	-	18.1	-	C

Segment 7: Weaving

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	1.00	0.935	2374	6093	0.39	65.0	12.2	B
2	1.00	0.935	2527	5970	0.42	63.5	13.3	B
3	1.00	0.935	2549	5928	0.43	63.1	13.5	B
4	1.00	0.935	2670	5991	0.45	63.2	14.1	B
5	1.00	0.935	2436	6036	0.40	64.3	12.6	B
6	1.00	0.935	2587	5886	0.44	62.6	13.8	B
7	1.00	0.935	2284	5883	0.39	63.8	11.9	B
8	1.00	0.935	2654	5854	0.45	62.2	14.2	B

Segment 8: Basic

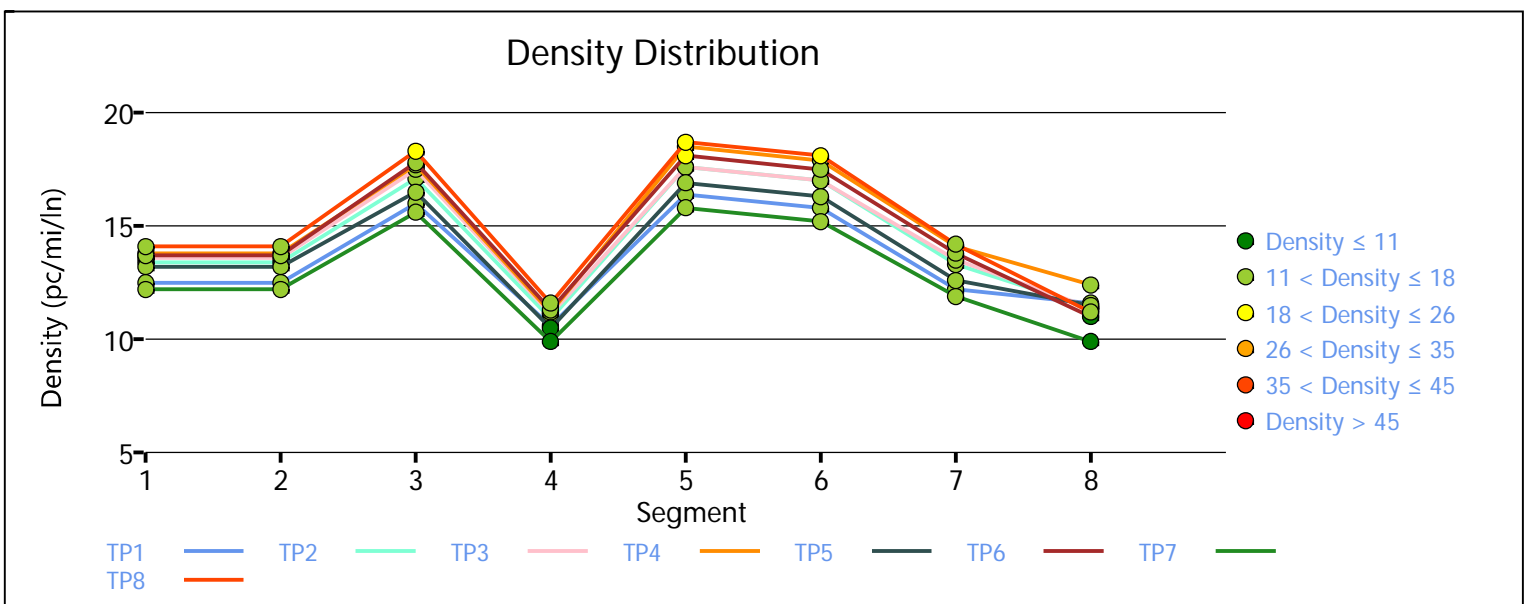
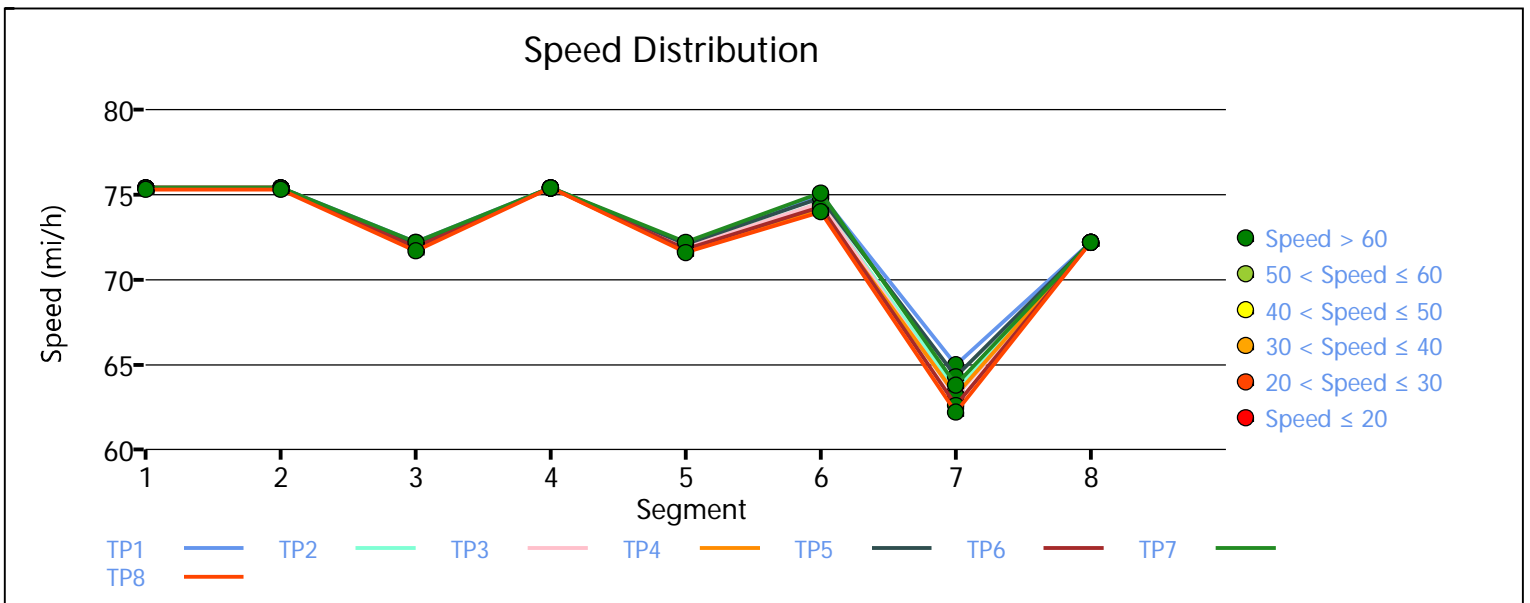
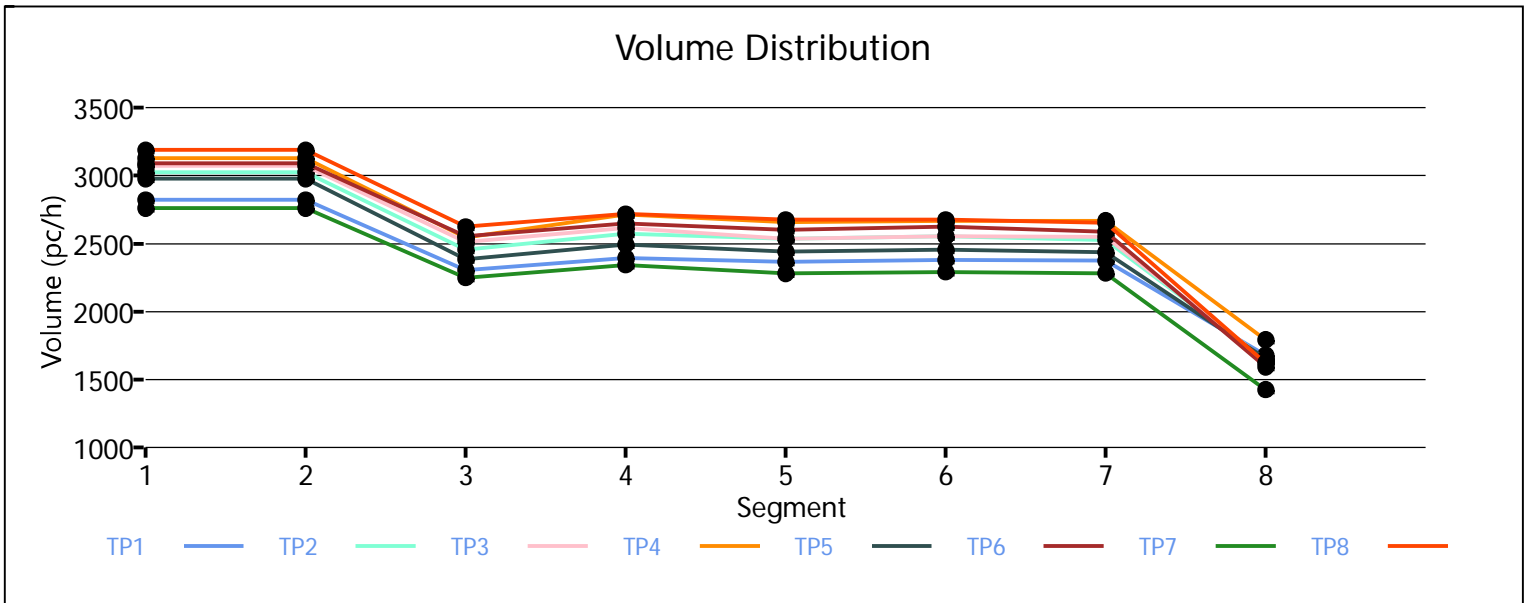
Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	1.00	0.917	1680	4800	0.35	72.2	11.6	B
2	1.00	0.917	1646	4800	0.34	72.2	11.4	B
3	1.00	0.917	1643	4800	0.34	72.2	11.4	B
4	1.00	0.917	1793	4800	0.37	72.2	12.4	B
5	1.00	0.917	1656	4800	0.35	72.2	11.5	B
6	1.00	0.917	1594	4800	0.33	72.2	11.0	A
7	1.00	0.917	1426	4800	0.30	72.2	9.9	A
8	1.00	0.917	1625	4800	0.34	72.2	11.2	B

Facility Time Period Results

T	Speed, mi/h	Density, pc/mi/ln	Density, veh/mi/ln	Travel Time, min	LOS
1	72.8	12.5	11.7	2.1	B
2	72.5	13.2	12.4	2.2	B
3	72.4	13.4	12.5	2.2	B
4	72.3	13.8	12.9	2.2	B
5	72.7	12.8	12.0	2.1	B
6	72.3	13.6	12.7	2.2	B
7	72.6	11.9	11.2	2.2	B
8	72.1	14.0	H-1-8 13.1	2.2	B

Facility Overall Results

Space Mean Speed, mi/h	72.4	Density, veh/mi/ln	12.3
Average Travel Time, min	2.2	Density, pc/mi/ln	13.2



HCS7 Freeway Facilities Report

Project Information

Analyst	WSP	Date	7/3/2018
Agency	City of Moreno Valley	Analysis Year	2018 With Alternative 2
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	WLC Pkwy IC - Westbound SR-60		

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	7
Total Time Periods	8	Time Period Duration, min	15

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic	east of Gilman Springs Rd On Ramp	1100	2
2	Weaving	Weaving	On-Ramp from Gilman Spring to Off-Ramp to Theodore St	2700	3
3	Basic	Basic	between Theodore St Off and Theodore St On Ramps	1820	2
4	Weaving	Weaving	Theodore St On-Ramp to Redlands Blvd Off-Ramp	2890	3
5	Basic	Basic	between Redlands Blvd Off and On Ramps	560	2
6	Merge	Merge	On-Ramp from Redlands Blvd	1500	2
7	Basic	Basic	Redlands Blvd to Moreno Beach Rd	2470	2

Facility Segment Data

Segment 1: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	1.00	0.893	1250	4800	0.26	75.4	8.3	A
2	1.00	0.893	1415	4800	0.29	75.4	9.4	A
3	1.00	0.893	1151	4800	0.24	75.4	7.6	A
4	1.00	0.893	1191	4800	0.25	75.4	7.9	A
5	1.00	0.893	1017	4800	0.21	75.4	6.7	A
6	1.00	0.893	1102	4800	0.23	75.4	7.3	A
7	1.00	0.893	1030	4800	0.21	75.4	6.8	A
8	1.00	0.893	1142	4800	0.24	75.4	7.6	A

Segment 2: Weaving

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	1.00	0.917	2182	6264	0.35	64.5	11.3	B
2	1.00	0.917	2154	6429	0.34	65.8	10.9	B
3	1.00	0.917	1896	6318	0.30	66.1	9.6	A

4	1.00	0.917	1870	6339	0.29	66.5	9.4	A
5	1.00	0.917	1644	6336	0.26	67.1	8.2	A
6	1.00	0.917	1717	6408	0.27	67.1	8.5	A
7	1.00	0.917	1467	6555	0.22	68.6	7.1	A
8	1.00	0.917	1605	6557	0.24	68.3	7.8	A

Segment 3: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	1.00	0.926	2160	4800	0.45	72.6	14.9	B
2	1.00	0.926	2069	4800	0.43	72.6	14.2	B
3	1.00	0.926	1840	4800	0.38	72.6	12.7	B
4	1.00	0.926	1758	4800	0.37	72.6	12.1	B
5	1.00	0.926	1585	4800	0.33	72.6	10.9	A
6	1.00	0.926	1667	4800	0.35	72.6	11.5	B
7	1.00	0.926	1417	4800	0.30	72.6	9.8	A
8	1.00	0.926	1533	4800	0.32	72.6	10.6	A

Segment 4: Weaving

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	1.00	0.917	2209	6945	0.32	71.0	10.4	B
2	1.00	0.917	2125	6936	0.31	71.1	10.0	A
3	1.00	0.917	1905	6897	0.28	71.2	8.9	A
4	1.00	0.917	1802	6895	0.26	71.3	8.4	A
5	1.00	0.917	1654	6879	0.24	71.6	7.7	A
6	1.00	0.917	1738	6912	0.25	71.6	8.1	A
7	1.00	0.917	1510	6834	0.22	71.6	7.0	A
8	1.00	0.917	1585	6939	0.23	72.1	7.3	A

Segment 5: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	1.00	0.917	2133	4800	0.44	72.6	14.7	B
2	1.00	0.917	2046	4800	0.43	72.6	14.1	B
3	1.00	0.917	1810	4800	0.38	72.6	12.5	B
4	1.00	0.917	1701	4800	0.35	72.6	11.7	B
5	1.00	0.917	1566	4800	0.33	72.6	10.8	A
6	1.00	0.917	1671	4800	0.35	72.6	11.5	B
7	1.00	0.917	1418	4800	0.30	72.6	9.8	A
8	1.00	0.917	1535	4800	0.32	72.6	10.6	A

Segment 6: Merge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	

1	1.00	1.00	0.926	0.962	2478	366	4800	2000	0.52	0.18	65.1	65.1	19.0	19.4	B
2	1.00	1.00	0.926	0.962	2475	449	4800	2000	0.52	0.22	65.1	65.1	19.0	19.3	B
3	1.00	1.00	0.926	0.962	2230	437	4800	2000	0.46	0.22	65.4	65.4	17.0	17.4	B
4	1.00	1.00	0.926	0.962	2076	391	4800	2000	0.43	0.20	65.6	65.6	15.8	16.2	B
5	1.00	1.00	0.926	0.962	1896	345	4800	2000	0.40	0.17	65.8	65.8	14.4	14.8	B
6	1.00	1.00	0.926	0.962	1978	324	4800	2000	0.41	0.16	65.7	65.7	15.1	15.5	B
7	1.00	1.00	0.926	0.962	1832	428	4800	2000	0.38	0.21	65.8	65.8	13.9	14.3	B
8	1.00	1.00	0.926	0.962	1862	341	4800	2000	0.39	0.17	65.8	65.8	14.1	14.6	B

Segment 7: Basic

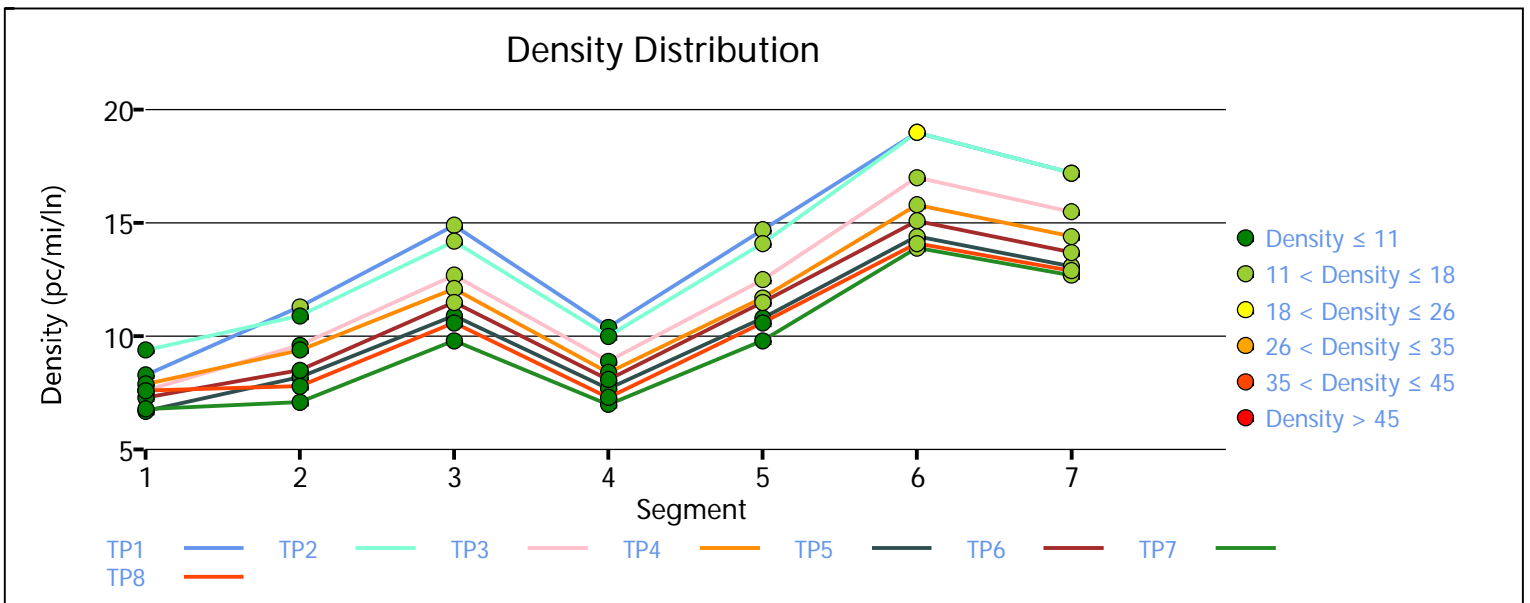
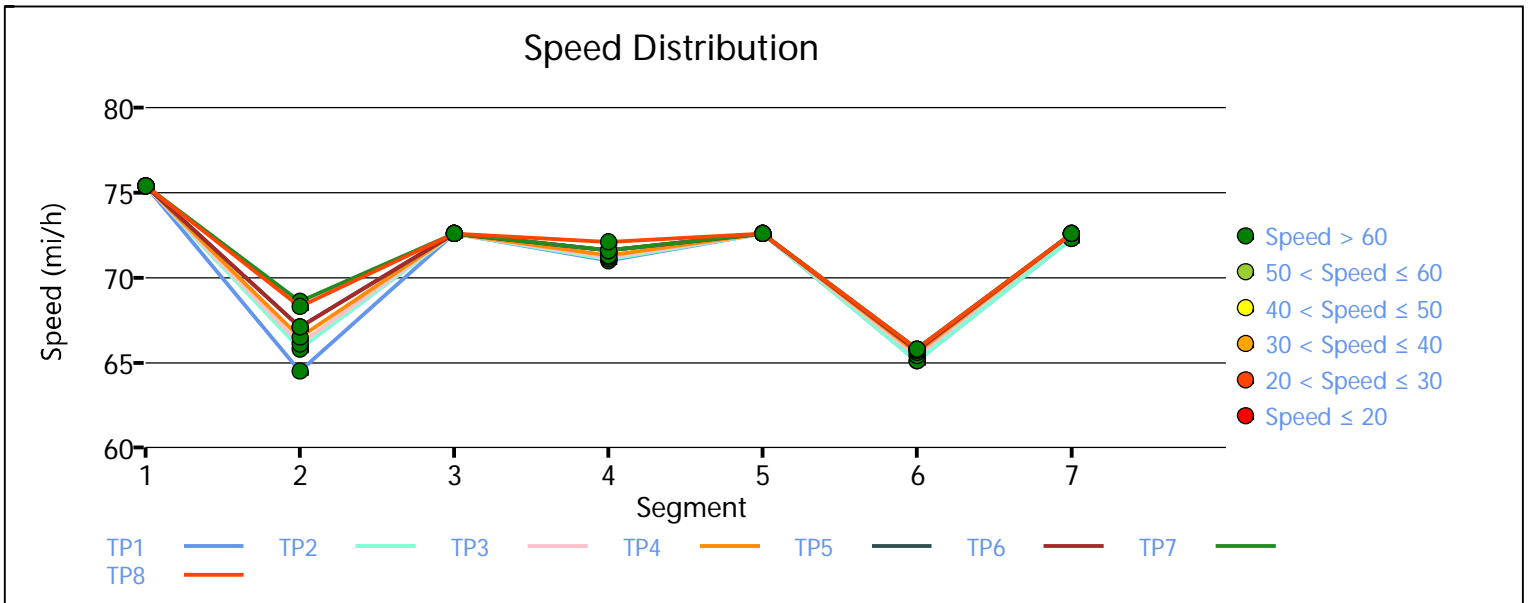
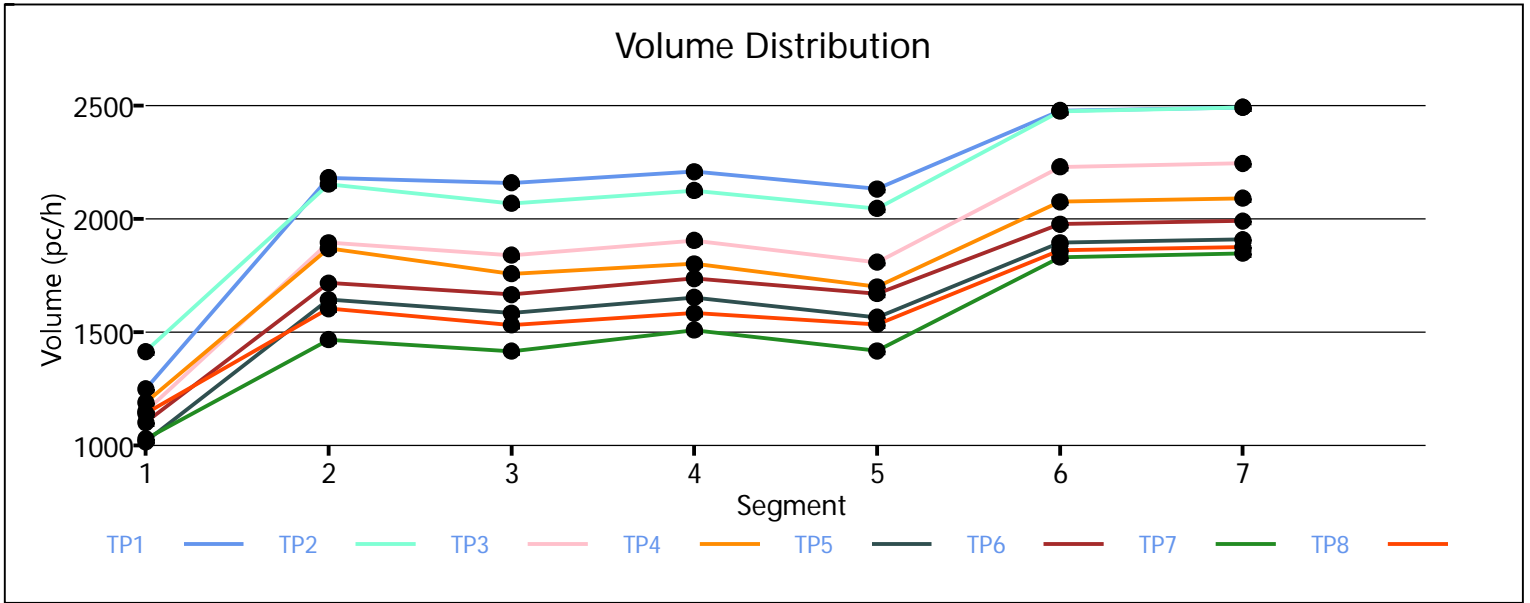
Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	1.00	0.926	2492	4800	0.52	72.3	17.2	B
2	1.00	0.926	2492	4800	0.52	72.3	17.2	B
3	1.00	0.926	2246	4800	0.47	72.6	15.5	B
4	1.00	0.926	2091	4800	0.44	72.6	14.4	B
5	1.00	0.926	1909	4800	0.40	72.6	13.1	B
6	1.00	0.926	1991	4800	0.41	72.6	13.7	B
7	1.00	0.926	1849	4800	0.39	72.6	12.7	B
8	1.00	0.926	1875	4800	0.39	72.6	12.9	B

Facility Time Period Results

T	Speed, mi/h	Density, pc/mi/ln	Density, veh/mi/ln	Travel Time, min	LOS
1	69.5	13.0	12.0	2.1	B
2	69.8	12.8	11.8	2.1	B
3	70.0	11.4	10.5	2.1	B
4	70.1	10.8	9.9	2.1	A
5	70.4	9.7	8.9	2.1	A
6	70.4	10.2	9.4	2.1	A
7	70.7	9.0	8.3	2.1	A
8	70.8	9.5	8.7	2.1	A

Facility Overall Results

Space Mean Speed, mi/h	70.2	Density, veh/mi/ln	9.9
Average Travel Time, min	2.1	Density, pc/mi/ln	10.8



HCS7 Freeway Facilities Report

Project Information

Analyst	WSP	Date	7/3/2018
Agency	City of Moreno Valley	Analysis Year	2018 With Alternative 2
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	WLC Pkwy IC - Westbound SR-60		

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	7
Total Time Periods	8	Time Period Duration, min	15

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic	east of Gilman Springs Rd On Ramp	1100	2
2	Weaving	Weaving	On-Ramp from Gilman Spring to Off-Ramp to Theodore St	2700	3
3	Basic	Basic	between Theodore St Off and Theodore St On Ramps	1820	2
4	Weaving	Weaving	Theodore St On-Ramp to Redlands Blvd Off-Ramp	2390	3
5	Basic	Basic	between Redlands Blvd Off and On Ramps	560	2
6	Merge	Merge	On-Ramp from Redlands Blvd	1500	2
7	Basic	Basic	Redlands Blvd to Moreno Beach Rd	2470	2

Facility Segment Data

Segment 1: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	1.00	0.893	1250	4800	0.26	75.4	8.3	A
2	1.00	0.893	1415	4800	0.29	75.4	9.4	A
3	1.00	0.893	1151	4800	0.24	75.4	7.6	A
4	1.00	0.893	1191	4800	0.25	75.4	7.9	A
5	1.00	0.893	1017	4800	0.21	75.4	6.7	A
6	1.00	0.893	1102	4800	0.23	75.4	7.3	A
7	1.00	0.893	1030	4800	0.21	75.4	6.8	A
8	1.00	0.893	1142	4800	0.24	75.4	7.6	A

Segment 2: Weaving

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	1.00	0.917	2182	6264	0.35	64.5	11.3	B
2	1.00	0.917	2154	6429	0.34	65.8	10.9	B
3	1.00	0.917	1896	6318	0.30	66.1	9.6	A

4	1.00	0.917	1870	6339	0.29	66.5	9.4	A
5	1.00	0.917	1644	6336	0.26	67.1	8.2	A
6	1.00	0.917	1717	6408	0.27	67.1	8.5	A
7	1.00	0.917	1467	6555	0.22	68.6	7.1	A
8	1.00	0.917	1605	6557	0.24	68.3	7.8	A

Segment 3: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	1.00	0.926	2160	4800	0.45	72.6	14.9	B
2	1.00	0.926	2069	4800	0.43	72.6	14.2	B
3	1.00	0.926	1840	4800	0.38	72.6	12.7	B
4	1.00	0.926	1758	4800	0.37	72.6	12.1	B
5	1.00	0.926	1585	4800	0.33	72.6	10.9	A
6	1.00	0.926	1667	4800	0.35	72.6	11.5	B
7	1.00	0.926	1417	4800	0.30	72.6	9.8	A
8	1.00	0.926	1533	4800	0.32	72.6	10.6	A

Segment 4: Weaving

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	1.00	0.917	2209	6945	0.32	71.0	10.4	B
2	1.00	0.917	2125	6936	0.31	71.1	10.0	A
3	1.00	0.917	1905	6897	0.28	71.2	8.9	A
4	1.00	0.917	1802	6895	0.26	71.3	8.4	A
5	1.00	0.917	1654	6879	0.24	71.6	7.7	A
6	1.00	0.917	1738	6912	0.25	71.6	8.1	A
7	1.00	0.917	1510	6834	0.22	71.6	7.0	A
8	1.00	0.917	1585	6939	0.23	72.1	7.3	A

Segment 5: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	1.00	0.917	2133	4800	0.44	72.6	14.7	B
2	1.00	0.917	2046	4800	0.43	72.6	14.1	B
3	1.00	0.917	1810	4800	0.38	72.6	12.5	B
4	1.00	0.917	1701	4800	0.35	72.6	11.7	B
5	1.00	0.917	1566	4800	0.33	72.6	10.8	A
6	1.00	0.917	1671	4800	0.35	72.6	11.5	B
7	1.00	0.917	1418	4800	0.30	72.6	9.8	A
8	1.00	0.917	1535	4800	0.32	72.6	10.6	A

Segment 6: Merge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	

1	1.00	1.00	0.926	0.962	2478	366	4800	2000	0.52	0.18	65.1	65.1	19.0	19.4	B
2	1.00	1.00	0.926	0.962	2475	449	4800	2000	0.52	0.22	65.1	65.1	19.0	19.3	B
3	1.00	1.00	0.926	0.962	2230	437	4800	2000	0.46	0.22	65.4	65.4	17.0	17.4	B
4	1.00	1.00	0.926	0.962	2076	391	4800	2000	0.43	0.20	65.6	65.6	15.8	16.2	B
5	1.00	1.00	0.926	0.962	1896	345	4800	2000	0.40	0.17	65.8	65.8	14.4	14.8	B
6	1.00	1.00	0.926	0.962	1978	324	4800	2000	0.41	0.16	65.7	65.7	15.1	15.5	B
7	1.00	1.00	0.926	0.962	1832	428	4800	2000	0.38	0.21	65.8	65.8	13.9	14.3	B
8	1.00	1.00	0.926	0.962	1862	341	4800	2000	0.39	0.17	65.8	65.8	14.1	14.6	B

Segment 7: Basic

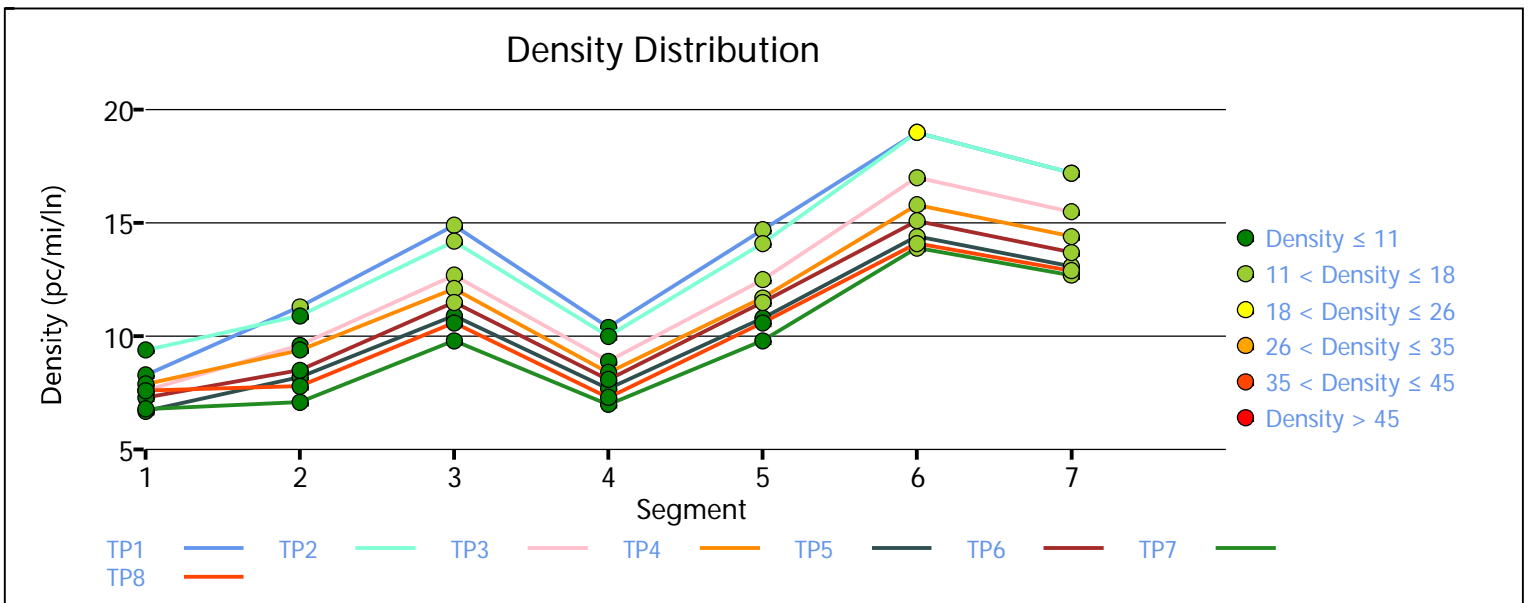
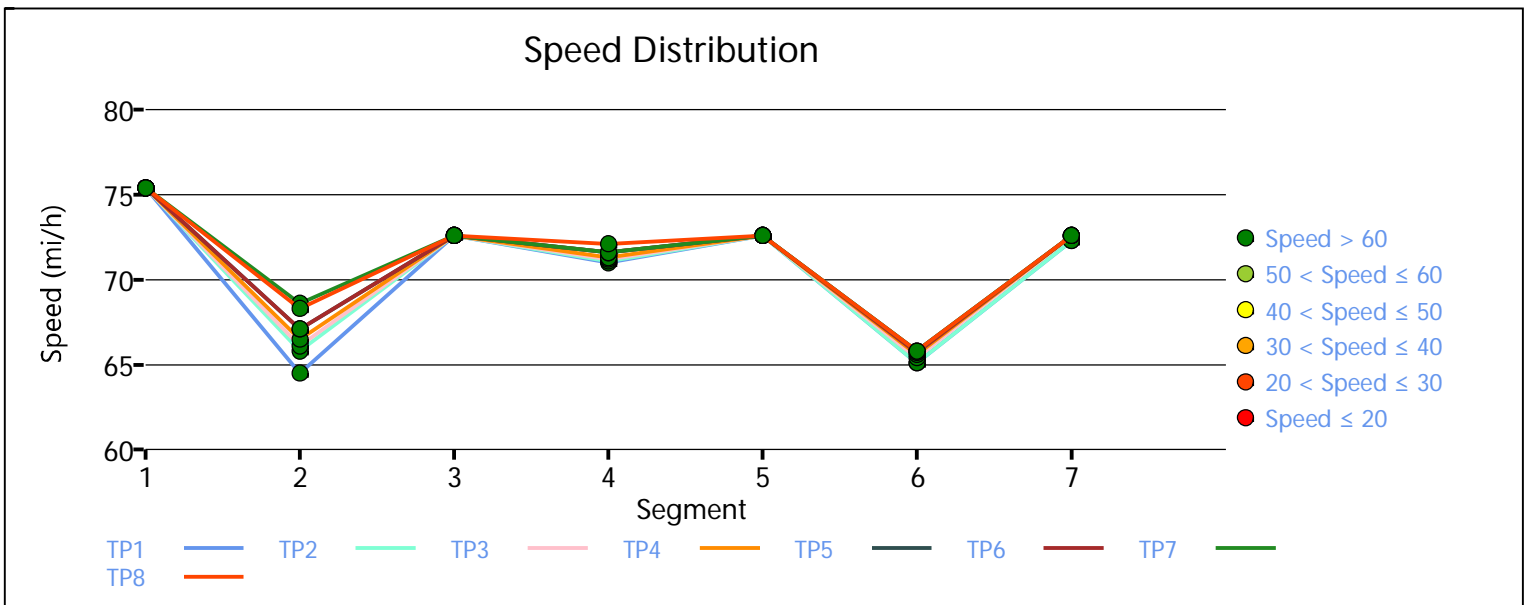
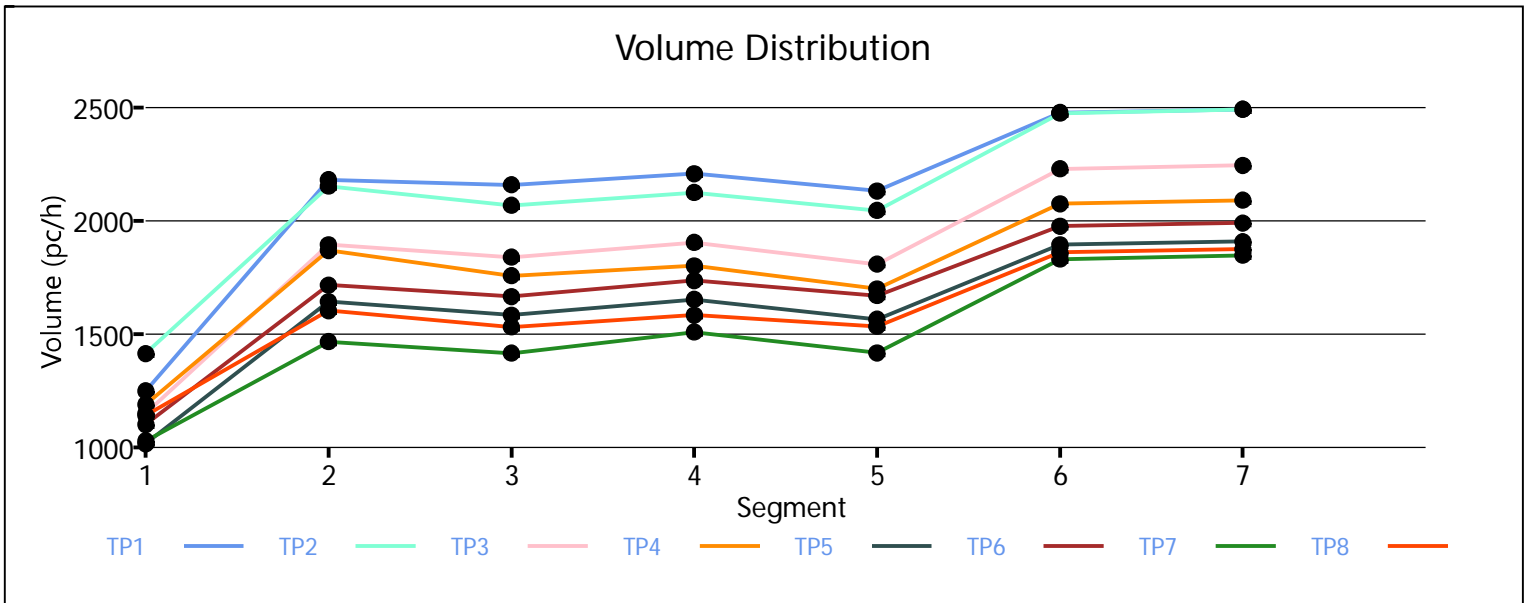
Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	1.00	0.926	2492	4800	0.52	72.3	17.2	B
2	1.00	0.926	2492	4800	0.52	72.3	17.2	B
3	1.00	0.926	2246	4800	0.47	72.6	15.5	B
4	1.00	0.926	2091	4800	0.44	72.6	14.4	B
5	1.00	0.926	1909	4800	0.40	72.6	13.1	B
6	1.00	0.926	1991	4800	0.41	72.6	13.7	B
7	1.00	0.926	1849	4800	0.39	72.6	12.7	B
8	1.00	0.926	1875	4800	0.39	72.6	12.9	B

Facility Time Period Results

T	Speed, mi/h	Density, pc/mi/ln	Density, veh/mi/ln	Travel Time, min	LOS
1	69.4	13.2	12.1	2.1	B
2	69.8	12.9	11.9	2.0	B
3	69.9	11.5	10.6	2.0	B
4	70.1	10.9	10.0	2.0	A
5	70.3	9.8	9.0	2.0	A
6	70.3	10.3	9.5	2.0	A
7	70.7	9.1	8.4	2.0	A
8	70.7	9.6	8.8	2.0	A

Facility Overall Results

Space Mean Speed, mi/h	70.1	Density, veh/mi/ln	10.0
Average Travel Time, min	2.0	Density, pc/mi/ln	10.9



Appendix H-2

Freeway LOS Worksheets for Alternative 2, 2025

HCS7 Freeway Facilities Report

Project Information

Analyst	WSP	Date	7/3/2018
Agency	City of Moreno Valley	Analysis Year	2025 with Alternative 2
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	WLC Pkwy IC - Eastbound SR-60		

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	9
Total Time Periods	8	Time Period Duration, min	15

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic	Moreno Beach Rd to Redlands Blvd	600	3
2	Diverge	Diverge	Off-Ramp to Redlands Blvd	1500	3
3	Basic	Basic	between Redlands Blvd Off and SB Redlands Blvd On Ramp	2150	3
4	Merge	Basic	On-Ramp from SB Redlands Blvd (Loop)	750	3
5	Weaving	Weaving	Redlands Blvd to Theodore St	2545	4
6	Basic	Basic	Theodore St Off-Ramp to Theodore St On Ramp	2350	3
7	Merge	Basic	SB On-Ramp from Theodore St (loop)	550	3
8	Weaving	Weaving	Theodore NB On-Ramp to Gilman Spring Off-Ramp	2450	4
9	Basic	Basic	east of Gilman Springs Rd Off Ramp	1350	3

Facility Segment Data

Segment 1: Basic

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)		LOS
1	1.00		0.870		3316		7200	0.46	75.2	14.7		B
2	1.00		0.870		3247		7200	0.45	75.3	14.4		B
3	1.00		0.870		3492		7200	0.49	75.0	15.5		B
4	1.00		0.870		3416		7200	0.47	75.1	15.2		B
5	1.00		0.870		2897		7200	0.40	75.4	12.8		B
6	1.00		0.870		2960		7200	0.41	75.4	13.1		B
7	1.00		0.870		3203		7200	0.44	75.3	14.2		B
8	1.00		0.870		3548		7200	0.49	75.0	15.8		B

Segment 2: Diverge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	Freeway	Ramp

1	1.00	1.00	0.870	0.909	3316	404	7200	4000	0.46	0.10	67.5	59.9	16.4	7.0	A
2	1.00	1.00	0.870	0.909	3247	341	7200	4000	0.45	0.09	67.6	60.1	16.0	6.7	A
3	1.00	1.00	0.870	0.909	3492	429	7200	4000	0.49	0.11	67.3	59.8	17.3	7.9	A
4	1.00	1.00	0.870	0.909	3416	454	7200	4000	0.47	0.11	67.3	59.7	16.9	7.5	A
5	1.00	1.00	0.870	0.909	2897	530	7200	4000	0.40	0.13	67.4	59.5	14.3	5.0	A
6	1.00	1.00	0.870	0.909	2960	600	7200	4000	0.41	0.15	67.2	59.3	14.7	5.3	A
7	1.00	1.00	0.870	0.909	3203	486	7200	4000	0.44	0.12	67.3	59.6	15.9	6.5	A
8	1.00	1.00	0.870	0.909	3548	581	7200	4000	0.49	0.15	67.0	59.4	17.7	8.2	A

Segment 3: Basic

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
1	1.00		0.870		2894		7200		0.40		71.7		13.5		B
2	1.00		0.870		2891		7200		0.40		71.7		13.4		B
3	1.00		0.870		3044		7200		0.42		71.7		14.2		B
4	1.00		0.870		2941		7200		0.41		71.7		13.7		B
5	1.00		0.870		2343		7200		0.33		71.7		10.9		A
6	1.00		0.870		2333		7200		0.32		71.7		10.9		A
7	1.00		0.870		2695		7200		0.37		71.7		12.5		B
8	1.00		0.870		2941		7200		0.41		71.7		13.7		B

Segment 4: Merge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	1.00	1.00	0.870	0.877	2951	57	7200	2000	0.40	0.03	75.4	-	12.8	-	B
2	1.00	1.00	0.870	0.877	3005	114	7200	2000	0.40	0.06	75.4	-	12.8	-	B
3	1.00	1.00	0.870	0.877	3101	57	7200	2000	0.42	0.03	75.4	-	13.5	-	B
4	1.00	1.00	0.870	0.877	3032	91	7200	2000	0.41	0.05	75.4	-	13.0	-	B
5	1.00	1.00	0.870	0.877	2434	91	7200	2000	0.33	0.05	75.4	-	10.4	-	A
6	1.00	1.00	0.870	0.877	2333	0	7200	2000	0.32	0.00	75.4	-	10.3	-	A
7	1.00	1.00	0.870	0.877	2786	91	7200	2000	0.37	0.05	75.4	-	11.9	-	B
8	1.00	1.00	0.870	0.877	2987	46	7200	2000	0.41	0.02	75.4	-	13.0	-	B

Segment 5: Weaving

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
1	1.00		0.870		3099		9096		0.34		70.4		11.0		B
2	1.00		0.870		3201		8976		0.36		69.9		11.4		B
3	1.00		0.870		3278		9043		0.36		70.0		11.7		B
4	1.00		0.870		3229		8988		0.36		69.9		11.5		B
5	1.00		0.870		2673		8472		0.32		70.0		9.5		A
6	1.00		0.870		2590		6757		0.38		70.1		9.2		A
7	1.00		0.870		3023		8413		0.36		69.9		10.8		B
8	1.00		0.870		3184		8804		0.36		70.0		11.4		B

Segment 6: Basic								
Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	1.00	0.909	2349	7200	0.33	71.7	10.9	A
2	1.00	0.909	2340	7200	0.33	71.7	10.9	A
3	1.00	0.909	2449	7200	0.34	71.7	11.4	B
4	1.00	0.909	2366	7200	0.33	71.7	11.0	A
5	1.00	0.909	1579	7200	0.22	71.7	7.3	A
6	1.00	0.909	1241	7200	0.17	71.7	5.8	A
7	1.00	0.909	1726	7200	0.24	71.7	8.0	A
8	1.00	0.909	2138	7200	0.30	71.7	9.9	A

Segment 7: Merge															
Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	1.00	1.00	0.901	0.980	2370	0	7200	2000	0.33	0.00	75.4	-	10.5	-	A
2	1.00	1.00	0.901	0.980	2361	0	7200	2000	0.33	0.00	75.4	-	10.4	-	A
3	1.00	1.00	0.901	0.980	2484	13	7200	2000	0.34	0.01	75.4	-	10.9	-	A
4	1.00	1.00	0.901	0.980	2415	28	7200	2000	0.33	0.01	75.4	-	10.6	-	A
5	1.00	1.00	0.901	0.980	1606	13	7200	2000	0.22	0.01	75.4	-	7.0	-	A
6	1.00	1.00	0.901	0.980	1265	13	7200	2000	0.17	0.01	75.4	-	5.5	-	A
7	1.00	1.00	0.901	0.980	1754	13	7200	2000	0.24	0.01	75.4	-	7.7	-	A
8	1.00	1.00	0.901	0.980	2197	41	7200	2000	0.30	0.02	75.4	-	9.5	-	A

Segment 8: Weaving								
Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	1.00	0.901	2475	9084	0.27	70.6	8.8	A
2	1.00	0.901	2607	8936	0.29	69.4	9.4	A
3	1.00	0.901	2705	8944	0.30	69.4	9.7	A
4	1.00	0.901	2686	8928	0.30	69.1	9.7	A
5	1.00	0.901	1832	8816	0.21	70.3	6.5	A
6	1.00	0.901	1399	8728	0.16	71.2	4.9	A
7	1.00	0.901	1933	8804	0.22	70.4	6.9	A
8	1.00	0.901	2471	8916	0.28	69.3	8.9	A

Segment 9: Basic								
Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	1.00	0.901	2036	7200	0.28	71.7	9.5	A
2	1.00	0.901	2134	7200	0.30	71.7	9.9	A
3	1.00	0.901	2193	7200	0.30	71.7	10.2	A
4	1.00	0.901	2203	7200	0.31	71.7	10.2	A
5	1.00	0.901	1476	7200	0.21	71.7	6.9	A

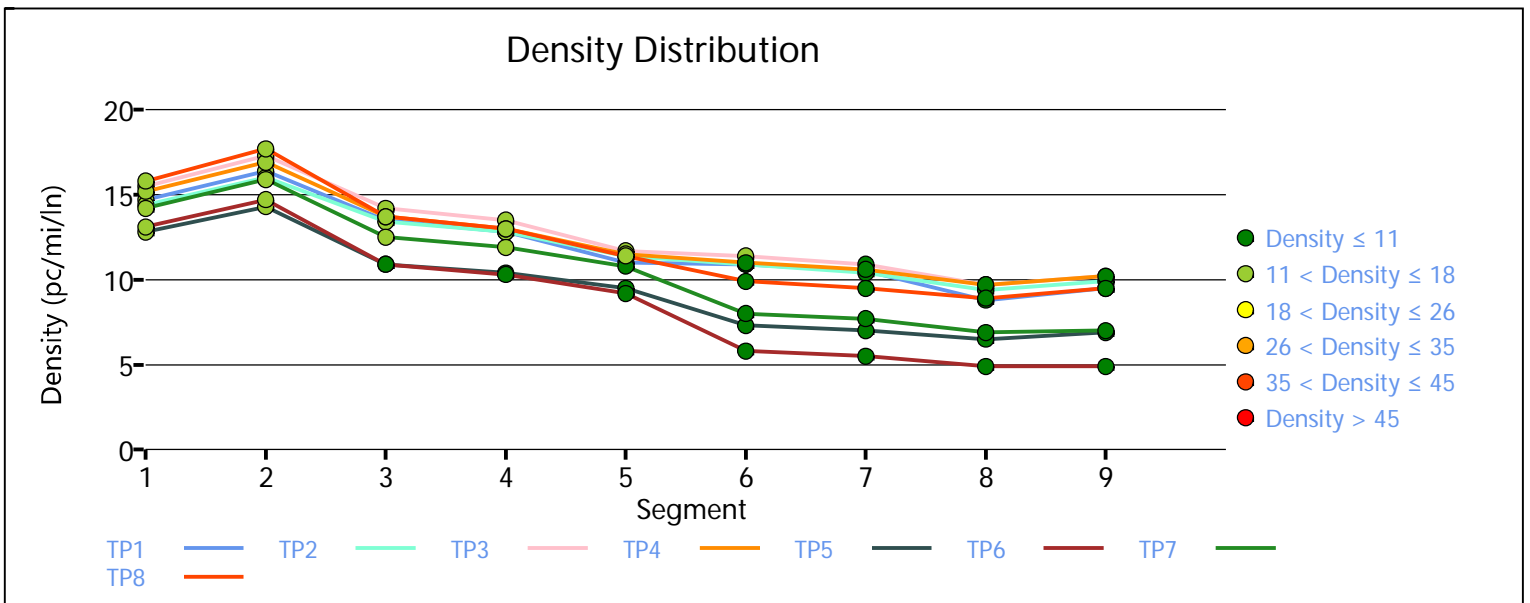
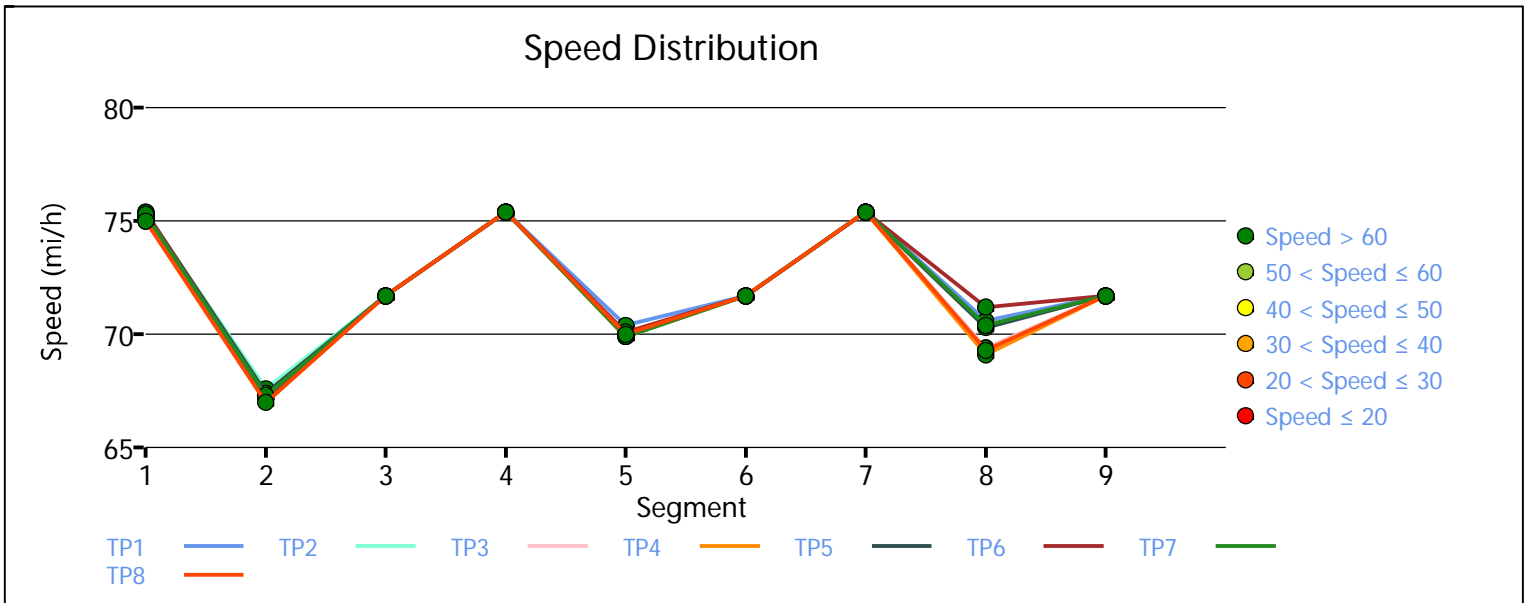
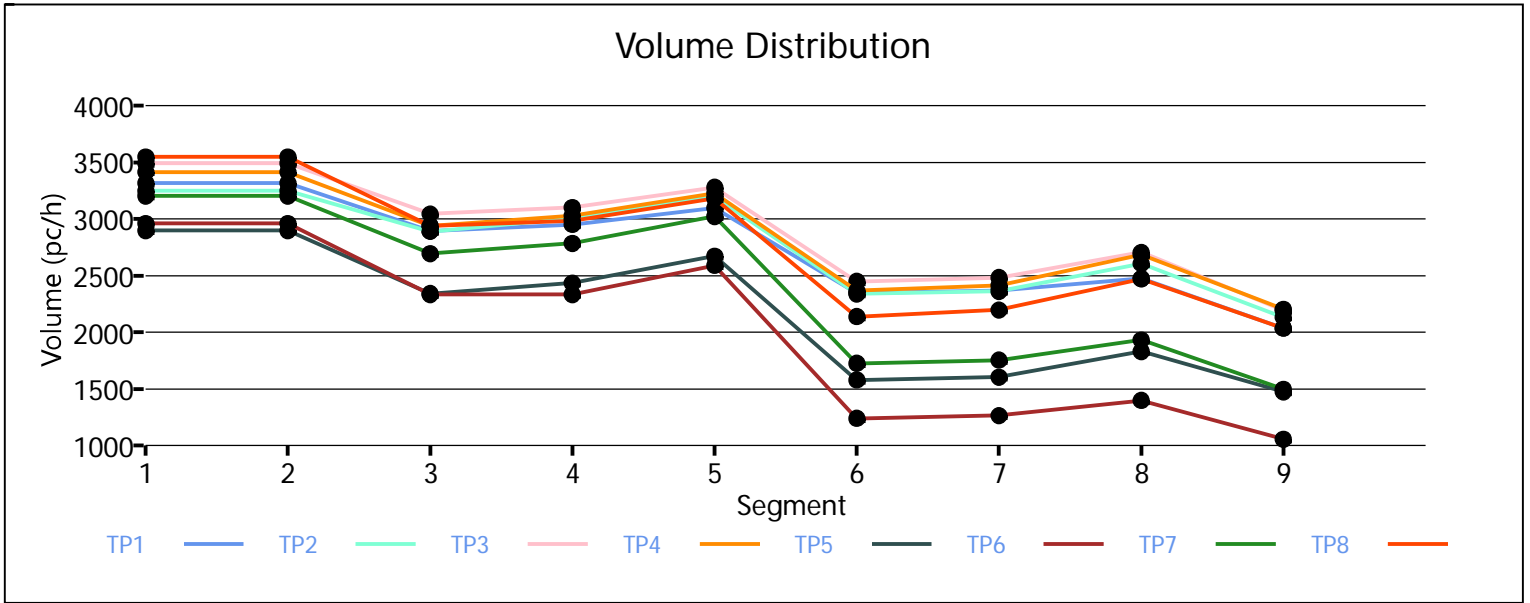
6	1.00	0.901	1057	7200	0.15	71.7	4.9	A
7	1.00	0.901	1498	7200	0.21	71.7	7.0	A
8	1.00	0.901	2036	7200	0.28	71.7	9.5	A

Facility Time Period Results

T	Speed, mi/h	Density, pc/mi/ln	Density, veh/mi/ln	Travel Time, min	LOS
1	71.2	11.5	10.1	2.3	B
2	70.9	11.6	10.3	2.3	B
3	70.9	12.2	10.8	2.3	B
4	70.8	11.9	10.5	2.3	B
5	71.0	9.1	8.0	2.3	A
6	71.1	8.3	7.3	2.3	A
7	71.0	10.1	8.9	2.3	A
8	70.8	11.6	10.2	2.3	B

Facility Overall Results

Space Mean Speed, mi/h	70.9	Density, veh/mi/ln	9.5
Average Travel Time, min	2.3	Density, pc/mi/ln	10.8



HCS7 Freeway Facilities Report

Project Information

Analyst	WSP	Date	7/3/2018
Agency	City of Moreno Valley	Analysis Year	2025 with Alternative 2
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	WLC Pkwy IC - Eastbound SR-60		

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	9
Total Time Periods	8	Time Period Duration, min	15

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic	Moreno Beach Rd to Redlands Blvd	600	3
2	Diverge	Diverge	Off-Ramp to Redlands Blvd	1500	3
3	Basic	Basic	between Redlands Blvd Off and SB Redlands Blvd On Ramp	2150	3
4	Merge	Basic	On-Ramp from SB Redlands Blvd (Loop)	750	3
5	Weaving	Weaving	Redlands Blvd to Theodore St	2545	4
6	Basic	Basic	Theodore St Off-Ramp to Theodore St On Ramp	2350	3
7	Merge	Basic	SB On-Ramp from Theodore St (loop)	550	3
8	Weaving	Weaving	Theodore NB On-Ramp to Gilman Spring Off-Ramp	2450	4
9	Basic	Basic	east of Gilman Springs Rd Off Ramp	1350	3

Facility Segment Data

Segment 1: Basic

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)		LOS
1	1.00		0.917		4094		7200	0.57	73.8	18.5		C
2	1.00		0.917		4375		7200	0.61	72.9	20.0		C
3	1.00		0.917		4458		7200	0.62	72.6	20.5		C
4	1.00		0.917		4511		7200	0.63	72.4	20.8		C
5	1.00		0.917		4321		7200	0.60	73.1	19.7		C
6	1.00		0.917		4506		7200	0.63	72.4	20.7		C
7	1.00		0.917		3975		7200	0.55	74.1	17.9		B
8	1.00		0.917		4625		7200	0.64	72.0	21.4		C

Segment 2: Diverge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	Freeway	Ramp

1	1.00	1.00	0.917	0.962	4094	774	7200	4000	0.57	0.19	66.3	58.8	20.6	10.9	B
2	1.00	1.00	0.917	0.962	4375	853	7200	4000	0.61	0.21	65.9	58.5	22.1	12.3	B
3	1.00	1.00	0.917	0.962	4458	842	7200	4000	0.62	0.21	66.0	58.6	22.5	12.7	B
4	1.00	1.00	0.917	0.962	4511	878	7200	4000	0.63	0.22	65.8	58.5	22.9	12.9	B
5	1.00	1.00	0.917	0.962	4321	885	7200	4000	0.60	0.22	65.9	58.4	21.9	12.0	B
6	1.00	1.00	0.917	0.962	4506	805	7200	4000	0.63	0.20	66.0	58.7	22.8	12.9	B
7	1.00	1.00	0.917	0.962	3975	768	7200	4000	0.55	0.19	66.3	58.8	20.0	10.3	B
8	1.00	1.00	0.917	0.962	4625	848	7200	4000	0.64	0.21	65.9	58.6	23.4	13.5	B

Segment 3: Basic

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
1	1.00		0.909		3310		7200		0.46		71.7		15.4		B
2	1.00		0.909		3510		7200		0.49		71.7		16.3		B
3	1.00		0.909		3606		7200		0.50		71.6		16.8		B
4	1.00		0.909		3622		7200		0.50		71.6		16.9		B
5	1.00		0.909		3422		7200		0.48		71.7		15.9		B
6	1.00		0.909		3694		7200		0.51		71.6		17.2		B
7	1.00		0.909		3197		7200		0.44		71.7		14.9		B
8	1.00		0.909		3768		7200		0.52		71.5		17.6		B

Segment 4: Merge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	1.00	1.00	0.917	0.952	3536	255	7200	2000	0.46	0.13	75.3	-	14.5	-	B
2	1.00	1.00	0.917	0.952	3820	340	7200	2000	0.48	0.17	75.1	-	15.4	-	B
3	1.00	1.00	0.917	0.952	3859	284	7200	2000	0.50	0.14	74.9	-	15.9	-	B
4	1.00	1.00	0.917	0.952	4015	425	7200	2000	0.50	0.21	74.9	-	16.0	-	B
5	1.00	1.00	0.917	0.952	3648	255	7200	2000	0.47	0.13	75.2	-	15.0	-	B
6	1.00	1.00	0.917	0.952	3832	170	7200	2000	0.51	0.09	74.8	-	16.3	-	B
7	1.00	1.00	0.917	0.952	3566	397	7200	2000	0.44	0.20	75.3	-	14.0	-	B
8	1.00	1.00	0.917	0.952	4019	284	7200	2000	0.52	0.14	74.7	-	16.7	-	B

Segment 5: Weaving

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
1	1.00		0.917		3672		9408		0.39		70.0		13.1		B
2	1.00		0.917		3984		9380		0.42		69.6		14.3		B
3	1.00		0.917		4101		9004		0.46		69.1		14.8		B
4	1.00		0.917		4271		9192		0.46		68.7		15.5		B
5	1.00		0.917		3846		9207		0.42		69.5		13.8		B
6	1.00		0.917		4015		9280		0.43		69.4		14.5		B
7	1.00		0.917		3752		9112		0.41		69.8		13.4		B
8	1.00		0.917		4175		9360		0.45		69.5		15.0		B

Segment 6: Basic								
Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	1.00	0.952	3162	7200	0.44	71.7	14.7	B
2	1.00	0.952	3401	7200	0.47	71.7	15.8	B
3	1.00	0.952	3006	7200	0.42	71.7	14.0	B
4	1.00	0.952	3426	7200	0.48	71.7	15.9	B
5	1.00	0.952	3078	7200	0.43	71.7	14.3	B
6	1.00	0.952	3304	7200	0.46	71.7	15.4	B
7	1.00	0.952	2857	7200	0.40	71.7	13.3	B
8	1.00	0.952	3520	7200	0.49	71.7	16.4	B

Segment 7: Merge															
Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	1.00	1.00	0.943	0.971	3225	33	7200	2000	0.44	0.02	75.3	-	14.1	-	B
2	1.00	1.00	0.943	0.971	3478	44	7200	2000	0.48	0.02	75.1	-	15.2	-	B
3	1.00	1.00	0.943	0.971	3079	44	7200	2000	0.42	0.02	75.4	-	13.4	-	B
4	1.00	1.00	0.943	0.971	3492	33	7200	2000	0.48	0.02	75.1	-	15.4	-	B
5	1.00	1.00	0.943	0.971	3140	33	7200	2000	0.43	0.02	75.4	-	13.7	-	B
6	1.00	1.00	0.943	0.971	3390	55	7200	2000	0.46	0.03	75.2	-	14.8	-	B
7	1.00	1.00	0.943	0.971	2917	33	7200	2000	0.40	0.02	75.4	-	12.7	-	B
8	1.00	1.00	0.943	0.971	3554	0	7200	2000	0.49	0.00	75.0	-	15.8	-	B

Segment 8: Weaving								
Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	1.00	0.943	3436	8828	0.39	68.5	12.5	B
2	1.00	0.943	3583	8760	0.41	69.0	13.0	B
3	1.00	0.943	3385	8492	0.40	67.7	12.5	B
4	1.00	0.943	3832	8644	0.44	67.2	14.3	B
5	1.00	0.943	3282	8748	0.38	69.0	11.9	B
6	1.00	0.943	3458	8636	0.40	69.2	12.5	B
7	1.00	0.943	3157	8524	0.37	68.4	11.5	B
8	1.00	0.943	3753	8580	0.44	68.0	13.8	B

Segment 9: Basic								
Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	1.00	0.935	2636	7200	0.37	71.7	12.3	B
2	1.00	0.935	2584	7200	0.36	71.7	12.0	B
3	1.00	0.935	2339	7200	0.32	71.7	10.9	A
4	1.00	0.935	2815	7200	0.39	71.7	13.1	B
5	1.00	0.935	2390	7200	0.33	71.7	11.1	B

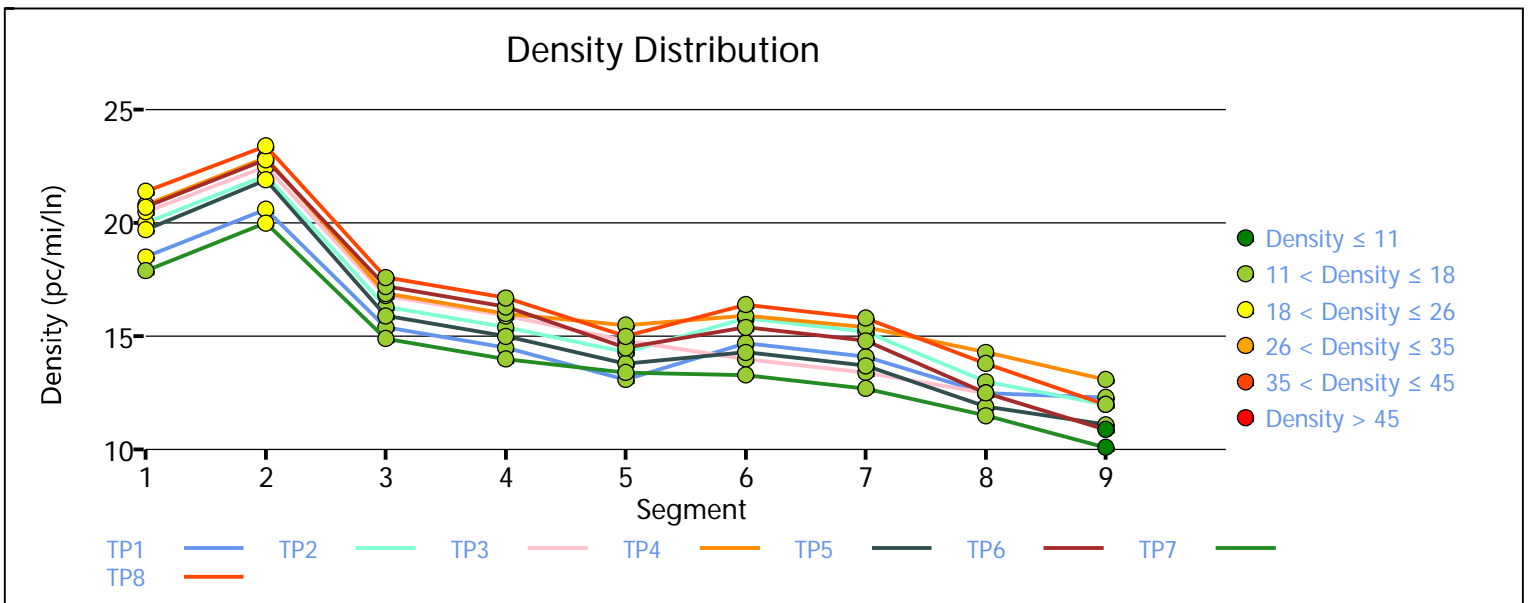
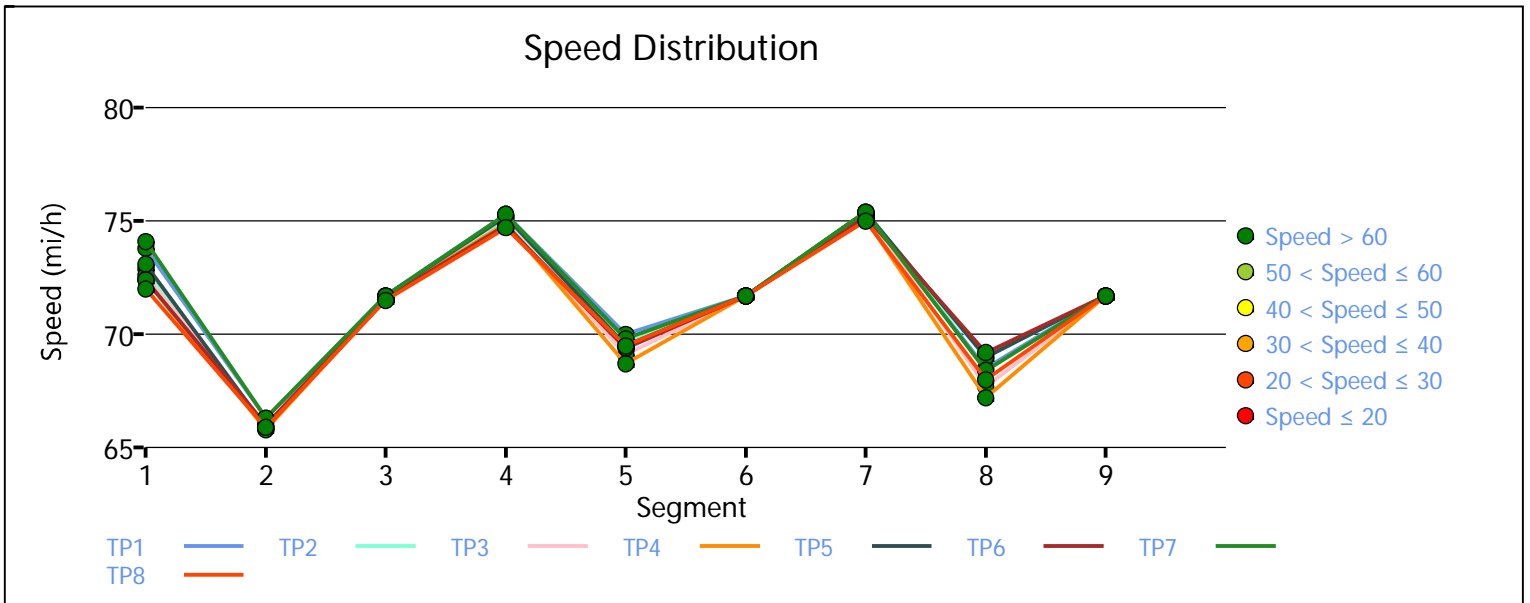
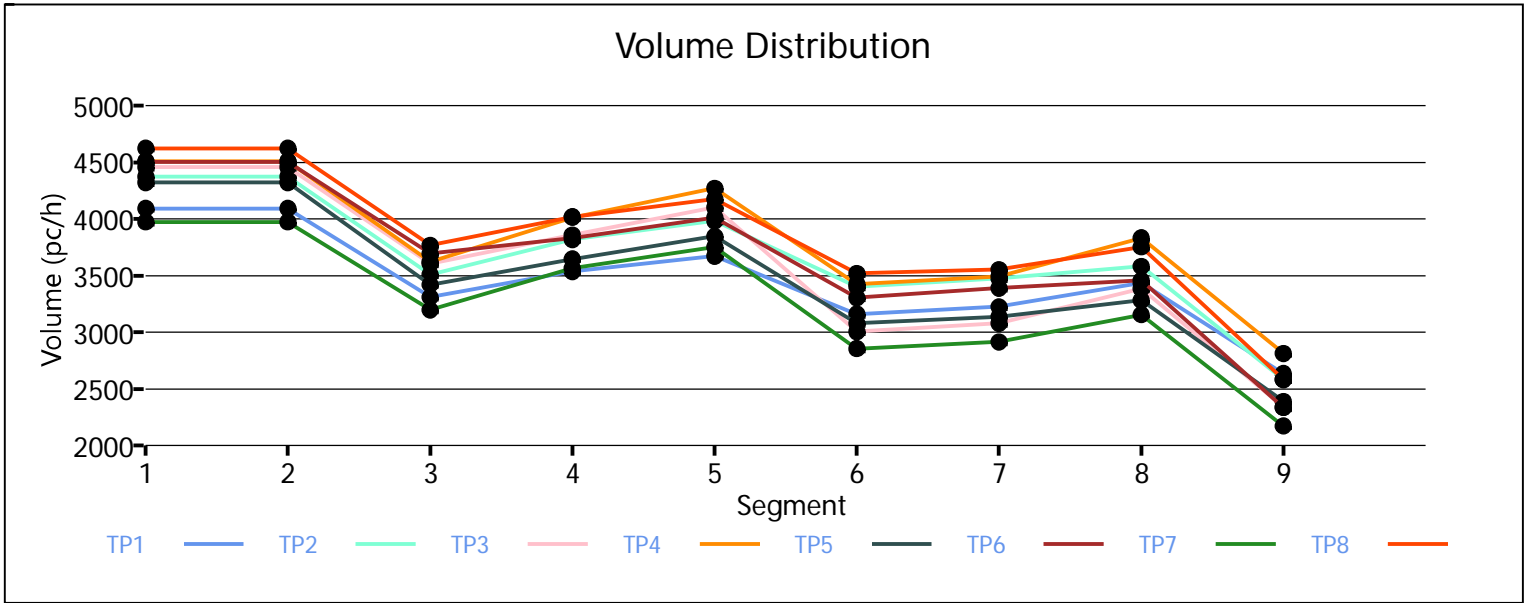
6	1.00	0.935	2337	7200	0.32	71.7	10.9	A
7	1.00	0.935	2174	7200	0.30	71.7	10.1	A
8	1.00	0.935	2583	7200	0.36	71.7	12.0	B

Facility Time Period Results

T	Speed, mi/h	Density, pc/mi/ln	Density, veh/mi/ln	Travel Time, min	LOS
1	70.5	14.5	13.4	2.3	B
2	70.4	15.4	14.3	2.3	B
3	70.0	15.1	14.0	2.3	B
4	69.8	16.2	15.0	2.3	B
5	70.4	14.6	13.5	2.3	B
6	70.3	15.4	14.3	2.3	B
7	70.4	13.7	12.7	2.3	B
8	70.1	16.2	15.0	2.3	B

Facility Overall Results

Space Mean Speed, mi/h	70.2	Density, veh/mi/ln	14.0
Average Travel Time, min	2.3	Density, pc/mi/ln	15.1



HCS7 Freeway Facilities Report

Project Information

Analyst	WSP	Date	7/3/2018
Agency	City of Moreno Valley	Analysis Year	2025 with Alternative 2
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	WLC Pkwy IC - Westbound SR-60		

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	8
Total Time Periods	8	Time Period Duration, min	15

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic	east of Gilman Springs Rd On Ramp	2200	3
2	Weaving	Weaving	On-Ramp from Gilman Spring to Off-Ramp to Theodore St	3200	4
3	Basic	Basic	between Theodore St Off and Theodore St On Ramps	1820	3
4	Weaving	Weaving	Theodore St to Redlands Blvd	2090	4
5	Basic	Basic	between Redlands Blvd Off and On Ramps	1500	3
6	Merge	Merge	On-Ramp from NB Redlands Blvd	1300	3
7	Merge	Merge	On-Ramp from SB Redlands Blvd	1500	3
8	Basic	Basic	Redlands Blvd to Moreno Beach Rd	1070	3

Facility Segment Data

Segment 1: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	1.00	0.926	2070	7200	0.29	75.4	9.2	A
2	1.00	0.926	2344	7200	0.33	75.4	10.4	A
3	1.00	0.926	1906	7200	0.26	75.4	8.4	A
4	1.00	0.926	1973	7200	0.27	75.4	8.7	A
5	1.00	0.926	1684	7200	0.23	75.4	7.4	A
6	1.00	0.926	1825	7200	0.25	75.4	8.1	A
7	1.00	0.926	1706	7200	0.24	75.4	7.5	A
8	1.00	0.926	1892	7200	0.26	75.4	8.4	A

Segment 2: Weaving

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	1.00	0.935	3023	8852	0.34	64.6	11.7	B
2	1.00	0.935	3112	8852	0.35	65.8	11.8	B
3	1.00	0.935	2674	8852	0.30	66.1	10.1	B

4	1.00	0.935	2683	8768	0.31	66.5	10.1	B
5	1.00	0.935	2333	8848	0.26	67.1	8.7	A
6	1.00	0.935	2461	8960	0.27	67.1	9.2	A
7	1.00	0.935	2163	9104	0.24	68.6	7.9	A
8	1.00	0.935	2379	9076	0.26	68.2	8.7	A

Segment 3: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	1.00	0.943	2887	7200	0.40	72.2	13.3	B
2	1.00	0.943	2818	7200	0.39	72.2	13.0	B
3	1.00	0.943	2459	7200	0.34	72.2	11.4	B
4	1.00	0.943	2314	7200	0.32	72.2	10.7	A
5	1.00	0.943	2118	7200	0.29	72.2	9.8	A
6	1.00	0.943	2275	7200	0.32	72.2	10.5	A
7	1.00	0.943	1989	7200	0.28	72.2	9.2	A
8	1.00	0.943	2143	7200	0.30	72.2	9.9	A

Segment 4: Weaving

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	1.00	0.885	3756	8828	0.43	65.0	14.4	B
2	1.00	0.885	3822	8724	0.44	64.0	14.9	B
3	1.00	0.885	3717	8396	0.44	62.2	14.9	B
4	1.00	0.885	3138	8545	0.37	65.6	12.0	B
5	1.00	0.885	3495	7830	0.45	61.4	14.2	B
6	1.00	0.885	3669	8359	0.44	61.2	15.0	B
7	1.00	0.885	3921	6518	0.60	57.8	17.0	B
8	1.00	0.885	3113	8632	0.36	64.6	12.0	B

Segment 5: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	1.00	0.885	3304	7200	0.46	72.2	15.2	B
2	1.00	0.885	3344	7200	0.46	72.2	15.4	B
3	1.00	0.885	3124	7200	0.43	72.2	14.4	B
4	1.00	0.885	2567	7200	0.36	72.2	11.9	B
5	1.00	0.885	2915	7200	0.40	72.2	13.5	B
6	1.00	0.885	3188	7200	0.44	72.2	14.7	B
7	1.00	0.885	3252	7200	0.45	72.2	15.0	B
8	1.00	0.885	2772	7200	0.39	72.2	12.8	B

Segment 6: Merge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	

1	1.00	1.00	0.901	0.909	3449	204	7200	2000	0.48	0.10	67.2	64.3	17.1	20.0	B
2	1.00	1.00	0.901	0.909	3525	241	7200	2000	0.49	0.12	67.1	64.2	17.5	20.4	C
3	1.00	1.00	0.901	0.909	3296	227	7200	2000	0.46	0.11	67.3	64.4	16.3	19.4	B
4	1.00	1.00	0.901	0.909	2643	121	7200	2000	0.37	0.06	67.9	64.7	13.0	16.1	B
5	1.00	1.00	0.901	0.909	3029	166	7200	2000	0.42	0.08	67.5	64.5	15.0	18.0	B
6	1.00	1.00	0.901	0.909	3289	158	7200	2000	0.46	0.08	67.4	64.4	16.3	19.1	B
7	1.00	1.00	0.901	0.909	3548	354	7200	2000	0.49	0.18	67.0	64.2	17.7	20.9	C
8	1.00	1.00	0.901	0.909	3032	309	7200	2000	0.42	0.15	67.4	64.5	15.0	18.4	B

Segment 7: Merge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	1.00	1.00	0.901	0.980	3846	395	7200	2000	0.53	0.20	67.7	65.4	18.9	18.5	B
2	1.00	1.00	0.901	0.980	4019	492	7200	2000	0.56	0.25	67.5	65.2	19.8	19.6	B
3	1.00	1.00	0.901	0.980	3783	486	7200	2000	0.53	0.24	67.7	65.4	18.6	18.4	B
4	1.00	1.00	0.901	0.980	3149	505	7200	2000	0.44	0.25	68.2	65.9	15.4	15.5	B
5	1.00	1.00	0.901	0.980	3426	395	7200	2000	0.48	0.20	68.1	65.8	16.8	16.5	B
6	1.00	1.00	0.901	0.980	3660	369	7200	2000	0.51	0.18	67.9	65.6	18.0	17.5	B
7	1.00	1.00	0.901	0.980	3914	362	7200	2000	0.54	0.18	67.7	65.4	19.3	18.7	B
8	1.00	1.00	0.901	0.980	3299	265	7200	2000	0.46	0.13	68.3	65.9	16.1	15.6	B

Segment 8: Basic

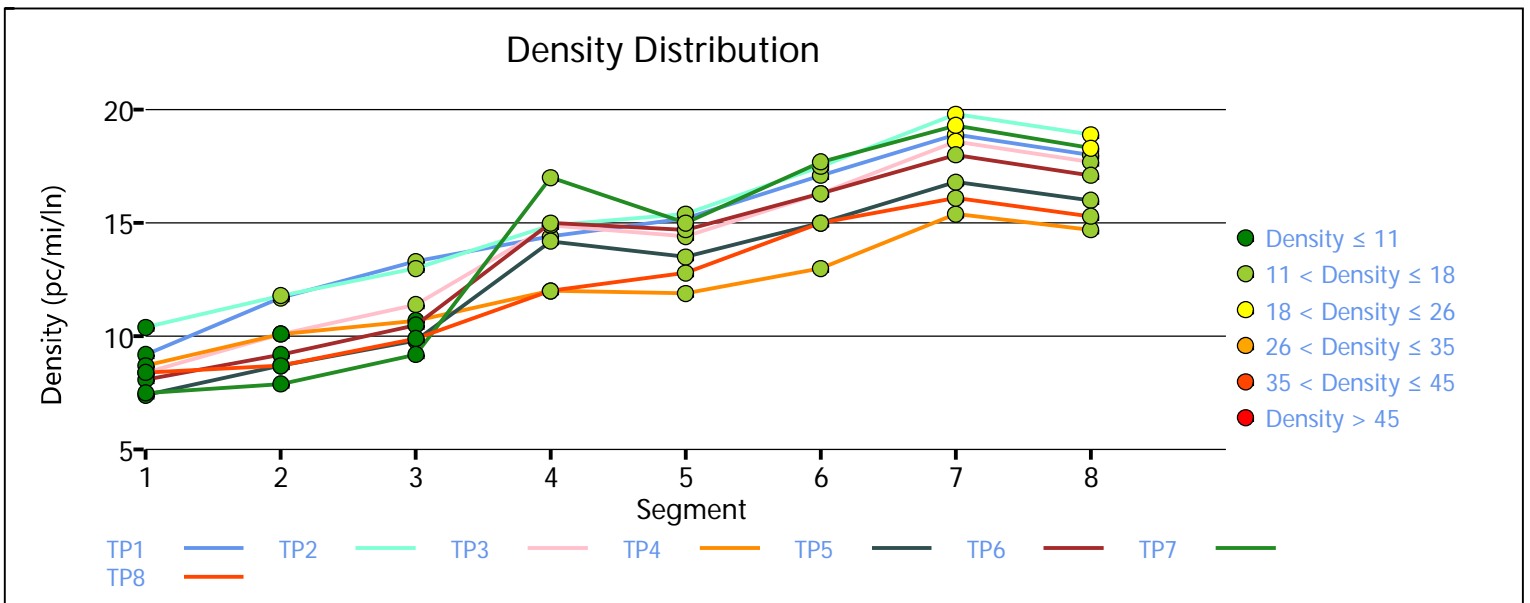
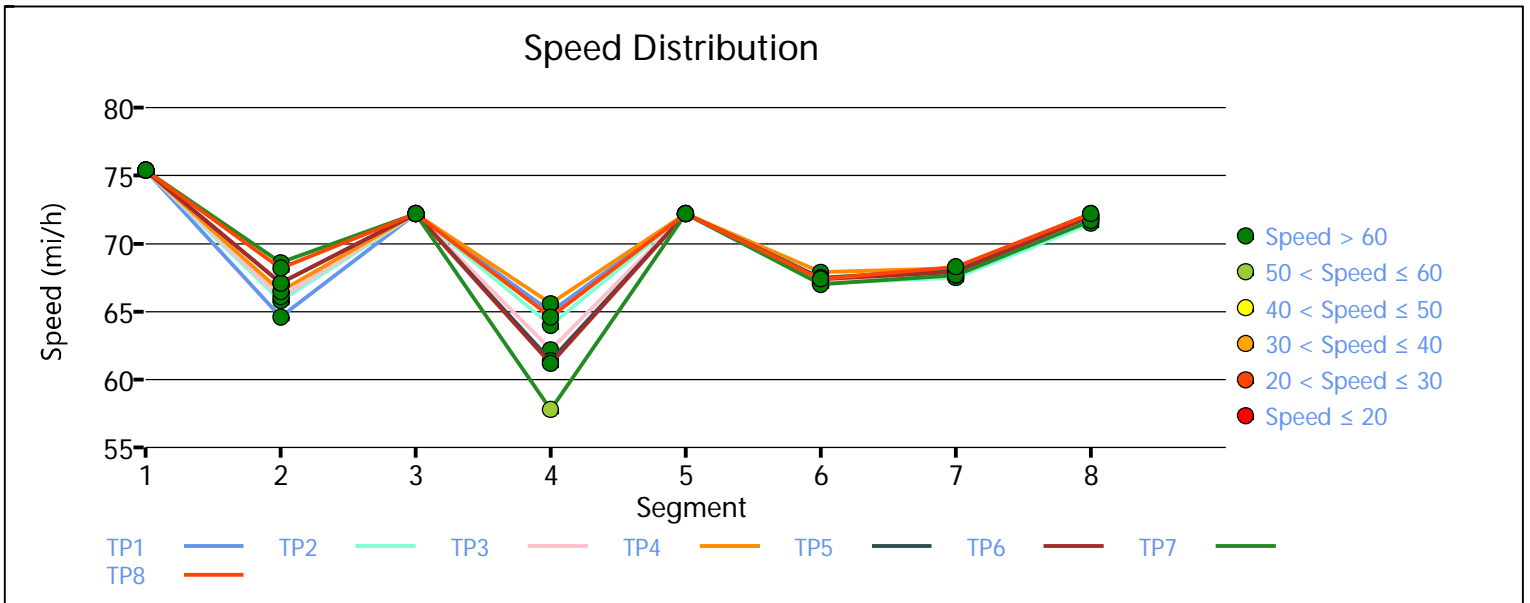
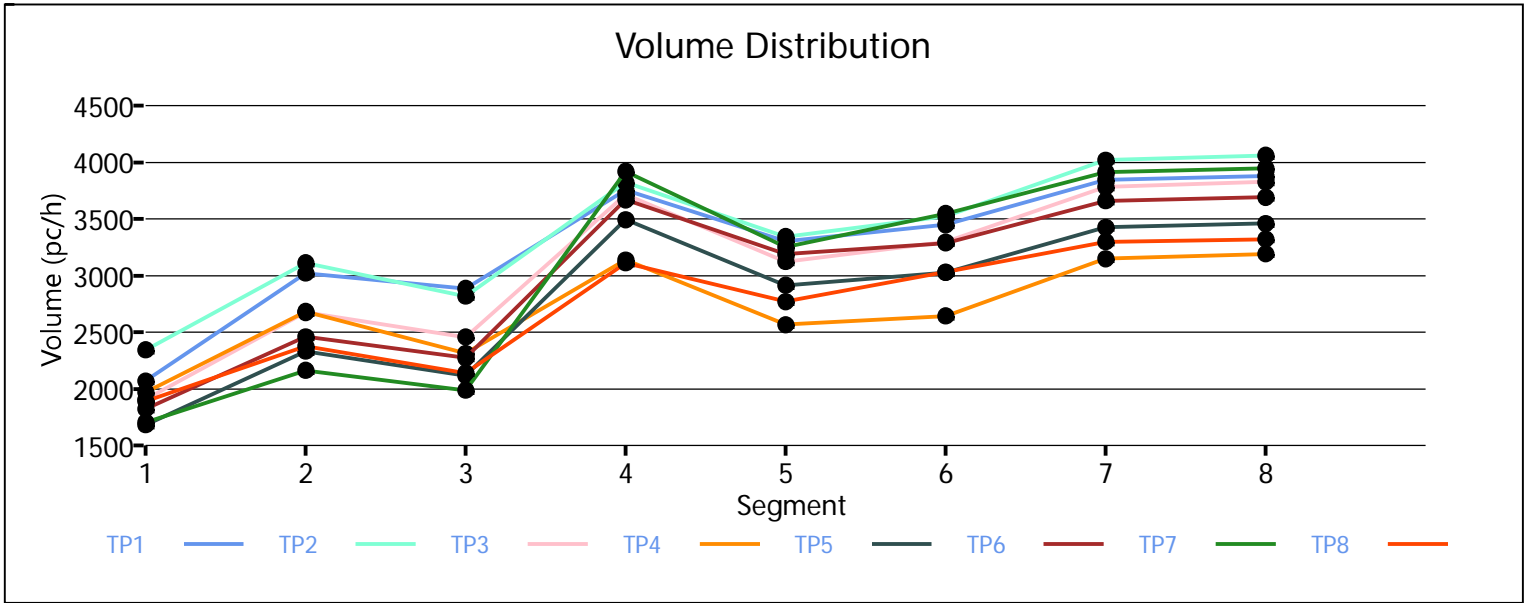
Time Period	PHF		fHV	Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
1	1.00		0.901	3880		7200		0.54		71.8		18.0	B	
2	1.00		0.901	4062		7200		0.56		71.5		18.9	C	
3	1.00		0.901	3826		7200		0.53		71.9		17.7	B	
4	1.00		0.901	3193		7200		0.44		72.2		14.7	B	
5	1.00		0.901	3461		7200		0.48		72.2		16.0	B	
6	1.00		0.901	3693		7200		0.51		72.0		17.1	B	
7	1.00		0.901	3946		7200		0.55		71.7		18.3	C	
8	1.00		0.901	3323		7200		0.46		72.2		15.3	B	

Facility Time Period Results

T	Speed, mi/h	Density, pc/mi/ln	Density, veh/mi/ln	Travel Time, min	LOS
1	68.5	13.8	12.6	2.4	B
2	68.6	14.2	13.0	2.4	B
3	68.3	13.0	11.8	2.4	B
4	69.2	11.5	10.5	2.4	B
5	68.4	11.7	10.7	2.4	B
6	68.3	12.6	11.4	2.4	B
7	67.6	12.7	11.5	2.5	B
8	69.4	11.3	H-2-13 10.3	2.4	B

Facility Overall Results

Space Mean Speed, mi/h	68.5	Density, veh/mi/ln	11.5
Average Travel Time, min	2.4	Density, pc/mi/ln	12.6



HCS7 Freeway Facilities Report

Project Information

Analyst	WSP	Date	7/3/2018
Agency	City of Moreno Valley	Analysis Year	2025 with Alternative 2
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	WLC Pkwy IC - Westbound SR-60		

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	8
Total Time Periods	8	Time Period Duration, min	15

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic	east of Gilman Springs Rd On Ramp	2200	3
2	Weaving	Weaving	On-Ramp from Gilman Spring to Off-Ramp to Theodore St	3200	4
3	Basic	Basic	between Theodore St Off and Theodore St On Ramps	1820	3
4	Weaving	Weaving	Theodore St to Redlands Blvd	2090	4
5	Basic	Basic	between Redlands Blvd Off and On Ramps	1500	3
6	Merge	Merge	On-Ramp from NB Redlands Blvd	1300	3
7	Merge	Merge	On-Ramp from SB Redlands Blvd	1500	3
8	Basic	Basic	Redlands Blvd to Moreno Beach Rd	1070	3

Facility Segment Data

Segment 1: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	1.00	0.901	2270	7200	0.32	75.4	10.0	A
2	1.00	0.901	2872	7200	0.40	75.4	12.7	B
3	1.00	0.901	2483	7200	0.34	75.4	11.0	A
4	1.00	0.901	2534	7200	0.35	75.4	11.2	B
5	1.00	0.901	2853	7200	0.40	75.4	12.6	B
6	1.00	0.901	2829	7200	0.39	75.4	12.5	B
7	1.00	0.901	2464	7200	0.34	75.4	10.9	A
8	1.00	0.901	2590	7200	0.36	75.4	11.4	B

Segment 2: Weaving

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	1.00	0.909	2741	9324	0.29	68.0	10.1	B
2	1.00	0.909	3410	9276	0.37	66.9	12.7	B
3	1.00	0.909	3088	9188	0.34	66.7	11.6	B

4	1.00	0.909	2952	9328	0.32	68.1	10.8	B
5	1.00	0.909	3336	9316	0.36	67.3	12.4	B
6	1.00	0.909	3291	9372	0.35	67.5	12.2	B
7	1.00	0.909	2983	9300	0.32	67.4	11.1	B
8	1.00	0.909	2981	9360	0.32	68.3	10.9	B

Segment 3: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	1.00	0.917	2632	7200	0.37	72.2	12.1	B
2	1.00	0.917	3032	7200	0.42	72.2	14.0	B
3	1.00	0.917	2903	7200	0.40	72.2	13.4	B
4	1.00	0.917	2732	7200	0.38	72.2	12.6	B
5	1.00	0.917	3089	7200	0.43	72.2	14.3	B
6	1.00	0.917	3097	7200	0.43	72.2	14.3	B
7	1.00	0.917	2848	7200	0.40	72.2	13.1	B
8	1.00	0.917	2759	7200	0.38	72.2	12.7	B

Segment 4: Weaving

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	1.00	0.877	3912	8540	0.46	61.5	15.9	B
2	1.00	0.877	4038	8852	0.46	63.5	15.9	B
3	1.00	0.877	4011	8820	0.45	62.7	16.0	B
4	1.00	0.877	3378	9004	0.38	66.6	12.7	B
5	1.00	0.877	3756	9088	0.41	66.3	14.2	B
6	1.00	0.877	3565	9211	0.39	68.1	13.1	B
7	1.00	0.877	3697	8884	0.42	64.8	14.3	B
8	1.00	0.877	3267	9172	0.36	68.0	12.0	B

Segment 5: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	1.00	0.877	3441	7200	0.48	72.2	15.9	B
2	1.00	0.877	3681	7200	0.51	72.0	17.0	B
3	1.00	0.877	3706	7200	0.51	72.0	17.2	B
4	1.00	0.877	3080	7200	0.43	72.2	14.2	B
5	1.00	0.877	3485	7200	0.48	72.2	16.1	B
6	1.00	0.877	3319	7200	0.46	72.2	15.3	B
7	1.00	0.877	3344	7200	0.46	72.2	15.4	B
8	1.00	0.877	3067	7200	0.43	72.2	14.2	B

Segment 6: Merge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	

1	1.00	1.00	0.885	0.840	3623	213	7200	2000	0.50	0.11	67.1	64.2	18.0	20.8	C
2	1.00	1.00	0.885	0.840	3907	260	7200	2000	0.54	0.13	66.7	63.9	19.5	22.2	C
3	1.00	1.00	0.885	0.840	3893	221	7200	2000	0.54	0.11	66.8	64.0	19.4	22.1	C
4	1.00	1.00	0.885	0.840	3242	190	7200	2000	0.45	0.10	67.4	64.4	16.0	19.0	B
5	1.00	1.00	0.885	0.840	3689	236	7200	2000	0.51	0.12	67.0	64.1	18.4	21.2	C
6	1.00	1.00	0.885	0.840	3594	305	7200	2000	0.50	0.15	67.0	64.2	17.9	20.9	C
7	1.00	1.00	0.885	0.840	3520	206	7200	2000	0.49	0.10	67.2	64.3	17.5	20.3	C
8	1.00	1.00	0.885	0.840	3238	198	7200	2000	0.45	0.10	67.4	64.4	16.0	19.0	B

Segment 7: Merge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	1.00	1.00	0.885	0.980	3975	363	7200	2000	0.55	0.18	67.6	65.3	19.6	19.0	B
2	1.00	1.00	0.885	0.980	4267	373	7200	2000	0.59	0.19	67.3	65.0	21.1	20.4	C
3	1.00	1.00	0.885	0.980	4275	393	7200	2000	0.59	0.20	67.2	65.0	21.2	20.5	C
4	1.00	1.00	0.885	0.980	3582	349	7200	2000	0.50	0.17	68.0	65.7	17.6	17.1	B
5	1.00	1.00	0.885	0.980	4040	363	7200	2000	0.56	0.18	67.6	65.3	19.9	19.3	B
6	1.00	1.00	0.885	0.980	3942	363	7200	2000	0.55	0.18	67.6	65.4	19.4	18.9	B
7	1.00	1.00	0.885	0.980	4006	496	7200	2000	0.56	0.25	67.5	65.2	19.8	19.5	B
8	1.00	1.00	0.885	0.980	3600	373	7200	2000	0.50	0.19	68.0	65.7	17.6	17.3	B

Segment 8: Basic

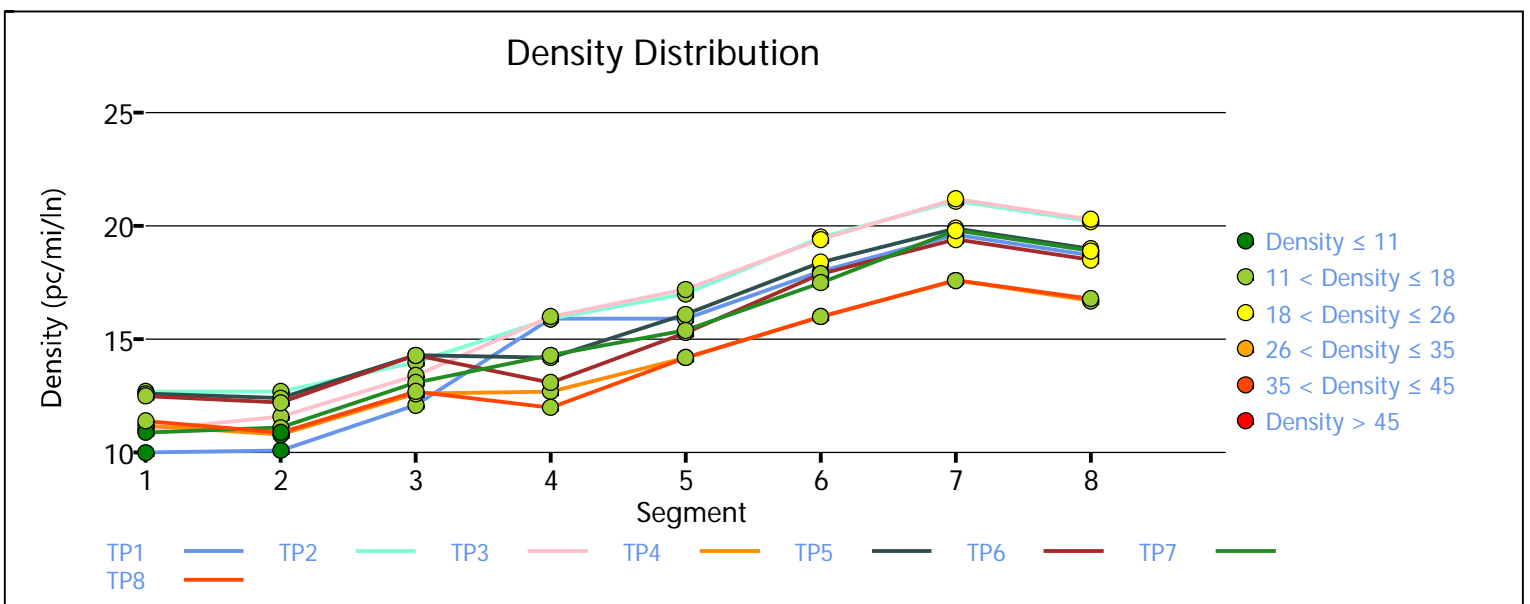
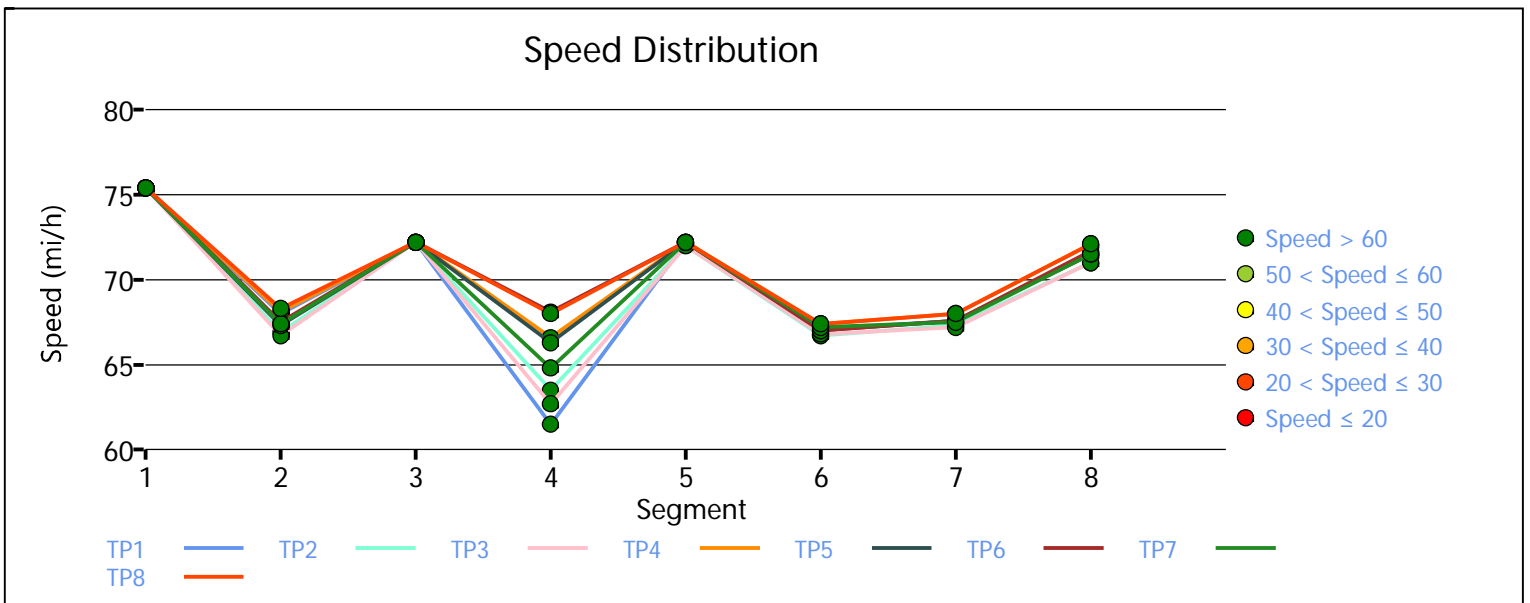
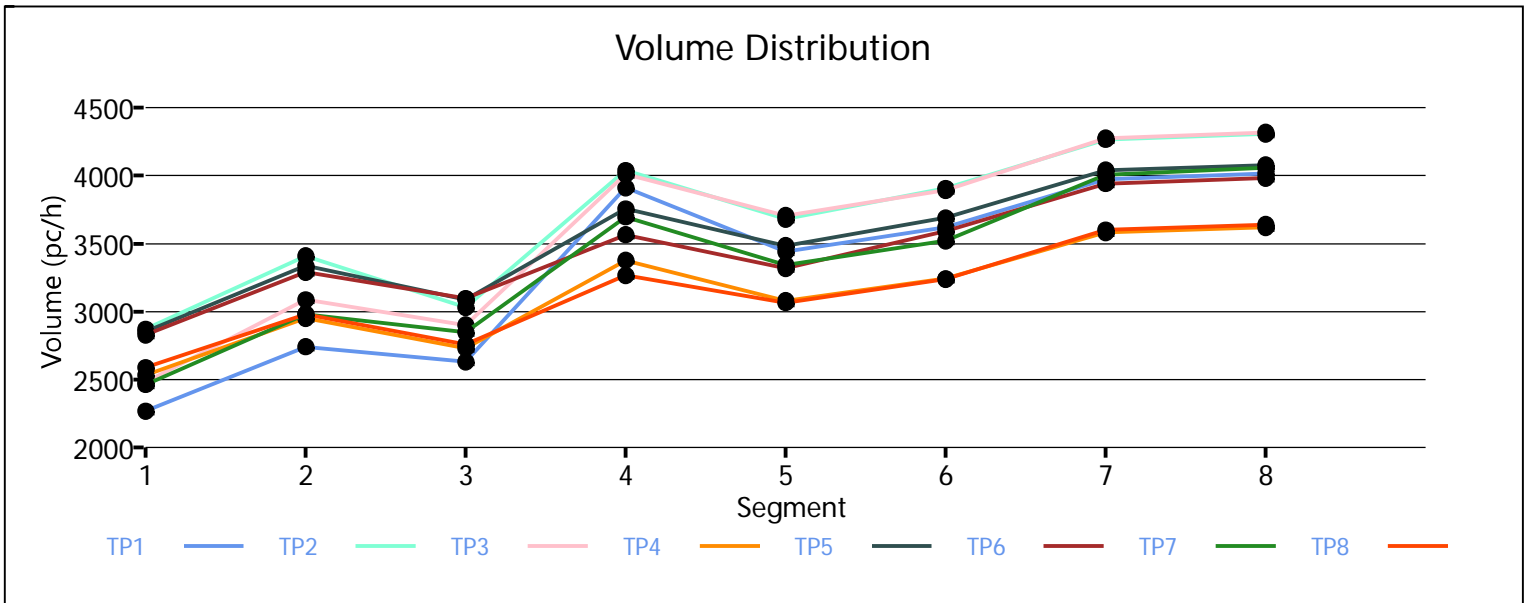
Time Period	PHF		fHV	Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
1	1.00		0.885	4015		7200		0.56		71.6		18.7	C	
2	1.00		0.885	4307		7200		0.60		71.0		20.2	C	
3	1.00		0.885	4318		7200		0.60		71.0		20.3	C	
4	1.00		0.885	3619		7200		0.50		72.1		16.7	B	
5	1.00		0.885	4079		7200		0.57		71.5		19.0	C	
6	1.00		0.885	3981		7200		0.55		71.7		18.5	C	
7	1.00		0.885	4059		7200		0.56		71.5		18.9	C	
8	1.00		0.885	3641		7200		0.51		72.1		16.8	B	

Facility Time Period Results

T	Speed, mi/h	Density, pc/mi/ln	Density, veh/mi/ln	Travel Time, min	LOS
1	68.6	13.9	12.4	2.4	B
2	68.7	15.6	13.9	2.4	B
3	68.5	15.0	13.4	2.4	B
4	69.8	13.1	11.7	2.4	B
5	69.5	14.9	13.3	2.4	B
6	69.8	14.4	12.9	2.4	B
7	69.2	14.0	12.5	2.4	B
8	70.1	13.1	H-2-18 11.7	2.4	B

Facility Overall Results

Space Mean Speed, mi/h	69.2	Density, veh/mi/ln	12.7
Average Travel Time, min	2.4	Density, pc/mi/ln	14.2



Appendix H-3

Freeway LOS Worksheets for Alternative 2, 2045

HCS7 Freeway Facilities Report

Project Information

Analyst	WSP	Date	7/3/2018
Agency	City of Moreno Valley	Analysis Year	2045 with Alternative 2
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	WLC Pkwy IC - Eastbound SR-60		

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	9
Total Time Periods	8	Time Period Duration, min	15

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic	Moreno Beach Rd to Redlands Blvd	600	3
2	Diverge	Diverge	Off-Ramp to Redlands Blvd	1500	3
3	Basic	Basic	between Redlands Blvd Off and SB Redlands Blvd On Ramp	2150	3
4	Merge	Basic	On-Ramp from SB Redlands Blvd (Loop)	750	3
5	Weaving	Weaving	Redlands Blvd to Theodore St	2545	4
6	Basic	Basic	Theodore St Off-Ramp to Theodore St On Ramp	2350	3
7	Merge	Basic	SB On-Ramp from Theodore St (loop)	550	3
8	Weaving	Weaving	Theodore NB On-Ramp to Gilman Spring Off-Ramp	2450	4
9	Basic	Basic	east of Gilman Springs Rd Off Ramp	1350	3

Facility Segment Data

Segment 1: Basic

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
1	1.00		0.877		4244		7200		0.59		73.4		19.3		C
2	1.00		0.877		4156		7200		0.58		73.6		18.8		C
3	1.00		0.877		4469		7200		0.62		72.6		20.5		C
4	1.00		0.877		4372		7200		0.61		72.9		20.0		C
5	1.00		0.877		3708		7200		0.52		74.7		16.5		B
6	1.00		0.877		3788		7200		0.53		74.5		17.0		B
7	1.00		0.877		4100		7200		0.57		73.8		18.5		C
8	1.00		0.877		4540		7200		0.63		72.3		20.9		C

Segment 2: Diverge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	

1	1.00	1.00	0.877	0.926	4244	396	7200	4000	0.59	0.10	67.0	59.9	21.1	11.6	B
2	1.00	1.00	0.877	0.926	4156	335	7200	4000	0.58	0.08	67.2	60.1	20.6	11.2	B
3	1.00	1.00	0.877	0.926	4469	421	7200	4000	0.62	0.11	66.8	59.8	22.3	12.7	B
4	1.00	1.00	0.877	0.926	4372	446	7200	4000	0.61	0.11	66.8	59.8	21.8	12.2	B
5	1.00	1.00	0.877	0.926	3708	521	7200	4000	0.52	0.13	67.0	59.5	18.4	9.0	A
6	1.00	1.00	0.877	0.926	3788	589	7200	4000	0.53	0.15	66.8	59.3	18.9	9.4	A
7	1.00	1.00	0.877	0.926	4100	477	7200	4000	0.57	0.12	66.9	59.7	20.4	10.9	B
8	1.00	1.00	0.877	0.926	4540	570	7200	4000	0.63	0.14	66.5	59.4	22.8	13.1	B

Segment 3: Basic

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
1	1.00		0.877		3826		7200		0.53		71.5		17.8		B
2	1.00		0.877		3803		7200		0.53		71.5		17.7		B
3	1.00		0.877		4024		7200		0.56		71.2		18.8		C
4	1.00		0.877		3901		7200		0.54		71.4		18.2		C
5	1.00		0.877		3158		7200		0.44		71.7		14.7		B
6	1.00		0.877		3166		7200		0.44		71.7		14.7		B
7	1.00		0.877		3596		7200		0.50		71.6		16.7		B
8	1.00		0.877		3938		7200		0.55		71.3		18.4		C

Segment 4: Merge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	1.00	1.00	0.885	0.962	3910	119	7200	2000	0.53	0.06	74.5	-	17.0	-	B
2	1.00	1.00	0.885	0.962	4006	238	7200	2000	0.52	0.12	74.6	-	16.8	-	B
3	1.00	1.00	0.885	0.962	4107	119	7200	2000	0.55	0.06	74.1	-	17.9	-	B
4	1.00	1.00	0.885	0.962	4056	190	7200	2000	0.54	0.10	74.4	-	17.3	-	B
5	1.00	1.00	0.885	0.962	3320	190	7200	2000	0.43	0.10	75.4	-	13.8	-	B
6	1.00	1.00	0.885	0.962	3138	0	7200	2000	0.44	0.00	75.4	-	13.9	-	B
7	1.00	1.00	0.885	0.962	3754	190	7200	2000	0.50	0.10	74.9	-	15.9	-	B
8	1.00	1.00	0.885	0.962	3998	95	7200	2000	0.54	0.05	74.3	-	17.5	-	B

Segment 5: Weaving

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
1	1.00		0.885		4222		9080		0.46		68.4		15.4		B
2	1.00		0.885		4460		8952		0.50		67.4		16.5		B
3	1.00		0.885		4497		9020		0.50		67.7		16.6		B
4	1.00		0.885		4506		8956		0.50		67.3		16.7		B
5	1.00		0.885		3833		8512		0.45		67.8		14.1		B
6	1.00		0.885		3608		7057		0.51		68.4		13.2		B
7	1.00		0.885		4194		8516		0.49		68.2		15.4		B
8	1.00		0.885		4380		8823		0.50		68.0		16.1		B

Segment 6: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	1.00	0.926	3265	7200	0.45	71.7	15.2	B
2	1.00	0.926	3364	7200	0.47	71.7	15.6	B
3	1.00	0.926	3441	7200	0.48	71.7	16.0	B
4	1.00	0.926	3407	7200	0.47	71.7	15.8	B
5	1.00	0.926	2442	7200	0.34	71.7	11.4	B
6	1.00	0.926	1895	7200	0.26	71.7	8.8	A
7	1.00	0.926	2543	7200	0.35	71.7	11.8	B
8	1.00	0.926	3048	7200	0.42	71.7	14.2	B

Segment 7: Merge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	1.00	1.00	0.917	0.990	3297	0	7200	2000	0.46	0.00	75.3	-	14.6	-	B
2	1.00	1.00	0.917	0.990	3397	0	7200	2000	0.47	0.00	75.2	-	15.1	-	B
3	1.00	1.00	0.917	0.990	3636	162	7200	2000	0.48	0.08	75.1	-	15.4	-	B
4	1.00	1.00	0.917	0.990	3764	323	7200	2000	0.48	0.16	75.1	-	15.3	-	B
5	1.00	1.00	0.917	0.990	2628	162	7200	2000	0.34	0.08	75.4	-	10.9	-	A
6	1.00	1.00	0.917	0.990	2076	162	7200	2000	0.27	0.08	75.4	-	8.5	-	A
7	1.00	1.00	0.917	0.990	2730	162	7200	2000	0.36	0.08	75.4	-	11.4	-	B
8	1.00	1.00	0.917	0.990	3562	485	7200	2000	0.43	0.24	75.4	-	13.6	-	B

Segment 8: Weaving

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	1.00	0.917	3403	8472	0.40	68.8	12.4	B
2	1.00	0.917	3686	8121	0.45	67.4	13.7	B
3	1.00	0.917	3902	8102	0.48	67.4	14.5	B
4	1.00	0.917	4109	8480	0.48	66.8	15.4	B
5	1.00	0.917	2910	8254	0.35	68.3	10.7	B
6	1.00	0.917	2237	7056	0.32	69.6	8.0	A
7	1.00	0.917	2944	7277	0.40	68.6	10.7	B
8	1.00	0.917	3925	8536	0.46	67.0	14.6	B

Segment 9: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	1.00	0.901	2193	7200	0.30	71.7	10.2	A
2	1.00	0.901	2403	7200	0.33	71.7	11.2	B
3	1.00	0.901	2501	7200	0.35	71.7	11.6	B
4	1.00	0.901	2804	7200	0.39	71.7	13.0	B
5	1.00	0.901	1950	7200	0.27	71.7	9.1	A

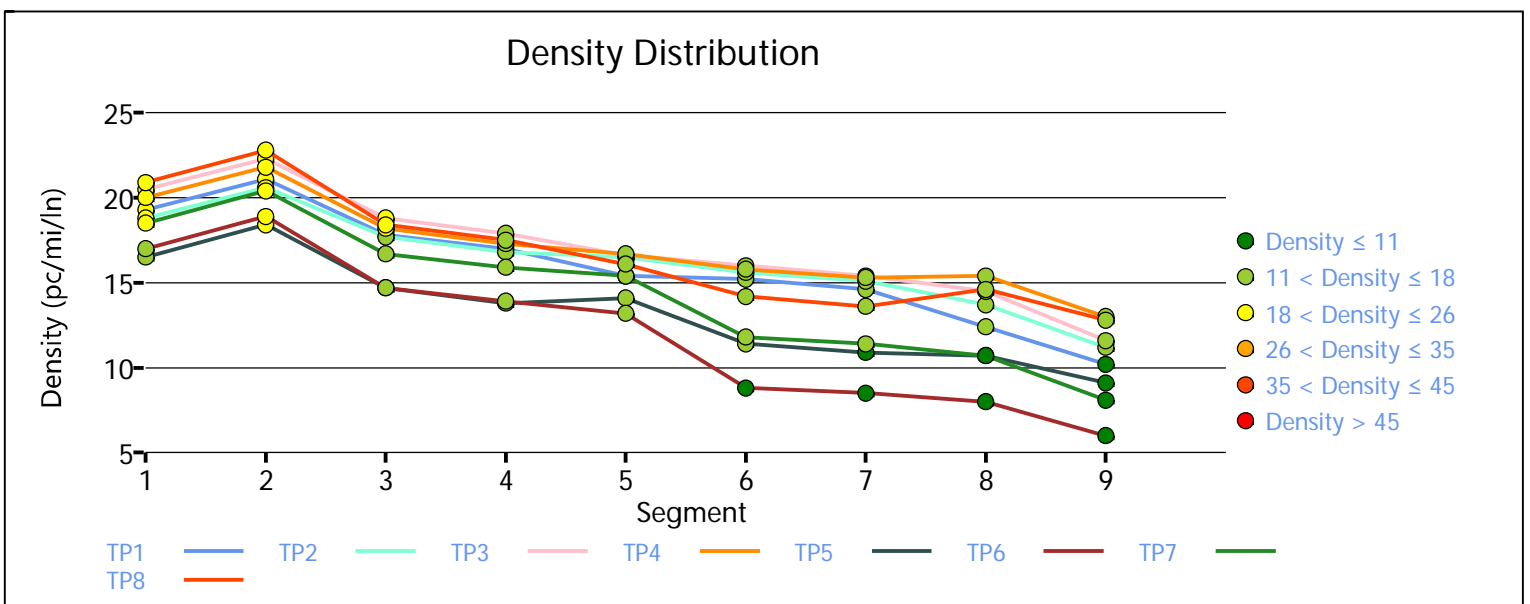
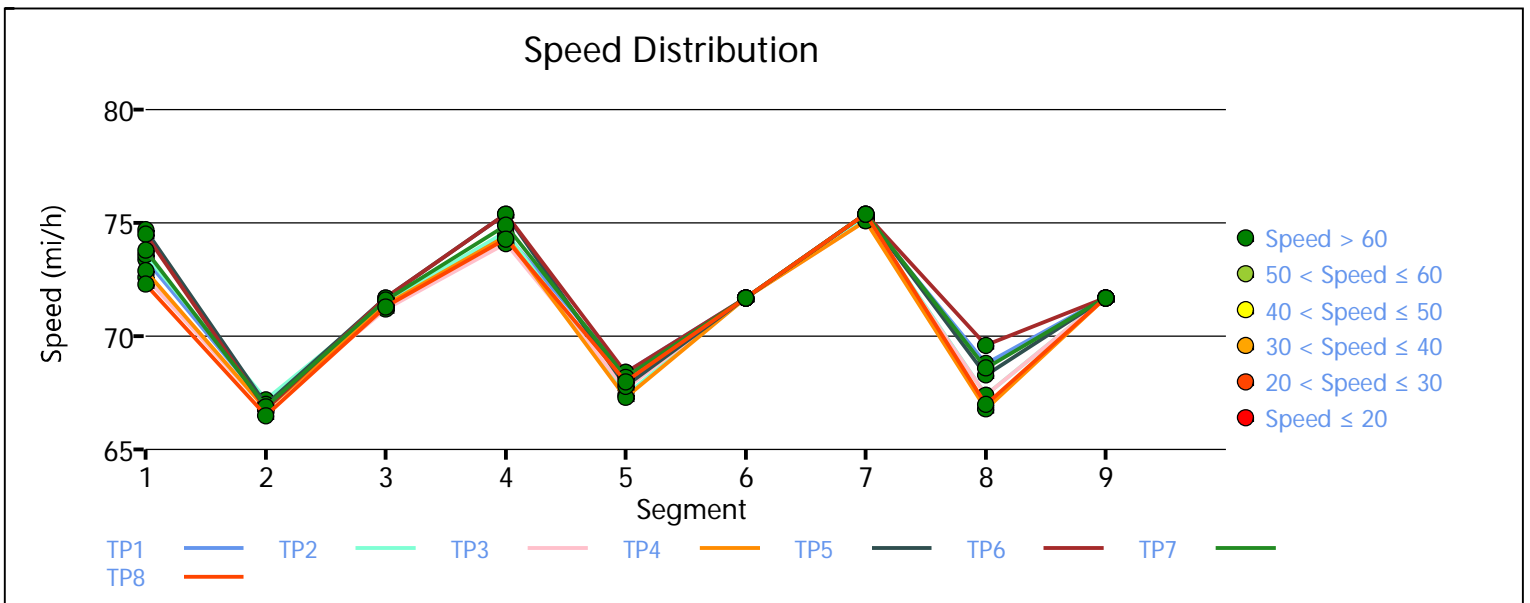
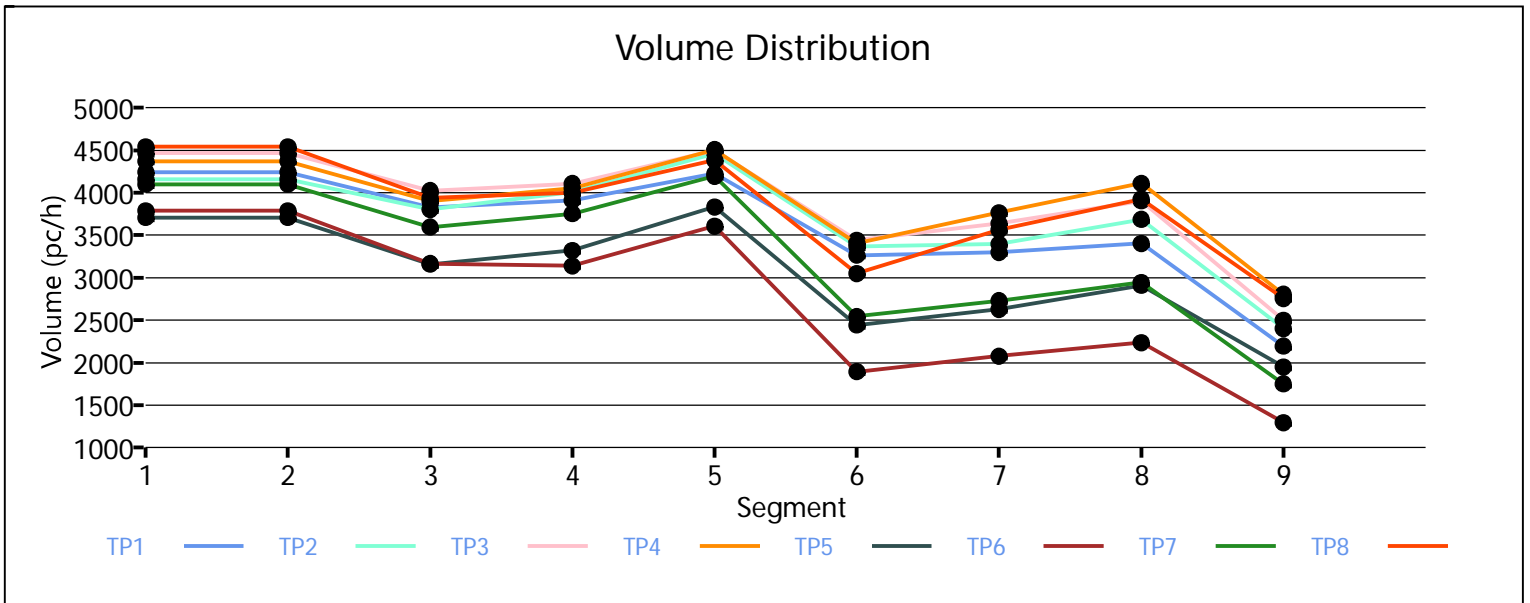
6	1.00	0.901	1294	7200	0.18	71.7	6.0	A
7	1.00	0.901	1749	7200	0.24	71.7	8.1	A
8	1.00	0.901	2757	7200	0.38	71.7	12.8	B

Facility Time Period Results

T	Speed, mi/h	Density, pc/mi/ln	Density, veh/mi/ln	Travel Time, min	LOS
1	70.3	15.4	13.8	2.3	B
2	69.8	15.9	14.3	2.3	B
3	69.7	16.7	14.9	2.3	B
4	69.5	16.8	15.0	2.3	B
5	70.1	13.0	11.7	2.3	B
6	70.4	11.6	10.4	2.3	B
7	70.2	13.9	12.4	2.3	B
8	69.6	16.3	14.6	2.3	B

Facility Overall Results

Space Mean Speed, mi/h	69.9	Density, veh/mi/ln	13.4
Average Travel Time, min	2.3	Density, pc/mi/ln	15.0



HCS7 Freeway Facilities Report

Project Information

Analyst	WSP	Date	7/3/2018
Agency	City of Moreno Valley	Analysis Year	2045 with Alternative 2
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	WLC Pkwy IC - Eastbound SR-60		

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	9
Total Time Periods	8	Time Period Duration, min	15

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic	Moreno Beach Rd to Redlands Blvd	600	3
2	Diverge	Diverge	Off-Ramp to Redlands Blvd	1500	3
3	Basic	Basic	between Redlands Blvd Off and SB Redlands Blvd On Ramp	2150	3
4	Merge	Basic	On-Ramp from SB Redlands Blvd (Loop)	750	3
5	Weaving	Weaving	Redlands Blvd to Theodore St	2545	4
6	Basic	Basic	Theodore St Off-Ramp to Theodore St On Ramp	2350	3
7	Merge	Basic	SB On-Ramp from Theodore St (loop)	550	3
8	Weaving	Weaving	Theodore NB On-Ramp to Gilman Spring Off-Ramp	2450	4
9	Basic	Basic	east of Gilman Springs Rd Off Ramp	850	3

Facility Segment Data

Segment 1: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	1.00	0.909	5517	7200	0.77	67.4	27.3	D
2	1.00	0.909	5895	7200	0.82	64.8	30.3	D
3	1.00	0.909	6008	7200	0.83	64.0	31.3	D
4	1.00	0.909	6080	7200	0.84	63.4	32.0	D
5	1.00	0.909	5823	7200	0.81	65.3	29.7	D
6	1.00	0.909	6072	7200	0.84	63.5	31.9	D
7	1.00	0.909	5356	7200	0.74	68.3	26.1	D
8	1.00	0.909	6233	7200	0.87	62.2	33.4	D

Segment 2: Diverge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	

1	1.00	1.00	0.909	0.971	5517	580	7200	4000	0.77	0.15	66.0	59.4	27.9	17.9	B
2	1.00	1.00	0.909	0.971	5895	640	7200	4000	0.82	0.16	65.6	59.2	30.0	19.7	B
3	1.00	1.00	0.909	0.971	6008	630	7200	4000	0.83	0.16	65.6	59.2	30.5	20.3	C
4	1.00	1.00	0.909	0.971	6080	658	7200	4000	0.84	0.16	65.5	59.1	30.9	20.6	C
5	1.00	1.00	0.909	0.971	5823	662	7200	4000	0.81	0.17	65.6	59.1	29.6	19.4	B
6	1.00	1.00	0.909	0.971	6072	602	7200	4000	0.84	0.15	65.6	59.3	30.9	20.6	C
7	1.00	1.00	0.909	0.971	5356	576	7200	4000	0.74	0.14	66.1	59.4	27.0	17.1	B
8	1.00	1.00	0.909	0.971	6233	635	7200	4000	0.87	0.16	65.5	59.2	31.7	21.4	C

Segment 3: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	1.00	0.909	4898	7200	0.68	68.8	23.7	C
2	1.00	0.909	5212	7200	0.72	67.5	25.7	C
3	1.00	0.909	5334	7200	0.74	66.9	26.6	D
4	1.00	0.909	5377	7200	0.75	66.7	26.9	D
5	1.00	0.909	5116	7200	0.71	67.9	25.1	C
6	1.00	0.909	5428	7200	0.75	66.5	27.2	D
7	1.00	0.909	4741	7200	0.66	69.4	22.8	C
8	1.00	0.909	5554	7200	0.77	65.8	28.1	D

Segment 4: Merge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	1.00	1.00	0.917	0.917	5336	481	7200	2000	0.67	0.24	71.0	-	22.8	-	C
2	1.00	1.00	0.917	0.917	5808	641	7200	2000	0.72	0.32	69.4	-	24.8	-	C
3	1.00	1.00	0.917	0.917	5822	534	7200	2000	0.73	0.27	68.7	-	25.7	-	C
4	1.00	1.00	0.917	0.917	6132	802	7200	2000	0.74	0.40	68.5	-	25.9	-	C
5	1.00	1.00	0.917	0.917	5552	481	7200	2000	0.70	0.24	69.9	-	24.2	-	C
6	1.00	1.00	0.917	0.917	5702	321	7200	2000	0.75	0.16	68.2	-	26.3	-	D
7	1.00	1.00	0.917	0.917	5448	748	7200	2000	0.65	0.37	71.7	-	21.9	-	C
8	1.00	1.00	0.917	0.917	6040	534	7200	2000	0.76	0.27	67.4	-	27.2	-	D

Segment 5: Weaving

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	1.00	0.917	6189	9132	0.68	62.3	24.8	C
2	1.00	0.917	6886	9064	0.76	60.3	28.5	D
3	1.00	0.917	6747	8812	0.77	62.4	27.0	C
4	1.00	0.917	7824	8772	0.89	56.3	34.7	D
5	1.00	0.917	6675	8908	0.75	60.7	27.5	C
6	1.00	0.917	6809	8972	0.76	60.5	28.1	D
7	1.00	0.917	5982	9008	0.66	65.2	22.9	C
8	1.00	0.917	6854	9144	0.75	62.2	27.5	C

Segment 6: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	1.00	0.952	5465	7200	0.76	66.3	27.5	D
2	1.00	0.952	6059	7200	0.84	62.7	32.2	D
3	1.00	0.952	5146	7200	0.71	67.8	25.3	C
4	1.00	0.952	6636	7200	0.92	58.4	37.9	E
5	1.00	0.952	5574	7200	0.77	65.7	28.3	D
6	1.00	0.952	5797	7200	0.81	64.4	30.0	D
7	1.00	0.952	4660	7200	0.65	69.7	22.3	C
8	1.00	0.952	5912	7200	0.82	63.7	30.9	D

Segment 7: Merge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	1.00	1.00	0.943	1.000	5717	200	7200	2000	0.77	0.10	67.4	-	27.3	-	D
2	1.00	1.00	0.943	1.000	6384	267	7200	2000	0.85	0.13	63.2	-	32.3	-	D
3	1.00	1.00	0.943	1.000	5462	267	7200	2000	0.72	0.13	69.2	-	25.0	-	C
4	1.00	1.00	0.943	1.000	6899	200	7200	2000	0.93	0.10	58.2	-	38.4	-	E
5	1.00	1.00	0.943	1.000	5827	200	7200	2000	0.78	0.10	66.6	-	28.2	-	D
6	1.00	1.00	0.943	1.000	6186	333	7200	2000	0.81	0.17	65.1	-	30.0	-	D
7	1.00	1.00	0.943	1.000	4904	200	7200	2000	0.65	0.10	71.6	-	21.9	-	C
8	1.00	1.00	0.943	1.000	5968	0	7200	2000	0.83	0.00	64.3	-	30.9	-	D

Segment 8: Weaving

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	1.00	0.943	5882	8756	0.67	66.1	22.2	C
2	1.00	0.943	6452	8660	0.75	66.1	24.4	C
3	1.00	0.943	5704	8159	0.70	65.7	21.7	C
4	1.00	0.943	7167	8692	0.82	64.1	28.0	C
5	1.00	0.943	5927	8680	0.68	66.4	22.3	C
6	1.00	0.943	6222	8496	0.73	66.5	23.4	C
7	1.00	0.943	5087	7847	0.65	66.7	19.1	B
8	1.00	0.943	6097	8046	0.76	66.0	23.1	C

Segment 9: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	1.00	0.935	4191	7200	0.58	70.9	19.7	C
2	1.00	0.935	4343	7200	0.60	70.6	20.5	C
3	1.00	0.935	3497	7200	0.49	71.7	16.3	B
4	1.00	0.935	5025	7200	0.70	68.3	24.5	C
5	1.00	0.935	4047	7200	0.56	71.2	18.9	C

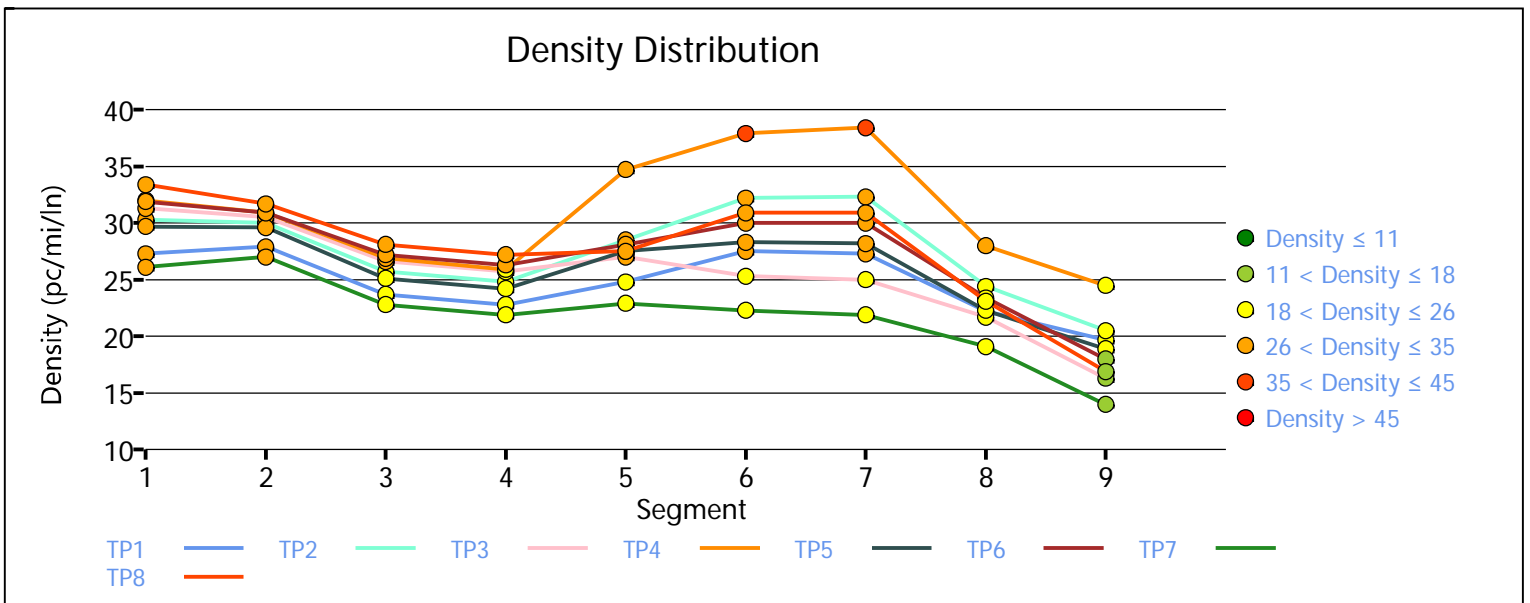
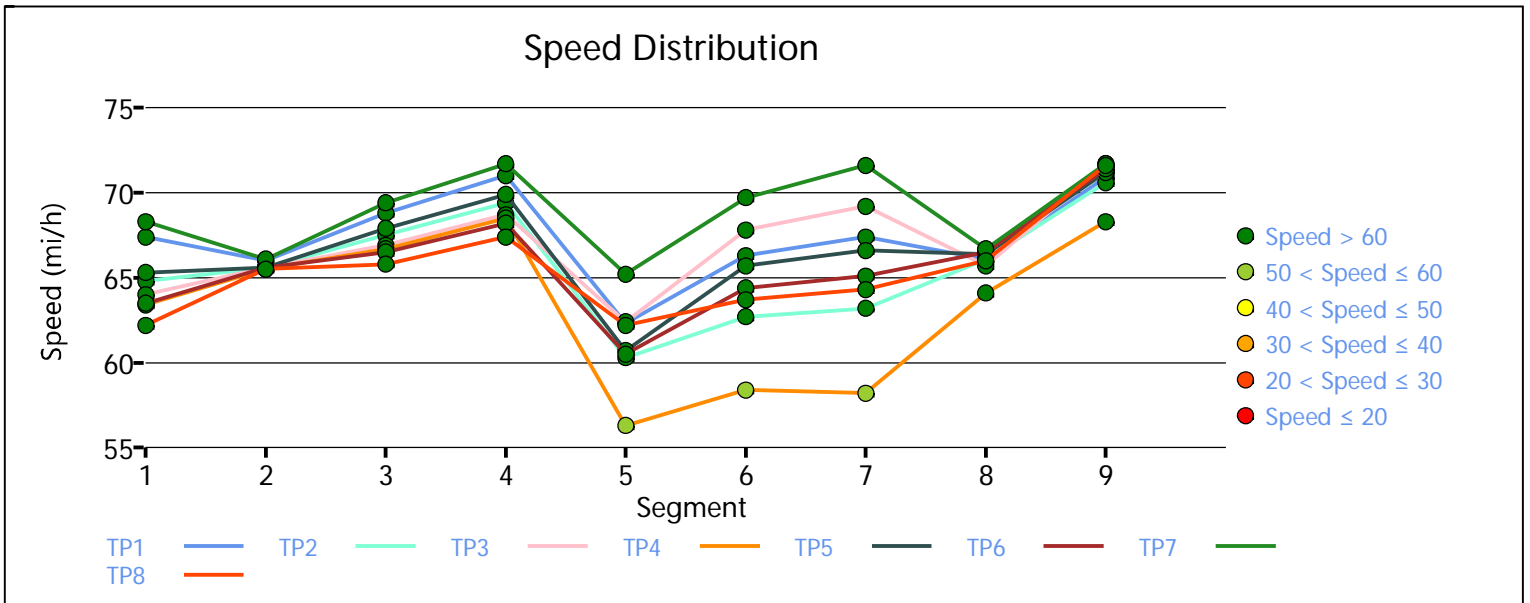
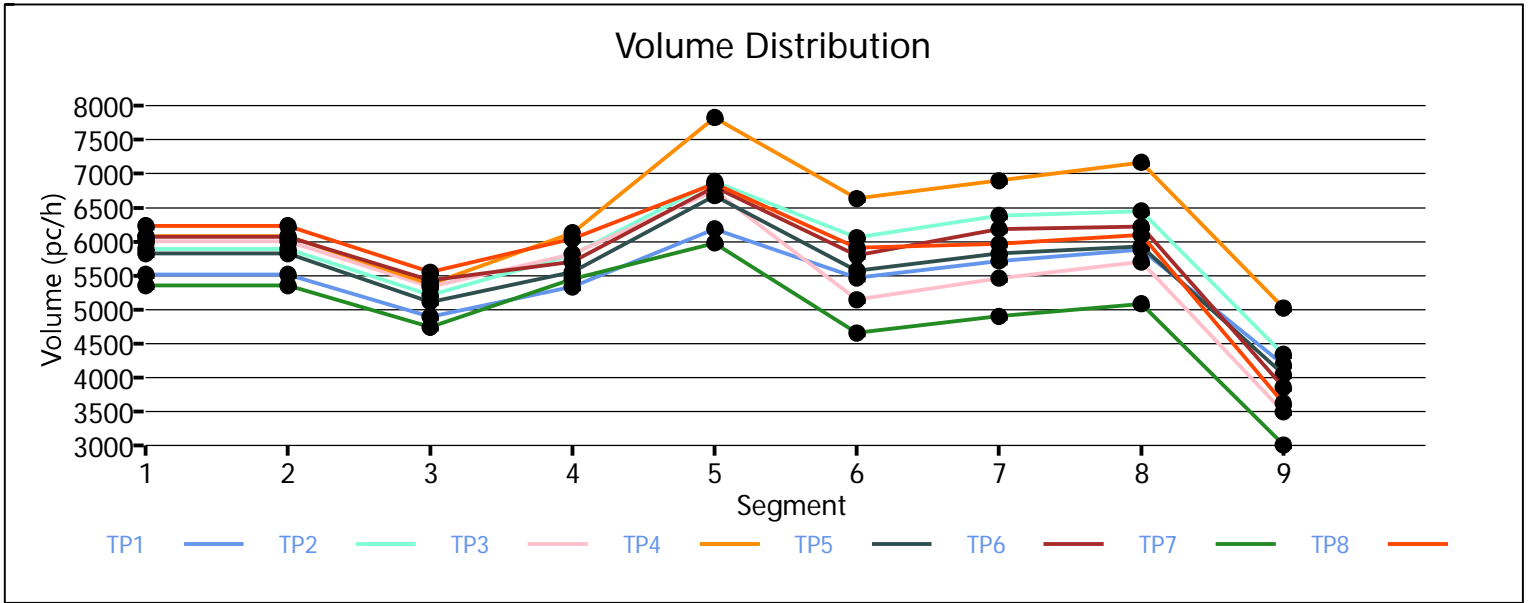
6	1.00	0.935	3859	7200	0.54	71.4	18.0	B
7	1.00	0.935	3012	7200	0.42	71.7	14.0	B
8	1.00	0.935	3625	7200	0.50	71.6	16.9	B

Facility Time Period Results

T	Speed, mi/h	Density, pc/mi/ln	Density, veh/mi/ln	Travel Time, min	LOS
1	66.2	24.6	22.8	2.4	C
2	64.5	27.5	25.6	2.4	D
3	65.9	25.3	23.5	2.4	C
4	61.7	31.4	29.1	2.5	D
5	65.4	25.9	24.0	2.4	C
6	64.8	27.1	25.2	2.4	D
7	67.9	21.9	20.3	2.3	C
8	64.7	27.3	25.3	2.4	D

Facility Overall Results

Space Mean Speed, mi/h	65.0	Density, veh/mi/ln	24.5
Average Travel Time, min	2.4	Density, pc/mi/ln	26.4



HCS7 Freeway Facilities Report

Project Information

Analyst	WSP	Date	7/3/2018
Agency	City of Moreno Valley	Analysis Year	2045 with Alternative 2
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	WLC Pkwy IC - Westbound SR-60		

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	8
Total Time Periods	8	Time Period Duration, min	15

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic	east of Gilman Springs Rd On Ramp	2200	3
2	Weaving	Weaving	On-Ramp from Gilman Spring to Off-Ramp to Theodore St	3200	4
3	Basic	Basic	between Theodore St Off and Theodore St On Ramps	1820	3
4	Weaving	Weaving	Theodore St to Redlands Blvd	2090	4
5	Basic	Basic	between Redlands Blvd Off and On Ramps	1500	3
6	Merge	Merge	On-Ramp from NB Redlands Blvd	1300	3
7	Merge	Merge	On-Ramp from SB Redlands Blvd	1500	3
8	Basic	Basic	Redlands Blvd to Moreno Beach Rd	1070	3

Facility Segment Data

Segment 1: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	1.00	0.952	4173	7200	0.58	73.6	18.9	C
2	1.00	0.952	4727	7200	0.66	71.5	22.0	C
3	1.00	0.952	3845	7200	0.53	74.4	17.2	B
4	1.00	0.952	3979	7200	0.55	74.1	17.9	B
5	1.00	0.952	3395	7200	0.47	75.2	15.1	B
6	1.00	0.952	3680	7200	0.51	74.8	16.4	B
7	1.00	0.952	3440	7200	0.48	75.1	15.3	B
8	1.00	0.952	3814	7200	0.53	74.5	17.1	B

Segment 2: Weaving

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	1.00	0.952	6403	8757	0.73	54.6	29.3	D
2	1.00	0.952	6510	8369	0.73	57.0	28.6	D
3	1.00	0.952	5628	8764	0.64	57.9	24.3	C

4	1.00	0.952	5605	8621	0.65	59.1	23.7	C
5	1.00	0.952	4901	8764	0.56	60.1	20.4	C
6	1.00	0.952	5162	8876	0.58	59.8	21.6	C
7	1.00	0.952	4501	9036	0.50	62.7	17.9	B
8	1.00	0.952	4933	9008	0.55	61.9	19.9	B

Segment 3: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	1.00	0.962	6079	7200	0.84	62.7	32.3	D
2	1.00	0.962	5868	7200	0.82	64.1	30.5	D
3	1.00	0.962	5152	7200	0.72	68.0	25.2	C
4	1.00	0.962	4815	7200	0.67	69.4	23.1	C
5	1.00	0.962	4428	7200	0.62	70.7	20.9	C
6	1.00	0.962	4749	7200	0.66	69.7	22.7	C
7	1.00	0.962	4173	7200	0.57	72.0	18.9	C
8	1.00	0.962	4573	7200	0.62	72.0	21.1	C

Segment 4: Weaving

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	1.00	0.917	7459	8823	0.85	58.4	31.9	D
2	1.00	0.917	7467	8728	0.86	57.0	32.8	D
3	1.00	0.917	7162	8396	0.85	54.8	32.7	D
4	1.00	0.917	6113	8443	0.72	59.8	25.6	C
5	1.00	0.917	6641	7936	0.84	54.1	30.7	D
6	1.00	0.917	6999	8428	0.83	53.5	32.7	D
7	1.00	0.917	6654	6679	1.09	52.0	32.0	F
8	1.00	0.917	5718	8684	0.69	60.0	23.8	C

Segment 5: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	1.00	0.909	6413	7200	0.89	60.2	35.5	E
2	1.00	0.909	6382	7200	0.89	60.5	35.2	E
3	1.00	0.909	5824	7200	0.81	64.4	30.1	D
4	1.00	0.909	4705	7200	0.65	69.8	22.5	C
5	1.00	0.909	5374	7200	0.75	67.0	26.7	D
6	1.00	0.909	6021	7200	0.84	63.1	31.8	D
7	1.00	0.909	5759	7200	0.82	65.8	29.2	D
8	1.00	0.909	4949	7200	0.74	70.5	23.4	C

Segment 6: Merge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	

1	1.00	1.00	0.917	0.901	6482	125	7200	2000	0.90	0.06	62.2	59.3	34.7	33.6	D
2	1.00	1.00	0.917	0.901	6475	149	7200	2000	0.90	0.07	62.1	59.2	34.8	33.7	D
3	1.00	1.00	0.917	0.901	5913	140	7200	2000	0.82	0.07	63.8	61.0	30.9	31.1	D
4	1.00	1.00	0.917	0.901	4738	74	7200	2000	0.66	0.04	65.9	63.2	24.0	25.5	C
5	1.00	1.00	0.917	0.901	5429	102	7200	2000	0.75	0.05	64.8	62.1	27.9	28.8	D
6	1.00	1.00	0.917	0.901	6066	98	7200	2000	0.84	0.05	63.3	60.6	31.9	31.7	D
7	1.00	1.00	0.917	0.901	5978	219	7200	2000	0.84	0.11	63.5	60.6	31.4	31.6	D
8	1.00	1.00	0.917	0.901	5140	191	7200	2000	0.76	0.10	65.2	62.5	26.3	27.7	C

Segment 7: Merge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	1.00	1.00	0.917	0.980	6643	163	7200	2000	0.92	0.08	62.1	59.2	35.7	31.1	D
2	1.00	1.00	0.917	0.980	6675	203	7200	2000	0.93	0.10	61.9	59.0	35.9	31.4	D
3	1.00	1.00	0.917	0.980	6112	201	7200	2000	0.85	0.10	63.9	61.3	31.9	28.7	D
4	1.00	1.00	0.917	0.980	4945	208	7200	2000	0.69	0.10	66.4	64.2	24.8	23.2	C
5	1.00	1.00	0.917	0.980	5590	163	7200	2000	0.78	0.08	65.3	62.9	28.5	26.1	C
6	1.00	1.00	0.917	0.980	6216	152	7200	2000	0.86	0.08	63.6	61.0	32.6	29.1	D
7	1.00	1.00	0.917	0.980	6128	150	7200	2000	0.86	0.08	63.9	61.3	32.0	28.6	D
8	1.00	1.00	0.917	0.980	5249	109	7200	2000	0.77	0.05	66.0	63.7	26.5	24.4	C

Segment 8: Basic

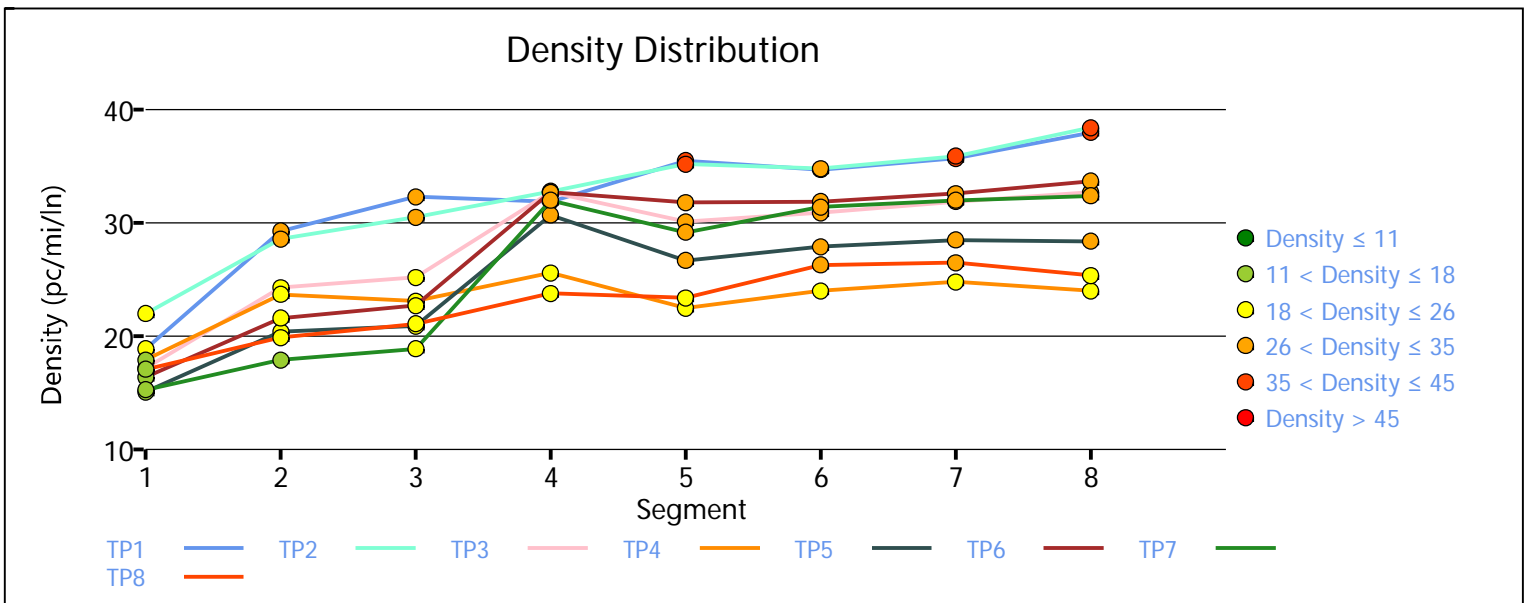
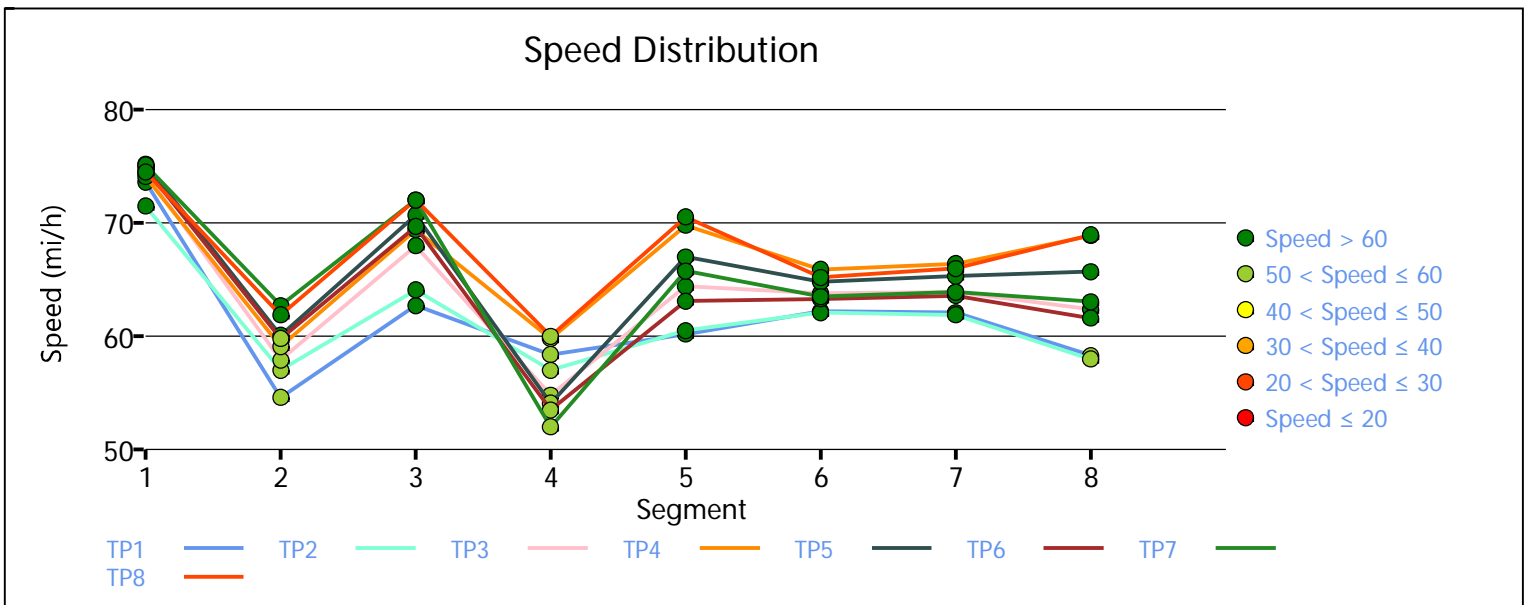
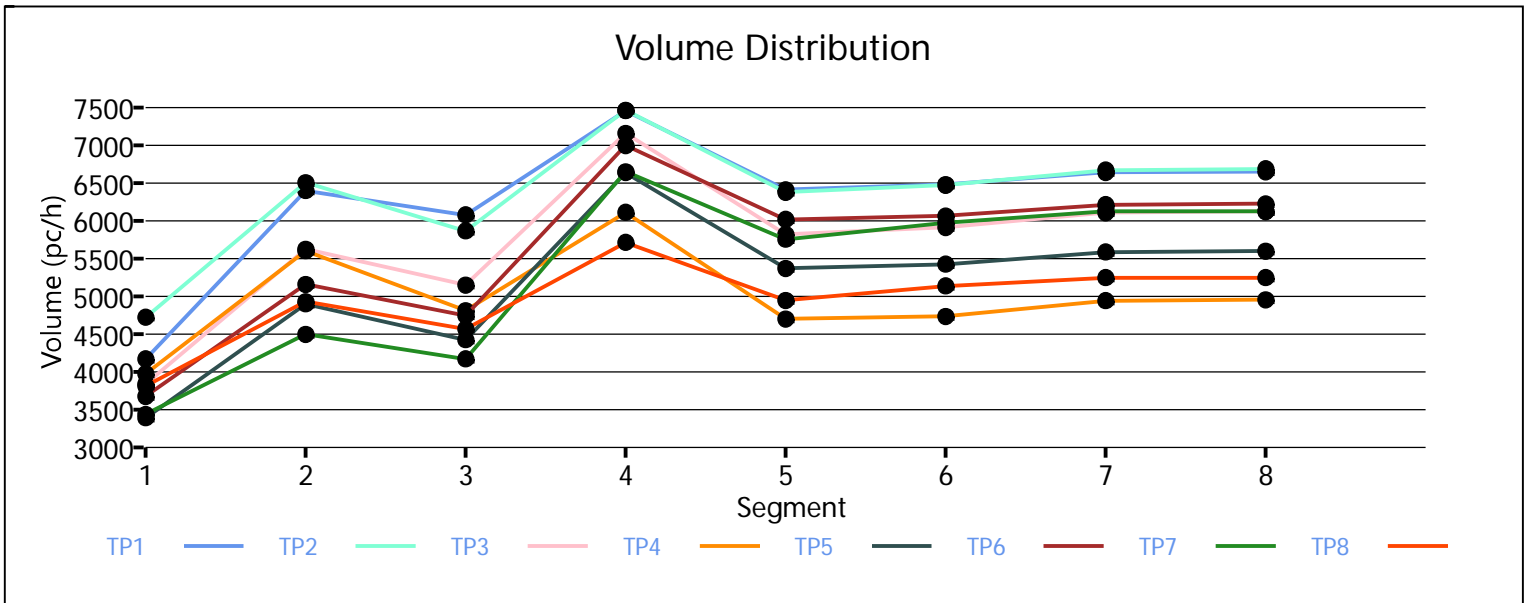
Time Period	PHF		fHV	Flow Rate (pc/h)		Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	1.00		0.917	6654		7200	0.92	58.3	38.0	E
2	1.00		0.917	6689		7200	0.93	58.0	38.4	E
3	1.00		0.917	6125		7200	0.85	62.4	32.7	D
4	1.00		0.917	4960		7200	0.69	68.9	24.0	C
5	1.00		0.917	5602		7200	0.78	65.7	28.4	D
6	1.00		0.917	6227		7200	0.86	61.6	33.7	D
7	1.00		0.917	6128		7200	0.86	63.1	32.4	D
8	1.00		0.917	5249		7200	0.77	68.9	25.4	C

Facility Time Period Results

T	Speed, mi/h	Density, pc/mi/ln	Density, veh/mi/ln	Travel Time, min	LOS
1	60.1	30.8	28.8	2.8	D
2	60.6	31.0	28.9	2.8	D
3	62.0	27.2	25.3	2.7	D
4	64.8	23.2	21.7	2.6	C
5	63.4	23.9	22.3	2.6	C
6	62.1	26.4	24.6	2.7	D
7	63.0	24.4	22.4	2.6	F
8	66.1	22.1	H-3-13 20.5	2.5	C

Facility Overall Results

Space Mean Speed, mi/h	62.5	Density, veh/mi/ln	24.3
Average Travel Time, min	2.7	Density, pc/mi/ln	26.1



HCS7 Freeway Facilities Report

Project Information

Analyst	WSP	Date	7/3/2018
Agency	City of Moreno Valley	Analysis Year	2045 with Alternative 2
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	WLC Pkwy IC - Westbound SR-60		

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	8
Total Time Periods	8	Time Period Duration, min	15

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic	east of Gilman Springs Rd On Ramp	2200	3
2	Weaving	Weaving	On-Ramp from Gilman Spring to Off-Ramp to Theodore St	3200	4
3	Basic	Basic	between Theodore St Off and Theodore St On Ramps	1820	3
4	Weaving	Weaving	Theodore St to Redlands Blvd	2090	4
5	Basic	Basic	between Redlands Blvd Off and On Ramps	1500	3
6	Merge	Merge	On-Ramp from NB Redlands Blvd	1300	3
7	Merge	Merge	On-Ramp from SB Redlands Blvd	1500	3
8	Basic	Basic	Redlands Blvd to Moreno Beach Rd	1070	3

Facility Segment Data

Segment 1: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	1.00	0.917	2683	7200	0.37	75.4	11.9	B
2	1.00	0.917	3397	7200	0.47	75.2	15.1	B
3	1.00	0.917	2936	7200	0.41	75.4	13.0	B
4	1.00	0.917	2996	7200	0.42	75.4	13.2	B
5	1.00	0.917	3374	7200	0.47	75.2	15.0	B
6	1.00	0.917	3345	7200	0.46	75.2	14.8	B
7	1.00	0.917	2914	7200	0.40	75.4	12.9	B
8	1.00	0.917	3062	7200	0.43	75.4	13.5	B

Segment 2: Weaving

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	1.00	0.935	4181	8413	0.50	60.5	17.3	B
2	1.00	0.935	5087	7368	0.69	59.1	21.5	C
3	1.00	0.935	4856	7368	0.66	58.0	20.9	C

4	1.00	0.935	4315	8599	0.50	61.4	17.6	B
5	1.00	0.935	4899	8495	0.58	59.8	20.5	C
6	1.00	0.935	4810	8752	0.55	60.0	20.0	B
7	1.00	0.935	4565	8216	0.56	59.3	19.2	B
8	1.00	0.935	4297	8744	0.49	61.8	17.4	B

Segment 3: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	1.00	0.935	4007	7200	0.56	71.6	18.7	C
2	1.00	0.935	4371	7200	0.61	70.8	20.6	C
3	1.00	0.935	4530	7200	0.63	70.4	21.4	C
4	1.00	0.935	3917	7200	0.54	71.8	18.2	C
5	1.00	0.935	4452	7200	0.62	70.6	21.0	C
6	1.00	0.935	4471	7200	0.62	70.6	21.1	C
7	1.00	0.935	4340	7200	0.60	70.9	20.4	C
8	1.00	0.935	3896	7200	0.54	71.8	18.1	C

Segment 4: Weaving

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	1.00	0.901	6255	6654	0.94	54.2	28.9	D
2	1.00	0.901	6105	8340	0.73	56.8	26.9	C
3	1.00	0.901	6494	8532	0.76	55.1	29.5	D
4	1.00	0.901	4984	8376	0.60	61.8	20.2	C
5	1.00	0.901	5553	8616	0.64	61.2	22.7	C
6	1.00	0.901	5198	8684	0.60	63.9	20.3	C
7	1.00	0.901	5784	8332	0.69	58.8	24.6	C
8	1.00	0.901	4722	8756	0.54	63.8	18.5	B

Segment 5: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	1.00	0.885	4747	7200	0.66	69.7	22.7	C
2	1.00	0.885	4972	7200	0.69	68.8	24.1	C
3	1.00	0.885	5784	7200	0.80	64.6	29.8	D
4	1.00	0.885	3826	7200	0.53	71.9	17.7	B
5	1.00	0.885	4576	7200	0.64	70.3	21.7	C
6	1.00	0.885	4164	7200	0.58	71.3	19.5	C
7	1.00	0.885	4523	7200	0.63	70.4	21.4	C
8	1.00	0.885	4002	7200	0.56	71.6	18.6	C

Segment 6: Merge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	

1	1.00	1.00	0.893	0.893	4884	180	7200	2000	0.68	0.09	65.6	62.9	24.8	26.5	C
2	1.00	1.00	0.893	0.893	5146	219	7200	2000	0.71	0.11	65.2	62.5	26.3	27.8	C
3	1.00	1.00	0.893	0.893	5919	187	7200	2000	0.82	0.09	63.7	60.9	31.0	31.2	D
4	1.00	1.00	0.893	0.893	3953	161	7200	2000	0.55	0.08	66.8	64.0	19.7	22.2	C
5	1.00	1.00	0.893	0.893	4735	200	7200	2000	0.66	0.10	65.8	63.1	24.0	25.9	C
6	1.00	1.00	0.893	0.893	4385	258	7200	2000	0.61	0.13	66.2	63.5	22.1	24.4	C
7	1.00	1.00	0.893	0.893	4658	175	7200	2000	0.65	0.09	65.9	63.2	23.6	25.4	C
8	1.00	1.00	0.893	0.893	4134	168	7200	2000	0.57	0.08	66.6	63.8	20.7	23.0	C

Segment 7: Merge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	1.00	1.00	0.893	0.980	5188	303	7200	2000	0.72	0.15	65.9	63.6	26.2	24.6	C
2	1.00	1.00	0.893	0.980	5458	311	7200	2000	0.76	0.16	65.4	63.0	27.8	25.9	C
3	1.00	1.00	0.893	0.980	6247	328	7200	2000	0.87	0.16	63.3	60.5	32.9	29.7	D
4	1.00	1.00	0.893	0.980	4244	291	7200	2000	0.59	0.15	67.3	65.1	21.0	20.1	C
5	1.00	1.00	0.893	0.980	5039	303	7200	2000	0.70	0.15	66.2	63.9	25.4	23.9	C
6	1.00	1.00	0.893	0.980	4687	303	7200	2000	0.65	0.15	66.8	64.5	23.4	22.2	C
7	1.00	1.00	0.893	0.980	5070	413	7200	2000	0.70	0.21	66.0	63.7	25.6	24.3	C
8	1.00	1.00	0.893	0.980	4445	311	7200	2000	0.62	0.16	67.0	64.8	22.1	21.1	C

Segment 8: Basic

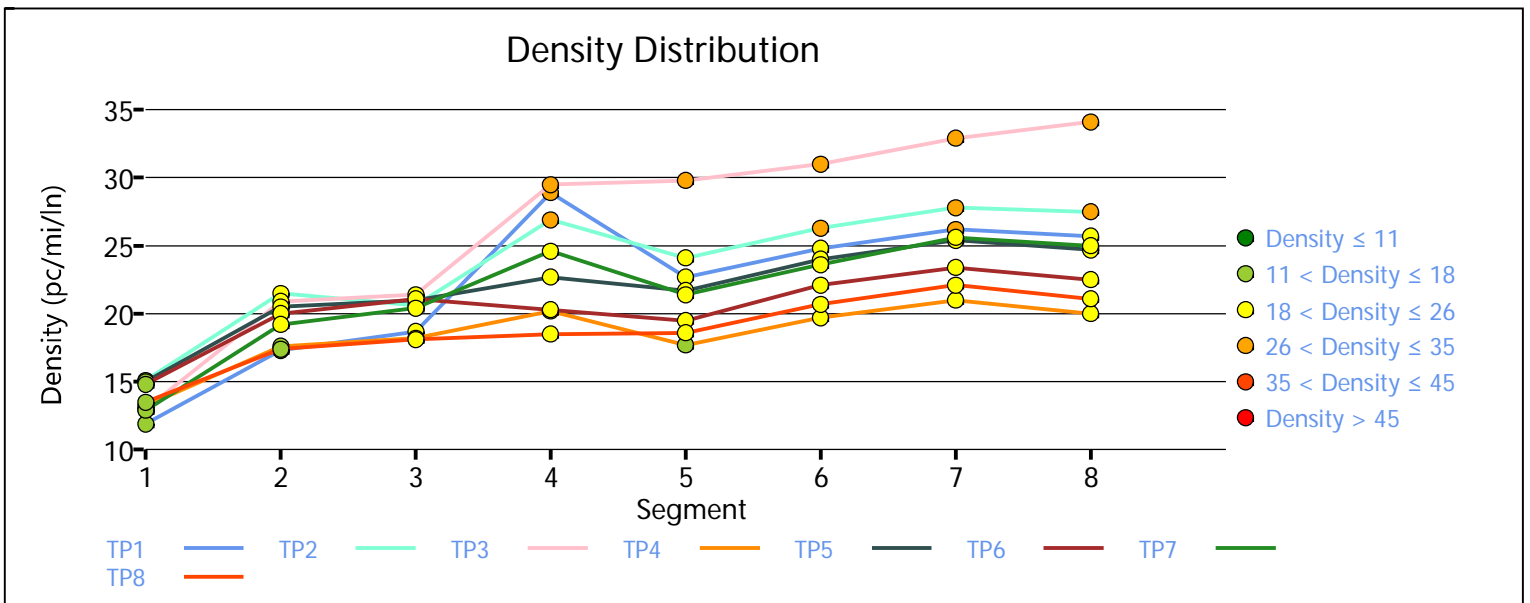
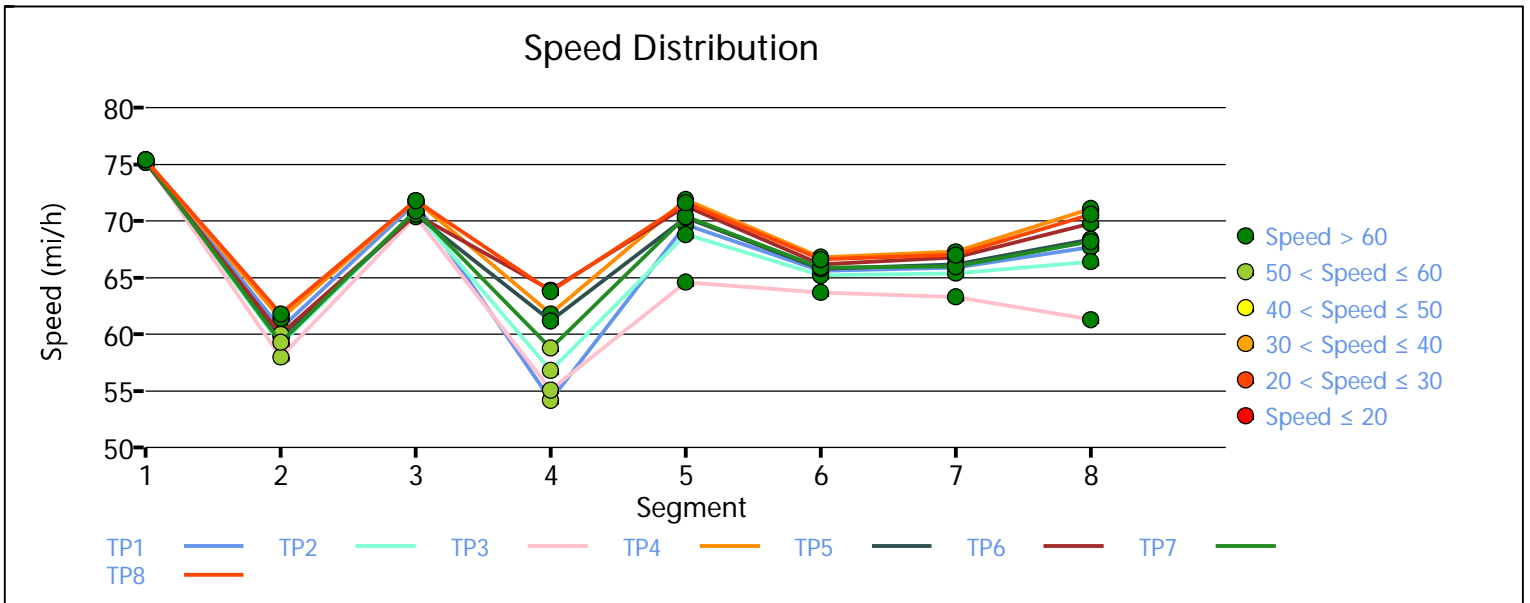
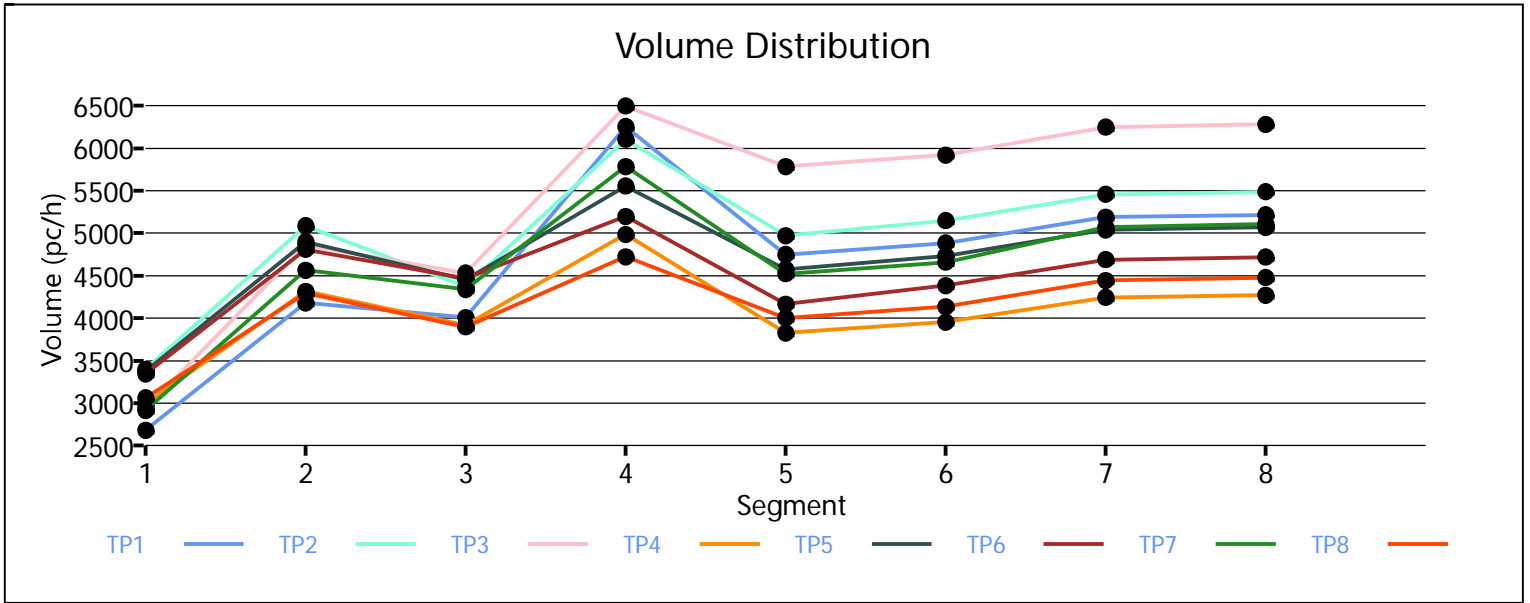
Time Period	PHF		fHV	Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
1	1.00		0.893	5217		7200		0.72		67.7		25.7		C
2	1.00		0.893	5488		7200		0.76		66.4		27.5		D
3	1.00		0.893	6279		7200		0.87		61.3		34.1		D
4	1.00		0.893	4272		7200		0.59		71.1		20.0		C
5	1.00		0.893	5068		7200		0.70		68.4		24.7		C
6	1.00		0.893	4717		7200		0.66		69.8		22.5		C
7	1.00		0.893	5111		7200		0.71		68.2		25.0		C
8	1.00		0.893	4476		7200		0.62		70.6		21.1		C

Facility Time Period Results

T	Speed, mi/h	Density, pc/mi/ln	Density, veh/mi/ln	Travel Time, min	LOS
1	63.9	21.1	19.2	2.6	C
2	64.0	23.0	21.0	2.6	C
3	62.1	24.9	22.6	2.7	C
4	66.7	18.2	16.6	2.5	C
5	65.5	21.3	19.4	2.5	C
6	66.3	20.1	18.3	2.5	C
7	64.8	20.9	19.1	2.6	C
8	67.2	18.2	H-3-18 6.6	2.5	C

Facility Overall Results

Space Mean Speed, mi/h	64.9	Density, veh/mi/ln	19.1
Average Travel Time, min	2.6	Density, pc/mi/ln	21.0



Appendix I

Intersection LOS Worksheets for Alternative 6

Appendix I-1

Intersection LOS Worksheets for Alternative 6, Existing

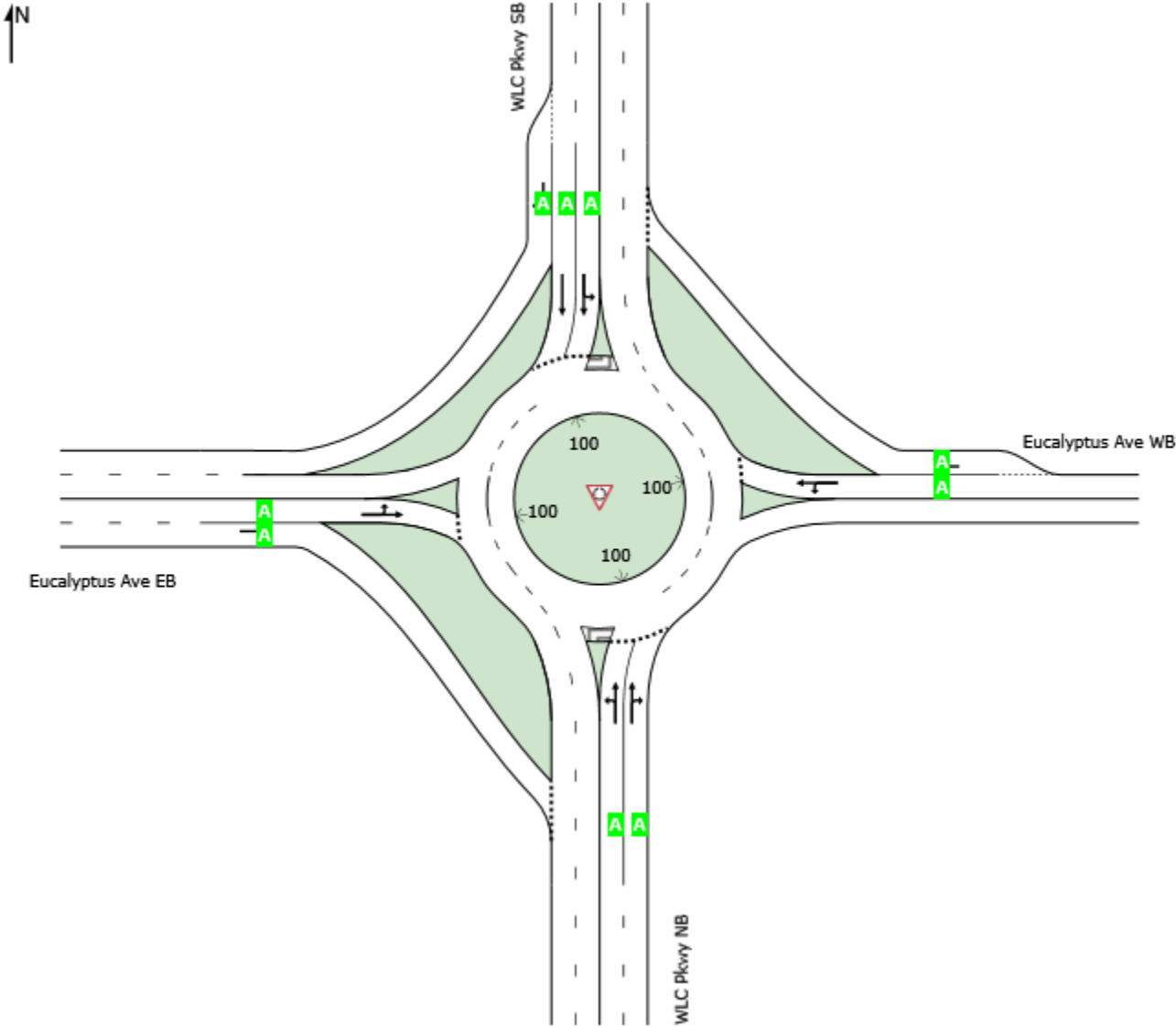
LANE LEVEL OF SERVICE

Lane Level of Service

 Site: 1 [Roundabout1 (WLC Pkwy & Eucalyptus Ave) - Int_E+P AM - HCM6]

Site Category: (None)
Roundabout

	Approaches				Intersection
	South	East	North	West	
LOS	A	A	A	A	A



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: Same as Sign Control.

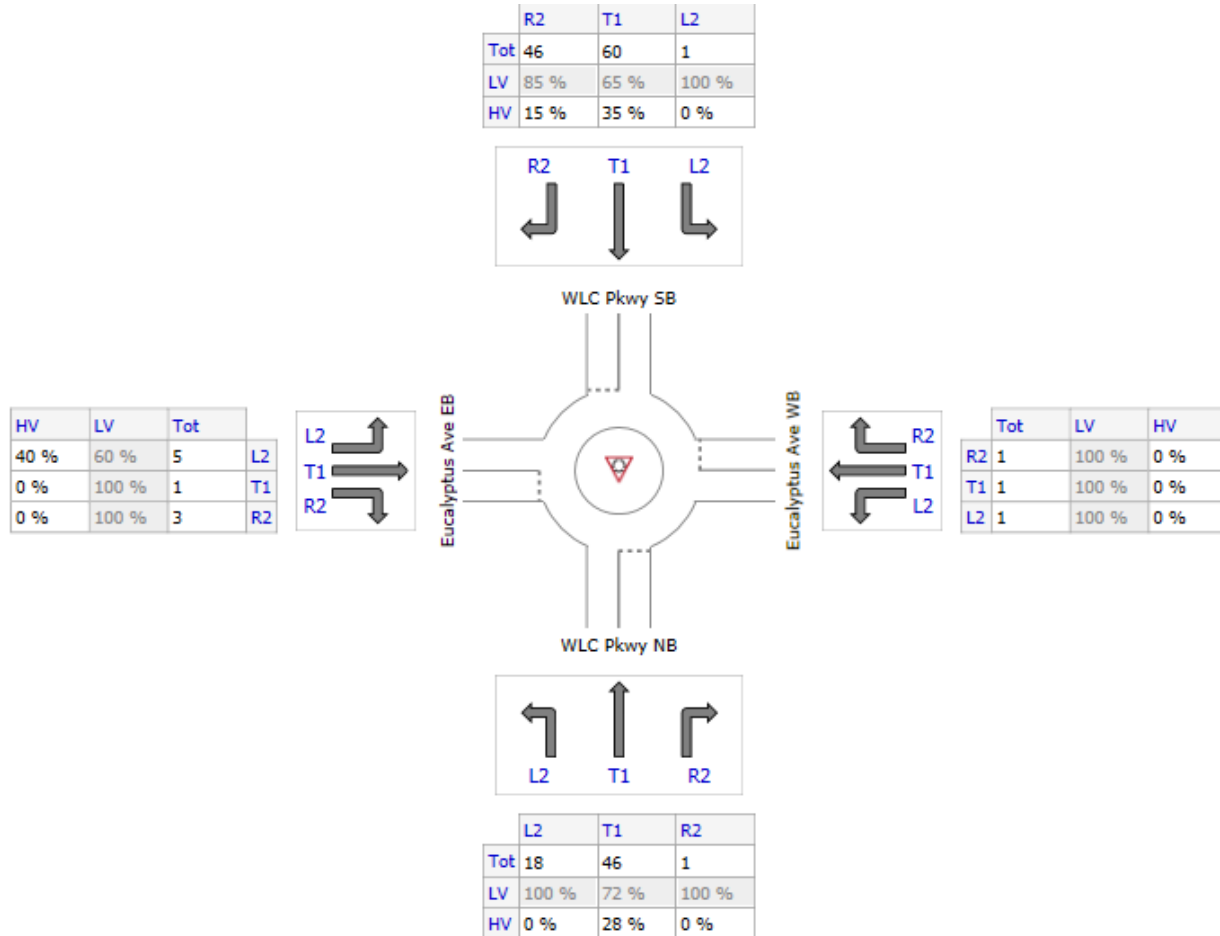
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

LOS F will result if $v/c > 1$ irrespective of lane delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

VOLUMES








DETAILED OUTPUT

Site: 1 [Roundabout1 (WLC Pkwy & Eucalyptus Ave) - Int_E+P AM - HCM6]

Site Category: (None)
Roundabout

OUTPUT TABLE LINKS

-  Roundabouts
 - Roundabout Basic Parameters
 - Roundabout Circulating / Exiting Stream Parameters
 - Roundabout Gap Acceptance Parameters
 - Roundabout Flow Rates
-  Movements
 - Intersection Negotiation and Travel Data
 - Movement Capacity and Performance Parameters
 - Fuel Consumption, Emissions and Cost
-  Lanes
 - Lane Performance and Capacity Information
 - Lane, Approach and Intersection Performance
 - Driver Characteristics
 - Lane Delays
 - Lane Queues
 - Lane Queue Percentiles
 - Lane Stops
-  Flow Rates
 - Origin-Destination Flow Rates (Total)
 - Origin-Destination Flow Rates by Movement Class
 - Lane Flow Rates
-  Other
 - Parameter Settings Summary
 - Diagnostics

Roundabouts

Roundabout Basic Parameters Site: Roundabout1 (WLC Pkwy & Eucalyptus Ave) - Int_E+P AM - HCM6

Site ID: 1
Roundabout

Central Island Diam	Circ Width	Insc Diam.	Entry Radius	Entry Angle	Circ Lanes	Entry Lanes	Av.Entry Lane Width	App Dist	Prop Upstr	Queued Signal	Extra Bunching
ft	ft	ft	ft	deg			ft	ft			%
South: WLC Pkwy NB	100.0*	30.0*	160.0*	65.0*	30.0*	1	2	13.00*	1600	NA	0.0U

East: Eucalyptus Ave WB												
100.0*	30.0*	160.0*	65.0*	30.0*	2	2	13.00*	1600		NA	0.0U	

North: WLC Pkwy SB												
100.0*	30.0*	160.0*	65.0*	30.0*	1	3	13.00*	1600		NA	0.0U	

West: Eucalyptus Ave EB												
100.0*	30.0*	160.0*	65.0*	30.0*	2	2	13.00*	1600		NA	0.0U	

Roundabout Capacity Model: US HCM 6

* These parameters do not affect estimated capacity values in the HCM 6 Capacity Model.

NA Not Applicable (single Site analysis or unconnected Site in Network analysis).

U User-specified Extra Bunching

[Go to Table Links \(Top\)](#)

Roundabout Circulating / Exiting Stream Parameters Site: Roundabout1 (WLC Pkwy & Eucalyptus Ave) - Int_E+P AM - HCM6

Site ID: 1
Roundabout

Dest	Turn	Lane No.	Lane Type	Opng Flow veh/h	HVE pcu/veh	Adj. Flow pcu/h	%Near Lane Only	%Exit Lane Incl.	Cap. Const. Effect	O-D Factor	Aver Speed mph	In-Bunch Headway sec	Prop. Bunched

South: WLC Pkwy NB													
W	L2	1	Dominant	7	1.28	9	0.0	0.0	N	-	17.3	0.00	0.000
N	T1	1	Dominant	7	1.28	9	0.0	0.0	N	-	17.3	0.00	0.000
N	T1	2	Subdominant	7	1.28	9	0.0	0.0	N	-	17.3	0.00	0.000
E	R2	2	Subdominant	7	1.28	9	0.0	0.0	N	-	17.3	0.00	0.000

East: Eucalyptus Ave WB													
S	L2	1	Dominant	86	1.21	104	0.0	0.0	N	-	21.7	0.00	0.000
W	T1	1	Dominant	86	1.21	104	0.0	0.0	N	-	21.7	0.00	0.000
N	R2	2	Excl. Slip	63	1.29	82	0.0	0.0	N	-	23.8	0.00	0.000

North: WLC Pkwy SB													
E	L2	1	Subdominant	25	1.00	25	0.0	0.0	N	-	16.3	0.00	0.000
S	T1	1	Subdominant	25	1.00	25	0.0	0.0	N	-	16.3	0.00	0.000
S	T1	2	Dominant	25	1.00	25	0.0	0.0	N	-	16.3	0.00	0.000
W	R2	3	Continuous										

West: Eucalyptus Ave EB													
N	L2	1	Dominant	62	1.34	83	0.0	0.0	N	-	24.1	0.00	0.000
E	T1	1	Dominant	62	1.34	83	0.0	0.0	N	-	24.1	0.00	0.000
S	R2	2	Excl. Slip	61	1.34	82	0.0	0.0	N	-	24.3	0.00	0.000

Roundabout Capacity Model: US HCM 6

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Roundabout Gap Acceptance Parameters Site: Roundabout1 (WLC Pkwy & Eucalyptus Ave) - Int_E+P AM - HCM6

Site ID: 1
Roundabout

Dest	Turn	Lane No.	Lane Type	In-Bunch Headway sec	Prop. Bunched	Priority Sharing	HVE for Entry	Critical Gap		Follow-up Headway sec
								Headway sec	Dist ft	

South: WLC Pkwy NB										
Model Calibration Factor (HCM 6): 1.00										
Entry/Circ. Flow Adjustment (HCM 6): None										
W	L2	1	Dominant	0.00	0.000	N	1.00	4.54	115.0	2.54
N	T1	1	Dominant	0.00	0.000	N	1.28	4.54	115.0	2.54
N	T1	2	Subdominant	0.00	0.000	N	1.28	4.54	115.0	2.54
E	R2	2	Subdominant	0.00	0.000	N	1.00	4.54	115.0	2.54

East: Eucalyptus Ave WB										
Model Calibration Factor (HCM 6): 1.00										
Entry/Circ. Flow Adjustment (HCM 6): None										
S	L2	1	Dominant	0.00	0.000	N	1.00	4.33	137.7	2.54
W	T1	1	Dominant	0.00	0.000	N	1.00	4.33	137.7	2.54
N	R2	2	Excl. Slip	0.00	0.000	N	1.00	4.33	150.7	2.54

North: WLC Pkwy SB										
Model Calibration Factor (HCM 6): 1.00										
Entry/Circ. Flow Adjustment (HCM 6): None										
E	L2	1	Subdominant	0.00	0.000	N	1.00	4.54	108.8	2.54
S	T1	1	Subdominant	0.00	0.000	N	1.35	4.54	108.8	2.54
S	T1	2	Dominant	0.00	0.000	N	1.35	4.54	108.8	2.54
W	R2	3	Continuous							

West: Eucalyptus Ave EB										
Model Calibration Factor (HCM 6): 1.00										
Entry/Circ. Flow Adjustment (HCM 6): None										
N	L2	1	Dominant	0.00	0.000	N	1.40	4.33	153.3	2.54
E	T1	1	Dominant	0.00	0.000	N	1.00	4.33	153.3	2.54
S	R2	2	Excl. Slip	0.00	0.000	N	1.00	4.33	154.1	2.54

Roundabout Capacity Model: US HCM 6										
Dist (Distance): Spacing, i.e. distance between the front ends of two successive vehicles across all lanes in the circulating or exiting stream										

[Go to Table Links \(Top\)](#)

Roundabout Flow Rates

Site: Roundabout1 (WLC Pkwy & Eucalyptus Ave) - Int_E+P AM - HCM6

Site ID: 1
Roundabout

CIRCULATING LANE FLOW RATES

Lane No.	Circulating Flow Rate		
	veh/h	pcu/h	Percent

South: WLC Pkwy NB			
1	7	9	100.0%
Total	7	9	

East: Eucalyptus Ave WB			
1	49	56	54.2%
2	37	48	45.8%
Total	86	104	

North: WLC Pkwy SB			
1	25	25	100.0%
Total	25	25	

West: Eucalyptus Ave EB			
1	32	42	50.6%
2	30	41	49.4%
Total	62	83	

The US HCM 6 roundabout capacity model option is in use. This model considers only the total circulating flow and not the flow rates in individual circulating lanes. To model the effects of flow distribution in circulating lanes on the entry capacity results, you should use the SIDRA Standard roundabout capacity model.

APPROACH LANE FLOW RATES

Lane No.	Approach Flows (veh/h)		
	Out	To Downst	Total
South: WLC Pkwy NB			
1	0	44	44
2	1	38	39
Total	1	82	83
East: Eucalyptus Ave WB			
1	0	2	2
2	1	0	1
Total	1	2	3
North: WLC Pkwy SB			
1	0	31	31
2	0	30	30
3	46	0	46
Total	46	61	107
West: Eucalyptus Ave EB			
1	0	6	6
2	3	0	3
Total	3	6	9

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Movements

Intersection Negotiation and Travel Data
 Site: Roundabout1 (WLC Pkwy & Eucalyptus Ave) - Int_E+P AM - HCM6

Site ID: 1
 Roundabout

TRAVEL SPEED, TRAVEL DISTANCE AND TRAVEL TIME

From Approach	To Exit	Turn	Running Speed mph	Travel Speed mph	Travel Distance ft	Travel Time s	Total Dem Flows veh-mi/h	Travel Distance Arv Flows veh-mi/h	Tot.Trav. Time veh-h/h
---------------	---------	------	-------------------	------------------	--------------------	---------------	--------------------------	------------------------------------	------------------------

South: WLC Pkwy NB								
West	L2	36.3	34.7	3407.0#	67.0#	14.7	14.7	0.4
North	T1	36.8	35.0	3368.7#	65.6#	37.2	37.2	1.1
East	R2	36.8	35.0	3347.5#	65.2#	0.8	0.8	0.0

East: Eucalyptus Ave WB								
South	L2	36.3	35.2	3395.6#	65.7#	0.6	0.6	0.0
West	T1	36.1	35.1	3395.6#	66.0#	0.7	0.7	0.0
North	R2	36.7	35.5	3261.8#	62.6#	0.6	0.6	0.0

North: WLC Pkwy SB								
East	L2	37.9	36.1	3356.0#	63.5#	0.6	0.6	0.0
South	T1	37.1	35.3	3353.7#	64.8#	38.1	38.1	1.1
West	R2	36.8	36.8	3261.8#	60.4#	28.4	28.4	0.8

West: Eucalyptus Ave EB								
North	L2	34.2	32.8	3419.0#	71.0#	3.2	3.2	0.1
East	T1	35.4	33.9	3419.0#	68.7#	0.7	0.7	0.0
South	R2	36.7	35.5	3261.8#	62.6#	1.9	1.9	0.1

ALL VEHICLES:		36.8	35.4	3343.6#	64.4#	127.6	127.6	3.6

"Running Speed" is the average speed excluding stopped periods.

Travel Time values include cruise times and intersection delays including acceleration, deceleration and idling delays.

Travel Distance and Travel Time values include travel on the External Exit section based on the Exit Distance or user-specified Downstream Distance value as applicable.

INTERSECTION NEGOTIATION DATA

From Approach	To Exit	Turn	Negn Radius ft	Negn Speed mph	Negn Dist ft	App Dist ft	Exit Dist ft	Downstr Dist ft

South: WLC Pkwy NB								
West	L2		62.0	16.0	243.5	1600	488	NA
North	T1		190.4	24.4	151.5	1600	488	NA
East	R2		115.2	20.2	62.0	1600	488	NA

East: Eucalyptus Ave WB								
South	L2		62.0	16.0	243.5	1600	488	NA
West	T1		190.4	24.4	151.5	1600	488	NA
North	R2		131.6	21.2	61.8	1600	488	NA

North: WLC Pkwy SB								
East	L2		62.0	16.0	243.5	1600	488	NA
South	T1		190.4	24.4	151.5	1600	488	NA
West	R2		135.0	21.4	61.8	1600	488	NA

West: Eucalyptus Ave EB								
North	L2		62.0	16.0	243.5	1600	488	NA
East	T1		190.4	24.4	151.5	1600	488	NA
South	R2		131.6	21.2	61.8	1600	488	NA

Maximum Negotiation (Design) Speed = 30.0 mph

NA Downstream Distance does not apply if:

- Exit is an internal leg of a network
- "Program" option was specified
- Distance specified was less than the Exit Negotiation Distance
- Distance specified was greater than the exit leg length

MOVEMENT SPEEDS AND GEOMETRIC DELAY

Mov ID	Turn	App. Speeds		Exit Speeds		Queue	Geom Delay sec
		Cruise mph	Negn mph	Negn mph	Cruise mph	Move-up Speed mph	

South: WLC Pkwy NB							
3	L2	40.0	16.0	16.0	40.0	32.2	0.0
8	T1	40.0	24.4	24.4	40.0	36.6	0.0
18	R2	40.0	20.2	20.2	40.0	39.1	0.0

East: Eucalyptus Ave WB							
1	L2	40.0	16.0	16.0	40.0	32.8	0.0
6	T1	40.0	24.4	24.4	40.0	32.8	0.0
16	R2	40.0	21.2	21.2	40.0	34.2	0.0

North: WLC Pkwy SB							
7	L2	40.0	16.0	16.0	40.0	38.9	0.0
4	T1	40.0	24.4	24.4	40.0	39.1	0.0
14	R2	40.0	21.4	21.4	40.0	34.5	0.0

West: Eucalyptus Ave EB							
5	L2	40.0	16.0	16.0	40.0	28.1	0.0
2	T1	40.0	24.4	24.4	40.0	28.1	0.0
12	R2	40.0	21.2	21.2	40.0	34.2	0.0

HCM Delay Formula option used: Geometric Delay is not included in Control Delay.

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Movement Capacity and Performance Parameters

Site: Roundabout1 (WLC Pkwy & Eucalyptus Ave) - Int_E+P AM - HCM6

Site ID: 1
Roundabout

MOVEMENT CAPACITY PARAMETERS

Mov ID	Turn	Mov Cl.	Arv Flow veh/h	Opng Flow veh/h	Movement Adjust. pcu/h	Total Cap. veh/h	Prac. Deg. xp	Prac. Spare Cap. %	Deg. Satn x

South: WLC Pkwy NB									
3	L2	#	23	7	9	652	0.85	2333	0.035*
8	T1	#	58	7	9	1667	0.85	2333	0.035*
18	R2	#	1	7	9	36	0.85	2333	0.035*

East: Eucalyptus Ave WB									
1	L2	#	1	86	104	623	0.85	****	0.002
6	T1	#	1	86	104	677	0.85	****	0.002
16	R2	#	1	63	82	1325	0.85	****	0.001

North: WLC Pkwy SB									
7	L2	#	1	25	25	34	0.85	2778	0.030
4	T1	#	60	25	25	2032	0.85	2778	0.030
14	R2	#	46	25	25	1456	0.98	3002	0.032

West: Eucalyptus Ave EB									
5	L2	#	5	62	83	818	0.85	****	0.006
2	T1	#	1	62	83	178	0.85	****	0.006
12	R2	#	3	61	82	1324	0.85	****	0.002

* Maximum degree of saturation

Combined Movement Capacity parameters are shown for all Movement Classes.

MOVEMENT PERFORMANCE

Mov ID	Turn	Total Delay (veh-h/h)	Total Delay (pers-h/h)	Aver. Delay (sec)	Eff. Stop Rate	Total Stops	Perf. Index	Tot.Trav. Distance (veh-mi/h)	Tot.Trav. Time (veh-h/h)	Aver. Speed (mph)
South: WLC Pkwy NB										
3	L2	0.02	0.02	2.8	0.01	0.2	0.44	14.7	0.4	34.7
8	T1	0.06	0.07	3.6	0.01	0.5	1.08	37.2	1.1	35.0
18	R2	0.00	0.00	2.8	0.01	0.0	0.06	0.8	0.0	35.0
East: Eucalyptus Ave WB										
1	L2	0.00	0.00	2.8	0.06	0.1	0.02	0.6	0.0	35.2
6	T1	0.00	0.00	2.8	0.06	0.1	0.02	0.7	0.0	35.1
16	R2	0.00	0.00	2.7	0.04	0.0	0.02	0.6	0.0	35.5
North: WLC Pkwy SB										
7	L2	0.00	0.00	2.8	0.02	0.0	0.05	0.6	0.0	36.1
4	T1	0.06	0.08	3.8	0.02	1.3	1.09	38.1	1.1	35.3
14	R2	0.00	0.00	0.0	0.00	0.0	0.71	28.4	0.8	36.8
West: Eucalyptus Ave EB										
5	L2	0.01	0.01	3.9	0.06	0.3	0.10	3.2	0.1	32.8
2	T1	0.00	0.00	2.8	0.06	0.1	0.03	0.7	0.0	33.9
12	R2	0.00	0.00	2.7	0.05	0.1	0.05	1.9	0.1	35.5

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Fuel Consumption, Emissions and Cost
Site: Roundabout1 (WLC Pkwy & Eucalyptus Ave) - Int_E+P AM - HCM6

Site ID: 1
Roundabout

FUEL CONSUMPTION, EMISSIONS AND COST (TOTAL)

Mov ID	Turn	Cost Total \$/h	Fuel Total gal/h	CO2 Total kg/h	CO Total kg/h	HC Total kg/h	NOX Total kg/h
South: WLC Pkwy NB							
3	L2	8.04	0.7	6.6	0.02	0.002	0.023
8	T1	23.04	2.7	25.1	0.06	0.004	0.129
18	R2	0.52	0.1	0.5	0.00	0.000	0.002
		31.59	3.5	32.2	0.08	0.006	0.155
East: Eucalyptus Ave WB							
1	L2	0.27	0.0	0.2	0.00	0.000	0.000
6	T1	0.30	0.0	0.2	0.00	0.000	0.000
16	R2	0.25	0.0	0.2	0.00	0.000	0.000
		0.82	0.1	0.6	0.00	0.000	0.001
North: WLC Pkwy SB							
7	L2	0.46	0.0	0.4	0.00	0.000	0.002
4	T1	27.97	3.5	32.5	0.06	0.004	0.192
14	R2	15.03	1.7	15.4	0.05	0.003	0.069

		43.45	5.2	48.3	0.10	0.007	0.263
West: Eucalyptus Ave EB							
5	L2	2.71	0.3	3.0	0.01	0.000	0.018
2	T1	0.58	0.1	0.5	0.00	0.000	0.003
12	R2	0.74	0.1	0.6	0.00	0.000	0.000
		4.03	0.4	4.1	0.01	0.001	0.022
INTERSECTION:							
		79.89	9.2	85.2	0.20	0.014	0.440

FUEL CONSUMPTION, EMISSIONS AND COST (RATE)

Mov ID	Turn	Cost Rate \$/mi	Fuel Eff. mpg	CO2 Rate g/km	CO Rate g/km	HC Rate g/km	NOX Rate g/km
South: WLC Pkwy NB							
3	L2	0.34	20.1	279.1	1.04	0.071	0.990
8	T1	0.39	13.8	419.5	0.96	0.069	2.165
18	R2	0.40	15.3	370.1	1.01	0.067	1.869
		0.37	15.1	379.6	0.99	0.069	1.833
East: Eucalyptus Ave WB							
1	L2	0.27	28.8	191.6	1.06	0.072	0.160
6	T1	0.27	28.8	191.6	1.06	0.072	0.160
16	R2	0.25	29.5	187.6	1.05	0.069	0.157
		0.26	29.0	190.4	1.05	0.071	0.159
North: WLC Pkwy SB							
7	L2	0.45	13.5	422.1	1.01	0.068	2.318
4	T1	0.46	11.0	529.5	0.94	0.069	3.127
14	R2	0.33	16.9	336.8	1.00	0.067	1.499
		0.40	13.0	447.0	0.97	0.068	2.431
West: Eucalyptus Ave EB							
5	L2	0.52	10.0	584.6	1.01	0.078	3.538
2	T1	0.51	12.2	468.8	1.09	0.078	2.674
12	R2	0.25	29.5	187.7	1.05	0.069	0.157
		0.43	13.0	443.6	1.03	0.075	2.352
INTERSECTION:							
		0.39	13.9	415.1	0.98	0.069	2.145

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Lanes

Lane Performance and Capacity Information

Site: Roundabout1 (WLC Pkwy & Eucalyptus Ave) - Int_E+P AM - HCM6

Site ID: 1
Roundabout

LANE PERFORMANCE

Lane No.	Flow veh/h	Cap veh/h	Deg. Satn x	Aver. Delay sec	Eff. Stop Rate	Q u e u e		Lane Length ft
						95% Back veh	ft	

South: WLC Pkwy NB								
1	44	1247	0.035	3.2	0.01	0.1	3.4	1600.0
2	39	1108	0.035	3.5	0.01	0.1	3.3	1600.0

East: Eucalyptus Ave WB								
1	2	1300	0.002	2.8	0.06	0.0	0.1	1600.0
2	1	1325	0.001	2.7	0.04	0.0	0.1	200.0T

North: WLC Pkwy SB								
1	31	1037	0.030	3.7	0.02	0.1	2.8	1600.0
2	30	1028	0.030	3.8	0.02	0.1	2.7	1600.0
3	46	1456	0.032	0.0	0.00			600.0T

West: Eucalyptus Ave EB								
1	6	996	0.006	3.7	0.06	0.0	0.5	1600.0
2	3	1324	0.002	2.7	0.05	0.0	0.2	1600.0

T Short lane due to specification of Turn Bay

LANE FLOW AND CAPACITY INFORMATION

Lane No.	Total Arv veh/h	Min Flow veh/h	Tot Cap veh/h	Deg. Satn x	Lane Util %

South: WLC Pkwy NB					
1	44	44	1247	0.035	100
2	39	39	1108	0.035	100

East: Eucalyptus Ave WB					
1	2	2	1300	0.002	100
2	1	1	1325	0.001	100

North: WLC Pkwy SB					
1	31	31	1037	0.030	100
2	30	30	1028	0.030	100
3	46	46	1456	0.032	100

West: Eucalyptus Ave EB					
1	6	6	996	0.006	100
2	3	3	1324	0.002	100

The capacity values of Continuous Lanes are obtained by adjusting the basic saturation flow for lane width, grade, movement class and turning vehicle effects. Saturation flow scale applies if specified.

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Lane, Approach and Intersection Performance
 Site: Roundabout1 (WLC Pkwy & Eucalyptus Ave) - Int_E+P AM - HCM6

Site ID: 1
 Roundabout

Lane No.	Arrival Flow (veh/h)	%HV	Adj. Basic Satf.	Deg Sat x	Aver. Delay sec	Longest Queue ft	Lane Length ft

South: WLC Pkwy NB							
1	44	13		0.035	3.2	3	1600
2	39	27		0.035	3.5	3	1600
	82	20		0.035	3.3	3	

East: Eucalyptus Ave WB							
1	2	0		0.002	2.8	0	1600
2	1	0		0.001	2.7	0	200
	3	0		0.002	2.8	0	

North: WLC Pkwy SB							
1	31	34		0.030	3.7	3	1600
2	30	35		0.030	3.8	3	1600
3	46	15	1975	0.032	0.0		600
	107	26		0.032	2.1	3	

West: Eucalyptus Ave EB							
1	6	33		0.006	3.7	1	1600
2	3	0		0.002	2.7	0	1600
	9	22		0.006	3.4	1	
=====							
ALL VEHICLES							
	Total Flow	% HV		Max X	Aver. Delay	Max Queue	
	201	23		0.035	2.7	3	
=====							

Peak flow period = 15 minutes.

Queue values in this table are 95% queue (feet)
 Note: Basic Saturation Flows at roundabouts or sign-controlled intersections apply only to continuous lanes.

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Driver Characteristics
 Site: Roundabout1 (WLC Pkwy & Eucalyptus Ave) - Int_E+P AM - HCM6

Site ID: 1
 Roundabout

Lane No.	Satn Speed mph	Satn Flow veh/h	Satn Hdwy sec	Satn Spacing ft	Average Queue Space ft	Driver Response Time sec

South: WLC Pkwy NB						
1	20.0	1420	2.54	74.35	27.67	1.59
2	24.3	1420	2.54	90.28	30.42	1.68

East: Eucalyptus Ave WB						
1	20.4	1420	2.54	75.73	25.00	1.70
2	NA - Short Lane					

North: WLC Pkwy SB						
1	24.1	1420	2.54	89.77	31.77	1.64

2	24.4	1420	2.54	90.80	32.00	1.64
3	NA - Continuous Movement					

West: Eucalyptus Ave EB						
1	17.5	1420	2.54	64.97	31.57	1.30
2	21.2	1420	2.54	78.95	25.00	1.73

Saturation Flow and Saturation Headway are derived from follow-up headway.

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Lane Delays

Site: Roundabout1 (WLC Pkwy & Eucalyptus Ave) - Int_E+P AM - HCM6

Site ID: 1
Roundabout

LANE DELAYS

Lane No.	Deg. x	% Arv During Green	Prog. Factor	Delay (seconds/veh)									
				Min Del dm	Stop-line 1st d1	2nd d2	Total dSL	Acc. Dec. dn	Queuing Total dq	MvUp dqm	Stopd (Idle) di	Geom dig	Control dic
South: WLC Pkwy NB													
1	0.035	NA	NA	2.9	3.1	0.1	3.2	4.7	2.9	0.0	2.9	0.0	3.2
2	0.035	NA	NA	3.2	3.4	0.1	3.5	6.5	3.2	0.0	3.2	0.0	3.5
East: Eucalyptus Ave WB													
1	0.002	NA	NA	2.8	2.8	0.0	2.8	5.0	1.8	0.0	1.8	0.0	2.8
2	0.001	NA	NA	2.7	2.7	0.0	2.7	4.6	2.0	0.0	2.0	0.0	2.7
North: WLC Pkwy SB													
1	0.030	NA	NA	3.5	3.6	0.1	3.7	6.4	3.1	0.0	3.1	0.0	3.7
2	0.030	NA	NA	3.5	3.6	0.1	3.8	6.6	3.2	0.0	3.2	0.0	3.8
3	0.032					0.0					0.0	0.0	
West: Eucalyptus Ave EB													
1	0.006	NA	NA	3.6	3.6	0.0	3.7	4.9	2.8	0.0	2.8	0.0	3.7
2	0.002	NA	NA	2.7	2.7	0.0	2.7	4.6	2.0	0.0	2.0	0.0	2.7

HCM Delay Formula option used (Exclude Geometric Delay option applies). Control Delay does not include Geometric Delay, and Stop-line Delay is treated as being same as Control Delay.

dm: Minimum delay for gap acceptance cases

dSL: Stop-line delay (=d1+d2)

dn: Average stop-start delay for all vehicles queued and unqueued

dq: Queuing delay (the part of the stop-line delay that includes stopped delay and queue move-up delay)

dqm: Queue move-up delay

di: Stopped delay (stopped (idling) time at near-zero speed)

dig: Geometric delay

dic: Control delay

[Go to Table Links \(Top\)](#)

Lane Queues

Site: Roundabout1 (WLC Pkwy & Eucalyptus Ave) - Int_E+P AM - HCM6

Site ID: 1
Roundabout

BACK OF QUEUE (VEHICLES)

Lane No.	Deg. Satn x	% Arv During Green	Prog. Factor	Ovrfl. Queue No	Back of Queue (veh)				Queue Stor. Ratio		Prob. Block %	Prob. SL Ov. %
					Nb1	Nb2	Nb	95%	Av.	95%		
South: WLC Pkwy NB												
1	0.035	NA	NA	0.0	0.0	0.0	0.0	0.1	0.00	0.00	0.0	NA
2	0.035	NA	NA	0.0	0.0	0.0	0.0	0.1	0.00	0.00	0.0	NA
East: Eucalyptus Ave WB												
1	0.002	NA	NA	0.0	0.0	0.0	0.0	0.0	0.00	0.00	0.0	NA
2	0.001	NA	NA	0.0	0.0	0.0	0.0	0.0	0.00	0.00	NA	0.0
North: WLC Pkwy SB												
1	0.030	NA	NA	0.0	0.0	0.0	0.0	0.1	0.00	0.00	0.0	NA
2	0.030	NA	NA	0.0	0.0	0.0	0.0	0.1	0.00	0.00	0.0	NA
West: Eucalyptus Ave EB												
1	0.006	NA	NA	0.0	0.0	0.0	0.0	0.0	0.00	0.00	0.0	NA
2	0.002	NA	NA	0.0	0.0	0.0	0.0	0.0	0.00	0.00	0.0	NA

SIDRA Standard models are used for Back of Queue estimation since HCM only gives Cycle-Average Queues for unsignalised intersections.

BACK OF QUEUE (DISTANCE)

Lane No.	Deg. Satn x	% Arv During Green	Prog. Factor	Ovrfl. Queue No	Back of Queue (ft)				Queue Stor. Ratio		Prob. Block %	Prob. SL Ov. %
					Nb1	Nb2	Nb	95%	Av.	95%		
South: WLC Pkwy NB												
1	0.035	NA	NA	0.0	1.4	0.0	1.4	3.4	0.00	0.00	0.0	NA
2	0.035	NA	NA	0.0	1.3	0.0	1.3	3.3	0.00	0.00	0.0	NA
East: Eucalyptus Ave WB												
1	0.002	NA	NA	0.0	0.1	0.0	0.1	0.1	0.00	0.00	0.0	NA
2	0.001	NA	NA	0.0	0.0	0.0	0.0	0.1	0.00	0.00	NA	0.0
North: WLC Pkwy SB												
1	0.030	NA	NA	0.0	1.1	0.0	1.1	2.8	0.00	0.00	0.0	NA
2	0.030	NA	NA	0.0	1.1	0.0	1.1	2.7	0.00	0.00	0.0	NA
West: Eucalyptus Ave EB												
1	0.006	NA	NA	0.0	0.2	0.0	0.2	0.5	0.00	0.00	0.0	NA
2	0.002	NA	NA	0.0	0.1	0.0	0.1	0.2	0.00	0.00	0.0	NA

SIDRA Standard models are used for Back of Queue estimation since HCM only gives Cycle-Average Queues for unsignalised intersections.

OTHER QUEUE RESULTS (VEHICLES)

Lane No.	Deg. Satn x	% Arv During Green	Prog. Factor	Ovrfl. Queue No	Cyc-Av. Queue Nc	95%
----------	-------------	--------------------	--------------	-----------------	------------------	-----

```

-----
South: WLC Pkwy NB
1  0.035  NA    NA    0.0    0.0    0.1
2  0.035  NA    NA    0.0    0.0    0.1
-----
East: Eucalyptus Ave WB
1  0.002  NA    NA    0.0    0.0    0.0
2  0.001  NA    NA    0.0    0.0    0.0
-----
North: WLC Pkwy SB
1  0.030  NA    NA    0.0    0.0    0.1
2  0.030  NA    NA    0.0    0.0    0.1
-----
West: Eucalyptus Ave EB
1  0.006  NA    NA    0.0    0.0    0.0
2  0.002  NA    NA    0.0    0.0    0.0
-----

```

HCM Delay Formula option used:
Cycle-Average Queue is calculated using average delay from the HCM equation.
(i.e. HCM delays are treated as stop-line delays for this purpose).

OTHER QUEUE RESULTS (DISTANCE)

```

-----
Lane  Deg.  % Arv  Prog.  Ovrfl.  Cyc-Av.  Queue
No.   Satn  During  Factor  Queue   No       Nc       95%
-----
South: WLC Pkwy NB
1  0.035  NA     NA     0.0     1.1     1.9
2  0.035  NA     NA     0.0     1.2     2.1
-----
East: Eucalyptus Ave WB
1  0.002  NA     NA     0.0     0.0     0.1
2  0.001  NA     NA     0.0     0.0     0.0
-----
North: WLC Pkwy SB
1  0.030  NA     NA     0.0     1.0     1.8
2  0.030  NA     NA     0.0     1.0     1.8
-----
West: Eucalyptus Ave EB
1  0.006  NA     NA     0.0     0.2     0.4
2  0.002  NA     NA     0.0     0.1     0.1
-----

```

HCM Delay Formula option used:
Cycle-Average Queue is calculated using average delay from the HCM equation.
(i.e. HCM delays are treated as stop-line delays for this purpose).

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Lane Queue Percentiles
Site: Roundabout1 (WLC Pkwy & Eucalyptus Ave) - Int_E+P AM - HCM6

Site ID: 1
Roundabout

LANE QUEUE PERCENTILES (VEHICLES)

```

-----
Lane  Deg.          Percentile Back of Queue (veh)
      Satn  -----
-----

```

No.	x	50%	70%	85%	90%	95%	98%	100%

South: WLC Pkwy NB								
1	0.035	0.0	0.1	0.1	0.1	0.1	0.1	0.1
2	0.035	0.0	0.1	0.1	0.1	0.1	0.1	0.1

East: Eucalyptus Ave WB								
1	0.002	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	0.001	0.0	0.0	0.0	0.0	0.0	0.0	0.0

North: WLC Pkwy SB								
1	0.030	0.0	0.0	0.1	0.1	0.1	0.1	0.1
2	0.030	0.0	0.0	0.1	0.1	0.1	0.1	0.1

West: Eucalyptus Ave EB								
1	0.006	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	0.002	0.0	0.0	0.0	0.0	0.0	0.0	0.0

SIDRA Standard models are used for Back of Queue estimation since HCM only gives Cycle-Average Queues for unsignalised intersections.

LANE QUEUE PERCENTILES (DISTANCE)

Lane No.	Deg. Satn x	Percentile Back of Queue (feet)						
		50%	70%	85%	90%	95%	98%	100%

South: WLC Pkwy NB								
1	0.035	1.4	1.8	2.5	2.9	3.4	3.8	4.1
2	0.035	1.3	1.7	2.4	2.8	3.3	3.7	3.9

East: Eucalyptus Ave WB								
1	0.002	0.1	0.1	0.1	0.1	0.1	0.2	0.2
2	0.001	0.0	0.0	0.0	0.1	0.1	0.1	0.1

North: WLC Pkwy SB								
1	0.030	1.1	1.4	2.0	2.3	2.8	3.1	3.3
2	0.030	1.1	1.4	2.0	2.3	2.7	3.1	3.3

West: Eucalyptus Ave EB								
1	0.006	0.2	0.3	0.4	0.4	0.5	0.6	0.6
2	0.002	0.1	0.1	0.1	0.2	0.2	0.2	0.2

SIDRA Standard models are used for Back of Queue estimation since HCM only gives Cycle-Average Queues for unsignalised intersections.

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Lane Stops
Site: Roundabout1 (WLC Pkwy & Eucalyptus Ave) - Int_E+P AM - HCM6

Site ID: 1
Roundabout

Lane No.	Deg. Satn x	% Arv During Green	Prog. Factor	-- Effective Stop Rate --				Total Stops H	Queue Move-up	Total Queue	Prop. Queued pq	Aver. Num. of Cycles to Depart
				he1	he2	Geom. hig	Overall h		Rate hqm	Move-ups Hqm		

South: WLC Pkwy NB												

1	0.035	NA	NA	0.01	0.00	0.00	0.01	0.4	0.00	0.0	0.05	0.05
2	0.035	NA	NA	0.01	0.00	0.00	0.01	0.3	0.00	0.0	0.05	0.05

East: Eucalyptus Ave WB												
1	0.002	NA	NA	0.06	0.00	0.00	0.06	0.1	0.00	0.0	0.19	0.19
2	0.001	NA	NA	0.04	0.00	0.00	0.04	0.0	0.00	0.0	0.17	0.17

North: WLC Pkwy SB												
1	0.030	NA	NA	0.02	0.00	0.00	0.02	0.7	0.00	0.0	0.09	0.09
2	0.030	NA	NA	0.02	0.00	0.00	0.02	0.7	0.00	0.0	0.09	0.09
3	0.032	NA	NA			0.00	0.00	0.0				

West: Eucalyptus Ave EB												
1	0.006	NA	NA	0.06	0.00	0.00	0.06	0.3	0.00	0.0	0.17	0.17
2	0.002	NA	NA	0.05	0.00	0.00	0.05	0.1	0.00	0.0	0.17	0.17

hig is the average value for all movements in a shared lane
hqm is average queue move-up rate for all vehicles queued and unqueued

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Flow Rates

Origin-Destination Flow Rates (Total)

Site: Roundabout1 (WLC Pkwy & Eucalyptus Ave) - Int_E+P AM - HCM6

Site ID: 1
Roundabout

TOTAL FLOW RATES for All Movement Classes (veh/h)

From SOUTH To:	W	N	E	
Turn:	L2	T1	R2	TOT
Flow Rate	22.8	58.2	1.3	82.3
%HV (all designations)	0.0	28.0	0.0	19.8

From EAST To:	S	W	N	
Turn:	L2	T1	R2	TOT
Flow Rate	1.0	1.1	1.0	3.1
%HV (all designations)	0.0	0.0	0.0	0.0

From NORTH To:	E	S	W	
Turn:	L2	T1	R2	TOT
Flow Rate	1.0	60.0	46.0	107.0
%HV (all designations)	0.0	35.0	15.0	26.1

From WEST To:	N	E	S	
Turn:	L2	T1	R2	TOT
Flow Rate	5.0	1.1	3.0	9.1
%HV (all designations)	40.0	0.0	0.0	22.0

Flow rates shown above are Arrival Flow Rates (veh/h) based on the following input specifications:
Unit Time for Volumes = 60 minutes
Peak Flow Period = 15 minutes
Effects of Volume Factors (Peak Flow Factor, Flow Scale, Growth Rate) are included.
Arrival Flow Rates may be less than Demand Flow Rates if capacity constraint applies in network analysis.

[Go to Table Links \(Top\)](#)

Origin-Destination Flow Rates by Movement Class
 Site: Roundabout1 (WLC Pkwy & Eucalyptus Ave) - Int_E+P AM - HCM6

Site ID: 1
 Roundabout

FLOW RATES for Light Vehicles (veh/h)

From SOUTH To:	W	N	E	
Turn:	L2	T1	R2	TOT
Flow Rate	22.8	41.9	1.3	66.0
Mov Class %	100.0	72.0	100.0	80.2
Flow Scale	1.00	1.00	1.00	-
Peak Flow Factor	0.79	0.79	0.79	-
Residual Demand	0.0	0.0	0.0	0.0
From EAST To:	S	W	N	
Turn:	L2	T1	R2	TOT
Flow Rate	1.0	1.1	1.0	3.1
Mov Class %	100.0	100.0	100.0	100.0
Flow Scale	1.00	1.00	1.00	-
Peak Flow Factor	1.00	0.92	1.00	-
Residual Demand	0.0	0.0	0.0	0.0
From NORTH To:	E	S	W	
Turn:	L2	T1	R2	TOT
Flow Rate	1.0	39.0	39.1	79.1
Mov Class %	100.0	65.0	85.0	73.9
Flow Scale	1.00	1.00	1.00	-
Peak Flow Factor	1.00	1.00	1.00	-
Residual Demand	0.0	0.0	0.0	0.0
From WEST To:	N	E	S	
Turn:	L2	T1	R2	TOT
Flow Rate	3.0	1.1	3.0	7.1
Mov Class %	60.0	100.0	100.0	78.0
Flow Scale	1.00	1.00	1.00	-
Peak Flow Factor	1.00	0.92	1.00	-
Residual Demand	0.0	0.0	0.0	0.0

FLOW RATES for Heavy Vehicles (veh/h)

From SOUTH To:	W	N	E	
Turn:	L2	T1	R2	TOT
Flow Rate	0.0	16.3	0.0	16.3
Mov Class %	0.0	28.0	0.0	19.8
Flow Scale	1.00	1.00	1.00	-
Peak Flow Factor	0.79	0.79	0.79	-
Residual Demand	0.0	0.0	0.0	0.0
From EAST To:	S	W	N	
Turn:	L2	T1	R2	TOT
Flow Rate	0.0	0.0	0.0	0.0
Mov Class %	0.0	0.0	0.0	0.0
Flow Scale	1.00	1.00	1.00	-

Peak Flow Factor	1.00	0.92	1.00	-
Residual Demand	0.0	0.0	0.0	0.0

From NORTH To:	E	S	W	
Turn:	L2	T1	R2	TOT

Flow Rate	0.0	21.0	6.9	27.9
Mov Class %	0.0	35.0	15.0	26.1
Flow Scale	1.00	1.00	1.00	-
Peak Flow Factor	1.00	1.00	1.00	-
Residual Demand	0.0	0.0	0.0	0.0

From WEST To:	N	E	S	
Turn:	L2	T1	R2	TOT

Flow Rate	2.0	0.0	0.0	2.0
Mov Class %	40.0	0.0	0.0	22.0
Flow Scale	1.00	1.00	1.00	-
Peak Flow Factor	1.00	0.92	1.00	-
Residual Demand	0.0	0.0	0.0	0.0

Flow rates shown above are Arrival Flow Rates (veh/h) based on the following input specifications:
Unit Time for Volumes = 60 minutes
Peak Flow Period = 15 minutes
Effects of Volume Factors (Peak Flow Factor, Flow Scale, Growth Rate) are included.
Arrival Flow Rates may be less than Demand Flow Rates if capacity constraint applies in network analysis.

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Lane Flow Rates

Site: Roundabout1 (WLC Pkwy & Eucalyptus Ave) - Int_E+P AM - HCM6

Site ID: 1
Roundabout

LANE FLOW RATES AT STOP LINE (veh/h)

From SOUTH To:	W	N	E	
Turn:	L2	T1	R2	TOT

Lane 1				
LV	22.8	15.0	*	37.7
HV	*	5.8	*	5.8
Total	22.8	20.8	*	43.6
Lane 2				
LV	*	27.0	1.3	28.2
HV	*	10.5	*	10.5
Total	*	37.4	1.3	38.7

Approach	22.8	58.2	1.3	82.3

From EAST To:	S	W	N	
Turn:	L2	T1	R2	TOT

Lane 1				
LV	1.0	1.1	*	2.1
Total	1.0	1.1	*	2.1
Lane 2				
LV	*	*	1.0	1.0
Total	*	*	1.0	1.0

Approach	1.0	1.1	1.0	3.1
From NORTH To: Turn:	E L2	S T1	W R2	TOT
Lane 1				
LV	1.0	19.3	*	20.3
HV	*	10.4	*	10.4
Total	1.0	29.6	*	30.6
Lane 2				
LV	*	19.7	*	19.7
HV	*	10.6	*	10.6
Total	*	30.4	*	30.4
Lane 3				
LV	*	*	39.1	39.1
HV	*	*	6.9	6.9
Total	*	*	46.0	46.0
Approach	1.0	60.0	46.0	107.0
From WEST To: Turn:	N L2	E T1	S R2	TOT
Lane 1				
LV	3.0	1.1	*	4.1
HV	2.0	*	*	2.0
Total	5.0	1.1	*	6.1
Lane 2				
LV	*	*	3.0	3.0
Total	*	*	3.0	3.0
Approach	5.0	1.1	3.0	9.1

* Movement not allocated to the lane

EXIT LANE FLOW RATES

Movement Class:	LV	HV	TOT
Exit: SOUTH			
Lane: 1	20.3	10.4	30.6
Lane: 2	22.7	10.6	33.4
Total	43.0	21.0	64.0
Exit: EAST			
Lane: 1	3.4	*	3.4
Total	3.4	*	3.4
Exit: NORTH			
Lane: 1	18.0	7.8	25.8
Lane: 2	28.0	10.5	38.4
Total	45.9	18.3	64.2
Exit: WEST			
Lane: 1	23.9	*	23.9
Lane: 2	39.1	6.9	46.0
Total	63.0	6.9	69.9

* Movement not allocated to the lane

DOWNSTREAM LANE FLOW RATES FOR EXIT ROADS

Movement Class:	LV	HV	TOT
Exit: SOUTH			
Lane: 1	20.3	10.4	30.6
Lane: 2	22.7	10.6	33.4

Total	43.0	21.0	64.0
-------	------	------	------

Exit: EAST			
Lane: 1	3.4	*	3.4
Total	3.4	*	3.4

Exit: NORTH			
Lane: 1	18.0	7.8	25.8
Lane: 2	28.0	10.5	38.4
Total	45.9	18.3	64.2

Exit: WEST			
Lane: 1	23.9	*	23.9
Lane: 2	39.1	6.9	46.0
Total	63.0	6.9	69.9

* Movement not allocated to the lane

Flow rates shown above are Arrival Flow Rates (veh/h) based on the following input specifications:
Unit Time for Volumes = 60 minutes
Peak Flow Period = 15 minutes
Effects of Volume Factors (Peak Flow Factor, Flow Scale, Growth Rate) are included.
Arrival Flow Rates may be less than Demand Flow Rates if capacity constraint applies in network analysis.

[Go to Table Links \(Top\)](#)

Other

Parameter Settings Summary

Site: Roundabout1 (WLC Pkwy & Eucalyptus Ave) - Int_E+P AM - HCM6

Site ID: 1
Roundabout

* Basic Parameters:
Intersection Type: Roundabout
US HCM 6 Roundabout Capacity Model used
Driving on the right-hand side of the road
Input data specified in US units
Model Defaults: US HCM (Customary)
Peak Flow Period (for performance): 15 minutes
Unit time (for volumes): 60 minutes.
HCM Delay Model option used
HCM Queue Model option used
Level of Service based on: Delay and v/c (HCM 6)
Queue percentile: 95%

[Go to Table Links \(Top\)](#)

Diagnostics

Site: Roundabout1 (WLC Pkwy & Eucalyptus Ave) - Int_E+P AM - HCM6

Site ID: 1
Roundabout

Lane Flow-Capacity Iterations:

Site Model Variability Index (Iterations 3 to N): 0.2%
Number of Iterations: 3 (Maximum: 10)

Other Diagnostic Messages (if any):

[Go to Table Links \(Top\)](#)

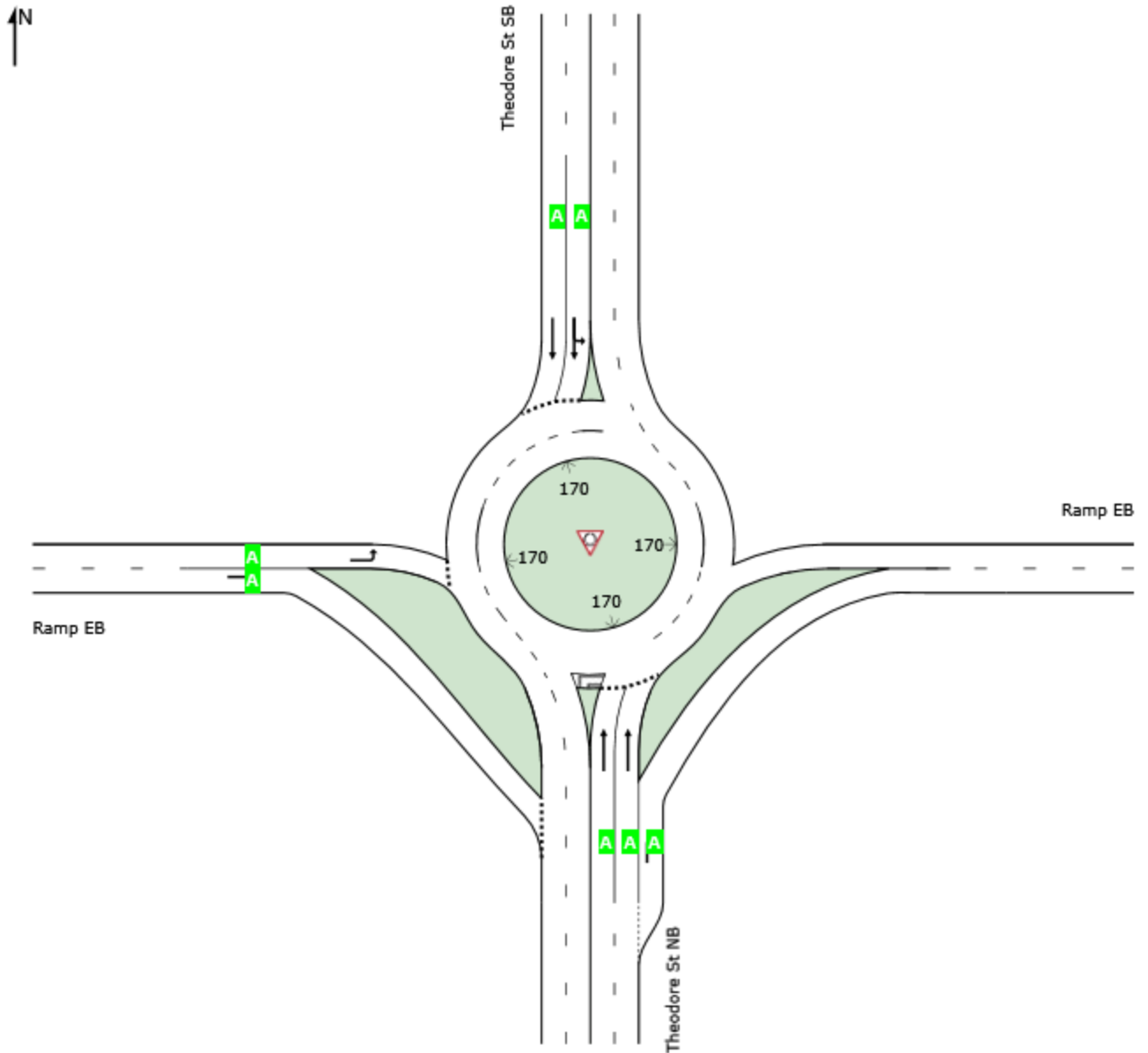
LANE LEVEL OF SERVICE

Lane Level of Service

 **Site: 1 [Roundabout2 (Theodore St & EB Ramps) - Int_E+P AM - HCM6]**

Site Category: (None)
Roundabout

	Approaches			Intersection
	South	North	West	
LOS	A	A	A	A



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: Same as Sign Control.

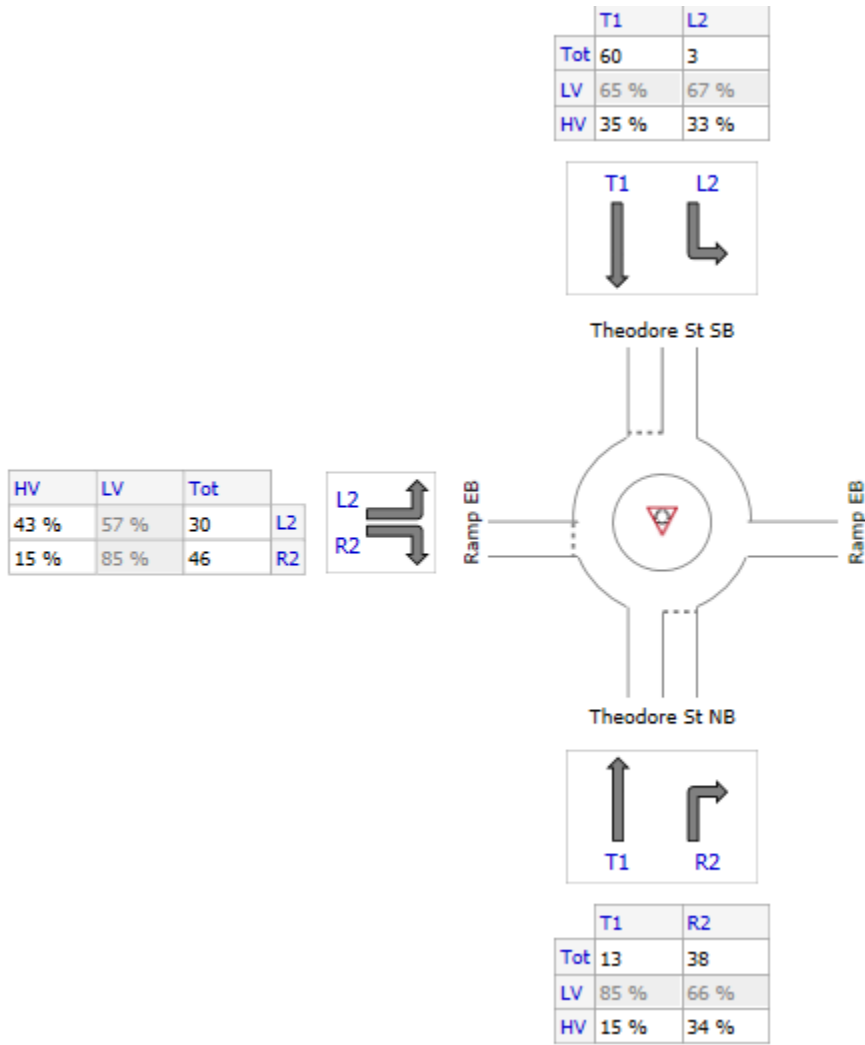
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

LOS F will result if $v/c > 1$ irrespective of lane delay value (does not apply for approaches and intersection).


Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

VOLUMES








DETAILED OUTPUT

 Site: 1 [Roundabout2 (Theodore St & EB Ramps) - Int_E+P AM - HCM6]

Site Category: (None)
Roundabout

OUTPUT TABLE LINKS

-  Roundabouts
 - Roundabout Basic Parameters
 - Roundabout Circulating / Exiting Stream Parameters
 - Roundabout Gap Acceptance Parameters
 - Roundabout Flow Rates
-  Movements
 - Intersection Negotiation and Travel Data
 - Movement Capacity and Performance Parameters
 - Fuel Consumption, Emissions and Cost
-  Lanes
 - Lane Performance and Capacity Information
 - Lane, Approach and Intersection Performance
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 - Lane Delays
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 - Parameter Settings Summary
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Roundabouts

Roundabout Basic Parameters Site: Roundabout2 (Theodore St & EB Ramps) - Int_E+P AM - HCM6

Site ID: 1
Roundabout

Central Island Diam	Circ Width	Insc Diam.	Entry Radius	Entry Angle	Circ Lanes	Entry Lanes	Av.Entry Lane Width	App Dist	Prop Upstr	Queued Signal	Extra Bunching
ft	ft	ft	ft	deg			ft	ft			%
South: Theodore St NB	170.0*	30.0*	230.0*	65.0*	30.0*	1	3	13.00*	1600	NA	0.0U

North: Theodore St SB												
170.0*	30.0*	230.0*	65.0*	30.0*	2	2	13.00*	1600		NA	0.0U	

West: Ramp EB												
170.0*	30.0*	230.0*	65.0*	30.0*	2	2	13.00*	1600		NA	0.0U	

Roundabout Capacity Model: US HCM 6

* These parameters do not affect estimated capacity values in the HCM 6 Capacity Model.

NA Not Applicable (single Site analysis or unconnected Site in Network analysis).

U User-specified Extra Bunching

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Roundabout Circulating / Exiting Stream Parameters Site: Roundabout2 (Theodore St & EB Ramps) - Int_E+P AM - HCM6

Site ID: 1
Roundabout

Dest	Turn	Lane No.	Lane Type	Opng Flow veh/h	HVE pcu/veh	Adj. Flow pcu/h	%Near Lane Only	%Exit Flow Incl.	Cap. Const. Effect	O-D Factor	Aver Speed mph	In-Bunch Headway sec	Prop. Bunched

South: Theodore St NB													
N	T1	1	Subdominant	33	1.42	47	0.0	0.0	N	-	18.9	0.00	0.000
N	T1	2	Dominant	33	1.42	47	0.0	0.0	N	-	18.9	0.00	0.000
E	R2	3	Continuous										

North: Theodore St SB													
E	L2	1	Subdominant	0	0.00	0	0.0	0.0	N	-	NA	0.00	0.000
S	T1	1	Subdominant	0	0.00	0	0.0	0.0	N	-	NA	0.00	0.000
S	T1	2	Dominant	0	0.00	0	0.0	0.0	N	-	NA	0.00	0.000

West: Ramp EB													
N	L2	1	Dominant	63	1.35	85	0.0	0.0	N	-	29.5	0.00	0.000
S	R2	2	Excl. Slip	60	1.35	81	0.0	0.0	N	-	30.0	0.00	0.000

Roundabout Capacity Model: US HCM 6													

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Roundabout Gap Acceptance Parameters Site: Roundabout2 (Theodore St & EB Ramps) - Int_E+P AM - HCM6

Site ID: 1
Roundabout

Dest	Turn	Lane No.	Lane Type	In-Bunch Headway sec	Prop. Bunched	Priority Sharing	HVE for Entry	Critical Gap		Follow-up Headway sec
								Headway sec	Dist ft	

South: Theodore St NB										
Model Calibration Factor (HCM 6): 1.00										
Entry/Circ. Flow Adjustment (HCM 6): None										
N	T1	1	Subdominant	0.00	0.000	N	1.15	4.54	126.1	2.54
N	T1	2	Dominant	0.00	0.000	N	1.15	4.54	126.1	2.54

E R2 3 Continuous

North: Theodore St SB

Model Calibration Factor (HCM 6): 1.00

Entry/Circ. Flow Adjustment (HCM 6): None

Direction	Lane	Flow Type	Flow Adj	Calib	Capacity	Flow Rate	Delay	Queue	Stop
E	L2	1 Subdominant	0.00	0.000	N	1.33	4.65	NA	2.67
S	T1	1 Subdominant	0.00	0.000	N	1.35	4.65	NA	2.67
S	T1	2 Dominant	0.00	0.000	N	1.35	4.33	NA	2.54

West: Ramp EB

Model Calibration Factor (HCM 6): 1.00

Entry/Circ. Flow Adjustment (HCM 6): None

Direction	Lane	Flow Type	Flow Adj	Calib	Capacity	Flow Rate	Delay	Queue	Stop
N	L2	1 Dominant	0.00	0.000	N	1.43	4.33	187.0	2.54
S	R2	2 Excl. Slip	0.00	0.000	N	1.15	4.33	190.3	2.54

Roundabout Capacity Model: US HCM 6

Dist (Distance): Spacing, i.e. distance between the front ends of two successive vehicles across all lanes in the circulating or exiting stream

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Roundabout Flow Rates Site: Roundabout2 (Theodore St & EB Ramps) - Int_E+P AM - HCM6

Site ID: 1
Roundabout

CIRCULATING LANE FLOW RATES

Lane No.	Circulating Flow Rate		
	veh/h	pcu/h	Percent
South: Theodore St NB			
1	33	47	100.0%
Total	33	47	
North: Theodore St SB			
1	0	0	0.0%
2	0	0	0.0%
Total	0	0	
West: Ramp EB			
1	31	41	48.7%
2	32	44	51.3%
Total	63	85	

The US HCM 6 roundabout capacity model option is in use. This model considers only the total circulating flow and not the flow rates in individual circulating lanes. To model the effects of flow distribution in circulating lanes on the entry capacity results, you should use the SIDRA Standard roundabout capacity model.

APPROACH LANE FLOW RATES

Lane No.	Approach Flows (veh/h)		
	Out	To Downst	Total
South: Theodore St NB			
1	0	7	7

2	0	7	7
3	43	0	43
Total	43	14	57

North: Theodore St SB			
1	0	31	31
2	0	32	32
Total	0	63	63

West: Ramp EB			
1	0	30	30
2	46	0	46
Total	46	30	76

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Movements

Intersection Negotiation and Travel Data Site: Roundabout2 (Theodore St & EB Ramps) - Int_E+P AM - HCM6

Site ID: 1
Roundabout

TRAVEL SPEED, TRAVEL DISTANCE AND TRAVEL TIME

From Approach	To Exit	Turn	Running Speed mph	Travel Speed mph	Travel Distance ft	Travel Time s	Total Dem Flows veh-mi/h	Travel Arv Flows veh-mi/h	Tot.Trav. Time veh-h/h
South: Theodore St NB									
	North	T1	39.5	38.2	3423.3#	61.1#	9.6	9.6	0.3
	East	R2	37.7	37.7	3288.6#	59.5#	26.9	26.9	0.7
North: Theodore St SB									
	East	L2	39.5	39.5	3439.1#	59.3#	2.0	2.0	0.0
	South	T1	39.8	39.8	3430.6#	58.8#	39.0	39.0	1.0
West: Ramp EB									
	North	L2	34.8	33.3	3580.9#	73.3#	20.3	20.3	0.6
	South	R2	37.5	35.9	3288.6#	62.4#	28.7	28.7	0.8
ALL VEHICLES:			38.0	37.2	3388.8#	62.2#	126.4	126.4	3.4

"Running Speed" is the average speed excluding stopped periods.

Travel Time values include cruise times and intersection delays including acceleration, deceleration and idling delays.

Travel Distance and Travel Time values include travel on the External Exit section based on the Exit Distance or user-specified Downstream Distance value as applicable.

INTERSECTION NEGOTIATION DATA

From Approach	To Exit	Turn	Negn Radius ft	Negn Speed mph	Negn Dist ft	App Dist ft	Exit Dist ft	Downstr Dist ft
---------------	---------	------	----------------	----------------	--------------	-------------	--------------	-----------------

South: Theodore St NB								
	North	T1	328.1	30.0	223.3	1600	488	NA
	East	R2	219.5	25.8	88.6	1600	488	NA

North: Theodore St SB								
	East	L2	97.0	18.9	380.9	1600	488	NA
	South	T1	328.1	30.0	223.3	1600	488	NA

West: Ramp EB								
	North	L2	97.0	18.9	380.9	1600	488	NA
	South	R2	216.1	25.6	88.6	1600	488	NA

Maximum Negotiation (Design) Speed = 30.0 mph

NA Downstream Distance does not apply if:

- Exit is an internal leg of a network
- "Program" option was specified
- Distance specified was less than the Exit Negotiation Distance
- Distance specified was greater than the exit leg length

MOVEMENT SPEEDS AND GEOMETRIC DELAY

Mov ID	Turn	App. Speeds		Exit Speeds		Queue Move-up Speed mph	Geom Delay sec
		Cruise mph	Negn mph	Negn mph	Cruise mph		

South: Theodore St NB							
8	T1	40.0	30.0	30.0	40.0	48.3	0.0
18	R2	40.0	25.8	25.8	40.0	41.5	0.0

North: Theodore St SB							
7	L2	40.0	18.9	18.9	40.0	46.5	0.0
4	T1	40.0	30.0	30.0	40.0	47.4	0.0

West: Ramp EB							
5	L2	40.0	18.9	18.9	40.0	30.4	0.0
12	R2	40.0	25.6	25.6	40.0	41.2	0.0

HCM Delay Formula option used: Geometric Delay is not included in Control Delay.

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Movement Capacity and Performance Parameters
 Site: Roundabout2 (Theodore St & EB Ramps) - Int_E+P AM - HCM6

Site ID: 1
 Roundabout

MOVEMENT CAPACITY PARAMETERS

Mov ID	Turn	Mov Cl.	Arv Flow veh/h	Opng Flow veh/h	Movement Adjust. Flow pcu/h	Total Cap. veh/h	Prac. Deg. Satn xp	Prac. Spare Cap. %	Deg. Satn x

South: Theodore St NB									
8	T1	#	15	33	47	2366	0.85	****	0.006
18	R2	#	43	33	47	1250	0.98	2736	0.035

North: Theodore St SB										
7	L2	#	3	0	0	98	0.85	2670	0.031	
4	T1	#	60	0	0	1956	0.85	2670	0.031	

West: Ramp EB										
5	L2	#	30	63	85	924	0.85	2517	0.032	
12	R2	#	46	60	81	1153	0.85	2030	0.040*	

* Maximum degree of saturation
Combined Movement Capacity parameters are shown for all Movement Classes.

MOVEMENT PERFORMANCE

Mov ID	Turn	Total Delay (veh-h/h)	Total Delay (pers-h/h)	Aver. Delay (sec)	Eff. Stop Rate	Total Stops	Perf. Index	Tot.Trav. Distance (veh-mi/h)	Tot.Trav. Time (veh-h/h)	Aver. Speed (mph)
South: Theodore St NB										
8	T1	0.01	0.02	3.1	0.03	0.5	0.27	9.6	0.3	38.2
18	R2	0.00	0.00	0.0	0.00	0.0	0.67	26.9	0.7	37.7
North: Theodore St SB										
7	L2	0.00	0.00	3.8	0.00	0.0	0.05	2.0	0.0	39.5
4	T1	0.06	0.08	3.8	0.00	0.0	1.04	39.0	1.0	39.8
West: Ramp EB										
5	L2	0.03	0.04	4.2	0.07	2.0	0.62	20.3	0.6	33.3
12	R2	0.04	0.05	3.5	0.07	3.1	0.88	28.7	0.8	35.9

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Fuel Consumption, Emissions and Cost
Site: Roundabout2 (Theodore St & EB Ramps) - Int_E+P AM - HCM6

Site ID: 1
Roundabout

FUEL CONSUMPTION, EMISSIONS AND COST (TOTAL)

Mov ID	Turn	Cost Total (\$/h)	Fuel Total (gal/h)	CO2 Total (kg/h)	CO Total (kg/h)	HC Total (kg/h)	NOX Total (kg/h)
South: Theodore St NB							
8	T1	4.65	0.5	4.6	0.01	0.001	0.020
18	R2	18.09	2.3	21.9	0.04	0.003	0.128
		22.74	2.8	26.5	0.05	0.004	0.147
North: Theodore St SB							
7	L2	1.24	0.2	1.5	0.00	0.000	0.008
4	T1	24.38	3.1	29.6	0.05	0.004	0.169
		25.61	3.3	31.1	0.06	0.004	0.177
West: Ramp EB							
5	L2	19.43	2.3	21.9	0.03	0.003	0.139
12	R2	15.22	1.7	15.2	0.05	0.003	0.067
		34.64	4.0	37.0	0.08	0.006	0.205

INTERSECTION: 83.00 10.1 94.6 0.19 0.013 0.530

FUEL CONSUMPTION, EMISSIONS AND COST (RATE)

Mov ID	Turn	Cost Rate \$/mi	Fuel Eff. mpg	CO2 Rate g/km	CO Rate g/km	HC Rate g/km	NOX Rate g/km

South: Theodore St NB							
8	T1	0.30	18.9	300.9	0.93	0.061	1.270
18	R2	0.42	11.5	505.5	0.91	0.064	2.950
		0.39	12.9	451.8	0.91	0.063	2.509

North: Theodore St SB							
7	L2	0.39	12.4	469.3	0.87	0.060	2.677
4	T1	0.39	12.4	471.5	0.86	0.059	2.693
		0.39	12.4	471.4	0.86	0.059	2.692

West: Ramp EB							
5	L2	0.59	8.8	667.4	1.01	0.080	4.238
12	R2	0.33	17.3	329.5	0.99	0.067	1.444
		0.44	12.3	469.8	0.99	0.072	2.604

INTERSECTION:		0.41	12.5	465.1	0.93	0.065	2.605

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Lanes

Lane Performance and Capacity Information
Site: Roundabout2 (Theodore St & EB Ramps) - Int_E+P AM - HCM6

Site ID: 1
Roundabout

LANE PERFORMANCE

Lane No.	Flow veh/h	Cap veh/h	Deg. Satn x	Aver. Delay sec	Eff. Stop Rate	Q u e u e		Lane Length ft
						95% Back veh	ft	

South: Theodore St NB								
1	7	1183	0.006	3.1	0.03	0.0	0.6	1600.0
2	7	1183	0.006	3.1	0.03	0.0	0.6	1600.0
3	43	1250	0.035	0.0	0.00			600.0T

North: Theodore St SB								
1	31	1001	0.031	3.9	0.00	0.0	0.0	1600.0
2	32	1052	0.031	3.7	0.00	0.0	0.0	1600.0

West: Ramp EB								
1	30	924	0.032	4.2	0.07	0.1	2.8	1600.0

2 46 1153 0.040 3.5 0.07 0.1 3.6 1600.0

T Short lane due to specification of Turn Bay

LANE FLOW AND CAPACITY INFORMATION

Lane No.	Total Arv Flow veh/h	Min Cap veh/h	Tot Cap veh/h	Deg. Satn x	Lane Util %

South: Theodore St NB					
1	7	7	1183	0.006	100
2	7	7	1183	0.006	100
3	43	43	1250	0.035	100

North: Theodore St SB					
1	31	31	1001	0.031	100
2	32	32	1052	0.031	100

West: Ramp EB					
1	30	30	924	0.032	100
2	46	46	1153	0.040	100

The capacity values of Continuous Lanes are obtained by adjusting the basic saturation flow for lane width, grade, movement class and turning vehicle effects. Saturation flow scale applies if specified.

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Lane, Approach and Intersection Performance
 Site: Roundabout2 (Theodore St & EB Ramps) - Int_E+P AM - HCM6

Site ID: 1
 Roundabout

Lane No.	Arrival Flow (veh/h)	%HV	Adj. Basic Satf.	Deg Sat x	Aver. Delay sec	Longest Queue ft	Lane Length ft

South: Theodore St NB							
1	7	15		0.006	3.1	1	1600
2	7	15		0.006	3.1	1	1600
3	43	34	1975	0.035	0.0		600

	58	29		0.035	0.8	1	

North: Theodore St SB							
1	31	35		0.031	3.9	0	1600
2	32	35		0.031	3.7	0	1600

	63	35		0.031	3.8		

West: Ramp EB							
1	30	43		0.032	4.2	3	1600
2	46	15		0.040	3.5	4	1600

	76	26		0.040	3.7	4	
=====							

ALL VEHICLES					
Total Flow	% HV	Max X	Aver. Delay	Max Queue	

197 30 0.040 2.9 4

Peak flow period = 15 minutes.

Queue values in this table are 95% queue (feet)
 Note: Basic Saturation Flows at roundabouts or sign-controlled intersections apply only to continuous lanes.

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Driver Characteristics
 Site: Roundabout2 (Theodore St & EB Ramps) - Int_E+P AM - HCM6

Site ID: 1
 Roundabout

Lane No.	Satn Speed mph	Satn Flow veh/h	Satn Hdwy sec	Satn Spacing ft	Average Queue Space ft	Driver Response Time sec
South: Theodore St NB						
1	30.0	1420	2.54	111.48	28.00	1.90
2	30.0	1420	2.54	111.48	28.00	1.90
3	NA - Continuous Movement					
North: Theodore St SB						
1	28.9	1350	2.67	113.04	31.96	1.91
2	30.0	1420	2.54	111.48	32.00	1.81
West: Ramp EB						
1	18.9	1420	2.54	70.34	33.60	1.32
2	25.6	1420	2.54	95.24	28.00	1.79

Saturation Flow and Saturation Headway are derived from follow-up headway.

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Lane Delays
 Site: Roundabout2 (Theodore St & EB Ramps) - Int_E+P AM - HCM6

Site ID: 1
 Roundabout

LANE DELAYS

Lane No.	Deg. Satn x	% Arv During Green	Prog. Factor	Delay (seconds/veh)									
				Min Del dm	Stop-line 1st d1	2nd d2	Delay Total dSL	Acc. Dec. dn	Queuing Total dq	MvUp dqm	Stopd (Idle) di	Geom dig	Control dic
South: Theodore St NB													
1	0.006	NA	NA	3.0	3.1	0.0	3.1	7.5	2.1	0.0	2.1	0.0	3.1
2	0.006	NA	NA	3.0	3.1	0.0	3.1	7.5	2.1	0.0	2.1	0.0	3.1
3	0.035					0.0					0.0	0.0	

North: Theodore St SB													
1	0.031	NA	NA	3.6	3.7	0.1	3.9	0.0	0.0	0.0	0.0	0.0	3.9
2	0.031	NA	NA	3.4	3.6	0.1	3.7	0.0	0.0	0.0	0.0	0.0	3.7
West: Ramp EB													
1	0.032	NA	NA	3.9	4.1	0.1	4.2	5.6	3.2	0.0	3.2	0.0	4.2
2	0.040	NA	NA	3.1	3.3	0.1	3.5	5.2	2.6	0.0	2.6	0.0	3.5

HCM Delay Formula option used (Exclude Geometric Delay option applies). Control Delay does not include Geometric Delay, and Stop-line Delay is treated as being same as Control Delay.

dm: Minimum delay for gap acceptance cases

dSL: Stop-line delay (=d1+d2)

dn: Average stop-start delay for all vehicles queued and unqueued

dq: Queuing delay (the part of the stop-line delay that includes stopped delay and queue move-up delay)

dqm: Queue move-up delay

di: Stopped delay (stopped (idling) time at near-zero speed)

dig: Geometric delay

dic: Control delay

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Lane Queues

Site: Roundabout2 (Theodore St & EB Ramps) - Int_E+P AM - HCM6

Site ID: 1
Roundabout

BACK OF QUEUE (VEHICLES)

Lane No.	Deg. Satn x	% Arv During Green	Prog. Factor	Ovrfl. Queue No	Back of Queue (veh)				Queue Stor. Ratio		Prob. Block %	Prob. SL Ov. %
					Nb1	Nb2	Nb	95%	Av.	95%		
South: Theodore St NB												
1	0.006	NA	NA	0.0	0.0	0.0	0.0	0.0	0.00	0.00	0.0	NA
2	0.006	NA	NA	0.0	0.0	0.0	0.0	0.0	0.00	0.00	0.0	NA
North: Theodore St SB												
1	0.031	NA	NA	0.0	0.0	0.0	0.0	0.0	0.00	0.00	0.0	NA
2	0.031	NA	NA	0.0	0.0	0.0	0.0	0.0	0.00	0.00	0.0	NA
West: Ramp EB												
1	0.032	NA	NA	0.0	0.0	0.0	0.0	0.1	0.00	0.00	0.0	NA
2	0.040	NA	NA	0.0	0.1	0.0	0.1	0.1	0.00	0.00	0.0	NA

SIDRA Standard models are used for Back of Queue estimation since HCM only gives Cycle-Average Queues for unsignalised intersections.

BACK OF QUEUE (DISTANCE)

Lane No.	Deg. Satn x	% Arv During Green	Prog. Factor	Ovrfl. Queue No	Back of Queue (ft)				Queue Stor. Ratio		Prob. Block %	Prob. SL Ov. %
					Nb1	Nb2	Nb	95%	Av.	95%		
South: Theodore St NB												
1	0.006	NA	NA	0.0	0.2	0.0	0.2	0.6	0.00	0.00	0.0	NA
2	0.006	NA	NA	0.0	0.2	0.0	0.2	0.6	0.00	0.00	0.0	NA

North: Theodore St SB												
1	0.031	NA	NA	0.0	0.0	0.0	0.0	0.0	0.00	0.00	0.0	NA
2	0.031	NA	NA	0.0	0.0	0.0	0.0	0.0	0.00	0.00	0.0	NA

West: Ramp EB												
1	0.032	NA	NA	0.0	1.1	0.0	1.1	2.8	0.00	0.00	0.0	NA
2	0.040	NA	NA	0.0	1.4	0.0	1.4	3.6	0.00	0.00	0.0	NA

SIDRA Standard models are used for Back of Queue estimation since HCM only gives Cycle-Average Queues for unsignalised intersections.

OTHER QUEUE RESULTS (VEHICLES)

Lane No.	Deg. Satn x	% Arv During Green	Prog. Factor	Ovrfl. Queue No	Cyc-Av. Queue Nc	Queue 95%
South: Theodore St NB						
1	0.006	NA	NA	0.0	0.0	0.0
2	0.006	NA	NA	0.0	0.0	0.0
North: Theodore St SB						
1	0.031	NA	NA	0.0	0.0	0.1
2	0.031	NA	NA	0.0	0.0	0.1
West: Ramp EB						
1	0.032	NA	NA	0.0	0.0	0.1
2	0.040	NA	NA	0.0	0.0	0.1

HCM Delay Formula option used:
Cycle-Average Queue is calculated using average delay from the HCM equation. (i.e. HCM delays are treated as stop-line delays for this purpose).

OTHER QUEUE RESULTS (DISTANCE)

Lane No.	Deg. Satn x	% Arv During Green	Prog. Factor	Ovrfl. Queue No	Cyc-Av. Queue Nc	Queue 95%
South: Theodore St NB						
1	0.006	NA	NA	0.0	0.2	0.3
2	0.006	NA	NA	0.0	0.2	0.3
North: Theodore St SB						
1	0.031	NA	NA	0.0	1.1	1.9
2	0.031	NA	NA	0.0	1.1	1.9
West: Ramp EB						
1	0.032	NA	NA	0.0	1.2	2.1
2	0.040	NA	NA	0.0	1.2	2.2

HCM Delay Formula option used:
Cycle-Average Queue is calculated using average delay from the HCM equation. (i.e. HCM delays are treated as stop-line delays for this purpose).

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Site ID: 1
Roundabout

LANE QUEUE PERCENTILES (VEHICLES)

Lane No.	Deg. Satn x	Percentile Back of Queue (veh)						
		50%	70%	85%	90%	95%	98%	100%
South: Theodore St NB								
1	0.006	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	0.006	0.0	0.0	0.0	0.0	0.0	0.0	0.0
North: Theodore St SB								
1	0.031	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	0.031	0.0	0.0	0.0	0.0	0.0	0.0	0.0
West: Ramp EB								
1	0.032	0.0	0.0	0.1	0.1	0.1	0.1	0.1
2	0.040	0.1	0.1	0.1	0.1	0.1	0.1	0.2

SIDRA Standard models are used for Back of Queue estimation since HCM only gives Cycle-Average Queues for unsignalised intersections.

LANE QUEUE PERCENTILES (DISTANCE)

Lane No.	Deg. Satn x	Percentile Back of Queue (feet)						
		50%	70%	85%	90%	95%	98%	100%
South: Theodore St NB								
1	0.006	0.2	0.3	0.4	0.5	0.6	0.7	0.7
2	0.006	0.2	0.3	0.4	0.5	0.6	0.7	0.7
North: Theodore St SB								
1	0.031	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	0.031	0.0	0.0	0.0	0.0	0.0	0.0	0.0
West: Ramp EB								
1	0.032	1.1	1.5	2.0	2.4	2.8	3.1	3.3
2	0.040	1.4	1.9	2.6	3.1	3.6	4.0	4.3

SIDRA Standard models are used for Back of Queue estimation since HCM only gives Cycle-Average Queues for unsignalised intersections.

[Go to Table Links \(Top\)](#)

Lane Stops
Site: Roundabout2 (Theodore St & EB Ramps) - Int_E+P AM - HCM6

Site ID: 1
Roundabout

Lane	Deg. Satn	% Arv During	Prog. Factor	-- Effective Stop Rate -- Geom. Overall	Total Stops	Queue Move-up Rate	Total Queue Move-ups	Prop. Queued	Aver. Num. of Cycles to
------	-----------	--------------	--------------	--	-------------	--------------------	----------------------	--------------	-------------------------

No.	x	Green		he1	he2	hig	h	H	hqm	Hqm	pq	Depart

South: Theodore St NB												
1	0.006	NA	NA	0.03	0.00	0.00	0.03	0.3	0.00	0.0	0.13	0.13
2	0.006	NA	NA	0.03	0.00	0.00	0.03	0.3	0.00	0.0	0.13	0.13
3	0.035	NA	NA			0.00	0.00	0.0				

North: Theodore St SB												
1	0.031	NA	NA	0.00	0.00	0.00	0.00	0.0	0.00	0.0	0.00	0.00
2	0.031	NA	NA	0.00	0.00	0.00	0.00	0.0	0.00	0.0	0.00	0.00

West: Ramp EB												
1	0.032	NA	NA	0.07	0.00	0.00	0.07	2.0	0.00	0.0	0.17	0.17
2	0.040	NA	NA	0.07	0.00	0.00	0.07	3.1	0.00	0.0	0.17	0.17

hig is the average value for all movements in a shared lane												
hqm is average queue move-up rate for all vehicles queued and unqueued												

[Go to Table Links \(Top\)](#)

Flow Rates

Origin-Destination Flow Rates (Total)

Site: Roundabout2 (Theodore St & EB Ramps) - Int_E+P AM - HCM6

Site ID: 1
Roundabout

TOTAL FLOW RATES for All Movement Classes (veh/h)

From SOUTH To:	N	E		
Turn:	T1	R2	TOT	
Flow Rate	14.8	43.2	58.0	
%HV (all designations)	15.0	34.0	29.2	

From NORTH To:	E	S		
Turn:	L2	T1	TOT	
Flow Rate	3.0	60.0	63.0	
%HV (all designations)	33.0	35.0	34.9	

From WEST To:	N	S		
Turn:	L2	R2	TOT	
Flow Rate	30.0	46.0	76.0	
%HV (all designations)	43.0	15.0	26.1	

Flow rates shown above are Arrival Flow Rates (veh/h) based on the following input specifications:
Unit Time for Volumes = 60 minutes
Peak Flow Period = 15 minutes
Effects of Volume Factors (Peak Flow Factor, Flow Scale, Growth Rate) are included.
Arrival Flow Rates may be less than Demand Flow Rates if capacity constraint applies in network analysis.

[Go to Table Links \(Top\)](#)

Origin-Destination Flow Rates by Movement Class

Site: Roundabout2 (Theodore St & EB Ramps) - Int_E+P AM - HCM6

Site ID: 1
 Roundabout

FLOW RATES for Light Vehicles (veh/h)

From SOUTH To:	N	E	
Turn:	T1	R2	TOT

Flow Rate	12.6	28.5	41.1
Mov Class %	85.0	66.0	70.8
Flow Scale	1.00	1.00	-
Peak Flow Factor	0.88	0.88	-
Residual Demand	0.0	0.0	0.0

From NORTH To:	E	S	
Turn:	L2	T1	TOT

Flow Rate	2.0	39.0	41.0
Mov Class %	67.0	65.0	65.1
Flow Scale	1.00	1.00	-
Peak Flow Factor	1.00	1.00	-
Residual Demand	0.0	0.0	0.0

From WEST To:	N	S	
Turn:	L2	R2	TOT

Flow Rate	17.1	39.1	56.2
Mov Class %	57.0	85.0	73.9
Flow Scale	1.00	1.00	-
Peak Flow Factor	1.00	1.00	-
Residual Demand	0.0	0.0	0.0

FLOW RATES for Heavy Vehicles (veh/h)

From SOUTH To:	N	E	
Turn:	T1	R2	TOT

Flow Rate	2.2	14.7	16.9
Mov Class %	15.0	34.0	29.2
Flow Scale	1.00	1.00	-
Peak Flow Factor	0.88	0.88	-
Residual Demand	0.0	0.0	0.0

From NORTH To:	E	S	
Turn:	L2	T1	TOT

Flow Rate	1.0	21.0	22.0
Mov Class %	33.0	35.0	34.9
Flow Scale	1.00	1.00	-
Peak Flow Factor	1.00	1.00	-
Residual Demand	0.0	0.0	0.0

From WEST To:	N	S	
Turn:	L2	R2	TOT

Flow Rate	12.9	6.9	19.8
Mov Class %	43.0	15.0	26.1
Flow Scale	1.00	1.00	-
Peak Flow Factor	1.00	1.00	-
Residual Demand	0.0	0.0	0.0

Flow rates shown above are Arrival Flow Rates (veh/h) based on the following input specifications:
 Unit Time for Volumes = 60 minutes
 Peak Flow Period = 15 minutes

Effects of Volume Factors (Peak Flow Factor, Flow Scale, Growth Rate) are included.
 Arrival Flow Rates may be less than Demand Flow Rates if capacity constraint applies in
 network analysis.

[Go to Table Links \(Top\)](#)

Lane Flow Rates
 Site: Roundabout2 (Theodore St & EB Ramps) - Int_E+P AM - HCM6

Site ID: 1
 Roundabout

LANE FLOW RATES AT STOP LINE (veh/h)

From SOUTH To:	N	E	TOT
Turn:	T1	R2	

Lane 1			
LV	6.3	*	6.3
HV	1.1	*	1.1
Total	7.4	*	7.4
Lane 2			
LV	6.3	*	6.3
HV	1.1	*	1.1
Total	7.4	*	7.4
Lane 3			
LV	*	28.5	28.5
HV	*	14.7	14.7
Total	*	43.2	43.2

Approach	14.8	43.2	58.0

From NORTH To:	E	S	TOT
Turn:	L2	T1	

Lane 1			
LV	2.0	18.0	20.0
HV	1.0	9.7	10.7
Total	3.0	27.7	30.7
Lane 2			
LV	*	21.0	21.0
HV	*	11.3	11.3
Total	*	32.3	32.3

Approach	3.0	60.0	63.0

From WEST To:	N	S	TOT
Turn:	L2	R2	

Lane 1			
LV	17.1	*	17.1
HV	12.9	*	12.9
Total	30.0	*	30.0
Lane 2			
LV	*	39.1	39.1
HV	*	6.9	6.9
Total	*	46.0	46.0

Approach	30.0	46.0	76.0

* Movement not allocated to the lane

EXIT LANE FLOW RATES

Movement Class:	LV	HV	TOT
Exit: SOUTH			
Lane: 1	18.0	9.7	27.7
Lane: 2	60.1	18.2	78.3
Total	78.1	27.9	106.0
Exit: EAST			
Lane: 1	2.0	1.0	3.0
Lane: 2	28.5	14.7	43.2
Total	30.5	15.7	46.2
Exit: NORTH			
Lane: 1	23.4	14.0	37.4
Lane: 2	6.3	1.1	7.4
Total	29.7	15.1	44.8

* Movement not allocated to the lane

DOWNSTREAM LANE FLOW RATES FOR EXIT ROADS

Movement Class:	LV	HV	TOT
Exit: SOUTH			
Lane: 1	18.0	9.7	27.7
Lane: 2	60.1	18.2	78.3
Total	78.1	27.9	106.0
Exit: EAST			
Lane: 1	2.0	1.0	3.0
Lane: 2	28.5	14.7	43.2
Total	30.5	15.7	46.2
Exit: NORTH			
Lane: 1	23.4	14.0	37.4
Lane: 2	6.3	1.1	7.4
Total	29.7	15.1	44.8

* Movement not allocated to the lane

Flow rates shown above are Arrival Flow Rates (veh/h) based on the following input specifications:
 Unit Time for Volumes = 60 minutes
 Peak Flow Period = 15 minutes
 Effects of Volume Factors (Peak Flow Factor, Flow Scale, Growth Rate) are included.
 Arrival Flow Rates may be less than Demand Flow Rates if capacity constraint applies in network analysis.

[Go to Table Links \(Top\)](#)

Other

Parameter Settings Summary
 Site: Roundabout2 (Theodore St & EB Ramps) - Int_E+P AM - HCM6

Site ID: 1
 Roundabout

* Basic Parameters:
Intersection Type: Roundabout
US HCM 6 Roundabout Capacity Model used
Driving on the right-hand side of the road
Input data specified in US units
Model Defaults: US HCM (Customary)
Peak Flow Period (for performance): 15 minutes
Unit time (for volumes): 60 minutes.
HCM Delay Model option used
HCM Queue Model option used
Level of Service based on: Delay and v/c (HCM 6)
Queue percentile: 95%

[Go to Table Links \(Top\)](#)

Diagnostics

Site: Roundabout2 (Theodore St & EB Ramps) - Int_E+P AM - HCM6

Site ID: 1
Roundabout

Lane Flow-Capacity Iterations:

Site Model Variability Index (Iterations 3 to N): 0.0%
Number of Iterations: 3 (Maximum: 10)

Other Diagnostic Messages (if any):

[Go to Table Links \(Top\)](#)

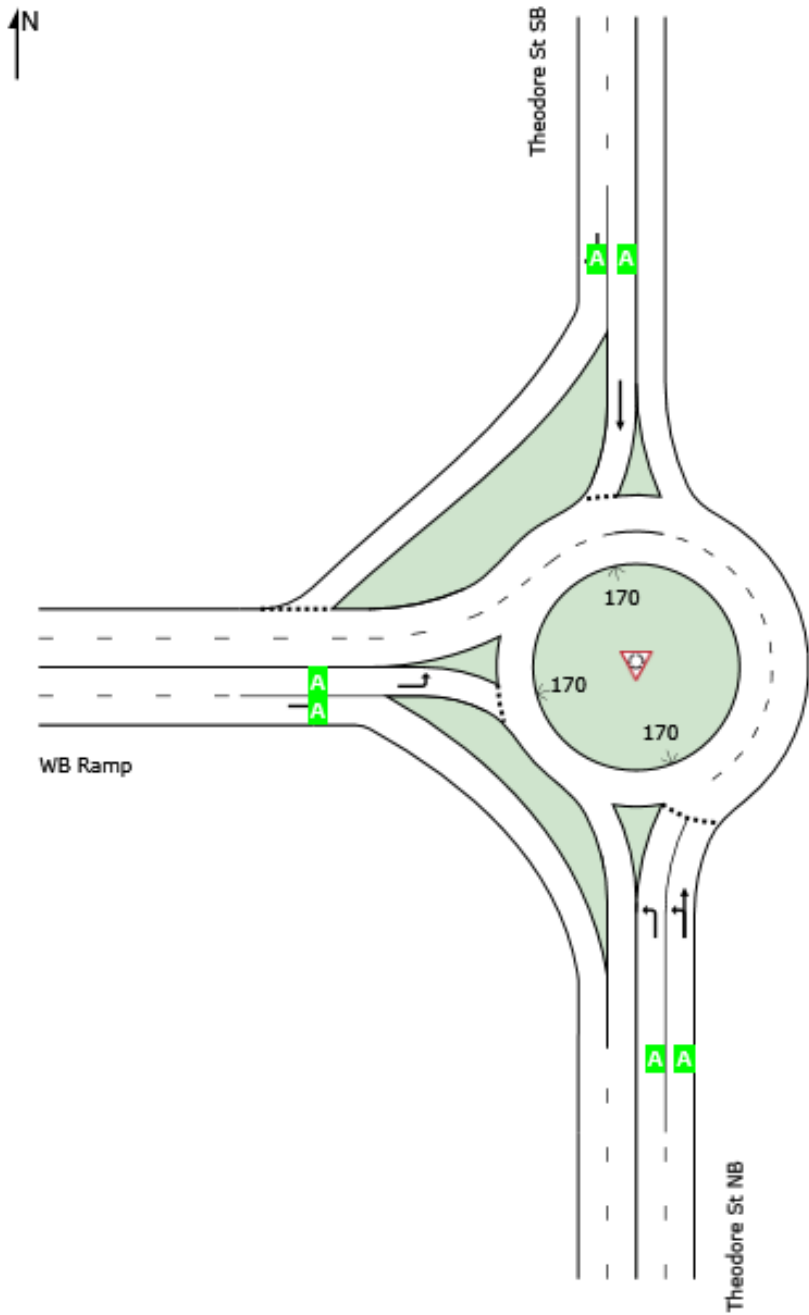
LANE LEVEL OF SERVICE

Lane Level of Service

 Site: 1 [Roundabout3 (Theodore St & WB Ramps) - Int_E+P AM - HCM6]

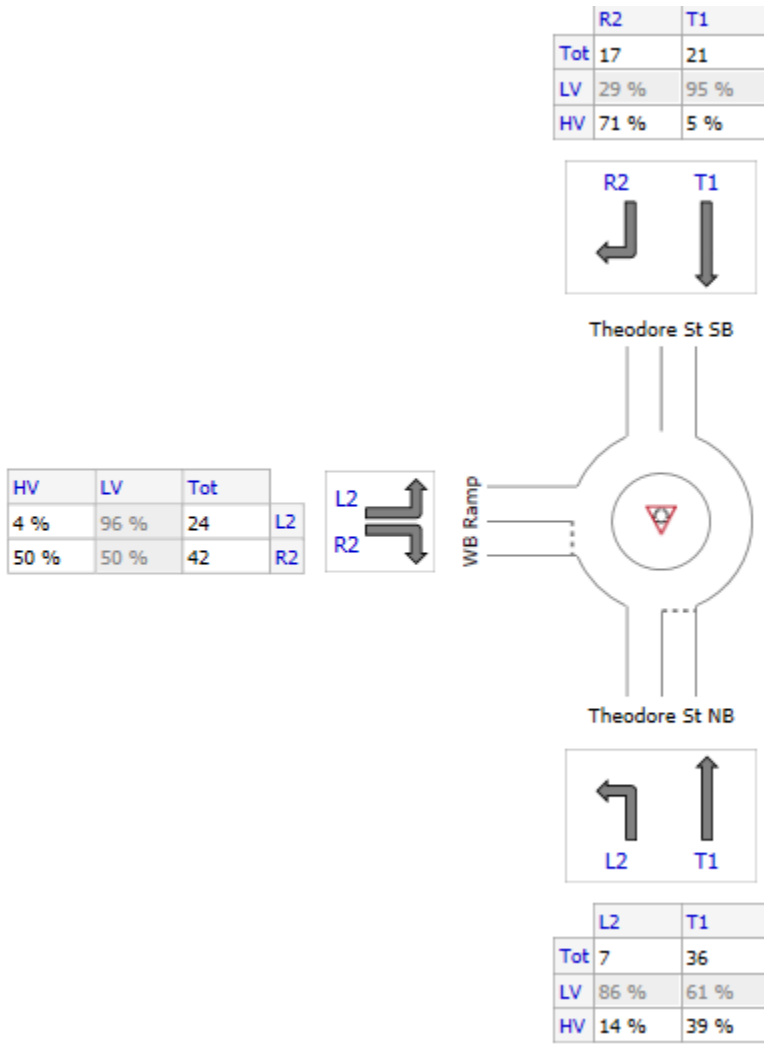
Site Category: (None)
Roundabout

	Approaches			Intersection
	South	North	West	
LOS	A	A	A	A




Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
 Roundabout LOS Method: Same as Sign Control.
 Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
 LOS F will result if $v/c > 1$ irrespective of lane delay value (does not apply for approaches and intersection).
 Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
 HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

VOLUMES








DETAILED OUTPUT

 Site: 1 [Roundabout3 (Theodore St & WB Ramps) - Int_E+P AM - HCM6]

Site Category: (None)
Roundabout

OUTPUT TABLE LINKS

-  Roundabouts
 - Roundabout Basic Parameters
 - Roundabout Circulating / Exiting Stream Parameters
 - Roundabout Gap Acceptance Parameters
 - Roundabout Flow Rates
-  Movements
 - Intersection Negotiation and Travel Data
 - Movement Capacity and Performance Parameters
 - Fuel Consumption, Emissions and Cost
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 - Lane Performance and Capacity Information
 - Lane, Approach and Intersection Performance
 - Driver Characteristics
 - Lane Delays
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 - Lane Queue Percentiles
 - Lane Stops
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 - Origin-Destination Flow Rates (Total)
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 - Lane Flow Rates
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 - Parameter Settings Summary
 - Diagnostics

Roundabouts

Roundabout Basic Parameters
Site: Roundabout3 (Theodore St & WB Ramps) - Int_E+P AM - HCM6

Site ID: 1
Roundabout

Central Island Diam	Circ Width	Insc Diam.	Entry Radius	Entry Angle	Circ Lanes	Entry Lanes	Av.Entry Lane Width	App Dist	Prop Upstr	Queued Signal	Extra Bunching
ft	ft	ft	ft	deg			ft	ft			%

South: Theodore St NB	170.0*	15.0*	215.0*	65.0*	30.0*	1	2	13.00*	1600	NA	0.0U
-----------------------	--------	-------	--------	-------	-------	---	---	--------	------	----	------

North: Theodore St SB											
170.0*	30.0*	215.0*	65.0*	30.0*	2	2	13.00*	1600		NA	0.0U

West: WB Ramp											
170.0*	15.0*	200.0*	65.0*	30.0*	1	2	13.00*	1600		NA	0.0U

Roundabout Capacity Model: US HCM 6

* These parameters do not affect estimated capacity values in the HCM 6 Capacity Model.

NA Not Applicable (single Site analysis or unconnected Site in Network analysis).

U User-specified Extra Bunching

[Go to Table Links \(Top\)](#)

Roundabout Circulating / Exiting Stream Parameters Site: Roundabout3 (Theodore St & WB Ramps) - Int_E+P AM - HCM6

Site ID: 1
Roundabout

Dest	Turn	Lane No.	Lane Type	Opng Flow veh/h	HVE pcu/veh	Adj. Flow pcu/h	%Near Lane Only	%Exit Flow Incl.	Cap. Const. Effect	O-D Factor	Aver Speed mph	In-Bunch Headway sec	Prop. Bunched

South: Theodore St NB													
W	L2	1	Subdominant	24	1.04	25	0.0	0.0	N	-	18.7	0.00	0.000
N	T1	2	Dominant	24	1.04	25	0.0	0.0	N	-	18.7	0.00	0.000

North: Theodore St SB													
S	T1	1	Dominant	8	1.14	9	0.0	0.0	N	-	18.7	0.00	0.000
W	R2	2	Excl. Slip	8	1.14	9	0.0	0.0	N	-	18.7	0.00	0.000

West: WB Ramp													
N	L2	1	Dominant	21	1.05	22	0.0	0.0	N	-	30.0	0.00	0.000
S	R2	2	Continuous										

Roundabout Capacity Model: US HCM 6

[Go to Table Links \(Top\)](#)

Roundabout Gap Acceptance Parameters Site: Roundabout3 (Theodore St & WB Ramps) - Int_E+P AM - HCM6

Site ID: 1
Roundabout

Dest	Turn	Lane No.	Lane Type	In-Bunch Headway sec	Prop. Bunched	Priority Sharing	HVE for Entry	Critical Gap		Follow-up Headway sec
				Headway sec	Headway sec	Headway sec	Headway sec	Dist ft	Headway sec	

South: Theodore St NB										
Model Calibration Factor (HCM 6): 1.00										
Entry/Circ. Flow Adjustment (HCM 6): None										
W	L2	1	Subdominant	0.00	0.000	N	1.14	4.54	124.9	2.54
N	T1	2	Dominant	0.00	0.000	N	1.39	4.54	124.9	2.54

North: Theodore St SB										

Model Calibration Factor (HCM 6): 1.00
 Entry/Circ. Flow Adjustment (HCM 6): None

S	T1	1	Dominant	0.00	0.000	N	1.05	4.33	118.6	2.54
W	R2	2	Excl. Slip	0.00	0.000	N	1.71	4.33	118.6	2.54

 West: WB Ramp
 Model Calibration Factor (HCM 6): 1.00
 Entry/Circ. Flow Adjustment (HCM 6): None

N	L2	1	Dominant	0.00	0.000	N	1.04	4.54	199.8	2.54
S	R2	2	Continuous							

 Roundabout Capacity Model: US HCM 6

Dist (Distance): Spacing, i.e. distance between the front ends of two successive vehicles across all lanes in the circulating or exiting stream

[Go to Table Links \(Top\)](#)

Roundabout Flow Rates
 Site: Roundabout3 (Theodore St & WB Ramps) - Int_E+P AM - HCM6

Site ID: 1
 Roundabout

CIRCULATING LANE FLOW RATES

Lane No.	Circulating Flow Rate		
	veh/h	pcu/h	Percent

South: Theodore St NB			
1	24	25	100.0%
Total	24	25	

North: Theodore St SB			
1	8	9	100.0%
2	0	0	0.0%
Total	8	9	

West: WB Ramp			
1	21	22	100.0%
Total	21	22	

The US HCM 6 roundabout capacity model option is in use. This model considers only the total circulating flow and not the flow rates in individual circulating lanes. To model the effects of flow distribution in circulating lanes on the entry capacity results, you should use the SIDRA Standard roundabout capacity model.

APPROACH LANE FLOW RATES

Lane No.	Approach Flows (veh/h)		
	Out	To Downst	Total

South: Theodore St NB			
1	0	8	8
2	41	0	41
Total	41	8	49

North: Theodore St SB			
1	0	21	21

2	17	0	17
Total	17	21	38

West: WB Ramp			
1	0	24	24
2	42	0	42
Total	42	24	66

[Go to Table Links \(Top\)](#)

Movements

Intersection Negotiation and Travel Data Site: Roundabout3 (Theodore St & WB Ramps) - Int_E+P AM - HCM6

Site ID: 1
Roundabout

TRAVEL SPEED, TRAVEL DISTANCE AND TRAVEL TIME

From Approach	To Exit	Turn	Running Speed mph	Travel Speed mph	Travel Distance ft	Travel Time s	Total Dem Flows veh-mi/h	Travel Arv Flows veh-mi/h	Tot.Trav. Time veh-h/h

South: Theodore St NB									
	West	L2	35.7	34.5	3569.1#	70.6#	5.4	5.4	0.2
	North	T1	39.5	37.4	3423.3#	62.4#	26.5	26.5	0.7

North: Theodore St SB									
	South	T1	39.9	38.3	3402.3#	60.6#	13.5	13.5	0.4
	West	R2	36.5	34.1	3282.9#	65.6#	10.6	10.6	0.3

West: WB Ramp									
	North	L2	36.1	34.9	3572.1#	69.9#	16.2	16.2	0.5
	South	R2	37.4	37.4	3276.9#	59.7#	26.1	26.1	0.7

ALL VEHICLES:			37.9	36.5	3395.5#	63.4#	98.3	98.3	2.7

"Running Speed" is the average speed excluding stopped periods.

Travel Time values include cruise times and intersection delays including acceleration, deceleration and idling delays.

Travel Distance and Travel Time values include travel on the External Exit section based on the Exit Distance or user-specified Downstream Distance value as applicable.

INTERSECTION NEGOTIATION DATA

From Approach	To Exit	Turn	Negn Radius ft	Negn Speed mph	Negn Dist ft	App Dist ft	Exit Dist ft	Downstr Dist ft

South: Theodore St NB								
	West	L2	94.0	18.7	369.1	1600	488	NA
	North	T1	328.1	30.0	223.3	1600	488	NA

North: Theodore St SB								
	South	T1	328.1	30.0	202.3	1600	488	NA

	West	R2	198.0	24.8	82.9	1600	488	NA

West: WB Ramp								
	North	L2	94.8	18.7	372.1	1600	488	NA
	South	R2	222.3	25.9	76.9	1600	488	NA

Maximum Negotiation (Design) Speed = 30.0 mph

NA Downstream Distance does not apply if:

- Exit is an internal leg of a network
- "Program" option was specified
- Distance specified was less than the Exit Negotiation Distance
- Distance specified was greater than the exit leg length

MOVEMENT SPEEDS AND GEOMETRIC DELAY

Mov ID	Turn	App. Speeds		Exit Speeds		Queue Move-up Speed mph	Geom Delay sec
		Cruise mph	Negn mph	Negn mph	Cruise mph		

South: Theodore St NB							
3	L2	40.0	18.7	18.7	40.0	30.1	0.0
8	T1	40.0	30.0	30.0	40.0	48.3	0.0

North: Theodore St SB							
4	T1	40.0	30.0	30.0	40.0	48.3	0.0
14	R2	40.0	24.8	24.8	40.0	39.9	0.0

West: WB Ramp							
5	L2	40.0	18.7	18.7	40.0	30.2	0.0
12	R2	40.0	25.9	25.9	40.0	41.7	0.0

HCM Delay Formula option used: Geometric Delay is not included in Control Delay.

[Go to Table Links \(Top\)](#)

Movement Capacity and Performance Parameters
 Site: Roundabout3 (Theodore St & WB Ramps) - Int_E+P AM - HCM6

Site ID: 1
 Roundabout

MOVEMENT CAPACITY PARAMETERS

Mov ID	Turn	Mov Cl.	Arv Flow veh/h	Opng Flow veh/h	Movement Adjust. Flow pcu/h	Total Cap. veh/h	Prac. Deg. Satn xp	Prac. Spare Cap. %	Deg. Satn x

South: Theodore St NB									
3	L2	#	8	24	25	1218	0.85	****	0.007
8	T1	#	41	24	25	999	0.85	1975	0.041*

North: Theodore St SB									
4	T1	#	21	8	9	1342	0.85	5332	0.016
14	R2	#	17	8	9	824	0.85	4020	0.021

West: WB Ramp									
5	L2	#	24	21	22	1338	0.85	4640	0.018

12 R2 # 42 21 22 1116 0.98 2505 0.038

* Maximum degree of saturation
 # Combined Movement Capacity parameters are shown for all Movement Classes.

MOVEMENT PERFORMANCE

Mov ID	Turn	Total Delay (veh-h/h)	Total Delay (pers-h/h)	Aver. Delay (sec)	Eff. Stop Rate	Total Stops	Perf. Index	Tot.Trav. Distance (veh-mi/h)	Tot.Trav. Time (veh-h/h)	Aver. Speed (mph)
South: Theodore St NB										
3	L2	0.01	0.01	3.0	0.02	0.1	0.16	5.4	0.2	34.5
8	T1	0.05	0.05	4.0	0.02	0.9	0.81	26.5	0.7	37.4
North: Theodore St SB										
4	T1	0.02	0.02	2.8	0.01	0.1	0.40	13.5	0.4	38.3
14	R2	0.02	0.03	4.6	0.01	0.1	0.32	10.6	0.3	34.1
West: WB Ramp										
5	L2	0.02	0.02	2.8	0.02	0.4	0.48	16.2	0.5	34.9
12	R2	0.00	0.00	0.0	0.00	0.0	0.65	26.1	0.7	37.4

[Go to Table Links \(Top\)](#)

Fuel Consumption, Emissions and Cost
 Site: Roundabout3 (Theodore St & WB Ramps) - Int_E+P AM - HCM6

Site ID: 1
 Roundabout

FUEL CONSUMPTION, EMISSIONS AND COST (TOTAL)

Mov ID	Turn	Cost Total (\$/h)	Fuel Total (gal/h)	CO2 Total (kg/h)	CO Total (kg/h)	HC Total (kg/h)	NOX Total (kg/h)
South: Theodore St NB							
3	L2	3.28	0.3	2.9	0.01	0.001	0.013
8	T1	18.27	2.3	22.1	0.04	0.003	0.131
		21.55	2.7	25.1	0.05	0.003	0.144
North: Theodore St SB							
4	T1	5.33	0.5	4.5	0.02	0.001	0.011
14	R2	11.49	1.6	15.6	0.01	0.001	0.106
		16.82	2.1	20.1	0.04	0.002	0.117
West: WB Ramp							
5	L2	8.12	0.7	6.1	0.03	0.002	0.014
12	R2	21.39	2.9	28.0	0.04	0.003	0.179
		29.51	3.6	34.1	0.06	0.005	0.193
INTERSECTION:		67.88	8.4	79.4	0.14	0.010	0.453

FUEL CONSUMPTION, EMISSIONS AND COST (RATE)

Mov ID	Turn	Cost Rate \$/mi	Fuel Eff. mpg	CO2 Rate g/km	CO Rate g/km	HC Rate g/km	NOX Rate g/km
South: Theodore St NB							
3	L2	0.38	16.7	340.6	1.03	0.075	1.459
8	T1	0.43	11.3	518.5	0.87	0.062	3.067
		0.42	12.0	488.5	0.89	0.064	2.796
North: Theodore St SB							
4	T1	0.24	26.9	208.4	0.95	0.059	0.494
14	R2	0.68	6.6	916.5	0.86	0.071	6.243
		0.43	11.4	518.9	0.91	0.064	3.015
West: WB Ramp							
5	L2	0.31	23.7	235.1	1.05	0.074	0.529
12	R2	0.51	8.9	667.5	0.87	0.065	4.266
		0.43	11.7	501.5	0.94	0.068	2.832
INTERSECTION:		0.43	11.7	501.6	0.92	0.066	2.865

[Go to Table Links \(Top\)](#)

Lanes

Lane Performance and Capacity Information

Site: Roundabout3 (Theodore St & WB Ramps) - Int_E+P AM - HCM6

Site ID: 1
Roundabout

LANE PERFORMANCE

Lane No.	Flow veh/h	Cap veh/h	Deg. Satn x	Aver. Delay sec	Eff. Stop Rate	Q u e u e		Lane Length ft
						95% Back veh	ft	
South: Theodore St NB								
1	8	1218	0.007	3.0	0.02	0.0	0.6	1600.0
2	41	999	0.041	4.0	0.02	0.1	3.8	1600.0
North: Theodore St SB								
1	21	1342	0.016	2.8	0.01	0.1	1.4	1600.0
2	17	824	0.021	4.6	0.01	0.0	1.7	1600.0
West: WB Ramp								
1	24	1338	0.018	2.8	0.02	0.1	1.7	1600.0
2	42	1116	0.038	0.0	0.00			1600.0

LANE FLOW AND CAPACITY INFORMATION

Lane No.	Total Arv Flow veh/h	Min Cap veh/h	Tot Cap veh/h	Deg. Satn x	Lane Util %

South: Theodore St NB					
1	8	8	1218	0.007	16P
2	41	41	999	0.041	100

North: Theodore St SB					
1	21	21	1342	0.016	100
2	17	17	824	0.021	100

West: WB Ramp					
1	24	24	1338	0.018	100
2	42	42	1116	0.038	100

P Lane under-utilisation found by the Program

The capacity values of Continuous Lanes are obtained by adjusting the basic saturation flow for lane width, grade, movement class and turning vehicle effects. Saturation flow scale applies if specified.

[Go to Table Links \(Top\)](#)

Lane, Approach and Intersection Performance Site: Roundabout3 (Theodore St & WB Ramps) - Int_E+P AM - HCM6

Site ID: 1
Roundabout

Lane No.	Arrival Flow (veh/h)	%HV	Adj. Basic Satf.	Deg Sat x	Aver. Delay sec	Longest Queue ft	Lane Length ft

South: Theodore St NB							
1	8	14		0.007	3.0	1	1600
2	41	39		0.041	4.0	4	1600
	49	35		0.041	3.8	4	

North: Theodore St SB							
1	21	5		0.016	2.8	1	1600
2	17	71		0.021	4.6	2	1600
	38	35		0.021	3.6	2	

West: WB Ramp							
1	24	4		0.018	2.8	2	1600
2	42	50	1975	0.038	0.0		1600
	66	33		0.038	1.0	2	
=====							
ALL VEHICLES							
	Total Flow	% HV		Max X	Aver. Delay	Max Queue	
	153	34		0.041	2.6	4	
=====							

Peak flow period = 15 minutes.

Queue values in this table are 95% queue (feet)
Note: Basic Saturation Flows at roundabouts or sign-controlled intersections apply only to continuous lanes.

[Go to Table Links \(Top\)](#)

Driver Characteristics
Site: Roundabout3 (Theodore St & WB Ramps) - Int_E+P AM - HCM6

Site ID: 1
 Roundabout

Lane No.	Satn Speed mph	Satn Flow veh/h	Satn Hdwy sec	Satn Spacing ft	Average Queue Space ft	Driver Response Time sec

South: Theodore St NB						
1	18.7	1420	2.54	69.50	27.80	1.52
2	30.0	1420	2.54	111.48	32.80	1.79

North: Theodore St SB						
1	30.0	1420	2.54	111.48	26.00	1.94
2	24.8	1420	2.54	92.14	39.20	1.46

West: WB Ramp						
1	18.7	1420	2.54	69.71	25.80	1.60
2	NA - Continuous Movement					

Saturation Flow and Saturation Headway are derived from follow-up headway.

[Go to Table Links \(Top\)](#)

Lane Delays
Site: Roundabout3 (Theodore St & WB Ramps) - Int_E+P AM - HCM6

Site ID: 1
 Roundabout

LANE DELAYS

Lane No.	Deg. Satn x	% Arv During Green	Prog. Factor	Delay (seconds/veh)									
				Min Del dm	Stop-line 1st d1	2nd d2	Total dSL	Acc. Dec. dn	Queuing Total dq	MvUp dqm	Stopd (Idle) di	Geom dig	Control dic

South: Theodore St NB													
1	0.007	NA	NA	3.0	3.0	0.0	3.0	5.5	2.5	0.0	2.5	0.0	3.0
2	0.041	NA	NA	3.6	3.8	0.2	4.0	7.5	3.3	0.0	3.3	0.0	4.0

North: Theodore St SB													
1	0.016	NA	NA	2.7	2.8	0.0	2.8	7.2	2.5	0.0	2.5	0.0	2.8
2	0.021	NA	NA	4.4	4.5	0.1	4.6	5.1	4.3	0.0	4.3	0.0	4.6

West: WB Ramp													
1	0.018	NA	NA	2.7	2.8	0.0	2.8	5.5	2.4	0.0	2.4	0.0	2.8
2	0.038					0.0					0.0	0.0	

HCM Delay Formula option used (Exclude Geometric Delay option applies). Control

Delay does not include Geometric Delay, and Stop-line Delay is treated as being same as Control Delay.

dm: Minimum delay for gap acceptance cases

dSL: Stop-line delay (=dl+d2)

dn: Average stop-start delay for all vehicles queued and unqueued

dq: Queuing delay (the part of the stop-line delay that includes stopped delay and queue move-up delay)

dqm: Queue move-up delay

di: Stopped delay (stopped (idling) time at near-zero speed)

dig: Geometric delay

dic: Control delay

[Go to Table Links \(Top\)](#)

Lane Queues

Site: Roundabout3 (Theodore St & WB Ramps) - Int_E+P AM - HCM6

Site ID: 1
Roundabout

BACK OF QUEUE (VEHICLES)

Lane No.	Deg. Satn x	% Arv During Green	Prog. Factor	Ovrfl. Queue No	Back of Queue (veh)				Queue Stor. Ratio		Prob. Block %	Prob. SL Ov. %
					Nb1	Nb2	Nb	95%	Av.	95%		
South: Theodore St NB												
1	0.007	NA	NA	0.0	0.0	0.0	0.0	0.0	0.00	0.00	0.0	NA
2	0.041	NA	NA	0.0	0.0	0.0	0.0	0.1	0.00	0.00	0.0	NA
North: Theodore St SB												
1	0.016	NA	NA	0.0	0.0	0.0	0.0	0.1	0.00	0.00	0.0	NA
2	0.021	NA	NA	0.0	0.0	0.0	0.0	0.0	0.00	0.00	0.0	NA
West: WB Ramp												
1	0.018	NA	NA	0.0	0.0	0.0	0.0	0.1	0.00	0.00	0.0	NA

SIDRA Standard models are used for Back of Queue estimation since HCM only gives Cycle-Average Queues for unsignalised intersections.

BACK OF QUEUE (DISTANCE)

Lane No.	Deg. Satn x	% Arv During Green	Prog. Factor	Ovrfl. Queue No	Back of Queue (ft)				Queue Stor. Ratio		Prob. Block %	Prob. SL Ov. %
					Nb1	Nb2	Nb	95%	Av.	95%		
South: Theodore St NB												
1	0.007	NA	NA	0.0	0.2	0.0	0.2	0.6	0.00	0.00	0.0	NA
2	0.041	NA	NA	0.0	1.5	0.0	1.5	3.8	0.00	0.00	0.0	NA
North: Theodore St SB												
1	0.016	NA	NA	0.0	0.6	0.0	0.6	1.4	0.00	0.00	0.0	NA
2	0.021	NA	NA	0.0	0.7	0.0	0.7	1.7	0.00	0.00	0.0	NA
West: WB Ramp												
1	0.018	NA	NA	0.0	0.7	0.0	0.7	1.7	0.00	0.00	0.0	NA

SIDRA Standard models are used for Back of Queue estimation since HCM only gives Cycle-Average Queues for unsignalised intersections.

OTHER QUEUE RESULTS (VEHICLES)

Lane No.	Deg. Satn	% Arv During Green	Prog. Factor	Ovrfl. Queue No	Cyc-Av. Nc	Queue 95%
	x					

South: Theodore St NB						
1	0.007	NA	NA	0.0	0.0	0.0
2	0.041	NA	NA	0.0	0.0	0.1

North: Theodore St SB						
1	0.016	NA	NA	0.0	0.0	0.0
2	0.021	NA	NA	0.0	0.0	0.0

West: WB Ramp						
1	0.018	NA	NA	0.0	0.0	0.0

HCM Delay Formula option used:

Cycle-Average Queue is calculated using average delay from the HCM equation. (i.e. HCM delays are treated as stop-line delays for this purpose).

OTHER QUEUE RESULTS (DISTANCE)

Lane No.	Deg. Satn	% Arv During Green	Prog. Factor	Ovrfl. Queue No	Cyc-Av. Nc	Queue 95%
	x					

South: Theodore St NB						
1	0.007	NA	NA	0.0	0.2	0.3
2	0.041	NA	NA	0.0	1.5	2.7

North: Theodore St SB						
1	0.016	NA	NA	0.0	0.4	0.8
2	0.021	NA	NA	0.0	0.8	1.5

West: WB Ramp						
1	0.018	NA	NA	0.0	0.5	0.9

HCM Delay Formula option used:

Cycle-Average Queue is calculated using average delay from the HCM equation. (i.e. HCM delays are treated as stop-line delays for this purpose).

[Go to Table Links \(Top\)](#)

Lane Queue Percentiles

Site: Roundabout3 (Theodore St & WB Ramps) - Int_E+P AM - HCM6

Site ID: 1
Roundabout

LANE QUEUE PERCENTILES (VEHICLES)

Lane No.	Deg. Satn	Percentile Back of Queue (veh)						
	x	50%	70%	85%	90%	95%	98%	100%

South: Theodore St NB								

1	0.007	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	0.041	0.0	0.1	0.1	0.1	0.1	0.1	0.1

North: Theodore St SB

1	0.016	0.0	0.0	0.0	0.0	0.1	0.1	0.1
2	0.021	0.0	0.0	0.0	0.0	0.0	0.0	0.1

West: WB Ramp

1	0.018	0.0	0.0	0.0	0.1	0.1	0.1	0.1
---	-------	-----	-----	-----	-----	-----	-----	-----

SIDRA Standard models are used for Back of Queue estimation since HCM only gives Cycle-Average Queues for unsignalised intersections.

LANE QUEUE PERCENTILES (DISTANCE)

Lane No.	Deg. Satn x	Percentile Back of Queue (feet)						
		50%	70%	85%	90%	95%	98%	100%

South: Theodore St NB

1	0.007	0.2	0.3	0.5	0.5	0.6	0.7	0.7
2	0.041	1.5	2.0	2.8	3.3	3.8	4.2	4.6

North: Theodore St SB

1	0.016	0.6	0.7	1.0	1.2	1.4	1.6	1.7
2	0.021	0.7	0.9	1.3	1.5	1.7	1.9	2.1

West: WB Ramp

1	0.018	0.7	0.9	1.3	1.5	1.7	1.9	2.1
---	-------	-----	-----	-----	-----	-----	-----	-----

SIDRA Standard models are used for Back of Queue estimation since HCM only gives Cycle-Average Queues for unsignalised intersections.

[Go to Table Links \(Top\)](#)

Lane Stops
Site: Roundabout3 (Theodore St & WB Ramps) - Int_E+P AM - HCM6

Site ID: 1
Roundabout

Lane No.	Deg. Satn x	% Arv During Green	Prog. Factor	-- Effective Stop Rate --				Total Stops H	Queue Move-up Rate hqm	Total Queue Move-ups Hqm	Prop. Queued pq	Aver. Num. of Cycles to Depart
				he1	he2	Geom. hig	Overall h					
South: Theodore St NB												
1	0.007	NA	NA	0.02	0.00	0.00	0.02	0.1	0.00	0.0	0.09	0.09
2	0.041	NA	NA	0.02	0.00	0.00	0.02	0.9	0.00	0.0	0.09	0.09
North: Theodore St SB												
1	0.016	NA	NA	0.01	0.00	0.00	0.01	0.1	0.00	0.0	0.05	0.05
2	0.021	NA	NA	0.01	0.00	0.00	0.01	0.1	0.00	0.0	0.05	0.05
West: WB Ramp												
1	0.018	NA	NA	0.02	0.00	0.00	0.02	0.4	0.00	0.0	0.08	0.08
2	0.038	NA	NA			0.00	0.00	0.0				

hig is the average value for all movements in a shared lane
hqm is average queue move-up rate for all vehicles queued and unqueued

[Go to Table Links \(Top\)](#)

Flow Rates

Origin-Destination Flow Rates (Total)

Site: Roundabout3 (Theodore St & WB Ramps) - Int_E+P AM - HCM6

Site ID: 1
Roundabout

TOTAL FLOW RATES for All Movement Classes (veh/h)

From SOUTH To:	W	N	
Turn:	L2	T1	TOT
Flow Rate	8.0	40.9	48.9
%HV (all designations)	14.0	39.0	34.9

From NORTH To:	S	W	
Turn:	T1	R2	TOT
Flow Rate	21.0	17.0	38.0
%HV (all designations)	5.0	71.0	34.5

From WEST To:	N	S	
Turn:	L2	R2	TOT
Flow Rate	24.0	42.0	66.0
%HV (all designations)	4.0	50.0	33.3

Flow rates shown above are Arrival Flow Rates (veh/h) based on the following input specifications:
Unit Time for Volumes = 60 minutes
Peak Flow Period = 15 minutes
Effects of Volume Factors (Peak Flow Factor, Flow Scale, Growth Rate) are included.
Arrival Flow Rates may be less than Demand Flow Rates if capacity constraint applies in network analysis.

[Go to Table Links \(Top\)](#)

Origin-Destination Flow Rates by Movement Class

Site: Roundabout3 (Theodore St & WB Ramps) - Int_E+P AM - HCM6

Site ID: 1
Roundabout

FLOW RATES for Light Vehicles (veh/h)

From SOUTH To:	W	N	
Turn:	L2	T1	TOT

Flow Rate	6.8	25.0	31.8
Mov Class %	86.0	61.0	65.1
Flow Scale	1.00	1.00	-
Peak Flow Factor	0.88	0.88	-
Residual Demand	0.0	0.0	0.0

From NORTH To:	S	W	
Turn:	T1	R2	TOT

Flow Rate	20.0	4.9	24.9
Mov Class %	95.0	29.0	65.5
Flow Scale	1.00	1.00	-
Peak Flow Factor	1.00	1.00	-
Residual Demand	0.0	0.0	0.0

From WEST To:	N	S	
Turn:	L2	R2	TOT

Flow Rate	23.0	21.0	44.0
Mov Class %	96.0	50.0	66.7
Flow Scale	1.00	1.00	-
Peak Flow Factor	1.00	1.00	-
Residual Demand	0.0	0.0	0.0

FLOW RATES for Heavy Vehicles (veh/h)

From SOUTH To:	W	N	
Turn:	L2	T1	TOT

Flow Rate	1.1	16.0	17.1
Mov Class %	14.0	39.0	34.9
Flow Scale	1.00	1.00	-
Peak Flow Factor	0.88	0.88	-
Residual Demand	0.0	0.0	0.0

From NORTH To:	S	W	
Turn:	T1	R2	TOT

Flow Rate	1.0	12.1	13.1
Mov Class %	5.0	71.0	34.5
Flow Scale	1.00	1.00	-
Peak Flow Factor	1.00	1.00	-
Residual Demand	0.0	0.0	0.0

From WEST To:	N	S	
Turn:	L2	R2	TOT

Flow Rate	1.0	21.0	22.0
Mov Class %	4.0	50.0	33.3
Flow Scale	1.00	1.00	-
Peak Flow Factor	1.00	1.00	-
Residual Demand	0.0	0.0	0.0

Flow rates shown above are Arrival Flow Rates (veh/h) based on the following input specifications:
Unit Time for Volumes = 60 minutes
Peak Flow Period = 15 minutes
Effects of Volume Factors (Peak Flow Factor, Flow Scale, Growth Rate) are included.
Arrival Flow Rates may be less than Demand Flow Rates if capacity constraint applies in network analysis.

[Go to Table Links \(Top\)](#)

Lane Flow Rates
Site: Roundabout3 (Theodore St & WB Ramps) - Int_E+P AM - HCM6

Site ID: 1
Roundabout

LANE FLOW RATES AT STOP LINE (veh/h)

From SOUTH To:	W	N	
Turn:	L2	T1	TOT

Lane 1			
LV	6.8	*	6.8
HV	1.1	*	1.1
Total	8.0	*	8.0
Lane 2			
LV	*	25.0	25.0
HV	*	16.0	16.0
Total	*	40.9	40.9

Approach	8.0	40.9	48.9

From NORTH To:	S	W	
Turn:	T1	R2	TOT

Lane 1			
LV	20.0	*	20.0
HV	1.0	*	1.0
Total	21.0	*	21.0
Lane 2			
LV	*	4.9	4.9
HV	*	12.1	12.1
Total	*	17.0	17.0

Approach	21.0	17.0	38.0

From WEST To:	N	S	
Turn:	L2	R2	TOT

Lane 1			
LV	23.0	*	23.0
HV	1.0	*	1.0
Total	24.0	*	24.0
Lane 2			
LV	*	21.0	21.0
HV	*	21.0	21.0
Total	*	42.0	42.0

Approach	24.0	42.0	66.0

* Movement not allocated to the lane

EXIT LANE FLOW RATES

Movement Class:	LV	HV	TOT

Exit: SOUTH			
Lane: 1	20.0	1.0	21.0
Lane: 2	21.0	21.0	42.0
Total	41.0	22.0	63.0

Exit: NORTH			
Lane: 1	48.0	16.9	64.9
Total	48.0	16.9	64.9

Exit: WEST			
Lane: 1	6.8	1.1	8.0
Lane: 2	4.9	12.1	17.0
Total	11.8	13.2	25.0

* Movement not allocated to the lane

DOWNSTREAM LANE FLOW RATES FOR EXIT ROADS

Movement Class:	LV	HV	TOT

Exit: SOUTH			
Lane: 1	20.0	1.0	21.0
Lane: 2	21.0	21.0	42.0
Total	41.0	22.0	63.0

Exit: NORTH			
Lane: 1	48.0	16.9	64.9
Total	48.0	16.9	64.9

Exit: WEST			
Lane: 1	6.8	1.1	8.0
Lane: 2	4.9	12.1	17.0
Total	11.8	13.2	25.0

* Movement not allocated to the lane

Flow rates shown above are Arrival Flow Rates (veh/h) based on the following input specifications:
 Unit Time for Volumes = 60 minutes
 Peak Flow Period = 15 minutes
 Effects of Volume Factors (Peak Flow Factor, Flow Scale, Growth Rate) are included.
 Arrival Flow Rates may be less than Demand Flow Rates if capacity constraint applies in network analysis.

[Go to Table Links \(Top\)](#)

Other

Parameter Settings Summary
 Site: Roundabout3 (Theodore St & WB Ramps) - Int_E+P AM - HCM6

Site ID: 1
 Roundabout

- * Basic Parameters:
- Intersection Type: Roundabout
- US HCM 6 Roundabout Capacity Model used
- Driving on the right-hand side of the road
- Input data specified in US units
- Model Defaults: US HCM (Customary)
- Peak Flow Period (for performance): 15 minutes
- Unit time (for volumes): 60 minutes.
- HCM Delay Model option used
- HCM Queue Model option used
- Level of Service based on: Delay and v/c (HCM 6)
- Queue percentile: 95%

[Go to Table Links \(Top\)](#)

Diagnostics
 Site: Roundabout3 (Theodore St & WB Ramps) - Int_E+P AM - HCM6

Site ID: 1
Roundabout

Lane Flow-Capacity Iterations:

Site Model Variability Index (Iterations 3 to N): 0.0%
Number of Iterations: 3 (Maximum: 10)

Other Diagnostic Messages (if any):

[Go to Table Links \(Top\)](#)

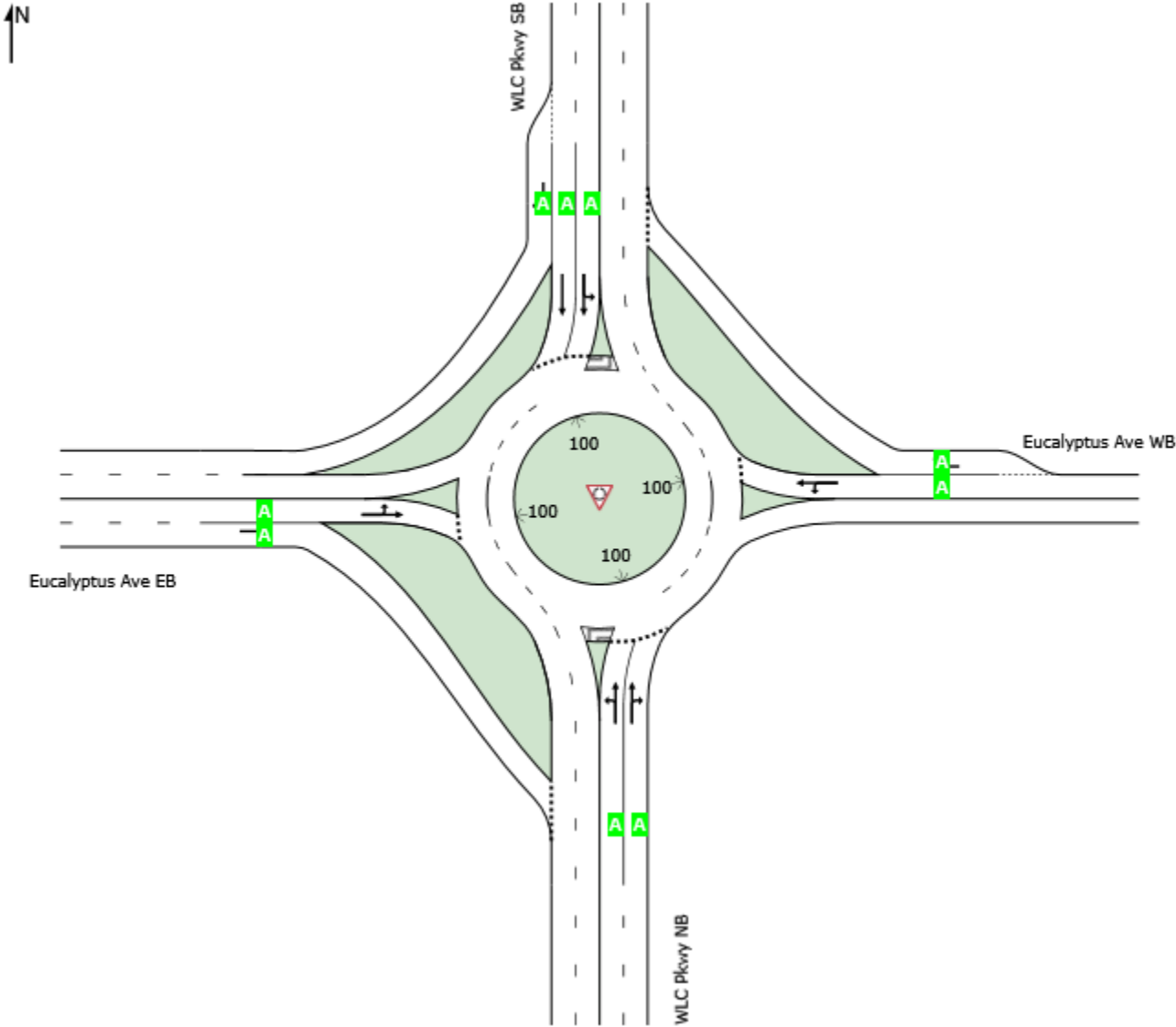
LANE LEVEL OF SERVICE

Lane Level of Service

 Site: 1 [Roundabout1 (WLC Pkwy & Eucalyptus Ave) - Int_E+P PM - HCM6]

Site Category: (None)
Roundabout

	Approaches				Intersection
	South	East	North	West	
LOS	A	A	A	A	A



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: Same as Sign Control.

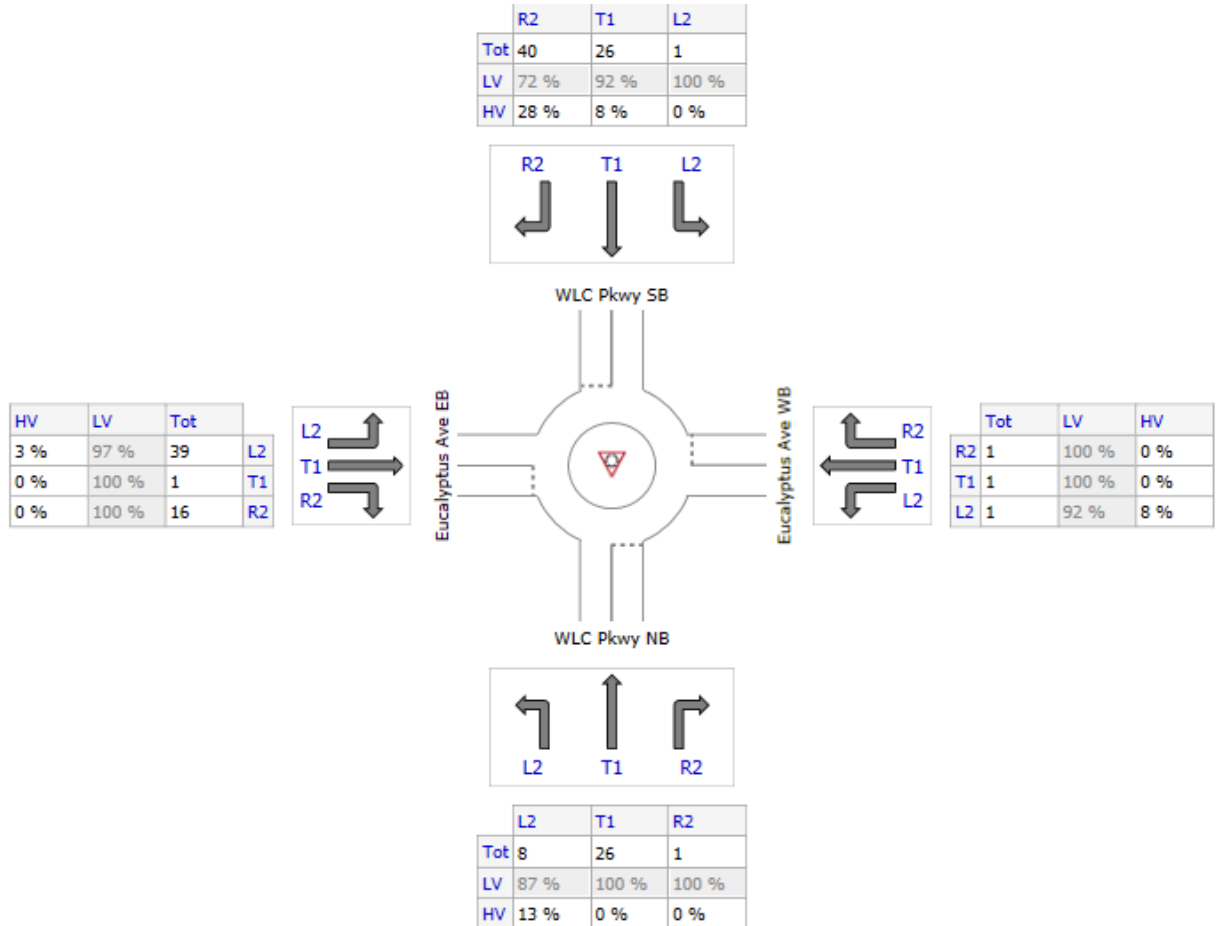
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).


Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

VOLUMES








DETAILED OUTPUT

 Site: 1 [Roundabout1 (WLC Pkwy & Eucalyptus Ave) - Int_E+P PM - HCM6]

Site Category: (None)
Roundabout

OUTPUT TABLE LINKS

-  Roundabouts
 - Roundabout Basic Parameters
 - Roundabout Circulating / Exiting Stream Parameters
 - Roundabout Gap Acceptance Parameters
 - Roundabout Flow Rates
-  Movements
 - Intersection Negotiation and Travel Data
 - Movement Capacity and Performance Parameters
 - Fuel Consumption, Emissions and Cost
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Roundabouts

Roundabout Basic Parameters Site: Roundabout1 (WLC Pkwy & Eucalyptus Ave) - Int_E+P PM - HCM6

Site ID: 1
Roundabout

Central Island Diam	Circ Width	Insc Diam.	Entry Radius	Entry Angle	Circ Lanes	Entry Lanes	Av.Entry Lane Width	App Dist	Prop Upstr	Queued Signal	Extra Bunching
ft	ft	ft	ft	deg			ft	ft			%

South: WLC Pkwy NB	100.0*	30.0*	160.0*	65.0*	30.0*	1	2	13.00*	1600	NA	0.0U

East: Eucalyptus Ave WB												
100.0*	30.0*	160.0*	65.0*	30.0*	2	2	13.00*	1600		NA	0.0U	

North: WLC Pkwy SB												
100.0*	30.0*	160.0*	65.0*	30.0*	1	3	13.00*	1600		NA	0.0U	

West: Eucalyptus Ave EB												
100.0*	30.0*	160.0*	65.0*	30.0*	2	2	13.00*	1600		NA	0.0U	

Roundabout Capacity Model: US HCM 6

* These parameters do not affect estimated capacity values in the HCM 6 Capacity Model.

NA Not Applicable (single Site analysis or unconnected Site in Network analysis).

U User-specified Extra Bunching

[Go to Table Links \(Top\)](#)

Roundabout Circulating / Exiting Stream Parameters Site: Roundabout1 (WLC Pkwy & Eucalyptus Ave) - Int_E+P PM - HCM6

Site ID: 1
Roundabout

Dest	Turn	Lane No.	Lane Type	Opng Flow veh/h	HVE pcu/veh	Adj. Flow pcu/h	%Near Only	%Exit Incl.	Cap. Const. Effect	O-D Factor	Aver Speed mph	In-Bunch Headway sec	Prop. Bunched

South: WLC Pkwy NB													
W	L2	1	Subdominant	41	1.03	42	0.0	0.0	N	-	16.2	0.00	0.000
N	T1	1	Subdominant	41	1.03	42	0.0	0.0	N	-	16.2	0.00	0.000
N	T1	2	Dominant	41	1.03	42	0.0	0.0	N	-	16.2	0.00	0.000
E	R2	2	Dominant	41	1.03	42	0.0	0.0	N	-	16.2	0.00	0.000

East: Eucalyptus Ave WB													
S	L2	1	Dominant	86	1.03	88	0.0	0.0	N	-	19.5	0.00	0.000
W	T1	1	Dominant	86	1.03	88	0.0	0.0	N	-	19.5	0.00	0.000
N	R2	2	Excl. Slip	75	1.02	76	0.0	0.0	N	-	20.0	0.00	0.000

North: WLC Pkwy SB													
E	L2	1	Subdominant	13	1.12	15	0.0	0.0	N	-	16.7	0.00	0.000
S	T1	1	Subdominant	13	1.12	15	0.0	0.0	N	-	16.7	0.00	0.000
S	T1	2	Dominant	13	1.12	15	0.0	0.0	N	-	16.7	0.00	0.000
W	R2	3	Continuous										

West: Eucalyptus Ave EB													
N	L2	1	Dominant	28	1.08	30	0.0	0.0	N	-	23.8	0.00	0.000
E	T1	1	Dominant	28	1.08	30	0.0	0.0	N	-	23.8	0.00	0.000
S	R2	2	Excl. Slip	27	1.08	29	0.0	0.0	N	-	24.1	0.00	0.000

Roundabout Capacity Model: US HCM 6

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Roundabout Gap Acceptance Parameters Site: Roundabout1 (WLC Pkwy & Eucalyptus Ave) - Int_E+P PM - HCM6

Site ID: 1
Roundabout

Dest	Turn	Lane No.	Lane Type	In-Bunch Headway sec	Prop. Bunched	Priority Sharing	HVE for Entry	Critical Gap		Follow-up Headway sec
								Headway sec	Dist ft	

South: WLC Pkwy NB										
Model Calibration Factor (HCM 6): 1.00										
Entry/Circ. Flow Adjustment (HCM 6): None										
W	L2	1	Subdominant	0.00	0.000	N	1.13	4.54	107.9	2.54
N	T1	1	Subdominant	0.00	0.000	N	1.00	4.54	107.9	2.54
N	T1	2	Dominant	0.00	0.000	N	1.00	4.54	107.9	2.54
E	R2	2	Dominant	0.00	0.000	N	1.00	4.54	107.9	2.54

East: Eucalyptus Ave WB										
Model Calibration Factor (HCM 6): 1.00										
Entry/Circ. Flow Adjustment (HCM 6): None										
S	L2	1	Dominant	0.00	0.000	N	1.08	4.33	123.7	2.54
W	T1	1	Dominant	0.00	0.000	N	1.00	4.33	123.7	2.54
N	R2	2	Excl. Slip	0.00	0.000	N	1.00	4.33	126.9	2.54

North: WLC Pkwy SB										
Model Calibration Factor (HCM 6): 1.00										
Entry/Circ. Flow Adjustment (HCM 6): None										
E	L2	1	Subdominant	0.00	0.000	N	1.00	4.54	111.1	2.54
S	T1	1	Subdominant	0.00	0.000	N	1.08	4.54	111.1	2.54
S	T1	2	Dominant	0.00	0.000	N	1.08	4.54	111.1	2.54
W	R2	3	Continuous							

West: Eucalyptus Ave EB										
Model Calibration Factor (HCM 6): 1.00										
Entry/Circ. Flow Adjustment (HCM 6): None										
N	L2	1	Dominant	0.00	0.000	N	1.03	4.33	151.2	2.54
E	T1	1	Dominant	0.00	0.000	N	1.00	4.33	151.2	2.54
S	R2	2	Excl. Slip	0.00	0.000	N	1.00	4.33	153.0	2.54

Roundabout Capacity Model: US HCM 6										
Dist (Distance): Spacing, i.e. distance between the front ends of two successive vehicles across all lanes in the circulating or exiting stream										

[Go to Table Links \(Top\)](#)

Roundabout Flow Rates

Site: Roundabout1 (WLC Pkwy & Eucalyptus Ave) - Int_E+P PM - HCM6

Site ID: 1
Roundabout

CIRCULATING LANE FLOW RATES

Lane No.	Circulating Flow Rate		
	veh/h	pcu/h	Percent

South: WLC Pkwy NB			
1	41	42	100.0%
Total	41	42	

East: Eucalyptus Ave WB			
1	62	65	73.6%
2	23	23	26.4%
Total	85	88	

North: WLC Pkwy SB			
1	13	15	100.0%
Total	13	15	

West: Eucalyptus Ave EB			
1	15	16	51.8%
2	13	15	48.2%
Total	28	31	

The US HCM 6 roundabout capacity model option is in use. This model considers only the total circulating flow and not the flow rates in individual circulating lanes. To model the effects of flow distribution in circulating lanes on the entry capacity results, you should use the SIDRA Standard roundabout capacity model.

APPROACH LANE FLOW RATES

Lane No.	Approach Flows (veh/h)		
	Out	To Downst	Total
South: WLC Pkwy NB			
1	0	23	23
2	1	24	25
Total	1	47	48
East: Eucalyptus Ave WB			
1	0	2	2
2	1	0	1
Total	1	2	3
North: WLC Pkwy SB			
1	0	14	14
2	0	13	13
3	40	0	40
Total	40	27	67
West: Eucalyptus Ave EB			
1	0	40	40
2	16	0	16
Total	16	40	56

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Movements

Intersection Negotiation and Travel Data
 Site: Roundabout1 (WLC Pkwy & Eucalyptus Ave) - Int_E+P PM - HCM6

Site ID: 1
 Roundabout

TRAVEL SPEED, TRAVEL DISTANCE AND TRAVEL TIME

From Approach	To Exit	Turn	Running Speed mph	Travel Speed mph	Travel Distance ft	Travel Time s	Total Dem Flows veh-mi/h	Travel Distance Arv Flows veh-mi/h	Tot.Trav. Time veh-h/h
---------------	---------	------	-------------------	------------------	--------------------	---------------	--------------------------	------------------------------------	------------------------

South: WLC Pkwy NB								
West	L2	36.1	34.8	3391.6#	66.4#	7.0	7.0	0.2
North	T1	37.3	36.1	3362.1#	63.5#	22.7	22.7	0.6
East	R2	36.5	35.4	3346.5#	64.5#	0.9	0.9	0.0

East: Eucalyptus Ave WB								
South	L2	36.1	35.0	3393.6#	66.1#	0.6	0.6	0.0
West	T1	36.2	35.1	3393.6#	65.9#	0.7	0.7	0.0
North	R2	36.7	35.6	3261.8#	62.6#	0.6	0.6	0.0

North: WLC Pkwy SB								
East	L2	37.9	36.5	3358.8#	62.8#	0.6	0.6	0.0
South	T1	37.7	36.3	3355.0#	63.1#	16.5	16.5	0.5
West	R2	36.5	36.5	3261.8#	61.0#	24.7	24.7	0.7

West: Eucalyptus Ave EB								
North	L2	34.9	33.7	3440.9#	69.6#	25.4	25.4	0.8
East	T1	34.9	33.6	3440.9#	69.7#	0.7	0.7	0.0
South	R2	36.9	35.6	3261.8#	62.5#	9.9	9.9	0.3

ALL VEHICLES:		36.5	35.4	3348.4#	64.4#	110.4	110.4	3.1

"Running Speed" is the average speed excluding stopped periods.

Travel Time values include cruise times and intersection delays including acceleration, deceleration and idling delays.

Travel Distance and Travel Time values include travel on the External Exit section based on the Exit Distance or user-specified Downstream Distance value as applicable.

INTERSECTION NEGOTIATION DATA

From Approach	To Exit	Turn	Negn Radius ft	Negn Speed mph	Negn Dist ft	App Dist ft	Exit Dist ft	Downstr Dist ft

South: WLC Pkwy NB								
West	L2		62.0	16.0	243.5	1600	488	NA
North	T1		190.4	24.4	151.5	1600	488	NA
East	R2		115.2	20.2	62.0	1600	488	NA

East: Eucalyptus Ave WB								
South	L2		62.0	16.0	243.5	1600	488	NA
West	T1		190.4	24.4	151.5	1600	488	NA
North	R2		131.6	21.2	61.8	1600	488	NA

North: WLC Pkwy SB								
East	L2		62.0	16.0	243.5	1600	488	NA
South	T1		190.4	24.4	151.5	1600	488	NA
West	R2		135.0	21.4	61.8	1600	488	NA

West: Eucalyptus Ave EB								
North	L2		62.0	16.0	243.5	1600	488	NA
East	T1		190.4	24.4	151.5	1600	488	NA
South	R2		131.6	21.2	61.8	1600	488	NA

Maximum Negotiation (Design) Speed = 30.0 mph

NA Downstream Distance does not apply if:

- Exit is an internal leg of a network
- "Program" option was specified
- Distance specified was less than the Exit Negotiation Distance
- Distance specified was greater than the exit leg length

MOVEMENT SPEEDS AND GEOMETRIC DELAY

Mov ID	Turn	App. Speeds		Exit Speeds		Queue	Geom Delay sec
		Cruise mph	Negn mph	Negn mph	Cruise mph	Move-up Speed mph	

South: WLC Pkwy NB							
3	L2	40.0	16.0	16.0	40.0	32.9	0.0
8	T1	40.0	24.4	24.4	40.0	36.8	0.0
18	R2	40.0	20.2	20.2	40.0	38.9	0.0

East: Eucalyptus Ave WB							
1	L2	40.0	16.0	16.0	40.0	32.8	0.0
6	T1	40.0	24.4	24.4	40.0	32.8	0.0
16	R2	40.0	21.2	21.2	40.0	34.2	0.0

North: WLC Pkwy SB							
7	L2	40.0	16.0	16.0	40.0	38.3	0.0
4	T1	40.0	24.4	24.4	40.0	38.8	0.0
14	R2	40.0	21.4	21.4	40.0	34.5	0.0

West: Eucalyptus Ave EB							
5	L2	40.0	16.0	16.0	40.0	26.1	0.0
2	T1	40.0	24.4	24.4	40.0	26.1	0.0
12	R2	40.0	21.2	21.2	40.0	34.2	0.0

HCM Delay Formula option used: Geometric Delay is not included in Control Delay.

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Movement Capacity and Performance Parameters

Site: Roundabout1 (WLC Pkwy & Eucalyptus Ave) - Int_E+P PM - HCM6

Site ID: 1
Roundabout

MOVEMENT CAPACITY PARAMETERS

Mov ID	Turn	Mov Cl.	Arv Flow veh/h	Opng Flow veh/h	Movement Adjust. pcu/h	Total Cap. veh/h	Prac. Deg. Satn xp	Prac. Spare Cap. %	Deg. Satn x

South: WLC Pkwy NB									
3	L2	#	11	41	42	607	0.85	4607	0.018
8	T1	#	36	41	42	1972	0.85	4607	0.018
18	R2	#	1	41	42	76	0.85	4607	0.018

East: Eucalyptus Ave WB									
1	L2	#	1	86	88	608	0.85	****	0.002
6	T1	#	1	86	88	661	0.85	****	0.002
16	R2	#	1	75	76	1331	0.85	****	0.001

North: WLC Pkwy SB									
7	L2	#	1	13	15	96	0.85	8092	0.010
4	T1	#	26	13	15	2506	0.85	8092	0.010
14	R2	#	40	13	15	1308	0.98	3105	0.031*

West: Eucalyptus Ave EB									
5	L2	#	39	28	30	1308	0.85	2752	0.030
2	T1	#	1	28	30	36	0.85	2752	0.030
12	R2	#	16	27	29	1385	0.85	7259	0.012

* Maximum degree of saturation

Combined Movement Capacity parameters are shown for all Movement Classes.

MOVEMENT PERFORMANCE

Mov ID	Turn	Total Delay (veh-h/h)	Total Delay (pers-h/h)	Aver. Delay (sec)	Eff. Stop Rate	Total Stops	Perf. Index	Tot.Trav. Distance (veh-mi/h)	Tot.Trav. Time (veh-h/h)	Aver. Speed (mph)
South: WLC Pkwy NB										
3	L2	0.01	0.01	3.1	0.03	0.4	0.24	7.0	0.2	34.8
8	T1	0.03	0.03	2.8	0.03	1.2	0.63	22.7	0.6	36.1
18	R2	0.00	0.00	2.8	0.03	0.0	0.05	0.9	0.0	35.4
East: Eucalyptus Ave WB										
1	L2	0.00	0.00	3.0	0.05	0.1	0.02	0.6	0.0	35.0
6	T1	0.00	0.00	2.7	0.05	0.1	0.02	0.7	0.0	35.1
16	R2	0.00	0.00	2.7	0.04	0.0	0.02	0.6	0.0	35.6
North: WLC Pkwy SB										
7	L2	0.00	0.00	2.6	0.01	0.0	0.03	0.6	0.0	36.5
4	T1	0.02	0.02	2.9	0.01	0.3	0.47	16.5	0.5	36.3
14	R2	0.00	0.00	0.0	0.00	0.0	0.62	24.7	0.7	36.5
West: Eucalyptus Ave EB										
5	L2	0.03	0.04	2.9	0.02	1.0	0.76	25.4	0.8	33.7
2	T1	0.00	0.00	2.8	0.02	0.0	0.06	0.7	0.0	33.6
12	R2	0.01	0.01	2.7	0.02	0.3	0.28	9.9	0.3	35.6

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Fuel Consumption, Emissions and Cost
Site: Roundabout1 (WLC Pkwy & Eucalyptus Ave) - Int_E+P PM - HCM6

Site ID: 1
Roundabout

FUEL CONSUMPTION, EMISSIONS AND COST (TOTAL)

Mov ID	Turn	Cost Total \$/h	Fuel Total gal/h	CO2 Total kg/h	CO Total kg/h	HC Total kg/h	NOX Total kg/h
South: WLC Pkwy NB							
3	L2	3.48	0.3	3.1	0.01	0.001	0.010
8	T1	9.57	0.8	7.3	0.04	0.002	0.011
18	R2	0.33	0.0	0.3	0.00	0.000	0.000
		13.38	1.2	10.7	0.05	0.003	0.022
East: Eucalyptus Ave WB							
1	L2	0.30	0.0	0.3	0.00	0.000	0.001
6	T1	0.33	0.0	0.2	0.00	0.000	0.001
16	R2	0.24	0.0	0.2	0.00	0.000	0.000
		0.88	0.1	0.7	0.00	0.000	0.001
North: WLC Pkwy SB							
7	L2	0.29	0.0	0.2	0.00	0.000	0.001
4	T1	7.64	0.8	6.8	0.03	0.002	0.022
14	R2	16.41	2.0	18.8	0.04	0.003	0.106

		24.35	2.8	25.9	0.07	0.005	0.128
West: Eucalyptus Ave EB							
5	L2	12.48	1.0	9.4	0.04	0.003	0.018
2	T1	0.35	0.0	0.3	0.00	0.000	0.000
12	R2	3.89	0.3	3.0	0.02	0.001	0.002
		16.72	1.4	12.6	0.06	0.004	0.021
INTERSECTION:							
		55.33	5.5	49.9	0.18	0.012	0.173

FUEL CONSUMPTION, EMISSIONS AND COST (RATE)

Mov ID	Turn	Cost Rate \$/mi	Fuel Eff. mpg	CO2 Rate g/km	CO Rate g/km	HC Rate g/km	NOX Rate g/km
South: WLC Pkwy NB							
3	L2	0.31	20.5	275.9	1.03	0.071	0.903
8	T1	0.26	27.7	200.3	1.03	0.068	0.311
18	R2	0.24	30.7	180.1	1.02	0.066	0.146
		0.27	25.7	217.1	1.03	0.068	0.443
East: Eucalyptus Ave WB							
1	L2	0.29	22.9	244.9	1.04	0.072	0.625
6	T1	0.29	25.0	221.6	1.06	0.072	0.451
16	R2	0.25	29.5	187.5	1.05	0.069	0.157
		0.28	25.5	218.5	1.05	0.071	0.416
North: WLC Pkwy SB							
7	L2	0.29	24.1	230.9	1.01	0.066	0.616
4	T1	0.29	22.0	256.0	1.00	0.066	0.811
14	R2	0.41	12.2	473.9	0.97	0.068	2.666
		0.36	15.0	384.2	0.98	0.067	1.903
West: Eucalyptus Ave EB							
5	L2	0.31	24.2	229.8	1.07	0.076	0.450
2	T1	0.30	25.1	221.2	1.08	0.076	0.385
12	R2	0.24	29.7	186.3	1.05	0.068	0.155
		0.29	25.5	217.7	1.07	0.074	0.368
INTERSECTION:							
		0.31	20.2	280.7	1.02	0.070	0.971

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Lanes

Lane Performance and Capacity Information

Site: Roundabout1 (WLC Pkwy & Eucalyptus Ave) - Int_E+P PM - HCM6

Site ID: 1
Roundabout

LANE PERFORMANCE

Lane No.	Flow veh/h	Cap veh/h	Deg. Satn x	Aver. Delay sec	Eff. Stop Rate	Q u e u e		Lane Length ft
						95% Back veh	ft	

South: WLC Pkwy NB								
1	23	1289	0.018	2.9	0.03	0.1	1.7	1600.0
2	25	1366	0.018	2.8	0.03	0.1	1.8	1600.0

East: Eucalyptus Ave WB								
1	2	1269	0.002	2.9	0.05	0.0	0.1	1600.0
2	1	1331	0.001	2.7	0.04	0.0	0.1	200.0T

North: WLC Pkwy SB								
1	14	1305	0.010	2.8	0.01	0.0	1.0	1600.0
2	13	1298	0.010	2.9	0.01	0.0	1.0	1600.0
3	40	1308	0.031	0.0	0.00			600.0T

West: Eucalyptus Ave EB								
1	40	1345	0.030	2.9	0.02	0.1	2.7	1600.0
2	16	1385	0.012	2.7	0.02	0.0	1.0	1600.0

T Short lane due to specification of Turn Bay

LANE FLOW AND CAPACITY INFORMATION

Lane No.	Total Arv Flow veh/h	Min Cap veh/h	Tot Cap veh/h	Deg. Satn x	Lane Util %

South: WLC Pkwy NB					
1	23	23	1289	0.018	100
2	25	25	1366	0.018	100

East: Eucalyptus Ave WB					
1	2	2	1269	0.002	100
2	1	1	1331	0.001	100

North: WLC Pkwy SB					
1	14	14	1305	0.010	100
2	13	13	1298	0.010	100
3	40	40	1308	0.031	100

West: Eucalyptus Ave EB					
1	40	40	1345	0.030	100
2	16	16	1385	0.012	100

The capacity values of Continuous Lanes are obtained by adjusting the basic saturation flow for lane width, grade, movement class and turning vehicle effects. Saturation flow scale applies if specified.

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Lane, Approach and Intersection Performance
 Site: Roundabout1 (WLC Pkwy & Eucalyptus Ave) - Int_E+P PM - HCM6

Site ID: 1
 Roundabout

Lane No.	Arrival Flow (veh/h)	%HV	Adj. Basic Satf.	Deg Sat x	Aver. Delay sec	Longest Queue ft	Lane Length ft

South: WLC Pkwy NB							
1	23	6		0.018	2.9	2	1600
2	25	0		0.018	2.8	2	1600
	48	3		0.018	2.9	2	

East: Eucalyptus Ave WB							
1	2	4		0.002	2.9	0	1600
2	1	0		0.001	2.7	0	200
	3	3		0.002	2.8	0	

North: WLC Pkwy SB							
1	14	7		0.010	2.8	1	1600
2	13	8		0.010	2.9	1	1600
3	40	28	1975	0.031	0.0		600
	67	20		0.031	1.1	1	

West: Eucalyptus Ave EB							
1	40	3		0.030	2.9	3	1600
2	16	0		0.012	2.7	1	1600
	56	2		0.030	2.8	3	
=====							
ALL VEHICLES							
	Total Flow	% HV		Max X	Aver. Delay	Max Queue	
	174	9		0.031	2.2	3	
=====							

Peak flow period = 15 minutes.

Queue values in this table are 95% queue (feet)
 Note: Basic Saturation Flows at roundabouts or sign-controlled intersections apply only to continuous lanes.

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Driver Characteristics
 Site: Roundabout1 (WLC Pkwy & Eucalyptus Ave) - Int_E+P PM - HCM6

Site ID: 1
 Roundabout

Lane No.	Satn Speed mph	Satn Flow veh/h	Satn Hdwy sec	Satn Spacing ft	Average Queue Space ft	Driver Response Time sec

South: WLC Pkwy NB						
1	20.4	1420	2.54	75.99	26.22	1.66
2	24.2	1420	2.54	89.92	25.00	1.83

East: Eucalyptus Ave WB						
1	20.4	1420	2.54	75.73	25.77	1.67
2	NA - Short Lane					

North: WLC Pkwy SB						
1	23.8	1420	2.54	88.47	26.48	1.78

2	24.4	1420	2.54	90.80	26.60	1.79
3	NA - Continuous Movement					

West: Eucalyptus Ave EB						
1	16.2	1420	2.54	60.20	25.58	1.46
2	21.2	1420	2.54	78.95	25.00	1.73

Saturation Flow and Saturation Headway are derived from follow-up headway.

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Lane Delays

Site: Roundabout1 (WLC Pkwy & Eucalyptus Ave) - Int_E+P PM - HCM6

Site ID: 1
Roundabout

LANE DELAYS

Lane No.	Deg. x	% Arv During Green	Prog. Factor	Delay (seconds/veh)									
				Min Del dm	Stop-line 1st d1	2nd d2	Total dSL	Acc. Dec. dn	Queuing Total dq	MvUp dqm	Stopd (Idle) di	Geom dig	Control dic
South: WLC Pkwy NB													
1	0.018	NA	NA	2.8	2.9	0.1	2.9	5.2	2.3	0.0	2.3	0.0	2.9
2	0.018	NA	NA	2.6	2.7	0.0	2.8	6.5	2.0	0.0	2.0	0.0	2.8
East: Eucalyptus Ave WB													
1	0.002	NA	NA	2.8	2.8	0.0	2.9	5.1	2.0	0.0	2.0	0.0	2.9
2	0.001	NA	NA	2.7	2.7	0.0	2.7	4.6	2.0	0.0	2.0	0.0	2.7
North: WLC Pkwy SB													
1	0.010	NA	NA	2.8	2.8	0.0	2.8	6.3	2.4	0.0	2.4	0.0	2.8
2	0.010	NA	NA	2.8	2.8	0.0	2.9	6.6	2.4	0.0	2.4	0.0	2.9
3	0.031					0.0					0.0	0.0	
West: Eucalyptus Ave EB													
1	0.030	NA	NA	2.7	2.8	0.1	2.9	4.9	2.4	0.0	2.4	0.0	2.9
2	0.012	NA	NA	2.6	2.7	0.0	2.7	4.6	2.3	0.0	2.3	0.0	2.7

HCM Delay Formula option used (Exclude Geometric Delay option applies). Control Delay does not include Geometric Delay, and Stop-line Delay is treated as being same as Control Delay.

dm: Minimum delay for gap acceptance cases

dSL: Stop-line delay (=d1+d2)

dn: Average stop-start delay for all vehicles queued and unqueued

dq: Queuing delay (the part of the stop-line delay that includes stopped delay and queue move-up delay)

dqm: Queue move-up delay

di: Stopped delay (stopped (idling) time at near-zero speed)

dig: Geometric delay

dic: Control delay

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Lane Queues

Site: Roundabout1 (WLC Pkwy & Eucalyptus Ave) - Int_E+P PM - HCM6

Site ID: 1
Roundabout

BACK OF QUEUE (VEHICLES)

Lane No.	Deg. Satn x	% Arv During Green	Prog. Factor	Ovrfl. Queue No	Back of Queue (veh)				Queue Stor. Ratio		Prob. Block %	Prob. SL Ov. %
					Nb1	Nb2	Nb	95%	Av.	95%		
South: WLC Pkwy NB												
1	0.018	NA	NA	0.0	0.0	0.0	0.0	0.1	0.00	0.00	0.0	NA
2	0.018	NA	NA	0.0	0.0	0.0	0.0	0.1	0.00	0.00	0.0	NA
East: Eucalyptus Ave WB												
1	0.002	NA	NA	0.0	0.0	0.0	0.0	0.0	0.00	0.00	0.0	NA
2	0.001	NA	NA	0.0	0.0	0.0	0.0	0.0	0.00	0.00	NA	0.0
North: WLC Pkwy SB												
1	0.010	NA	NA	0.0	0.0	0.0	0.0	0.0	0.00	0.00	0.0	NA
2	0.010	NA	NA	0.0	0.0	0.0	0.0	0.0	0.00	0.00	0.0	NA
West: Eucalyptus Ave EB												
1	0.030	NA	NA	0.0	0.0	0.0	0.0	0.1	0.00	0.00	0.0	NA
2	0.012	NA	NA	0.0	0.0	0.0	0.0	0.0	0.00	0.00	0.0	NA

SIDRA Standard models are used for Back of Queue estimation since HCM only gives Cycle-Average Queues for unsignalised intersections.

BACK OF QUEUE (DISTANCE)

Lane No.	Deg. Satn x	% Arv During Green	Prog. Factor	Ovrfl. Queue No	Back of Queue (ft)				Queue Stor. Ratio		Prob. Block %	Prob. SL Ov. %
					Nb1	Nb2	Nb	95%	Av.	95%		
South: WLC Pkwy NB												
1	0.018	NA	NA	0.0	0.7	0.0	0.7	1.7	0.00	0.00	0.0	NA
2	0.018	NA	NA	0.0	0.7	0.0	0.7	1.8	0.00	0.00	0.0	NA
East: Eucalyptus Ave WB												
1	0.002	NA	NA	0.0	0.1	0.0	0.1	0.1	0.00	0.00	0.0	NA
2	0.001	NA	NA	0.0	0.0	0.0	0.0	0.1	0.00	0.00	NA	0.0
North: WLC Pkwy SB												
1	0.010	NA	NA	0.0	0.4	0.0	0.4	1.0	0.00	0.00	0.0	NA
2	0.010	NA	NA	0.0	0.4	0.0	0.4	1.0	0.00	0.00	0.0	NA
West: Eucalyptus Ave EB												
1	0.030	NA	NA	0.0	1.1	0.0	1.1	2.7	0.00	0.00	0.0	NA
2	0.012	NA	NA	0.0	0.4	0.0	0.4	1.0	0.00	0.00	0.0	NA

SIDRA Standard models are used for Back of Queue estimation since HCM only gives Cycle-Average Queues for unsignalised intersections.

OTHER QUEUE RESULTS (VEHICLES)

Lane No.	Deg. Satn x	% Arv During Green	Prog. Factor	Ovrfl. Queue No	Cyc-Av. Queue No	95%
----------	-------------	--------------------	--------------	-----------------	------------------	-----

```

-----
South: WLC Pkwy NB
1  0.018  NA    NA    0.0    0.0    0.0
2  0.018  NA    NA    0.0    0.0    0.0
-----
East: Eucalyptus Ave WB
1  0.002  NA    NA    0.0    0.0    0.0
2  0.001  NA    NA    0.0    0.0    0.0
-----
North: WLC Pkwy SB
1  0.010  NA    NA    0.0    0.0    0.0
2  0.010  NA    NA    0.0    0.0    0.0
-----
West: Eucalyptus Ave EB
1  0.030  NA    NA    0.0    0.0    0.1
2  0.012  NA    NA    0.0    0.0    0.0
-----

```

HCM Delay Formula option used:
Cycle-Average Queue is calculated using average delay from the HCM equation.
(i.e. HCM delays are treated as stop-line delays for this purpose).

OTHER QUEUE RESULTS (DISTANCE)

```

-----
Lane  Deg.  % Arv  Prog.  Ovrfl.  Cyc-Av.  Queue
No.   Satn  During  Factor  Queue   No       Nc       95%
-----
South: WLC Pkwy NB
1  0.018  NA     NA     0.0     0.5     0.9
2  0.018  NA     NA     0.0     0.5     0.9
-----
East: Eucalyptus Ave WB
1  0.002  NA     NA     0.0     0.0     0.1
2  0.001  NA     NA     0.0     0.0     0.0
-----
North: WLC Pkwy SB
1  0.010  NA     NA     0.0     0.3     0.5
2  0.010  NA     NA     0.0     0.3     0.5
-----
West: Eucalyptus Ave EB
1  0.030  NA     NA     0.0     0.8     1.5
2  0.012  NA     NA     0.0     0.3     0.5
-----

```

HCM Delay Formula option used:
Cycle-Average Queue is calculated using average delay from the HCM equation.
(i.e. HCM delays are treated as stop-line delays for this purpose).

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Lane Queue Percentiles
Site: Roundabout1 (WLC Pkwy & Eucalyptus Ave) - Int_E+P PM - HCM6

Site ID: 1
Roundabout

LANE QUEUE PERCENTILES (VEHICLES)

```

-----
Lane  Deg.  Percentile Back of Queue (veh)
      Satn  -----
-----

```

No.	x	50%	70%	85%	90%	95%	98%	100%

South: WLC Pkwy NB								
1	0.018	0.0	0.0	0.0	0.1	0.1	0.1	0.1
2	0.018	0.0	0.0	0.1	0.1	0.1	0.1	0.1

East: Eucalyptus Ave WB								
1	0.002	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	0.001	0.0	0.0	0.0	0.0	0.0	0.0	0.0

North: WLC Pkwy SB								
1	0.010	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	0.010	0.0	0.0	0.0	0.0	0.0	0.0	0.0

West: Eucalyptus Ave EB								
1	0.030	0.0	0.1	0.1	0.1	0.1	0.1	0.1
2	0.012	0.0	0.0	0.0	0.0	0.0	0.0	0.1

SIDRA Standard models are used for Back of Queue estimation since HCM only gives Cycle-Average Queues for unsignalised intersections.

LANE QUEUE PERCENTILES (DISTANCE)

Lane No.	Deg. Satn x	Percentile Back of Queue (feet)						
		50%	70%	85%	90%	95%	98%	100%

South: WLC Pkwy NB								
1	0.018	0.7	0.9	1.3	1.5	1.7	1.9	2.1
2	0.018	0.7	0.9	1.3	1.5	1.8	2.0	2.1

East: Eucalyptus Ave WB								
1	0.002	0.1	0.1	0.1	0.1	0.1	0.2	0.2
2	0.001	0.0	0.0	0.0	0.1	0.1	0.1	0.1

North: WLC Pkwy SB								
1	0.010	0.4	0.5	0.7	0.8	1.0	1.1	1.2
2	0.010	0.4	0.5	0.7	0.8	1.0	1.1	1.2

West: Eucalyptus Ave EB								
1	0.030	1.1	1.4	2.0	2.3	2.7	3.0	3.3
2	0.012	0.4	0.5	0.8	0.9	1.0	1.2	1.3

SIDRA Standard models are used for Back of Queue estimation since HCM only gives Cycle-Average Queues for unsignalised intersections.

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Lane Stops
Site: Roundabout1 (WLC Pkwy & Eucalyptus Ave) - Int_E+P PM - HCM6

Site ID: 1
Roundabout

Lane No.	Deg. Satn x	% Arv During Green	Prog. Factor	-- Effective Stop Rate --				Total Stops H	Queue Move-up	Total Queue	Prop. Queued pq	Aver. Num. of Cycles to Depart
				he1	he2	Geom. hig	Overall h		Rate hqm	Move-ups Hqm		

South: WLC Pkwy NB												

1	0.018	NA	NA	0.03	0.00	0.00	0.03	0.8	0.00	0.0	0.12	0.12
2	0.018	NA	NA	0.03	0.00	0.00	0.03	0.9	0.00	0.0	0.12	0.12

East: Eucalyptus Ave WB												
1	0.002	NA	NA	0.05	0.00	0.00	0.05	0.1	0.00	0.0	0.17	0.17
2	0.001	NA	NA	0.04	0.00	0.00	0.04	0.0	0.00	0.0	0.16	0.16

North: WLC Pkwy SB												
1	0.010	NA	NA	0.01	0.00	0.00	0.01	0.2	0.00	0.0	0.06	0.06
2	0.010	NA	NA	0.01	0.00	0.00	0.01	0.2	0.00	0.0	0.06	0.06
3	0.031	NA	NA			0.00	0.00	0.0				

West: Eucalyptus Ave EB												
1	0.030	NA	NA	0.02	0.00	0.00	0.02	1.0	0.00	0.0	0.10	0.10
2	0.012	NA	NA	0.02	0.00	0.00	0.02	0.3	0.00	0.0	0.09	0.09

hig is the average value for all movements in a shared lane
hqm is average queue move-up rate for all vehicles queued and unqueued

[Go to Table Links \(Top\)](#)

Flow Rates

Origin-Destination Flow Rates (Total)

Site: Roundabout1 (WLC Pkwy & Eucalyptus Ave) - Int_E+P PM - HCM6

Site ID: 1
Roundabout

TOTAL FLOW RATES for All Movement Classes (veh/h)

From SOUTH To:	W	N	E	
Turn:	L2	T1	R2	TOT
Flow Rate	11.0	35.6	1.4	47.9
%HV (all designations)	13.0	0.0	0.0	3.0

From EAST To:	S	W	N	
Turn:	L2	T1	R2	TOT
Flow Rate	1.0	1.1	1.0	3.1
%HV (all designations)	8.0	0.0	0.0	2.6

From NORTH To:	E	S	W	
Turn:	L2	T1	R2	TOT
Flow Rate	1.0	26.0	40.0	67.0
%HV (all designations)	0.0	8.0	28.0	19.8

From WEST To:	N	E	S	
Turn:	L2	T1	R2	TOT
Flow Rate	39.0	1.1	16.0	56.1
%HV (all designations)	3.0	0.0	0.0	2.1

Flow rates shown above are Arrival Flow Rates (veh/h) based on the following input specifications:
Unit Time for Volumes = 60 minutes
Peak Flow Period = 15 minutes
Effects of Volume Factors (Peak Flow Factor, Flow Scale, Growth Rate) are included.
Arrival Flow Rates may be less than Demand Flow Rates if capacity constraint applies in network analysis.

[Go to Table Links \(Top\)](#)

Origin-Destination Flow Rates by Movement Class
 Site: Roundabout1 (WLC Pkwy & Eucalyptus Ave) - Int_E+P PM - HCM6

Site ID: 1
 Roundabout

FLOW RATES for Light Vehicles (veh/h)

From SOUTH To:	W	N	E	
Turn:	L2	T1	R2	TOT
Flow Rate	9.5	35.6	1.4	46.5
Mov Class %	87.0	100.0	100.0	97.0
Flow Scale	1.00	1.00	1.00	-
Peak Flow Factor	0.73	0.73	0.73	-
Residual Demand	0.0	0.0	0.0	0.0

From EAST To:	S	W	N	
Turn:	L2	T1	R2	TOT
Flow Rate	0.9	1.1	1.0	3.0
Mov Class %	92.0	100.0	100.0	97.4
Flow Scale	1.00	1.00	1.00	-
Peak Flow Factor	1.00	0.92	1.00	-
Residual Demand	0.0	0.0	0.0	0.0

From NORTH To:	E	S	W	
Turn:	L2	T1	R2	TOT
Flow Rate	1.0	23.9	28.8	53.7
Mov Class %	100.0	92.0	72.0	80.2
Flow Scale	1.00	1.00	1.00	-
Peak Flow Factor	1.00	1.00	1.00	-
Residual Demand	0.0	0.0	0.0	0.0

From WEST To:	N	E	S	
Turn:	L2	T1	R2	TOT
Flow Rate	37.8	1.1	16.0	54.9
Mov Class %	97.0	100.0	100.0	97.9
Flow Scale	1.00	1.00	1.00	-
Peak Flow Factor	1.00	0.92	1.00	-
Residual Demand	0.0	0.0	0.0	0.0

FLOW RATES for Heavy Vehicles (veh/h)

From SOUTH To:	W	N	E	
Turn:	L2	T1	R2	TOT
Flow Rate	1.4	0.0	0.0	1.4
Mov Class %	13.0	0.0	0.0	3.0
Flow Scale	1.00	1.00	1.00	-
Peak Flow Factor	0.73	0.73	0.73	-
Residual Demand	0.0	0.0	0.0	0.0

From EAST To:	S	W	N	
Turn:	L2	T1	R2	TOT
Flow Rate	0.1	0.0	0.0	0.1
Mov Class %	8.0	0.0	0.0	2.6
Flow Scale	1.00	1.00	1.00	-

Peak Flow Factor	1.00	0.92	1.00	-
Residual Demand	0.0	0.0	0.0	0.0

From NORTH To:	E	S	W	
Turn:	L2	T1	R2	TOT

Flow Rate	0.0	2.1	11.2	13.3
Mov Class %	0.0	8.0	28.0	19.8
Flow Scale	1.00	1.00	1.00	-
Peak Flow Factor	1.00	1.00	1.00	-
Residual Demand	0.0	0.0	0.0	0.0

From WEST To:	N	E	S	
Turn:	L2	T1	R2	TOT

Flow Rate	1.2	0.0	0.0	1.2
Mov Class %	3.0	0.0	0.0	2.1
Flow Scale	1.00	1.00	1.00	-
Peak Flow Factor	1.00	0.92	1.00	-
Residual Demand	0.0	0.0	0.0	0.0

Flow rates shown above are Arrival Flow Rates (veh/h) based on the following input specifications:
Unit Time for Volumes = 60 minutes
Peak Flow Period = 15 minutes
Effects of Volume Factors (Peak Flow Factor, Flow Scale, Growth Rate) are included.
Arrival Flow Rates may be less than Demand Flow Rates if capacity constraint applies in network analysis.

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Lane Flow Rates

Site: Roundabout1 (WLC Pkwy & Eucalyptus Ave) - Int_E+P PM - HCM6

Site ID: 1
Roundabout

LANE FLOW RATES AT STOP LINE (veh/h)

From SOUTH To:	W	N	E	
Turn:	L2	T1	R2	TOT

Lane 1				
LV	9.5	12.3	*	21.8
HV	1.4	*	*	1.4
Total	11.0	12.3	*	23.3
Lane 2				
LV	*	23.3	1.4	24.7
Total	*	23.3	1.4	24.7

Approach	11.0	35.6	1.4	47.9

From EAST To:	S	W	N	
Turn:	L2	T1	R2	TOT

Lane 1				
LV	0.9	1.1	*	2.0
HV	0.1	*	*	0.1
Total	1.0	1.1	*	2.1
Lane 2				
LV	*	*	1.0	1.0
Total	*	*	1.0	1.0

Approach	1.0	1.1	1.0	3.1
From NORTH To: Turn:	E L2	S T1	W R2	TOT
Lane 1				
LV	1.0	11.5	*	12.5
HV	*	1.0	*	1.0
Total	1.0	12.5	*	13.5
Lane 2				
LV	*	12.4	*	12.4
HV	*	1.1	*	1.1
Total	*	13.5	*	13.5
Lane 3				
LV	*	*	28.8	28.8
HV	*	*	11.2	11.2
Total	*	*	40.0	40.0
Approach	1.0	26.0	40.0	67.0
From WEST To: Turn:	N L2	E T1	S R2	TOT
Lane 1				
LV	37.8	1.1	*	38.9
HV	1.2	*	*	1.2
Total	39.0	1.1	*	40.1
Lane 2				
LV	*	*	16.0	16.0
Total	*	*	16.0	16.0
Approach	39.0	1.1	16.0	56.1

* Movement not allocated to the lane

EXIT LANE FLOW RATES

Movement Class:	LV	HV	TOT
Exit: SOUTH			
Lane: 1	12.5	1.1	13.5
Lane: 2	28.4	1.1	29.5
Total	40.8	2.2	43.0
Exit: EAST			
Lane: 1	3.5	*	3.5
Total	3.5	*	3.5
Exit: NORTH			
Lane: 1	50.1	1.2	51.3
Lane: 2	24.3	*	24.3
Total	74.4	1.2	75.6
Exit: WEST			
Lane: 1	10.6	1.4	12.0
Lane: 2	28.8	11.2	40.0
Total	39.4	12.6	52.0

* Movement not allocated to the lane

DOWNSTREAM LANE FLOW RATES FOR EXIT ROADS

Movement Class:	LV	HV	TOT
Exit: SOUTH			
Lane: 1	12.5	1.1	13.5
Lane: 2	28.4	1.1	29.5

Total	40.8	2.2	43.0

Exit: EAST			
Lane: 1	3.5	*	3.5
Total	3.5	*	3.5

Exit: NORTH			
Lane: 1	50.1	1.2	51.3
Lane: 2	24.3	*	24.3
Total	74.4	1.2	75.6

Exit: WEST			
Lane: 1	10.6	1.4	12.0
Lane: 2	28.8	11.2	40.0
Total	39.4	12.6	52.0

* Movement not allocated to the lane

Flow rates shown above are Arrival Flow Rates (veh/h) based on the following input specifications:
Unit Time for Volumes = 60 minutes
Peak Flow Period = 15 minutes
Effects of Volume Factors (Peak Flow Factor, Flow Scale, Growth Rate) are included.
Arrival Flow Rates may be less than Demand Flow Rates if capacity constraint applies in network analysis.

[Go to Table Links \(Top\)](#)

Other

Parameter Settings Summary

Site: Roundabout1 (WLC Pkwy & Eucalyptus Ave) - Int_E+P PM - HCM6

Site ID: 1
Roundabout

* Basic Parameters:
Intersection Type: Roundabout
US HCM 6 Roundabout Capacity Model used
Driving on the right-hand side of the road
Input data specified in US units
Model Defaults: US HCM (Customary)
Peak Flow Period (for performance): 15 minutes
Unit time (for volumes): 60 minutes.
HCM Delay Model option used
HCM Queue Model option used
Level of Service based on: Delay and v/c (HCM 6)
Queue percentile: 95%

[Go to Table Links \(Top\)](#)

Diagnostics

Site: Roundabout1 (WLC Pkwy & Eucalyptus Ave) - Int_E+P PM - HCM6

Site ID: 1
Roundabout

Lane Flow-Capacity Iterations:

Site Model Variability Index (Iterations 3 to N): 0.0%
Number of Iterations: 3 (Maximum: 10)

Other Diagnostic Messages (if any):

[Go to Table Links \(Top\)](#)

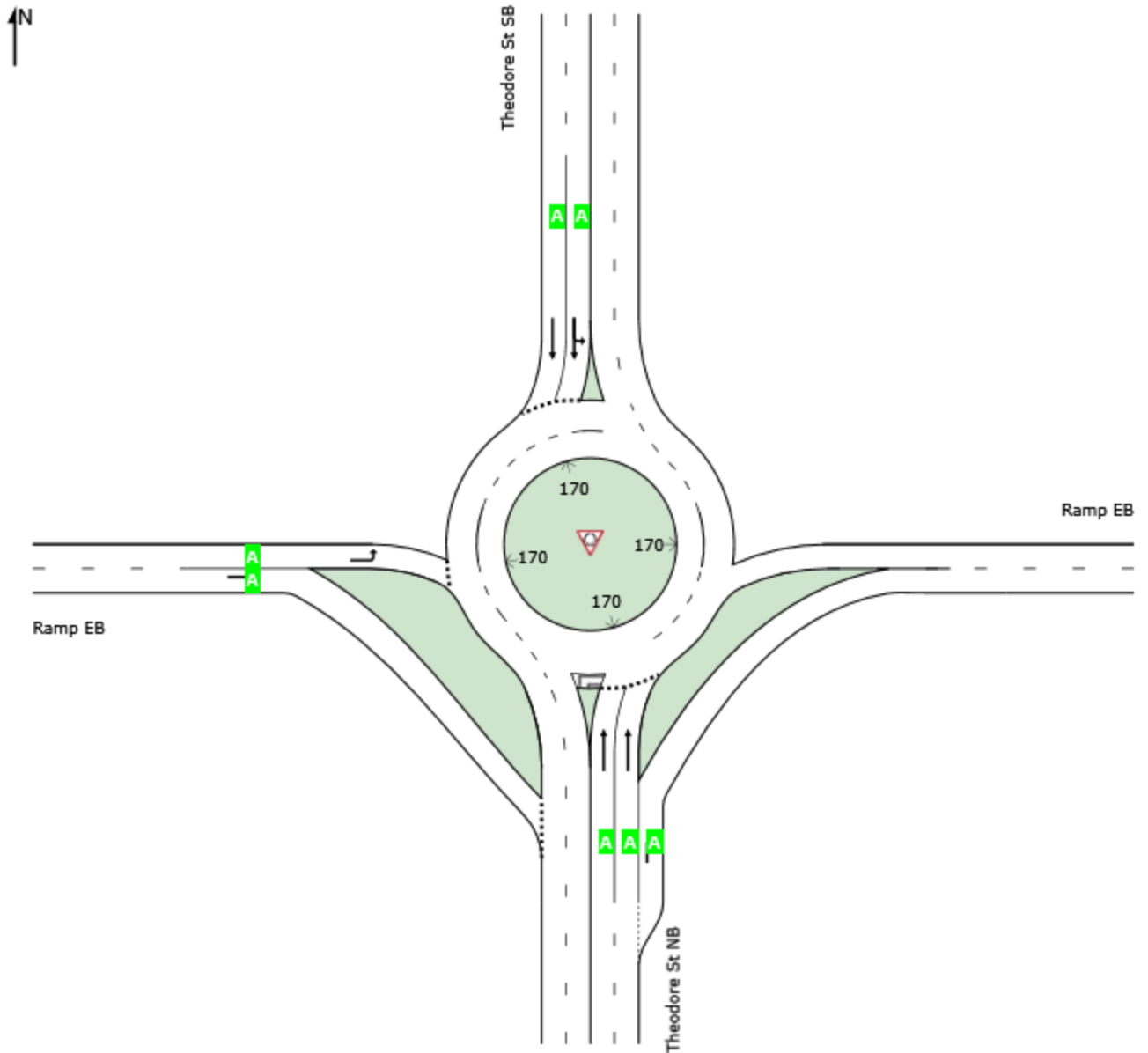
LANE LEVEL OF SERVICE

Lane Level of Service

 **Site: 1 [Roundabout2 (Theodore St & EB Ramps) - Int_E+P PM - HCM6]**

Site Category: (None)
Roundabout

	Approaches			Intersection
	South	North	West	
LOS	A	A	A	A



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: Same as Sign Control.

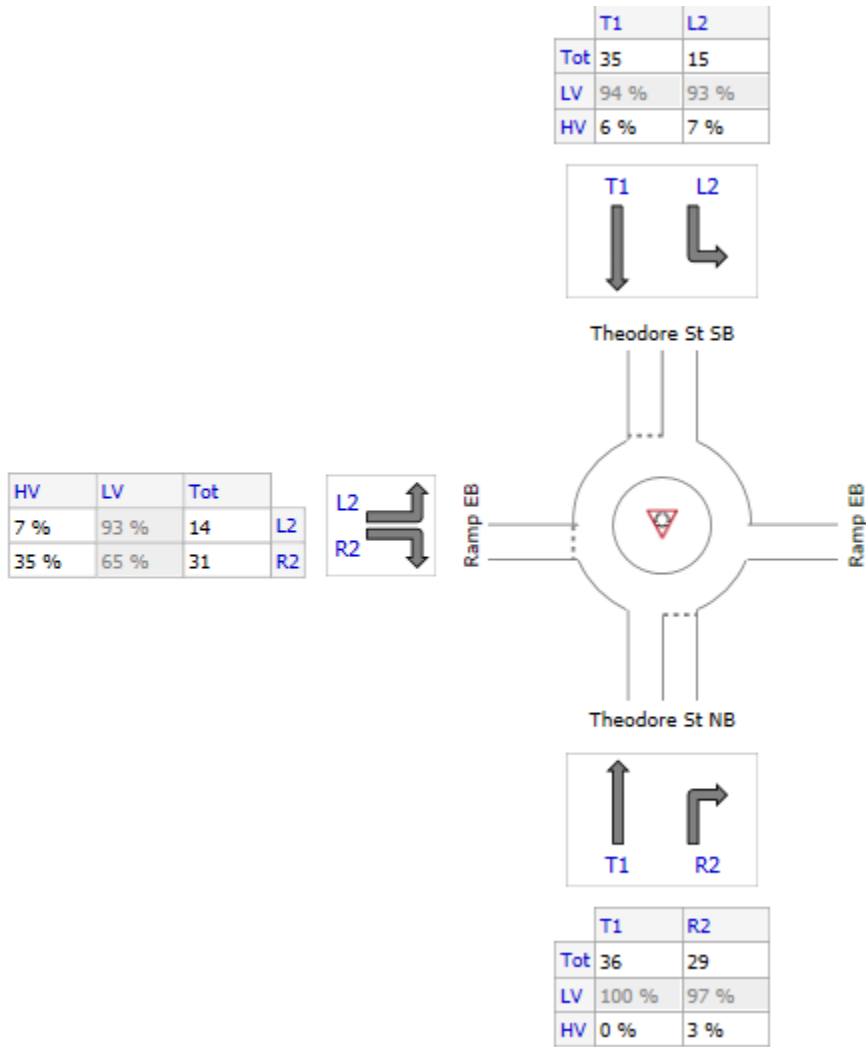
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

LOS F will result if $v/c > 1$ irrespective of lane delay value (does not apply for approaches and intersection).


Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

VOLUMES








DETAILED OUTPUT

 Site: 1 [Roundabout2 (Theodore St & EB Ramps) - Int_E+P PM - HCM6]

Site Category: (None)
Roundabout

OUTPUT TABLE LINKS

-  Roundabouts
 - Roundabout Basic Parameters
 - Roundabout Circulating / Exiting Stream Parameters
 - Roundabout Gap Acceptance Parameters
 - Roundabout Flow Rates
-  Movements
 - Intersection Negotiation and Travel Data
 - Movement Capacity and Performance Parameters
 - Fuel Consumption, Emissions and Cost
-  Lanes
 - Lane Performance and Capacity Information
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Roundabouts

Roundabout Basic Parameters Site: Roundabout2 (Theodore St & EB Ramps) - Int_E+P PM - HCM6

Site ID: 1
Roundabout

Central Island Diam	Circ Width	Insc Diam.	Entry Radius	Entry Angle	Circ Lanes	Entry Lanes	Av.Entry Lane Width	App Dist	Prop Upstr	Queued Signal	Extra Bunching
ft	ft	ft	ft	deg			ft	ft			%

South: Theodore St NB	170.0*	30.0*	230.0*	65.0*	30.0*	1	3	13.00*	1600	NA	0.0U

North: Theodore St SB												
170.0*	30.0*	230.0*	65.0*	30.0*	2	2	13.00*	1600		NA	0.0U	

West: Ramp EB												
170.0*	30.0*	230.0*	65.0*	30.0*	2	2	13.00*	1600		NA	0.0U	

Roundabout Capacity Model: US HCM 6

* These parameters do not affect estimated capacity values in the HCM 6 Capacity Model.

NA Not Applicable (single Site analysis or unconnected Site in Network analysis).

U User-specified Extra Bunching

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Roundabout Circulating / Exiting Stream Parameters Site: Roundabout2 (Theodore St & EB Ramps) - Int_E+P PM - HCM6

Site ID: 1
Roundabout

Dest	Turn	Lane No.	Lane Type	Opng Flow veh/h	HVE pcu/veh	Adj. Flow pcu/h	%Near Lane Only	%Exit Flow Incl.	Cap. Const. Effect	O-D Factor	Aver Speed mph	In-Bunch Headway sec	Prop. Bunched

South: Theodore St NB													
N	T1	1	Subdominant	29	1.07	31	0.0	0.0	N	-	18.9	0.00	0.000
N	T1	2	Dominant	29	1.07	31	0.0	0.0	N	-	18.9	0.00	0.000
E	R2	3	Continuous										

North: Theodore St SB													
E	L2	1	Subdominant	0	0.00	0	0.0	0.0	N	-	NA	0.00	0.000
S	T1	1	Subdominant	0	0.00	0	0.0	0.0	N	-	NA	0.00	0.000
S	T1	2	Dominant	0	0.00	0	0.0	0.0	N	-	NA	0.00	0.000

West: Ramp EB													
N	L2	1	Dominant	50	1.06	53	0.0	0.0	N	-	26.7	0.00	0.000
S	R2	2	Excl. Slip	35	1.06	37	0.0	0.0	N	-	30.0	0.00	0.000

Roundabout Capacity Model: US HCM 6

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Roundabout Gap Acceptance Parameters Site: Roundabout2 (Theodore St & EB Ramps) - Int_E+P PM - HCM6

Site ID: 1
Roundabout

Dest	Turn	Lane No.	Lane Type	In-Bunch Headway sec	Prop. Bunched	Priority Sharing	HVE for Entry	Critical Gap		Follow-up Headway sec
								Headway sec	Dist ft	

South: Theodore St NB										
Model Calibration Factor (HCM 6): 1.00										
Entry/Circ. Flow Adjustment (HCM 6): None										
N	T1	1	Subdominant	0.00	0.000	N	1.00	4.54	126.1	2.54
N	T1	2	Dominant	0.00	0.000	N	1.00	4.54	126.1	2.54

E R2 3 Continuous

North: Theodore St SB

Model Calibration Factor (HCM 6): 1.00

Entry/Circ. Flow Adjustment (HCM 6): None

Direction	Lane	Priority	Flow Adj	Calib	Control	Flow Adj	Calib	Flow Adj	Calib
E	L2	1 Subdominant	0.00	0.000	N	1.07	4.65	NA	2.67
S	T1	1 Subdominant	0.00	0.000	N	1.06	4.65	NA	2.67
S	T1	2 Dominant	0.00	0.000	N	1.06	4.33	NA	2.54

West: Ramp EB

Model Calibration Factor (HCM 6): 1.00

Entry/Circ. Flow Adjustment (HCM 6): None

Direction	Lane	Priority	Flow Adj	Calib	Control	Flow Adj	Calib	Flow Adj	Calib
N	L2	1 Dominant	0.00	0.000	N	1.07	4.33	169.2	2.54
S	R2	2 Excl. Slip	0.00	0.000	N	1.35	4.33	190.3	2.54

Roundabout Capacity Model: US HCM 6

Dist (Distance): Spacing, i.e. distance between the front ends of two successive vehicles across all lanes in the circulating or exiting stream

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Roundabout Flow Rates

Site: Roundabout2 (Theodore St & EB Ramps) - Int_E+P PM - HCM6

Site ID: 1
Roundabout

CIRCULATING LANE FLOW RATES

Lane No.	Circulating Flow Rate		
	veh/h	pcu/h	Percent
South: Theodore St NB			
1	29	31	100.0%
Total	29	31	
North: Theodore St SB			
1	0	0	0.0%
2	0	0	0.0%
Total	0	0	
West: Ramp EB			
1	24	26	48.7%
2	26	27	51.3%
Total	50	53	

The US HCM 6 roundabout capacity model option is in use. This model considers only the total circulating flow and not the flow rates in individual circulating lanes. To model the effects of flow distribution in circulating lanes on the entry capacity results, you should use the SIDRA Standard roundabout capacity model.

APPROACH LANE FLOW RATES

Lane No.	Approach Flows (veh/h)		
	Out	To Downst	Total
South: Theodore St NB			
1	0	21	21

2	0	21	21
3	34	0	34
Total	34	42	76

North: Theodore St SB			
1	0	24	24
2	0	26	26
Total	0	50	50

West: Ramp EB			
1	0	14	14
2	31	0	31
Total	31	14	45

[Go to Table Links \(Top\)](#)

Movements

Intersection Negotiation and Travel Data Site: Roundabout2 (Theodore St & EB Ramps) - Int_E+P PM - HCM6

Site ID: 1
Roundabout

TRAVEL SPEED, TRAVEL DISTANCE AND TRAVEL TIME

From Approach	To Exit	Turn	Running Speed mph	Travel Speed mph	Travel Distance ft	Travel Time s	Total Dem Flows veh-mi/h	Travel Arv Flows veh-mi/h	Tot.Trav. Time veh-h/h

South: Theodore St NB									
	North	T1	39.8	38.5	3423.3#	60.6#	27.5	27.5	0.7
	East	R2	38.3	38.3	3288.6#	58.6#	21.2	21.2	0.6

North: Theodore St SB									
	East	L2	38.0	38.0	3520.2#	63.2#	10.0	10.0	0.3
	South	T1	39.5	39.5	3449.1#	59.6#	22.9	22.9	0.6

West: Ramp EB									
	North	L2	35.9	34.8	3580.9#	70.1#	9.5	9.5	0.3
	South	R2	37.3	35.4	3288.6#	63.4#	19.3	19.3	0.5

ALL VEHICLES:			38.5	37.7	3398.8#	61.5#	110.4	110.4	2.9

"Running Speed" is the average speed excluding stopped periods.

Travel Time values include cruise times and intersection delays including acceleration, deceleration and idling delays.

Travel Distance and Travel Time values include travel on the External Exit section based on the Exit Distance or user-specified Downstream Distance value as applicable.

INTERSECTION NEGOTIATION DATA

From Approach	To Exit	Turn	Negn Radius ft	Negn Speed mph	Negn Dist ft	App Dist ft	Exit Dist ft	Downstr Dist ft

South: Theodore St NB								
	North	T1	328.1	30.0	223.3	1600	488	NA
	East	R2	219.5	25.8	88.6	1600	488	NA

North: Theodore St SB								
	East	L2	97.0	18.9	380.9	1600	488	NA
	South	T1	328.1	30.0	223.3	1600	488	NA

West: Ramp EB								
	North	L2	97.0	18.9	380.9	1600	488	NA
	South	R2	216.1	25.6	88.6	1600	488	NA

Maximum Negotiation (Design) Speed = 30.0 mph

NA Downstream Distance does not apply if:

- Exit is an internal leg of a network
- "Program" option was specified
- Distance specified was less than the Exit Negotiation Distance
- Distance specified was greater than the exit leg length

MOVEMENT SPEEDS AND GEOMETRIC DELAY

Mov ID	Turn	App. Speeds		Exit Speeds		Queue Move-up Speed mph	Geom Delay sec
		Cruise mph	Negn mph	Negn mph	Cruise mph		

South: Theodore St NB							
8	T1	40.0	30.0	30.0	40.0	48.3	0.0
18	R2	40.0	25.8	25.8	40.0	41.5	0.0

North: Theodore St SB							
7	L2	40.0	18.9	18.9	40.0	37.3	0.0
4	T1	40.0	30.0	30.0	40.0	45.3	0.0

West: Ramp EB							
5	L2	40.0	18.9	18.9	40.0	30.4	0.0
12	R2	40.0	25.6	25.6	40.0	41.2	0.0

HCM Delay Formula option used: Geometric Delay is not included in Control Delay.

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Movement Capacity and Performance Parameters
 Site: Roundabout2 (Theodore St & EB Ramps) - Int_E+P PM - HCM6

Site ID: 1
 Roundabout

MOVEMENT CAPACITY PARAMETERS

Mov ID	Turn	Mov Cl.	Arv Flow veh/h	Opng Flow veh/h	Movement Adjust. Flow pcu/h	Total Cap. veh/h	Prac. Deg. Satn xp	Prac. Spare Cap. %	Deg. Satn x

South: Theodore St NB									
8	T1	#	42	29	31	2761	0.85	5441	0.015
18	R2	#	34	29	31	1626	0.98	4570	0.021

North: Theodore St SB										
7	L2	#	15	0	0	782	0.85	4330	0.019	
4	T1	#	35	0	0	1824	0.85	4330	0.019	

West: Ramp EB										
5	L2	#	14	50	53	1268	0.85	7601	0.011	
12	R2	#	31	35	37	1019	0.85	2695	0.030*	

* Maximum degree of saturation
Combined Movement Capacity parameters are shown for all Movement Classes.

MOVEMENT PERFORMANCE

Mov ID	Turn	Total Delay (veh-h/h)	Total Delay (pers-h/h)	Aver. Delay (sec)	Eff. Stop Rate	Total Stops	Perf. Index	Tot.Trav. Distance (veh-mi/h)	Tot.Trav. Time (veh-h/h)	Aver. Speed (mph)
South: Theodore St NB										
8	T1	0.03	0.04	2.7	0.02	1.1	0.75	27.5	0.7	38.5
18	R2	0.00	0.00	0.0	0.00	0.0	0.53	21.2	0.6	38.3
North: Theodore St SB										
7	L2	0.01	0.02	3.0	0.00	0.0	0.26	10.0	0.3	38.0
4	T1	0.03	0.03	2.9	0.00	0.0	0.60	22.9	0.6	39.5
West: Ramp EB										
5	L2	0.01	0.01	2.9	0.04	0.5	0.28	9.5	0.3	34.8
12	R2	0.03	0.04	3.8	0.03	0.9	0.59	19.3	0.5	35.4

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Fuel Consumption, Emissions and Cost
Site: Roundabout2 (Theodore St & EB Ramps) - Int_E+P PM - HCM6

Site ID: 1
Roundabout

FUEL CONSUMPTION, EMISSIONS AND COST (TOTAL)

Mov ID	Turn	Cost Total (\$/h)	Fuel Total (gal/h)	CO2 Total (kg/h)	CO Total (kg/h)	HC Total (kg/h)	NOX Total (kg/h)
South: Theodore St NB							
8	T1	9.75	0.8	7.3	0.04	0.003	0.006
18	R2	8.07	0.8	6.9	0.03	0.002	0.013
		17.81	1.6	14.2	0.08	0.005	0.019
North: Theodore St SB							
7	L2	4.57	0.4	3.9	0.02	0.001	0.011
4	T1	9.22	0.9	8.1	0.03	0.002	0.022
		13.79	1.3	12.0	0.05	0.003	0.033
West: Ramp EB							
5	L2	5.15	0.5	4.1	0.02	0.001	0.012
12	R2	13.97	1.8	16.5	0.03	0.002	0.097
		19.12	2.2	20.6	0.05	0.003	0.110

```

-----
INTERSECTION:    50.72    5.1    46.8    0.17    0.011    0.162
-----

```

FUEL CONSUMPTION, EMISSIONS AND COST (RATE)

Mov ID	Turn	Cost Rate \$/mi	Fuel Eff. mpg	CO2 Rate g/km	CO Rate g/km	HC Rate g/km	NOX Rate g/km

South: Theodore St NB							
8	T1	0.22	33.3	166.0	0.96	0.059	0.125
18	R2	0.24	27.7	201.3	0.99	0.062	0.385
		0.23	30.6	181.4	0.97	0.060	0.238

North: Theodore St SB							
7	L2	0.28	23.2	241.6	0.98	0.065	0.705
4	T1	0.25	25.5	219.9	0.94	0.059	0.591
		0.26	24.8	226.5	0.96	0.061	0.626

West: Ramp EB							
5	L2	0.34	20.8	269.7	1.05	0.075	0.817
12	R2	0.45	11.0	529.9	0.94	0.068	3.134
		0.41	13.0	444.1	0.97	0.070	2.370

INTERSECTION:		0.29	21.5	263.4	0.97	0.063	0.910

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Lanes

Lane Performance and Capacity Information Site: Roundabout2 (Theodore St & EB Ramps) - Int_E+P PM - HCM6

Site ID: 1
Roundabout

LANE PERFORMANCE

Lane No.	Flow veh/h	Cap veh/h	Deg. Satn x	Aver. Delay sec	Eff. Stop Rate	Q u e u e		Lane Length ft
						95% Back veh	ft	

South: Theodore St NB								
1	21	1380	0.015	2.7	0.02	0.1	1.5	1600.0
2	21	1380	0.015	2.7	0.02	0.1	1.5	1600.0
3	34	1626	0.021	0.0	0.00			600.0T

North: Theodore St SB								
1	24	1266	0.019	3.0	0.00	0.0	0.0	1600.0
2	26	1340	0.019	2.8	0.00	0.0	0.0	1600.0

West: Ramp EB								
1	14	1268	0.011	2.9	0.04	0.0	1.0	1600.0

2 31 1019 0.030 3.8 0.03 0.1 2.6 1600.0

T Short lane due to specification of Turn Bay

LANE FLOW AND CAPACITY INFORMATION

Lane No.	Total Arv Flow veh/h	Min Cap veh/h	Tot Cap veh/h	Deg. Satn x	Lane Util %

South: Theodore St NB					
1	21	21	1380	0.015	100
2	21	21	1380	0.015	100
3	34	34	1626	0.021	100

North: Theodore St SB					
1	24	24	1266	0.019	100
2	26	26	1340	0.019	100

West: Ramp EB					
1	14	14	1268	0.011	100
2	31	31	1019	0.030	100

The capacity values of Continuous Lanes are obtained by adjusting the basic saturation flow for lane width, grade, movement class and turning vehicle effects. Saturation flow scale applies if specified.

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Lane, Approach and Intersection Performance
 Site: Roundabout2 (Theodore St & EB Ramps) - Int_E+P PM - HCM6

Site ID: 1
 Roundabout

Lane No.	Arrival Flow (veh/h)	%HV	Adj. Basic Satf.	Deg Sat x	Aver. Delay sec	Longest Queue ft	Lane Length ft

South: Theodore St NB							
1	21	0		0.015	2.7	1	1600
2	21	0		0.015	2.7	1	1600
3	34	3	1975	0.021	0.0		600

	76	1		0.021	1.5	1	

North: Theodore St SB							
1	24	7		0.019	3.0	0	1600
2	26	6		0.019	2.8	0	1600

	50	6		0.019	2.9		

West: Ramp EB							
1	14	7		0.011	2.9	1	1600
2	31	35		0.030	3.8	3	1600

	45	26		0.030	3.5	3	
=====							

ALL VEHICLES					
Total Flow	% HV	Max X	Aver. Delay	Max Queue	

171 9 0.030 2.4 3

=====

Peak flow period = 15 minutes.

Queue values in this table are 95% queue (feet)
 Note: Basic Saturation Flows at roundabouts or sign-controlled
 intersections apply only to continuous lanes.

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Driver Characteristics
 Site: Roundabout2 (Theodore St & EB Ramps) - Int_E+P PM - HCM6

Site ID: 1
 Roundabout

Lane No.	Satn Speed mph	Satn Flow veh/h	Satn Hdwy sec	Satn Spacing ft	Average Queue Space ft	Driver Response Time sec

South: Theodore St NB						
1	30.0	1420	2.54	111.48	25.00	1.97
2	30.0	1420	2.54	111.48	25.00	1.97
3	NA - Continuous Movement					

North: Theodore St SB						
1	23.2	1350	2.67	90.54	26.32	1.89
2	30.0	1420	2.54	111.48	26.20	1.94

West: Ramp EB						
1	18.9	1420	2.54	70.34	26.40	1.58
2	25.6	1420	2.54	95.24	32.00	1.68

Saturation Flow and Saturation Headway are derived from follow-up headway.

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Lane Delays
 Site: Roundabout2 (Theodore St & EB Ramps) - Int_E+P PM - HCM6

Site ID: 1
 Roundabout

LANE DELAYS

Lane No.	Deg. Satn x	% Arv During Green	Prog. Factor	Delay (seconds/veh)									
				Min Del dm	Stop-line 1st d1	2nd d2	Total dSL	Acc. dn	Queuing Total dq	MvUp dqm	Stopd (Idle) di	Geom dig	Control dic

South: Theodore St NB													
1	0.015	NA	NA	2.6	2.7	0.0	2.7	7.5	2.0	0.0	2.0	0.0	2.7
2	0.015	NA	NA	2.6	2.7	0.0	2.7	7.5	2.0	0.0	2.0	0.0	2.7
3	0.021					0.0					0.0	0.0	

North: Theodore St SB													
1	0.019	NA	NA	2.8	2.9	0.1	3.0	0.0	0.0	0.0	0.0	0.0	3.0
2	0.019	NA	NA	2.7	2.8	0.1	2.8	0.0	0.0	0.0	0.0	0.0	2.8
West: Ramp EB													
1	0.011	NA	NA	2.8	2.9	0.0	2.9	5.6	2.2	0.0	2.2	0.0	2.9
2	0.030	NA	NA	3.5	3.7	0.1	3.8	5.2	3.2	0.0	3.2	0.0	3.8

HCM Delay Formula option used (Exclude Geometric Delay option applies). Control Delay does not include Geometric Delay, and Stop-line Delay is treated as being same as Control Delay.

dm: Minimum delay for gap acceptance cases

dSL: Stop-line delay (=d1+d2)

dn: Average stop-start delay for all vehicles queued and unqueued

dq: Queuing delay (the part of the stop-line delay that includes stopped delay and queue move-up delay)

dqm: Queue move-up delay

di: Stopped delay (stopped (idling) time at near-zero speed)

dig: Geometric delay

dic: Control delay

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Lane Queues

Site: Roundabout2 (Theodore St & EB Ramps) - Int_E+P PM - HCM6

Site ID: 1
Roundabout

BACK OF QUEUE (VEHICLES)

Lane No.	Deg. Satn x	% Arv During Green	Prog. Factor	Ovrfl. Queue No	Back of Queue (veh)				Queue Stor. Ratio		Prob. Block %	Prob. SL Ov. %
					Nb1	Nb2	Nb	95%	Av.	95%		
South: Theodore St NB												
1	0.015	NA	NA	0.0	0.0	0.0	0.0	0.1	0.00	0.00	0.0	NA
2	0.015	NA	NA	0.0	0.0	0.0	0.0	0.1	0.00	0.00	0.0	NA
North: Theodore St SB												
1	0.019	NA	NA	0.0	0.0	0.0	0.0	0.0	0.00	0.00	0.0	NA
2	0.019	NA	NA	0.0	0.0	0.0	0.0	0.0	0.00	0.00	0.0	NA
West: Ramp EB												
1	0.011	NA	NA	0.0	0.0	0.0	0.0	0.0	0.00	0.00	0.0	NA
2	0.030	NA	NA	0.0	0.0	0.0	0.0	0.1	0.00	0.00	0.0	NA

SIDRA Standard models are used for Back of Queue estimation since HCM only gives Cycle-Average Queues for unsignalised intersections.

BACK OF QUEUE (DISTANCE)

Lane No.	Deg. Satn x	% Arv During Green	Prog. Factor	Ovrfl. Queue No	Back of Queue (ft)				Queue Stor. Ratio		Prob. Block %	Prob. SL Ov. %
					Nb1	Nb2	Nb	95%	Av.	95%		
South: Theodore St NB												
1	0.015	NA	NA	0.0	0.6	0.0	0.6	1.5	0.00	0.00	0.0	NA
2	0.015	NA	NA	0.0	0.6	0.0	0.6	1.5	0.00	0.00	0.0	NA

North: Theodore St SB												
1	0.019	NA	NA	0.0	0.0	0.0	0.0	0.0	0.00	0.00	0.0	NA
2	0.019	NA	NA	0.0	0.0	0.0	0.0	0.0	0.00	0.00	0.0	NA
West: Ramp EB												
1	0.011	NA	NA	0.0	0.4	0.0	0.4	1.0	0.00	0.00	0.0	NA
2	0.030	NA	NA	0.0	1.1	0.0	1.1	2.6	0.00	0.00	0.0	NA

SIDRA Standard models are used for Back of Queue estimation since HCM only gives Cycle-Average Queues for unsignalised intersections.

OTHER QUEUE RESULTS (VEHICLES)

Lane No.	Deg. Satn	% Arv During Green	Prog. Factor	Ovrfl. Queue No	Cyc-Av. Queue	
	x			No	Nc	95%
South: Theodore St NB						
1	0.015	NA	NA	0.0	0.0	0.0
2	0.015	NA	NA	0.0	0.0	0.0
North: Theodore St SB						
1	0.019	NA	NA	0.0	0.0	0.0
2	0.019	NA	NA	0.0	0.0	0.0
West: Ramp EB						
1	0.011	NA	NA	0.0	0.0	0.0
2	0.030	NA	NA	0.0	0.0	0.1

HCM Delay Formula option used:
Cycle-Average Queue is calculated using average delay from the HCM equation. (i.e. HCM delays are treated as stop-line delays for this purpose).

OTHER QUEUE RESULTS (DISTANCE)

Lane No.	Deg. Satn	% Arv During Green	Prog. Factor	Ovrfl. Queue No	Cyc-Av. Queue	
	x			No	Nc	95%
South: Theodore St NB						
1	0.015	NA	NA	0.0	0.4	0.7
2	0.015	NA	NA	0.0	0.4	0.7
North: Theodore St SB						
1	0.019	NA	NA	0.0	0.5	1.0
2	0.019	NA	NA	0.0	0.5	1.0
West: Ramp EB						
1	0.011	NA	NA	0.0	0.3	0.5
2	0.030	NA	NA	0.0	1.0	1.9

HCM Delay Formula option used:
Cycle-Average Queue is calculated using average delay from the HCM equation. (i.e. HCM delays are treated as stop-line delays for this purpose).

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Site ID: 1
Roundabout

LANE QUEUE PERCENTILES (VEHICLES)

Lane No.	Deg. Satn x	Percentile Back of Queue (veh)						
		50%	70%	85%	90%	95%	98%	100%
South: Theodore St NB								
1	0.015	0.0	0.0	0.0	0.1	0.1	0.1	0.1
2	0.015	0.0	0.0	0.0	0.1	0.1	0.1	0.1
North: Theodore St SB								
1	0.019	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	0.019	0.0	0.0	0.0	0.0	0.0	0.0	0.0
West: Ramp EB								
1	0.011	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	0.030	0.0	0.0	0.1	0.1	0.1	0.1	0.1

SIDRA Standard models are used for Back of Queue estimation since HCM only gives Cycle-Average Queues for unsignalised intersections.

LANE QUEUE PERCENTILES (DISTANCE)

Lane No.	Deg. Satn x	Percentile Back of Queue (feet)						
		50%	70%	85%	90%	95%	98%	100%
South: Theodore St NB								
1	0.015	0.6	0.8	1.1	1.3	1.5	1.7	1.8
2	0.015	0.6	0.8	1.1	1.3	1.5	1.7	1.8
North: Theodore St SB								
1	0.019	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	0.019	0.0	0.0	0.0	0.0	0.0	0.0	0.0
West: Ramp EB								
1	0.011	0.4	0.5	0.7	0.8	1.0	1.1	1.2
2	0.030	1.1	1.4	1.9	2.3	2.6	2.9	3.2

SIDRA Standard models are used for Back of Queue estimation since HCM only gives Cycle-Average Queues for unsignalised intersections.

[Go to Table Links \(Top\)](#)

Lane Stops
Site: Roundabout2 (Theodore St & EB Ramps) - Int_E+P PM - HCM6

Site ID: 1
Roundabout

Lane	Deg. Satn	% Arv During	Prog. Factor	-- Effective Stop Rate -- Geom. Overall	Total Stops	Queue Move-up Rate	Total Queue Move-ups	Prop. Queued	Aver. Num. of Cycles to
------	-----------	--------------	--------------	--	-------------	--------------------	----------------------	--------------	-------------------------

No.	x	Green		he1	he2	hig	h	H	hqm	Hqm	pq	Depart

South: Theodore St NB												
1	0.015	NA	NA	0.02	0.00	0.00	0.02	0.5	0.00	0.0	0.10	0.10
2	0.015	NA	NA	0.02	0.00	0.00	0.02	0.5	0.00	0.0	0.10	0.10
3	0.021	NA	NA			0.00	0.00	0.0				

North: Theodore St SB												
1	0.019	NA	NA	0.00	0.00	0.00	0.00	0.0	0.00	0.0	0.00	0.00
2	0.019	NA	NA	0.00	0.00	0.00	0.00	0.0	0.00	0.0	0.00	0.00

West: Ramp EB												
1	0.011	NA	NA	0.04	0.00	0.00	0.04	0.5	0.00	0.0	0.13	0.13
2	0.030	NA	NA	0.03	0.00	0.00	0.03	0.9	0.00	0.0	0.11	0.11

hig is the average value for all movements in a shared lane												
hqm is average queue move-up rate for all vehicles queued and unqueued												

[Go to Table Links \(Top\)](#)

Flow Rates

Origin-Destination Flow Rates (Total)

Site: Roundabout2 (Theodore St & EB Ramps) - Int_E+P PM - HCM6

Site ID: 1
Roundabout

TOTAL FLOW RATES for All Movement Classes (veh/h)

From SOUTH To:	N	E	
Turn:	T1	R2	TOT
Flow Rate	42.4	34.1	76.5
%HV (all designations)	0.0	3.0	1.3

From NORTH To:	E	S	
Turn:	L2	T1	TOT
Flow Rate	15.0	35.0	50.0
%HV (all designations)	7.0	6.0	6.3

From WEST To:	N	S	
Turn:	L2	R2	TOT
Flow Rate	14.0	31.0	45.0
%HV (all designations)	7.0	35.0	26.3

Flow rates shown above are Arrival Flow Rates (veh/h) based on the following input specifications:
Unit Time for Volumes = 60 minutes
Peak Flow Period = 15 minutes
Effects of Volume Factors (Peak Flow Factor, Flow Scale, Growth Rate) are included.
Arrival Flow Rates may be less than Demand Flow Rates if capacity constraint applies in network analysis.

[Go to Table Links \(Top\)](#)

Origin-Destination Flow Rates by Movement Class

Site: Roundabout2 (Theodore St & EB Ramps) - Int_E+P PM - HCM6

Site ID: 1
 Roundabout

FLOW RATES for Light Vehicles (veh/h)

From SOUTH To:	N	E	
Turn:	T1	R2	TOT

Flow Rate	42.4	33.1	75.4
Mov Class %	100.0	97.0	98.7
Flow Scale	1.00	1.00	-
Peak Flow Factor	0.85	0.85	-
Residual Demand	0.0	0.0	0.0

From NORTH To:	E	S	
Turn:	L2	T1	TOT

Flow Rate	13.9	32.9	46.9
Mov Class %	93.0	94.0	93.7
Flow Scale	1.00	1.00	-
Peak Flow Factor	1.00	1.00	-
Residual Demand	0.0	0.0	0.0

From WEST To:	N	S	
Turn:	L2	R2	TOT

Flow Rate	13.0	20.1	33.2
Mov Class %	93.0	65.0	73.7
Flow Scale	1.00	1.00	-
Peak Flow Factor	1.00	1.00	-
Residual Demand	0.0	0.0	0.0

FLOW RATES for Heavy Vehicles (veh/h)

From SOUTH To:	N	E	
Turn:	T1	R2	TOT

Flow Rate	0.0	1.0	1.0
Mov Class %	0.0	3.0	1.3
Flow Scale	1.00	1.00	-
Peak Flow Factor	0.85	0.85	-
Residual Demand	0.0	0.0	0.0

From NORTH To:	E	S	
Turn:	L2	T1	TOT

Flow Rate	1.0	2.1	3.1
Mov Class %	7.0	6.0	6.3
Flow Scale	1.00	1.00	-
Peak Flow Factor	1.00	1.00	-
Residual Demand	0.0	0.0	0.0

From WEST To:	N	S	
Turn:	L2	R2	TOT

Flow Rate	1.0	10.9	11.8
Mov Class %	7.0	35.0	26.3
Flow Scale	1.00	1.00	-
Peak Flow Factor	1.00	1.00	-
Residual Demand	0.0	0.0	0.0

Flow rates shown above are Arrival Flow Rates (veh/h) based on the following input specifications:
 Unit Time for Volumes = 60 minutes
 Peak Flow Period = 15 minutes

Effects of Volume Factors (Peak Flow Factor, Flow Scale, Growth Rate) are included.
 Arrival Flow Rates may be less than Demand Flow Rates if capacity constraint applies in
 network analysis.

[Go to Table Links \(Top\)](#)

Lane Flow Rates
Site: Roundabout2 (Theodore St & EB Ramps) - Int_E+P PM - HCM6

Site ID: 1
 Roundabout

LANE FLOW RATES AT STOP LINE (veh/h)

From SOUTH To:	N	E	
Turn:	T1	R2	TOT

Lane 1			
LV	21.2	*	21.2
Total	21.2	*	21.2
Lane 2			
LV	21.2	*	21.2
Total	21.2	*	21.2
Lane 3			
LV	*	33.1	33.1
HV	*	1.0	1.0
Total	*	34.1	34.1

Approach	42.4	34.1	76.5

From NORTH To:	E	S	
Turn:	L2	T1	TOT

Lane 1			
LV	13.9	8.7	22.7
HV	1.0	0.6	1.6
Total	15.0	9.3	24.3
Lane 2			
LV	*	24.2	24.2
HV	*	1.5	1.5
Total	*	25.7	25.7

Approach	15.0	35.0	50.0

From WEST To:	N	S	
Turn:	L2	R2	TOT

Lane 1			
LV	13.0	*	13.0
HV	1.0	*	1.0
Total	14.0	*	14.0
Lane 2			
LV	*	20.1	20.1
HV	*	10.9	10.9
Total	*	31.0	31.0

Approach	14.0	31.0	45.0

* Movement not allocated to the lane

EXIT LANE FLOW RATES

Movement Class:	LV	HV	TOT
Exit: SOUTH			
Lane: 1	8.7	0.6	9.3
Lane: 2	44.3	12.4	56.7
Total	53.1	13.0	66.0
Exit: EAST			
Lane: 1	13.9	1.0	15.0
Lane: 2	33.1	1.0	34.1
Total	47.0	2.1	49.1
Exit: NORTH			
Lane: 1	34.2	1.0	35.2
Lane: 2	21.2	*	21.2
Total	55.4	1.0	56.4

* Movement not allocated to the lane

DOWNSTREAM LANE FLOW RATES FOR EXIT ROADS

Movement Class:	LV	HV	TOT
Exit: SOUTH			
Lane: 1	8.7	0.6	9.3
Lane: 2	44.3	12.4	56.7
Total	53.1	13.0	66.0
Exit: EAST			
Lane: 1	13.9	1.0	15.0
Lane: 2	33.1	1.0	34.1
Total	47.0	2.1	49.1
Exit: NORTH			
Lane: 1	34.2	1.0	35.2
Lane: 2	21.2	*	21.2
Total	55.4	1.0	56.4

* Movement not allocated to the lane

Flow rates shown above are Arrival Flow Rates (veh/h) based on the following input specifications:
 Unit Time for Volumes = 60 minutes
 Peak Flow Period = 15 minutes
 Effects of Volume Factors (Peak Flow Factor, Flow Scale, Growth Rate) are included.
 Arrival Flow Rates may be less than Demand Flow Rates if capacity constraint applies in network analysis.

[Go to Table Links \(Top\)](#)

Other

Parameter Settings Summary

Site: Roundabout2 (Theodore St & EB Ramps) - Int_E+P PM - HCM6

Site ID: 1
 Roundabout

* Basic Parameters:
 Intersection Type: Roundabout

US HCM 6 Roundabout Capacity Model used
Driving on the right-hand side of the road
Input data specified in US units
Model Defaults: US HCM (Customary)
Peak Flow Period (for performance): 15 minutes
Unit time (for volumes): 60 minutes.
HCM Delay Model option used
HCM Queue Model option used
Level of Service based on: Delay and v/c (HCM 6)
Queue percentile: 95%

[Go to Table Links \(Top\)](#)

Diagnostics

Site: Roundabout2 (Theodore St & EB Ramps) - Int_E+P PM - HCM6

Site ID: 1
Roundabout

Lane Flow-Capacity Iterations:

Site Model Variability Index (Iterations 3 to N): 0.0%
Number of Iterations: 3 (Maximum: 10)

Other Diagnostic Messages (if any):

[Go to Table Links \(Top\)](#)

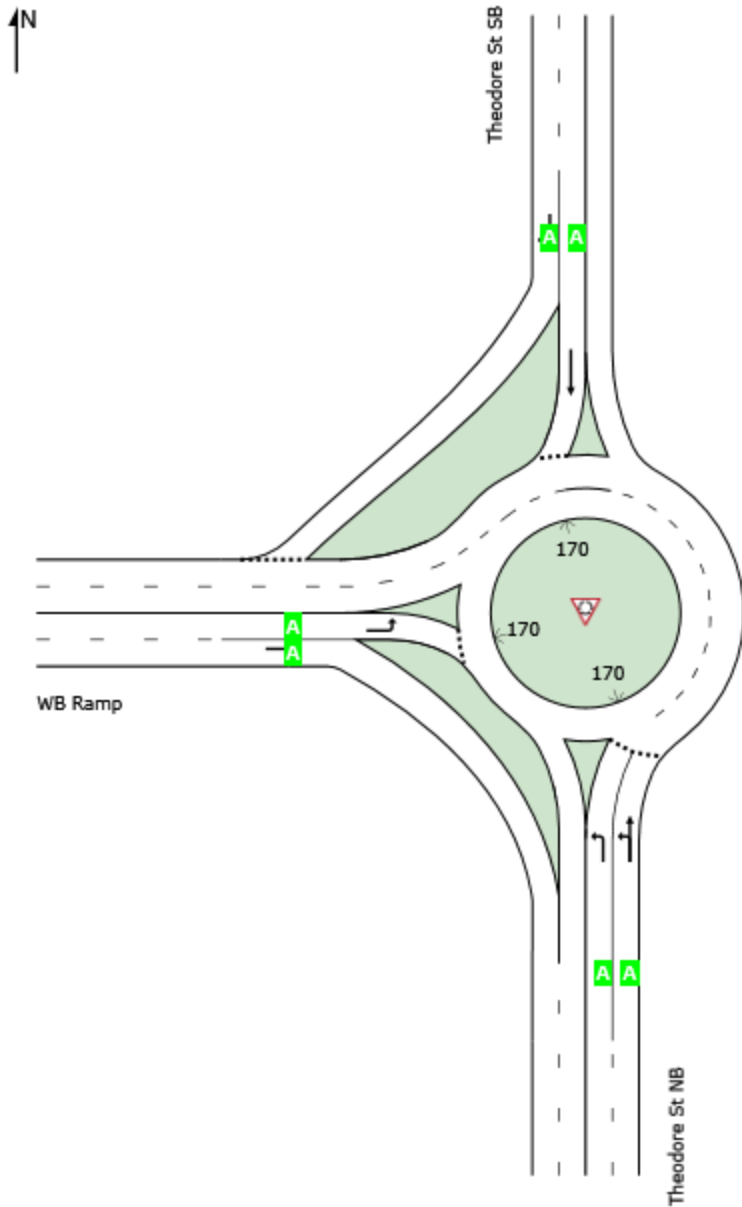
LANE LEVEL OF SERVICE

Lane Level of Service

 **Site: 1 [Roundabout3 (Theodore St & WB Ramps) - Int_E+P PM - HCM6]**

Site Category: (None)
Roundabout

	Approaches			Intersection
	South	North	West	
LOS	A	A	A	A



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: Same as Sign Control.

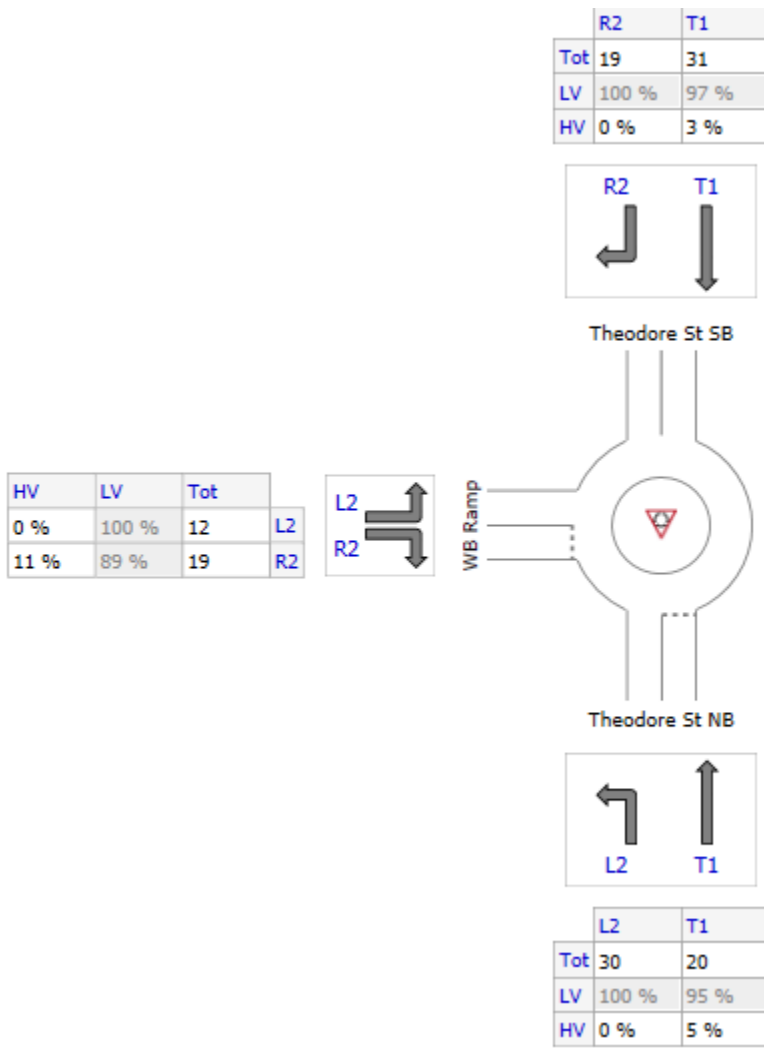
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

LOS F will result if $v/c > 1$ irrespective of lane delay value (does not apply for approaches and intersection).


Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

VOLUMES








DETAILED OUTPUT

 Site: 1 [Roundabout3 (Theodore St & WB Ramps) - Int_E+P PM - HCM6]

Site Category: (None)
Roundabout

OUTPUT TABLE LINKS

-  Roundabouts
 - Roundabout Basic Parameters
 - Roundabout Circulating / Exiting Stream Parameters
 - Roundabout Gap Acceptance Parameters
 - Roundabout Flow Rates
-  Movements
 - Intersection Negotiation and Travel Data
 - Movement Capacity and Performance Parameters
 - Fuel Consumption, Emissions and Cost
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 - Lane Performance and Capacity Information
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 - Origin-Destination Flow Rates (Total)
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Roundabouts

Roundabout Basic Parameters
Site: Roundabout3 (Theodore St & WB Ramps) - Int_E+P PM - HCM6

Site ID: 1
Roundabout

Central Island Diam	Circ Width	Insc Diam.	Entry Radius	Entry Angle	Circ Lanes	Entry Lanes	Av.Entry Lane Width	App Dist	Prop Upstr	Queued Signal	Extra Bunching
ft	ft	ft	ft	deg			ft	ft			%
South: Theodore St NB											
170.0*	15.0*	215.0*	65.0*	30.0*	1	2	13.00*	1600		NA	0.0U

North: Theodore St SB											
170.0*	30.0*	215.0*	65.0*	30.0*	2	2	13.00*	1600		NA	0.0U

West: WB Ramp											
170.0*	15.0*	200.0*	65.0*	30.0*	1	2	13.00*	1600		NA	0.0U

Roundabout Capacity Model: US HCM 6

* These parameters do not affect estimated capacity values in the HCM 6 Capacity Model.

NA Not Applicable (single Site analysis or unconnected Site in Network analysis).

U User-specified Extra Bunching

[Go to Table Links \(Top\)](#)

Roundabout Circulating / Exiting Stream Parameters

Site: Roundabout3 (Theodore St & WB Ramps) - Int_E+P PM - HCM6

Site ID: 1
Roundabout

Dest	Turn	Lane No.	Lane Type	Opng Flow veh/h	HVE pcu/veh	Adj. Flow pcu/h	%Near Lane Only	%Exit Flow Incl.	Cap. Const. Effect	O-D Factor	Aver Speed mph	In-Bunch Headway sec	Prop. Bunched

South: Theodore St NB													
W	L2	1	Dominant	12	1.00	12	0.0	0.0	N	-	18.7	0.00	0.000
W	L2	2	Subdominant	12	1.00	12	0.0	0.0	N	-	18.7	0.00	0.000
N	T1	2	Subdominant	12	1.00	12	0.0	0.0	N	-	18.7	0.00	0.000

North: Theodore St SB													
S	T1	1	Dominant	43	1.00	43	0.0	0.0	N	-	18.7	0.00	0.000
W	R2	2	Excl. Slip	43	1.00	43	0.0	0.0	N	-	18.7	0.00	0.000

West: WB Ramp													
N	L2	1	Dominant	31	1.03	32	0.0	0.0	N	-	30.0	0.00	0.000
S	R2	2	Continuous										

Roundabout Capacity Model: US HCM 6													

[Go to Table Links \(Top\)](#)

Roundabout Gap Acceptance Parameters

Site: Roundabout3 (Theodore St & WB Ramps) - Int_E+P PM - HCM6

Site ID: 1
Roundabout

Dest	Turn	Lane No.	Lane Type	In-Bunch Headway sec	Prop. Bunched	Priority Sharing	HVE for Entry	Critical Gap		Follow-up Headway sec
				sec				Headway sec	Dist ft	sec

South: Theodore St NB										
Model Calibration Factor (HCM 6): 1.00										
Entry/Circ. Flow Adjustment (HCM 6): None										
W	L2	1	Dominant	0.00	0.000	N	1.00	4.54	124.9	2.54
W	L2	2	Subdominant	0.00	0.000	N	1.00	4.54	124.9	2.54
N	T1	2	Subdominant	0.00	0.000	N	1.05	4.54	124.9	2.54

 North: Theodore St SB
 Model Calibration Factor (HCM 6): 1.00
 Entry/Circ. Flow Adjustment (HCM 6): None

S	T1	1	Dominant	0.00	0.000	N	1.03	4.33	118.6	2.54
W	R2	2	Excl. Slip	0.00	0.000	N	1.00	4.33	118.6	2.54

West: WB Ramp
 Model Calibration Factor (HCM 6): 1.00
 Entry/Circ. Flow Adjustment (HCM 6): None

N	L2	1	Dominant	0.00	0.000	N	1.00	4.54	199.8	2.54
S	R2	2	Continuous							

Roundabout Capacity Model: US HCM 6

Dist (Distance): Spacing, i.e. distance between the front ends of two successive vehicles across all lanes in the circulating or exiting stream

[Go to Table Links \(Top\)](#)

Roundabout Flow Rates

Site: Roundabout3 (Theodore St & WB Ramps) - Int_E+P PM - HCM6

Site ID: 1
 Roundabout

CIRCULATING LANE FLOW RATES

Lane No.	Circulating Flow Rate		
	veh/h	pcu/h	Percent

South: Theodore St NB			
1	12	12	100.0%
Total	12	12	

North: Theodore St SB			
1	37	37	85.0%
2	7	7	15.0%
Total	44	44	

West: WB Ramp			
1	31	32	100.0%
Total	31	32	

The US HCM 6 roundabout capacity model option is in use. This model considers only the total circulating flow and not the flow rates in individual circulating lanes. To model the effects of flow distribution in circulating lanes on the entry capacity results, you should use the SIDRA Standard roundabout capacity model.

APPROACH LANE FLOW RATES

Lane No.	Approach Flows (veh/h)		
	Out	To Downst	Total

South: Theodore St NB			
1	0	37	37
2	29	7	36
Total	29	44	73

North: Theodore St SB			
1	0	31	31
2	19	0	19
Total	19	31	50

West: WB Ramp			
1	0	12	12
2	19	0	19
Total	19	12	31

[Go to Table Links \(Top\)](#)

Movements

Intersection Negotiation and Travel Data

Site: Roundabout3 (Theodore St & WB Ramps) - Int_E+P PM - HCM6

Site ID: 1
Roundabout

TRAVEL SPEED, TRAVEL DISTANCE AND TRAVEL TIME

From Approach	To Exit	Turn	Running Speed mph	Travel Speed mph	Travel Distance ft	Travel Time s	Total Dem Flows veh-mi/h	Travel Distance Arv Flows veh-mi/h	Tot.Trav. Time veh-h/h
South: Theodore St NB									
	West	L2	36.7	35.4	3551.4#	68.4#	29.2	29.2	0.8
	North	T1	39.1	37.5	3451.2#	62.7#	18.9	18.9	0.5
North: Theodore St SB									
	South	T1	39.6	38.2	3402.3#	60.6#	20.0	20.0	0.5
	West	R2	37.7	36.4	3282.9#	61.5#	11.8	11.8	0.3
West: WB Ramp									
	North	L2	36.1	35.0	3572.1#	69.5#	8.1	8.1	0.2
	South	R2	38.1	38.1	3276.9#	58.6#	11.8	11.8	0.3
ALL VEHICLES:			38.0	36.7	3436.8#	63.8#	99.9	99.9	2.7

"Running Speed" is the average speed excluding stopped periods.

Travel Time values include cruise times and intersection delays including acceleration, deceleration and idling delays.

Travel Distance and Travel Time values include travel on the External Exit section based on the Exit Distance or user-specified Downstream Distance value as applicable.

INTERSECTION NEGOTIATION DATA

From Approach	To Exit	Turn	Negn Radius ft	Negn Speed mph	Negn Dist ft	App Dist ft	Exit Dist ft	Downstr Dist ft
South: Theodore St NB								
	West	L2	94.0	18.7	369.1	1600	488	NA
	North	T1	328.1	30.0	223.3	1600	488	NA

North: Theodore St SB								
	South	T1	328.1	30.0	202.3	1600	488	NA
	West	R2	198.0	24.8	82.9	1600	488	NA
West: WB Ramp								
	North	L2	94.8	18.7	372.1	1600	488	NA
	South	R2	222.3	25.9	76.9	1600	488	NA

Maximum Negotiation (Design) Speed = 30.0 mph

NA Downstream Distance does not apply if:

- Exit is an internal leg of a network
- "Program" option was specified
- Distance specified was less than the Exit Negotiation Distance
- Distance specified was greater than the exit leg length

MOVEMENT SPEEDS AND GEOMETRIC DELAY

Mov ID	Turn	App. Speeds		Exit Speeds		Queue Move-up Speed	Geom Delay
		Cruise mph	Negn mph	Negn mph	Cruise mph		
South: Theodore St NB							
3	L2	40.0	18.7	18.7	40.0	32.3	0.0
8	T1	40.0	30.0	30.0	40.0	44.9	0.0
North: Theodore St SB							
4	T1	40.0	30.0	30.0	40.0	48.3	0.0
14	R2	40.0	24.8	24.8	40.0	39.9	0.0
West: WB Ramp							
5	L2	40.0	18.7	18.7	40.0	30.2	0.0
12	R2	40.0	25.9	25.9	40.0	41.7	0.0

HCM Delay Formula option used: Geometric Delay is not included in Control Delay.

[Go to Table Links \(Top\)](#)

Movement Capacity and Performance Parameters
 Site: Roundabout3 (Theodore St & WB Ramps) - Int_E+P PM - HCM6

Site ID: 1
 Roundabout

MOVEMENT CAPACITY PARAMETERS

Mov ID	Turn	Mov Cl.	Arv Flow	Opng Flow	Movement Adjust. Flow	Total Cap.	Prac. Deg. xp	Prac. Spare Cap. %	Deg. Satn x
South: Theodore St NB									
3	L2	#	43	12	12	1653	0.85	3131	0.026*
8	T1	#	29	12	12	1102	0.85	3131	0.026*
North: Theodore St SB									
4	T1	#	31	43	43	1329	0.85	3543	0.023
14	R2	#	19	43	43	1368	0.85	6022	0.014

West: WB Ramp										
5	L2	#	12	31	32	1379	0.85	9670	0.009	
12	R2	#	19	31	32	1509	0.98	7681	0.013	

* Maximum degree of saturation
Combined Movement Capacity parameters are shown for all Movement Classes.

MOVEMENT PERFORMANCE

Mov ID	Turn	Total Delay (veh-h/h)	Total Delay (pers-h/h)	Aver. Delay (sec)	Eff. Stop Rate	Total Stops	Perf. Index	Tot.Trav. Distance (veh-mi/h)	Tot.Trav. Time (veh-h/h)	Aver. Speed (mph)
South: Theodore St NB										
3	L2	0.03	0.04	2.8	0.01	0.5	0.81	29.2	0.8	35.4
8	T1	0.02	0.03	2.9	0.01	0.3	0.58	18.9	0.5	37.5
North: Theodore St SB										
4	T1	0.02	0.03	2.9	0.03	1.1	0.60	20.0	0.5	38.2
14	R2	0.01	0.02	2.7	0.03	0.6	0.33	11.8	0.3	36.4
West: WB Ramp										
5	L2	0.01	0.01	2.7	0.02	0.3	0.23	8.1	0.2	35.0
12	R2	0.00	0.00	0.0	0.00	0.0	0.29	11.8	0.3	38.1

[Go to Table Links \(Top\)](#)

Fuel Consumption, Emissions and Cost
Site: Roundabout3 (Theodore St & WB Ramps) - Int_E+P PM - HCM6

Site ID: 1
Roundabout

FUEL CONSUMPTION, EMISSIONS AND COST (TOTAL)

Mov ID	Turn	Cost Total (\$/h)	Fuel Total (gal/h)	CO2 Total (kg/h)	CO Total (kg/h)	HC Total (kg/h)	NOX Total (kg/h)
South: Theodore St NB							
3	L2	13.01	1.0	9.1	0.05	0.003	0.009
8	T1	7.70	0.7	6.3	0.03	0.002	0.014
		20.71	1.7	15.4	0.08	0.005	0.022
North: Theodore St SB							
4	T1	7.62	0.7	6.2	0.03	0.002	0.011
14	R2	4.47	0.4	3.4	0.02	0.001	0.003
		12.09	1.1	9.6	0.05	0.003	0.014
West: WB Ramp							
5	L2	3.73	0.3	2.5	0.01	0.001	0.002
12	R2	5.34	0.6	5.3	0.02	0.001	0.020
		9.07	0.9	7.8	0.03	0.002	0.022
INTERSECTION:		41.87	3.7	32.9	0.16	0.011	0.059

FUEL CONSUMPTION, EMISSIONS AND COST (RATE)

Mov ID	Turn	Cost Rate \$/mi	Fuel Eff. mpg	CO2 Rate g/km	CO Rate g/km	HC Rate g/km	NOX Rate g/km
South: Theodore St NB							
3	L2	0.28	28.8	192.3	1.04	0.071	0.184
8	T1	0.25	26.9	208.0	0.96	0.062	0.451
		0.27	28.0	198.5	1.01	0.067	0.289
North: Theodore St SB							
4	T1	0.24	28.8	193.4	0.96	0.060	0.354
14	R2	0.24	30.8	179.7	1.02	0.065	0.145
		0.24	29.5	188.3	0.98	0.062	0.277
West: WB Ramp							
5	L2	0.29	28.4	194.9	1.06	0.074	0.161
12	R2	0.28	20.4	278.1	0.97	0.062	1.046
		0.28	23.0	244.2	1.00	0.067	0.685
INTERSECTION:		0.26	27.3	204.4	1.00	0.066	0.364

[Go to Table Links \(Top\)](#)

Lanes

Lane Performance and Capacity Information

Site: Roundabout3 (Theodore St & WB Ramps) - Int_E+P PM - HCM6

Site ID: 1
Roundabout

LANE PERFORMANCE

Lane No.	Flow veh/h	Cap veh/h	Deg. Satn x	Aver. Delay sec	Eff. Stop Rate	Q u e u e		Lane Length ft
						95% Back veh	ft	
South: Theodore St NB								
1	37	1405	0.026	2.8	0.01	0.1	2.6	1600.0
2	36	1350	0.026	2.9	0.01	0.1	2.6	1600.0
North: Theodore St SB								
1	31	1329	0.023	2.9	0.03	0.1	2.1	1600.0
2	19	1368	0.014	2.7	0.03	0.1	1.3	1600.0
West: WB Ramp								
1	12	1379	0.009	2.7	0.02	0.0	0.8	1600.0
2	19	1509	0.013	0.0	0.00			1600.0

LANE FLOW AND CAPACITY INFORMATION

Lane No.	Total Arv Flow veh/h	Min Cap veh/h	Tot Cap veh/h	Deg. Satn x	Lane Util %

South: Theodore St NB					
1	37	37	1405	0.026	100
2	36	36	1350	0.026	100

North: Theodore St SB					
1	31	31	1329	0.023	100
2	19	19	1368	0.014	100

West: WB Ramp					
1	12	12	1379	0.009	100
2	19	19	1509	0.013	100

The capacity values of Continuous Lanes are obtained by adjusting the basic saturation flow for lane width, grade, movement class and turning vehicle effects. Saturation flow scale applies if specified.

[Go to Table Links \(Top\)](#)

Lane, Approach and Intersection Performance Site: Roundabout3 (Theodore St & WB Ramps) - Int_E+P PM - HCM6

Site ID: 1
Roundabout

Lane No.	Arrival Flow (veh/h)	%HV	Adj. Basic Satf.	Deg Sat x	Aver. Delay sec	Longest Queue ft	Lane Length ft

South: Theodore St NB							
1	37	0		0.026	2.8	3	1600
2	36	4		0.026	2.9	3	1600
	72	2		0.026	2.8	3	

North: Theodore St SB							
1	31	3		0.023	2.9	2	1600
2	19	0		0.014	2.7	1	1600
	50	2		0.023	2.8	2	

West: WB Ramp							
1	12	0		0.009	2.7	1	1600
2	19	11	1975	0.013	0.0		1600
	31	7		0.013	1.0	1	
=====							
ALL VEHICLES							
	Total Flow	% HV		Max X	Aver. Delay	Max Queue	
	153	3		0.026	2.5	3	
=====							

Peak flow period = 15 minutes.

Queue values in this table are 95% queue (feet)
Note: Basic Saturation Flows at roundabouts or sign-controlled intersections apply only to continuous lanes.

[Go to Table Links \(Top\)](#)

Driver Characteristics
 Site: Roundabout3 (Theodore St & WB Ramps) - Int_E+P PM - HCM6

Site ID: 1
 Roundabout

Lane No.	Satn Speed mph	Satn Flow veh/h	Satn Hdwy sec	Satn Spacing ft	Average Queue Space ft	Driver Response Time sec

South: Theodore St NB						
1	18.7	1420	2.54	69.50	25.00	1.62
2	27.9	1420	2.54	103.76	25.82	1.90

North: Theodore St SB						
1	30.0	1420	2.54	111.48	25.60	1.95
2	24.8	1420	2.54	92.14	25.00	1.85

West: WB Ramp						
1	18.7	1420	2.54	69.71	25.00	1.63
2	NA - Continuous Movement					

Saturation Flow and Saturation Headway are derived from follow-up headway.

[Go to Table Links \(Top\)](#)

Lane Delays
 Site: Roundabout3 (Theodore St & WB Ramps) - Int_E+P PM - HCM6

Site ID: 1
 Roundabout

LANE DELAYS

Lane No.	Deg. Satn x	% Arv During Green	Prog. Factor	Delay (seconds/veh)									
				Min Del dm	Stop-line 1st d1	2nd d2	Total dSL	Acc. Dec. dn	Queuing Total dq	MvUp dqm	Stopd (Idle) di	Geom dig	Control dic

South: Theodore St NB													
1	0.026	NA	NA	2.6	2.7	0.1	2.8	5.5	2.4	0.0	2.4	0.0	2.8
2	0.026	NA	NA	2.7	2.8	0.1	2.9	6.5	2.5	0.0	2.5	0.0	2.9

North: Theodore St SB													
1	0.023	NA	NA	2.7	2.8	0.1	2.9	7.2	2.0	0.0	2.0	0.0	2.9
2	0.014	NA	NA	2.6	2.7	0.0	2.7	5.1	2.1	0.0	2.1	0.0	2.7

West: WB Ramp													
1	0.009	NA	NA	2.6	2.7	0.0	2.7	5.5	2.1	0.0	2.1	0.0	2.7
2	0.013					0.0					0.0	0.0	

HCM Delay Formula option used (Exclude Geometric Delay option applies). Control

Delay does not include Geometric Delay, and Stop-line Delay is treated as being same as Control Delay.

dm: Minimum delay for gap acceptance cases

dSL: Stop-line delay (=dl+d2)

dn: Average stop-start delay for all vehicles queued and unqueued

dq: Queuing delay (the part of the stop-line delay that includes stopped delay and queue move-up delay)

dqm: Queue move-up delay

di: Stopped delay (stopped (idling) time at near-zero speed)

dig: Geometric delay

dic: Control delay

[Go to Table Links \(Top\)](#)

Lane Queues

Site: Roundabout3 (Theodore St & WB Ramps) - Int_E+P PM - HCM6

Site ID: 1
Roundabout

BACK OF QUEUE (VEHICLES)

Lane No.	Deg. Satn x	% Arv During Green	Prog. Factor	Ovrfl. Queue No	Back of Queue (veh)				Queue Stor. Ratio		Prob. Block %	Prob. SL Ov. %
					Nb1	Nb2	Nb	95%	Av.	95%		
South: Theodore St NB												
1	0.026	NA	NA	0.0	0.0	0.0	0.0	0.1	0.00	0.00	0.0	NA
2	0.026	NA	NA	0.0	0.0	0.0	0.0	0.1	0.00	0.00	0.0	NA
North: Theodore St SB												
1	0.023	NA	NA	0.0	0.0	0.0	0.0	0.1	0.00	0.00	0.0	NA
2	0.014	NA	NA	0.0	0.0	0.0	0.0	0.1	0.00	0.00	0.0	NA
West: WB Ramp												
1	0.009	NA	NA	0.0	0.0	0.0	0.0	0.0	0.00	0.00	0.0	NA

SIDRA Standard models are used for Back of Queue estimation since HCM only gives Cycle-Average Queues for unsignalised intersections.

BACK OF QUEUE (DISTANCE)

Lane No.	Deg. Satn x	% Arv During Green	Prog. Factor	Ovrfl. Queue No	Back of Queue (ft)				Queue Stor. Ratio		Prob. Block %	Prob. SL Ov. %
					Nb1	Nb2	Nb	95%	Av.	95%		
South: Theodore St NB												
1	0.026	NA	NA	0.0	1.0	0.0	1.0	2.6	0.00	0.00	0.0	NA
2	0.026	NA	NA	0.0	1.0	0.0	1.0	2.6	0.00	0.00	0.0	NA
North: Theodore St SB												
1	0.023	NA	NA	0.0	0.9	0.0	0.9	2.1	0.00	0.00	0.0	NA
2	0.014	NA	NA	0.0	0.5	0.0	0.5	1.3	0.00	0.00	0.0	NA
West: WB Ramp												
1	0.009	NA	NA	0.0	0.3	0.0	0.3	0.8	0.00	0.00	0.0	NA

SIDRA Standard models are used for Back of Queue estimation since HCM only gives Cycle-Average Queues for unsignalised intersections.

OTHER QUEUE RESULTS (VEHICLES)

Lane No.	Deg. Satn	% Arv During Green	Prog. Factor	Ovrfl. Queue No	Cyc-Av. Nc	Queue 95%
	x					
South: Theodore St NB						
1	0.026	NA	NA	0.0	0.0	0.1
2	0.026	NA	NA	0.0	0.0	0.1
North: Theodore St SB						
1	0.023	NA	NA	0.0	0.0	0.0
2	0.014	NA	NA	0.0	0.0	0.0
West: WB Ramp						
1	0.009	NA	NA	0.0	0.0	0.0

HCM Delay Formula option used:

Cycle-Average Queue is calculated using average delay from the HCM equation. (i.e. HCM delays are treated as stop-line delays for this purpose).

OTHER QUEUE RESULTS (DISTANCE)

Lane No.	Deg. Satn	% Arv During Green	Prog. Factor	Ovrfl. Queue No	Cyc-Av. Nc	Queue 95%
	x					
South: Theodore St NB						
1	0.026	NA	NA	0.0	0.7	1.3
2	0.026	NA	NA	0.0	0.7	1.3
North: Theodore St SB						
1	0.023	NA	NA	0.0	0.6	1.2
2	0.014	NA	NA	0.0	0.4	0.7
West: WB Ramp						
1	0.009	NA	NA	0.0	0.2	0.4

HCM Delay Formula option used:

Cycle-Average Queue is calculated using average delay from the HCM equation. (i.e. HCM delays are treated as stop-line delays for this purpose).

[Go to Table Links \(Top\)](#)

Lane Queue Percentiles

Site: Roundabout3 (Theodore St & WB Ramps) - Int_E+P PM - HCM6

Site ID: 1
Roundabout

LANE QUEUE PERCENTILES (VEHICLES)

Lane No.	Deg. Satn	Percentile Back of Queue (veh)						
	x	50%	70%	85%	90%	95%	98%	100%
South: Theodore St NB								

1	0.026	0.0	0.1	0.1	0.1	0.1	0.1	0.1
2	0.026	0.0	0.1	0.1	0.1	0.1	0.1	0.1

North: Theodore St SB

1	0.023	0.0	0.0	0.1	0.1	0.1	0.1	0.1
2	0.014	0.0	0.0	0.0	0.0	0.1	0.1	0.1

West: WB Ramp

1	0.009	0.0	0.0	0.0	0.0	0.0	0.0	0.0
---	-------	-----	-----	-----	-----	-----	-----	-----

SIDRA Standard models are used for Back of Queue estimation since HCM only gives Cycle-Average Queues for unsignalised intersections.

LANE QUEUE PERCENTILES (DISTANCE)

Lane No.	Deg. Satn x	Percentile Back of Queue (feet)						
		50%	70%	85%	90%	95%	98%	100%

South: Theodore St NB

1	0.026	1.0	1.4	1.9	2.2	2.6	2.9	3.1
2	0.026	1.0	1.3	1.9	2.2	2.6	2.9	3.1

North: Theodore St SB

1	0.023	0.9	1.1	1.6	1.8	2.1	2.4	2.5
2	0.014	0.5	0.7	0.9	1.1	1.3	1.4	1.5

West: WB Ramp

1	0.009	0.3	0.4	0.6	0.7	0.8	0.9	1.0
---	-------	-----	-----	-----	-----	-----	-----	-----

SIDRA Standard models are used for Back of Queue estimation since HCM only gives Cycle-Average Queues for unsignalised intersections.

[Go to Table Links \(Top\)](#)

Lane Stops
Site: Roundabout3 (Theodore St & WB Ramps) - Int_E+P PM - HCM6

Site ID: 1
Roundabout

Lane No.	Deg. Satn x	% Arv During Green	Prog. Factor	-- Effective Stop Rate --				Total Stops H	Queue Move-up Rate hqm	Total Queue Move-ups Hqm	Prop. Queued pq	Aver. Num. of Cycles to Depart
				he1	he2	Geom. hig	Overall h					
South: Theodore St NB												
1	0.026	NA	NA	0.01	0.00	0.00	0.01	0.4	0.00	0.0	0.06	0.06
2	0.026	NA	NA	0.01	0.00	0.00	0.01	0.4	0.00	0.0	0.06	0.06
North: Theodore St SB												
1	0.023	NA	NA	0.03	0.00	0.00	0.03	1.1	0.00	0.0	0.12	0.12
2	0.014	NA	NA	0.03	0.00	0.00	0.03	0.6	0.00	0.0	0.12	0.12
West: WB Ramp												
1	0.009	NA	NA	0.02	0.00	0.00	0.02	0.3	0.00	0.0	0.10	0.10
2	0.013	NA	NA			0.00	0.00	0.0				

hig is the average value for all movements in a shared lane
hqm is average queue move-up rate for all vehicles queued and unqueued

[Go to Table Links \(Top\)](#)

Flow Rates

Origin-Destination Flow Rates (Total)

Site: Roundabout3 (Theodore St & WB Ramps) - Int_E+P PM - HCM6

Site ID: 1
Roundabout

TOTAL FLOW RATES for All Movement Classes (veh/h)

From SOUTH To:	W	N	
Turn:	L2	T1	TOT
Flow Rate	43.5	29.0	72.5
%HV (all designations)	0.0	5.0	2.0

From NORTH To:	S	W	
Turn:	T1	R2	TOT
Flow Rate	31.0	19.0	50.0
%HV (all designations)	3.0	0.0	1.9

From WEST To:	N	S	
Turn:	L2	R2	TOT
Flow Rate	12.0	19.0	31.0
%HV (all designations)	0.0	11.0	6.7

Flow rates shown above are Arrival Flow Rates (veh/h) based on the following input specifications:
Unit Time for Volumes = 60 minutes
Peak Flow Period = 15 minutes
Effects of Volume Factors (Peak Flow Factor, Flow Scale, Growth Rate) are included.
Arrival Flow Rates may be less than Demand Flow Rates if capacity constraint applies in network analysis.

[Go to Table Links \(Top\)](#)

Origin-Destination Flow Rates by Movement Class

Site: Roundabout3 (Theodore St & WB Ramps) - Int_E+P PM - HCM6

Site ID: 1
Roundabout

FLOW RATES for Light Vehicles (veh/h)

From SOUTH To:	W	N	
Turn:	L2	T1	TOT

Flow Rate	43.5	27.5	71.0
Mov Class %	100.0	95.0	98.0
Flow Scale	1.00	1.00	-
Peak Flow Factor	0.69	0.69	-
Residual Demand	0.0	0.0	0.0

From NORTH To:	S	W	
Turn:	T1	R2	TOT

Flow Rate	30.1	19.0	49.1
Mov Class %	97.0	100.0	98.1
Flow Scale	1.00	1.00	-
Peak Flow Factor	1.00	1.00	-
Residual Demand	0.0	0.0	0.0

From WEST To:	N	S	
Turn:	L2	R2	TOT

Flow Rate	12.0	16.9	28.9
Mov Class %	100.0	89.0	93.3
Flow Scale	1.00	1.00	-
Peak Flow Factor	1.00	1.00	-
Residual Demand	0.0	0.0	0.0

FLOW RATES for Heavy Vehicles (veh/h)

From SOUTH To:	W	N	
Turn:	L2	T1	TOT

Flow Rate	0.0	1.4	1.4
Mov Class %	0.0	5.0	2.0
Flow Scale	1.00	1.00	-
Peak Flow Factor	0.69	0.69	-
Residual Demand	0.0	0.0	0.0

From NORTH To:	S	W	
Turn:	T1	R2	TOT

Flow Rate	0.9	0.0	0.9
Mov Class %	3.0	0.0	1.9
Flow Scale	1.00	1.00	-
Peak Flow Factor	1.00	1.00	-
Residual Demand	0.0	0.0	0.0

From WEST To:	N	S	
Turn:	L2	R2	TOT

Flow Rate	0.0	2.1	2.1
Mov Class %	0.0	11.0	6.7
Flow Scale	1.00	1.00	-
Peak Flow Factor	1.00	1.00	-
Residual Demand	0.0	0.0	0.0

Flow rates shown above are Arrival Flow Rates (veh/h) based on the following input specifications:
Unit Time for Volumes = 60 minutes
Peak Flow Period = 15 minutes
Effects of Volume Factors (Peak Flow Factor, Flow Scale, Growth Rate) are included.
Arrival Flow Rates may be less than Demand Flow Rates if capacity constraint applies in network analysis.

[Go to Table Links \(Top\)](#)

Lane Flow Rates
Site: Roundabout3 (Theodore St & WB Ramps) - Int_E+P PM - HCM6

Site ID: 1
Roundabout

LANE FLOW RATES AT STOP LINE (veh/h)

From SOUTH To:	W	N	
Turn:	L2	T1	TOT

Lane 1			
LV	36.9	*	36.9
Total	36.9	*	36.9
Lane 2			
LV	6.5	27.5	34.1
HV	*	1.4	1.4
Total	6.5	29.0	35.5

Approach	43.5	29.0	72.5

From NORTH To:	S	W	
Turn:	T1	R2	TOT

Lane 1			
LV	30.1	*	30.1
HV	0.9	*	0.9
Total	31.0	*	31.0
Lane 2			
LV	*	19.0	19.0
Total	*	19.0	19.0

Approach	31.0	19.0	50.0

From WEST To:	N	S	
Turn:	L2	R2	TOT

Lane 1			
LV	12.0	*	12.0
Total	12.0	*	12.0
Lane 2			
LV	*	16.9	16.9
HV	*	2.1	2.1
Total	*	19.0	19.0

Approach	12.0	19.0	31.0

* Movement not allocated to the lane

EXIT LANE FLOW RATES

Movement Class:	LV	HV	TOT

Exit: SOUTH			
Lane: 1	30.1	0.9	31.0
Lane: 2	16.9	2.1	19.0
Total	47.0	3.0	50.0

Exit: NORTH			
Lane: 1	39.5	1.4	41.0
Total	39.5	1.4	41.0

Exit: WEST			
Lane: 1	36.9	*	36.9
Lane: 2	25.5	*	25.5
Total	62.5	*	62.5

* Movement not allocated to the lane

DOWNSTREAM LANE FLOW RATES FOR EXIT ROADS

Movement Class:	LV	HV	TOT
Exit: SOUTH			
Lane: 1	30.1	0.9	31.0
Lane: 2	16.9	2.1	19.0
Total	47.0	3.0	50.0
Exit: NORTH			
Lane: 1	39.5	1.4	41.0
Total	39.5	1.4	41.0
Exit: WEST			
Lane: 1	36.9	*	36.9
Lane: 2	25.5	*	25.5
Total	62.5	*	62.5

* Movement not allocated to the lane

Flow rates shown above are Arrival Flow Rates (veh/h) based on the following input specifications:
Unit Time for Volumes = 60 minutes
Peak Flow Period = 15 minutes
Effects of Volume Factors (Peak Flow Factor, Flow Scale, Growth Rate) are included.
Arrival Flow Rates may be less than Demand Flow Rates if capacity constraint applies in network analysis.

[Go to Table Links \(Top\)](#)

Other

Parameter Settings Summary

Site: Roundabout3 (Theodore St & WB Ramps) - Int_E+P PM - HCM6

Site ID: 1
Roundabout

* Basic Parameters:
Intersection Type: Roundabout
US HCM 6 Roundabout Capacity Model used
Driving on the right-hand side of the road
Input data specified in US units
Model Defaults: US HCM (Customary)
Peak Flow Period (for performance): 15 minutes
Unit time (for volumes): 60 minutes.
HCM Delay Model option used
HCM Queue Model option used
Level of Service based on: Delay and v/c (HCM 6)
Queue percentile: 95%

[Go to Table Links \(Top\)](#)

Diagnostics

Site: Roundabout3 (Theodore St & WB Ramps) - Int_E+P PM - HCM6

Site ID: 1
Roundabout

Lane Flow-Capacity Iterations:

Site Model Variability Index (Iterations 3 to N): 0.0%
Number of Iterations: 3 (Maximum: 10)

Other Diagnostic Messages (if any):

[Go to Table Links \(Top\)](#)

Appendix I-2

Intersection LOS Worksheets for Alternative 6, 2025

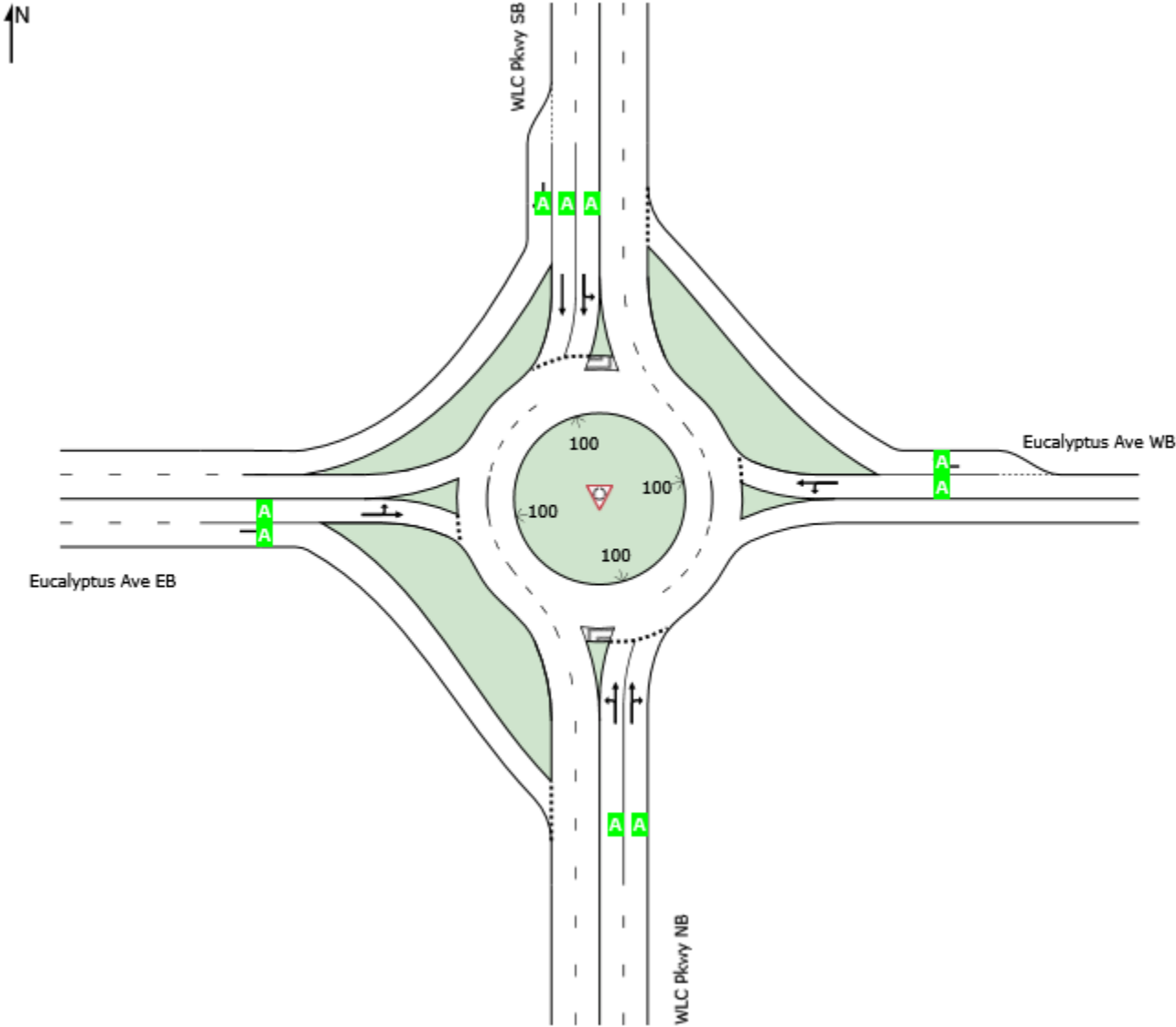
LANE LEVEL OF SERVICE

Lane Level of Service

 Site: 1 [Roundabout1 (WLC Pkwy & Eucalyptus Ave) - 2025AM - HCM6]

Site Category: (None)
Roundabout

LOS	Approaches				Intersection
	South East	North West	North West	South East	
A	A	A	A	A	A



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: Same as Sign Control.

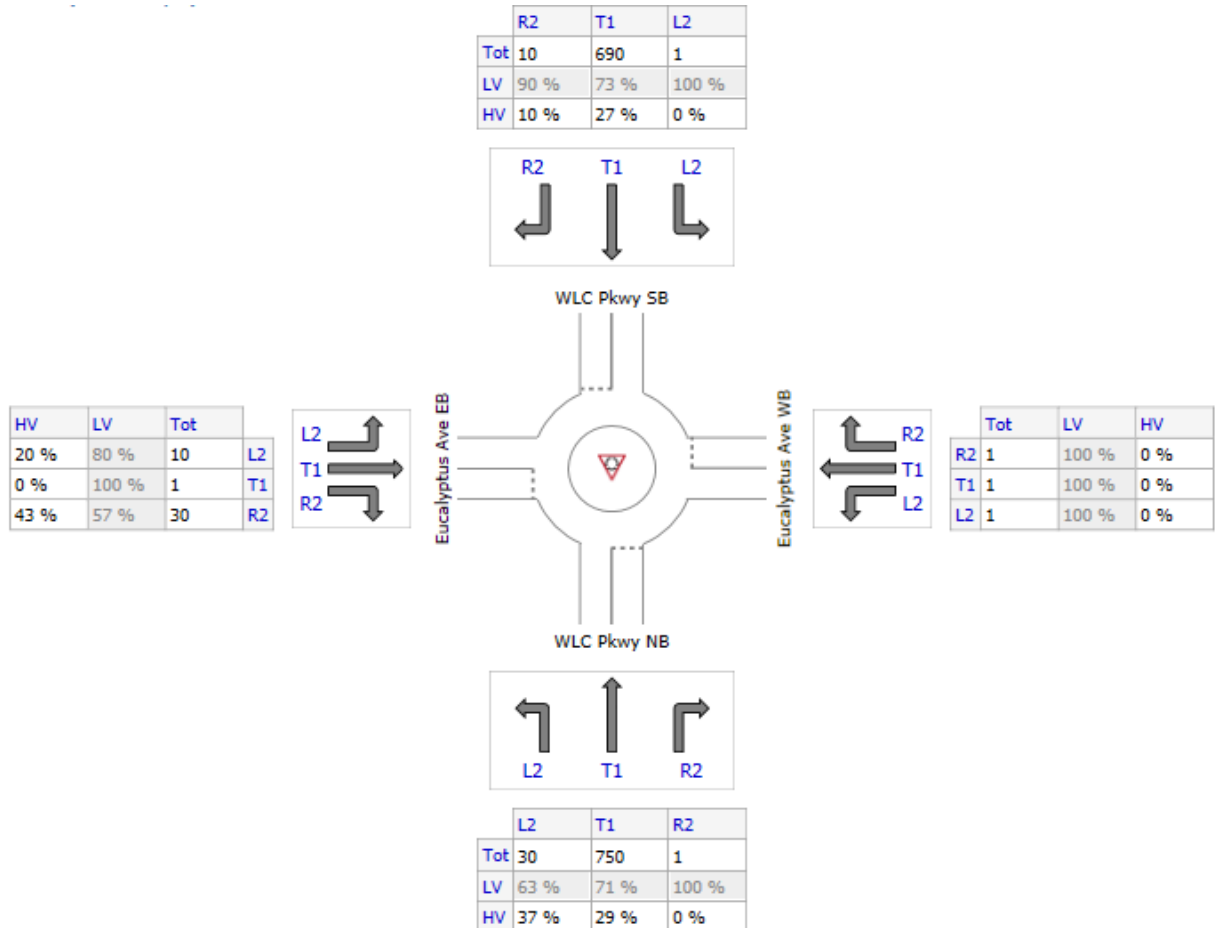
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).


Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

VOLUMES








DETAILED OUTPUT

 Site: 1 [Roundabout1 (WLC Pkwy & Eucalyptus Ave) - 2025AM - HCM6]

Site Category: (None)
Roundabout

OUTPUT TABLE LINKS

-  Roundabouts
 - Roundabout Basic Parameters
 - Roundabout Circulating / Exiting Stream Parameters
 - Roundabout Gap Acceptance Parameters
 - Roundabout Flow Rates
-  Movements
 - Intersection Negotiation and Travel Data
 - Movement Capacity and Performance Parameters
 - Fuel Consumption, Emissions and Cost
-  Lanes
 - Lane Performance and Capacity Information
 - Lane, Approach and Intersection Performance
 - Driver Characteristics
 - Lane Delays
 - Lane Queues
 - Lane Queue Percentiles
 - Lane Stops
-  Flow Rates
 - Origin-Destination Flow Rates (Total)
 - Origin-Destination Flow Rates by Movement Class
 - Lane Flow Rates
-  Other
 - Parameter Settings Summary
 - Diagnostics

Roundabouts

Roundabout Basic Parameters Site: Roundabout1 (WLC Pkwy & Eucalyptus Ave) - 2025AM - HCM6

Site ID: 1
Roundabout

Central Island Diam	Circ Width	Insc Diam.	Entry Radius	Entry Angle	Circ Lanes	Entry Lanes	Av.Entry Lane Width	App Dist	Prop Upstr	Queued Signal	Extra Bunching
ft	ft	ft	ft	deg			ft	ft			%
South: WLC Pkwy NB	100.0*	30.0*	160.0*	65.0*	30.0*	1	2	13.00*	1600	NA	0.0U

East: Eucalyptus Ave WB												
100.0*	30.0*	160.0*	65.0*	30.0*	2	2	13.00*	1600		NA	0.0U	

North: WLC Pkwy SB												
100.0*	30.0*	160.0*	65.0*	30.0*	1	3	13.00*	1600		NA	0.0U	

West: Eucalyptus Ave EB												
100.0*	30.0*	160.0*	65.0*	30.0*	2	2	13.00*	1600		NA	0.0U	

Roundabout Capacity Model: US HCM 6

* These parameters do not affect estimated capacity values in the HCM 6 Capacity Model.

NA Not Applicable (single Site analysis or unconnected Site in Network analysis).

U User-specified Extra Bunching

[Go to Table Links \(Top\)](#)

Roundabout Circulating / Exiting Stream Parameters Site: Roundabout1 (WLC Pkwy & Eucalyptus Ave) - 2025AM - HCM6

Site ID: 1
Roundabout

Dest	Turn	Lane No.	Lane Type	Opng Flow veh/h	HVE pcu/veh	Adj. Flow pcu/h	%Near Lane Only	%Exit Flow Incl.	Cap. Const. Effect	O-D Factor	Aver Speed mph	In-Bunch Headway sec	Prop. Bunched

South: WLC Pkwy NB													
W	L2	1	Subdominant	12	1.17	14	0.0	0.0	N	-	16.7	0.00	0.000
N	T1	1	Subdominant	12	1.17	14	0.0	0.0	N	-	16.7	0.00	0.000
N	T1	2	Dominant	12	1.17	14	0.0	0.0	N	-	16.7	0.00	0.000
E	R2	2	Dominant	12	1.17	14	0.0	0.0	N	-	16.7	0.00	0.000

East: Eucalyptus Ave WB													
S	L2	1	Dominant	997	1.29	1289	0.0	0.0	N	-	24.0	0.00	0.000
W	T1	1	Dominant	997	1.29	1289	0.0	0.0	N	-	24.0	0.00	0.000
N	R2	2	Excl. Slip	959	1.29	1237	0.0	0.0	N	-	24.3	0.00	0.000

North: WLC Pkwy SB													
E	L2	1	Subdominant	40	1.35	54	0.0	0.0	N	-	16.2	0.00	0.000
S	T1	1	Subdominant	40	1.35	54	0.0	0.0	N	-	16.2	0.00	0.000
S	T1	2	Dominant	40	1.35	54	0.0	0.0	N	-	16.2	0.00	0.000
W	R2	3	Continuous										

West: Eucalyptus Ave EB													
N	L2	1	Dominant	692	1.27	878	0.0	0.0	N	-	24.4	0.00	0.000
E	T1	1	Dominant	692	1.27	878	0.0	0.0	N	-	24.4	0.00	0.000
S	R2	2	Excl. Slip	691	1.27	877	0.0	0.0	N	-	24.4	0.00	0.000

Roundabout Capacity Model: US HCM 6

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Roundabout Gap Acceptance Parameters Site: Roundabout1 (WLC Pkwy & Eucalyptus Ave) - 2025AM - HCM6

Site ID: 1
Roundabout

Dest	Turn	Lane No.	Lane Type	In-Bunch Headway sec	Prop. Bunched	Priority Sharing	HVE for Entry	Critical Gap		Follow-up Headway sec
								Headway sec	Dist ft	
South: WLC Pkwy NB										
Model Calibration Factor (HCM 6): 1.00										
Entry/Circ. Flow Adjustment (HCM 6): None										
W	L2	1	Subdominant	0.00	0.000	N	1.37	4.54	111.4	2.54
N	T1	1	Subdominant	0.00	0.000	N	1.29	4.54	111.4	2.54
N	T1	2	Dominant	0.00	0.000	N	1.29	4.54	111.4	2.54
E	R2	2	Dominant	0.00	0.000	N	1.00	4.54	111.4	2.54
East: Eucalyptus Ave WB										
Model Calibration Factor (HCM 6): 1.00										
Entry/Circ. Flow Adjustment (HCM 6): None										
S	L2	1	Dominant	0.00	0.000	N	1.00	4.33	152.4	2.54
W	T1	1	Dominant	0.00	0.000	N	1.00	4.33	152.4	2.54
N	R2	2	Excl. Slip	0.00	0.000	N	1.00	4.33	154.4	2.54
North: WLC Pkwy SB										
Model Calibration Factor (HCM 6): 1.00										
Entry/Circ. Flow Adjustment (HCM 6): None										
E	L2	1	Subdominant	0.00	0.000	N	1.00	4.54	107.9	2.54
S	T1	1	Subdominant	0.00	0.000	N	1.27	4.54	107.9	2.54
S	T1	2	Dominant	0.00	0.000	N	1.27	4.54	107.9	2.54
W	R2	3	Continuous							
West: Eucalyptus Ave EB										
Model Calibration Factor (HCM 6): 1.00										
Entry/Circ. Flow Adjustment (HCM 6): None										
N	L2	1	Dominant	0.00	0.000	N	1.20	4.33	154.8	2.54
E	T1	1	Dominant	0.00	0.000	N	1.00	4.33	154.8	2.54
S	R2	2	Excl. Slip	0.00	0.000	N	1.43	4.33	154.9	2.54
Roundabout Capacity Model: US HCM 6										
Dist (Distance): Spacing, i.e. distance between the front ends of two successive vehicles across all lanes in the circulating or exiting stream										

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Roundabout Flow Rates

Site: Roundabout1 (WLC Pkwy & Eucalyptus Ave) - 2025AM - HCM6

Site ID: 1
Roundabout

CIRCULATING LANE FLOW RATES

Lane No.	Circulating Flow Rate		
	veh/h	pcu/h	Percent
South: WLC Pkwy NB			
1	12	14	100.0%
Total	12	14	
East: Eucalyptus Ave WB			
1	503	651	50.5%
2	494	638	49.5%
Total	997	1289	

North: WLC Pkwy SB			
1	40	54	100.0%
Total	40	54	

West: Eucalyptus Ave EB			
1	347	440	50.1%
2	345	439	49.9%
Total	692	879	

The US HCM 6 roundabout capacity model option is in use. This model considers only the total circulating flow and not the flow rates in individual circulating lanes. To model the effects of flow distribution in circulating lanes on the entry capacity results, you should use the SIDRA Standard roundabout capacity model.

APPROACH LANE FLOW RATES

Lane No.	Approach Flows (veh/h)		
	Out	To Downst	Total
South: WLC Pkwy NB			
1	0	493	493
2	1	495	496
Total	1	988	989
East: Eucalyptus Ave WB			
1	0	2	2
2	1	0	1
Total	1	2	3
North: WLC Pkwy SB			
1	0	346	346
2	0	345	345
3	10	0	10
Total	10	691	701
West: Eucalyptus Ave EB			
1	0	11	11
2	30	0	30
Total	30	11	41

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Movements

Intersection Negotiation and Travel Data
 Site: Roundabout1 (WLC Pkwy & Eucalyptus Ave) - 2025AM - HCM6

Site ID: 1
 Roundabout

TRAVEL SPEED, TRAVEL DISTANCE AND TRAVEL TIME

From Approach	To Exit	Turn	Running Speed mph	Travel Speed mph	Travel Distance ft	Travel Time s	Total Dem Flows veh-mi/h	Travel Distance Arv Flows veh-mi/h	Tot.Trav. Time veh-h/h
---------------	---------	------	-------------------	------------------	--------------------	---------------	--------------------------	------------------------------------	------------------------

South: WLC Pkwy NB								
West	L2	36.4	32.4	3357.8#	70.6#	24.2	24.2	0.7
North	T1	37.2	33.0	3354.3#	69.2#	603.1	603.1	18.3
East	R2	36.6	32.6	3351.2#	70.1#	0.8	0.8	0.0

East: Eucalyptus Ave WB								
South	L2	34.9	32.8	3395.6#	70.5#	0.6	0.6	0.0
West	T1	34.8	32.7	3395.6#	70.8#	0.7	0.7	0.0
North	R2	35.4	33.1	3261.8#	67.1#	0.6	0.6	0.0

North: WLC Pkwy SB								
East	L2	37.7	34.6	3351.8#	66.0#	0.6	0.6	0.0
South	T1	37.0	34.0	3351.7#	67.2#	438.0	438.0	12.9
West	R2	36.9	36.9	3261.8#	60.2#	6.2	6.2	0.2

West: Eucalyptus Ave EB								
North	L2	33.5	31.8	3432.5#	73.7#	6.5	6.5	0.2
East	T1	34.0	32.2	3432.5#	72.7#	0.7	0.7	0.0
South	R2	34.5	31.7	3261.8#	70.2#	18.5	18.5	0.6

ALL VEHICLES:		37.0	33.4	3351.7#	68.4#	1100.6	1100.6	33.0

"Running Speed" is the average speed excluding stopped periods.

Travel Time values include cruise times and intersection delays including acceleration, deceleration and idling delays.

Travel Distance and Travel Time values include travel on the External Exit section based on the Exit Distance or user-specified Downstream Distance value as applicable.

INTERSECTION NEGOTIATION DATA

From Approach	To Exit	Turn	Negn Radius ft	Negn Speed mph	Negn Dist ft	App Dist ft	Exit Dist ft	Downstr Dist ft

South: WLC Pkwy NB								
West	L2		62.0	16.0	243.5	1600	488	NA
North	T1		190.4	24.4	151.5	1600	488	NA
East	R2		115.2	20.2	62.0	1600	488	NA

East: Eucalyptus Ave WB								
South	L2		62.0	16.0	243.5	1600	488	NA
West	T1		190.4	24.4	151.5	1600	488	NA
North	R2		131.6	21.2	61.8	1600	488	NA

North: WLC Pkwy SB								
East	L2		62.0	16.0	243.5	1600	488	NA
South	T1		190.4	24.4	151.5	1600	488	NA
West	R2		135.0	21.4	61.8	1600	488	NA

West: Eucalyptus Ave EB								
North	L2		62.0	16.0	243.5	1600	488	NA
East	T1		190.4	24.4	151.5	1600	488	NA
South	R2		131.6	21.2	61.8	1600	488	NA

Maximum Negotiation (Design) Speed = 30.0 mph

NA Downstream Distance does not apply if:

- Exit is an internal leg of a network
- "Program" option was specified
- Distance specified was less than the Exit Negotiation Distance
- Distance specified was greater than the exit leg length

MOVEMENT SPEEDS AND GEOMETRIC DELAY

Mov ID	Turn	App. Speeds		Exit Speeds		Queue	Geom Delay sec
		Cruise mph	Negn mph	Negn mph	Cruise mph	Move-up Speed mph	

South: WLC Pkwy NB							
3	L2	40.0	16.0	16.0	40.0	38.3	0.0
8	T1	40.0	24.4	24.4	40.0	38.8	0.0
18	R2	40.0	20.2	20.2	40.0	39.3	0.0

East: Eucalyptus Ave WB							
1	L2	40.0	16.0	16.0	40.0	13.6	0.0
6	T1	40.0	24.4	24.4	40.0	13.6	0.0
16	R2	40.0	21.2	21.2	40.0	13.8	0.0

North: WLC Pkwy SB							
7	L2	40.0	16.0	16.0	40.0	39.3	0.0
4	T1	40.0	24.4	24.4	40.0	39.3	0.0
14	R2	40.0	21.4	21.4	40.0	34.5	0.0

West: Eucalyptus Ave EB							
5	L2	40.0	16.0	16.0	40.0	16.7	0.0
2	T1	40.0	24.4	24.4	40.0	16.7	0.0
12	R2	40.0	21.2	21.2	40.0	18.1	0.0

HCM Delay Formula option used: Geometric Delay is not included in Control Delay.

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Movement Capacity and Performance Parameters

Site: Roundabout1 (WLC Pkwy & Eucalyptus Ave) - 2025AM - HCM6

Site ID: 1
Roundabout

MOVEMENT CAPACITY PARAMETERS

Mov ID	Turn	Mov Cl.	Arv Flow veh/h	Opng Flow veh/h	Movement Adjust. pcu/h	Total Cap. veh/h	Prac. Deg. Satn xp	Prac. Spare Cap. %	Deg. Satn x

South: WLC Pkwy NB									
3	L2	#	38	12	14	83	0.85	86	0.456*
8	T1	#	949	12	14	2083	0.85	86	0.456*
18	R2	#	1	12	14	3	0.85	86	0.456*

East: Eucalyptus Ave WB									
1	L2	#	1	997	1289	228	0.85	****	0.004
6	T1	#	1	997	1289	247	0.85	****	0.004
16	R2	#	1	959	1237	496	0.85	****	0.002

North: WLC Pkwy SB									
7	L2	#	1	40	54	3	0.85	162	0.325
4	T1	#	690	40	54	2126	0.85	162	0.325
14	R2	#	10	40	54	1522	0.98	****	0.007

West: Eucalyptus Ave EB									
5	L2	#	10	692	878	514	0.85	4272	0.019
2	T1	#	1	692	878	56	0.85	4272	0.019
12	R2	#	30	691	877	471	0.85	1235	0.064

* Maximum degree of saturation

Combined Movement Capacity parameters are shown for all Movement Classes.

MOVEMENT PERFORMANCE

Mov ID	Turn	Total Delay (veh-h/h)	Total Delay (pers-h/h)	Aver. Delay (sec)	Eff. Stop Rate	Total Stops	Perf. Index	Tot.Trav. Distance (veh-mi/h)	Tot.Trav. Time (veh-h/h)	Aver. Speed (mph)
South: WLC Pkwy NB										
3	L2	0.09	0.11	8.6	0.02	0.9	2.37	24.2	0.7	32.4
8	T1	2.20	2.64	8.3	0.02	23.0	19.08	603.1	18.3	33.0
18	R2	0.00	0.00	7.6	0.02	0.0	0.86	0.8	0.0	32.6
East: Eucalyptus Ave WB										
1	L2	0.00	0.00	7.6	0.55	0.6	0.03	0.6	0.0	32.8
6	T1	0.00	0.00	7.6	0.55	0.6	0.03	0.7	0.0	32.7
16	R2	0.00	0.00	7.3	0.49	0.5	0.02	0.6	0.0	33.1
North: WLC Pkwy SB										
7	L2	0.00	0.00	5.9	0.08	0.1	0.54	0.6	0.0	34.6
4	T1	1.27	1.52	6.6	0.08	52.5	13.55	438.0	12.9	34.0
14	R2	0.00	0.00	0.0	0.00	0.0	0.15	6.2	0.2	36.9
West: Eucalyptus Ave EB										
5	L2	0.02	0.02	6.6	0.48	4.8	0.25	6.5	0.2	31.8
2	T1	0.00	0.00	5.6	0.48	0.5	0.04	0.7	0.0	32.2
12	R2	0.07	0.08	8.5	0.55	16.4	0.75	18.5	0.6	31.7

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Fuel Consumption, Emissions and Cost
Site: Roundabout1 (WLC Pkwy & Eucalyptus Ave) - 2025AM - HCM6

Site ID: 1
Roundabout

FUEL CONSUMPTION, EMISSIONS AND COST (TOTAL)

Mov ID	Turn	Cost Total (\$/h)	Fuel Total (gal/h)	CO2 Total (kg/h)	CO Total (kg/h)	HC Total (kg/h)	NOX Total (kg/h)
South: WLC Pkwy NB							
3	L2	17.54	2.1	19.8	0.04	0.003	0.113
8	T1	431.30	50.0	466.3	0.95	0.070	2.619
18	R2	0.56	0.1	0.5	0.00	0.000	0.003
		449.40	52.1	486.6	0.98	0.073	2.734
East: Eucalyptus Ave WB							
1	L2	0.31	0.0	0.2	0.00	0.000	0.000
6	T1	0.34	0.0	0.2	0.00	0.000	0.000
16	R2	0.27	0.0	0.2	0.00	0.000	0.000
		0.93	0.1	0.7	0.00	0.000	0.001
North: WLC Pkwy SB							
7	L2	0.43	0.0	0.4	0.00	0.000	0.002
4	T1	299.45	34.7	323.3	0.69	0.050	1.779
14	R2	2.95	0.3	2.8	0.01	0.001	0.010

		302.83	35.1	326.5	0.70	0.051	1.791

West: Eucalyptus Ave EB							
5	L2	4.84	0.5	4.5	0.01	0.001	0.022
2	T1	0.52	0.0	0.4	0.00	0.000	0.002
12	R2	17.46	2.2	20.4	0.03	0.002	0.131

		22.83	2.7	25.4	0.04	0.003	0.155

INTERSECTION:		775.98	90.0	839.0	1.73	0.127	4.682

FUEL CONSUMPTION, EMISSIONS AND COST (RATE)

Mov ID	Turn	Cost Rate \$/mi	Fuel Eff. mpg	CO2 Rate g/km	CO Rate g/km	HC Rate g/km	NOX Rate g/km

South: WLC Pkwy NB							
3	L2	0.45	11.4	508.7	0.96	0.072	2.912
8	T1	0.44	12.1	480.4	0.97	0.072	2.698
18	R2	0.43	14.6	390.4	1.03	0.071	2.023

		0.44	12.0	481.4	0.97	0.072	2.705

East: Eucalyptus Ave WB							
1	L2	0.30	26.3	210.1	1.13	0.081	0.184
6	T1	0.30	26.3	210.1	1.13	0.081	0.184
16	R2	0.28	27.7	199.5	1.09	0.076	0.172

		0.29	26.7	206.8	1.12	0.080	0.180

North: WLC Pkwy SB							
7	L2	0.42	15.0	378.6	1.03	0.070	1.926
4	T1	0.42	12.6	458.6	0.97	0.071	2.524
14	R2	0.30	19.8	284.9	1.01	0.066	1.050

		0.42	12.7	456.1	0.98	0.071	2.502

West: Eucalyptus Ave EB							
5	L2	0.46	13.3	431.2	1.12	0.087	2.110
2	T1	0.46	15.1	373.6	1.16	0.087	1.680
12	R2	0.59	8.6	684.6	1.02	0.080	4.399

		0.55	9.6	612.1	1.05	0.082	3.747

INTERSECTION:		0.44	12.2	473.7	0.98	0.072	2.643

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Lanes

Lane Performance and Capacity Information
 Site: Roundabout1 (WLC Pkwy & Eucalyptus Ave) - 2025AM - HCM6

Site ID: 1
 Roundabout

LANE PERFORMANCE

Lane No.	Flow veh/h	Cap veh/h	Deg. Satn x	Aver. Delay sec	Eff. Stop Rate	Q u e u e		Lane Length ft
						95% Back veh	ft	

South: WLC Pkwy NB								
1	493	1082	0.456	8.4	0.02	2.1	64.1	1600.0
2	496	1087	0.456	8.3	0.02	2.1	64.3	1600.0

East: Eucalyptus Ave WB								
1	2	475	0.004	7.6	0.55	0.0	0.3	1600.0
2	1	496	0.002	7.3	0.49	0.0	0.2	200.0T

North: WLC Pkwy SB								
1	346	1065	0.325	6.6	0.08	1.3	39.3	1600.0
2	345	1064	0.325	6.6	0.08	1.3	39.3	1600.0
3	10	1522	0.007	0.0	0.00			600.0T

West: Eucalyptus Ave EB								
1	11	570	0.019	6.5	0.48	0.1	1.6	1600.0
2	30	471	0.064	8.5	0.55	0.2	5.1	1600.0

T Short lane due to specification of Turn Bay

LANE FLOW AND CAPACITY INFORMATION

Lane No.	Total Arv Flow veh/h	Min Cap veh/h	Tot Cap veh/h	Deg. Satn x	Lane
					Util %

South: WLC Pkwy NB					
1	493	150	1082	0.456	100
2	496	150	1087	0.456	100

East: Eucalyptus Ave WB					
1	2	2	475	0.004	100
2	1	1	496	0.002	100

North: WLC Pkwy SB					
1	346	150	1065	0.325	100
2	345	150	1064	0.325	100
3	10	10	1522	0.007	100

West: Eucalyptus Ave EB					
1	11	11	570	0.019	100
2	30	30	471	0.064	100

The capacity values of Continuous Lanes are obtained by adjusting the basic saturation flow for lane width, grade, movement class and turning vehicle effects. Saturation flow scale applies if specified.

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Lane, Approach and Intersection Performance
 Site: Roundabout1 (WLC Pkwy & Eucalyptus Ave) - 2025AM - HCM6

Site ID: 1
 Roundabout

Lane No.	Arrival Flow (veh/h)	%HV	Adj. Basic Satf.	Deg Sat x	Aver. Delay sec	Longest Queue ft	Lane Length ft

South: WLC Pkwy NB							
1	493	30		0.456	8.4	64	1600
2	496	29		0.456	8.3	64	1600
		989	29	0.456	8.3	64	

East: Eucalyptus Ave WB							
1	2	0		0.004	7.6	0	1600
2	1	0		0.002	7.3	0	200
		3	0	0.004	7.5	0	

North: WLC Pkwy SB							
1	346	27		0.325	6.6	39	1600
2	345	27		0.325	6.6	39	1600
3	10	10	1975	0.007	0.0		600
		701	27	0.325	6.5	39	

West: Eucalyptus Ave EB							
1	11	18		0.019	6.5	2	1600
2	30	43		0.064	8.5	5	1600
		41	36	0.064	8.0	5	
=====							
ALL VEHICLES							
	Total Flow	% HV		Max X	Aver. Delay	Max Queue	
	1734	28		0.456	7.6	64	
=====							

Peak flow period = 15 minutes.

Queue values in this table are 95% queue (feet)

Note: Basic Saturation Flows at roundabouts or sign-controlled intersections apply only to continuous lanes.

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Driver Characteristics

Site: Roundabout1 (WLC Pkwy & Eucalyptus Ave) - 2025AM - HCM6

Site ID: 1
Roundabout

Lane No.	Satn Speed mph	Satn Flow veh/h	Satn Hdwy sec	Satn Spacing ft	Average Queue Space ft	Driver Response Time sec

South: WLC Pkwy NB						
1	23.8	1420	2.54	88.37	30.92	1.65
2	24.4	1420	2.54	90.76	30.79	1.68

East: Eucalyptus Ave WB						
1	20.4	1420	2.54	75.73	25.00	1.70
2	NA - Short Lane					

North: WLC Pkwy SB						
1	24.4	1420	2.54	90.71	30.38	1.69

2	24.4	1420	2.54	90.80	30.40	1.69
3	NA - Continuous Movement					

West: Eucalyptus Ave EB						
1	16.8	1420	2.54	62.43	28.61	1.37
2	21.2	1420	2.54	78.95	33.60	1.46

Saturation Flow and Saturation Headway are derived from follow-up headway.

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Lane Delays

Site: Roundabout1 (WLC Pkwy & Eucalyptus Ave) - 2025AM - HCM6

Site ID: 1
Roundabout

LANE DELAYS

Lane No.	Deg. x	% Arv During Green	Prog. Factor	Delay (seconds/veh)									
				Min Del dm	Stop-line 1st d1	2nd d2	Total dSL	Acc. Dec. dn	Queuing Total dq	MvUp dqm	Stopd (Idle) di	Geom dig	Control dic
South: WLC Pkwy NB													
1	0.456	NA	NA	3.3	5.6	2.8	8.4	6.3	7.8	0.0	7.8	0.0	8.4
2	0.456	NA	NA	3.3	5.6	2.7	8.3	6.6	7.7	0.0	7.7	0.0	8.3
East: Eucalyptus Ave WB													
1	0.004	NA	NA	7.6	7.6	0.0	7.6	5.0	4.3	0.0	4.3	0.0	7.6
2	0.002	NA	NA	7.3	7.3	0.0	7.3	4.6	4.3	0.0	4.3	0.0	7.3
North: WLC Pkwy SB													
1	0.325	NA	NA	3.4	5.0	1.6	6.6	6.6	5.4	0.0	5.4	0.0	6.6
2	0.325	NA	NA	3.4	5.0	1.6	6.6	6.6	5.4	0.0	5.4	0.0	6.6
3	0.007					0.0					0.0	0.0	
West: Eucalyptus Ave EB													
1	0.019	NA	NA	6.3	6.4	0.1	6.5	4.8	3.9	0.0	3.9	0.0	6.5
2	0.064	NA	NA	7.6	8.0	0.5	8.5	4.6	5.9	0.0	5.9	0.0	8.5

HCM Delay Formula option used (Exclude Geometric Delay option applies). Control Delay does not include Geometric Delay, and Stop-line Delay is treated as being same as Control Delay.

dm: Minimum delay for gap acceptance cases

dSL: Stop-line delay (=d1+d2)

dn: Average stop-start delay for all vehicles queued and unqueued

dq: Queuing delay (the part of the stop-line delay that includes stopped delay and queue move-up delay)

dqm: Queue move-up delay

di: Stopped delay (stopped (idling) time at near-zero speed)

dig: Geometric delay

dic: Control delay

[Go to Table Links \(Top\)](#)

Lane Queues
Site: Roundabout1 (WLC Pkwy & Eucalyptus Ave) - 2025AM - HCM6

Site ID: 1
 Roundabout

BACK OF QUEUE (VEHICLES)

Lane No.	Deg. Satn x	% Arv During Green	Prog. Factor	Ovrfl. Queue No	Back of Queue (veh)				Queue Stor. Ratio		Prob. Block %	Prob. SL Ov. %
					Nb1	Nb2	Nb	95%	Av.	95%		
South: WLC Pkwy NB												
1	0.456	NA	NA	0.0	0.8	0.0	0.8	2.1	0.02	0.04	0.0	NA
2	0.456	NA	NA	0.0	0.8	0.0	0.8	2.1	0.02	0.04	0.0	NA
East: Eucalyptus Ave WB												
1	0.004	NA	NA	0.0	0.0	0.0	0.0	0.0	0.00	0.00	0.0	NA
2	0.002	NA	NA	0.0	0.0	0.0	0.0	0.0	0.00	0.00	NA	0.0
North: WLC Pkwy SB												
1	0.325	NA	NA	0.0	0.5	0.0	0.5	1.3	0.01	0.02	0.0	NA
2	0.325	NA	NA	0.0	0.5	0.0	0.5	1.3	0.01	0.02	0.0	NA
West: Eucalyptus Ave EB												
1	0.019	NA	NA	0.0	0.0	0.0	0.0	0.1	0.00	0.00	0.0	NA
2	0.064	NA	NA	0.0	0.1	0.0	0.1	0.2	0.00	0.00	0.0	NA

SIDRA Standard models are used for Back of Queue estimation since HCM only gives Cycle-Average Queues for unsignalised intersections.

BACK OF QUEUE (DISTANCE)

Lane No.	Deg. Satn x	% Arv During Green	Prog. Factor	Ovrfl. Queue No	Back of Queue (ft)				Queue Stor. Ratio		Prob. Block %	Prob. SL Ov. %
					Nb1	Nb2	Nb	95%	Av.	95%		
South: WLC Pkwy NB												
1	0.456	NA	NA	0.0	25.8	0.0	25.8	64.1	0.02	0.04	0.0	NA
2	0.456	NA	NA	0.0	25.9	0.0	25.9	64.3	0.02	0.04	0.0	NA
East: Eucalyptus Ave WB												
1	0.004	NA	NA	0.0	0.1	0.0	0.1	0.3	0.00	0.00	0.0	NA
2	0.002	NA	NA	0.0	0.1	0.0	0.1	0.2	0.00	0.00	NA	0.0
North: WLC Pkwy SB												
1	0.325	NA	NA	0.0	15.8	0.0	15.8	39.3	0.01	0.02	0.0	NA
2	0.325	NA	NA	0.0	15.8	0.0	15.8	39.3	0.01	0.02	0.0	NA
West: Eucalyptus Ave EB												
1	0.019	NA	NA	0.0	0.6	0.0	0.6	1.6	0.00	0.00	0.0	NA
2	0.064	NA	NA	0.0	2.0	0.0	2.0	5.1	0.00	0.00	0.0	NA

SIDRA Standard models are used for Back of Queue estimation since HCM only gives Cycle-Average Queues for unsignalised intersections.

OTHER QUEUE RESULTS (VEHICLES)

Lane No.	Deg. Satn x	% Arv During Green	Prog. Factor	Ovrfl. Queue No	Cyc-Av. Queue No	95%
----------	-------------	--------------------	--------------	-----------------	------------------	-----


```

-----
South: WLC Pkwy NB
1  0.456  NA    NA    0.0    1.1    2.1
2  0.456  NA    NA    0.0    1.1    2.1
-----
East: Eucalyptus Ave WB
1  0.004  NA    NA    0.0    0.0    0.0
2  0.002  NA    NA    0.0    0.0    0.0
-----
North: WLC Pkwy SB
1  0.325  NA    NA    0.0    0.6    1.2
2  0.325  NA    NA    0.0    0.6    1.2
-----
West: Eucalyptus Ave EB
1  0.019  NA    NA    0.0    0.0    0.0
2  0.064  NA    NA    0.0    0.1    0.1
-----

```

HCM Delay Formula option used:
Cycle-Average Queue is calculated using average delay from the HCM equation.
(i.e. HCM delays are treated as stop-line delays for this purpose).

OTHER QUEUE RESULTS (DISTANCE)

```

-----
Lane  Deg.  % Arv  Prog.  Ovrfl.  Cyc-Av.  Queue
No.   Satn  During  Factor  Queue   No       Nc       95%
-----
South: WLC Pkwy NB
1  0.456  NA     NA     0.0    35.4    64.3
2  0.456  NA     NA     0.0    35.3    64.1
-----
East: Eucalyptus Ave WB
1  0.004  NA     NA     0.0    0.1     0.2
2  0.002  NA     NA     0.0    0.1     0.1
-----
North: WLC Pkwy SB
1  0.325  NA     NA     0.0    19.3    35.0
2  0.325  NA     NA     0.0    19.3    35.0
-----
West: Eucalyptus Ave EB
1  0.019  NA     NA     0.0    0.6     1.0
2  0.064  NA     NA     0.0    2.4     4.3
-----

```

HCM Delay Formula option used:
Cycle-Average Queue is calculated using average delay from the HCM equation.
(i.e. HCM delays are treated as stop-line delays for this purpose).

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Lane Queue Percentiles
Site: Roundabout1 (WLC Pkwy & Eucalyptus Ave) - 2025AM - HCM6

Site ID: 1
Roundabout

LANE QUEUE PERCENTILES (VEHICLES)

```

-----
Lane  Deg.  Percentile Back of Queue (veh)
Satn  -----
-----

```

No.	x	50%	70%	85%	90%	95%	98%	100%

South: WLC Pkwy NB								
1	0.456	0.8	1.1	1.5	1.8	2.1	2.3	2.5
2	0.456	0.8	1.1	1.5	1.8	2.1	2.3	2.5

East: Eucalyptus Ave WB								
1	0.004	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	0.002	0.0	0.0	0.0	0.0	0.0	0.0	0.0

North: WLC Pkwy SB								
1	0.325	0.5	0.7	1.0	1.1	1.3	1.4	1.5
2	0.325	0.5	0.7	1.0	1.1	1.3	1.4	1.5

West: Eucalyptus Ave EB								
1	0.019	0.0	0.0	0.0	0.0	0.1	0.1	0.1
2	0.064	0.1	0.1	0.1	0.1	0.2	0.2	0.2

SIDRA Standard models are used for Back of Queue estimation since HCM only gives Cycle-Average Queues for unsignalised intersections.

LANE QUEUE PERCENTILES (DISTANCE)

Lane No.	Deg. Satn x	Percentile Back of Queue (feet)						
		50%	70%	85%	90%	95%	98%	100%

South: WLC Pkwy NB								
1	0.456	25.8	33.4	47.1	54.5	64.1	71.1	76.5
2	0.456	25.9	33.5	47.3	54.7	64.3	71.4	76.8

East: Eucalyptus Ave WB								
1	0.004	0.1	0.2	0.3	0.3	0.3	0.4	0.4
2	0.002	0.1	0.1	0.1	0.1	0.2	0.2	0.2

North: WLC Pkwy SB								
1	0.325	15.8	20.5	28.9	33.5	39.3	43.7	46.9
2	0.325	15.8	20.5	28.9	33.4	39.3	43.7	46.9

West: Eucalyptus Ave EB								
1	0.019	0.6	0.8	1.2	1.3	1.6	1.8	1.9
2	0.064	2.0	2.6	3.7	4.3	5.1	5.6	6.1

SIDRA Standard models are used for Back of Queue estimation since HCM only gives Cycle-Average Queues for unsignalised intersections.

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Lane Stops
Site: Roundabout1 (WLC Pkwy & Eucalyptus Ave) - 2025AM - HCM6

Site ID: 1
Roundabout

Lane No.	Deg. Satn x	% Arv During Green	Prog. Factor	-- Effective Stop Rate --		Total Stops H	Queue Move-up Rate hqm	Total Queue Move-ups Hqm	Prop. Queued pq	Aver. Num. of Cycles to Depart
				he1	he2					

South: WLC Pkwy NB										

1	0.456	NA	NA	0.02	0.00	0.00	0.02	11.9	0.00	0.0	0.10	0.10
2	0.456	NA	NA	0.02	0.00	0.00	0.02	12.0	0.00	0.0	0.10	0.10

East: Eucalyptus Ave WB												
1	0.004	NA	NA	0.55	0.00	0.00	0.55	1.2	0.00	0.0	0.67	0.67
2	0.002	NA	NA	0.49	0.00	0.00	0.49	0.5	0.00	0.0	0.65	0.65

North: WLC Pkwy SB												
1	0.325	NA	NA	0.08	0.00	0.00	0.08	26.3	0.00	0.0	0.18	0.18
2	0.325	NA	NA	0.08	0.00	0.00	0.08	26.3	0.00	0.0	0.18	0.18
3	0.007	NA	NA			0.00	0.00	0.0				

West: Eucalyptus Ave EB												
1	0.019	NA	NA	0.48	0.00	0.00	0.48	5.3	0.00	0.0	0.56	0.56
2	0.064	NA	NA	0.55	0.00	0.00	0.55	16.4	0.00	0.0	0.57	0.57

hig is the average value for all movements in a shared lane
hqm is average queue move-up rate for all vehicles queued and unqueued

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Flow Rates

Origin-Destination Flow Rates (Total) Site: Roundabout1 (WLC Pkwy & Eucalyptus Ave) - 2025AM - HCM6

Site ID: 1
Roundabout

TOTAL FLOW RATES for All Movement Classes (veh/h)

From SOUTH To:	W	N	E	
Turn:	L2	T1	R2	TOT
Flow Rate	38.0	949.4	1.3	988.6
%HV (all designations)	37.0	29.0	0.0	29.3

From EAST To:	S	W	N	
Turn:	L2	T1	R2	TOT
Flow Rate	1.0	1.1	1.0	3.1
%HV (all designations)	0.0	0.0	0.0	0.0

From NORTH To:	E	S	W	
Turn:	L2	T1	R2	TOT
Flow Rate	1.0	690.0	10.0	701.0
%HV (all designations)	0.0	27.0	10.0	26.7

From WEST To:	N	E	S	
Turn:	L2	T1	R2	TOT
Flow Rate	10.0	1.1	30.0	41.1
%HV (all designations)	20.0	0.0	43.0	36.3

Flow rates shown above are Arrival Flow Rates (veh/h) based on the following input specifications:
Unit Time for Volumes = 60 minutes
Peak Flow Period = 15 minutes
Effects of Volume Factors (Peak Flow Factor, Flow Scale, Growth Rate) are included.
Arrival Flow Rates may be less than Demand Flow Rates if capacity constraint applies in network analysis.

[Go to Table Links \(Top\)](#)

Origin-Destination Flow Rates by Movement Class
 Site: Roundabout1 (WLC Pkwy & Eucalyptus Ave) - 2025AM - HCM6

Site ID: 1
 Roundabout

FLOW RATES for Light Vehicles (veh/h)

From SOUTH To:	W	N	E	
Turn:	L2	T1	R2	TOT
Flow Rate	23.9	674.1	1.3	699.2
Mov Class %	63.0	71.0	100.0	70.7
Flow Scale	1.00	1.00	1.00	-
Peak Flow Factor	0.79	0.79	0.79	-
Residual Demand	0.0	0.0	0.0	0.0

From EAST To:	S	W	N	
Turn:	L2	T1	R2	TOT
Flow Rate	1.0	1.1	1.0	3.1
Mov Class %	100.0	100.0	100.0	100.0
Flow Scale	1.00	1.00	1.00	-
Peak Flow Factor	1.00	0.92	1.00	-
Residual Demand	0.0	0.0	0.0	0.0

From NORTH To:	E	S	W	
Turn:	L2	T1	R2	TOT
Flow Rate	1.0	503.7	9.0	513.7
Mov Class %	100.0	73.0	90.0	73.3
Flow Scale	1.00	1.00	1.00	-
Peak Flow Factor	1.00	1.00	1.00	-
Residual Demand	0.0	0.0	0.0	0.0

From WEST To:	N	E	S	
Turn:	L2	T1	R2	TOT
Flow Rate	8.0	1.1	17.1	26.2
Mov Class %	80.0	100.0	57.0	63.7
Flow Scale	1.00	1.00	1.00	-
Peak Flow Factor	1.00	0.92	1.00	-
Residual Demand	0.0	0.0	0.0	0.0

FLOW RATES for Heavy Vehicles (veh/h)

From SOUTH To:	W	N	E	
Turn:	L2	T1	R2	TOT
Flow Rate	14.1	275.3	0.0	289.4
Mov Class %	37.0	29.0	0.0	29.3
Flow Scale	1.00	1.00	1.00	-
Peak Flow Factor	0.79	0.79	0.79	-
Residual Demand	0.0	0.0	0.0	0.0

From EAST To:	S	W	N	
Turn:	L2	T1	R2	TOT
Flow Rate	0.0	0.0	0.0	0.0
Mov Class %	0.0	0.0	0.0	0.0
Flow Scale	1.00	1.00	1.00	-

Peak Flow Factor	1.00	0.92	1.00	-
Residual Demand	0.0	0.0	0.0	0.0

From NORTH To:	E	S	W	
Turn:	L2	T1	R2	TOT

Flow Rate	0.0	186.3	1.0	187.3
Mov Class %	0.0	27.0	10.0	26.7
Flow Scale	1.00	1.00	1.00	-
Peak Flow Factor	1.00	1.00	1.00	-
Residual Demand	0.0	0.0	0.0	0.0

From WEST To:	N	E	S	
Turn:	L2	T1	R2	TOT

Flow Rate	2.0	0.0	12.9	14.9
Mov Class %	20.0	0.0	43.0	36.3
Flow Scale	1.00	1.00	1.00	-
Peak Flow Factor	1.00	0.92	1.00	-
Residual Demand	0.0	0.0	0.0	0.0

Flow rates shown above are Arrival Flow Rates (veh/h) based on the following input specifications:
Unit Time for Volumes = 60 minutes
Peak Flow Period = 15 minutes
Effects of Volume Factors (Peak Flow Factor, Flow Scale, Growth Rate) are included.
Arrival Flow Rates may be less than Demand Flow Rates if capacity constraint applies in network analysis.

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Lane Flow Rates

Site: Roundabout1 (WLC Pkwy & Eucalyptus Ave) - 2025AM - HCM6

Site ID: 1
Roundabout

LANE FLOW RATES AT STOP LINE (veh/h)

From SOUTH To:	W	N	E	
Turn:	L2	T1	R2	TOT

Lane 1				
LV	23.9	323.1	*	347.0
HV	14.1	132.0	*	146.0
Total	38.0	455.0	*	493.0
Lane 2				
LV	*	351.0	1.3	352.3
HV	*	143.4	*	143.4
Total	*	494.4	1.3	495.6

Approach	38.0	949.4	1.3	988.6

From EAST To:	S	W	N	
Turn:	L2	T1	R2	TOT

Lane 1				
LV	1.0	1.1	*	2.1
Total	1.0	1.1	*	2.1
Lane 2				
LV	*	*	1.0	1.0
Total	*	*	1.0	1.0

Approach	1.0	1.1	1.0	3.1
From NORTH To:	E	S	W	
Turn:	L2	T1	R2	TOT

Lane 1				
LV	1.0	251.6	*	252.6
HV	*	93.0	*	93.0
Total	1.0	344.6	*	345.6
Lane 2				
LV	*	252.1	*	252.1
HV	*	93.3	*	93.3
Total	*	345.4	*	345.4
Lane 3				
LV	*	*	9.0	9.0
HV	*	*	1.0	1.0
Total	*	*	10.0	10.0

Approach	1.0	690.0	10.0	701.0

From WEST To:	N	E	S	
Turn:	L2	T1	R2	TOT

Lane 1				
LV	8.0	1.1	*	9.1
HV	2.0	*	*	2.0
Total	10.0	1.1	*	11.1
Lane 2				
LV	*	*	17.1	17.1
HV	*	*	12.9	12.9
Total	*	*	30.0	30.0

Approach	10.0	1.1	30.0	41.1

* Movement not allocated to the lane

EXIT LANE FLOW RATES

Movement Class:	LV	HV	TOT

Exit: SOUTH			
Lane: 1	252.6	93.0	345.6
Lane: 2	269.2	106.2	375.4
Total	521.8	199.2	721.0

Exit: EAST			
Lane: 1	3.4	*	3.4
Total	3.4	*	3.4

Exit: NORTH			
Lane: 1	331.1	134.0	465.0
Lane: 2	352.0	143.4	495.4
Total	683.1	277.3	960.4

Exit: WEST			
Lane: 1	25.0	14.1	39.1
Lane: 2	9.0	1.0	10.0
Total	34.0	15.1	49.1

* Movement not allocated to the lane

DOWNSTREAM LANE FLOW RATES FOR EXIT ROADS

Movement Class:	LV	HV	TOT

Exit: SOUTH			
Lane: 1	252.6	93.0	345.6

Lane: 2	269.2	106.2	375.4
Total	521.8	199.2	721.0

Exit: EAST			
Lane: 1	3.4	*	3.4
Total	3.4	*	3.4

Exit: NORTH			
Lane: 1	331.1	134.0	465.0
Lane: 2	352.0	143.4	495.4
Total	683.1	277.3	960.4

Exit: WEST			
Lane: 1	25.0	14.1	39.1
Lane: 2	9.0	1.0	10.0
Total	34.0	15.1	49.1

* Movement not allocated to the lane

Flow rates shown above are Arrival Flow Rates (veh/h) based on the following input specifications:
Unit Time for Volumes = 60 minutes
Peak Flow Period = 15 minutes
Effects of Volume Factors (Peak Flow Factor, Flow Scale, Growth Rate) are included.
Arrival Flow Rates may be less than Demand Flow Rates if capacity constraint applies in network analysis.

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Other

Parameter Settings Summary Site: Roundabout1 (WLC Pkwy & Eucalyptus Ave) - 2025AM - HCM6

Site ID: 1
Roundabout

* Basic Parameters:
Intersection Type: Roundabout
US HCM 6 Roundabout Capacity Model used
Driving on the right-hand side of the road
Input data specified in US units
Model Defaults: US HCM (Customary)
Peak Flow Period (for performance): 15 minutes
Unit time (for volumes): 60 minutes.
HCM Delay Model option used
HCM Queue Model option used
Level of Service based on: Delay and v/c (HCM 6)
Queue percentile: 95%

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Diagnostics Site: Roundabout1 (WLC Pkwy & Eucalyptus Ave) - 2025AM - HCM6

Site ID: 1
Roundabout

Lane Flow-Capacity Iterations:

Site Model Variability Index (Iterations 3 to N): 0.0%
Number of Iterations: 3 (Maximum: 10)

Other Diagnostic Messages (if any):

[Go to Table Links \(Top\)](#)

LANE LEVEL OF SERVICE

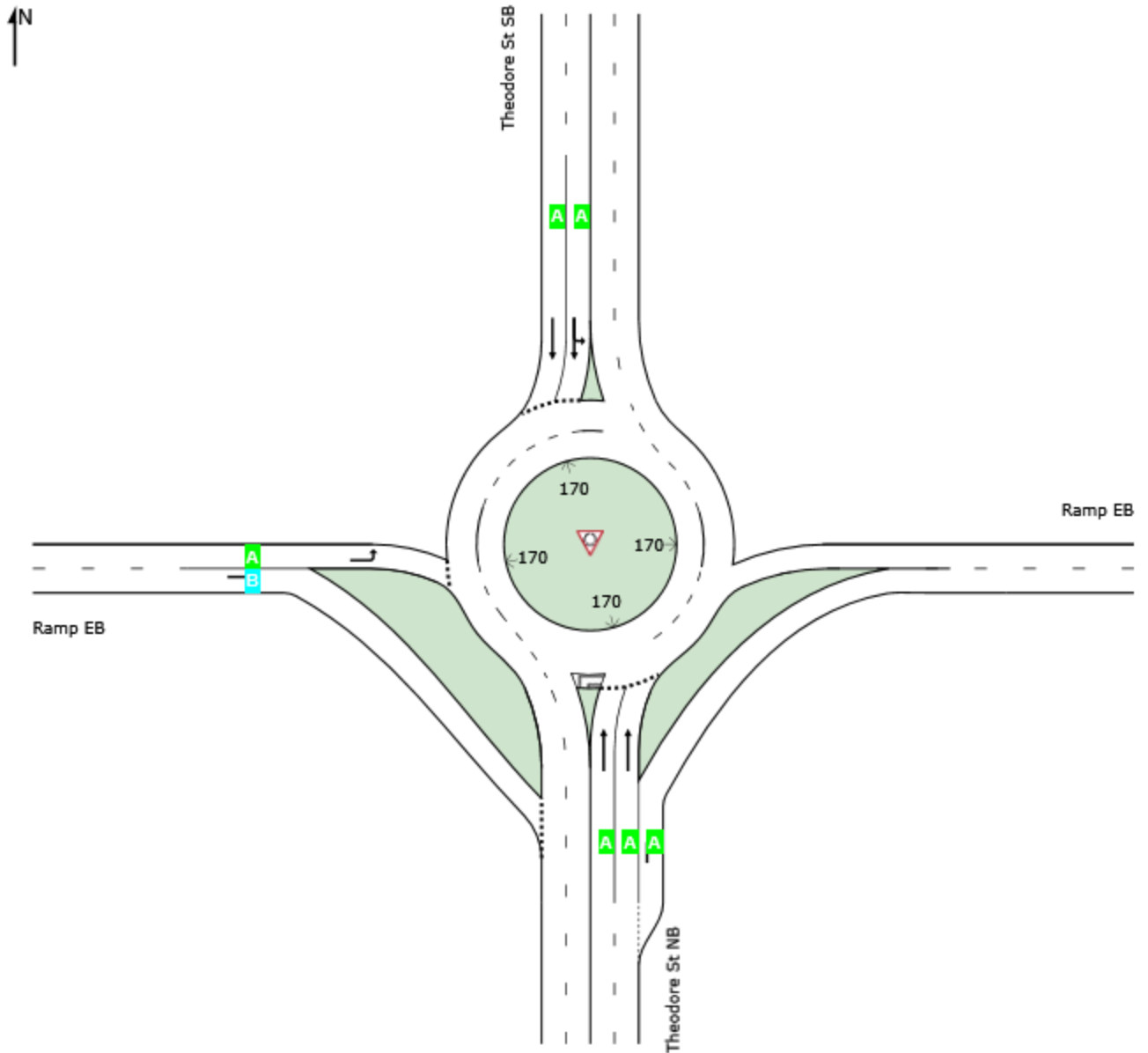
Lane Level of Service



Site: 1 [Roundabout2 (Theodore St & EB Ramps) - 2025AM - HCM6]

Site Category: (None)
Roundabout

	Approaches			Intersection
	South	North	West	
LOS	A	A	B	A



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: Same as Sign Control.

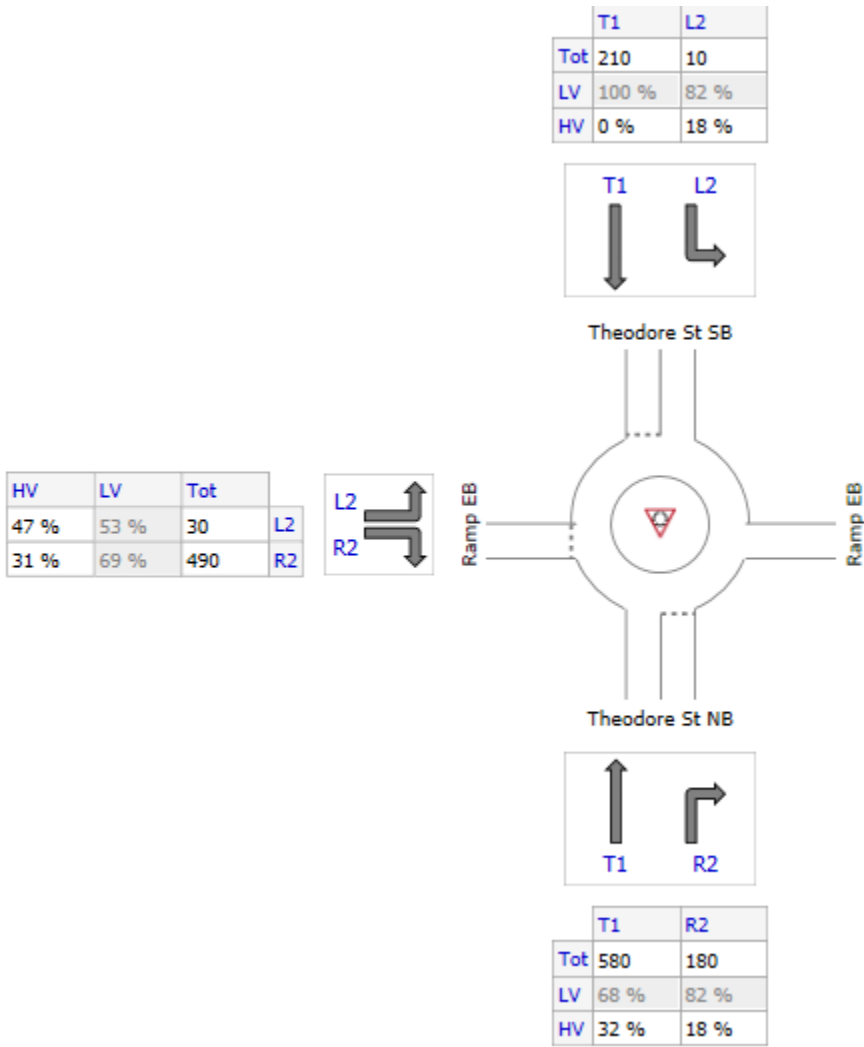
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

LOS F will result if $v/c > 1$ irrespective of lane delay value (does not apply for approaches and intersection).


Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

VOLUMES








DETAILED OUTPUT

 Site: 1 [Roundabout2 (Theodore St & EB Ramps) - 2025AM - HCM6]

Site Category: (None)
Roundabout

OUTPUT TABLE LINKS

-  Roundabouts
 - Roundabout Basic Parameters
 - Roundabout Circulating / Exiting Stream Parameters
 - Roundabout Gap Acceptance Parameters
 - Roundabout Flow Rates
-  Movements
 - Intersection Negotiation and Travel Data
 - Movement Capacity and Performance Parameters
 - Fuel Consumption, Emissions and Cost
-  Lanes
 - Lane Performance and Capacity Information
 - Lane, Approach and Intersection Performance
 - Driver Characteristics
 - Lane Delays
 - Lane Queues
 - Lane Queue Percentiles
 - Lane Stops
-  Flow Rates
 - Origin-Destination Flow Rates (Total)
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-  Other
 - Parameter Settings Summary
 - Diagnostics

Roundabouts

Roundabout Basic Parameters Site: Roundabout2 (Theodore St & EB Ramps) - 2025AM - HCM6

Site ID: 1
Roundabout

Central Island Diam	Circ Width	Insc Diam.	Entry Radius	Entry Angle	Circ Lanes	Entry Lanes	Av.Entry Lane Width	App Dist	Prop Upstr	Queued Signal	Extra Bunching
ft	ft	ft	ft	deg			ft	ft			%
South: Theodore St NB	170.0*	30.0*	230.0*	65.0*	30.0*	1	3	13.00*	1600	NA	0.0U

North: Theodore St SB												
170.0*	30.0*	230.0*	65.0*	30.0*	2	2	13.00*	1600		NA	0.0U	

West: Ramp EB												
170.0*	30.0*	230.0*	65.0*	30.0*	2	2	13.00*	1600		NA	0.0U	

Roundabout Capacity Model: US HCM 6

* These parameters do not affect estimated capacity values in the HCM 6 Capacity Model.

NA Not Applicable (single Site analysis or unconnected Site in Network analysis).

U User-specified Extra Bunching

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Roundabout Circulating / Exiting Stream Parameters Site: Roundabout2 (Theodore St & EB Ramps) - 2025AM - HCM6

Site ID: 1
Roundabout

Dest	Turn	Lane No.	Lane Type	Opng Flow veh/h	HVE pcu/veh	Adj. Flow pcu/h	%Near Lane Only	%Exit Flow Incl.	Cap. Const. Effect	O-D Factor	Aver Speed mph	In-Bunch Headway sec	Prop. Bunched

South: Theodore St NB													
N	T1	1	Subdominant	40	1.40	56	0.0	0.0	N	-	18.9	0.00	0.000
N	T1	2	Dominant	40	1.40	56	0.0	0.0	N	-	18.9	0.00	0.000
E	R2	3	Continuous										

North: Theodore St SB													
E	L2	1	Subdominant	0	0.00	0	0.0	0.0	N	-	NA	0.00	0.000
S	T1	1	Subdominant	0	0.00	0	0.0	0.0	N	-	NA	0.00	0.000
S	T1	2	Dominant	0	0.00	0	0.0	0.0	N	-	NA	0.00	0.000

West: Ramp EB													
N	L2	1	Dominant	220	1.01	222	0.0	0.0	N	-	29.5	0.00	0.000
S	R2	2	Excl. Slip	210	1.00	210	0.0	0.0	N	-	30.0	0.00	0.000

Roundabout Capacity Model: US HCM 6

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Roundabout Gap Acceptance Parameters Site: Roundabout2 (Theodore St & EB Ramps) - 2025AM - HCM6

Site ID: 1
Roundabout

Dest	Turn	Lane No.	Lane Type	In-Bunch Headway sec	Prop. Bunched	Priority Sharing	HVE for Entry	Critical Gap		Follow-up Headway sec
								Headway sec	Dist ft	

South: Theodore St NB										
Model Calibration Factor (HCM 6): 1.00										
Entry/Circ. Flow Adjustment (HCM 6): None										
N	T1	1	Subdominant	0.00	0.000	N	1.32	4.54	126.1	2.54
N	T1	2	Dominant	0.00	0.000	N	1.32	4.54	126.1	2.54

E R2 3 Continuous

North: Theodore St SB

Model Calibration Factor (HCM 6): 1.00

Entry/Circ. Flow Adjustment (HCM 6): None

Direction	Lane	Control	Flow Adj	Cal Factor	Capacity	Delay	Queue	Stop	Start
E	L2	1 Subdominant	0.00	0.000	N	1.18	4.65	NA	2.67
S	T1	1 Subdominant	0.00	0.000	N	1.00	4.65	NA	2.67
S	T1	2 Dominant	0.00	0.000	N	1.00	4.33	NA	2.54

West: Ramp EB

Model Calibration Factor (HCM 6): 1.00

Entry/Circ. Flow Adjustment (HCM 6): None

Direction	Lane	Control	Flow Adj	Cal Factor	Capacity	Delay	Queue	Stop	Start
N	L2	1 Dominant	0.00	0.000	N	1.47	4.33	187.1	2.54
S	R2	2 Excl. Slip	0.00	0.000	N	1.31	4.33	190.3	2.54

Roundabout Capacity Model: US HCM 6

Dist (Distance): Spacing, i.e. distance between the front ends of two successive vehicles across all lanes in the circulating or exiting stream

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Roundabout Flow Rates

Site: Roundabout2 (Theodore St & EB Ramps) - 2025AM - HCM6

Site ID: 1

Roundabout

CIRCULATING LANE FLOW RATES

Lane No.	Circulating Flow Rate		
	veh/h	pcu/h	Percent
South: Theodore St NB			
1	40	56	100.0%
Total	40	56	
North: Theodore St SB			
1	0	0	0.0%
2	0	0	0.0%
Total	0	0	
West: Ramp EB			
1	106	108	48.8%
2	114	114	51.2%
Total	220	222	

The US HCM 6 roundabout capacity model option is in use.

This model considers only the total circulating flow and not the flow rates in individual circulating lanes. To model the effects of flow distribution in circulating lanes on the entry capacity results, you should use the SIDRA Standard roundabout capacity model.

APPROACH LANE FLOW RATES

Lane No.	Approach Flows (veh/h)		
	Out	To Downst	Total
South: Theodore St NB			
1	0	330	330

2	0	330	330
3	205	0	205
Total	205	660	865

North: Theodore St SB			
1	0	106	106
2	0	114	114
Total	0	220	220

West: Ramp EB			
1	0	30	30
2	490	0	490
Total	490	30	520

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Movements

Intersection Negotiation and Travel Data Site: Roundabout2 (Theodore St & EB Ramps) - 2025AM - HCM6

Site ID: 1
Roundabout

TRAVEL SPEED, TRAVEL DISTANCE AND TRAVEL TIME

From Approach	To Exit	Turn	Running Speed mph	Travel Speed mph	Travel Distance ft	Travel Time s	Total Dem Flows veh-mi/h	Travel Arv Flows veh-mi/h	Tot.Trav. Time veh-h/h
South: Theodore St NB									
	North	T1	39.1	35.9	3423.3#	65.1#	427.3	427.3	11.9
	East	R2	38.0	38.0	3288.6#	59.0#	127.4	127.4	3.4
North: Theodore St SB									
	East	L2	40.2	40.2	3435.7#	58.3#	6.5	6.5	0.2
	South	T1	40.2	40.2	3429.0#	58.2#	136.4	136.4	3.4
West: Ramp EB									
	North	L2	34.4	32.9	3580.9#	74.2#	20.3	20.3	0.6
	South	R2	36.3	31.7	3288.6#	70.7#	305.2	305.2	9.6
ALL VEHICLES:			38.2	35.2	3368.8#	65.3#	1023.2	1023.2	29.1

"Running Speed" is the average speed excluding stopped periods.

Travel Time values include cruise times and intersection delays including acceleration, deceleration and idling delays.

Travel Distance and Travel Time values include travel on the External Exit section based on the Exit Distance or user-specified Downstream Distance value as applicable.

INTERSECTION NEGOTIATION DATA

From Approach	To Exit	Turn	Negn Radius ft	Negn Speed mph	Negn Dist ft	App Dist ft	Exit Dist ft	Downstr Dist ft
---------------	---------	------	----------------	----------------	--------------	-------------	--------------	-----------------

South: Theodore St NB								
North	T1		328.1	30.0	223.3	1600	488	NA
East	R2		219.5	25.8	88.6	1600	488	NA
North: Theodore St SB								
East	L2		97.0	18.9	380.9	1600	488	NA
South	T1		328.1	30.0	223.3	1600	488	NA
West: Ramp EB								
North	L2		97.0	18.9	380.9	1600	488	NA
South	R2		216.1	25.6	88.6	1600	488	NA

Maximum Negotiation (Design) Speed = 30.0 mph

NA Downstream Distance does not apply if:

- Exit is an internal leg of a network
- "Program" option was specified
- Distance specified was less than the Exit Negotiation Distance
- Distance specified was greater than the exit leg length

MOVEMENT SPEEDS AND GEOMETRIC DELAY

Mov ID	Turn	App. Speeds		Exit Speeds		Queue Move-up Speed mph	Geom Delay sec
		Cruise mph	Negn mph	Negn mph	Cruise mph		
South: Theodore St NB							
8	T1	40.0	30.0	30.0	40.0	48.3	0.0
18	R2	40.0	25.8	25.8	40.0	41.5	0.0
North: Theodore St SB							
7	L2	40.0	18.9	18.9	40.0	46.6	0.0
4	T1	40.0	30.0	30.0	40.0	47.5	0.0
West: Ramp EB							
5	L2	40.0	18.9	18.9	40.0	30.4	0.0
12	R2	40.0	25.6	25.6	40.0	32.2	0.0

HCM Delay Formula option used: Geometric Delay is not included in Control Delay.

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Movement Capacity and Performance Parameters
 Site: Roundabout2 (Theodore St & EB Ramps) - 2025AM - HCM6

Site ID: 1
 Roundabout

MOVEMENT CAPACITY PARAMETERS

Mov ID	Turn	Mov Cl.	Arv Flow veh/h	Opng Flow veh/h	Movement Adjust. Flow pcu/h	Total Cap. veh/h	Prac. Deg. Satn xp	Prac. Spare Cap. %	Deg. Satn x
South: Theodore St NB									
8	T1	#	659	40	56	2045	0.85	164	0.322
18	R2	#	205	40	56	1419	0.98	580	0.144

North: Theodore St SB										
7	L2	#	10	0	0	125	0.85	962	0.080	
4	T1	#	210	0	0	2623	0.85	962	0.080	

West: Ramp EB										
5	L2	#	30	220	222	800	0.85	2167	0.037	
12	R2	#	490	210	210	907	0.85	57	0.540*	

* Maximum degree of saturation
Combined Movement Capacity parameters are shown for all Movement Classes.

MOVEMENT PERFORMANCE

Mov ID	Turn	Total Delay (veh-h/h)	Total Delay (pers-h/h)	Aver. Delay (sec)	Eff. Stop Rate	Total Stops	Perf. Index	Tot.Trav. Distance (veh-mi/h)	Tot.Trav. Time (veh-h/h)	Aver. Speed (mph)
South: Theodore St NB										
8	T1	1.24	1.49	6.8	0.08	51.0	13.19	427.3	11.9	35.9
18	R2	0.00	0.00	0.0	0.00	0.0	3.18	127.4	3.4	38.0
North: Theodore St SB										
7	L2	0.01	0.01	3.8	0.00	0.0	0.17	6.5	0.2	40.2
4	T1	0.19	0.23	3.2	0.00	0.0	3.60	136.4	3.4	40.2
West: Ramp EB										
5	L2	0.04	0.05	4.9	0.17	5.1	0.65	20.3	0.6	32.9
12	R2	1.53	1.84	11.2	0.31	154.3	11.81	305.2	9.6	31.7

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Fuel Consumption, Emissions and Cost
Site: Roundabout2 (Theodore St & EB Ramps) - 2025AM - HCM6

Site ID: 1
Roundabout

FUEL CONSUMPTION, EMISSIONS AND COST (TOTAL)

Mov ID	Turn	Cost Total \$/h	Fuel Total gal/h	CO2 Total kg/h	CO Total kg/h	HC Total kg/h	NOX Total kg/h
South: Theodore St NB							
8	T1	282.04	34.1	320.0	0.62	0.045	1.805
18	R2	66.40	7.7	71.0	0.19	0.013	0.333
		348.44	41.9	391.0	0.82	0.057	2.138
North: Theodore St SB							
7	L2	2.40	0.3	2.4	0.01	0.001	0.007
4	T1	47.45	4.2	37.0	0.21	0.012	0.039
		49.84	4.4	39.4	0.22	0.013	0.045
West: Ramp EB							
5	L2	21.13	2.5	24.0	0.03	0.003	0.156
12	R2	235.84	27.4	255.8	0.49	0.038	1.483
		256.97	29.9	279.8	0.53	0.040	1.640

INTERSECTION:	655.25	76.2	710.2	1.56	0.111	3.823
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FUEL CONSUMPTION, EMISSIONS AND COST (RATE)

Mov ID	Turn	Cost Rate \$/mi	Fuel Eff. mpg	CO2 Rate g/km	CO Rate g/km	HC Rate g/km	NOX Rate g/km
South: Theodore St NB							
8	T1	0.41	12.5	465.3	0.90	0.065	2.625
18	R2	0.32	16.5	346.5	0.95	0.062	1.625
		0.39	13.3	438.0	0.91	0.064	2.395
North: Theodore St SB							
7	L2	0.23	24.9	228.6	0.92	0.058	0.632
4	T1	0.22	32.8	168.4	0.95	0.057	0.177
		0.22	32.4	171.2	0.95	0.057	0.197
West: Ramp EB							
5	L2	0.65	8.0	733.0	1.03	0.083	4.773
12	R2	0.48	11.2	520.9	1.01	0.076	3.020
		0.49	10.9	534.1	1.01	0.077	3.130
INTERSECTION:		0.40	13.4	431.3	0.95	0.067	2.322

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Lanes

Lane Performance and Capacity Information Site: Roundabout2 (Theodore St & EB Ramps) - 2025AM - HCM6

Site ID: 1
Roundabout

LANE PERFORMANCE

Lane No.	Flow veh/h	Cap veh/h	Deg. Satn x	Aver. Delay sec	Eff. Stop Rate	Q u e u e		Lane Length ft
						95% Back veh	ft	
South: Theodore St NB								
1	330	1022	0.322	6.8	0.08	1.2	38.3	1600.0
2	330	1022	0.322	6.8	0.08	1.2	38.3	1600.0
3	205	1419	0.144	0.0	0.00			600.0T
North: Theodore St SB								
1	106	1328	0.080	3.3	0.00	0.0	0.0	1600.0
2	114	1420	0.080	3.2	0.00	0.0	0.0	1600.0
West: Ramp EB								
1	30	800	0.037	4.9	0.17	0.1	3.2	1600.0

2 490 907 0.540 11.2 0.31 2.2 69.6 1600.0

T Short lane due to specification of Turn Bay

LANE FLOW AND CAPACITY INFORMATION

Lane No.	Total Arv Flow veh/h	Min Cap veh/h	Tot Cap veh/h	Deg. Satn x	Lane Util %

South: Theodore St NB					
1	330	150	1022	0.322	100
2	330	150	1022	0.322	100
3	205	205	1419	0.144	100

North: Theodore St SB					
1	106	106	1328	0.080	100
2	114	114	1420	0.080	100

West: Ramp EB					
1	30	30	800	0.037	100
2	490	150	907	0.540	100

The capacity values of Continuous Lanes are obtained by adjusting the basic saturation flow for lane width, grade, movement class and turning vehicle effects. Saturation flow scale applies if specified.

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Lane, Approach and Intersection Performance
 Site: Roundabout2 (Theodore St & EB Ramps) - 2025AM - HCM6

Site ID: 1
 Roundabout

Lane No.	Arrival Flow (veh/h)	%HV	Adj. Basic Satf.	Deg Sat x	Aver. Delay sec	Longest Queue ft	Lane Length ft

South: Theodore St NB							
1	330	32		0.322	6.8	38	1600
2	330	32		0.322	6.8	38	1600
3	205	18	1975	0.144	0.0		600

	864	29		0.322	5.2	38	

North: Theodore St SB							
1	106	2		0.080	3.3	0	1600
2	114	0		0.080	3.2	0	1600

	220	1		0.080	3.2		

West: Ramp EB							
1	30	47		0.037	4.9	3	1600
2	490	31		0.540	11.2	70	1600

	520	32		0.540	10.9	70	
=====							

ALL VEHICLES					
Total Flow	% HV	Max X	Aver. Delay	Max Queue	

1604 26 0.540 6.8 70

=====

Peak flow period = 15 minutes.

Queue values in this table are 95% queue (feet)
 Note: Basic Saturation Flows at roundabouts or sign-controlled intersections apply only to continuous lanes.

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Driver Characteristics
 Site: Roundabout2 (Theodore St & EB Ramps) - 2025AM - HCM6

Site ID: 1
 Roundabout

Lane No.	Satn Speed mph	Satn Flow veh/h	Satn Hdwy sec	Satn Spacing ft	Average Queue Space ft	Driver Response Time sec

South: Theodore St NB						
1	30.0	1420	2.54	111.48	31.40	1.82
2	30.0	1420	2.54	111.48	31.40	1.82
3	NA - Continuous Movement					

North: Theodore St SB						
1	28.9	1350	2.67	113.19	25.34	2.07
2	30.0	1420	2.54	111.48	25.00	1.97

West: Ramp EB						
1	18.9	1420	2.54	70.34	34.40	1.30
2	25.6	1420	2.54	95.24	31.20	1.70

Saturation Flow and Saturation Headway are derived from follow-up headway.

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Lane Delays
 Site: Roundabout2 (Theodore St & EB Ramps) - 2025AM - HCM6

Site ID: 1
 Roundabout

LANE DELAYS

Lane No.	Deg. Satn x	% Arv During Green	Prog. Factor	Delay (seconds/veh)									
				Min Del dm	Stop-line 1st d1	2nd d2	Total dSL	Acc. dn	Queuing Total dq	MvUp dqm	Stopd (Idle) di	Geom dig	Control dic

South: Theodore St NB													
1	0.322	NA	NA	3.5	5.1	1.7	6.8	7.5	5.4	0.0	5.4	0.0	6.8
2	0.322	NA	NA	3.5	5.1	1.7	6.8	7.5	5.4	0.0	5.4	0.0	6.8
3	0.144					0.0					0.0	0.0	

North: Theodore St SB													
1	0.080	NA	NA	2.7	3.1	0.2	3.3	0.0	0.0	0.0	0.0	0.0	3.3
2	0.080	NA	NA	2.5	2.9	0.2	3.2	0.0	0.0	0.0	0.0	0.0	3.2
West: Ramp EB													
1	0.037	NA	NA	4.5	4.7	0.2	4.9	5.6	3.2	0.0	3.2	0.0	4.9
2	0.540	NA	NA	4.0	6.7	4.6	11.2	5.2	9.0	0.0	9.0	0.0	11.2

HCM Delay Formula option used (Exclude Geometric Delay option applies). Control Delay does not include Geometric Delay, and Stop-line Delay is treated as being same as Control Delay.

dm: Minimum delay for gap acceptance cases

dSL: Stop-line delay (=d1+d2)

dn: Average stop-start delay for all vehicles queued and unqueued

dq: Queuing delay (the part of the stop-line delay that includes stopped delay and queue move-up delay)

dqm: Queue move-up delay

di: Stopped delay (stopped (idling) time at near-zero speed)

dig: Geometric delay

dic: Control delay

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Lane Queues

Site: Roundabout2 (Theodore St & EB Ramps) - 2025AM - HCM6

Site ID: 1
Roundabout

BACK OF QUEUE (VEHICLES)

Lane No.	Deg. Satn x	% Arv During Green	Prog. Factor	Ovrfl. Queue No	Back of Queue (veh)				Queue Stor. Ratio		Prob. Block %	Prob. SL Ov. %
					Nb1	Nb2	Nb	95%	Av.	95%		
South: Theodore St NB												
1	0.322	NA	NA	0.0	0.5	0.0	0.5	1.2	0.01	0.02	0.0	NA
2	0.322	NA	NA	0.0	0.5	0.0	0.5	1.2	0.01	0.02	0.0	NA
North: Theodore St SB												
1	0.080	NA	NA	0.0	0.0	0.0	0.0	0.0	0.00	0.00	0.0	NA
2	0.080	NA	NA	0.0	0.0	0.0	0.0	0.0	0.00	0.00	0.0	NA
West: Ramp EB												
1	0.037	NA	NA	0.0	0.0	0.0	0.0	0.1	0.00	0.00	0.0	NA
2	0.540	NA	NA	0.0	0.9	0.0	0.9	2.2	0.02	0.04	0.0	NA

SIDRA Standard models are used for Back of Queue estimation since HCM only gives Cycle-Average Queues for unsignalised intersections.

BACK OF QUEUE (DISTANCE)

Lane No.	Deg. Satn x	% Arv During Green	Prog. Factor	Ovrfl. Queue No	Back of Queue (ft)				Queue Stor. Ratio		Prob. Block %	Prob. SL Ov. %
					Nb1	Nb2	Nb	95%	Av.	95%		
South: Theodore St NB												
1	0.322	NA	NA	0.0	15.4	0.0	15.4	38.3	0.01	0.02	0.0	NA
2	0.322	NA	NA	0.0	15.4	0.0	15.4	38.3	0.01	0.02	0.0	NA

North: Theodore St SB												
1	0.080	NA	NA	0.0	0.0	0.0	0.0	0.0	0.00	0.00	0.0	NA
2	0.080	NA	NA	0.0	0.0	0.0	0.0	0.0	0.00	0.00	0.0	NA

West: Ramp EB												
1	0.037	NA	NA	0.0	1.3	0.0	1.3	3.2	0.00	0.00	0.0	NA
2	0.540	NA	NA	0.0	28.0	0.0	28.0	69.6	0.02	0.04	0.0	NA

SIDRA Standard models are used for Back of Queue estimation since HCM only gives Cycle-Average Queues for unsignalised intersections.

OTHER QUEUE RESULTS (VEHICLES)

Lane No.	Deg. Satn	% Arv During Green	Prog. Factor	Ovrfl. Queue No	Cyc-Av. Queue	
	x			No	Nc	95%
South: Theodore St NB						
1	0.322	NA	NA	0.0	0.6	1.1
2	0.322	NA	NA	0.0	0.6	1.1
North: Theodore St SB						
1	0.080	NA	NA	0.0	0.1	0.2
2	0.080	NA	NA	0.0	0.1	0.2
West: Ramp EB						
1	0.037	NA	NA	0.0	0.0	0.1
2	0.540	NA	NA	0.0	1.5	2.8

HCM Delay Formula option used:
 Cycle-Average Queue is calculated using average delay from the HCM equation.
 (i.e. HCM delays are treated as stop-line delays for this purpose).

OTHER QUEUE RESULTS (DISTANCE)

Lane No.	Deg. Satn	% Arv During Green	Prog. Factor	Ovrfl. Queue No	Cyc-Av. Queue	
	x			No	Nc	95%
South: Theodore St NB						
1	0.322	NA	NA	0.0	19.5	35.4
2	0.322	NA	NA	0.0	19.5	35.4
North: Theodore St SB						
1	0.080	NA	NA	0.0	2.5	4.5
2	0.080	NA	NA	0.0	2.5	4.5
West: Ramp EB						
1	0.037	NA	NA	0.0	1.4	2.5
2	0.540	NA	NA	0.0	47.7	86.6

HCM Delay Formula option used:
 Cycle-Average Queue is calculated using average delay from the HCM equation.
 (i.e. HCM delays are treated as stop-line delays for this purpose).

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Site ID: 1
Roundabout

LANE QUEUE PERCENTILES (VEHICLES)

Lane No.	Deg. Satn x	Percentile Back of Queue (veh)						
		50%	70%	85%	90%	95%	98%	100%
South: Theodore St NB								
1	0.322	0.5	0.6	0.9	1.0	1.2	1.4	1.5
2	0.322	0.5	0.6	0.9	1.0	1.2	1.4	1.5
North: Theodore St SB								
1	0.080	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	0.080	0.0	0.0	0.0	0.0	0.0	0.0	0.0
West: Ramp EB								
1	0.037	0.0	0.0	0.1	0.1	0.1	0.1	0.1
2	0.540	0.9	1.2	1.6	1.9	2.2	2.5	2.7

SIDRA Standard models are used for Back of Queue estimation since HCM only gives Cycle-Average Queues for unsignalised intersections.

LANE QUEUE PERCENTILES (DISTANCE)

Lane No.	Deg. Satn x	Percentile Back of Queue (feet)						
		50%	70%	85%	90%	95%	98%	100%
South: Theodore St NB								
1	0.322	15.4	19.9	28.1	32.5	38.3	42.5	45.6
2	0.322	15.4	19.9	28.1	32.5	38.3	42.5	45.6
North: Theodore St SB								
1	0.080	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	0.080	0.0	0.0	0.0	0.0	0.0	0.0	0.0
West: Ramp EB								
1	0.037	1.3	1.7	2.3	2.7	3.2	3.5	3.8
2	0.540	28.0	36.2	51.1	59.2	69.6	77.2	83.0

SIDRA Standard models are used for Back of Queue estimation since HCM only gives Cycle-Average Queues for unsignalised intersections.

[Go to Table Links \(Top\)](#)

Lane Stops
Site: Roundabout2 (Theodore St & EB Ramps) - 2025AM - HCM6

Site ID: 1
Roundabout

Lane	Deg. Satn	% Arv During	Prog. Factor	-- Effective Stop Rate -- Geom. Overall	Total Stops	Queue Move-up Rate	Total Queue Move-ups	Prop. Queued	Aver. Num. of Cycles to
------	-----------	--------------	--------------	--	-------------	--------------------	----------------------	--------------	-------------------------

No.	x	Green		he1	he2	hig	h	H	hqm	Hqm	pq	Depart

South: Theodore St NB												
1	0.322	NA	NA	0.08	0.00	0.00	0.08	25.5	0.00	0.0	0.19	0.19
2	0.322	NA	NA	0.08	0.00	0.00	0.08	25.5	0.00	0.0	0.19	0.19
3	0.144	NA	NA			0.00	0.00	0.0				

North: Theodore St SB												
1	0.080	NA	NA	0.00	0.00	0.00	0.00	0.0	0.00	0.0	0.00	0.00
2	0.080	NA	NA	0.00	0.00	0.00	0.00	0.0	0.00	0.0	0.00	0.00

West: Ramp EB												
1	0.037	NA	NA	0.17	0.00	0.00	0.17	5.1	0.00	0.0	0.30	0.30
2	0.540	NA	NA	0.31	0.00	0.00	0.31	154.3	0.00	0.0	0.43	0.43

hig is the average value for all movements in a shared lane												
hqm is average queue move-up rate for all vehicles queued and unqueued												

[Go to Table Links \(Top\)](#)

Flow Rates

Origin-Destination Flow Rates (Total)

Site: Roundabout2 (Theodore St & EB Ramps) - 2025AM - HCM6

Site ID: 1
Roundabout

TOTAL FLOW RATES for All Movement Classes (veh/h)

From SOUTH To:	N	E	
Turn:	T1	R2	TOT
Flow Rate	659.1	204.5	863.6
%HV (all designations)	32.0	18.0	28.7

From NORTH To:	E	S	
Turn:	L2	T1	TOT
Flow Rate	10.0	210.0	220.0
%HV (all designations)	18.0	0.0	0.8

From WEST To:	N	S	
Turn:	L2	R2	TOT
Flow Rate	30.0	490.0	520.0
%HV (all designations)	47.0	31.0	31.9

Flow rates shown above are Arrival Flow Rates (veh/h) based on the following input specifications:
Unit Time for Volumes = 60 minutes
Peak Flow Period = 15 minutes
Effects of Volume Factors (Peak Flow Factor, Flow Scale, Growth Rate) are included.
Arrival Flow Rates may be less than Demand Flow Rates if capacity constraint applies in network analysis.

[Go to Table Links \(Top\)](#)

Origin-Destination Flow Rates by Movement Class

Site: Roundabout2 (Theodore St & EB Ramps) - 2025AM - HCM6

Site ID: 1
 Roundabout

FLOW RATES for Light Vehicles (veh/h)

From SOUTH To:	N	E	
Turn:	T1	R2	TOT
Flow Rate	448.2	167.7	615.9
Mov Class %	68.0	82.0	71.3
Flow Scale	1.00	1.00	-
Peak Flow Factor	0.88	0.88	-
Residual Demand	0.0	0.0	0.0

From NORTH To:	E	S	
Turn:	L2	T1	TOT
Flow Rate	8.2	210.0	218.2
Mov Class %	82.0	100.0	99.2
Flow Scale	1.00	1.00	-
Peak Flow Factor	1.00	1.00	-
Residual Demand	0.0	0.0	0.0

From WEST To:	N	S	
Turn:	L2	R2	TOT
Flow Rate	15.9	338.1	354.0
Mov Class %	53.0	69.0	68.1
Flow Scale	1.00	1.00	-
Peak Flow Factor	1.00	1.00	-
Residual Demand	0.0	0.0	0.0

FLOW RATES for Heavy Vehicles (veh/h)

From SOUTH To:	N	E	
Turn:	T1	R2	TOT
Flow Rate	210.9	36.8	247.7
Mov Class %	32.0	18.0	28.7
Flow Scale	1.00	1.00	-
Peak Flow Factor	0.88	0.88	-
Residual Demand	0.0	0.0	0.0

From NORTH To:	E	S	
Turn:	L2	T1	TOT
Flow Rate	1.8	0.0	1.8
Mov Class %	18.0	0.0	0.8
Flow Scale	1.00	1.00	-
Peak Flow Factor	1.00	1.00	-
Residual Demand	0.0	0.0	0.0

From WEST To:	N	S	
Turn:	L2	R2	TOT
Flow Rate	14.1	151.9	166.0
Mov Class %	47.0	31.0	31.9
Flow Scale	1.00	1.00	-
Peak Flow Factor	1.00	1.00	-
Residual Demand	0.0	0.0	0.0

Flow rates shown above are Arrival Flow Rates (veh/h) based on the following input specifications:
 Unit Time for Volumes = 60 minutes
 Peak Flow Period = 15 minutes

Effects of Volume Factors (Peak Flow Factor, Flow Scale, Growth Rate) are included.
 Arrival Flow Rates may be less than Demand Flow Rates if capacity constraint applies in
 network analysis.

[Go to Table Links \(Top\)](#)

Lane Flow Rates
Site: Roundabout2 (Theodore St & EB Ramps) - 2025AM - HCM6

Site ID: 1
 Roundabout

LANE FLOW RATES AT STOP LINE (veh/h)

From SOUTH To:	N	E	TOT
Turn:	T1	R2	

Lane 1			
LV	224.1	*	224.1
HV	105.5	*	105.5
Total	329.5	*	329.5
Lane 2			
LV	224.1	*	224.1
HV	105.5	*	105.5
Total	329.5	*	329.5
Lane 3			
LV	*	167.7	167.7
HV	*	36.8	36.8
Total	*	204.5	204.5

Approach	659.1	204.5	863.6

From NORTH To:	E	S	TOT
Turn:	L2	T1	

Lane 1			
LV	8.2	96.3	104.5
HV	1.8	*	1.8
Total	10.0	96.3	106.3
Lane 2			
LV	*	113.7	113.7
Total	*	113.7	113.7

Approach	10.0	210.0	220.0

From WEST To:	N	S	TOT
Turn:	L2	R2	

Lane 1			
LV	15.9	*	15.9
HV	14.1	*	14.1
Total	30.0	*	30.0
Lane 2			
LV	*	338.1	338.1
HV	*	151.9	151.9
Total	*	490.0	490.0

Approach	30.0	490.0	520.0

* Movement not allocated to the lane

EXIT LANE FLOW RATES

Movement Class:	LV	HV	TOT
Exit: SOUTH			
Lane: 1	96.3	*	96.3
Lane: 2	451.8	151.9	603.7
Total	548.1	151.9	700.0

Exit: EAST			
Lane: 1	8.2	1.8	10.0
Lane: 2	167.7	36.8	204.5
Total	175.9	38.6	214.5

Exit: NORTH			
Lane: 1	240.0	119.6	359.5
Lane: 2	224.1	105.5	329.5
Total	464.1	225.0	689.1

* Movement not allocated to the lane

DOWNSTREAM LANE FLOW RATES FOR EXIT ROADS

Movement Class:	LV	HV	TOT
Exit: SOUTH			
Lane: 1	96.3	*	96.3
Lane: 2	451.8	151.9	603.7
Total	548.1	151.9	700.0

Exit: EAST			
Lane: 1	8.2	1.8	10.0
Lane: 2	167.7	36.8	204.5
Total	175.9	38.6	214.5

Exit: NORTH			
Lane: 1	240.0	119.6	359.5
Lane: 2	224.1	105.5	329.5
Total	464.1	225.0	689.1

* Movement not allocated to the lane

Flow rates shown above are Arrival Flow Rates (veh/h) based on the following input specifications:
 Unit Time for Volumes = 60 minutes
 Peak Flow Period = 15 minutes
 Effects of Volume Factors (Peak Flow Factor, Flow Scale, Growth Rate) are included.
 Arrival Flow Rates may be less than Demand Flow Rates if capacity constraint applies in network analysis.

[Go to Table Links \(Top\)](#)

Other

Parameter Settings Summary

Site: Roundabout2 (Theodore St & EB Ramps) - 2025AM - HCM6

Site ID: 1
 Roundabout

* Basic Parameters:

Intersection Type: Roundabout
US HCM 6 Roundabout Capacity Model used
Driving on the right-hand side of the road
Input data specified in US units
Model Defaults: US HCM (Customary)
Peak Flow Period (for performance): 15 minutes
Unit time (for volumes): 60 minutes.
HCM Delay Model option used
HCM Queue Model option used
Level of Service based on: Delay and v/c (HCM 6)
Queue percentile: 95%

[Go to Table Links \(Top\)](#)

Diagnostics

Site: Roundabout2 (Theodore St & EB Ramps) - 2025AM - HCM6

Site ID: 1
Roundabout

Lane Flow-Capacity Iterations:

Site Model Variability Index (Iterations 3 to N): 0.0%
Number of Iterations: 3 (Maximum: 10)

Other Diagnostic Messages (if any):

[Go to Table Links \(Top\)](#)

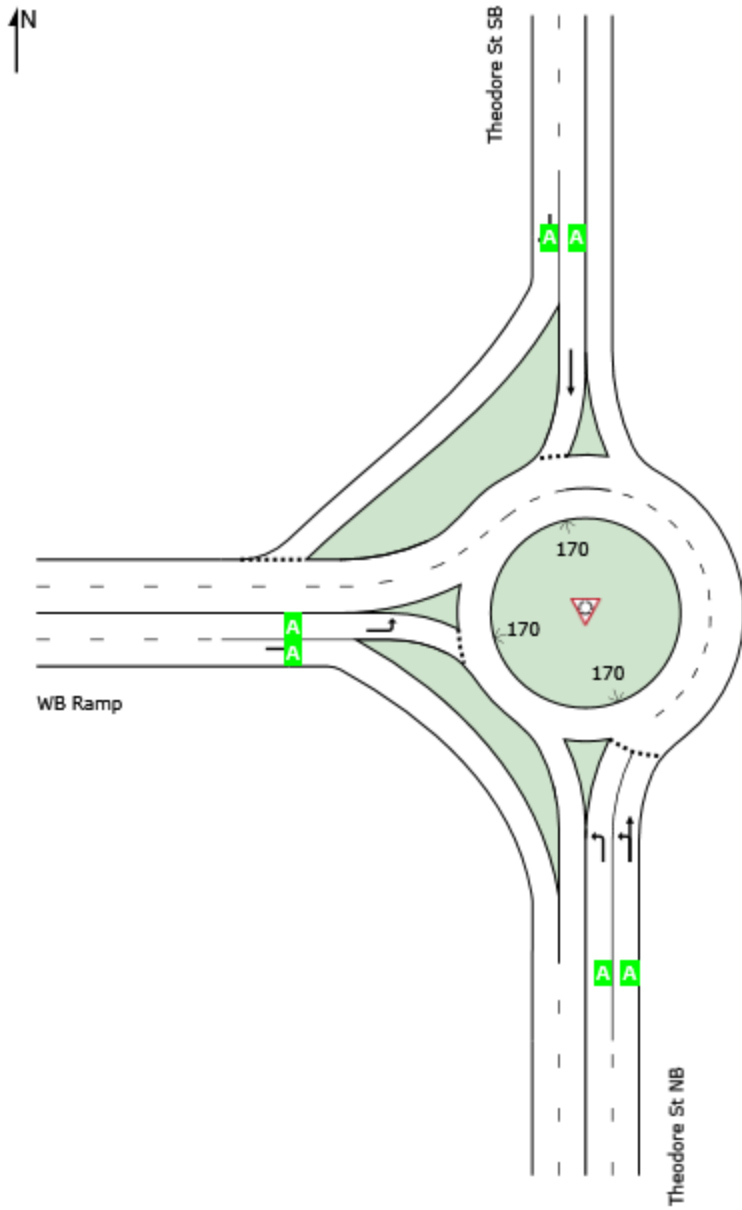
LANE LEVEL OF SERVICE

Lane Level of Service

 **Site: 1 [Roundabout3 (Theodore St & WB Ramps) - 2025AM - HCM6]**

Site Category: (None)
Roundabout

	Approaches			Intersection
	South	North	West	
LOS	A	A	A	A



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: Same as Sign Control.

Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

LOS F will result if $v/c > 1$ irrespective of lane delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

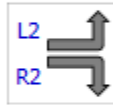
VOLUMES

	R2	T1
Tot	40	40
LV	70 %	87 %
HV	30 %	13 %



Theodore St SB

HV	LV	Tot	
13 %	87 %	30	L2
18 %	82 %	180	R2



WB Ramp




Theodore St NB



	L2	T1
Tot	550	60
LV	66 %	77 %
HV	34 %	23 %






S

DETAILED OUTPUT

 Site: 1 [Roundabout3 (Theodore St & WB Ramps) - 2025AM - HCM6]

Site Category: (None)
Roundabout

OUTPUT TABLE LINKS

-  Roundabouts
 - Roundabout Basic Parameters
 - Roundabout Circulating / Exiting Stream Parameters
 - Roundabout Gap Acceptance Parameters
 - Roundabout Flow Rates
-  Movements
 - Intersection Negotiation and Travel Data
 - Movement Capacity and Performance Parameters
 - Fuel Consumption, Emissions and Cost
-  Lanes
 - Lane Performance and Capacity Information
 - Lane, Approach and Intersection Performance
 - Driver Characteristics
 - Lane Delays
 - Lane Queues
 - Lane Queue Percentiles
 - Lane Stops
-  Flow Rates
 - Origin-Destination Flow Rates (Total)
 - Origin-Destination Flow Rates by Movement Class
 - Lane Flow Rates
-  Other
 - Parameter Settings Summary
 - Diagnostics

Roundabouts

Roundabout Basic Parameters Site: Roundabout3 (Theodore St & WB Ramps) - 2025AM - HCM6

Site ID: 1
Roundabout

Central Island Diam	Circ Width	Insc Diam.	Entry Radius	Entry Angle	Circ Lanes	Entry Lanes	Av.Entry Lane Width	App Dist	Prop Upstr	Queued Signal	Extra Bunching
ft	ft	ft	ft	deg			ft	ft			%
South: Theodore St NB	170.0*	15.0*	215.0*	65.0*	30.0*	1	2	13.00*	1600	NA	0.0U

North: Theodore St SB											
170.0*	30.0*	215.0*	65.0*	30.0*	2	2	13.00*	1600		NA	0.0U

West: WB Ramp											
170.0*	15.0*	200.0*	65.0*	30.0*	1	2	13.00*	1600		NA	0.0U

Roundabout Capacity Model: US HCM 6

* These parameters do not affect estimated capacity values in the HCM 6 Capacity Model.

NA Not Applicable (single Site analysis or unconnected Site in Network analysis).

U User-specified Extra Bunching

[Go to Table Links \(Top\)](#)

Roundabout Circulating / Exiting Stream Parameters Site: Roundabout3 (Theodore St & WB Ramps) - 2025AM - HCM6

Site ID: 1
Roundabout

Dest	Turn	Lane No.	Lane Type	Opng Flow veh/h	HVE pcu/veh	Adj. Flow pcu/h	%Near Lane Only	%Exit Flow Incl.	Cap. Const. Effect	O-D Factor	Aver Speed mph	In-Bunch Headway sec	Prop. Bunched

South: Theodore St NB													
W	L2	1	Subdominant	30	1.13	34	0.0	0.0	N	-	18.7	0.00	0.000
W	L2	2	Dominant	30	1.13	34	0.0	0.0	N	-	18.7	0.00	0.000
N	T1	2	Dominant	30	1.13	34	0.0	0.0	N	-	18.7	0.00	0.000

North: Theodore St SB													
S	T1	1	Dominant	625	1.34	838	0.0	0.0	N	-	18.7	0.00	0.000
W	R2	2	Excl. Slip	625	1.34	838	0.0	0.0	N	-	18.7	0.00	0.000

West: WB Ramp													
N	L2	1	Dominant	40	1.13	45	0.0	0.0	N	-	30.0	0.00	0.000
S	R2	2	Continuous										

Roundabout Capacity Model: US HCM 6

[Go to Table Links \(Top\)](#)

Roundabout Gap Acceptance Parameters Site: Roundabout3 (Theodore St & WB Ramps) - 2025AM - HCM6

Site ID: 1
Roundabout

Dest	Turn	Lane No.	Lane Type	In-Bunch Headway sec	Prop. Bunched	Priority Sharing	HVE for Entry	Critical Gap		Follow-up Headway sec
								Headway sec	Dist ft	

South: Theodore St NB										
Model Calibration Factor (HCM 6): 1.00										
Entry/Circ. Flow Adjustment (HCM 6): None										
W	L2	1	Subdominant	0.00	0.000	N	1.34	4.54	124.9	2.54
W	L2	2	Dominant	0.00	0.000	N	1.34	4.54	124.9	2.54
N	T1	2	Dominant	0.00	0.000	N	1.23	4.54	124.9	2.54

 North: Theodore St SB
 Model Calibration Factor (HCM 6): 1.00
 Entry/Circ. Flow Adjustment (HCM 6): None

S	T1	1	Dominant	0.00	0.000	N	1.13	4.33	118.6	2.54
W	R2	2	Excl. Slip	0.00	0.000	N	1.30	4.33	118.6	2.54

West: WB Ramp
 Model Calibration Factor (HCM 6): 1.00
 Entry/Circ. Flow Adjustment (HCM 6): None

N	L2	1	Dominant	0.00	0.000	N	1.13	4.54	199.8	2.54
S	R2	2	Continuous							

Roundabout Capacity Model: US HCM 6

Dist (Distance): Spacing, i.e. distance between the front ends of two successive vehicles across all lanes in the circulating or exiting stream

[Go to Table Links \(Top\)](#)

Roundabout Flow Rates

Site: Roundabout3 (Theodore St & WB Ramps) - 2025AM - HCM6

Site ID: 1
 Roundabout

CIRCULATING LANE FLOW RATES

Lane No.	Circulating Flow Rate		
	veh/h	pcu/h	Percent

South: Theodore St NB			
1	30	34	100.0%
Total	30	34	

North: Theodore St SB			
1	344	461	55.0%
2	281	377	45.0%
Total	625	838	

West: WB Ramp			
1	40	45	100.0%
Total	40	45	

The US HCM 6 roundabout capacity model option is in use. This model considers only the total circulating flow and not the flow rates in individual circulating lanes. To model the effects of flow distribution in circulating lanes on the entry capacity results, you should use the SIDRA Standard roundabout capacity model.

APPROACH LANE FLOW RATES

Lane No.	Approach Flows (veh/h)		
	Out	To Downst	Total

South: Theodore St NB			
1	0	344	344
2	68	281	349
Total	68	625	693

North: Theodore St SB			
1	0	40	40
2	40	0	40
Total	40	40	80

West: WB Ramp			
1	0	30	30
2	180	0	180
Total	180	30	210

[Go to Table Links \(Top\)](#)

Movements

Intersection Negotiation and Travel Data

Site: Roundabout3 (Theodore St & WB Ramps) - 2025AM - HCM6

Site ID: 1
Roundabout

TRAVEL SPEED, TRAVEL DISTANCE AND TRAVEL TIME

From Approach	To Exit	Turn	Running Speed mph	Travel Speed mph	Travel Distance ft	Travel Time s	Total Dem Flows veh-mi/h	Travel Distance Arv Flows veh-mi/h	Tot.Trav. Time veh-h/h
South: Theodore St NB									
	West	L2	35.4	32.5	3554.7#	74.6#	420.8	420.8	12.9
	North	T1	36.1	33.1	3537.0#	72.9#	45.7	45.7	1.4
North: Theodore St SB									
	South	T1	37.5	36.0	3402.3#	64.5#	25.8	25.8	0.7
	West	R2	35.8	33.2	3282.9#	67.4#	24.9	24.9	0.7
West: WB Ramp									
	North	L2	35.7	34.4	3572.1#	70.7#	20.3	20.3	0.6
	South	R2	38.0	38.0	3276.9#	58.9#	111.7	111.7	2.9
ALL VEHICLES:			36.0	33.6	3485.9#	70.7#	649.1	649.1	19.3

"Running Speed" is the average speed excluding stopped periods.

Travel Time values include cruise times and intersection delays including acceleration, deceleration and idling delays.

Travel Distance and Travel Time values include travel on the External Exit section based on the Exit Distance or user-specified Downstream Distance value as applicable.

INTERSECTION NEGOTIATION DATA

From Approach	To Exit	Turn	Negn Radius ft	Negn Speed mph	Negn Dist ft	App Dist ft	Exit Dist ft	Downstr Dist ft
South: Theodore St NB								
	West	L2	94.0	18.7	369.1	1600	488	NA
	North	T1	328.1	30.0	223.3	1600	488	NA

North: Theodore St SB								
	South	T1	328.1	30.0	202.3	1600	488	NA
	West	R2	198.0	24.8	82.9	1600	488	NA
West: WB Ramp								
	North	L2	94.8	18.7	372.1	1600	488	NA
	South	R2	222.3	25.9	76.9	1600	488	NA

Maximum Negotiation (Design) Speed = 30.0 mph

NA Downstream Distance does not apply if:

- Exit is an internal leg of a network
- "Program" option was specified
- Distance specified was less than the Exit Negotiation Distance
- Distance specified was greater than the exit leg length

MOVEMENT SPEEDS AND GEOMETRIC DELAY

Mov ID	Turn	App. Speeds		Exit Speeds		Queue Move-up Speed	Geom Delay
		Cruise mph	Negn mph	Negn mph	Cruise mph		
South: Theodore St NB							
3	L2	40.0	18.7	18.7	40.0	31.7	0.0
8	T1	40.0	30.0	30.0	40.0	33.6	0.0
North: Theodore St SB							
4	T1	40.0	30.0	30.0	40.0	16.7	0.0
14	R2	40.0	24.8	24.8	40.0	17.7	0.0
West: WB Ramp							
5	L2	40.0	18.7	18.7	40.0	30.2	0.0
12	R2	40.0	25.9	25.9	40.0	41.7	0.0

HCM Delay Formula option used: Geometric Delay is not included in Control Delay.

[Go to Table Links \(Top\)](#)

Movement Capacity and Performance Parameters
 Site: Roundabout3 (Theodore St & WB Ramps) - 2025AM - HCM6

Site ID: 1
 Roundabout

MOVEMENT CAPACITY PARAMETERS

Mov ID	Turn	Mov Cl.	Arv Flow	Opng Flow	Movement Adjust. Flow	Total Cap.	Prac. Deg. xp	Prac. Spare Cap. %	Deg. Satn x
South: Theodore St NB									
3	L2	#	625	30	34	1868	0.85	154	0.335*
8	T1	#	68	30	34	204	0.85	154	0.335*
North: Theodore St SB									
4	T1	#	40	625	838	617	0.85	1210	0.065
14	R2	#	40	625	838	536	0.85	1039	0.075

West: WB Ramp										
5	L2	#	30	40	45	1206	0.85	3317	0.025	
12	R2	#	180	40	45	1419	0.98	673	0.127	

* Maximum degree of saturation
Combined Movement Capacity parameters are shown for all Movement Classes.

MOVEMENT PERFORMANCE

Mov ID	Turn	Total Delay (veh-h/h)	Total Delay (pers-h/h)	Aver. Delay (sec)	Eff. Stop Rate	Total Stops	Perf. Index	Tot.Trav. Distance (veh-mi/h)	Tot.Trav. Time (veh-h/h)	Aver. Speed (mph)
South: Theodore St NB										
3	L2	1.20	1.44	6.9	0.05	30.2	12.92	420.8	12.9	32.5
8	T1	0.13	0.15	6.6	0.05	3.3	2.33	45.7	1.4	33.1
North: Theodore St SB										
4	T1	0.07	0.09	6.6	0.53	21.4	0.99	25.8	0.7	36.0
14	R2	0.08	0.10	7.6	0.54	21.7	0.99	24.9	0.7	33.2
West: WB Ramp										
5	L2	0.03	0.03	3.2	0.04	1.1	0.61	20.3	0.6	34.4
12	R2	0.00	0.00	0.0	0.00	0.0	2.79	111.7	2.9	38.0

[Go to Table Links \(Top\)](#)

Fuel Consumption, Emissions and Cost
Site: Roundabout3 (Theodore St & WB Ramps) - 2025AM - HCM6

Site ID: 1
Roundabout

FUEL CONSUMPTION, EMISSIONS AND COST (TOTAL)

Mov ID	Turn	Cost Total (\$/h)	Fuel Total (gal/h)	CO2 Total (kg/h)	CO Total (kg/h)	HC Total (kg/h)	NOX Total (kg/h)
South: Theodore St NB							
3	L2	353.25	40.0	374.3	0.69	0.053	2.213
8	T1	36.79	4.0	37.1	0.08	0.006	0.214
		390.04	44.0	411.4	0.76	0.059	2.426
North: Theodore St SB							
4	T1	13.50	1.4	12.8	0.04	0.003	0.053
14	R2	18.95	2.2	20.8	0.04	0.003	0.121
		32.44	3.6	33.7	0.08	0.006	0.174
West: WB Ramp							
5	L2	12.36	1.2	10.9	0.03	0.002	0.045
12	R2	57.98	6.8	62.2	0.17	0.011	0.292
		70.34	7.9	73.1	0.20	0.014	0.337
INTERSECTION:		492.82	55.5	518.2	1.05	0.079	2.937

FUEL CONSUMPTION, EMISSIONS AND COST (RATE)

Mov ID	Turn	Cost Rate \$/mi	Fuel Eff. mpg	CO2 Rate g/km	CO Rate g/km	HC Rate g/km	NOX Rate g/km
South: Theodore St NB							
3	L2	0.52	10.5	552.7	1.02	0.079	3.268
8	T1	0.50	11.5	505.2	1.02	0.077	2.905
		0.52	10.6	548.1	1.02	0.079	3.232
North: Theodore St SB							
4	T1	0.33	18.3	309.8	0.99	0.068	1.282
14	R2	0.47	11.2	519.7	1.01	0.076	3.020
		0.40	13.9	412.9	1.00	0.072	2.135
West: WB Ramp							
5	L2	0.38	17.0	333.6	1.04	0.076	1.381
12	R2	0.32	16.5	346.1	0.95	0.062	1.623
		0.33	16.6	344.2	0.96	0.064	1.585
INTERSECTION:		0.47	11.7	496.0	1.00	0.075	2.812

[Go to Table Links \(Top\)](#)

Lanes

Lane Performance and Capacity Information

Site: Roundabout3 (Theodore St & WB Ramps) - 2025AM - HCM6

Site ID: 1
Roundabout

LANE PERFORMANCE

Lane No.	Flow veh/h	Cap veh/h	Deg. Satn x	Aver. Delay sec	Eff. Stop Rate	Q u e u e		Lane Length ft
						95% Back veh	ft	
South: Theodore St NB								
1	344	1028	0.335	6.9	0.05	1.3	40.2	1600.0
2	349	1044	0.335	6.8	0.05	1.3	40.5	1600.0
North: Theodore St SB								
1	40	617	0.065	6.6	0.53	0.2	5.4	1600.0
2	40	536	0.075	7.6	0.54	0.2	6.1	1600.0
West: WB Ramp								
1	30	1206	0.025	3.2	0.04	0.1	2.4	1600.0
2	180	1419	0.127	0.0	0.00			1600.0

LANE FLOW AND CAPACITY INFORMATION

Lane No.	Total Arv Flow veh/h	Min Cap veh/h	Tot Cap veh/h	Deg. Satn x	Lane Util %

South: Theodore St NB					
1	344	150	1028	0.335	100
2	349	150	1044	0.335	100

North: Theodore St SB					
1	40	40	617	0.065	100
2	40	40	536	0.075	100

West: WB Ramp					
1	30	30	1206	0.025	100
2	180	180	1419	0.127	100

The capacity values of Continuous Lanes are obtained by adjusting the basic saturation flow for lane width, grade, movement class and turning vehicle effects. Saturation flow scale applies if specified.

[Go to Table Links \(Top\)](#)

Lane, Approach and Intersection Performance Site: Roundabout3 (Theodore St & WB Ramps) - 2025AM - HCM6

Site ID: 1
Roundabout

Lane No.	Arrival Flow (veh/h)	%HV	Adj. Basic Satf.	Deg Sat x	Aver. Delay sec	Longest Queue ft	Lane Length ft

South: Theodore St NB							
1	344	34		0.335	6.9	40	1600
2	349	32		0.335	6.8	41	1600
	693	33		0.335	6.9	41	

North: Theodore St SB							
1	40	13		0.065	6.6	5	1600
2	40	30		0.075	7.6	6	1600
	80	22		0.075	7.1	6	

West: WB Ramp							
1	30	13		0.025	3.2	2	1600
2	180	18	1975	0.127	0.0		1600
	210	17		0.127	0.5	2	
=====							
ALL VEHICLES							
	Total Flow	% HV		Max X	Aver. Delay	Max Queue	
	983	29		0.335	5.5	41	
=====							

Peak flow period = 15 minutes.

Queue values in this table are 95% queue (feet)
Note: Basic Saturation Flows at roundabouts or sign-controlled intersections apply only to continuous lanes.

[Go to Table Links \(Top\)](#)

Driver Characteristics
Site: Roundabout3 (Theodore St & WB Ramps) - 2025AM - HCM6

Site ID: 1
 Roundabout

Lane No.	Satn Speed mph	Satn Flow veh/h	Satn Hdwy sec	Satn Spacing ft	Average Queue Space ft	Driver Response Time sec

South: Theodore St NB						
1	18.7	1420	2.54	69.50	31.80	1.38
2	20.9	1420	2.54	77.70	31.37	1.51

North: Theodore St SB						
1	30.0	1420	2.54	111.48	27.60	1.91
2	24.8	1420	2.54	92.14	31.00	1.68

West: WB Ramp						
1	18.7	1420	2.54	69.71	27.60	1.53
2	NA - Continuous Movement					

Saturation Flow and Saturation Headway are derived from follow-up headway.

[Go to Table Links \(Top\)](#)

Lane Delays
Site: Roundabout3 (Theodore St & WB Ramps) - 2025AM - HCM6

Site ID: 1
 Roundabout

LANE DELAYS

Lane No.	Deg. Satn x	% Arv During Green	Prog. Factor	Delay (seconds/veh)									
				Min Del dm	Stop-line d1	2nd d2	Total dSL	Acc. Dec. dn	Queuing Total dq	MvUp dqm	Stopd (Idle) di	Geom dig	Control dic

South: Theodore St NB													
1	0.335	NA	NA	3.5	5.2	1.8	6.9	5.5	6.2	0.0	6.2	0.0	6.9
2	0.335	NA	NA	3.4	5.1	1.7	6.8	5.1	6.1	0.0	6.1	0.0	6.8

North: Theodore St SB													
1	0.065	NA	NA	5.8	6.2	0.4	6.6	7.2	2.6	0.0	2.6	0.0	6.6
2	0.075	NA	NA	6.7	7.1	0.5	7.6	5.1	4.8	0.0	4.8	0.0	7.6

West: WB Ramp													
1	0.025	NA	NA	3.0	3.1	0.1	3.2	5.5	2.5	0.0	2.5	0.0	3.2
2	0.127					0.0					0.0	0.0	

HCM Delay Formula option used (Exclude Geometric Delay option applies). Control

Delay does not include Geometric Delay, and Stop-line Delay is treated as being same as Control Delay.

dm: Minimum delay for gap acceptance cases

dSL: Stop-line delay (=dl+d2)

dn: Average stop-start delay for all vehicles queued and unqueued

dq: Queuing delay (the part of the stop-line delay that includes stopped delay and queue move-up delay)

dqm: Queue move-up delay

di: Stopped delay (stopped (idling) time at near-zero speed)

dig: Geometric delay

dic: Control delay

[Go to Table Links \(Top\)](#)

Lane Queues

Site: Roundabout3 (Theodore St & WB Ramps) - 2025AM - HCM6

Site ID: 1
Roundabout

BACK OF QUEUE (VEHICLES)

Lane No.	Deg. Satn x	% Arv During Green	Prog. Factor	Ovrfl. Queue No	Back of Queue (veh)				Queue Stor. Ratio		Prob. Block %	Prob. SL Ov. %
					Nb1	Nb2	Nb	95%	Av.	95%		
South: Theodore St NB												
1	0.335	NA	NA	0.0	0.5	0.0	0.5	1.3	0.01	0.03	0.0	NA
2	0.335	NA	NA	0.0	0.5	0.0	0.5	1.3	0.01	0.03	0.0	NA
North: Theodore St SB												
1	0.065	NA	NA	0.0	0.1	0.0	0.1	0.2	0.00	0.00	0.0	NA
2	0.075	NA	NA	0.0	0.1	0.0	0.1	0.2	0.00	0.00	0.0	NA
West: WB Ramp												
1	0.025	NA	NA	0.0	0.0	0.0	0.0	0.1	0.00	0.00	0.0	NA

SIDRA Standard models are used for Back of Queue estimation since HCM only gives Cycle-Average Queues for unsignalised intersections.

BACK OF QUEUE (DISTANCE)

Lane No.	Deg. Satn x	% Arv During Green	Prog. Factor	Ovrfl. Queue No	Back of Queue (ft)				Queue Stor. Ratio		Prob. Block %	Prob. SL Ov. %
					Nb1	Nb2	Nb	95%	Av.	95%		
South: Theodore St NB												
1	0.335	NA	NA	0.0	16.2	0.0	16.2	40.2	0.01	0.03	0.0	NA
2	0.335	NA	NA	0.0	16.3	0.0	16.3	40.5	0.01	0.03	0.0	NA
North: Theodore St SB												
1	0.065	NA	NA	0.0	2.2	0.0	2.2	5.4	0.00	0.00	0.0	NA
2	0.075	NA	NA	0.0	2.5	0.0	2.5	6.1	0.00	0.00	0.0	NA
West: WB Ramp												
1	0.025	NA	NA	0.0	1.0	0.0	1.0	2.4	0.00	0.00	0.0	NA

SIDRA Standard models are used for Back of Queue estimation since HCM only gives Cycle-Average Queues for unsignalised intersections.

OTHER QUEUE RESULTS (VEHICLES)

Lane No.	Deg. Satn	% Arv During Green	Prog. Factor	Ovrfl. Queue No	Cyc-Av. Nc	Queue 95%
	x					
South: Theodore St NB						
1	0.335	NA	NA	0.0	0.7	1.2
2	0.335	NA	NA	0.0	0.7	1.2
North: Theodore St SB						
1	0.065	NA	NA	0.0	0.1	0.1
2	0.075	NA	NA	0.0	0.1	0.2
West: WB Ramp						
1	0.025	NA	NA	0.0	0.0	0.0

HCM Delay Formula option used:

Cycle-Average Queue is calculated using average delay from the HCM equation. (i.e. HCM delays are treated as stop-line delays for this purpose).

OTHER QUEUE RESULTS (DISTANCE)

Lane No.	Deg. Satn	% Arv During Green	Prog. Factor	Ovrfl. Queue No	Cyc-Av. Nc	Queue 95%
	x					
South: Theodore St NB						
1	0.335	NA	NA	0.0	21.0	38.2
2	0.335	NA	NA	0.0	20.8	37.8
North: Theodore St SB						
1	0.065	NA	NA	0.0	2.0	3.7
2	0.075	NA	NA	0.0	2.6	4.8
West: WB Ramp						
1	0.025	NA	NA	0.0	0.7	1.3

HCM Delay Formula option used:

Cycle-Average Queue is calculated using average delay from the HCM equation. (i.e. HCM delays are treated as stop-line delays for this purpose).

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Lane Queue Percentiles

Site: Roundabout3 (Theodore St & WB Ramps) - 2025AM - HCM6

Site ID: 1
Roundabout

LANE QUEUE PERCENTILES (VEHICLES)

Lane No.	Deg. Satn	Percentile Back of Queue (veh)						
	x	50%	70%	85%	90%	95%	98%	100%
South: Theodore St NB								

1	0.335	0.5	0.7	0.9	1.1	1.3	1.4	1.5
2	0.335	0.5	0.7	0.9	1.1	1.3	1.4	1.5

North: Theodore St SB

1	0.065	0.1	0.1	0.1	0.2	0.2	0.2	0.2
2	0.075	0.1	0.1	0.1	0.2	0.2	0.2	0.2

West: WB Ramp

1	0.025	0.0	0.0	0.1	0.1	0.1	0.1	0.1
---	-------	-----	-----	-----	-----	-----	-----	-----

SIDRA Standard models are used for Back of Queue estimation since HCM only gives Cycle-Average Queues for unsignalised intersections.

LANE QUEUE PERCENTILES (DISTANCE)

Lane No.	Deg. Satn x	Percentile Back of Queue (feet)						
		50%	70%	85%	90%	95%	98%	100%

South: Theodore St NB

1	0.335	16.2	21.0	29.5	34.2	40.2	44.7	48.0
2	0.335	16.3	21.1	29.8	34.5	40.5	45.0	48.4

North: Theodore St SB

1	0.065	2.2	2.8	4.0	4.6	5.4	6.0	6.5
2	0.075	2.5	3.2	4.5	5.2	6.1	6.8	7.3

West: WB Ramp

1	0.025	1.0	1.2	1.7	2.0	2.4	2.6	2.8
---	-------	-----	-----	-----	-----	-----	-----	-----

SIDRA Standard models are used for Back of Queue estimation since HCM only gives Cycle-Average Queues for unsignalised intersections.

[Go to Table Links \(Top\)](#)

Lane Stops
Site: Roundabout3 (Theodore St & WB Ramps) - 2025AM - HCM6

Site ID: 1
Roundabout

Lane No.	Deg. Satn x	% Arv During Green	Prog. Factor	-- Effective Stop Rate --				Total Stops H	Queue Move-up Rate hqm	Total Queue Move-ups Hqm	Prop. Queued pq	Aver. Num. of Cycles to Depart
				he1	he2	hig	h					

South: Theodore St NB

1	0.335	NA	NA	0.05	0.00	0.00	0.05	16.6	0.00	0.0	0.14	0.14
2	0.335	NA	NA	0.05	0.00	0.00	0.05	16.9	0.00	0.0	0.14	0.14

North: Theodore St SB

1	0.065	NA	NA	0.53	0.00	0.00	0.53	21.4	0.00	0.0	0.56	0.56
2	0.075	NA	NA	0.54	0.00	0.00	0.54	21.7	0.00	0.0	0.56	0.56

West: WB Ramp

1	0.025	NA	NA	0.04	0.00	0.00	0.04	1.1	0.00	0.0	0.13	0.13
2	0.127	NA	NA			0.00	0.00	0.0				

hig is the average value for all movements in a shared lane
hqm is average queue move-up rate for all vehicles queued and unqueued

[Go to Table Links \(Top\)](#)

Flow Rates

Origin-Destination Flow Rates (Total)

Site: Roundabout3 (Theodore St & WB Ramps) - 2025AM - HCM6

Site ID: 1
Roundabout

TOTAL FLOW RATES for All Movement Classes (veh/h)

From SOUTH To:	W	N	
Turn:	L2	T1	TOT
Flow Rate	625.0	68.2	693.2
%HV (all designations)	34.0	23.0	32.9

From NORTH To:	S	W	
Turn:	T1	R2	TOT
Flow Rate	40.0	40.0	80.0
%HV (all designations)	13.0	30.0	21.5

From WEST To:	N	S	
Turn:	L2	R2	TOT
Flow Rate	30.0	180.0	210.0
%HV (all designations)	13.0	18.0	17.3

Flow rates shown above are Arrival Flow Rates (veh/h) based on the following input specifications:
Unit Time for Volumes = 60 minutes
Peak Flow Period = 15 minutes
Effects of Volume Factors (Peak Flow Factor, Flow Scale, Growth Rate) are included.
Arrival Flow Rates may be less than Demand Flow Rates if capacity constraint applies in network analysis.

[Go to Table Links \(Top\)](#)

Origin-Destination Flow Rates by Movement Class

Site: Roundabout3 (Theodore St & WB Ramps) - 2025AM - HCM6

Site ID: 1
Roundabout

FLOW RATES for Light Vehicles (veh/h)

From SOUTH To:	W	N	
Turn:	L2	T1	TOT

Flow Rate	412.5	52.5	465.0
Mov Class %	66.0	77.0	67.1
Flow Scale	1.00	1.00	-
Peak Flow Factor	0.88	0.88	-
Residual Demand	0.0	0.0	0.0

From NORTH To:	S	W	
Turn:	T1	R2	TOT
Flow Rate	34.8	28.0	62.8
Mov Class %	87.0	70.0	78.5
Flow Scale	1.00	1.00	-
Peak Flow Factor	1.00	1.00	-
Residual Demand	0.0	0.0	0.0

From WEST To:	N	S	
Turn:	L2	R2	TOT
Flow Rate	26.1	147.6	173.7
Mov Class %	87.0	82.0	82.7
Flow Scale	1.00	1.00	-
Peak Flow Factor	1.00	1.00	-
Residual Demand	0.0	0.0	0.0

FLOW RATES for Heavy Vehicles (veh/h)

From SOUTH To:	W	N	
Turn:	L2	T1	TOT
Flow Rate	212.5	15.7	228.2
Mov Class %	34.0	23.0	32.9
Flow Scale	1.00	1.00	-
Peak Flow Factor	0.88	0.88	-
Residual Demand	0.0	0.0	0.0

From NORTH To:	S	W	
Turn:	T1	R2	TOT
Flow Rate	5.2	12.0	17.2
Mov Class %	13.0	30.0	21.5
Flow Scale	1.00	1.00	-
Peak Flow Factor	1.00	1.00	-
Residual Demand	0.0	0.0	0.0

From WEST To:	N	S	
Turn:	L2	R2	TOT
Flow Rate	3.9	32.4	36.3
Mov Class %	13.0	18.0	17.3
Flow Scale	1.00	1.00	-
Peak Flow Factor	1.00	1.00	-
Residual Demand	0.0	0.0	0.0

Flow rates shown above are Arrival Flow Rates (veh/h) based on the following input specifications:
Unit Time for Volumes = 60 minutes
Peak Flow Period = 15 minutes
Effects of Volume Factors (Peak Flow Factor, Flow Scale, Growth Rate) are included.
Arrival Flow Rates may be less than Demand Flow Rates if capacity constraint applies in network analysis.

[Go to Table Links \(Top\)](#)

Lane Flow Rates
Site: Roundabout3 (Theodore St & WB Ramps) - 2025AM - HCM6

Site ID: 1
Roundabout

LANE FLOW RATES AT STOP LINE (veh/h)

From SOUTH To:	W	N	
Turn:	L2	T1	TOT

Lane 1			
LV	226.9	*	226.9
HV	116.9	*	116.9
Total	343.8	*	343.8
Lane 2			
LV	185.6	52.5	238.1
HV	95.6	15.7	111.3
Total	281.2	68.2	349.4

Approach	625.0	68.2	693.2

From NORTH To:	S	W	
Turn:	T1	R2	TOT

Lane 1			
LV	34.8	*	34.8
HV	5.2	*	5.2
Total	40.0	*	40.0
Lane 2			
LV	*	28.0	28.0
HV	*	12.0	12.0
Total	*	40.0	40.0

Approach	40.0	40.0	80.0

From WEST To:	N	S	
Turn:	L2	R2	TOT

Lane 1			
LV	26.1	*	26.1
HV	3.9	*	3.9
Total	30.0	*	30.0
Lane 2			
LV	*	147.6	147.6
HV	*	32.4	32.4
Total	*	180.0	180.0

Approach	30.0	180.0	210.0

* Movement not allocated to the lane

EXIT LANE FLOW RATES

Movement Class:	LV	HV	TOT

Exit: SOUTH			
Lane: 1	34.8	5.2	40.0
Lane: 2	147.6	32.4	180.0
Total	182.4	37.6	220.0

Exit: NORTH			
Lane: 1	78.6	19.6	98.2
Total	78.6	19.6	98.2

Exit: WEST			
Lane: 1	226.9	116.9	343.8
Lane: 2	213.6	107.6	321.2
Total	440.5	224.5	665.0

* Movement not allocated to the lane

DOWNSTREAM LANE FLOW RATES FOR EXIT ROADS

Movement Class:	LV	HV	TOT

Exit: SOUTH			
Lane: 1	34.8	5.2	40.0
Lane: 2	147.6	32.4	180.0
Total	182.4	37.6	220.0

Exit: NORTH			
Lane: 1	78.6	19.6	98.2
Total	78.6	19.6	98.2

Exit: WEST			
Lane: 1	226.9	116.9	343.8
Lane: 2	213.6	107.6	321.2
Total	440.5	224.5	665.0

* Movement not allocated to the lane

Flow rates shown above are Arrival Flow Rates (veh/h) based on the following input specifications:
 Unit Time for Volumes = 60 minutes
 Peak Flow Period = 15 minutes
 Effects of Volume Factors (Peak Flow Factor, Flow Scale, Growth Rate) are included.
 Arrival Flow Rates may be less than Demand Flow Rates if capacity constraint applies in network analysis.

[Go to Table Links \(Top\)](#)

Other

Parameter Settings Summary
 Site: Roundabout3 (Theodore St & WB Ramps) - 2025AM - HCM6

Site ID: 1
 Roundabout

* Basic Parameters:
 Intersection Type: Roundabout
 US HCM 6 Roundabout Capacity Model used
 Driving on the right-hand side of the road
 Input data specified in US units
 Model Defaults: US HCM (Customary)
 Peak Flow Period (for performance): 15 minutes
 Unit time (for volumes): 60 minutes.
 HCM Delay Model option used
 HCM Queue Model option used
 Level of Service based on: Delay and v/c (HCM 6)
 Queue percentile: 95%

[Go to Table Links \(Top\)](#)

Diagnostics
 Site: Roundabout3 (Theodore St & WB Ramps) - 2025AM - HCM6

Site ID: 1
Roundabout

Lane Flow-Capacity Iterations:

Site Model Variability Index (Iterations 3 to N): 0.0%
Number of Iterations: 3 (Maximum: 10)

Other Diagnostic Messages (if any):

[Go to Table Links \(Top\)](#)

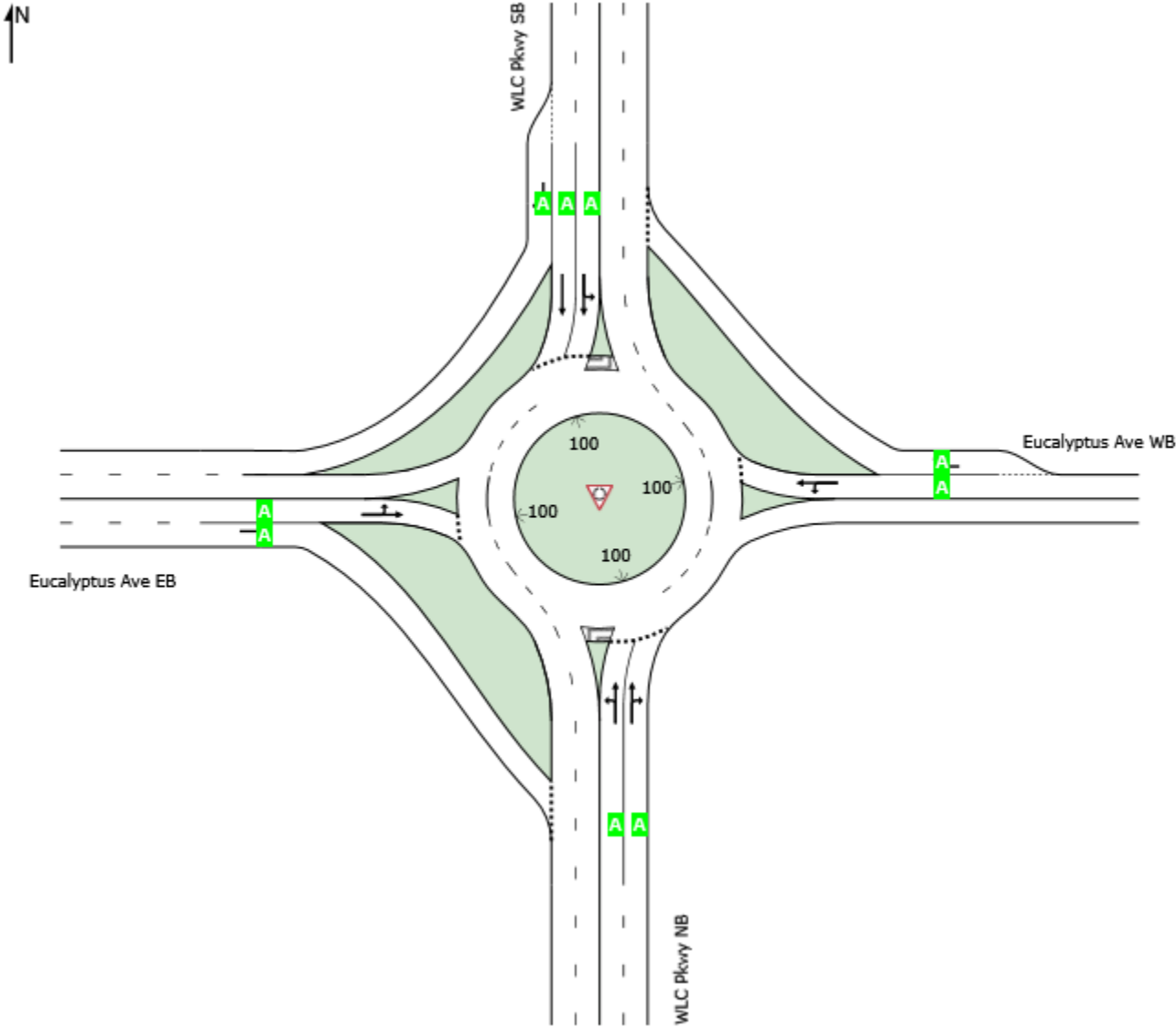
LANE LEVEL OF SERVICE

Lane Level of Service

 Site: 1 [Roundabout1 (WLC Pkwy & Eucalyptus Ave) - 2025PM - HCM6]

Site Category: (None)
Roundabout

LOS	Approaches				Intersection
	South East	North West	North West	South East	
A	A	A	A	A	A



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: Same as Sign Control.

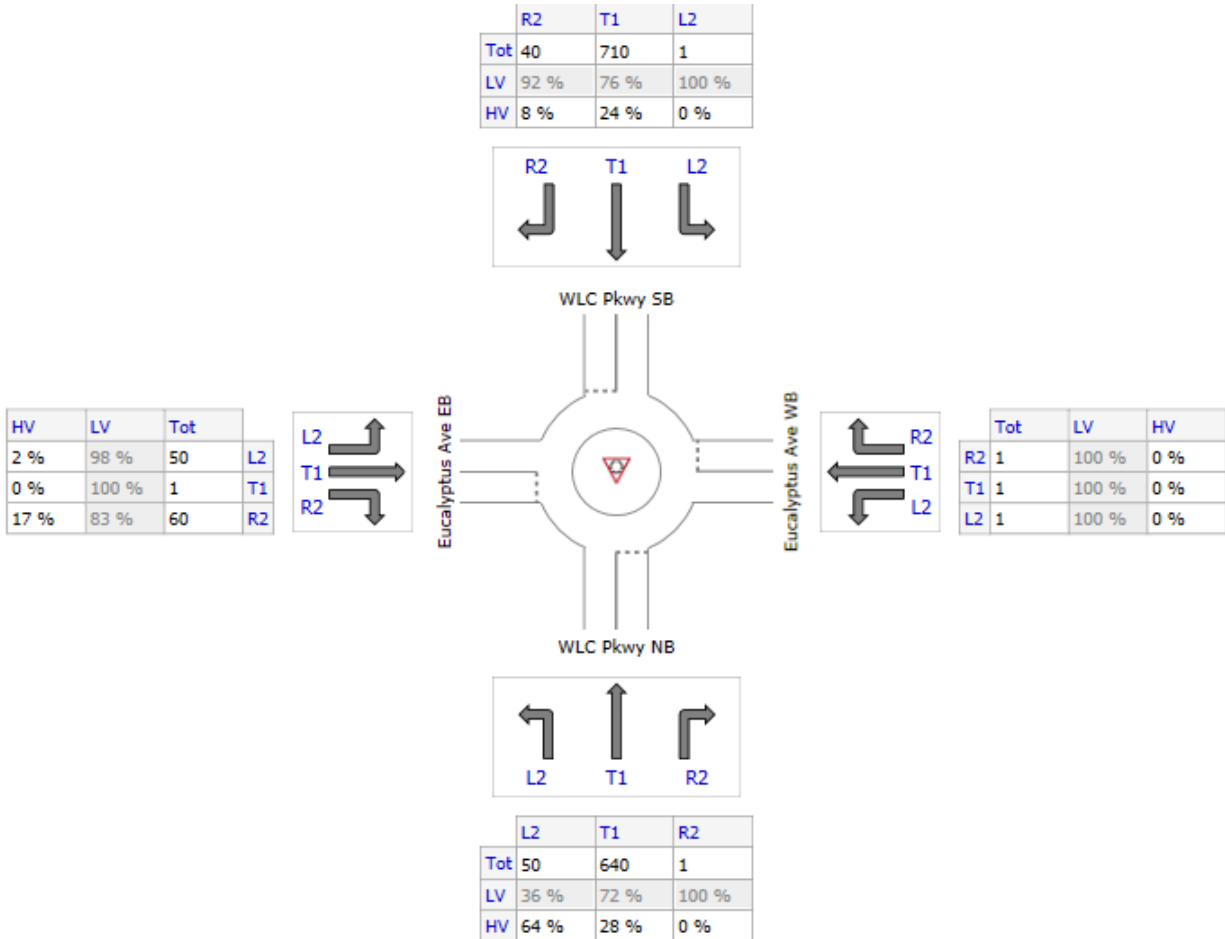
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).


Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

VOLUMES








DETAILED OUTPUT

 Site: 1 [Roundabout1 (WLC Pkwy & Eucalyptus Ave) - 2025PM - HCM6]

Site Category: (None)
Roundabout

OUTPUT TABLE LINKS

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 - Roundabout Circulating / Exiting Stream Parameters
 - Roundabout Gap Acceptance Parameters
 - Roundabout Flow Rates
-  Movements
 - Intersection Negotiation and Travel Data
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Roundabouts

Roundabout Basic Parameters Site: Roundabout1 (WLC Pkwy & Eucalyptus Ave) - 2025PM - HCM6

Site ID: 1
Roundabout

Central Island Diam	Circ Width	Insc Diam.	Entry Radius	Entry Angle	Circ Lanes	Entry Lanes	Av.Entry Lane Width	App Dist	Prop Upstr	Queued Signal	Extra Bunching
ft	ft	ft	ft	deg			ft	ft			%
South: WLC Pkwy NB	100.0*	30.0*	160.0*	65.0*	30.0*	1	2	13.00*	1600	NA	0.0U

East: Eucalyptus Ave WB												
100.0*	30.0*	160.0*	65.0*	30.0*	2	2	13.00*	1600		NA	0.0U	

North: WLC Pkwy SB												
100.0*	30.0*	160.0*	65.0*	30.0*	1	3	13.00*	1600		NA	0.0U	

West: Eucalyptus Ave EB												
100.0*	30.0*	160.0*	65.0*	30.0*	2	2	13.00*	1600		NA	0.0U	

Roundabout Capacity Model: US HCM 6

* These parameters do not affect estimated capacity values in the HCM 6 Capacity Model.

NA Not Applicable (single Site analysis or unconnected Site in Network analysis).

U User-specified Extra Bunching

[Go to Table Links \(Top\)](#)

Roundabout Circulating / Exiting Stream Parameters Site: Roundabout1 (WLC Pkwy & Eucalyptus Ave) - 2025PM - HCM6

Site ID: 1
Roundabout

Dest	Turn	Lane No.	Lane Type	Opng Flow veh/h	HVE pcu/veh	Adj. Flow pcu/h	%Near Lane Only	%Exit Flow Incl.	Cap. Const. Effect	O-D Factor	Aver Speed mph	In-Bunch Headway sec	Prop. Bunched

South: WLC Pkwy NB													
W	L2	1	Subdominant	52	1.02	53	0.0	0.0	N	-	16.1	0.00	0.000
N	T1	1	Subdominant	52	1.02	53	0.0	0.0	N	-	16.1	0.00	0.000
N	T1	2	Dominant	52	1.02	53	0.0	0.0	N	-	16.1	0.00	0.000
E	R2	2	Dominant	52	1.02	53	0.0	0.0	N	-	16.1	0.00	0.000

East: Eucalyptus Ave WB													
S	L2	1	Dominant	995	1.29	1286	0.0	0.0	N	-	23.4	0.00	0.000
W	T1	1	Dominant	995	1.29	1286	0.0	0.0	N	-	23.4	0.00	0.000
N	R2	2	Excl. Slip	927	1.27	1173	0.0	0.0	N	-	24.0	0.00	0.000

North: WLC Pkwy SB													
E	L2	1	Subdominant	71	1.62	114	0.0	0.0	N	-	16.1	0.00	0.000
S	T1	1	Subdominant	71	1.62	114	0.0	0.0	N	-	16.1	0.00	0.000
S	T1	2	Dominant	71	1.62	114	0.0	0.0	N	-	16.1	0.00	0.000
W	R2	3	Continuous										

West: Eucalyptus Ave EB													
N	L2	1	Dominant	712	1.24	882	0.0	0.0	N	-	24.4	0.00	0.000
E	T1	1	Dominant	712	1.24	882	0.0	0.0	N	-	24.4	0.00	0.000
S	R2	2	Excl. Slip	711	1.24	881	0.0	0.0	N	-	24.4	0.00	0.000

Roundabout Capacity Model: US HCM 6

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Roundabout Gap Acceptance Parameters Site: Roundabout1 (WLC Pkwy & Eucalyptus Ave) - 2025PM - HCM6

Site ID: 1
Roundabout

Dest	Turn	Lane No.	Lane Type	In-Bunch Headway sec	Prop. Bunched	Priority Sharing	HVE for Entry	Critical Gap		Follow-up Headway sec
								Headway sec	Dist ft	

South: WLC Pkwy NB										
Model Calibration Factor (HCM 6): 1.00										
Entry/Circ. Flow Adjustment (HCM 6): None										
W	L2	1	Subdominant	0.00	0.000	N	1.64	4.54	107.5	2.54
N	T1	1	Subdominant	0.00	0.000	N	1.28	4.54	107.5	2.54
N	T1	2	Dominant	0.00	0.000	N	1.28	4.54	107.5	2.54
E	R2	2	Dominant	0.00	0.000	N	1.00	4.54	107.5	2.54

East: Eucalyptus Ave WB										
Model Calibration Factor (HCM 6): 1.00										
Entry/Circ. Flow Adjustment (HCM 6): None										
S	L2	1	Dominant	0.00	0.000	N	1.00	4.33	148.6	2.54
W	T1	1	Dominant	0.00	0.000	N	1.00	4.33	148.6	2.54
N	R2	2	Excl. Slip	0.00	0.000	N	1.00	4.33	152.1	2.54

North: WLC Pkwy SB										
Model Calibration Factor (HCM 6): 1.00										
Entry/Circ. Flow Adjustment (HCM 6): None										
E	L2	1	Subdominant	0.00	0.000	N	1.00	4.54	107.2	2.54
S	T1	1	Subdominant	0.00	0.000	N	1.24	4.54	107.2	2.54
S	T1	2	Dominant	0.00	0.000	N	1.24	4.54	107.2	2.54
W	R2	3	Continuous							

West: Eucalyptus Ave EB										
Model Calibration Factor (HCM 6): 1.00										
Entry/Circ. Flow Adjustment (HCM 6): None										
N	L2	1	Dominant	0.00	0.000	N	1.02	4.33	154.8	2.54
E	T1	1	Dominant	0.00	0.000	N	1.00	4.33	154.8	2.54
S	R2	2	Excl. Slip	0.00	0.000	N	1.17	4.33	154.9	2.54

Roundabout Capacity Model: US HCM 6										
Dist (Distance): Spacing, i.e. distance between the front ends of two successive vehicles across all lanes in the circulating or exiting stream										

[Go to Table Links \(Top\)](#)

Roundabout Flow Rates

Site: Roundabout1 (WLC Pkwy & Eucalyptus Ave) - 2025PM - HCM6

Site ID: 1
Roundabout

CIRCULATING LANE FLOW RATES

Lane No.	Circulating Flow Rate		
	veh/h	pcu/h	Percent

South: WLC Pkwy NB			
1	52	53	100.0%
Total	52	53	

East: Eucalyptus Ave WB			
1	514	669	52.1%
2	482	616	47.9%
Total	996	1285	

North: WLC Pkwy SB			
1	71	114	100.0%
Total	71	114	

West: Eucalyptus Ave EB			
1	357	442	50.1%
2	355	441	49.9%
Total	712	883	

The US HCM 6 roundabout capacity model option is in use. This model considers only the total circulating flow and not the flow rates in individual circulating lanes. To model the effects of flow distribution in circulating lanes on the entry capacity results, you should use the SIDRA Standard roundabout capacity model.

APPROACH LANE FLOW RATES

Lane No.	Approach Flows (veh/h)		
	Out	To Downst	Total
South: WLC Pkwy NB			
1	0	464	464
2	1	482	483
Total	1	946	947
East: Eucalyptus Ave WB			
1	0	2	2
2	1	0	1
Total	1	2	3
North: WLC Pkwy SB			
1	0	356	356
2	0	355	355
3	40	0	40
Total	40	711	751
West: Eucalyptus Ave EB			
1	0	51	51
2	60	0	60
Total	60	51	111

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Movements

Intersection Negotiation and Travel Data
 Site: Roundabout1 (WLC Pkwy & Eucalyptus Ave) - 2025PM - HCM6

Site ID: 1
 Roundabout

TRAVEL SPEED, TRAVEL DISTANCE AND TRAVEL TIME

From Approach	To Exit	Turn	Running Speed mph	Travel Speed mph	Travel Distance ft	Travel Time s	Total Dem Flows veh-mi/h	Travel Arv Flows veh-mi/h	Distance veh-mi/h	Tot.Trav. Time veh-h/h
---------------	---------	------	-------------------	------------------	--------------------	---------------	--------------------------	---------------------------	-------------------	------------------------

South: WLC Pkwy NB								
West	L2	35.0	31.4	3358.8#	72.8#	43.6	43.6	1.4
North	T1	36.8	32.9	3354.6#	69.5#	557.0	557.0	16.9
East	R2	36.2	32.5	3351.1#	70.3#	0.9	0.9	0.0

East: Eucalyptus Ave WB								
South	L2	35.0	32.8	3395.6#	70.5#	0.6	0.6	0.0
West	T1	34.8	32.7	3395.6#	70.8#	0.7	0.7	0.0
North	R2	35.4	33.3	3261.8#	66.7#	0.6	0.6	0.0

North: WLC Pkwy SB								
East	L2	37.3	34.4	3351.8#	66.4#	0.6	0.6	0.0
South	T1	36.6	33.9	3351.6#	67.5#	450.7	450.7	13.3
West	R2	37.0	37.0	3261.8#	60.1#	24.7	24.7	0.7

West: Eucalyptus Ave EB								
North	L2	33.8	32.1	3441.5#	73.0#	32.6	32.6	1.0
East	T1	33.7	32.1	3441.5#	73.2#	0.7	0.7	0.0
South	R2	35.1	32.6	3261.8#	68.1#	37.1	37.1	1.1

ALL VEHICLES:		36.5	33.3	3350.9#	68.7#	1149.8	1149.8	34.6

"Running Speed" is the average speed excluding stopped periods.

Travel Time values include cruise times and intersection delays including acceleration, deceleration and idling delays.

Travel Distance and Travel Time values include travel on the External Exit section based on the Exit Distance or user-specified Downstream Distance value as applicable.

INTERSECTION NEGOTIATION DATA

From Approach	To Exit	Turn	Negn Radius ft	Negn Speed mph	Negn Dist ft	App Dist ft	Exit Dist ft	Downstr Dist ft

South: WLC Pkwy NB								
West	L2		62.0	16.0	243.5	1600	488	NA
North	T1		190.4	24.4	151.5	1600	488	NA
East	R2		115.2	20.2	62.0	1600	488	NA

East: Eucalyptus Ave WB								
South	L2		62.0	16.0	243.5	1600	488	NA
West	T1		190.4	24.4	151.5	1600	488	NA
North	R2		131.6	21.2	61.8	1600	488	NA

North: WLC Pkwy SB								
East	L2		62.0	16.0	243.5	1600	488	NA
South	T1		190.4	24.4	151.5	1600	488	NA
West	R2		135.0	21.4	61.8	1600	488	NA

West: Eucalyptus Ave EB								
North	L2		62.0	16.0	243.5	1600	488	NA
East	T1		190.4	24.4	151.5	1600	488	NA
South	R2		131.6	21.2	61.8	1600	488	NA

Maximum Negotiation (Design) Speed = 30.0 mph

NA Downstream Distance does not apply if:

- Exit is an internal leg of a network
- "Program" option was specified
- Distance specified was less than the Exit Negotiation Distance
- Distance specified was greater than the exit leg length

MOVEMENT SPEEDS AND GEOMETRIC DELAY

Mov ID	Turn	App. Speeds		Exit Speeds		Queue	Geom Delay sec
		Cruise mph	Negn mph	Negn mph	Cruise mph	Move-up Speed mph	

South: WLC Pkwy NB							
3	L2	40.0	16.0	16.0	40.0	37.3	0.0
8	T1	40.0	24.4	24.4	40.0	38.4	0.0
18	R2	40.0	20.2	20.2	40.0	39.3	0.0

East: Eucalyptus Ave WB							
1	L2	40.0	16.0	16.0	40.0	13.6	0.0
6	T1	40.0	24.4	24.4	40.0	13.6	0.0
16	R2	40.0	21.2	21.2	40.0	14.0	0.0

North: WLC Pkwy SB							
7	L2	40.0	16.0	16.0	40.0	39.3	0.0
4	T1	40.0	24.4	24.4	40.0	39.3	0.0
14	R2	40.0	21.4	21.4	40.0	34.5	0.0

West: Eucalyptus Ave EB							
5	L2	40.0	16.0	16.0	40.0	15.7	0.0
2	T1	40.0	24.4	24.4	40.0	15.7	0.0
12	R2	40.0	21.2	21.2	40.0	16.6	0.0

HCM Delay Formula option used: Geometric Delay is not included in Control Delay.

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Movement Capacity and Performance Parameters

Site: Roundabout1 (WLC Pkwy & Eucalyptus Ave) - 2025PM - HCM6

Site ID: 1
Roundabout

MOVEMENT CAPACITY PARAMETERS

Mov ID	Turn	Mov Cl.	Arv Flow veh/h	Opng Flow veh/h	Movement Adjust. pcu/h	Total Cap. veh/h	Prac. Deg. Satn xp	Prac. Spare Cap. %	Deg. Satn x

South: WLC Pkwy NB									
3	L2	#	68	52	53	150	0.85	86	0.457*
8	T1	#	877	52	53	1920	0.85	86	0.457*
18	R2	#	1	52	53	3	0.85	86	0.457*

East: Eucalyptus Ave WB									
1	L2	#	1	995	1286	228	0.85	****	0.004
6	T1	#	1	995	1286	248	0.85	****	0.004
16	R2	#	1	927	1173	524	0.85	****	0.002

North: WLC Pkwy SB									
7	L2	#	1	71	114	3	0.85	147	0.344
4	T1	#	710	71	114	2062	0.85	147	0.344
14	R2	#	40	71	114	1551	0.98	3699	0.026

West: Eucalyptus Ave EB									
5	L2	#	50	712	882	644	0.85	995	0.078
2	T1	#	1	712	882	14	0.85	995	0.078
12	R2	#	60	711	881	574	0.85	713	0.105

* Maximum degree of saturation

Combined Movement Capacity parameters are shown for all Movement Classes.

MOVEMENT PERFORMANCE

Mov ID	Turn	Total Delay (veh-h/h)	Total Delay (pers-h/h)	Aver. Delay (sec)	Eff. Stop Rate	Total Stops	Perf. Index	Tot.Trav. Distance (veh-mi/h)	Tot.Trav. Time (veh-h/h)	Aver. Speed (mph)
South: WLC Pkwy NB										
3	L2	0.18	0.22	9.6	0.09	5.9	2.87	43.6	1.4	31.4
8	T1	2.09	2.50	8.6	0.09	77.0	18.06	557.0	16.9	32.9
18	R2	0.00	0.00	7.8	0.09	0.1	0.86	0.9	0.0	32.5
East: Eucalyptus Ave WB										
1	L2	0.00	0.00	7.6	0.55	0.6	0.03	0.6	0.0	32.8
6	T1	0.00	0.00	7.6	0.55	0.6	0.03	0.7	0.0	32.7
16	R2	0.00	0.00	6.9	0.47	0.5	0.02	0.6	0.0	33.3
North: WLC Pkwy SB										
7	L2	0.00	0.00	6.4	0.16	0.2	0.59	0.6	0.0	34.4
4	T1	1.39	1.66	7.0	0.16	112.9	14.42	450.7	13.3	33.9
14	R2	0.00	0.00	0.0	0.00	0.0	0.62	24.7	0.7	37.0
West: Eucalyptus Ave EB										
5	L2	0.09	0.11	6.3	0.57	28.4	1.27	32.6	1.0	32.1
2	T1	0.00	0.00	6.2	0.57	0.6	0.13	0.7	0.0	32.1
12	R2	0.13	0.15	7.5	0.58	34.7	1.49	37.1	1.1	32.6

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Fuel Consumption, Emissions and Cost
Site: Roundabout1 (WLC Pkwy & Eucalyptus Ave) - 2025PM - HCM6

Site ID: 1
Roundabout

FUEL CONSUMPTION, EMISSIONS AND COST (TOTAL)

Mov ID	Turn	Cost Total (\$/h)	Fuel Total (gal/h)	CO2 Total (kg/h)	CO Total (kg/h)	HC Total (kg/h)	NOX Total (kg/h)
South: WLC Pkwy NB							
3	L2	34.78	4.7	44.2	0.07	0.005	0.272
8	T1	413.86	47.6	444.4	0.89	0.066	2.540
18	R2	0.61	0.1	0.5	0.00	0.000	0.003
		449.24	52.3	489.2	0.95	0.071	2.814
East: Eucalyptus Ave WB							
1	L2	0.31	0.0	0.2	0.00	0.000	0.000
6	T1	0.34	0.0	0.2	0.00	0.000	0.000
16	R2	0.27	0.0	0.2	0.00	0.000	0.000
		0.93	0.1	0.7	0.00	0.000	0.001
North: WLC Pkwy SB							
7	L2	0.42	0.0	0.4	0.00	0.000	0.002
4	T1	298.83	33.9	314.0	0.72	0.052	1.669
14	R2	11.26	1.2	10.5	0.04	0.003	0.035

		310.51	35.1	324.8	0.76	0.055	1.706

West: Eucalyptus Ave EB							
5	L2	18.38	1.4	12.8	0.06	0.005	0.021
2	T1	0.40	0.0	0.3	0.00	0.000	0.000
12	R2	23.64	2.5	23.1	0.06	0.005	0.110

		42.42	4.0	36.2	0.13	0.009	0.131

INTERSECTION:		803.10	91.5	850.9	1.84	0.135	4.652

FUEL CONSUMPTION, EMISSIONS AND COST (RATE)

Mov ID	Turn	Cost Rate \$/mi	Fuel Eff. mpg	CO2 Rate g/km	CO Rate g/km	HC Rate g/km	NOX Rate g/km

South: WLC Pkwy NB							
3	L2	0.50	9.3	630.8	0.93	0.075	3.876
8	T1	0.46	11.7	495.8	0.99	0.073	2.833
18	R2	0.43	14.6	389.3	1.03	0.072	2.010

		0.46	11.5	505.4	0.99	0.073	2.908

East: Eucalyptus Ave WB							
1	L2	0.30	26.3	210.1	1.13	0.081	0.184
6	T1	0.30	26.3	210.1	1.13	0.081	0.184
16	R2	0.27	27.8	198.8	1.09	0.076	0.171

		0.29	26.8	206.5	1.11	0.080	0.180

North: WLC Pkwy SB							
7	L2	0.41	15.6	361.8	1.03	0.071	1.770
4	T1	0.41	13.3	432.9	0.99	0.072	2.302
14	R2	0.28	21.3	264.2	1.01	0.066	0.870

		0.41	13.6	424.0	0.99	0.071	2.227

West: Eucalyptus Ave EB							
5	L2	0.35	22.7	244.9	1.17	0.088	0.402
2	T1	0.35	23.2	239.2	1.17	0.088	0.359
12	R2	0.40	14.8	386.5	1.06	0.077	1.843

		0.37	17.7	319.4	1.11	0.082	1.161

INTERSECTION:		0.43	12.6	459.8	1.00	0.073	2.514

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Lanes

Lane Performance and Capacity Information
 Site: Roundabout1 (WLC Pkwy & Eucalyptus Ave) - 2025PM - HCM6

Site ID: 1
 Roundabout

LANE PERFORMANCE

Lane No.	Flow veh/h	Cap veh/h	Deg. Satn x	Aver. Delay sec	Eff. Stop Rate	Q u e u e		Lane Length ft
						95% Back veh	ft	
South: WLC Pkwy NB								
1	464	1015	0.457	8.8	0.09	1.9	61.7	1600.0
2	483	1058	0.457	8.5	0.09	2.1	63.4	1600.0
East: Eucalyptus Ave WB								
1	2	476	0.004	7.6	0.55	0.0	0.3	1600.0
2	1	524	0.002	6.9	0.47	0.0	0.2	200.0T
North: WLC Pkwy SB								
1	356	1032	0.344	7.0	0.16	1.4	42.0	1600.0
2	355	1032	0.344	7.0	0.16	1.4	42.0	1600.0
3	40	1551	0.026	0.0	0.00			600.0T
West: Eucalyptus Ave EB								
1	51	658	0.078	6.3	0.57	0.3	6.7	1600.0
2	60	574	0.105	7.5	0.58	0.3	8.8	1600.0

T Short lane due to specification of Turn Bay

LANE FLOW AND CAPACITY INFORMATION

Lane No.	Total Arv Flow veh/h	Min Cap veh/h	Tot Cap veh/h	Deg. Satn x	Lane Util %
South: WLC Pkwy NB					
1	464	150	1015	0.457	100
2	483	150	1058	0.457	100
East: Eucalyptus Ave WB					
1	2	2	476	0.004	100
2	1	1	524	0.002	100
North: WLC Pkwy SB					
1	356	150	1032	0.344	100
2	355	150	1032	0.344	100
3	40	40	1551	0.026	100
West: Eucalyptus Ave EB					
1	51	51	658	0.078	100
2	60	60	574	0.105	100

The capacity values of Continuous Lanes are obtained by adjusting the basic saturation flow for lane width, grade, movement class and turning vehicle effects. Saturation flow scale applies if specified.

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Lane, Approach and Intersection Performance
 Site: Roundabout1 (WLC Pkwy & Eucalyptus Ave) - 2025PM - HCM6

Site ID: 1
 Roundabout

Lane No.	Arrival Flow (veh/h)	%HV	Adj. Basic Satf.	Deg Sat x	Aver. Delay sec	Longest Queue ft	Lane Length ft

South: WLC Pkwy NB							
1	464	33		0.457	8.8	62	1600
2	483	28		0.457	8.5	63	1600
	947	31		0.457	8.6	63	

East: Eucalyptus Ave WB							
1	2	0		0.004	7.6	0	1600
2	1	0		0.002	6.9	0	200
	3	0		0.004	7.4	0	

North: WLC Pkwy SB							
1	356	24		0.344	7.0	42	1600
2	355	24		0.344	7.0	42	1600
3	40	8	1975	0.026	0.0		600
	751	23		0.344	6.7	42	

West: Eucalyptus Ave EB							
1	51	2		0.078	6.3	7	1600
2	60	17		0.105	7.5	9	1600
	111	10		0.105	7.0	9	
=====							
ALL VEHICLES							
	Total Flow	% HV		Max X	Aver. Delay	Max Queue	
	1812	26		0.457	7.7	63	
=====							

Peak flow period = 15 minutes.

Queue values in this table are 95% queue (feet)
 Note: Basic Saturation Flows at roundabouts or sign-controlled intersections apply only to continuous lanes.

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Driver Characteristics
 Site: Roundabout1 (WLC Pkwy & Eucalyptus Ave) - 2025PM - HCM6

Site ID: 1
 Roundabout

Lane No.	Satn Speed mph	Satn Flow veh/h	Satn Hdwy sec	Satn Spacing ft	Average Queue Space ft	Driver Response Time sec

South: WLC Pkwy NB						
1	23.2	1420	2.54	86.15	31.66	1.60
2	24.4	1420	2.54	90.75	30.58	1.68

East: Eucalyptus Ave WB						
1	20.4	1420	2.54	75.73	25.00	1.70
2	NA - Short Lane					

North: WLC Pkwy SB						
1	24.4	1420	2.54	90.71	29.79	1.70

2	24.4	1420	2.54	90.80	29.80	1.70
3	NA - Continuous Movement					

West: Eucalyptus Ave EB						
1	16.1	1420	2.54	60.02	25.39	1.46
2	21.2	1420	2.54	78.95	28.40	1.62

Saturation Flow and Saturation Headway are derived from follow-up headway.

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Lane Delays
Site: Roundabout1 (WLC Pkwy & Eucalyptus Ave) - 2025PM - HCM6

Site ID: 1
Roundabout

LANE DELAYS

Lane No.	Deg. x	% Arv During Green	Prog. Factor	Delay (seconds/veh)									
				Min Del dm	Stop-line 1st d1	2nd d2	Total dSL	Acc. Dec. dn	Queuing Total dq	MvUp dqm	Stopd (Idle) di	Geom dig	Control dic
South: WLC Pkwy NB													
1	0.457	NA	NA	3.5	5.8	2.9	8.8	6.3	7.5	0.0	7.5	0.0	8.8
2	0.457	NA	NA	3.4	5.7	2.8	8.5	6.6	7.1	0.0	7.1	0.0	8.5
East: Eucalyptus Ave WB													
1	0.004	NA	NA	7.6	7.6	0.0	7.6	5.0	4.3	0.0	4.3	0.0	7.6
2	0.002	NA	NA	6.9	6.9	0.0	6.9	4.6	4.0	0.0	4.0	0.0	6.9
North: WLC Pkwy SB													
1	0.344	NA	NA	3.5	5.2	1.8	7.0	6.6	5.1	0.0	5.1	0.0	7.0
2	0.344	NA	NA	3.5	5.2	1.8	7.0	6.6	5.1	0.0	5.1	0.0	7.0
3	0.026					0.0					0.0	0.0	
West: Eucalyptus Ave EB													
1	0.078	NA	NA	5.5	5.9	0.5	6.3	4.9	3.5	0.0	3.5	0.0	6.3
2	0.105	NA	NA	6.3	6.8	0.7	7.5	4.6	4.9	0.0	4.9	0.0	7.5

HCM Delay Formula option used (Exclude Geometric Delay option applies). Control Delay does not include Geometric Delay, and Stop-line Delay is treated as being same as Control Delay.
dm: Minimum delay for gap acceptance cases
dSL: Stop-line delay (=d1+d2)
dn: Average stop-start delay for all vehicles queued and unqueued
dq: Queuing delay (the part of the stop-line delay that includes stopped delay and queue move-up delay)
dqm: Queue move-up delay
di: Stopped delay (stopped (idling) time at near-zero speed)
dig: Geometric delay
dic: Control delay

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Lane Queues
Site: Roundabout1 (WLC Pkwy & Eucalyptus Ave) - 2025PM - HCM6

Site ID: 1
 Roundabout

BACK OF QUEUE (VEHICLES)

Lane No.	Deg. Satn x	% Arv During Green	Prog. Factor	Ovrfl. Queue No	Back of Queue (veh)				Queue Stor. Ratio		Prob. Block %	Prob. SL Ov. %
					Nb1	Nb2	Nb	95%	Av.	95%		
South: WLC Pkwy NB												
1	0.457	NA	NA	0.0	0.8	0.0	0.8	1.9	0.02	0.04	0.0	NA
2	0.457	NA	NA	0.0	0.8	0.0	0.8	2.1	0.02	0.04	0.0	NA
East: Eucalyptus Ave WB												
1	0.004	NA	NA	0.0	0.0	0.0	0.0	0.0	0.00	0.00	0.0	NA
2	0.002	NA	NA	0.0	0.0	0.0	0.0	0.0	0.00	0.00	NA	0.0
North: WLC Pkwy SB												
1	0.344	NA	NA	0.0	0.6	0.0	0.6	1.4	0.01	0.03	0.0	NA
2	0.344	NA	NA	0.0	0.6	0.0	0.6	1.4	0.01	0.03	0.0	NA
West: Eucalyptus Ave EB												
1	0.078	NA	NA	0.0	0.1	0.0	0.1	0.3	0.00	0.00	0.0	NA
2	0.105	NA	NA	0.0	0.1	0.0	0.1	0.3	0.00	0.01	0.0	NA

SIDRA Standard models are used for Back of Queue estimation since HCM only gives Cycle-Average Queues for unsignalised intersections.

BACK OF QUEUE (DISTANCE)

Lane No.	Deg. Satn x	% Arv During Green	Prog. Factor	Ovrfl. Queue No	Back of Queue (ft)				Queue Stor. Ratio		Prob. Block %	Prob. SL Ov. %
					Nb1	Nb2	Nb	95%	Av.	95%		
South: WLC Pkwy NB												
1	0.457	NA	NA	0.0	24.8	0.0	24.8	61.7	0.02	0.04	0.0	NA
2	0.457	NA	NA	0.0	25.5	0.0	25.5	63.4	0.02	0.04	0.0	NA
East: Eucalyptus Ave WB												
1	0.004	NA	NA	0.0	0.1	0.0	0.1	0.3	0.00	0.00	0.0	NA
2	0.002	NA	NA	0.0	0.1	0.0	0.1	0.2	0.00	0.00	NA	0.0
North: WLC Pkwy SB												
1	0.344	NA	NA	0.0	16.9	0.0	16.9	42.0	0.01	0.03	0.0	NA
2	0.344	NA	NA	0.0	16.9	0.0	16.9	42.0	0.01	0.03	0.0	NA
West: Eucalyptus Ave EB												
1	0.078	NA	NA	0.0	2.7	0.0	2.7	6.7	0.00	0.00	0.0	NA
2	0.105	NA	NA	0.0	3.5	0.0	3.5	8.8	0.00	0.01	0.0	NA

SIDRA Standard models are used for Back of Queue estimation since HCM only gives Cycle-Average Queues for unsignalised intersections.

OTHER QUEUE RESULTS (VEHICLES)

Lane No.	Deg. Satn x	% Arv During Green	Prog. Factor	Ovrfl. Queue No	Cyc-Av. Queue Nc	95%
----------	-------------	--------------------	--------------	-----------------	------------------	-----

```

-----
South: WLC Pkwy NB
1  0.457  NA    NA    0.0    1.1    2.0
2  0.457  NA    NA    0.0    1.1    2.1
-----
East: Eucalyptus Ave WB
1  0.004  NA    NA    0.0    0.0    0.0
2  0.002  NA    NA    0.0    0.0    0.0
-----
North: WLC Pkwy SB
1  0.344  NA    NA    0.0    0.7    1.3
2  0.344  NA    NA    0.0    0.7    1.3
-----
West: Eucalyptus Ave EB
1  0.078  NA    NA    0.0    0.1    0.2
2  0.105  NA    NA    0.0    0.1    0.2
-----

```

HCM Delay Formula option used:
Cycle-Average Queue is calculated using average delay from the HCM equation.
(i.e. HCM delays are treated as stop-line delays for this purpose).

OTHER QUEUE RESULTS (DISTANCE)

```

-----
Lane  Deg.  % Arv  Prog.  Ovrfl.  Cyc-Av.  Queue
No.   Satn  During  Factor  Queue   No       Nc       95%
-----
South: WLC Pkwy NB
1  0.457  NA     NA     0.0     35.8    64.9
2  0.457  NA     NA     0.0     34.9    63.4
-----
East: Eucalyptus Ave WB
1  0.004  NA     NA     0.0     0.1     0.2
2  0.002  NA     NA     0.0     0.0     0.1
-----
North: WLC Pkwy SB
1  0.344  NA     NA     0.0     20.7    37.5
2  0.344  NA     NA     0.0     20.7    37.5
-----
West: Eucalyptus Ave EB
1  0.078  NA     NA     0.0     2.3     4.1
2  0.105  NA     NA     0.0     3.6     6.5
-----

```

HCM Delay Formula option used:
Cycle-Average Queue is calculated using average delay from the HCM equation.
(i.e. HCM delays are treated as stop-line delays for this purpose).

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Lane Queue Percentiles
Site: Roundabout1 (WLC Pkwy & Eucalyptus Ave) - 2025PM - HCM6

Site ID: 1
Roundabout

LANE QUEUE PERCENTILES (VEHICLES)

```

-----
Lane  Deg.          Percentile Back of Queue (veh)
      Satn  -----
-----

```

No.	x	50%	70%	85%	90%	95%	98%	100%

South: WLC Pkwy NB								
1	0.457	0.8	1.0	1.4	1.7	1.9	2.2	2.3
2	0.457	0.8	1.1	1.5	1.8	2.1	2.3	2.5

East: Eucalyptus Ave WB								
1	0.004	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	0.002	0.0	0.0	0.0	0.0	0.0	0.0	0.0

North: WLC Pkwy SB								
1	0.344	0.6	0.7	1.0	1.2	1.4	1.6	1.7
2	0.344	0.6	0.7	1.0	1.2	1.4	1.6	1.7

West: Eucalyptus Ave EB								
1	0.078	0.1	0.1	0.2	0.2	0.3	0.3	0.3
2	0.105	0.1	0.2	0.2	0.3	0.3	0.3	0.4

SIDRA Standard models are used for Back of Queue estimation since HCM only gives Cycle-Average Queues for unsignalised intersections.

LANE QUEUE PERCENTILES (DISTANCE)

Lane No.	Deg. Satn x	Percentile Back of Queue (feet)						
		50%	70%	85%	90%	95%	98%	100%

South: WLC Pkwy NB								
1	0.457	24.8	32.2	45.3	52.5	61.7	68.5	73.7
2	0.457	25.5	33.0	46.6	53.9	63.4	70.4	75.7

East: Eucalyptus Ave WB								
1	0.004	0.1	0.2	0.3	0.3	0.3	0.4	0.4
2	0.002	0.1	0.1	0.1	0.1	0.2	0.2	0.2

North: WLC Pkwy SB								
1	0.344	16.9	21.9	30.9	35.8	42.0	46.7	50.2
2	0.344	16.9	21.9	30.9	35.7	42.0	46.7	50.2

West: Eucalyptus Ave EB								
1	0.078	2.7	3.5	4.9	5.7	6.7	7.4	7.9
2	0.105	3.5	4.6	6.5	7.5	8.8	9.8	10.5

SIDRA Standard models are used for Back of Queue estimation since HCM only gives Cycle-Average Queues for unsignalised intersections.

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Lane Stops
Site: Roundabout1 (WLC Pkwy & Eucalyptus Ave) - 2025PM - HCM6

Site ID: 1
Roundabout

Lane No.	Deg. Satn x	% Arv During Green	Prog. Factor	-- Effective Stop Rate --		Total Stops H	Queue Move-up Rate hqm	Total Queue Move-ups Hqm	Prop. Queued pq	Aver. Num. of Cycles to Depart
				he1	he2					

South: WLC Pkwy NB										

1	0.457	NA	NA	0.09	0.00	0.00	0.09	40.3	0.00	0.0	0.20	0.20
2	0.457	NA	NA	0.09	0.00	0.00	0.09	42.8	0.00	0.0	0.21	0.21

East: Eucalyptus Ave WB												
1	0.004	NA	NA	0.55	0.00	0.00	0.55	1.1	0.00	0.0	0.67	0.67
2	0.002	NA	NA	0.47	0.00	0.00	0.47	0.5	0.00	0.0	0.63	0.63

North: WLC Pkwy SB												
1	0.344	NA	NA	0.16	0.00	0.00	0.16	56.6	0.00	0.0	0.29	0.29
2	0.344	NA	NA	0.16	0.00	0.00	0.16	56.5	0.00	0.0	0.29	0.29
3	0.026	NA	NA			0.00	0.00	0.0				

West: Eucalyptus Ave EB												
1	0.078	NA	NA	0.57	0.00	0.00	0.57	29.1	0.00	0.0	0.58	0.58
2	0.105	NA	NA	0.58	0.00	0.00	0.58	34.7	0.00	0.0	0.58	0.58

hig is the average value for all movements in a shared lane
hqm is average queue move-up rate for all vehicles queued and unqueued

[Go to Table Links \(Top\)](#)

Flow Rates

Origin-Destination Flow Rates (Total)

Site: Roundabout1 (WLC Pkwy & Eucalyptus Ave) - 2025PM - HCM6

Site ID: 1
Roundabout

TOTAL FLOW RATES for All Movement Classes (veh/h)

From SOUTH To:	W	N	E	
Turn:	L2	T1	R2	TOT
Flow Rate	68.5	876.7	1.4	946.6
%HV (all designations)	64.0	28.0	0.0	30.6

From EAST To:	S	W	N	
Turn:	L2	T1	R2	TOT
Flow Rate	1.0	1.1	1.0	3.1
%HV (all designations)	0.0	0.0	0.0	0.0

From NORTH To:	E	S	W	
Turn:	L2	T1	R2	TOT
Flow Rate	1.0	710.0	40.0	751.0
%HV (all designations)	0.0	24.0	8.0	23.1

From WEST To:	N	E	S	
Turn:	L2	T1	R2	TOT
Flow Rate	50.0	1.1	60.0	111.1
%HV (all designations)	2.0	0.0	17.0	10.1

Flow rates shown above are Arrival Flow Rates (veh/h) based on the following input specifications:
Unit Time for Volumes = 60 minutes
Peak Flow Period = 15 minutes
Effects of Volume Factors (Peak Flow Factor, Flow Scale, Growth Rate) are included.
Arrival Flow Rates may be less than Demand Flow Rates if capacity constraint applies in network analysis.

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Origin-Destination Flow Rates by Movement Class
 Site: Roundabout1 (WLC Pkwy & Eucalyptus Ave) - 2025PM - HCM6

Site ID: 1
 Roundabout

FLOW RATES for Light Vehicles (veh/h)

From SOUTH To:	W	N	E	
Turn:	L2	T1	R2	TOT
Flow Rate	24.7	631.2	1.4	657.3
Mov Class %	36.0	72.0	100.0	69.4
Flow Scale	1.00	1.00	1.00	-
Peak Flow Factor	0.73	0.73	0.73	-
Residual Demand	0.0	0.0	0.0	0.0
From EAST To:	S	W	N	
Turn:	L2	T1	R2	TOT
Flow Rate	1.0	1.1	1.0	3.1
Mov Class %	100.0	100.0	100.0	100.0
Flow Scale	1.00	1.00	1.00	-
Peak Flow Factor	1.00	0.92	1.00	-
Residual Demand	0.0	0.0	0.0	0.0
From NORTH To:	E	S	W	
Turn:	L2	T1	R2	TOT
Flow Rate	1.0	539.6	36.8	577.4
Mov Class %	100.0	76.0	92.0	76.9
Flow Scale	1.00	1.00	1.00	-
Peak Flow Factor	1.00	1.00	1.00	-
Residual Demand	0.0	0.0	0.0	0.0
From WEST To:	N	E	S	
Turn:	L2	T1	R2	TOT
Flow Rate	49.0	1.1	49.8	99.9
Mov Class %	98.0	100.0	83.0	89.9
Flow Scale	1.00	1.00	1.00	-
Peak Flow Factor	1.00	0.92	1.00	-
Residual Demand	0.0	0.0	0.0	0.0

FLOW RATES for Heavy Vehicles (veh/h)

From SOUTH To:	W	N	E	
Turn:	L2	T1	R2	TOT
Flow Rate	43.8	245.5	0.0	289.3
Mov Class %	64.0	28.0	0.0	30.6
Flow Scale	1.00	1.00	1.00	-
Peak Flow Factor	0.73	0.73	0.73	-
Residual Demand	0.0	0.0	0.0	0.0
From EAST To:	S	W	N	
Turn:	L2	T1	R2	TOT
Flow Rate	0.0	0.0	0.0	0.0
Mov Class %	0.0	0.0	0.0	0.0
Flow Scale	1.00	1.00	1.00	-

Peak Flow Factor	1.00	0.92	1.00	-
Residual Demand	0.0	0.0	0.0	0.0

From NORTH To:	E	S	W	
Turn:	L2	T1	R2	TOT

Flow Rate	0.0	170.4	3.2	173.6
Mov Class %	0.0	24.0	8.0	23.1
Flow Scale	1.00	1.00	1.00	-
Peak Flow Factor	1.00	1.00	1.00	-
Residual Demand	0.0	0.0	0.0	0.0

From WEST To:	N	E	S	
Turn:	L2	T1	R2	TOT

Flow Rate	1.0	0.0	10.2	11.2
Mov Class %	2.0	0.0	17.0	10.1
Flow Scale	1.00	1.00	1.00	-
Peak Flow Factor	1.00	0.92	1.00	-
Residual Demand	0.0	0.0	0.0	0.0

Flow rates shown above are Arrival Flow Rates (veh/h) based on the following input specifications:
Unit Time for Volumes = 60 minutes
Peak Flow Period = 15 minutes
Effects of Volume Factors (Peak Flow Factor, Flow Scale, Growth Rate) are included.
Arrival Flow Rates may be less than Demand Flow Rates if capacity constraint applies in network analysis.

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Lane Flow Rates

Site: Roundabout1 (WLC Pkwy & Eucalyptus Ave) - 2025PM - HCM6

Site ID: 1
Roundabout

LANE FLOW RATES AT STOP LINE (veh/h)

From SOUTH To:	W	N	E	
Turn:	L2	T1	R2	TOT

Lane 1				
LV	24.7	284.5	*	309.1
HV	43.8	110.6	*	154.5
Total	68.5	395.1	*	463.6
Lane 2				
LV	*	346.8	1.4	348.1
HV	*	134.8	*	134.8
Total	*	481.6	1.4	483.0

Approach	68.5	876.7	1.4	946.6

From EAST To:	S	W	N	
Turn:	L2	T1	R2	TOT

Lane 1				
LV	1.0	1.1	*	2.1
Total	1.0	1.1	*	2.1
Lane 2				
LV	*	*	1.0	1.0
Total	*	*	1.0	1.0

Approach	1.0	1.1	1.0	3.1
From NORTH To:	E	S	W	
Turn:	L2	T1	R2	TOT

Lane 1				
LV	1.0	269.5	*	270.5
HV	*	85.1	*	85.1
Total	1.0	354.6	*	355.6
Lane 2				
LV	*	270.1	*	270.1
HV	*	85.3	*	85.3
Total	*	355.4	*	355.4
Lane 3				
LV	*	*	36.8	36.8
HV	*	*	3.2	3.2
Total	*	*	40.0	40.0

Approach	1.0	710.0	40.0	751.0

From WEST To:	N	E	S	
Turn:	L2	T1	R2	TOT

Lane 1				
LV	49.0	1.1	*	50.1
HV	1.0	*	*	1.0
Total	50.0	1.1	*	51.1
Lane 2				
LV	*	*	49.8	49.8
HV	*	*	10.2	10.2
Total	*	*	60.0	60.0

Approach	50.0	1.1	60.0	111.1

* Movement not allocated to the lane

EXIT LANE FLOW RATES

Movement Class:	LV	HV	TOT

Exit: SOUTH			
Lane: 1	270.5	85.1	355.6
Lane: 2	319.9	95.5	415.4
Total	590.4	180.6	771.0

Exit: EAST			
Lane: 1	3.5	*	3.5
Total	3.5	*	3.5

Exit: NORTH			
Lane: 1	333.5	111.6	445.1
Lane: 2	347.8	134.8	482.6
Total	681.2	246.5	927.7

Exit: WEST			
Lane: 1	25.7	43.8	69.6
Lane: 2	36.8	3.2	40.0
Total	62.5	47.0	109.6

* Movement not allocated to the lane

DOWNSTREAM LANE FLOW RATES FOR EXIT ROADS

Movement Class:	LV	HV	TOT

Exit: SOUTH			
Lane: 1	270.5	85.1	355.6

Lane: 2	319.9	95.5	415.4
Total	590.4	180.6	771.0

Exit: EAST			
Lane: 1	3.5	*	3.5
Total	3.5	*	3.5

Exit: NORTH			
Lane: 1	333.5	111.6	445.1
Lane: 2	347.8	134.8	482.6
Total	681.2	246.5	927.7

Exit: WEST			
Lane: 1	25.7	43.8	69.6
Lane: 2	36.8	3.2	40.0
Total	62.5	47.0	109.6

* Movement not allocated to the lane

Flow rates shown above are Arrival Flow Rates (veh/h) based on the following input specifications:
 Unit Time for Volumes = 60 minutes
 Peak Flow Period = 15 minutes
 Effects of Volume Factors (Peak Flow Factor, Flow Scale, Growth Rate) are included.
 Arrival Flow Rates may be less than Demand Flow Rates if capacity constraint applies in network analysis.

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Other

Parameter Settings Summary Site: Roundabout1 (WLC Pkwy & Eucalyptus Ave) - 2025PM - HCM6

Site ID: 1
 Roundabout

* Basic Parameters:
 Intersection Type: Roundabout
 US HCM 6 Roundabout Capacity Model used
 Driving on the right-hand side of the road
 Input data specified in US units
 Model Defaults: US HCM (Customary)
 Peak Flow Period (for performance): 15 minutes
 Unit time (for volumes): 60 minutes.
 HCM Delay Model option used
 HCM Queue Model option used
 Level of Service based on: Delay and v/c (HCM 6)
 Queue percentile: 95%

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Diagnostics Site: Roundabout1 (WLC Pkwy & Eucalyptus Ave) - 2025PM - HCM6

Site ID: 1
 Roundabout

Lane Flow-Capacity Iterations:

Site Model Variability Index (Iterations 3 to N): 0.0%
Number of Iterations: 3 (Maximum: 10)

Other Diagnostic Messages (if any):

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LANE LEVEL OF SERVICE

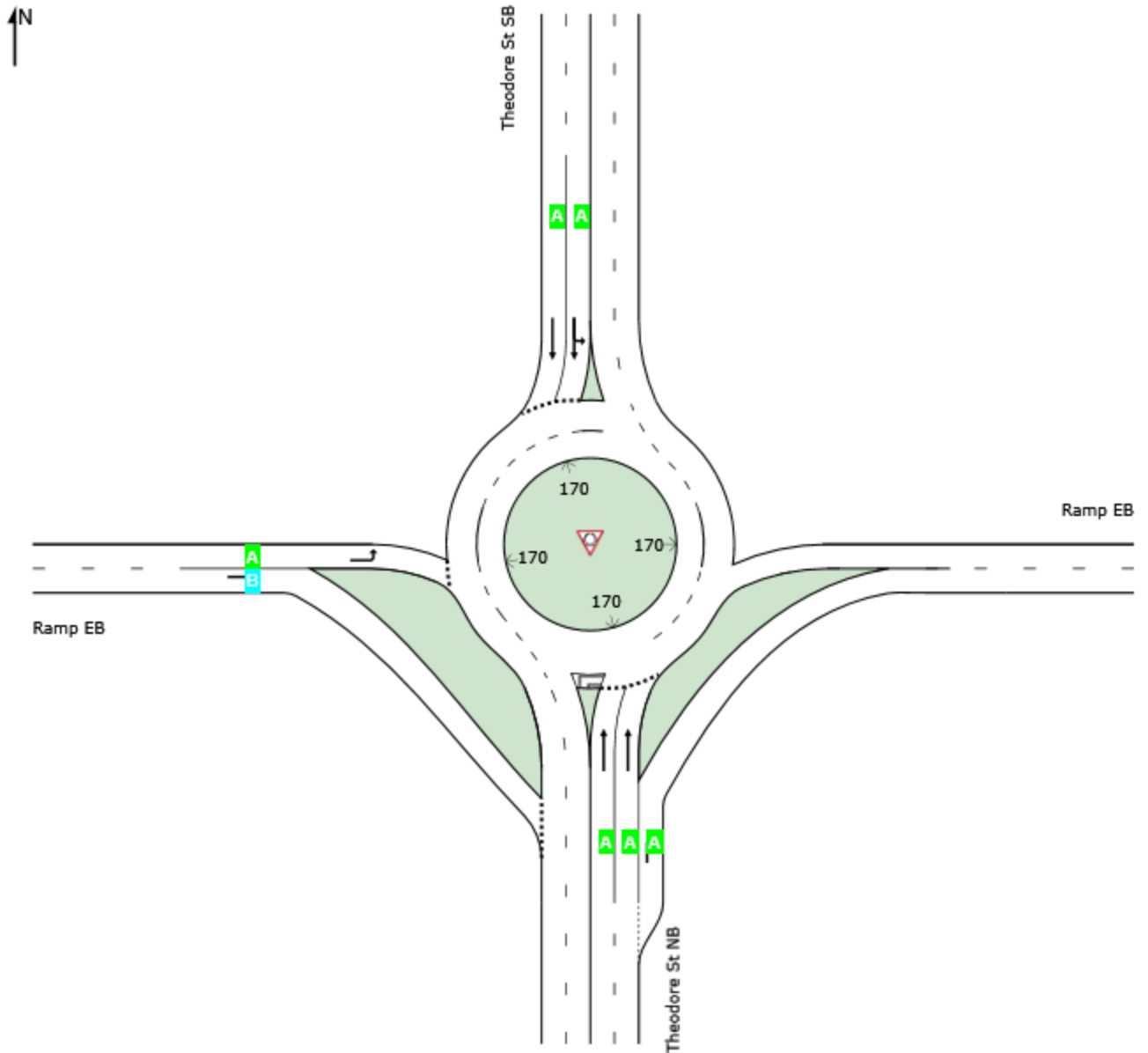
Lane Level of Service



Site: 1 [Roundabout2 (Theodore St & EB Ramps) - 2025PM - HCM6]

Site Category: (None)
Roundabout

	Approaches			Intersection
	South	North	West	
LOS	A	A	B	A



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: Same as Sign Control.

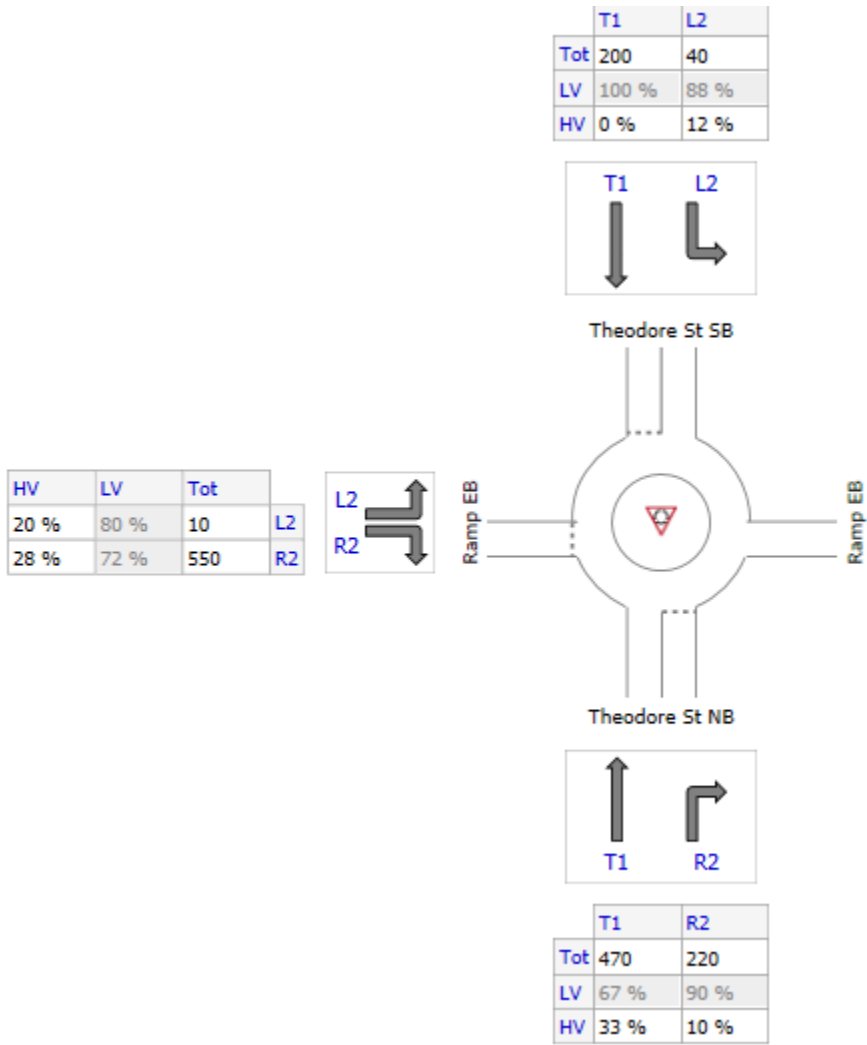
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

LOS F will result if $v/c > 1$ irrespective of lane delay value (does not apply for approaches and intersection).


Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

VOLUMES








DETAILED OUTPUT

 Site: 1 [Roundabout2 (Theodore St & EB Ramps) - 2025PM - HCM6]

Site Category: (None)
Roundabout

OUTPUT TABLE LINKS

-  Roundabouts
 - Roundabout Basic Parameters
 - Roundabout Circulating / Exiting Stream Parameters
 - Roundabout Gap Acceptance Parameters
 - Roundabout Flow Rates
-  Movements
 - Intersection Negotiation and Travel Data
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Roundabouts

Roundabout Basic Parameters
Site: Roundabout2 (Theodore St & EB Ramps) - 2025PM - HCM6

Site ID: 1
Roundabout

Central Island Diam	Circ Width	Insc Diam.	Entry Radius	Entry Angle	Circ Lanes	Entry Lanes	Av.Entry Lane Width	App Dist	Prop Upstr	Queued Signal	Extra Bunching
ft	ft	ft	ft	deg			ft	ft			%
South: Theodore St NB	170.0*	30.0*	230.0*	65.0*	30.0*	1	3	13.00*	1600	NA	0.0U

North: Theodore St SB												
170.0*	30.0*	230.0*	65.0*	30.0*	2	2	13.00*	1600		NA	0.0U	

West: Ramp EB												
170.0*	30.0*	230.0*	65.0*	30.0*	2	2	13.00*	1600		NA	0.0U	

Roundabout Capacity Model: US HCM 6

* These parameters do not affect estimated capacity values in the HCM 6 Capacity Model.

NA Not Applicable (single Site analysis or unconnected Site in Network analysis).

U User-specified Extra Bunching

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Roundabout Circulating / Exiting Stream Parameters Site: Roundabout2 (Theodore St & EB Ramps) - 2025PM - HCM6

Site ID: 1
Roundabout

Dest	Turn	Lane No.	Lane Type	Opng Flow veh/h	HVE pcu/veh	Adj. Flow pcu/h	%Near Lane Only	%Exit Flow Incl.	Cap. Const. Effect	O-D Factor	Aver Speed mph	In-Bunch Headway sec	Prop. Bunched

South: Theodore St NB													
N	T1	1	Subdominant	50	1.14	57	0.0	0.0	N	-	18.9	0.00	0.000
N	T1	2	Dominant	50	1.14	57	0.0	0.0	N	-	18.9	0.00	0.000
E	R2	3	Continuous										

North: Theodore St SB													
E	L2	1	Subdominant	0	0.00	0	0.0	0.0	N	-	NA	0.00	0.000
S	T1	1	Subdominant	0	0.00	0	0.0	0.0	N	-	NA	0.00	0.000
S	T1	2	Dominant	0	0.00	0	0.0	0.0	N	-	NA	0.00	0.000

West: Ramp EB													
N	L2	1	Dominant	240	1.02	245	0.0	0.0	N	-	28.1	0.00	0.000
S	R2	2	Excl. Slip	200	1.00	200	0.0	0.0	N	-	30.0	0.00	0.000

Roundabout Capacity Model: US HCM 6

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Roundabout Gap Acceptance Parameters Site: Roundabout2 (Theodore St & EB Ramps) - 2025PM - HCM6

Site ID: 1
Roundabout

Dest	Turn	Lane No.	Lane Type	In-Bunch Headway sec	Prop. Bunched	Priority Sharing	HVE for Entry	Critical Gap		Follow-up Headway sec
								Headway sec	Dist ft	

South: Theodore St NB										
Model Calibration Factor (HCM 6): 1.00										
Entry/Circ. Flow Adjustment (HCM 6): None										
N	T1	1	Subdominant	0.00	0.000	N	1.33	4.54	126.1	2.54
N	T1	2	Dominant	0.00	0.000	N	1.33	4.54	126.1	2.54

E R2 3 Continuous

North: Theodore St SB

Model Calibration Factor (HCM 6): 1.00

Entry/Circ. Flow Adjustment (HCM 6): None

Direction	Lane	Count	Type	Flow Adj	Cal Factor	Capacity	Flow Rate	Delay	Queue
E	L2	1	Subdominant	0.00	0.000	N	1.12	4.65	NA
S	T1	1	Subdominant	0.00	0.000	N	1.00	4.65	NA
S	T1	2	Dominant	0.00	0.000	N	1.00	4.33	NA

West: Ramp EB

Model Calibration Factor (HCM 6): 1.00

Entry/Circ. Flow Adjustment (HCM 6): None

Direction	Lane	Count	Type	Flow Adj	Cal Factor	Capacity	Flow Rate	Delay	Queue
N	L2	1	Dominant	0.00	0.000	N	1.20	4.33	178.6
S	R2	2	Excl. Slip	0.00	0.000	N	1.28	4.33	190.3

Roundabout Capacity Model: US HCM 6

Dist (Distance): Spacing, i.e. distance between the front ends of two successive vehicles across all lanes in the circulating or exiting stream

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Roundabout Flow Rates

Site: Roundabout2 (Theodore St & EB Ramps) - 2025PM - HCM6

Site ID: 1
Roundabout

CIRCULATING LANE FLOW RATES

Lane No.	Circulating Flow Rate		
	veh/h	pcu/h	Percent
South: Theodore St NB			
1	50	57	100.0%
Total	50	57	
North: Theodore St SB			
1	0	0	0.0%
2	0	0	0.0%
Total	0	0	
West: Ramp EB			
1	115	119	48.8%
2	125	125	51.2%
Total	240	244	

The US HCM 6 roundabout capacity model option is in use. This model considers only the total circulating flow and not the flow rates in individual circulating lanes. To model the effects of flow distribution in circulating lanes on the entry capacity results, you should use the SIDRA Standard roundabout capacity model.

APPROACH LANE FLOW RATES

Lane No.	Approach Flows (veh/h)		
	Out	To Downst	Total
South: Theodore St NB			
1	0	276	276

2	0	276	276
3	259	0	259
Total	259	552	811

North: Theodore St SB			
1	0	115	115
2	0	125	125
Total	0	240	240

West: Ramp EB			
1	0	10	10
2	550	0	550
Total	550	10	560

[Go to Table Links \(Top\)](#)

Movements

Intersection Negotiation and Travel Data Site: Roundabout2 (Theodore St & EB Ramps) - 2025PM - HCM6

Site ID: 1
Roundabout

TRAVEL SPEED, TRAVEL DISTANCE AND TRAVEL TIME

From Approach	To Exit	Turn	Running Speed mph	Travel Speed mph	Travel Distance ft	Travel Time s	Total Dem Flows veh-mi/h	Travel Distance Arv Flows veh-mi/h	Tot.Trav. Time veh-h/h
South: Theodore St NB									
	North	T1	39.1	36.2	3423.3#	64.6#	358.5	358.5	9.9
	East	R2	38.1	38.1	3288.6#	58.8#	161.2	161.2	4.2
North: Theodore St SB									
	East	L2	39.2	39.2	3473.9#	60.5#	26.3	26.3	0.7
	South	T1	39.7	39.7	3442.2#	59.1#	130.4	130.4	3.3
West: Ramp EB									
	North	L2	35.1	34.0	3580.9#	71.7#	6.8	6.8	0.2
	South	R2	36.3	31.4	3288.6#	71.5#	342.6	342.6	10.9
ALL VEHICLES:			38.1	35.1	3360.3#	65.3#	1025.8	1025.8	29.2

"Running Speed" is the average speed excluding stopped periods.

Travel Time values include cruise times and intersection delays including acceleration, deceleration and idling delays.

Travel Distance and Travel Time values include travel on the External Exit section based on the Exit Distance or user-specified Downstream Distance value as applicable.

INTERSECTION NEGOTIATION DATA

From Approach	To Exit	Turn	Negn Radius ft	Negn Speed mph	Negn Dist ft	App Dist ft	Exit Dist ft	Downstr Dist ft
---------------	---------	------	----------------	----------------	--------------	-------------	--------------	-----------------

South: Theodore St NB								
	North	T1	328.1	30.0	223.3	1600	488	NA
	East	R2	219.5	25.8	88.6	1600	488	NA

North: Theodore St SB								
	East	L2	97.0	18.9	380.9	1600	488	NA
	South	T1	328.1	30.0	223.3	1600	488	NA

West: Ramp EB								
	North	L2	97.0	18.9	380.9	1600	488	NA
	South	R2	216.1	25.6	88.6	1600	488	NA

Maximum Negotiation (Design) Speed = 30.0 mph

NA Downstream Distance does not apply if:

- Exit is an internal leg of a network
- "Program" option was specified
- Distance specified was less than the Exit Negotiation Distance
- Distance specified was greater than the exit leg length

MOVEMENT SPEEDS AND GEOMETRIC DELAY

Mov ID	Turn	App. Speeds		Exit Speeds		Queue Move-up Speed mph	Geom Delay sec
		Cruise mph	Negn mph	Negn mph	Cruise mph		

South: Theodore St NB							
8	T1	40.0	30.0	30.0	40.0	48.3	0.0
18	R2	40.0	25.8	25.8	40.0	41.5	0.0

North: Theodore St SB							
7	L2	40.0	18.9	18.9	40.0	42.0	0.0
4	T1	40.0	30.0	30.0	40.0	45.9	0.0

West: Ramp EB							
5	L2	40.0	18.9	18.9	40.0	29.0	0.0
12	R2	40.0	25.6	25.6	40.0	32.7	0.0

HCM Delay Formula option used: Geometric Delay is not included in Control Delay.

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Movement Capacity and Performance Parameters
 Site: Roundabout2 (Theodore St & EB Ramps) - 2025PM - HCM6

Site ID: 1
 Roundabout

MOVEMENT CAPACITY PARAMETERS

Mov ID	Turn	Mov Cl.	Arv Flow veh/h	Opng Flow veh/h	Movement Adjust. Flow pcu/h	Total Cap. veh/h	Prac. Deg. Satn xp	Prac. Spare Cap. %	Deg. Satn x

South: Theodore St NB									
8	T1	#	553	50	57	2028	0.85	212	0.273
18	R2	#	259	50	57	1522	0.98	476	0.170

North: Theodore St SB										
7	L2	#	40	0	0	453	0.85	862	0.088	
4	T1	#	200	0	0	2264	0.85	862	0.088	

West: Ramp EB										
5	L2	#	10	240	245	961	0.85	8069	0.010	
12	R2	#	550	200	200	936	0.85	45	0.588*	

* Maximum degree of saturation
Combined Movement Capacity parameters are shown for all Movement Classes.

MOVEMENT PERFORMANCE

Mov ID	Turn	Total Delay (veh-h/h)	Total Delay (pers-h/h)	Aver. Delay (sec)	Eff. Stop Rate	Total Stops	Perf. Index	Tot.Trav. Distance (veh-mi/h)	Tot.Trav. Time (veh-h/h)	Aver. Speed (mph)
South: Theodore St NB										
8	T1	0.96	1.15	6.2	0.07	40.7	10.93	358.5	9.9	36.2
18	R2	0.00	0.00	0.0	0.00	0.0	4.03	161.2	4.2	38.1
North: Theodore St SB										
7	L2	0.04	0.05	3.7	0.00	0.0	0.70	26.3	0.7	39.2
4	T1	0.18	0.22	3.3	0.00	0.0	3.44	130.4	3.3	39.7
West: Ramp EB										
5	L2	0.01	0.01	3.8	0.16	1.6	0.21	6.8	0.2	34.0
12	R2	1.85	2.22	12.1	0.32	178.5	13.54	342.6	10.9	31.4

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Fuel Consumption, Emissions and Cost
Site: Roundabout2 (Theodore St & EB Ramps) - 2025PM - HCM6

Site ID: 1
Roundabout

FUEL CONSUMPTION, EMISSIONS AND COST (TOTAL)

Mov ID	Turn	Cost Total \$/h	Fuel Total gal/h	CO2 Total kg/h	CO Total kg/h	HC Total kg/h	NOX Total kg/h
South: Theodore St NB							
8	T1	238.16	29.1	273.2	0.52	0.037	1.555
18	R2	71.84	7.7	69.7	0.25	0.016	0.250
		310.00	36.8	342.9	0.77	0.053	1.805
North: Theodore St SB							
7	L2	10.96	1.1	10.0	0.04	0.003	0.029
4	T1	47.52	4.2	37.1	0.20	0.012	0.050
		58.48	5.3	47.1	0.24	0.015	0.079
West: Ramp EB							
5	L2	4.95	0.5	4.7	0.01	0.001	0.023
12	R2	256.40	29.0	270.4	0.56	0.042	1.519
		261.35	29.5	275.1	0.57	0.043	1.543

INTERSECTION: 629.82 71.6 665.0 1.58 0.111 3.426

FUEL CONSUMPTION, EMISSIONS AND COST (RATE)

Mov ID	Turn	Cost Rate \$/mi	Fuel Eff. mpg	CO2 Rate g/km	CO Rate g/km	HC Rate g/km	NOX Rate g/km

South: Theodore St NB							
8	T1	0.41	12.3	473.5	0.90	0.064	2.695
18	R2	0.28	21.1	268.5	0.97	0.062	0.963
		0.37	14.1	409.9	0.92	0.064	2.158

North: Theodore St SB							
7	L2	0.26	23.9	236.3	0.95	0.061	0.685
4	T1	0.23	31.3	176.7	0.96	0.058	0.236
		0.23	29.8	186.7	0.96	0.059	0.311

West: Ramp EB							
5	L2	0.45	13.4	427.4	1.08	0.082	2.138
12	R2	0.47	11.8	490.5	1.02	0.077	2.756
		0.46	11.8	489.2	1.02	0.077	2.744

INTERSECTION:		0.38	14.3	402.8	0.96	0.067	2.075

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Lanes

Lane Performance and Capacity Information
Site: Roundabout2 (Theodore St & EB Ramps) - 2025PM - HCM6

Site ID: 1
Roundabout

LANE PERFORMANCE

Lane No.	Flow veh/h	Cap veh/h	Deg. Satn x	Aver. Delay sec	Eff. Stop Rate	Q u e u e		Lane Length ft
						95% Back veh	ft	

South: Theodore St NB								
1	276	1014	0.273	6.2	0.07	1.0	30.8	1600.0
2	276	1014	0.273	6.2	0.07	1.0	30.8	1600.0
3	259	1522	0.170	0.0	0.00			600.0T

North: Theodore St SB								
1	115	1297	0.088	3.5	0.00	0.0	0.0	1600.0
2	125	1420	0.088	3.2	0.00	0.0	0.0	1600.0

West: Ramp EB								
1	10	961	0.010	3.8	0.16	0.0	0.9	1600.0

2 550 936 0.588 12.1 0.32 2.7 81.3 1600.0

T Short lane due to specification of Turn Bay

LANE FLOW AND CAPACITY INFORMATION

Lane No.	Total Arv Flow veh/h	Min Cap veh/h	Tot Cap veh/h	Deg. Satn x	Lane Util %

South: Theodore St NB					
1	276	150	1014	0.273	100
2	276	150	1014	0.273	100
3	259	259	1522	0.170	100

North: Theodore St SB					
1	115	115	1297	0.088	100
2	125	125	1420	0.088	100

West: Ramp EB					
1	10	10	961	0.010	100
2	550	150	936	0.588	100

The capacity values of Continuous Lanes are obtained by adjusting the basic saturation flow for lane width, grade, movement class and turning vehicle effects. Saturation flow scale applies if specified.

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Lane, Approach and Intersection Performance
Site: Roundabout2 (Theodore St & EB Ramps) - 2025PM - HCM6

Site ID: 1
Roundabout

Lane No.	Arrival Flow (veh/h)	%HV	Adj. Basic Satf.	Deg Sat x	Aver. Delay sec	Longest Queue ft	Lane Length ft

South: Theodore St NB							
1	276	33		0.273	6.2	31	1600
2	276	33		0.273	6.2	31	1600
3	259	10	1975	0.170	0.0		600

	812	26		0.273	4.3	31	

North: Theodore St SB							
1	115	4		0.088	3.5	0	1600
2	125	0		0.088	3.2	0	1600

	240	2		0.088	3.3		

West: Ramp EB							
1	10	20		0.010	3.8	1	1600
2	550	28		0.588	12.1	81	1600

	560	28		0.588	12.0	81	
=====							

ALL VEHICLES					
Total Flow	% HV	Max X	Aver. Delay	Max Queue	

1612 23 0.588 6.8 81

Peak flow period = 15 minutes.

Queue values in this table are 95% queue (feet)
 Note: Basic Saturation Flows at roundabouts or sign-controlled intersections apply only to continuous lanes.

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Driver Characteristics
 Site: Roundabout2 (Theodore St & EB Ramps) - 2025PM - HCM6

Site ID: 1
 Roundabout

Lane No.	Satn Speed mph	Satn Flow veh/h	Satn Hdwy sec	Satn Spacing ft	Average Queue Space ft	Driver Response Time sec
South: Theodore St NB						
1	30.0	1420	2.54	111.48	31.60	1.82
2	30.0	1420	2.54	111.48	31.60	1.82
3	NA - Continuous Movement					
North: Theodore St SB						
1	26.1	1350	2.67	102.15	25.84	1.99
2	30.0	1420	2.54	111.48	25.00	1.97
West: Ramp EB						
1	18.9	1420	2.54	70.34	29.00	1.49
2	25.6	1420	2.54	95.24	30.60	1.72

Saturation Flow and Saturation Headway are derived from follow-up headway.

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Lane Delays
 Site: Roundabout2 (Theodore St & EB Ramps) - 2025PM - HCM6

Site ID: 1
 Roundabout

LANE DELAYS

Lane No.	Deg. x	% Arv During Green	Prog. Factor	Delay (seconds/veh)									
				Min Del dm	Stop-line 1st d1	2nd d2	Total dSL	Acc. dn	Queuing Total dq	MvUp dqm	Stopd (Idle) di	Geom dig	Control dic
South: Theodore St NB													
1	0.273	NA	NA	3.6	4.9	1.3	6.2	7.5	4.9	0.0	4.9	0.0	6.2
2	0.273	NA	NA	3.6	4.9	1.3	6.2	7.5	4.9	0.0	4.9	0.0	6.2
3	0.170					0.0					0.0	0.0	

North: Theodore St SB													
1	0.088	NA	NA	2.8	3.2	0.3	3.5	0.0	0.0	0.0	0.0	0.0	3.5
2	0.088	NA	NA	2.5	3.0	0.2	3.2	0.0	0.0	0.0	0.0	0.0	3.2
West: Ramp EB													
1	0.010	NA	NA	3.7	3.8	0.0	3.8	5.6	2.1	0.0	2.1	0.0	3.8
2	0.588	NA	NA	3.8	6.8	5.3	12.1	5.2	9.8	0.0	9.8	0.0	12.1

HCM Delay Formula option used (Exclude Geometric Delay option applies). Control Delay does not include Geometric Delay, and Stop-line Delay is treated as being same as Control Delay.

dm: Minimum delay for gap acceptance cases

dSL: Stop-line delay (=d1+d2)

dn: Average stop-start delay for all vehicles queued and unqueued

dq: Queuing delay (the part of the stop-line delay that includes stopped delay and queue move-up delay)

dqm: Queue move-up delay

di: Stopped delay (stopped (idling) time at near-zero speed)

dig: Geometric delay

dic: Control delay

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Lane Queues

Site: Roundabout2 (Theodore St & EB Ramps) - 2025PM - HCM6

Site ID: 1
Roundabout

BACK OF QUEUE (VEHICLES)

Lane No.	Deg. Satn x	% Arv During Green	Prog. Factor	Ovrfl. Queue No	Back of Queue (veh)				Queue Stor. Ratio		Prob. Block %	Prob. SL Ov. %
					Nb1	Nb2	Nb	95%	Av.	95%		
South: Theodore St NB												
1	0.273	NA	NA	0.0	0.4	0.0	0.4	1.0	0.01	0.02	0.0	NA
2	0.273	NA	NA	0.0	0.4	0.0	0.4	1.0	0.01	0.02	0.0	NA
North: Theodore St SB												
1	0.088	NA	NA	0.0	0.0	0.0	0.0	0.0	0.00	0.00	0.0	NA
2	0.088	NA	NA	0.0	0.0	0.0	0.0	0.0	0.00	0.00	0.0	NA
West: Ramp EB												
1	0.010	NA	NA	0.0	0.0	0.0	0.0	0.0	0.00	0.00	0.0	NA
2	0.588	NA	NA	0.0	1.1	0.0	1.1	2.7	0.02	0.05	0.0	NA

SIDRA Standard models are used for Back of Queue estimation since HCM only gives Cycle-Average Queues for unsignalised intersections.

BACK OF QUEUE (DISTANCE)

Lane No.	Deg. Satn x	% Arv During Green	Prog. Factor	Ovrfl. Queue No	Back of Queue (ft)				Queue Stor. Ratio		Prob. Block %	Prob. SL Ov. %
					Nb1	Nb2	Nb	95%	Av.	95%		
South: Theodore St NB												
1	0.273	NA	NA	0.0	12.4	0.0	12.4	30.8	0.01	0.02	0.0	NA
2	0.273	NA	NA	0.0	12.4	0.0	12.4	30.8	0.01	0.02	0.0	NA

North: Theodore St SB												
1	0.088	NA	NA	0.0	0.0	0.0	0.0	0.0	0.00	0.00	0.0	NA
2	0.088	NA	NA	0.0	0.0	0.0	0.0	0.0	0.00	0.00	0.0	NA

West: Ramp EB												
1	0.010	NA	NA	0.0	0.4	0.0	0.4	0.9	0.00	0.00	0.0	NA
2	0.588	NA	NA	0.0	32.7	0.0	32.7	81.3	0.02	0.05	0.0	NA

SIDRA Standard models are used for Back of Queue estimation since HCM only gives Cycle-Average Queues for unsignalised intersections.

OTHER QUEUE RESULTS (VEHICLES)

Lane No.	Deg. Satn	% Arv During Green	Prog. Factor	Ovrfl. Queue No	Cyc-Av. Queue	
	x				Nc	95%
South: Theodore St NB						
1	0.273	NA	NA	0.0	0.5	0.9
2	0.273	NA	NA	0.0	0.5	0.9
North: Theodore St SB						
1	0.088	NA	NA	0.0	0.1	0.2
2	0.088	NA	NA	0.0	0.1	0.2
West: Ramp EB						
1	0.010	NA	NA	0.0	0.0	0.0
2	0.588	NA	NA	0.0	1.9	3.4

HCM Delay Formula option used:
 Cycle-Average Queue is calculated using average delay from the HCM equation.
 (i.e. HCM delays are treated as stop-line delays for this purpose).

OTHER QUEUE RESULTS (DISTANCE)

Lane No.	Deg. Satn	% Arv During Green	Prog. Factor	Ovrfl. Queue No	Cyc-Av. Queue	
	x				Nc	95%
South: Theodore St NB						
1	0.273	NA	NA	0.0	15.1	27.5
2	0.273	NA	NA	0.0	15.1	27.5
North: Theodore St SB						
1	0.088	NA	NA	0.0	2.9	5.2
2	0.088	NA	NA	0.0	2.8	5.1
West: Ramp EB						
1	0.010	NA	NA	0.0	0.3	0.6
2	0.588	NA	NA	0.0	56.6	102.7

HCM Delay Formula option used:
 Cycle-Average Queue is calculated using average delay from the HCM equation.
 (i.e. HCM delays are treated as stop-line delays for this purpose).

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Site ID: 1
Roundabout

LANE QUEUE PERCENTILES (VEHICLES)

Lane No.	Deg. Satn x	Percentile Back of Queue (veh)						
		50%	70%	85%	90%	95%	98%	100%
South: Theodore St NB								
1	0.273	0.4	0.5	0.7	0.8	1.0	1.1	1.2
2	0.273	0.4	0.5	0.7	0.8	1.0	1.1	1.2
North: Theodore St SB								
1	0.088	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	0.088	0.0	0.0	0.0	0.0	0.0	0.0	0.0
West: Ramp EB								
1	0.010	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	0.588	1.1	1.4	2.0	2.3	2.7	2.9	3.2

SIDRA Standard models are used for Back of Queue estimation since HCM only gives Cycle-Average Queues for unsignalised intersections.

LANE QUEUE PERCENTILES (DISTANCE)

Lane No.	Deg. Satn x	Percentile Back of Queue (feet)						
		50%	70%	85%	90%	95%	98%	100%
South: Theodore St NB								
1	0.273	12.4	16.1	22.6	26.2	30.8	34.2	36.8
2	0.273	12.4	16.1	22.6	26.2	30.8	34.2	36.8
North: Theodore St SB								
1	0.088	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	0.088	0.0	0.0	0.0	0.0	0.0	0.0	0.0
West: Ramp EB								
1	0.010	0.4	0.5	0.7	0.8	0.9	1.0	1.1
2	0.588	32.7	42.3	59.7	69.1	81.3	90.2	96.9

SIDRA Standard models are used for Back of Queue estimation since HCM only gives Cycle-Average Queues for unsignalised intersections.

[Go to Table Links \(Top\)](#)

Lane Stops
Site: Roundabout2 (Theodore St & EB Ramps) - 2025PM - HCM6

Site ID: 1
Roundabout

Lane	Deg. Satn	% Arv During	Prog. Factor	-- Effective Stop Rate -- Geom. Overall	Total Stops	Queue Move-up Rate	Total Queue Move-ups	Prop. Queued	Aver. Num. of Cycles to
------	-----------	--------------	--------------	--	-------------	--------------------	----------------------	--------------	-------------------------

No.	x	Green		he1	he2	hig	h	H	hqm	Hqm	pq	Depart

South: Theodore St NB												
1	0.273	NA	NA	0.07	0.00	0.00	0.07	20.4	0.00	0.0	0.18	0.18
2	0.273	NA	NA	0.07	0.00	0.00	0.07	20.4	0.00	0.0	0.18	0.18
3	0.170	NA	NA			0.00	0.00	0.0				

North: Theodore St SB												
1	0.088	NA	NA	0.00	0.00	0.00	0.00	0.0	0.00	0.0	0.00	0.00
2	0.088	NA	NA	0.00	0.00	0.00	0.00	0.0	0.00	0.0	0.00	0.00

West: Ramp EB												
1	0.010	NA	NA	0.16	0.00	0.00	0.16	1.6	0.00	0.0	0.31	0.31
2	0.588	NA	NA	0.32	0.00	0.00	0.32	178.5	0.00	0.0	0.45	0.45

hig is the average value for all movements in a shared lane												
hqm is average queue move-up rate for all vehicles queued and unqueued												

[Go to Table Links \(Top\)](#)

Flow Rates

Origin-Destination Flow Rates (Total)

Site: Roundabout2 (Theodore St & EB Ramps) - 2025PM - HCM6

Site ID: 1
Roundabout

TOTAL FLOW RATES for All Movement Classes (veh/h)

From SOUTH To:	N	E	
Turn:	T1	R2	TOT
Flow Rate	552.9	258.8	811.8
%HV (all designations)	33.0	10.0	25.7

From NORTH To:	E	S	
Turn:	L2	T1	TOT
Flow Rate	40.0	200.0	240.0
%HV (all designations)	12.0	0.0	2.0

From WEST To:	N	S	
Turn:	L2	R2	TOT
Flow Rate	10.0	550.0	560.0
%HV (all designations)	20.0	28.0	27.9

Flow rates shown above are Arrival Flow Rates (veh/h) based on the following input specifications:
Unit Time for Volumes = 60 minutes
Peak Flow Period = 15 minutes
Effects of Volume Factors (Peak Flow Factor, Flow Scale, Growth Rate) are included.
Arrival Flow Rates may be less than Demand Flow Rates if capacity constraint applies in network analysis.

[Go to Table Links \(Top\)](#)

Origin-Destination Flow Rates by Movement Class

Site: Roundabout2 (Theodore St & EB Ramps) - 2025PM - HCM6

Site ID: 1
 Roundabout

FLOW RATES for Light Vehicles (veh/h)

From SOUTH To:	N	E	
Turn:	T1	R2	TOT

Flow Rate	370.5	232.9	603.4
Mov Class %	67.0	90.0	74.3
Flow Scale	1.00	1.00	-
Peak Flow Factor	0.85	0.85	-
Residual Demand	0.0	0.0	0.0

From NORTH To:	E	S	
Turn:	L2	T1	TOT

Flow Rate	35.2	200.0	235.2
Mov Class %	88.0	100.0	98.0
Flow Scale	1.00	1.00	-
Peak Flow Factor	1.00	1.00	-
Residual Demand	0.0	0.0	0.0

From WEST To:	N	S	
Turn:	L2	R2	TOT

Flow Rate	8.0	396.0	404.0
Mov Class %	80.0	72.0	72.1
Flow Scale	1.00	1.00	-
Peak Flow Factor	1.00	1.00	-
Residual Demand	0.0	0.0	0.0

FLOW RATES for Heavy Vehicles (veh/h)

From SOUTH To:	N	E	
Turn:	T1	R2	TOT

Flow Rate	182.5	25.9	208.4
Mov Class %	33.0	10.0	25.7
Flow Scale	1.00	1.00	-
Peak Flow Factor	0.85	0.85	-
Residual Demand	0.0	0.0	0.0

From NORTH To:	E	S	
Turn:	L2	T1	TOT

Flow Rate	4.8	0.0	4.8
Mov Class %	12.0	0.0	2.0
Flow Scale	1.00	1.00	-
Peak Flow Factor	1.00	1.00	-
Residual Demand	0.0	0.0	0.0

From WEST To:	N	S	
Turn:	L2	R2	TOT

Flow Rate	2.0	154.0	156.0
Mov Class %	20.0	28.0	27.9
Flow Scale	1.00	1.00	-
Peak Flow Factor	1.00	1.00	-
Residual Demand	0.0	0.0	0.0

Flow rates shown above are Arrival Flow Rates (veh/h) based on the following input specifications:
 Unit Time for Volumes = 60 minutes
 Peak Flow Period = 15 minutes

Effects of Volume Factors (Peak Flow Factor, Flow Scale, Growth Rate) are included.
 Arrival Flow Rates may be less than Demand Flow Rates if capacity constraint applies in
 network analysis.

[Go to Table Links \(Top\)](#)

Lane Flow Rates
Site: Roundabout2 (Theodore St & EB Ramps) - 2025PM - HCM6

Site ID: 1
 Roundabout

LANE FLOW RATES AT STOP LINE (veh/h)

From SOUTH To:	N	E	TOT
Turn:	T1	R2	

Lane 1			
LV	185.2	*	185.2
HV	91.2	*	91.2
Total	276.5	*	276.5
Lane 2			
LV	185.2	*	185.2
HV	91.2	*	91.2
Total	276.5	*	276.5
Lane 3			
LV	*	232.9	232.9
HV	*	25.9	25.9
Total	*	258.8	258.8

Approach	552.9	258.8	811.8

From NORTH To:	E	S	TOT
Turn:	L2	T1	

Lane 1			
LV	35.2	74.6	109.8
HV	4.8	*	4.8
Total	40.0	74.6	114.6
Lane 2			
LV	*	125.4	125.4
Total	*	125.4	125.4

Approach	40.0	200.0	240.0

From WEST To:	N	S	TOT
Turn:	L2	R2	

Lane 1			
LV	8.0	*	8.0
HV	2.0	*	2.0
Total	10.0	*	10.0
Lane 2			
LV	*	396.0	396.0
HV	*	154.0	154.0
Total	*	550.0	550.0

Approach	10.0	550.0	560.0

* Movement not allocated to the lane

EXIT LANE FLOW RATES

Movement Class:	LV	HV	TOT
Exit: SOUTH			
Lane: 1	74.6	*	74.6
Lane: 2	521.4	154.0	675.4
Total	596.0	154.0	750.0
Exit: EAST			
Lane: 1	35.2	4.8	40.0
Lane: 2	232.9	25.9	258.8
Total	268.1	30.7	298.8
Exit: NORTH			
Lane: 1	193.2	93.2	286.5
Lane: 2	185.2	91.2	276.5
Total	378.5	184.5	562.9

* Movement not allocated to the lane

DOWNSTREAM LANE FLOW RATES FOR EXIT ROADS

Movement Class:	LV	HV	TOT
Exit: SOUTH			
Lane: 1	74.6	*	74.6
Lane: 2	521.4	154.0	675.4
Total	596.0	154.0	750.0
Exit: EAST			
Lane: 1	35.2	4.8	40.0
Lane: 2	232.9	25.9	258.8
Total	268.1	30.7	298.8
Exit: NORTH			
Lane: 1	193.2	93.2	286.5
Lane: 2	185.2	91.2	276.5
Total	378.5	184.5	562.9

* Movement not allocated to the lane

Flow rates shown above are Arrival Flow Rates (veh/h) based on the following input specifications:
Unit Time for Volumes = 60 minutes
Peak Flow Period = 15 minutes
Effects of Volume Factors (Peak Flow Factor, Flow Scale, Growth Rate) are included.
Arrival Flow Rates may be less than Demand Flow Rates if capacity constraint applies in network analysis.

[Go to Table Links \(Top\)](#)

Other

Parameter Settings Summary

Site: Roundabout2 (Theodore St & EB Ramps) - 2025PM - HCM6

Site ID: 1
Roundabout

* Basic Parameters:

Intersection Type: Roundabout
US HCM 6 Roundabout Capacity Model used
Driving on the right-hand side of the road
Input data specified in US units
Model Defaults: US HCM (Customary)
Peak Flow Period (for performance): 15 minutes
Unit time (for volumes): 60 minutes.
HCM Delay Model option used
HCM Queue Model option used
Level of Service based on: Delay and v/c (HCM 6)
Queue percentile: 95%

[Go to Table Links \(Top\)](#)

Diagnostics

Site: Roundabout2 (Theodore St & EB Ramps) - 2025PM - HCM6

Site ID: 1
Roundabout

Lane Flow-Capacity Iterations:

Site Model Variability Index (Iterations 3 to N): 0.0%
Number of Iterations: 3 (Maximum: 10)

Other Diagnostic Messages (if any):

[Go to Table Links \(Top\)](#)

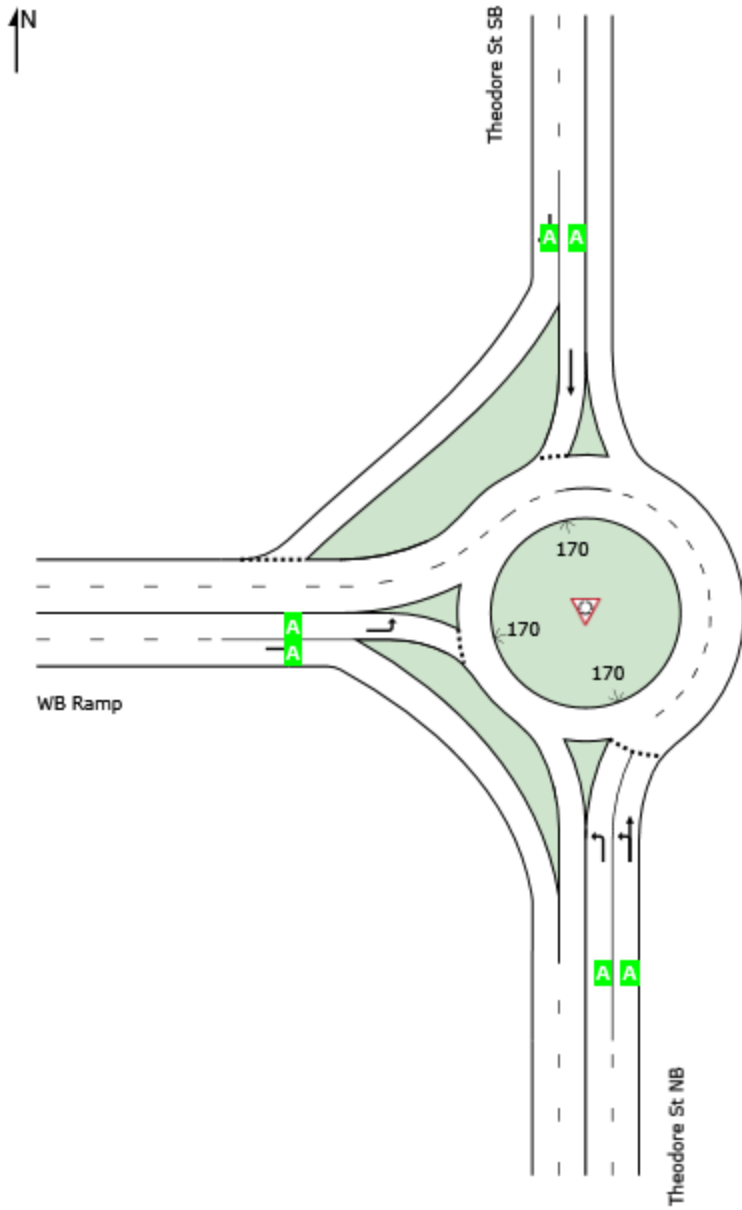
LANE LEVEL OF SERVICE

Lane Level of Service

 **Site: 1 [Roundabout3 (Theodore St & WB Ramps) - 2025PM - HCM6]**

Site Category: (None)
Roundabout

	Approaches			Intersection
	South	North	West	
LOS	A	A	A	A



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: Same as Sign Control.

Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

LOS F will result if $v/c > 1$ irrespective of lane delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

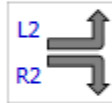
VOLUMES

	R2	T1
Tot	20	80
LV	100 %	97 %
HV	0 %	3 %



Theodore St SB

HV	LV	Tot	
0 %	100 %	20	L2
13 %	87 %	160	R2



WB Ramp




Theodore St NB








	L2	T1
Tot	400	80
LV	61 %	96 %
HV	39 %	4 %

DETAILED OUTPUT

 Site: 1 [Roundabout3 (Theodore St & WB Ramps) - 2025PM - HCM6]

Site Category: (None)
Roundabout

OUTPUT TABLE LINKS

-  Roundabouts
 - Roundabout Basic Parameters
 - Roundabout Circulating / Exiting Stream Parameters
 - Roundabout Gap Acceptance Parameters
 - Roundabout Flow Rates
-  Movements
 - Intersection Negotiation and Travel Data
 - Movement Capacity and Performance Parameters
 - Fuel Consumption, Emissions and Cost
-  Lanes
 - Lane Performance and Capacity Information
 - Lane, Approach and Intersection Performance
 - Driver Characteristics
 - Lane Delays
 - Lane Queues
 - Lane Queue Percentiles
 - Lane Stops
-  Flow Rates
 - Origin-Destination Flow Rates (Total)
 - Origin-Destination Flow Rates by Movement Class
 - Lane Flow Rates
-  Other
 - Parameter Settings Summary
 - Diagnostics

Roundabouts

Roundabout Basic Parameters Site: Roundabout3 (Theodore St & WB Ramps) - 2025PM - HCM6

Site ID: 1
Roundabout

Central Island Diam	Circ Width	Insc Diam.	Entry Radius	Entry Angle	Circ Lanes	Entry Lanes	Av.Entry Lane Width	App Dist	Prop Upstr	Queued Signal	Extra Bunching
ft	ft	ft	ft	deg			ft	ft			%
South: Theodore St NB	170.0*	15.0*	215.0*	65.0*	30.0*	1	2	13.00*	1600	NA	0.0U

North: Theodore St SB											
170.0*	30.0*	215.0*	65.0*	30.0*	2	2	13.00*	1600		NA	0.0U

West: WB Ramp											
170.0*	15.0*	200.0*	65.0*	30.0*	1	2	13.00*	1600		NA	0.0U

Roundabout Capacity Model: US HCM 6

* These parameters do not affect estimated capacity values in the HCM 6 Capacity Model.

NA Not Applicable (single Site analysis or unconnected Site in Network analysis).

U User-specified Extra Bunching

[Go to Table Links \(Top\)](#)

Roundabout Circulating / Exiting Stream Parameters Site: Roundabout3 (Theodore St & WB Ramps) - 2025PM - HCM6

Site ID: 1
Roundabout

Dest	Turn	Lane No.	Lane Type	Opng Flow veh/h	HVE pcu/veh	Adj. Flow pcu/h	%Near Lane Only	%Exit Flow Incl.	Cap. Const. Effect	O-D Factor	Aver Speed mph	In-Bunch Headway sec	Prop. Bunched

South: Theodore St NB													
W	L2	1	Subdominant	20	1.00	20	0.0	0.0	N	-	18.7	0.00	0.000
W	L2	2	Dominant	20	1.00	20	0.0	0.0	N	-	18.7	0.00	0.000
N	T1	2	Dominant	20	1.00	20	0.0	0.0	N	-	18.7	0.00	0.000

North: Theodore St SB													
S	T1	1	Dominant	580	1.39	806	0.0	0.0	N	-	18.7	0.00	0.000
W	R2	2	Excl. Slip	580	1.39	806	0.0	0.0	N	-	18.7	0.00	0.000

West: WB Ramp													
N	L2	1	Dominant	80	1.03	82	0.0	0.0	N	-	30.0	0.00	0.000
S	R2	2	Continuous										

Roundabout Capacity Model: US HCM 6

[Go to Table Links \(Top\)](#)

Roundabout Gap Acceptance Parameters Site: Roundabout3 (Theodore St & WB Ramps) - 2025PM - HCM6

Site ID: 1
Roundabout

Dest	Turn	Lane No.	Lane Type	In-Bunch Headway sec	Prop. Bunched	Priority Sharing	HVE for Entry	Critical Gap		Follow-up Headway sec
								Headway sec	Dist ft	

South: Theodore St NB										
Model Calibration Factor (HCM 6): 1.00										
Entry/Circ. Flow Adjustment (HCM 6): None										
W	L2	1	Subdominant	0.00	0.000	N	1.39	4.54	124.9	2.54
W	L2	2	Dominant	0.00	0.000	N	1.39	4.54	124.9	2.54
N	T1	2	Dominant	0.00	0.000	N	1.04	4.54	124.9	2.54

 North: Theodore St SB
 Model Calibration Factor (HCM 6): 1.00
 Entry/Circ. Flow Adjustment (HCM 6): None

S	T1	1	Dominant	0.00	0.000	N	1.03	4.33	118.6	2.54
W	R2	2	Excl. Slip	0.00	0.000	N	1.00	4.33	118.6	2.54

West: WB Ramp
 Model Calibration Factor (HCM 6): 1.00
 Entry/Circ. Flow Adjustment (HCM 6): None

N	L2	1	Dominant	0.00	0.000	N	1.00	4.54	199.8	2.54
S	R2	2	Continuous							

Roundabout Capacity Model: US HCM 6

Dist (Distance): Spacing, i.e. distance between the front ends of two successive vehicles across all lanes in the circulating or exiting stream

[Go to Table Links \(Top\)](#)

Roundabout Flow Rates

Site: Roundabout3 (Theodore St & WB Ramps) - 2025PM - HCM6

Site ID: 1
 Roundabout

CIRCULATING LANE FLOW RATES

Lane No.	Circulating Flow Rate		
	veh/h	pcu/h	Percent

South: Theodore St NB			
1	20	20	100.0%
Total	20	20	

North: Theodore St SB			
1	333	462	57.4%
2	247	343	42.6%
Total	580	805	

West: WB Ramp			
1	80	82	100.0%
Total	80	82	

The US HCM 6 roundabout capacity model option is in use. This model considers only the total circulating flow and not the flow rates in individual circulating lanes. To model the effects of flow distribution in circulating lanes on the entry capacity results, you should use the SIDRA Standard roundabout capacity model.

APPROACH LANE FLOW RATES

Lane No.	Approach Flows (veh/h)		
	Out	To Downst	Total

South: Theodore St NB			
1	0	333	333
2	116	247	363
Total	116	580	696

North: Theodore St SB			
1	0	80	80
2	20	0	20
Total	20	80	100

West: WB Ramp			
1	0	20	20
2	160	0	160
Total	160	20	180

[Go to Table Links \(Top\)](#)

Movements

Intersection Negotiation and Travel Data

Site: Roundabout3 (Theodore St & WB Ramps) - 2025PM - HCM6

Site ID: 1
Roundabout

TRAVEL SPEED, TRAVEL DISTANCE AND TRAVEL TIME

From Approach	To Exit	Turn	Running Speed mph	Travel Speed mph	Travel Distance ft	Travel Time s	Total Dem Flows veh-mi/h	Travel Arv Flows veh-mi/h	Tot.Trav. Time veh-h/h
South: Theodore St NB									
	West	L2	35.7	32.7	3542.7#	74.0#	389.0	389.0	11.9
	North	T1	37.2	34.0	3507.1#	70.3#	77.0	77.0	2.3
North: Theodore St SB									
	South	T1	37.5	36.1	3402.3#	64.2#	51.6	51.6	1.4
	West	R2	36.4	34.9	3282.9#	64.1#	12.4	12.4	0.4
West: WB Ramp									
	North	L2	35.9	35.0	3572.1#	69.7#	13.5	13.5	0.4
	South	R2	38.1	38.1	3276.9#	58.7#	99.3	99.3	2.6
ALL VEHICLES:			36.4	33.9	3478.7#	69.9#	642.8	642.8	19.0

"Running Speed" is the average speed excluding stopped periods.

Travel Time values include cruise times and intersection delays including acceleration, deceleration and idling delays.

Travel Distance and Travel Time values include travel on the External Exit section based on the Exit Distance or user-specified Downstream Distance value as applicable.

INTERSECTION NEGOTIATION DATA

From Approach	To Exit	Turn	Negn Radius ft	Negn Speed mph	Negn Dist ft	App Dist ft	Exit Dist ft	Downstr Dist ft
South: Theodore St NB								
	West	L2	94.0	18.7	369.1	1600	488	NA
	North	T1	328.1	30.0	223.3	1600	488	NA

North: Theodore St SB								
	South	T1	328.1	30.0	202.3	1600	488	NA
	West	R2	198.0	24.8	82.9	1600	488	NA
West: WB Ramp								
	North	L2	94.8	18.7	372.1	1600	488	NA
	South	R2	222.3	25.9	76.9	1600	488	NA

Maximum Negotiation (Design) Speed = 30.0 mph

NA Downstream Distance does not apply if:

- Exit is an internal leg of a network
- "Program" option was specified
- Distance specified was less than the Exit Negotiation Distance
- Distance specified was greater than the exit leg length

MOVEMENT SPEEDS AND GEOMETRIC DELAY

Mov ID	Turn	App. Speeds		Exit Speeds		Queue Move-up Speed	Geom Delay
		Cruise mph	Negn mph	Negn mph	Cruise mph		
South: Theodore St NB							
3	L2	40.0	18.7	18.7	40.0	32.6	0.0
8	T1	40.0	30.0	30.0	40.0	35.9	0.0
North: Theodore St SB							
4	T1	40.0	30.0	30.0	40.0	16.3	0.0
14	R2	40.0	24.8	24.8	40.0	16.1	0.0
West: WB Ramp							
5	L2	40.0	18.7	18.7	40.0	30.2	0.0
12	R2	40.0	25.9	25.9	40.0	41.7	0.0

HCM Delay Formula option used: Geometric Delay is not included in Control Delay.

[Go to Table Links \(Top\)](#)

Movement Capacity and Performance Parameters
 Site: Roundabout3 (Theodore St & WB Ramps) - 2025PM - HCM6

Site ID: 1
 Roundabout

MOVEMENT CAPACITY PARAMETERS

Mov ID	Turn	Mov Cl.	Arv Flow	Opng Flow	Movement Adjust. Flow	Total Cap.	Prac. Deg. Satn	Prac. Spare Cap.	Deg. Satn
			veh/h	veh/h	pcu/h	veh/h	xp	%	x
South: Theodore St NB									
3	L2	#	580	20	20	1747	0.85	156	0.332*
8	T1	#	116	20	20	349	0.85	156	0.332*
North: Theodore St SB									
4	T1	#	80	580	806	695	0.85	638	0.115
14	R2	#	20	580	806	716	0.85	2942	0.028

West: WB Ramp										
5	L2	#	20	80	82	1317	0.85	5499	0.015	
12	R2	#	160	80	82	1482	0.98	808	0.108	

* Maximum degree of saturation
Combined Movement Capacity parameters are shown for all Movement Classes.

MOVEMENT PERFORMANCE

Mov ID	Turn	Total Delay (veh-h/h)	Total Delay (pers-h/h)	Aver. Delay (sec)	Eff. Stop Rate	Total Stops	Perf. Index	Tot.Trav. Distance (veh-mi/h)	Tot.Trav. Time (veh-h/h)	Aver. Speed (mph)
South: Theodore St NB										
3	L2	1.12	1.34	7.0	0.03	16.6	11.95	389.0	11.9	32.7
8	T1	0.19	0.23	6.0	0.03	3.4	3.22	77.0	2.3	34.0
North: Theodore St SB										
4	T1	0.14	0.17	6.4	0.57	45.4	2.00	51.6	1.4	36.1
14	R2	0.03	0.04	5.3	0.47	9.4	0.43	12.4	0.4	34.9
West: WB Ramp										
5	L2	0.02	0.02	2.9	0.06	1.3	0.38	13.5	0.4	35.0
12	R2	0.00	0.00	0.0	0.00	0.0	2.48	99.3	2.6	38.1

[Go to Table Links \(Top\)](#)

Fuel Consumption, Emissions and Cost
Site: Roundabout3 (Theodore St & WB Ramps) - 2025PM - HCM6

Site ID: 1
Roundabout

FUEL CONSUMPTION, EMISSIONS AND COST (TOTAL)

Mov ID	Turn	Cost Total (\$/h)	Fuel Total (gal/h)	CO2 Total (kg/h)	CO Total (kg/h)	HC Total (kg/h)	NOX Total (kg/h)
South: Theodore St NB							
3	L2	328.93	38.3	359.9	0.62	0.048	2.169
8	T1	57.50	5.7	52.0	0.13	0.009	0.280
		386.43	44.0	411.9	0.75	0.058	2.449
North: Theodore St SB							
4	T1	21.88	2.0	17.5	0.08	0.006	0.034
14	R2	5.16	0.4	3.8	0.02	0.001	0.003
		27.04	2.4	21.4	0.11	0.007	0.037
West: WB Ramp							
5	L2	6.41	0.5	4.4	0.02	0.002	0.004
12	R2	46.87	5.2	47.5	0.15	0.010	0.193
		53.28	5.7	51.9	0.18	0.012	0.197
INTERSECTION:		466.75	52.0	485.1	1.04	0.076	2.683

FUEL CONSUMPTION, EMISSIONS AND COST (RATE)

Mov ID	Turn	Cost Rate \$/mi	Fuel Eff. mpg	CO2 Rate g/km	CO Rate g/km	HC Rate g/km	NOX Rate g/km
South: Theodore St NB							
3	L2	0.53	10.2	575.0	1.00	0.077	3.465
8	T1	0.46	13.6	419.2	1.04	0.074	2.256
		0.52	10.6	549.2	1.00	0.077	3.265
North: Theodore St SB							
4	T1	0.26	26.4	211.2	1.01	0.068	0.412
14	R2	0.26	28.9	191.5	1.06	0.072	0.162
		0.26	26.8	207.4	1.02	0.068	0.364
West: WB Ramp							
5	L2	0.29	27.6	200.1	1.08	0.076	0.168
12	R2	0.29	19.1	297.4	0.96	0.062	1.210
		0.29	19.8	285.7	0.97	0.064	1.085
INTERSECTION:		0.45	12.4	468.9	1.00	0.074	2.594

[Go to Table Links \(Top\)](#)

Lanes

Lane Performance and Capacity Information

Site: Roundabout3 (Theodore St & WB Ramps) - 2025PM - HCM6

Site ID: 1
Roundabout

LANE PERFORMANCE

Lane No.	Flow veh/h	Cap veh/h	Deg. Satn x	Aver. Delay sec	Eff. Stop Rate	Q u e u e		Lane Length ft
						95% Back veh	ft	
South: Theodore St NB								
1	333	1003	0.332	7.0	0.03	1.2	39.3	1600.0
2	363	1093	0.332	6.6	0.03	1.3	41.1	1600.0
North: Theodore St SB								
1	80	695	0.115	6.4	0.57	0.4	10.1	1600.0
2	20	716	0.028	5.3	0.47	0.1	2.4	1600.0
West: WB Ramp								
1	20	1317	0.015	2.9	0.06	0.1	1.5	1600.0
2	160	1482	0.108	0.0	0.00			1600.0

LANE FLOW AND CAPACITY INFORMATION

Lane No.	Total Arv Flow veh/h	Min Cap veh/h	Tot Cap veh/h	Deg. Satn x	Lane Util %

South: Theodore St NB					
1	333	150	1003	0.332	100
2	363	150	1093	0.332	100

North: Theodore St SB					
1	80	80	695	0.115	100
2	20	20	716	0.028	100

West: WB Ramp					
1	20	20	1317	0.015	100
2	160	160	1482	0.108	100

The capacity values of Continuous Lanes are obtained by adjusting the basic saturation flow for lane width, grade, movement class and turning vehicle effects. Saturation flow scale applies if specified.

[Go to Table Links \(Top\)](#)

Lane, Approach and Intersection Performance Site: Roundabout3 (Theodore St & WB Ramps) - 2025PM - HCM6

Site ID: 1
Roundabout

Lane No.	Arrival Flow (veh/h)	%HV	Adj. Basic Satf.	Deg Sat x	Aver. Delay sec	Longest Queue ft	Lane Length ft

South: Theodore St NB							
1	333	39		0.332	7.0	39	1600
2	363	28		0.332	6.6	41	1600
	696	33		0.332	6.8	41	

North: Theodore St SB							
1	80	3		0.115	6.4	10	1600
2	20	0		0.028	5.3	2	1600
	100	2		0.115	6.2	10	

West: WB Ramp							
1	20	0		0.015	2.9	1	1600
2	160	13	1975	0.108	0.0		1600
	180	12		0.108	0.3	1	
=====							
ALL VEHICLES							
	Total Flow	% HV		Max X	Aver. Delay	Max Queue	
	976	26		0.332	5.5	41	
=====							

Peak flow period = 15 minutes.

Queue values in this table are 95% queue (feet)
Note: Basic Saturation Flows at roundabouts or sign-controlled intersections apply only to continuous lanes.

[Go to Table Links \(Top\)](#)

Driver Characteristics
Site: Roundabout3 (Theodore St & WB Ramps) - 2025PM - HCM6

Site ID: 1
 Roundabout

Lane No.	Satn Speed mph	Satn Flow veh/h	Satn Hdwy sec	Satn Spacing ft	Average Queue Space ft	Driver Response Time sec

South: Theodore St NB						
1	18.7	1420	2.54	69.50	32.80	1.34
2	22.3	1420	2.54	82.92	30.56	1.60

North: Theodore St SB						
1	30.0	1420	2.54	111.48	25.60	1.95
2	24.8	1420	2.54	92.14	25.00	1.85

West: WB Ramp						
1	18.7	1420	2.54	69.71	25.00	1.63
2	NA - Continuous Movement					

Saturation Flow and Saturation Headway are derived from follow-up headway.

[Go to Table Links \(Top\)](#)

Lane Delays
Site: Roundabout3 (Theodore St & WB Ramps) - 2025PM - HCM6

Site ID: 1
 Roundabout

LANE DELAYS

Lane No.	Deg. Satn x	% Arv During Green	Prog. Factor	Delay (seconds/veh)									
				Min Del dm	Stop-line 1st d1	2nd d2	Total dSL	Acc. Dec. dn	Queuing Total dq	MvUp dqm	Stopd (Idle) di	Geom dig	Control dic

South: Theodore St NB													
1	0.332	NA	NA	3.6	5.2	1.8	7.0	5.5	6.5	0.0	6.5	0.0	7.0
2	0.332	NA	NA	3.3	5.0	1.6	6.6	5.4	6.0	0.0	6.0	0.0	6.6

North: Theodore St SB													
1	0.115	NA	NA	5.2	5.8	0.7	6.4	7.2	2.4	0.0	2.4	0.0	6.4
2	0.028	NA	NA	5.0	5.2	0.1	5.3	5.1	2.5	0.0	2.5	0.0	5.3

West: WB Ramp													
1	0.015	NA	NA	2.7	2.8	0.0	2.9	5.5	1.9	0.0	1.9	0.0	2.9
2	0.108					0.0					0.0	0.0	

HCM Delay Formula option used (Exclude Geometric Delay option applies). Control

Delay does not include Geometric Delay, and Stop-line Delay is treated as being same as Control Delay.

dm: Minimum delay for gap acceptance cases

dSL: Stop-line delay (=dl+d2)

dn: Average stop-start delay for all vehicles queued and unqueued

dq: Queuing delay (the part of the stop-line delay that includes stopped delay and queue move-up delay)

dqm: Queue move-up delay

di: Stopped delay (stopped (idling) time at near-zero speed)

dig: Geometric delay

dic: Control delay

[Go to Table Links \(Top\)](#)

Lane Queues

Site: Roundabout3 (Theodore St & WB Ramps) - 2025PM - HCM6

Site ID: 1
Roundabout

BACK OF QUEUE (VEHICLES)

Lane No.	Deg. Satn x	% Arv During Green	Prog. Factor	Ovrfl. Queue No	Back of Queue (veh)				Queue Stor. Ratio		Prob. Block %	Prob. SL Ov. %
					Nb1	Nb2	Nb	95%	Av.	95%		
South: Theodore St NB												
1	0.332	NA	NA	0.0	0.5	0.0	0.5	1.2	0.01	0.02	0.0	NA
2	0.332	NA	NA	0.0	0.5	0.0	0.5	1.3	0.01	0.03	0.0	NA
North: Theodore St SB												
1	0.115	NA	NA	0.0	0.2	0.0	0.2	0.4	0.00	0.01	0.0	NA
2	0.028	NA	NA	0.0	0.0	0.0	0.0	0.1	0.00	0.00	0.0	NA
West: WB Ramp												
1	0.015	NA	NA	0.0	0.0	0.0	0.0	0.1	0.00	0.00	0.0	NA

SIDRA Standard models are used for Back of Queue estimation since HCM only gives Cycle-Average Queues for unsignalised intersections.

BACK OF QUEUE (DISTANCE)

Lane No.	Deg. Satn x	% Arv During Green	Prog. Factor	Ovrfl. Queue No	Back of Queue (ft)				Queue Stor. Ratio		Prob. Block %	Prob. SL Ov. %
					Nb1	Nb2	Nb	95%	Av.	95%		
South: Theodore St NB												
1	0.332	NA	NA	0.0	15.8	0.0	15.8	39.3	0.01	0.02	0.0	NA
2	0.332	NA	NA	0.0	16.5	0.0	16.5	41.1	0.01	0.03	0.0	NA
North: Theodore St SB												
1	0.115	NA	NA	0.0	4.1	0.0	4.1	10.1	0.00	0.01	0.0	NA
2	0.028	NA	NA	0.0	1.0	0.0	1.0	2.4	0.00	0.00	0.0	NA
West: WB Ramp												
1	0.015	NA	NA	0.0	0.6	0.0	0.6	1.5	0.00	0.00	0.0	NA

SIDRA Standard models are used for Back of Queue estimation since HCM only gives Cycle-Average Queues for unsignalised intersections.

OTHER QUEUE RESULTS (VEHICLES)

Lane No.	Deg. Satn	% Arv During Green	Prog. Factor	Ovrfl. Queue No	Cyc-Av. Nc	Queue 95%
	x					
South: Theodore St NB						
1	0.332	NA	NA	0.0	0.6	1.2
2	0.332	NA	NA	0.0	0.7	1.2
North: Theodore St SB						
1	0.115	NA	NA	0.0	0.1	0.3
2	0.028	NA	NA	0.0	0.0	0.1
West: WB Ramp						
1	0.015	NA	NA	0.0	0.0	0.0

HCM Delay Formula option used:

Cycle-Average Queue is calculated using average delay from the HCM equation. (i.e. HCM delays are treated as stop-line delays for this purpose).

OTHER QUEUE RESULTS (DISTANCE)

Lane No.	Deg. Satn	% Arv During Green	Prog. Factor	Ovrfl. Queue No	Cyc-Av. Nc	Queue 95%
	x					
South: Theodore St NB						
1	0.332	NA	NA	0.0	21.3	38.6
2	0.332	NA	NA	0.0	20.3	36.8
North: Theodore St SB						
1	0.115	NA	NA	0.0	3.7	6.6
2	0.028	NA	NA	0.0	0.7	1.3
West: WB Ramp						
1	0.015	NA	NA	0.0	0.4	0.7

HCM Delay Formula option used:

Cycle-Average Queue is calculated using average delay from the HCM equation. (i.e. HCM delays are treated as stop-line delays for this purpose).

[Go to Table Links \(Top\)](#)

Lane Queue Percentiles
Site: Roundabout3 (Theodore St & WB Ramps) - 2025PM - HCM6

Site ID: 1
Roundabout

LANE QUEUE PERCENTILES (VEHICLES)

Lane No.	Deg. Satn	Percentile Back of Queue (veh)						
	x	50%	70%	85%	90%	95%	98%	100%
South: Theodore St NB								

1	0.332	0.5	0.6	0.9	1.0	1.2	1.3	1.4
2	0.332	0.5	0.7	1.0	1.1	1.3	1.5	1.6

North: Theodore St SB

1	0.115	0.2	0.2	0.3	0.3	0.4	0.4	0.5
2	0.028	0.0	0.0	0.1	0.1	0.1	0.1	0.1

West: WB Ramp

1	0.015	0.0	0.0	0.0	0.1	0.1	0.1	0.1
---	-------	-----	-----	-----	-----	-----	-----	-----

SIDRA Standard models are used for Back of Queue estimation since HCM only gives Cycle-Average Queues for unsignalised intersections.

LANE QUEUE PERCENTILES (DISTANCE)

Lane No.		Deg. Satn x	Percentile Back of Queue (feet)						
			50%	70%	85%	90%	95%	98%	100%

South: Theodore St NB

1	0.332	15.8	20.5	28.9	33.5	39.3	43.7	46.9
2	0.332	16.5	21.4	30.2	34.9	41.1	45.6	49.0

North: Theodore St SB

1	0.115	4.1	5.3	7.4	8.6	10.1	11.3	12.1
2	0.028	1.0	1.2	1.7	2.0	2.4	2.6	2.8

West: WB Ramp

1	0.015	0.6	0.8	1.1	1.3	1.5	1.6	1.8
---	-------	-----	-----	-----	-----	-----	-----	-----

SIDRA Standard models are used for Back of Queue estimation since HCM only gives Cycle-Average Queues for unsignalised intersections.

[Go to Table Links \(Top\)](#)

Lane Stops
Site: Roundabout3 (Theodore St & WB Ramps) - 2025PM - HCM6

Site ID: 1
Roundabout

Lane No.	Deg. Satn x	% Arv During Green	Prog. Factor	-- Effective Stop Rate --				Total Stops H	Queue Move-up Rate hqm	Total Queue Move-ups Hqm	Prop. Queued pq	Aver. Num. of Cycles to Depart
				he1	he2	Geom. hig	Overall h					

South: Theodore St NB												
1	0.332	NA	NA	0.03	0.00	0.00	0.03	9.4	0.00	0.0	0.10	0.10
2	0.332	NA	NA	0.03	0.00	0.00	0.03	10.6	0.00	0.0	0.10	0.10

North: Theodore St SB												
1	0.115	NA	NA	0.57	0.00	0.00	0.57	45.4	0.00	0.0	0.57	0.57
2	0.028	NA	NA	0.47	0.00	0.00	0.47	9.4	0.00	0.0	0.54	0.54

West: WB Ramp												
1	0.015	NA	NA	0.06	0.00	0.00	0.06	1.3	0.00	0.0	0.18	0.18
2	0.108	NA	NA			0.00	0.00	0.0				

hig is the average value for all movements in a shared lane
hqm is average queue move-up rate for all vehicles queued and unqueued

[Go to Table Links \(Top\)](#)

Flow Rates

Origin-Destination Flow Rates (Total)

Site: Roundabout3 (Theodore St & WB Ramps) - 2025PM - HCM6

Site ID: 1
Roundabout

TOTAL FLOW RATES for All Movement Classes (veh/h)

From SOUTH To:	W	N	
Turn:	L2	T1	TOT
Flow Rate	579.7	115.9	695.7
%HV (all designations)	39.0	4.0	33.2

From NORTH To:	S	W	
Turn:	T1	R2	TOT
Flow Rate	80.0	20.0	100.0
%HV (all designations)	3.0	0.0	2.4

From WEST To:	N	S	
Turn:	L2	R2	TOT
Flow Rate	20.0	160.0	180.0
%HV (all designations)	0.0	13.0	11.6

Flow rates shown above are Arrival Flow Rates (veh/h) based on the following input specifications:
Unit Time for Volumes = 60 minutes
Peak Flow Period = 15 minutes
Effects of Volume Factors (Peak Flow Factor, Flow Scale, Growth Rate) are included.
Arrival Flow Rates may be less than Demand Flow Rates if capacity constraint applies in network analysis.

[Go to Table Links \(Top\)](#)

Origin-Destination Flow Rates by Movement Class

Site: Roundabout3 (Theodore St & WB Ramps) - 2025PM - HCM6

Site ID: 1
Roundabout

FLOW RATES for Light Vehicles (veh/h)

From SOUTH To:	W	N	
Turn:	L2	T1	TOT

Flow Rate	353.6	111.3	464.9
Mov Class %	61.0	96.0	66.8
Flow Scale	1.00	1.00	-
Peak Flow Factor	0.69	0.69	-
Residual Demand	0.0	0.0	0.0

From NORTH To:	S	W	
Turn:	T1	R2	TOT
Flow Rate	77.6	20.0	97.6
Mov Class %	97.0	100.0	97.6
Flow Scale	1.00	1.00	-
Peak Flow Factor	1.00	1.00	-
Residual Demand	0.0	0.0	0.0

From WEST To:	N	S	
Turn:	L2	R2	TOT
Flow Rate	20.0	139.2	159.2
Mov Class %	100.0	87.0	88.4
Flow Scale	1.00	1.00	-
Peak Flow Factor	1.00	1.00	-
Residual Demand	0.0	0.0	0.0

FLOW RATES for Heavy Vehicles (veh/h)

From SOUTH To:	W	N	
Turn:	L2	T1	TOT
Flow Rate	226.1	4.6	230.7
Mov Class %	39.0	4.0	33.2
Flow Scale	1.00	1.00	-
Peak Flow Factor	0.69	0.69	-
Residual Demand	0.0	0.0	0.0

From NORTH To:	S	W	
Turn:	T1	R2	TOT
Flow Rate	2.4	0.0	2.4
Mov Class %	3.0	0.0	2.4
Flow Scale	1.00	1.00	-
Peak Flow Factor	1.00	1.00	-
Residual Demand	0.0	0.0	0.0

From WEST To:	N	S	
Turn:	L2	R2	TOT
Flow Rate	0.0	20.8	20.8
Mov Class %	0.0	13.0	11.6
Flow Scale	1.00	1.00	-
Peak Flow Factor	1.00	1.00	-
Residual Demand	0.0	0.0	0.0

Flow rates shown above are Arrival Flow Rates (veh/h) based on the following input specifications:
Unit Time for Volumes = 60 minutes
Peak Flow Period = 15 minutes
Effects of Volume Factors (Peak Flow Factor, Flow Scale, Growth Rate) are included.
Arrival Flow Rates may be less than Demand Flow Rates if capacity constraint applies in network analysis.

[Go to Table Links \(Top\)](#)

Lane Flow Rates
Site: Roundabout3 (Theodore St & WB Ramps) - 2025PM - HCM6

Site ID: 1
Roundabout

LANE FLOW RATES AT STOP LINE (veh/h)

From SOUTH To:	W	N	
Turn:	L2	T1	TOT

Lane 1			
LV	203.1	*	203.1
HV	129.8	*	129.8
Total	332.9	*	332.9
Lane 2			
LV	150.5	111.3	261.8
HV	96.2	4.6	100.9
Total	246.8	115.9	362.7

Approach	579.7	115.9	695.7

From NORTH To:	S	W	
Turn:	T1	R2	TOT

Lane 1			
LV	77.6	*	77.6
HV	2.4	*	2.4
Total	80.0	*	80.0
Lane 2			
LV	*	20.0	20.0
Total	*	20.0	20.0

Approach	80.0	20.0	100.0

From WEST To:	N	S	
Turn:	L2	R2	TOT

Lane 1			
LV	20.0	*	20.0
Total	20.0	*	20.0
Lane 2			
LV	*	139.2	139.2
HV	*	20.8	20.8
Total	*	160.0	160.0

Approach	20.0	160.0	180.0

* Movement not allocated to the lane

EXIT LANE FLOW RATES

Movement Class:	LV	HV	TOT

Exit: SOUTH			
Lane: 1	77.6	2.4	80.0
Lane: 2	139.2	20.8	160.0
Total	216.8	23.2	240.0

Exit: NORTH			
Lane: 1	131.3	4.6	135.9
Total	131.3	4.6	135.9

Exit: WEST			
Lane: 1	203.1	129.8	332.9
Lane: 2	170.5	96.2	266.8
Total	373.6	226.1	599.7

* Movement not allocated to the lane

DOWNSTREAM LANE FLOW RATES FOR EXIT ROADS

Movement Class:	LV	HV	TOT
Exit: SOUTH			
Lane: 1	77.6	2.4	80.0
Lane: 2	139.2	20.8	160.0
Total	216.8	23.2	240.0
Exit: NORTH			
Lane: 1	131.3	4.6	135.9
Total	131.3	4.6	135.9
Exit: WEST			
Lane: 1	203.1	129.8	332.9
Lane: 2	170.5	96.2	266.8
Total	373.6	226.1	599.7

* Movement not allocated to the lane

Flow rates shown above are Arrival Flow Rates (veh/h) based on the following input specifications:
Unit Time for Volumes = 60 minutes
Peak Flow Period = 15 minutes
Effects of Volume Factors (Peak Flow Factor, Flow Scale, Growth Rate) are included.
Arrival Flow Rates may be less than Demand Flow Rates if capacity constraint applies in network analysis.

[Go to Table Links \(Top\)](#)

Other

Parameter Settings Summary

Site: Roundabout3 (Theodore St & WB Ramps) - 2025PM - HCM6

Site ID: 1
Roundabout

* Basic Parameters:

Intersection Type: Roundabout
US HCM 6 Roundabout Capacity Model used
Driving on the right-hand side of the road
Input data specified in US units
Model Defaults: US HCM (Customary)
Peak Flow Period (for performance): 15 minutes
Unit time (for volumes): 60 minutes.
HCM Delay Model option used
HCM Queue Model option used
Level of Service based on: Delay and v/c (HCM 6)
Queue percentile: 95%

[Go to Table Links \(Top\)](#)

Diagnostics

Site: Roundabout3 (Theodore St & WB Ramps) - 2025PM - HCM6

Site ID: 1
Roundabout

Lane Flow-Capacity Iterations:

Site Model Variability Index (Iterations 3 to N): 0.1%
Number of Iterations: 3 (Maximum: 10)

Other Diagnostic Messages (if any):

[Go to Table Links \(Top\)](#)

Appendix I-3

Intersection LOS Worksheets for Alternative 6, 2045

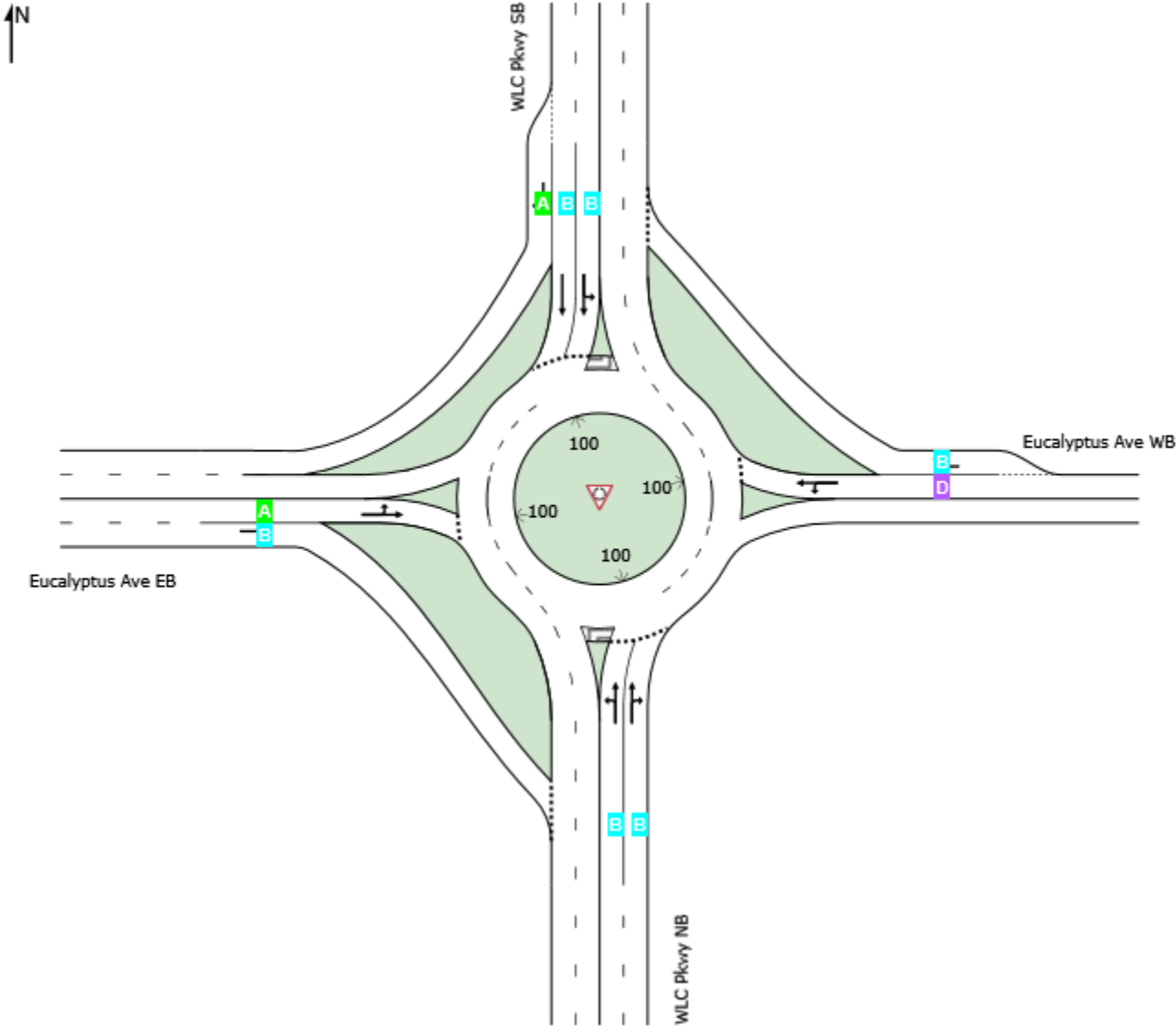
LANE LEVEL OF SERVICE

Lane Level of Service

 Site: 1 [Roundabout1 (WLC Pkwy & Eucalyptus Ave) - 2045AM - HCM6]

Site Category: (None)
Roundabout

LOS	Approaches				Intersection
	South East	North West	North West	South East	
B	D	B	B	B	



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: Same as Sign Control.

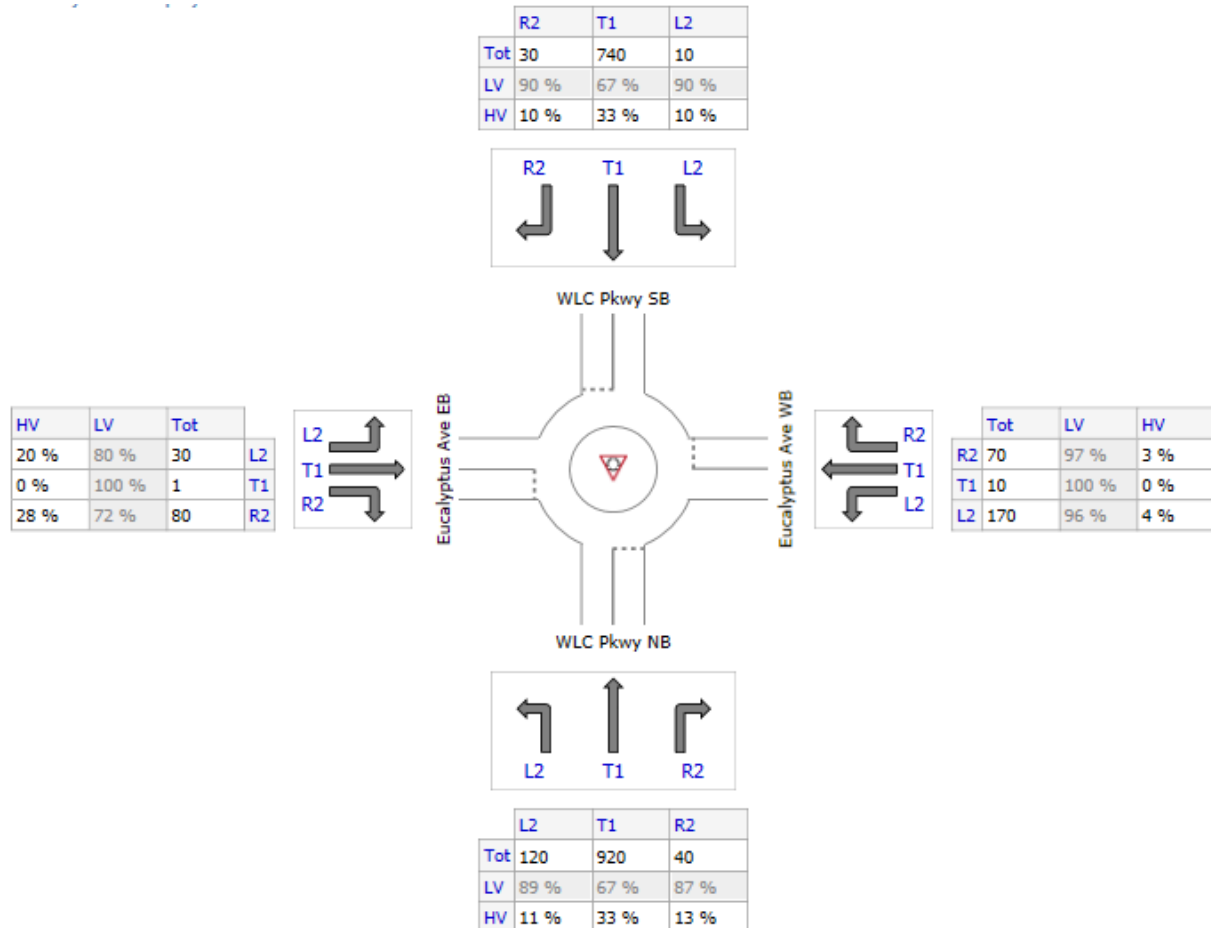
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).


Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

VOLUMES








DETAILED OUTPUT

 Site: 1 [Roundabout1 (WLC Pkwy & Eucalyptus Ave) - 2045AM - HCM6]

Site Category: (None)
Roundabout

OUTPUT TABLE LINKS

-  Roundabouts
 - Roundabout Basic Parameters
 - Roundabout Circulating / Exiting Stream Parameters
 - Roundabout Gap Acceptance Parameters
 - Roundabout Flow Rates
-  Movements
 - Intersection Negotiation and Travel Data
 - Movement Capacity and Performance Parameters
 - Fuel Consumption, Emissions and Cost
-  Lanes
 - Lane Performance and Capacity Information
 - Lane, Approach and Intersection Performance
 - Driver Characteristics
 - Lane Delays
 - Lane Queues
 - Lane Queue Percentiles
 - Lane Stops
-  Flow Rates
 - Origin-Destination Flow Rates (Total)
 - Origin-Destination Flow Rates by Movement Class
 - Lane Flow Rates
-  Other
 - Parameter Settings Summary
 - Diagnostics

Roundabouts

Roundabout Basic Parameters Site: Roundabout1 (WLC Pkwy & Eucalyptus Ave) - 2045AM - HCM6

Site ID: 1
Roundabout

Central Island Diam	Circ Width	Insc Diam.	Entry Radius	Entry Angle	Circ Lanes	Entry Lanes	Av.Entry Lane Width	App Dist	Prop Upstr	Queued Signal	Extra Bunching
ft	ft	ft	ft	deg			ft	ft			%
South: WLC Pkwy NB	100.0*	30.0*	160.0*	65.0*	30.0*	1	2	13.00*	1600	NA	0.0U

East: Eucalyptus Ave WB												
100.0*	30.0*	160.0*	65.0*	30.0*	2	2	13.00*	1600		NA	0.0U	

North: WLC Pkwy SB												
100.0*	30.0*	160.0*	65.0*	30.0*	1	3	13.00*	1600		NA	0.0U	

West: Eucalyptus Ave EB												
100.0*	30.0*	160.0*	65.0*	30.0*	2	2	13.00*	1600		NA	0.0U	

Roundabout Capacity Model: US HCM 6

* These parameters do not affect estimated capacity values in the HCM 6 Capacity Model.

NA Not Applicable (single Site analysis or unconnected Site in Network analysis).

U User-specified Extra Bunching

[Go to Table Links \(Top\)](#)

Roundabout Circulating / Exiting Stream Parameters Site: Roundabout1 (WLC Pkwy & Eucalyptus Ave) - 2045AM - HCM6

Site ID: 1
Roundabout

Dest	Turn	Lane No.	Lane Type	Opng Flow veh/h	HVE pcu/veh	Adj. Flow pcu/h	%Near Only	%Exit Incl.	Cap. Const. Effect	O-D Factor	Aver Speed mph	In-Bunch Headway sec	Prop. Bunched

South: WLC Pkwy NB													
W	L2	1	Dominant	41	1.17	48	0.0	0.0	N	-	16.2	0.00	0.000
N	T1	1	Dominant	41	1.17	48	0.0	0.0	N	-	16.2	0.00	0.000
N	T1	2	Subdominant	41	1.17	48	0.0	0.0	N	-	16.2	0.00	0.000
E	R2	2	Subdominant	41	1.17	48	0.0	0.0	N	-	16.2	0.00	0.000

East: Eucalyptus Ave WB													
S	L2	1	Dominant	1346	1.30	1753	0.0	0.0	N	-	23.3	0.00	0.000
W	T1	1	Dominant	1346	1.30	1753	0.0	0.0	N	-	23.3	0.00	0.000
N	R2	2	Excl. Slip	1195	1.33	1585	0.0	0.0	N	-	24.2	0.00	0.000

North: WLC Pkwy SB													
E	L2	1	Dominant	333	1.07	356	0.0	0.0	N	-	16.2	0.00	0.000
S	T1	1	Dominant	333	1.07	356	0.0	0.0	N	-	16.2	0.00	0.000
S	T1	2	Subdominant	333	1.07	356	0.0	0.0	N	-	16.2	0.00	0.000
W	R2	3	Continuous										

West: Eucalyptus Ave EB													
N	L2	1	Dominant	920	1.27	1172	0.0	0.0	N	-	22.8	0.00	0.000
E	T1	1	Dominant	920	1.27	1172	0.0	0.0	N	-	22.8	0.00	0.000
S	R2	2	Excl. Slip	910	1.28	1161	0.0	0.0	N	-	22.8	0.00	0.000

Roundabout Capacity Model: US HCM 6

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Roundabout Gap Acceptance Parameters Site: Roundabout1 (WLC Pkwy & Eucalyptus Ave) - 2045AM - HCM6

Site ID: 1
Roundabout

Dest	Turn	Lane No.	Lane Type	In-Bunch Headway sec	Prop. Bunched	Priority Sharing	HVE for Entry	Critical Gap		Follow-up Headway sec
								Headway sec	Dist ft	

South: WLC Pkwy NB										
Model Calibration Factor (HCM 6): 1.00										
Entry/Circ. Flow Adjustment (HCM 6): None										
W	L2	1	Dominant	0.00	0.000	N	1.11	4.54	107.9	2.54
N	T1	1	Dominant	0.00	0.000	N	1.33	4.54	107.9	2.54
N	T1	2	Subdominant	0.00	0.000	N	1.33	4.54	107.9	2.54
E	R2	2	Subdominant	0.00	0.000	N	1.13	4.54	107.9	2.54

East: Eucalyptus Ave WB										
Model Calibration Factor (HCM 6): 1.00										
Entry/Circ. Flow Adjustment (HCM 6): None										
S	L2	1	Dominant	0.00	0.000	N	1.04	4.33	147.7	2.54
W	T1	1	Dominant	0.00	0.000	N	1.00	4.33	147.7	2.54
N	R2	2	Excl. Slip	0.00	0.000	N	1.03	4.33	153.6	2.54

North: WLC Pkwy SB										
Model Calibration Factor (HCM 6): 1.00										
Entry/Circ. Flow Adjustment (HCM 6): None										
E	L2	1	Dominant	0.00	0.000	N	1.10	4.54	108.2	2.54
S	T1	1	Dominant	0.00	0.000	N	1.33	4.54	108.2	2.54
S	T1	2	Subdominant	0.00	0.000	N	1.33	4.54	108.2	2.54
W	R2	3	Continuous							

West: Eucalyptus Ave EB										
Model Calibration Factor (HCM 6): 1.00										
Entry/Circ. Flow Adjustment (HCM 6): None										
N	L2	1	Dominant	0.00	0.000	N	1.20	4.33	144.5	2.54
E	T1	1	Dominant	0.00	0.000	N	1.00	4.33	144.5	2.54
S	R2	2	Excl. Slip	0.00	0.000	N	1.28	4.33	145.0	2.54

Roundabout Capacity Model: US HCM 6										
Dist (Distance): Spacing, i.e. distance between the front ends of two successive vehicles across all lanes in the circulating or exiting stream										

[Go to Table Links \(Top\)](#)

Roundabout Flow Rates

Site: Roundabout1 (WLC Pkwy & Eucalyptus Ave) - 2045AM - HCM6

Site ID: 1
Roundabout

CIRCULATING LANE FLOW RATES

Lane No.	Circulating Flow Rate		
	veh/h	pcu/h	Percent

South: WLC Pkwy NB			
1	41	48	100.0%
Total	41	48	

East: Eucalyptus Ave WB			
1	723	924	52.7%
2	624	830	47.3%
Total	1347	1754	

North: WLC Pkwy SB			
1	333	356	100.0%
Total	333	356	

West: Eucalyptus Ave EB			
1	546	674	57.5%
2	374	498	42.5%
Total	920	1172	

The US HCM 6 roundabout capacity model option is in use. This model considers only the total circulating flow and not the flow rates in individual circulating lanes. To model the effects of flow distribution in circulating lanes on the entry capacity results, you should use the SIDRA Standard roundabout capacity model.

APPROACH LANE FLOW RATES

Lane No.	Approach Flows (veh/h)		
	Out	To Downst	Total
South: WLC Pkwy NB			
1	0	692	692
2	51	624	675
Total	51	1316	1367
East: Eucalyptus Ave WB			
1	0	181	181
2	70	0	70
Total	70	181	251
North: WLC Pkwy SB			
1	0	376	376
2	0	374	374
3	30	0	30
Total	30	750	780
West: Eucalyptus Ave EB			
1	0	31	31
2	80	0	80
Total	80	31	111

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Movements

Intersection Negotiation and Travel Data
 Site: Roundabout1 (WLC Pkwy & Eucalyptus Ave) - 2045AM - HCM6

Site ID: 1
 Roundabout

TRAVEL SPEED, TRAVEL DISTANCE AND TRAVEL TIME

From Approach	To Exit	Turn	Running Speed mph	Travel Speed mph	Travel Distance ft	Travel Time s	Total Dem Flows veh-mi/h	Travel Distance Arv Flows veh-mi/h	Tot.Trav. Time veh-h/h
---------------	---------	------	-------------------	------------------	--------------------	---------------	--------------------------	------------------------------------	------------------------

South: WLC Pkwy NB								
West	L2	36.3	30.7	3376.5#	74.9#	97.1	97.1	3.2
North	T1	36.3	30.7	3358.5#	74.5#	740.8	740.8	24.1
East	R2	35.7	30.3	3342.9#	75.3#	32.1	32.1	1.1

East: Eucalyptus Ave WB								
South	L2	31.7	24.3	3437.7#	96.5#	110.7	110.7	4.6
West	T1	31.7	24.3	3437.7#	96.5#	7.1	7.1	0.3
North	R2	35.0	30.3	3261.8#	73.4#	43.2	43.2	1.4

North: WLC Pkwy SB								
East	L2	35.4	31.9	3354.7#	71.6#	6.4	6.4	0.2
South	T1	35.0	31.6	3353.1#	72.3#	469.9	469.9	14.9
West	R2	36.9	36.9	3261.8#	60.2#	18.5	18.5	0.5

West: Eucalyptus Ave EB								
North	L2	33.1	30.5	3439.5#	76.9#	19.5	19.5	0.6
East	T1	33.6	30.9	3439.5#	75.9#	0.7	0.7	0.0
South	R2	34.7	30.5	3261.8#	72.8#	49.4	49.4	1.6

ALL VEHICLES:		35.4	30.4	3357.4#	75.2#	1595.5	1595.5	52.4

"Running Speed" is the average speed excluding stopped periods.

Travel Time values include cruise times and intersection delays including acceleration, deceleration and idling delays.

Travel Distance and Travel Time values include travel on the External Exit section based on the Exit Distance or user-specified Downstream Distance value as applicable.

INTERSECTION NEGOTIATION DATA

From Approach	To Exit	Turn	Negn Radius ft	Negn Speed mph	Negn Dist ft	App Dist ft	Exit Dist ft	Downstr Dist ft

South: WLC Pkwy NB								
West	L2		62.0	16.0	243.5	1600	488	NA
North	T1		190.4	24.4	151.5	1600	488	NA
East	R2		115.2	20.2	62.0	1600	488	NA

East: Eucalyptus Ave WB								
South	L2		62.0	16.0	243.5	1600	488	NA
West	T1		190.4	24.4	151.5	1600	488	NA
North	R2		131.6	21.2	61.8	1600	488	NA

North: WLC Pkwy SB								
East	L2		62.0	16.0	243.5	1600	488	NA
South	T1		190.4	24.4	151.5	1600	488	NA
West	R2		135.0	21.4	61.8	1600	488	NA

West: Eucalyptus Ave EB								
North	L2		62.0	16.0	243.5	1600	488	NA
East	T1		190.4	24.4	151.5	1600	488	NA
South	R2		131.6	21.2	61.8	1600	488	NA

Maximum Negotiation (Design) Speed = 30.0 mph

NA Downstream Distance does not apply if:

- Exit is an internal leg of a network
- "Program" option was specified
- Distance specified was less than the Exit Negotiation Distance
- Distance specified was greater than the exit leg length

MOVEMENT SPEEDS AND GEOMETRIC DELAY

Mov ID	Turn	App. Speeds		Exit Speeds		Queue	Geom Delay sec
		Cruise mph	Negn mph	Negn mph	Cruise mph	Move-up Speed mph	

South: WLC Pkwy NB							
3	L2	40.0	16.0	16.0	40.0	36.3	0.0
8	T1	40.0	24.4	24.4	40.0	37.6	0.0
18	R2	40.0	20.2	20.2	40.0	38.8	0.0

East: Eucalyptus Ave WB							
1	L2	40.0	16.0	16.0	40.0	12.4	0.0
6	T1	40.0	24.4	24.4	40.0	12.4	0.0
16	R2	40.0	21.2	21.2	40.0	12.8	0.0

North: WLC Pkwy SB							
7	L2	40.0	16.0	16.0	40.0	25.5	0.0
4	T1	40.0	24.4	24.4	40.0	25.5	0.0
14	R2	40.0	21.4	21.4	40.0	23.6	0.0

West: Eucalyptus Ave EB							
5	L2	40.0	16.0	16.0	40.0	15.1	0.0
2	T1	40.0	24.4	24.4	40.0	15.1	0.0
12	R2	40.0	21.2	21.2	40.0	15.6	0.0

HCM Delay Formula option used: Geometric Delay is not included in Control Delay.

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Movement Capacity and Performance Parameters

Site: Roundabout1 (WLC Pkwy & Eucalyptus Ave) - 2045AM - HCM6

Site ID: 1
Roundabout

MOVEMENT CAPACITY PARAMETERS

Mov ID	Turn	Mov Cl.	Arv Flow veh/h	Opng Flow veh/h	Movement Adjust. pcu/h	Total Cap. veh/h	Prac. Deg. Satn xp	Prac. Spare Cap. %	Deg. Satn x

South: WLC Pkwy NB									
3	L2	#	152	41	48	233	0.85	30	0.653*
8	T1	#	1165	41	48	1784	0.85	30	0.653*
18	R2	#	51	41	48	78	0.85	30	0.653*

East: Eucalyptus Ave WB									
1	L2	#	170	1346	1753	290	0.85	45	0.587
6	T1	#	11	1346	1753	19	0.85	45	0.587
16	R2	#	70	1195	1585	358	0.85	335	0.195

North: WLC Pkwy SB									
7	L2	#	10	333	356	21	0.85	75	0.485
4	T1	#	740	333	356	1527	0.85	75	0.485
14	R2	#	30	333	356	1522	0.98	4873	0.020

West: Eucalyptus Ave EB									
5	L2	#	30	920	1172	424	0.85	1102	0.071
2	T1	#	1	920	1172	15	0.85	1102	0.071
12	R2	#	80	910	1161	414	0.85	339	0.193

* Maximum degree of saturation

Combined Movement Capacity parameters are shown for all Movement Classes.

MOVEMENT PERFORMANCE

Mov ID	Turn	Total Delay (veh-h/h)	Total Delay (pers-h/h)	Aver. Delay (sec)	Eff. Stop Rate	Total Stops	Perf. Index	Tot.Trav. Distance (veh-mi/h)	Tot.Trav. Time (veh-h/h)	Aver. Speed (mph)
South: WLC Pkwy NB										
3	L2	0.52	0.62	12.3	0.11	16.3	6.11	97.1	3.2	30.7
8	T1	4.21	5.05	13.0	0.11	123.5	26.40	740.8	24.1	30.7
18	R2	0.18	0.21	12.6	0.10	5.3	3.93	32.1	1.1	30.3
East: Eucalyptus Ave WB										
1	L2	1.41	1.70	30.0	1.05	179.0	7.21	110.7	4.6	24.3
6	T1	0.09	0.11	29.5	1.05	11.4	1.35	7.1	0.3	24.3
16	R2	0.26	0.31	13.4	0.78	54.5	2.14	43.2	1.4	30.3
North: WLC Pkwy SB										
7	L2	0.03	0.04	10.6	0.52	5.2	2.01	6.4	0.2	31.9
4	T1	2.34	2.81	11.4	0.52	385.9	18.02	469.9	14.9	31.6
14	R2	0.00	0.00	0.0	0.00	0.0	0.46	18.5	0.5	36.9
West: Eucalyptus Ave EB										
5	L2	0.08	0.09	9.2	0.64	19.3	0.83	19.5	0.6	30.5
2	T1	0.00	0.00	7.8	0.64	0.7	0.10	0.7	0.0	30.9
12	R2	0.26	0.31	11.7	0.66	53.2	2.21	49.4	1.6	30.5

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Fuel Consumption, Emissions and Cost
Site: Roundabout1 (WLC Pkwy & Eucalyptus Ave) - 2045AM - HCM6

Site ID: 1
Roundabout

FUEL CONSUMPTION, EMISSIONS AND COST (TOTAL)

Mov ID	Turn	Cost Total (\$/h)	Fuel Total (gal/h)	CO2 Total (kg/h)	CO Total (kg/h)	HC Total (kg/h)	NOX Total (kg/h)
South: WLC Pkwy NB							
3	L2	73.21	7.4	68.1	0.16	0.012	0.363
8	T1	571.04	65.3	610.7	1.20	0.092	3.482
18	R2	24.78	2.6	23.9	0.05	0.004	0.133
		669.03	75.3	702.8	1.41	0.108	3.978
East: Eucalyptus Ave WB							
1	L2	84.44	5.9	53.4	0.23	0.019	0.116
6	T1	5.39	0.4	3.3	0.01	0.001	0.006
16	R2	22.57	1.9	16.7	0.08	0.006	0.033
		112.40	8.2	73.3	0.32	0.026	0.155
North: WLC Pkwy SB							
7	L2	5.08	0.5	4.9	0.01	0.001	0.028
4	T1	380.54	44.4	415.3	0.76	0.059	2.471
14	R2	8.83	0.9	8.5	0.03	0.002	0.031

		394.45	45.8	428.7	0.81	0.062	2.531
West: Eucalyptus Ave EB							
5	L2	15.60	1.5	14.2	0.04	0.003	0.071
2	T1	0.56	0.0	0.5	0.00	0.000	0.002
12	R2	39.49	4.4	41.3	0.08	0.007	0.237
		55.65	6.0	56.0	0.12	0.009	0.310
INTERSECTION:							
		1231.54	135.3	1260.8	2.66	0.206	6.974

FUEL CONSUMPTION, EMISSIONS AND COST (RATE)

Mov ID	Turn	Cost Rate \$/mi	Fuel Eff. mpg	CO2 Rate g/km	CO Rate g/km	HC Rate g/km	NOX Rate g/km
South: WLC Pkwy NB							
3	L2	0.47	13.1	435.9	1.05	0.078	2.320
8	T1	0.48	11.3	512.3	1.00	0.077	2.921
18	R2	0.48	12.4	463.6	1.03	0.076	2.583
		0.48	11.6	502.0	1.01	0.077	2.841
East: Eucalyptus Ave WB							
1	L2	0.47	18.6	299.5	1.28	0.109	0.649
6	T1	0.47	19.3	288.0	1.29	0.109	0.563
16	R2	0.32	23.2	240.1	1.11	0.081	0.481
		0.43	19.7	283.1	1.24	0.102	0.600
North: WLC Pkwy SB							
7	L2	0.50	12.0	479.1	1.06	0.078	2.739
4	T1	0.50	10.6	549.1	1.01	0.078	3.268
14	R2	0.30	19.8	284.9	1.01	0.066	1.050
		0.50	10.8	538.3	1.01	0.077	3.178
West: Eucalyptus Ave EB							
5	L2	0.50	12.6	452.7	1.15	0.092	2.257
2	T1	0.49	14.3	395.2	1.19	0.091	1.828
12	R2	0.50	11.1	519.5	1.06	0.082	2.974
		0.50	11.5	499.5	1.09	0.085	2.761
INTERSECTION:							
		0.48	11.8	491.1	1.04	0.080	2.716

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Lanes

Lane Performance and Capacity Information
 Site: Roundabout1 (WLC Pkwy & Eucalyptus Ave) - 2045AM - HCM6

Site ID: 1
 Roundabout

LANE PERFORMANCE

Lane No.	Flow veh/h	Cap veh/h	Deg. Satn x	Aver. Delay sec	Eff. Stop Rate	Q u e u e		Lane Length ft
						95% Back veh	ft	

South: WLC Pkwy NB								
1	692	1061	0.653	12.8	0.11	3.8	116.8	1600.0
2	675	1034	0.653	13.0	0.10	3.6	113.5	1600.0

East: Eucalyptus Ave WB								
1	181	308	0.587	29.9	1.05	2.5	65.2	1600.0
2	70	358	0.195	13.4	0.78	0.6	15.7	200.0T

North: WLC Pkwy SB								
1	376	776	0.485	11.3	0.52	2.2	70.2	1600.0
2	374	772	0.485	11.4	0.52	2.2	70.0	1600.0
3	30	1522	0.020	0.0	0.00			600.0T

West: Eucalyptus Ave EB								
1	31	440	0.071	9.2	0.64	0.2	5.6	1600.0
2	80	414	0.193	11.7	0.66	0.5	15.8	1600.0

T Short lane due to specification of Turn Bay

LANE FLOW AND CAPACITY INFORMATION

Lane No.	Total Arv Flow veh/h	Min Cap veh/h	Tot Cap veh/h	Deg. Satn x	Lane Util %

South: WLC Pkwy NB					
1	692	150	1061	0.653	100
2	675	150	1034	0.653	100

East: Eucalyptus Ave WB					
1	181	150	308	0.587	100
2	70	70	358	0.195	100

North: WLC Pkwy SB					
1	376	150	776	0.485	100
2	374	150	772	0.485	100
3	30	30	1522	0.020	100

West: Eucalyptus Ave EB					
1	31	31	440	0.071	100
2	80	80	414	0.193	100

The capacity values of Continuous Lanes are obtained by adjusting the basic saturation flow for lane width, grade, movement class and turning vehicle effects. Saturation flow scale applies if specified.

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Lane, Approach and Intersection Performance
 Site: Roundabout1 (WLC Pkwy & Eucalyptus Ave) - 2045AM - HCM6

Site ID: 1
 Roundabout

Lane No.	Arrival Flow (veh/h)	%HV	Adj. Basic Satf.	Deg Sat x	Aver. Delay sec	Longest Queue ft	Lane Length ft

South: WLC Pkwy NB							
1	692	28		0.653	12.8	117	1600
2	675	31		0.653	13.0	114	1600
		1367	30	0.653	12.9	117	

East: Eucalyptus Ave WB							
1	181	4		0.587	29.9	65	1600
2	70	3		0.195	13.4	16	200
		251	4	0.587	25.3	65	

North: WLC Pkwy SB							
1	376	32		0.485	11.3	70	1600
2	374	33		0.485	11.4	70	1600
3	30	10	1975	0.020	0.0		600
		780	32	0.485	10.9	70	

West: Eucalyptus Ave EB							
1	31	19		0.071	9.2	6	1600
2	80	28		0.193	11.7	16	1600
		111	26	0.193	11.0	16	
=====							
ALL VEHICLES							
	Total Flow	% HV		Max X	Aver. Delay	Max Queue	
	2509	28		0.653	13.5	117	
=====							

Peak flow period = 15 minutes.

Queue values in this table are 95% queue (feet)
 Note: Basic Saturation Flows at roundabouts or sign-controlled intersections apply only to continuous lanes.

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Driver Characteristics
 Site: Roundabout1 (WLC Pkwy & Eucalyptus Ave) - 2045AM - HCM6

Site ID: 1
 Roundabout

Lane No.	Satn Speed mph	Satn Flow veh/h	Satn Hdwy sec	Satn Spacing ft	Average Queue Space ft	Driver Response Time sec

South: WLC Pkwy NB						
1	22.6	1420	2.54	83.90	30.63	1.61
2	24.1	1420	2.54	89.62	31.30	1.65

East: Eucalyptus Ave WB						
1	16.5	1420	2.54	61.24	25.75	1.47
2	NA - Short Lane					

North: WLC Pkwy SB						
1	24.2	1420	2.54	89.96	31.48	1.65

2	24.4	1420	2.54	90.80	31.60	1.65
3	NA - Continuous Movement					

West: Eucalyptus Ave EB						
1	16.3	1420	2.54	60.45	28.86	1.32
2	21.2	1420	2.54	78.95	30.60	1.55

Saturation Flow and Saturation Headway are derived from follow-up headway.

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Lane Delays

Site: Roundabout1 (WLC Pkwy & Eucalyptus Ave) - 2045AM - HCM6

Site ID: 1
Roundabout

LANE DELAYS

Lane No.	Deg. Satn x	% Arv During Green	Prog. Factor	Delay (seconds/veh)									
				Min Del dm	Stop-line 1st d1	2nd d2	Total dSL	Acc. Dec. dn	Queuing Total dq	MvUp dqm	Stopd (Idle) di	Geom dig	Control dic
South: WLC Pkwy NB													
1	0.653	NA	NA	3.4	6.7	6.1	12.8	5.6	11.4	0.0	11.4	0.0	12.8
2	0.653	NA	NA	3.5	6.7	6.3	13.0	6.4	11.4	0.0	11.4	0.0	13.0
East: Eucalyptus Ave WB													
1	0.587	NA	NA	11.7	14.6	15.3	29.9	4.8	25.7	3.2	22.5	0.0	29.9
2	0.195	NA	NA	10.0	11.0	2.4	13.4	4.6	9.8	0.0	9.8	0.0	13.4
North: WLC Pkwy SB													
1	0.485	NA	NA	4.6	7.1	4.3	11.3	6.5	7.9	0.8	7.0	0.0	11.3
2	0.485	NA	NA	4.7	7.1	4.3	11.4	6.6	7.8	0.8	7.0	0.0	11.4
3	0.020					0.0					0.0	0.0	
West: Eucalyptus Ave EB													
1	0.071	NA	NA	8.2	8.5	0.6	9.2	4.9	6.0	0.0	6.0	0.0	9.2
2	0.193	NA	NA	8.7	9.7	2.1	11.7	4.6	8.7	0.0	8.7	0.0	11.7

HCM Delay Formula option used (Exclude Geometric Delay option applies). Control Delay does not include Geometric Delay, and Stop-line Delay is treated as being same as Control Delay.

dm: Minimum delay for gap acceptance cases

dSL: Stop-line delay (=d1+d2)

dn: Average stop-start delay for all vehicles queued and unqueued

dq: Queuing delay (the part of the stop-line delay that includes stopped delay and queue move-up delay)

dqm: Queue move-up delay

di: Stopped delay (stopped (idling) time at near-zero speed)

dig: Geometric delay

dic: Control delay

[Go to Table Links \(Top\)](#)

Lane Queues
Site: Roundabout1 (WLC Pkwy & Eucalyptus Ave) - 2045AM - HCM6

Site ID: 1
 Roundabout

BACK OF QUEUE (VEHICLES)

Lane No.	Deg. Satn x	% Arv During Green	Prog. Factor	Ovrfl. Queue No	Back of Queue (veh)				Queue Stor. Ratio		Prob. Block %	Prob. SL Ov. %
					Nb1	Nb2	Nb	95%	Av.	95%		
South: WLC Pkwy NB												
1	0.653	NA	NA	0.0	1.5	0.0	1.5	3.8	0.03	0.07	0.0	NA
2	0.653	NA	NA	0.0	1.5	0.0	1.5	3.6	0.03	0.07	0.0	NA
East: Eucalyptus Ave WB												
1	0.587	NA	NA	0.4	0.8	0.2	1.0	2.5	0.02	0.04	0.0	NA
2	0.195	NA	NA	0.0	0.2	0.0	0.2	0.6	0.03	0.08	NA	0.0
North: WLC Pkwy SB												
1	0.485	NA	NA	0.1	0.7	0.2	0.9	2.2	0.02	0.04	0.0	NA
2	0.485	NA	NA	0.1	0.7	0.2	0.9	2.2	0.02	0.04	0.0	NA
West: Eucalyptus Ave EB												
1	0.071	NA	NA	0.0	0.1	0.0	0.1	0.2	0.00	0.00	0.0	NA
2	0.193	NA	NA	0.0	0.2	0.0	0.2	0.5	0.00	0.01	0.0	NA

SIDRA Standard models are used for Back of Queue estimation since HCM only gives Cycle-Average Queues for unsignalised intersections.

BACK OF QUEUE (DISTANCE)

Lane No.	Deg. Satn x	% Arv During Green	Prog. Factor	Ovrfl. Queue No	Back of Queue (ft)				Queue Stor. Ratio		Prob. Block %	Prob. SL Ov. %
					Nb1	Nb2	Nb	95%	Av.	95%		
South: WLC Pkwy NB												
1	0.653	NA	NA	0.0	47.0	0.0	47.0	116.8	0.03	0.07	0.0	NA
2	0.653	NA	NA	0.0	45.7	0.0	45.7	113.5	0.03	0.07	0.0	NA
East: Eucalyptus Ave WB												
1	0.587	NA	NA	9.2	20.3	5.9	26.2	65.2	0.02	0.04	0.0	NA
2	0.195	NA	NA	0.0	6.3	0.0	6.3	15.7	0.03	0.08	NA	0.0
North: WLC Pkwy SB												
1	0.485	NA	NA	4.0	23.4	4.9	28.2	70.2	0.02	0.04	0.0	NA
2	0.485	NA	NA	4.0	23.3	4.9	28.2	70.0	0.02	0.04	0.0	NA
West: Eucalyptus Ave EB												
1	0.071	NA	NA	0.0	2.3	0.0	2.3	5.6	0.00	0.00	0.0	NA
2	0.193	NA	NA	0.0	6.4	0.0	6.4	15.8	0.00	0.01	0.0	NA

SIDRA Standard models are used for Back of Queue estimation since HCM only gives Cycle-Average Queues for unsignalised intersections.

OTHER QUEUE RESULTS (VEHICLES)

Lane No.	Deg. Satn x	% Arv During Green	Prog. Factor	Ovrfl. Queue No	Cyc-Av. Queue Nc	95%
----------	-------------	--------------------	--------------	-----------------	------------------	-----

```

-----
South: WLC Pkwy NB
1  0.653  NA    NA    0.0   2.5   4.5
2  0.653  NA    NA    0.0   2.4   4.4
-----
East: Eucalyptus Ave WB
1  0.587  NA    NA    0.4   1.5   2.7
2  0.195  NA    NA    0.0   0.3   0.5
-----
North: WLC Pkwy SB
1  0.485  NA    NA    0.1   1.2   2.1
2  0.485  NA    NA    0.1   1.2   2.1
-----
West: Eucalyptus Ave EB
1  0.071  NA    NA    0.0   0.1   0.1
2  0.193  NA    NA    0.0   0.3   0.5
-----

```

HCM Delay Formula option used:
Cycle-Average Queue is calculated using average delay from the HCM equation.
(i.e. HCM delays are treated as stop-line delays for this purpose).

OTHER QUEUE RESULTS (DISTANCE)

```

-----
Lane   Deg.  % Arv  Prog.  Ovrfl.  Cyc-Av.  Queue
No.    Satn  During  Factor  Queue   No       Nc       95%
-----
South: WLC Pkwy NB
1  0.653  NA     NA     0.0     75.4    136.8
2  0.653  NA     NA     0.0     76.5    138.8
-----
East: Eucalyptus Ave WB
1  0.587  NA     NA     9.2     38.7    70.2
2  0.195  NA     NA     0.0     6.7     12.1
-----
North: WLC Pkwy SB
1  0.485  NA     NA     4.0     37.3    67.7
2  0.485  NA     NA     4.0     37.4    67.9
-----
West: Eucalyptus Ave EB
1  0.071  NA     NA     0.0     2.3     4.1
2  0.193  NA     NA     0.0     8.0     14.5
-----

```

HCM Delay Formula option used:
Cycle-Average Queue is calculated using average delay from the HCM equation.
(i.e. HCM delays are treated as stop-line delays for this purpose).

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Lane Queue Percentiles
Site: Roundabout1 (WLC Pkwy & Eucalyptus Ave) - 2045AM - HCM6

Site ID: 1
Roundabout

LANE QUEUE PERCENTILES (VEHICLES)

```

-----
Lane   Deg.          Percentile Back of Queue (veh)
      Satn  -----

```

No.	x	50%	70%	85%	90%	95%	98%	100%

South: WLC Pkwy NB								
1	0.653	1.5	2.0	2.8	3.2	3.8	4.2	4.5
2	0.653	1.5	1.9	2.7	3.1	3.6	4.0	4.3

East: Eucalyptus Ave WB								
1	0.587	1.0	1.3	1.9	2.2	2.5	2.8	3.0
2	0.195	0.2	0.3	0.5	0.5	0.6	0.7	0.7

North: WLC Pkwy SB								
1	0.485	0.9	1.2	1.6	1.9	2.2	2.5	2.7
2	0.485	0.9	1.2	1.6	1.9	2.2	2.5	2.6

West: Eucalyptus Ave EB								
1	0.071	0.1	0.1	0.1	0.2	0.2	0.2	0.2
2	0.193	0.2	0.3	0.4	0.4	0.5	0.6	0.6

SIDRA Standard models are used for Back of Queue estimation since HCM only gives Cycle-Average Queues for unsignalised intersections.

LANE QUEUE PERCENTILES (DISTANCE)

Lane No.	Deg. Satn x	Percentile Back of Queue (feet)						
		50%	70%	85%	90%	95%	98%	100%

South: WLC Pkwy NB								
1	0.653	47.0	60.8	85.8	99.3	116.8	129.6	139.3
2	0.653	45.6	59.1	83.4	96.5	113.5	126.0	135.4

East: Eucalyptus Ave WB								
1	0.587	26.2	33.9	47.8	55.4	65.2	72.3	77.7
2	0.195	6.3	8.2	11.6	13.4	15.7	17.5	18.8

North: WLC Pkwy SB								
1	0.485	28.2	36.6	51.5	59.7	70.2	77.9	83.7
2	0.485	28.2	36.5	51.4	59.6	70.0	77.7	83.6

West: Eucalyptus Ave EB								
1	0.071	2.3	2.9	4.1	4.8	5.6	6.3	6.7
2	0.193	6.4	8.2	11.6	13.4	15.8	17.5	18.8

SIDRA Standard models are used for Back of Queue estimation since HCM only gives Cycle-Average Queues for unsignalised intersections.

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Lane Stops
Site: Roundabout1 (WLC Pkwy & Eucalyptus Ave) - 2045AM - HCM6

Site ID: 1
Roundabout

Lane No.	Deg. Satn x	% Arv During Green	Prog. Factor	-- Effective Stop Rate --		Total Stops H	Queue Move-up Rate hqm	Total Queue Move-ups Hqm	Prop. Queued pq	Aver. Num. of Cycles to Depart
				he1	he2					

South: WLC Pkwy NB										

1	0.653	NA	NA	0.11	0.00	0.00	0.11	74.4	0.00	0.0	0.25	0.25
2	0.653	NA	NA	0.10	0.00	0.00	0.10	70.8	0.00	0.0	0.25	0.25

East: Eucalyptus Ave WB												
1	0.587	NA	NA	0.89	0.16	0.00	1.05	190.4	0.65	117.4	0.89	1.54
2	0.195	NA	NA	0.78	0.00	0.00	0.78	54.5	0.00	0.0	0.78	0.78

North: WLC Pkwy SB												
1	0.485	NA	NA	0.47	0.05	0.00	0.52	196.1	0.11	41.4	0.54	0.65
2	0.485	NA	NA	0.47	0.05	0.00	0.52	195.0	0.11	41.4	0.53	0.65
3	0.020	NA	NA			0.00	0.00	0.0				

West: Eucalyptus Ave EB												
1	0.071	NA	NA	0.64	0.00	0.00	0.64	20.0	0.00	0.0	0.64	0.64
2	0.193	NA	NA	0.66	0.00	0.00	0.66	53.2	0.00	0.0	0.66	0.66

hig is the average value for all movements in a shared lane
hqm is average queue move-up rate for all vehicles queued and unqueued

[Go to Table Links \(Top\)](#)

Flow Rates

Origin-Destination Flow Rates (Total)

Site: Roundabout1 (WLC Pkwy & Eucalyptus Ave) - 2045AM - HCM6

Site ID: 1
Roundabout

TOTAL FLOW RATES for All Movement Classes (veh/h)

From SOUTH To:	W	N	E	
Turn:	L2	T1	R2	TOT
Flow Rate	151.9	1164.6	50.6	1367.1
%HV (all designations)	11.0	33.0	13.0	29.8

From EAST To:	S	W	N	
Turn:	L2	T1	R2	TOT
Flow Rate	170.0	10.9	70.0	250.9
%HV (all designations)	4.0	0.0	3.0	3.5

From NORTH To:	E	S	W	
Turn:	L2	T1	R2	TOT
Flow Rate	10.0	740.0	30.0	780.0
%HV (all designations)	10.0	33.0	10.0	31.8

From WEST To:	N	E	S	
Turn:	L2	T1	R2	TOT
Flow Rate	30.0	1.1	80.0	111.1
%HV (all designations)	20.0	0.0	28.0	25.6

Flow rates shown above are Arrival Flow Rates (veh/h) based on the following input specifications:
Unit Time for Volumes = 60 minutes
Peak Flow Period = 15 minutes
Effects of Volume Factors (Peak Flow Factor, Flow Scale, Growth Rate) are included.
Arrival Flow Rates may be less than Demand Flow Rates if capacity constraint applies in network analysis.

[Go to Table Links \(Top\)](#)

Origin-Destination Flow Rates by Movement Class
 Site: Roundabout1 (WLC Pkwy & Eucalyptus Ave) - 2045AM - HCM6

Site ID: 1
 Roundabout

FLOW RATES for Light Vehicles (veh/h)

From SOUTH To:	W	N	E	
Turn:	L2	T1	R2	TOT
Flow Rate	135.2	780.3	44.1	959.5
Mov Class %	89.0	67.0	87.0	70.2
Flow Scale	1.00	1.00	1.00	-
Peak Flow Factor	0.79	0.79	0.79	-
Residual Demand	0.0	0.0	0.0	0.0

From EAST To:	S	W	N	
Turn:	L2	T1	R2	TOT
Flow Rate	163.2	10.9	67.9	242.0
Mov Class %	96.0	100.0	97.0	96.5
Flow Scale	1.00	1.00	1.00	-
Peak Flow Factor	1.00	0.92	1.00	-
Residual Demand	0.0	0.0	0.0	0.0

From NORTH To:	E	S	W	
Turn:	L2	T1	R2	TOT
Flow Rate	9.0	495.8	27.0	531.8
Mov Class %	90.0	67.0	90.0	68.2
Flow Scale	1.00	1.00	1.00	-
Peak Flow Factor	1.00	1.00	1.00	-
Residual Demand	0.0	0.0	0.0	0.0

From WEST To:	N	E	S	
Turn:	L2	T1	R2	TOT
Flow Rate	24.0	1.1	57.6	82.7
Mov Class %	80.0	100.0	72.0	74.4
Flow Scale	1.00	1.00	1.00	-
Peak Flow Factor	1.00	0.92	1.00	-
Residual Demand	0.0	0.0	0.0	0.0

FLOW RATES for Heavy Vehicles (veh/h)

From SOUTH To:	W	N	E	
Turn:	L2	T1	R2	TOT
Flow Rate	16.7	384.3	6.6	407.6
Mov Class %	11.0	33.0	13.0	29.8
Flow Scale	1.00	1.00	1.00	-
Peak Flow Factor	0.79	0.79	0.79	-
Residual Demand	0.0	0.0	0.0	0.0

From EAST To:	S	W	N	
Turn:	L2	T1	R2	TOT
Flow Rate	6.8	0.0	2.1	8.9
Mov Class %	4.0	0.0	3.0	3.5
Flow Scale	1.00	1.00	1.00	-

Peak Flow Factor	1.00	0.92	1.00	-
Residual Demand	0.0	0.0	0.0	0.0

From NORTH To:	E	S	W	
Turn:	L2	T1	R2	TOT

Flow Rate	1.0	244.2	3.0	248.2
Mov Class %	10.0	33.0	10.0	31.8
Flow Scale	1.00	1.00	1.00	-
Peak Flow Factor	1.00	1.00	1.00	-
Residual Demand	0.0	0.0	0.0	0.0

From WEST To:	N	E	S	
Turn:	L2	T1	R2	TOT

Flow Rate	6.0	0.0	22.4	28.4
Mov Class %	20.0	0.0	28.0	25.6
Flow Scale	1.00	1.00	1.00	-
Peak Flow Factor	1.00	0.92	1.00	-
Residual Demand	0.0	0.0	0.0	0.0

Flow rates shown above are Arrival Flow Rates (veh/h) based on the following input specifications:
Unit Time for Volumes = 60 minutes
Peak Flow Period = 15 minutes
Effects of Volume Factors (Peak Flow Factor, Flow Scale, Growth Rate) are included.
Arrival Flow Rates may be less than Demand Flow Rates if capacity constraint applies in network analysis.

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Lane Flow Rates

Site: Roundabout1 (WLC Pkwy & Eucalyptus Ave) - 2045AM - HCM6

Site ID: 1
Roundabout

LANE FLOW RATES AT STOP LINE (veh/h)

From SOUTH To:	W	N	E	
Turn:	L2	T1	R2	TOT

Lane 1				
LV	135.2	362.1	*	497.3
HV	16.7	178.4	*	195.1
Total	151.9	540.5	*	692.4
Lane 2				
LV	*	418.1	44.1	462.2
HV	*	205.9	6.6	212.5
Total	*	624.1	50.6	674.7

Approach	151.9	1164.6	50.6	1367.1

From EAST To:	S	W	N	
Turn:	L2	T1	R2	TOT

Lane 1				
LV	163.2	10.9	*	174.1
HV	6.8	*	*	6.8
Total	170.0	10.9	*	180.9
Lane 2				
LV	*	*	67.9	67.9
HV	*	*	2.1	2.1

Total	*	*	70.0	70.0

Approach	170.0	10.9	70.0	250.9

From NORTH To:	E	S	W	
Turn:	L2	T1	R2	TOT

Lane 1				
LV	9.0	245.1	*	254.1
HV	1.0	120.7	*	121.7
Total	10.0	365.9	*	375.9
Lane 2				
LV	*	250.7	*	250.7
HV	*	123.5	*	123.5
Total	*	374.1	*	374.1
Lane 3				
LV	*	*	27.0	27.0
HV	*	*	3.0	3.0
Total	*	*	30.0	30.0

Approach	10.0	740.0	30.0	780.0

From WEST To:	N	E	S	
Turn:	L2	T1	R2	TOT

Lane 1				
LV	24.0	1.1	*	25.1
HV	6.0	*	*	6.0
Total	30.0	1.1	*	31.1
Lane 2				
LV	*	*	57.6	57.6
HV	*	*	22.4	22.4
Total	*	*	80.0	80.0

Approach	30.0	1.1	80.0	111.1

* Movement not allocated to the lane

EXIT LANE FLOW RATES

Movement Class:	LV	HV	TOT

Exit: SOUTH			
Lane: 1	408.3	127.5	535.9
Lane: 2	308.3	145.9	454.1
Total	716.6	273.4	990.0

Exit: EAST			
Lane: 1	54.1	7.6	61.7
Total	54.1	7.6	61.7

Exit: NORTH			
Lane: 1	386.1	184.4	570.5
Lane: 2	486.0	208.0	694.1
Total	872.2	392.4	1264.6

Exit: WEST			
Lane: 1	146.1	16.7	162.8
Lane: 2	27.0	3.0	30.0
Total	173.1	19.7	192.8

* Movement not allocated to the lane

DOWNSTREAM LANE FLOW RATES FOR EXIT ROADS

Movement Class:	LV	HV	TOT

Exit: SOUTH			
Lane: 1	408.3	127.5	535.9
Lane: 2	308.3	145.9	454.1
Total	716.6	273.4	990.0

Exit: EAST			
Lane: 1	54.1	7.6	61.7
Total	54.1	7.6	61.7

Exit: NORTH			
Lane: 1	386.1	184.4	570.5
Lane: 2	486.0	208.0	694.1
Total	872.2	392.4	1264.6

Exit: WEST			
Lane: 1	146.1	16.7	162.8
Lane: 2	27.0	3.0	30.0
Total	173.1	19.7	192.8

* Movement not allocated to the lane

Flow rates shown above are Arrival Flow Rates (veh/h) based on the following input specifications:
 Unit Time for Volumes = 60 minutes
 Peak Flow Period = 15 minutes
 Effects of Volume Factors (Peak Flow Factor, Flow Scale, Growth Rate) are included.
 Arrival Flow Rates may be less than Demand Flow Rates if capacity constraint applies in network analysis.

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Other

Parameter Settings Summary
 Site: Roundabout1 (WLC Pkwy & Eucalyptus Ave) - 2045AM - HCM6

Site ID: 1
 Roundabout

* Basic Parameters:
 Intersection Type: Roundabout
 US HCM 6 Roundabout Capacity Model used
 Driving on the right-hand side of the road
 Input data specified in US units
 Model Defaults: US HCM (Customary)
 Peak Flow Period (for performance): 15 minutes
 Unit time (for volumes): 60 minutes.
 HCM Delay Model option used
 HCM Queue Model option used
 Level of Service based on: Delay and v/c (HCM 6)
 Queue percentile: 95%

[Go to Table Links \(Top\)](#)

Diagnostics
 Site: Roundabout1 (WLC Pkwy & Eucalyptus Ave) - 2045AM - HCM6

Site ID: 1

Roundabout

Lane Flow-Capacity Iterations:

Site Model Variability Index (Iterations 3 to N): 0.0%
Number of Iterations: 3 (Maximum: 10)

Other Diagnostic Messages (if any):

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LANE LEVEL OF SERVICE

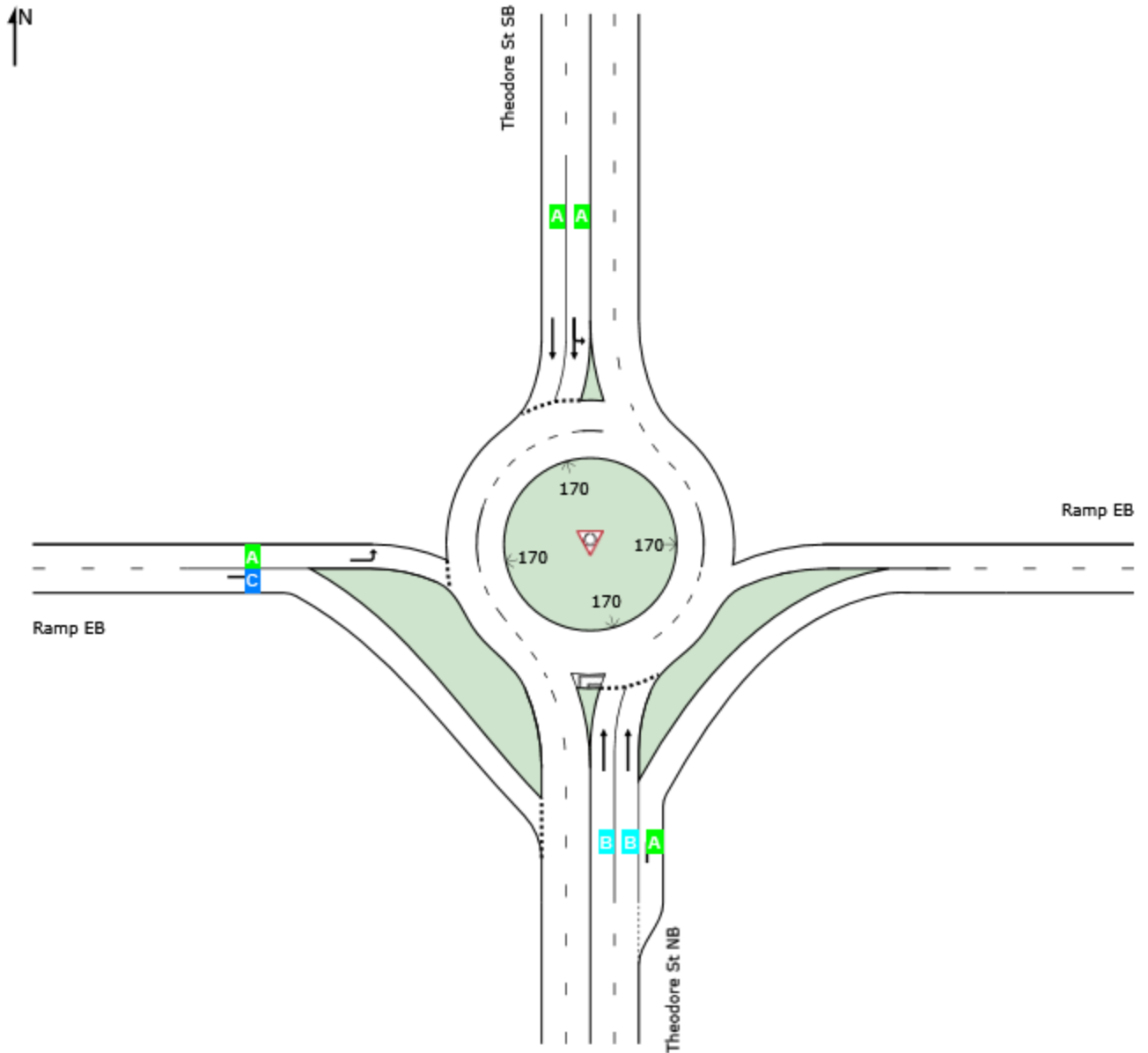
Lane Level of Service



Site: 1 [Roundabout2 (Theodore St & EB Ramps) - 2045AM - HCM6]

Site Category: (None)
Roundabout

	Approaches			Intersection
	South	North	West	
LOS	B	A	B	B



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: Same as Sign Control.

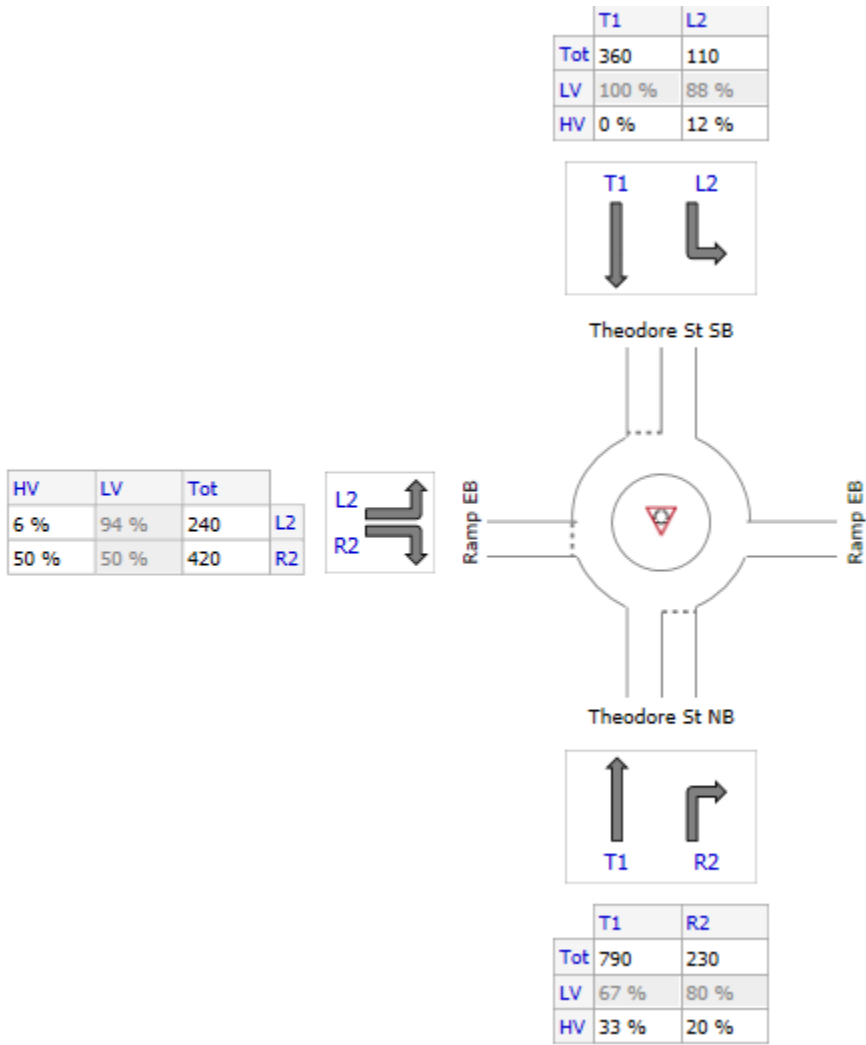
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

LOS F will result if $v/c > 1$ irrespective of lane delay value (does not apply for approaches and intersection).


Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

VOLUMES








DETAILED OUTPUT

 Site: 1 [Roundabout2 (Theodore St & EB Ramps) - 2045AM - HCM6]

Site Category: (None)
Roundabout

OUTPUT TABLE LINKS

-  Roundabouts
 - Roundabout Basic Parameters
 - Roundabout Circulating / Exiting Stream Parameters
 - Roundabout Gap Acceptance Parameters
 - Roundabout Flow Rates
-  Movements
 - Intersection Negotiation and Travel Data
 - Movement Capacity and Performance Parameters
 - Fuel Consumption, Emissions and Cost
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 - Parameter Settings Summary
 - Diagnostics

Roundabouts

Roundabout Basic Parameters Site: Roundabout2 (Theodore St & EB Ramps) - 2045AM - HCM6

Site ID: 1
Roundabout

Central Island Diam	Circ Width	Insc Diam.	Entry Radius	Entry Angle	Circ Lanes	Entry Lanes	Av.Entry Lane Width	App Dist	Prop Upstr	Queued Signal	Extra Bunching
ft	ft	ft	ft	deg			ft	ft			%
South: Theodore St NB											
170.0*	30.0*	230.0*	65.0*	30.0*	1	3	13.00*	1600		NA	0.0U

North: Theodore St SB												
170.0*	30.0*	230.0*	65.0*	30.0*	2	2	13.00*	1600		NA	0.0U	

West: Ramp EB												
170.0*	30.0*	230.0*	65.0*	30.0*	2	2	13.00*	1600		NA	0.0U	

Roundabout Capacity Model: US HCM 6

* These parameters do not affect estimated capacity values in the HCM 6 Capacity Model.

NA Not Applicable (single Site analysis or unconnected Site in Network analysis).

U User-specified Extra Bunching

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Roundabout Circulating / Exiting Stream Parameters Site: Roundabout2 (Theodore St & EB Ramps) - 2045AM - HCM6

Site ID: 1
Roundabout

Dest	Turn	Lane No.	Lane Type	Opng Flow veh/h	HVE pcu/veh	Adj. Flow pcu/h	%Near Lane Only	%Exit Flow Incl.	Cap. Const. Effect	O-D Factor	Aver Speed mph	In-Bunch Headway sec	Prop. Bunched

South: Theodore St NB													
N	T1	1	Subdominant	350	1.08	378	0.0	0.0	N	-	18.9	0.00	0.000
N	T1	2	Dominant	350	1.08	378	0.0	0.0	N	-	18.9	0.00	0.000
E	R2	3	Continuous										

North: Theodore St SB													
E	L2	1	Subdominant	0	0.00	0	0.0	0.0	N	-	NA	0.00	0.000
S	T1	1	Subdominant	0	0.00	0	0.0	0.0	N	-	NA	0.00	0.000
S	T1	2	Dominant	0	0.00	0	0.0	0.0	N	-	NA	0.00	0.000

West: Ramp EB													
N	L2	1	Dominant	470	1.03	483	0.0	0.0	N	-	27.4	0.00	0.000
S	R2	2	Excl. Slip	360	1.00	360	0.0	0.0	N	-	30.0	0.00	0.000

Roundabout Capacity Model: US HCM 6

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Roundabout Gap Acceptance Parameters Site: Roundabout2 (Theodore St & EB Ramps) - 2045AM - HCM6

Site ID: 1
Roundabout

Dest	Turn	Lane No.	Lane Type	In-Bunch Headway sec	Prop. Bunched	Priority Sharing	HVE for Entry	Critical Gap		Follow-up Headway sec
								Headway sec	Dist ft	

South: Theodore St NB										
Model Calibration Factor (HCM 6): 1.00										
Entry/Circ. Flow Adjustment (HCM 6): None										
N	T1	1	Subdominant	0.00	0.000	N	1.33	4.54	126.1	2.54
N	T1	2	Dominant	0.00	0.000	N	1.33	4.54	126.1	2.54

E R2 3 Continuous

North: Theodore St SB

Model Calibration Factor (HCM 6): 1.00

Entry/Circ. Flow Adjustment (HCM 6): None

Entry	Lane	Control	Flow Adj	Flow Adj	Capacity	Delay	Queue	Queue	
E	L2	1 Subdominant	0.00	0.000	N	1.12	4.65	NA	2.67
S	T1	1 Subdominant	0.00	0.000	N	1.00	4.65	NA	2.67
S	T1	2 Dominant	0.00	0.000	N	1.00	4.33	NA	2.54

West: Ramp EB

Model Calibration Factor (HCM 6): 1.00

Entry/Circ. Flow Adjustment (HCM 6): None

Entry	Lane	Control	Flow Adj	Flow Adj	Capacity	Delay	Queue	Queue	
N	L2	1 Dominant	0.00	0.000	N	1.06	4.33	173.9	2.54
S	R2	2 Excl. Slip	0.00	0.000	N	1.50	4.33	190.3	2.54

Roundabout Capacity Model: US HCM 6

Dist (Distance): Spacing, i.e. distance between the front ends of two successive vehicles across all lanes in the circulating or exiting stream

[Go to Table Links \(Top\)](#)

Roundabout Flow Rates

Site: Roundabout2 (Theodore St & EB Ramps) - 2045AM - HCM6

Site ID: 1
Roundabout

CIRCULATING LANE FLOW RATES

Lane No.	Circulating Flow Rate		
	veh/h	pcu/h	Percent
South: Theodore St NB			
1	350	378	100.0%
Total	350	378	
North: Theodore St SB			
1	0	0	0.0%
2	0	0	0.0%
Total	0	0	
West: Ramp EB			
1	223	236	48.8%
2	247	247	51.2%
Total	470	483	

The US HCM 6 roundabout capacity model option is in use. This model considers only the total circulating flow and not the flow rates in individual circulating lanes. To model the effects of flow distribution in circulating lanes on the entry capacity results, you should use the SIDRA Standard roundabout capacity model.

APPROACH LANE FLOW RATES

Lane No.	Approach Flows (veh/h)		
	Out	To Downst	Total
South: Theodore St NB			
1	0	449	449

2	0	449	449
3	261	0	261
Total	261	898	1159

North: Theodore St SB			
1	0	222	222
2	0	248	248
Total	0	470	470

West: Ramp EB			
1	0	240	240
2	420	0	420
Total	420	240	660

[Go to Table Links \(Top\)](#)

Movements

Intersection Negotiation and Travel Data Site: Roundabout2 (Theodore St & EB Ramps) - 2045AM - HCM6

Site ID: 1
Roundabout

TRAVEL SPEED, TRAVEL DISTANCE AND TRAVEL TIME

From Approach	To Exit	Turn	Running Speed mph	Travel Speed mph	Travel Distance ft	Travel Time s	Total Dem Flows veh-mi/h	Travel Arv Flows veh-mi/h	Tot.Trav. Time veh-h/h
South: Theodore St NB									
	North	T1	35.3	32.1	3423.3#	72.7#	582.0	582.0	18.1
	East	R2	37.9	37.9	3288.6#	59.1#	162.8	162.8	4.3
North: Theodore St SB									
	East	L2	38.5	38.5	3496.2#	61.9#	72.8	72.8	1.9
	South	T1	39.6	39.6	3446.1#	59.3#	235.0	235.0	5.9
West: Ramp EB									
	North	L2	34.9	33.0	3580.9#	74.0#	162.8	162.8	4.9
	South	R2	33.7	29.6	3288.6#	75.7#	261.6	261.6	8.8
ALL VEHICLES:			36.1	33.6	3406.8#	69.2#	1477.0	1477.0	44.0

"Running Speed" is the average speed excluding stopped periods.

Travel Time values include cruise times and intersection delays including acceleration, deceleration and idling delays.

Travel Distance and Travel Time values include travel on the External Exit section based on the Exit Distance or user-specified Downstream Distance value as applicable.

INTERSECTION NEGOTIATION DATA

From Approach	To Exit	Turn	Negn Radius ft	Negn Speed mph	Negn Dist ft	App Dist ft	Exit Dist ft	Downstr Dist ft
---------------	---------	------	----------------	----------------	--------------	-------------	--------------	-----------------

South: Theodore St NB								
North	T1		328.1	30.0	223.3	1600	488	NA
East	R2		219.5	25.8	88.6	1600	488	NA
North: Theodore St SB								
East	L2		97.0	18.9	380.9	1600	488	NA
South	T1		328.1	30.0	223.3	1600	488	NA
West: Ramp EB								
North	L2		97.0	18.9	380.9	1600	488	NA
South	R2		216.1	25.6	88.6	1600	488	NA

Maximum Negotiation (Design) Speed = 30.0 mph

NA Downstream Distance does not apply if:

- Exit is an internal leg of a network
- "Program" option was specified
- Distance specified was less than the Exit Negotiation Distance
- Distance specified was greater than the exit leg length

MOVEMENT SPEEDS AND GEOMETRIC DELAY

Mov ID	Turn	App. Speeds		Exit Speeds		Queue Move-up Speed mph	Geom Delay sec
		Cruise mph	Negn mph	Negn mph	Cruise mph		
South: Theodore St NB							
8	T1	40.0	30.0	30.0	40.0	24.9	0.0
18	R2	40.0	25.8	25.8	40.0	23.8	0.0
North: Theodore St SB							
7	L2	40.0	18.9	18.9	40.0	39.4	0.0
4	T1	40.0	30.0	30.0	40.0	45.5	0.0
West: Ramp EB							
5	L2	40.0	18.9	18.9	40.0	20.3	0.0
12	R2	40.0	25.6	25.6	40.0	26.7	0.0

HCM Delay Formula option used: Geometric Delay is not included in Control Delay.

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Movement Capacity and Performance Parameters
 Site: Roundabout2 (Theodore St & EB Ramps) - 2045AM - HCM6

Site ID: 1
 Roundabout

MOVEMENT CAPACITY PARAMETERS

Mov ID	Turn	Mov Cl.	Arv Flow veh/h	Opng Flow veh/h	Movement Adjust. Flow pcu/h	Total Cap. veh/h	Prac. Deg. Satn xp	Prac. Spare Cap. %	Deg. Satn x
South: Theodore St NB									
8	T1	#	898	350	378	1514	0.85	43	0.593
18	R2	#	261	350	378	1395	0.98	423	0.187

North: Theodore St SB									
7	L2	#	110	0	0	631	0.85	388	0.174
4	T1	#	360	0	0	2065	0.85	388	0.174

West: Ramp EB									
5	L2	#	240	470	483	888	0.85	215	0.270
12	R2	#	420	360	360	697	0.85	41	0.602*

* Maximum degree of saturation
Combined Movement Capacity parameters are shown for all Movement Classes.

MOVEMENT PERFORMANCE

Mov ID	Turn	Total Delay (veh-h/h)	Total Delay (pers-h/h)	Aver. Delay (sec)	Eff. Stop Rate	Total Stops	Perf. Index	Tot.Trav. Distance (veh-mi/h)	Tot.Trav. Time (veh-h/h)	Aver. Speed (mph)
South: Theodore St NB										
8	T1	3.59	4.31	14.4	0.74	666.9	25.29	582.0	18.1	32.1
18	R2	0.00	0.00	0.0	0.00	0.0	4.07	162.8	4.3	37.9
North: Theodore St SB										
7	L2	0.14	0.16	4.5	0.00	0.0	1.96	72.8	1.9	38.5
4	T1	0.40	0.48	4.0	0.00	0.0	6.27	235.0	5.9	39.6
West: Ramp EB										
5	L2	0.46	0.55	6.9	0.48	114.5	6.02	162.8	4.9	33.0
12	R2	1.83	2.20	15.7	0.72	302.1	13.23	261.6	8.8	29.6

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Fuel Consumption, Emissions and Cost
Site: Roundabout2 (Theodore St & EB Ramps) - 2045AM - HCM6

Site ID: 1
Roundabout

FUEL CONSUMPTION, EMISSIONS AND COST (TOTAL)

Mov ID	Turn	Cost Total (\$/h)	Fuel Total (gal/h)	CO2 Total (kg/h)	CO Total (kg/h)	HC Total (kg/h)	NOX Total (kg/h)
South: Theodore St NB							
8	T1	459.94	53.2	498.5	0.92	0.072	2.967
18	R2	87.90	10.4	95.9	0.25	0.016	0.469
		547.84	63.6	594.4	1.17	0.088	3.435
North: Theodore St SB							
7	L2	32.61	3.3	29.6	0.11	0.007	0.095
4	T1	86.89	7.6	67.9	0.36	0.022	0.097
		119.50	10.9	97.5	0.48	0.030	0.192
West: Ramp EB							
5	L2	102.40	8.5	76.7	0.30	0.023	0.215
12	R2	276.69	34.0	323.6	0.43	0.036	2.148
		379.08	42.5	400.3	0.74	0.059	2.363

INTERSECTION:	1046.43	116.9	1092.2	2.38	0.177	5.991
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FUEL CONSUMPTION, EMISSIONS AND COST (RATE)

Mov ID	Turn	Cost Rate \$/mi	Fuel Eff. mpg	CO2 Rate g/km	CO Rate g/km	HC Rate g/km	NOX Rate g/km
South: Theodore St NB							
8	T1	0.49	10.9	532.2	0.99	0.076	3.167
18	R2	0.34	15.7	366.0	0.94	0.063	1.790
		0.46	11.7	495.9	0.98	0.073	2.866
North: Theodore St SB							
7	L2	0.28	22.4	252.7	0.97	0.063	0.810
4	T1	0.23	30.8	179.5	0.96	0.058	0.258
		0.24	28.3	196.9	0.96	0.060	0.388
West: Ramp EB							
5	L2	0.39	19.1	292.8	1.16	0.089	0.820
12	R2	0.66	7.7	768.7	1.02	0.085	5.103
		0.56	10.0	586.2	1.08	0.087	3.460
INTERSECTION:		0.44	12.6	459.5	1.00	0.074	2.520

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Lanes

Lane Performance and Capacity Information Site: Roundabout2 (Theodore St & EB Ramps) - 2045AM - HCM6

Site ID: 1
Roundabout

LANE PERFORMANCE

Lane No.	Flow veh/h	Cap veh/h	Deg. Satn x	Aver. Delay sec	Eff. Stop Rate	Q u e u e		Lane Length ft
						95% Back veh	ft	
South: Theodore St NB								
1	449	757	0.593	14.4	0.74	4.3	135.4	1600.0
2	449	757	0.593	14.4	0.74	4.3	135.4	1600.0
3	261	1395	0.187	0.0	0.00			600.0T
North: Theodore St SB								
1	222	1276	0.174	4.3	0.00	0.0	0.0	1600.0
2	248	1420	0.174	3.9	0.00	0.0	0.0	1600.0
West: Ramp EB								
1	240	888	0.270	6.9	0.48	1.1	27.8	1600.0

2 420 697 0.602 15.7 0.72 4.0 138.5 1600.0

T Short lane due to specification of Turn Bay

LANE FLOW AND CAPACITY INFORMATION

Lane No.	Total Arv Flow veh/h	Min Cap veh/h	Tot Cap veh/h	Deg. Satn x	Lane Util %
South: Theodore St NB					
1	449	150	757	0.593	100
2	449	150	757	0.593	100
3	261	261	1395	0.187	100
North: Theodore St SB					
1	222	150	1276	0.174	100
2	248	150	1420	0.174	100
West: Ramp EB					
1	240	150	888	0.270	100
2	420	150	697	0.602	100

The capacity values of Continuous Lanes are obtained by adjusting the basic saturation flow for lane width, grade, movement class and turning vehicle effects. Saturation flow scale applies if specified.

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Lane, Approach and Intersection Performance
Site: Roundabout2 (Theodore St & EB Ramps) - 2045AM - HCM6

Site ID: 1
Roundabout

Lane No.	Arrival Flow (veh/h)	%HV	Adj. Basic Satf.	Deg Sat x	Aver. Delay sec	Longest Queue ft	Lane Length ft
South: Theodore St NB							
1	449	33		0.593	14.4	135	1600
2	449	33		0.593	14.4	135	1600
3	261	20	1975	0.187	0.0		600
	1159	30		0.593	11.2	135	
North: Theodore St SB							
1	222	6		0.174	4.3	0	1600
2	248	0		0.174	3.9	0	1600
	470	3		0.174	4.1		
West: Ramp EB							
1	240	6		0.270	6.9	28	1600
2	420	50		0.602	15.7	138	1600
	660	34		0.602	12.5	138	

ALL VEHICLES					
Total Flow	% HV	Max X	Aver. Delay	Max Queue	

2289 26 0.602 10.1 138

Peak flow period = 15 minutes.

Queue values in this table are 95% queue (feet)
 Note: Basic Saturation Flows at roundabouts or sign-controlled intersections apply only to continuous lanes.

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Driver Characteristics
 Site: Roundabout2 (Theodore St & EB Ramps) - 2045AM - HCM6

Site ID: 1
 Roundabout

Lane No.	Satn Speed mph	Satn Flow veh/h	Satn Hdwy sec	Satn Spacing ft	Average Queue Space ft	Driver Response Time sec
South: Theodore St NB						
1	30.0	1420	2.54	111.48	31.60	1.82
2	30.0	1420	2.54	111.48	31.60	1.82
3	NA - Continuous Movement					
North: Theodore St SB						
1	24.5	1350	2.67	95.86	26.19	1.94
2	30.0	1420	2.54	111.48	25.00	1.97
West: Ramp EB						
1	18.9	1420	2.54	70.34	26.20	1.59
2	25.6	1420	2.54	95.24	35.00	1.60

Saturation Flow and Saturation Headway are derived from follow-up headway.

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Lane Delays
 Site: Roundabout2 (Theodore St & EB Ramps) - 2045AM - HCM6

Site ID: 1
 Roundabout

LANE DELAYS

Lane No.	Deg. Satn x	% Arv During Green	Prog. Factor	Delay (seconds/veh)									
				Min Del dm	Stop-line 1st d1	2nd d2	Total dSL	Acc. dn	Queuing Total dq	MvUp dqm	Stopd (Idle) di	Geom dig	Control dic
South: Theodore St NB													
1	0.593	NA	NA	4.8	7.7	6.7	14.4	7.5	9.9	3.3	6.6	0.0	14.4
2	0.593	NA	NA	4.8	7.7	6.7	14.4	7.5	9.9	3.3	6.6	0.0	14.4
3	0.187					0.0					0.0	0.0	

North: Theodore St SB													
1	0.174	NA	NA	2.8	3.7	0.6	4.3	0.0	0.0	0.0	0.0	0.0	4.3
2	0.174	NA	NA	2.5	3.4	0.5	3.9	0.0	0.0	0.0	0.0	0.0	3.9

West: Ramp EB													
1	0.270	NA	NA	4.1	5.4	1.5	6.9	5.6	4.0	0.0	4.0	0.0	6.9
2	0.602	NA	NA	5.2	8.2	7.5	15.7	5.2	12.9	3.9	9.1	0.0	15.7

HCM Delay Formula option used (Exclude Geometric Delay option applies). Control Delay does not include Geometric Delay, and Stop-line Delay is treated as being same as Control Delay.

dm: Minimum delay for gap acceptance cases

dSL: Stop-line delay (=d1+d2)

dn: Average stop-start delay for all vehicles queued and unqueued

dq: Queuing delay (the part of the stop-line delay that includes stopped delay and queue move-up delay)

dqm: Queue move-up delay

di: Stopped delay (stopped (idling) time at near-zero speed)

dig: Geometric delay

dic: Control delay

[Go to Table Links \(Top\)](#)

Lane Queues

Site: Roundabout2 (Theodore St & EB Ramps) - 2045AM - HCM6

Site ID: 1
Roundabout

BACK OF QUEUE (VEHICLES)

Lane No.	Deg. Satn x	% Arv During Green	Prog. Factor	Ovrfl. Queue No	Back of Queue (veh)				Queue Stor. Ratio		Prob. Block %	Prob. SL Ov. %
					Nb1	Nb2	Nb	95%	Av.	95%		
South: Theodore St NB												
1	0.593	NA	NA	0.6	1.0	0.8	1.7	4.3	0.03	0.08	0.0	NA
2	0.593	NA	NA	0.6	1.0	0.8	1.7	4.3	0.03	0.08	0.0	NA
North: Theodore St SB												
1	0.174	NA	NA	0.0	0.0	0.0	0.0	0.0	0.00	0.00	0.0	NA
2	0.174	NA	NA	0.0	0.0	0.0	0.0	0.0	0.00	0.00	0.0	NA
West: Ramp EB												
1	0.270	NA	NA	0.0	0.4	0.0	0.4	1.1	0.01	0.02	0.0	NA
2	0.602	NA	NA	0.6	0.8	0.8	1.6	4.0	0.03	0.09	0.0	NA

SIDRA Standard models are used for Back of Queue estimation since HCM only gives Cycle-Average Queues for unsignalised intersections.

BACK OF QUEUE (DISTANCE)

Lane No.	Deg. Satn x	% Arv During Green	Prog. Factor	Ovrfl. Queue No	Back of Queue (ft)				Queue Stor. Ratio		Prob. Block %	Prob. SL Ov. %
					Nb1	Nb2	Nb	95%	Av.	95%		
South: Theodore St NB												
1	0.593	NA	NA	18.4	30.6	23.9	54.5	135.4	0.03	0.08	0.0	NA
2	0.593	NA	NA	18.4	30.6	23.9	54.5	135.4	0.03	0.08	0.0	NA

North: Theodore St SB												
1	0.174	NA	NA	0.0	0.0	0.0	0.0	0.0	0.00	0.00	0.0	NA
2	0.174	NA	NA	0.0	0.0	0.0	0.0	0.0	0.00	0.00	0.0	NA

West: Ramp EB												
1	0.270	NA	NA	0.0	11.2	0.0	11.2	27.8	0.01	0.02	0.0	NA
2	0.602	NA	NA	21.7	28.1	27.7	55.7	138.5	0.03	0.09	0.0	NA

SIDRA Standard models are used for Back of Queue estimation since HCM only gives Cycle-Average Queues for unsignalised intersections.

OTHER QUEUE RESULTS (VEHICLES)

Lane No.	Deg. Satn	% Arv During Green	Prog. Factor	Ovrfl. Queue No	Cyc-Av. Queue	
	x			No	Nc	95%
South: Theodore St NB						
1	0.593	NA	NA	0.6	1.8	3.3
2	0.593	NA	NA	0.6	1.8	3.3
North: Theodore St SB						
1	0.174	NA	NA	0.0	0.3	0.5
2	0.174	NA	NA	0.0	0.3	0.5
West: Ramp EB						
1	0.270	NA	NA	0.0	0.5	0.8
2	0.602	NA	NA	0.6	1.8	3.3

HCM Delay Formula option used:
 Cycle-Average Queue is calculated using average delay from the HCM equation.
 (i.e. HCM delays are treated as stop-line delays for this purpose).

OTHER QUEUE RESULTS (DISTANCE)

Lane No.	Deg. Satn	% Arv During Green	Prog. Factor	Ovrfl. Queue No	Cyc-Av. Queue	
	x			No	Nc	95%
South: Theodore St NB						
1	0.593	NA	NA	18.4	56.7	102.9
2	0.593	NA	NA	18.4	56.7	102.9
North: Theodore St SB						
1	0.174	NA	NA	0.0	6.9	12.6
2	0.174	NA	NA	0.0	6.8	12.3
West: Ramp EB						
1	0.270	NA	NA	0.0	12.0	21.9
2	0.602	NA	NA	21.7	64.1	116.2

HCM Delay Formula option used:
 Cycle-Average Queue is calculated using average delay from the HCM equation.
 (i.e. HCM delays are treated as stop-line delays for this purpose).

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Lane Queue Percentiles
 Site: Roundabout2 (Theodore St & EB Ramps) - 2045AM - HCM6

Site ID: 1
Roundabout

LANE QUEUE PERCENTILES (VEHICLES)

Lane No.	Deg. Satn x	Percentile Back of Queue (veh)						
		50%	70%	85%	90%	95%	98%	100%
South: Theodore St NB								
1	0.593	1.7	2.2	3.1	3.6	4.3	4.8	5.1
2	0.593	1.7	2.2	3.1	3.6	4.3	4.8	5.1
North: Theodore St SB								
1	0.174	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	0.174	0.0	0.0	0.0	0.0	0.0	0.0	0.0
West: Ramp EB								
1	0.270	0.4	0.6	0.8	0.9	1.1	1.2	1.3
2	0.602	1.6	2.1	2.9	3.4	4.0	4.4	4.7

SIDRA Standard models are used for Back of Queue estimation since HCM only gives Cycle-Average Queues for unsignalised intersections.

LANE QUEUE PERCENTILES (DISTANCE)

Lane No.	Deg. Satn x	Percentile Back of Queue (feet)						
		50%	70%	85%	90%	95%	98%	100%
South: Theodore St NB								
1	0.593	54.5	70.5	99.4	115.1	135.4	150.3	161.6
2	0.593	54.5	70.5	99.4	115.1	135.4	150.3	161.6
North: Theodore St SB								
1	0.174	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	0.174	0.0	0.0	0.0	0.0	0.0	0.0	0.0
West: Ramp EB								
1	0.270	11.2	14.5	20.4	23.6	27.8	30.8	33.1
2	0.602	55.7	72.1	101.7	117.8	138.5	153.7	165.2

SIDRA Standard models are used for Back of Queue estimation since HCM only gives Cycle-Average Queues for unsignalised intersections.

[Go to Table Links \(Top\)](#)

Lane Stops
Site: Roundabout2 (Theodore St & EB Ramps) - 2045AM - HCM6

Site ID: 1
Roundabout

Lane	Deg. Satn	% Arv During	Prog. Factor	-- Effective Stop Rate -- Geom. Overall	Total Stops	Queue Move-up Rate	Total Queue Move-ups	Prop. Queued	Aver. Num. of Cycles to
------	-----------	--------------	--------------	--	-------------	--------------------	----------------------	--------------	-------------------------

No.	x	Green		he1	he2	hig	h	H	hqm	Hqm	pq	Depart

South: Theodore St NB												
1	0.593	NA	NA	0.54	0.20	0.00	0.74	333.5	0.44	196.5	0.59	1.03
2	0.593	NA	NA	0.54	0.20	0.00	0.74	333.5	0.44	196.5	0.59	1.03
3	0.187	NA	NA			0.00	0.00	0.0				

North: Theodore St SB												
1	0.174	NA	NA	0.00	0.00	0.00	0.00	0.0	0.00	0.0	0.00	0.00
2	0.174	NA	NA	0.00	0.00	0.00	0.00	0.0	0.00	0.0	0.00	0.00

West: Ramp EB												
1	0.270	NA	NA	0.48	0.00	0.00	0.48	114.5	0.00	0.0	0.52	0.52
2	0.602	NA	NA	0.48	0.24	0.00	0.72	302.1	0.49	207.9	0.53	1.03

hig is the average value for all movements in a shared lane												
hqm is average queue move-up rate for all vehicles queued and unqueued												

[Go to Table Links \(Top\)](#)

Flow Rates

Origin-Destination Flow Rates (Total)

Site: Roundabout2 (Theodore St & EB Ramps) - 2045AM - HCM6

Site ID: 1
Roundabout

TOTAL FLOW RATES for All Movement Classes (veh/h)

From SOUTH To:	N	E	
Turn:	T1	R2	TOT
Flow Rate	897.7	261.4	1159.1
%HV (all designations)	33.0	20.0	30.1

From NORTH To:	E	S	
Turn:	L2	T1	TOT
Flow Rate	110.0	360.0	470.0
%HV (all designations)	12.0	0.0	2.8

From WEST To:	N	S	
Turn:	L2	R2	TOT
Flow Rate	240.0	420.0	660.0
%HV (all designations)	6.0	50.0	34.0

Flow rates shown above are Arrival Flow Rates (veh/h) based on the following input specifications:
Unit Time for Volumes = 60 minutes
Peak Flow Period = 15 minutes
Effects of Volume Factors (Peak Flow Factor, Flow Scale, Growth Rate) are included.
Arrival Flow Rates may be less than Demand Flow Rates if capacity constraint applies in network analysis.

[Go to Table Links \(Top\)](#)

Origin-Destination Flow Rates by Movement Class

Site: Roundabout2 (Theodore St & EB Ramps) - 2045AM - HCM6

Site ID: 1
 Roundabout

FLOW RATES for Light Vehicles (veh/h)

From SOUTH To:	N	E	
Turn:	T1	R2	TOT

Flow Rate	601.5	209.1	810.6
Mov Class %	67.0	80.0	69.9
Flow Scale	1.00	1.00	-
Peak Flow Factor	0.88	0.88	-
Residual Demand	0.0	0.0	0.0

From NORTH To:	E	S	
Turn:	L2	T1	TOT

Flow Rate	96.8	360.0	456.8
Mov Class %	88.0	100.0	97.2
Flow Scale	1.00	1.00	-
Peak Flow Factor	1.00	1.00	-
Residual Demand	0.0	0.0	0.0

From WEST To:	N	S	
Turn:	L2	R2	TOT

Flow Rate	225.6	210.0	435.6
Mov Class %	94.0	50.0	66.0
Flow Scale	1.00	1.00	-
Peak Flow Factor	1.00	1.00	-
Residual Demand	0.0	0.0	0.0

FLOW RATES for Heavy Vehicles (veh/h)

From SOUTH To:	N	E	
Turn:	T1	R2	TOT

Flow Rate	296.2	52.3	348.5
Mov Class %	33.0	20.0	30.1
Flow Scale	1.00	1.00	-
Peak Flow Factor	0.88	0.88	-
Residual Demand	0.0	0.0	0.0

From NORTH To:	E	S	
Turn:	L2	T1	TOT

Flow Rate	13.2	0.0	13.2
Mov Class %	12.0	0.0	2.8
Flow Scale	1.00	1.00	-
Peak Flow Factor	1.00	1.00	-
Residual Demand	0.0	0.0	0.0

From WEST To:	N	S	
Turn:	L2	R2	TOT

Flow Rate	14.4	210.0	224.4
Mov Class %	6.0	50.0	34.0
Flow Scale	1.00	1.00	-
Peak Flow Factor	1.00	1.00	-
Residual Demand	0.0	0.0	0.0

Flow rates shown above are Arrival Flow Rates (veh/h) based on the following input specifications:
 Unit Time for Volumes = 60 minutes
 Peak Flow Period = 15 minutes

Effects of Volume Factors (Peak Flow Factor, Flow Scale, Growth Rate) are included.
 Arrival Flow Rates may be less than Demand Flow Rates if capacity constraint applies in
 network analysis.

[Go to Table Links \(Top\)](#)

Lane Flow Rates
Site: Roundabout2 (Theodore St & EB Ramps) - 2045AM - HCM6

Site ID: 1
 Roundabout

LANE FLOW RATES AT STOP LINE (veh/h)

From SOUTH To:	N	E	TOT
Turn:	T1	R2	

Lane 1			
LV	300.7	*	300.7
HV	148.1	*	148.1
Total	448.9	*	448.9
Lane 2			
LV	300.7	*	300.7
HV	148.1	*	148.1
Total	448.9	*	448.9
Lane 3			
LV	*	209.1	209.1
HV	*	52.3	52.3
Total	*	261.4	261.4

Approach	897.7	261.4	1159.1

From NORTH To:	E	S	TOT
Turn:	L2	T1	

Lane 1			
LV	96.8	112.5	209.3
HV	13.2	*	13.2
Total	110.0	112.5	222.5
Lane 2			
LV	*	247.5	247.5
Total	*	247.5	247.5

Approach	110.0	360.0	470.0

From WEST To:	N	S	TOT
Turn:	L2	R2	

Lane 1			
LV	225.6	*	225.6
HV	14.4	*	14.4
Total	240.0	*	240.0
Lane 2			
LV	*	210.0	210.0
HV	*	210.0	210.0
Total	*	420.0	420.0

Approach	240.0	420.0	660.0

* Movement not allocated to the lane

EXIT LANE FLOW RATES

Movement Class:	LV	HV	TOT
Exit: SOUTH			
Lane: 1	112.5	*	112.5
Lane: 2	457.5	210.0	667.5
Total	570.0	210.0	780.0

Exit: EAST			
Lane: 1	96.8	13.2	110.0
Lane: 2	209.1	52.3	261.4
Total	305.9	65.5	371.4

Exit: NORTH			
Lane: 1	526.3	162.5	688.9
Lane: 2	300.7	148.1	448.9
Total	827.1	310.6	1137.7

* Movement not allocated to the lane

DOWNSTREAM LANE FLOW RATES FOR EXIT ROADS

Movement Class:	LV	HV	TOT
Exit: SOUTH			
Lane: 1	112.5	*	112.5
Lane: 2	457.5	210.0	667.5
Total	570.0	210.0	780.0

Exit: EAST			
Lane: 1	96.8	13.2	110.0
Lane: 2	209.1	52.3	261.4
Total	305.9	65.5	371.4

Exit: NORTH			
Lane: 1	526.3	162.5	688.9
Lane: 2	300.7	148.1	448.9
Total	827.1	310.6	1137.7

* Movement not allocated to the lane

Flow rates shown above are Arrival Flow Rates (veh/h) based on the following input specifications:
 Unit Time for Volumes = 60 minutes
 Peak Flow Period = 15 minutes
 Effects of Volume Factors (Peak Flow Factor, Flow Scale, Growth Rate) are included.
 Arrival Flow Rates may be less than Demand Flow Rates if capacity constraint applies in network analysis.

[Go to Table Links \(Top\)](#)

Other

Parameter Settings Summary

Site: Roundabout2 (Theodore St & EB Ramps) - 2045AM - HCM6

Site ID: 1
 Roundabout

* Basic Parameters:

Intersection Type: Roundabout
US HCM 6 Roundabout Capacity Model used
Driving on the right-hand side of the road
Input data specified in US units
Model Defaults: US HCM (Customary)
Peak Flow Period (for performance): 15 minutes
Unit time (for volumes): 60 minutes.
HCM Delay Model option used
HCM Queue Model option used
Level of Service based on: Delay and v/c (HCM 6)
Queue percentile: 95%

[Go to Table Links \(Top\)](#)

Diagnostics

Site: Roundabout2 (Theodore St & EB Ramps) - 2045AM - HCM6

Site ID: 1
Roundabout

Lane Flow-Capacity Iterations:

Site Model Variability Index (Iterations 3 to N): 0.1%
Number of Iterations: 3 (Maximum: 10)

Other Diagnostic Messages (if any):

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LANE LEVEL OF SERVICE

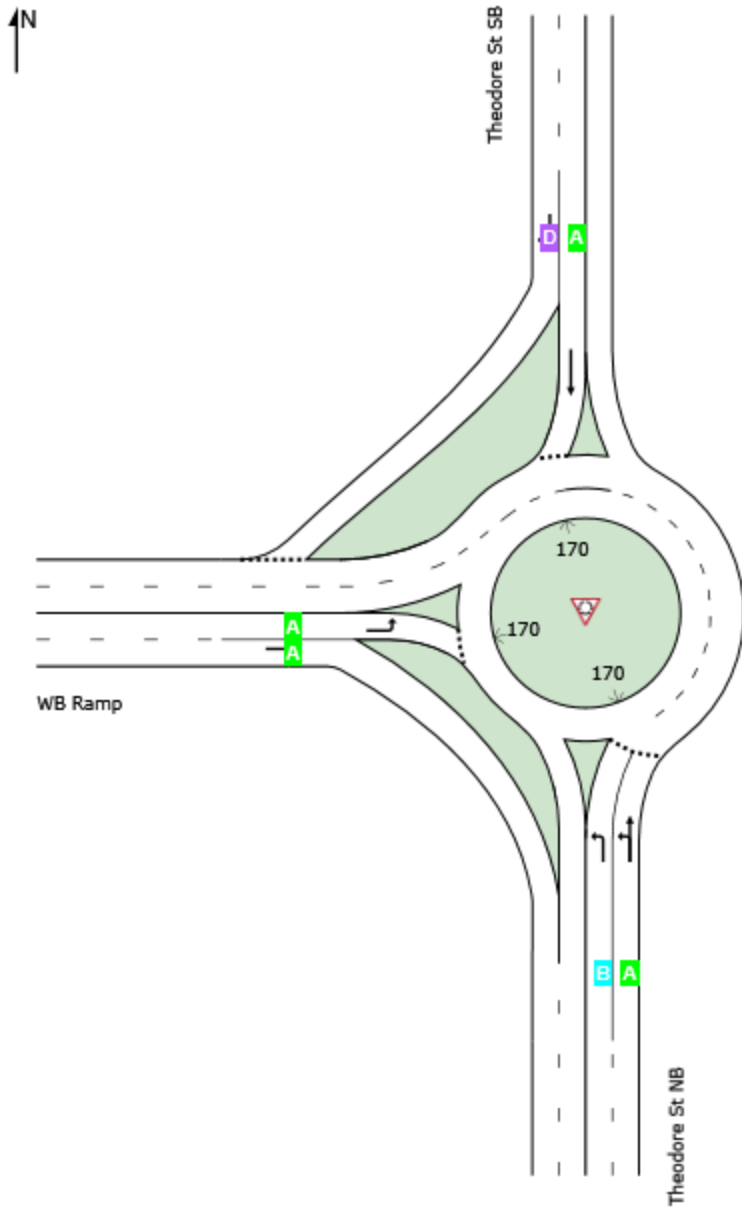
Lane Level of Service



Site: 1 [Roundabout3 (Theodore St & WB Ramps) - 2045AM - HCM6]

Site Category: (None)
Roundabout

	Approaches			Intersection
	South	North	West	
LOS	B	D	A	B



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: Same as Sign Control.

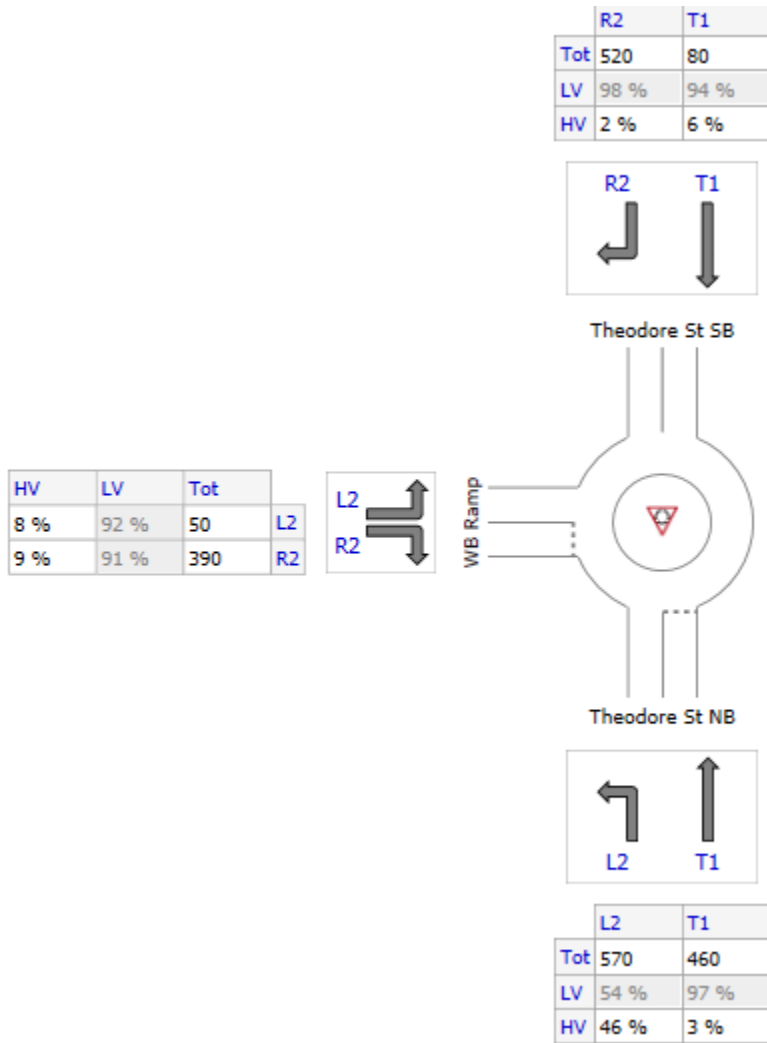
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

LOS F will result if $v/c > 1$ irrespective of lane delay value (does not apply for approaches and intersection).


Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

VOLUMES








DETAILED OUTPUT

 Site: 1 [Roundabout3 (Theodore St & WB Ramps) - 2045AM - HCM6]

Site Category: (None)
Roundabout

OUTPUT TABLE LINKS

-  Roundabouts
 - Roundabout Basic Parameters
 - Roundabout Circulating / Exiting Stream Parameters
 - Roundabout Gap Acceptance Parameters
 - Roundabout Flow Rates
-  Movements
 - Intersection Negotiation and Travel Data
 - Movement Capacity and Performance Parameters
 - Fuel Consumption, Emissions and Cost
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 - Lane Performance and Capacity Information
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Roundabouts

Roundabout Basic Parameters Site: Roundabout3 (Theodore St & WB Ramps) - 2045AM - HCM6

Site ID: 1
Roundabout

Central Island Diam	Circ Width	Insc Diam.	Entry Radius	Entry Angle	Circ Lanes	Entry Lanes	Av.Entry Lane Width	App Dist	Prop Upstr	Queued Signal	Extra Bunching
ft	ft	ft	ft	deg			ft	ft			%
South: Theodore St NB	170.0*	15.0*	215.0*	65.0*	30.0*	1	2	13.00*	1600	NA	0.0U

North: Theodore St SB											
170.0*	30.0*	215.0*	65.0*	30.0*	2	2	13.00*	1600		NA	0.0U

West: WB Ramp											
170.0*	15.0*	200.0*	65.0*	30.0*	1	2	13.00*	1600		NA	0.0U

Roundabout Capacity Model: US HCM 6

* These parameters do not affect estimated capacity values in the HCM 6 Capacity Model.

NA Not Applicable (single Site analysis or unconnected Site in Network analysis).

U User-specified Extra Bunching

[Go to Table Links \(Top\)](#)

Roundabout Circulating / Exiting Stream Parameters Site: Roundabout3 (Theodore St & WB Ramps) - 2045AM - HCM6

Site ID: 1
Roundabout

Dest	Turn	Lane No.	Lane Type	Opng Flow veh/h	HVE pcu/veh	Adj. Flow pcu/h	%Near Lane Only	%Exit Flow Incl.	Cap. Const. Effect	O-D Factor	Aver Speed mph	In-Bunch Headway sec	Prop. Bunched

South: Theodore St NB													
W	L2	1	Subdominant	50	1.08	54	0.0	0.0	N	-	18.7	0.00	0.000
W	L2	2	Dominant	50	1.08	54	0.0	0.0	N	-	18.7	0.00	0.000
N	T1	2	Dominant	50	1.08	54	0.0	0.0	N	-	18.7	0.00	0.000

North: Theodore St SB													
S	T1	1	Dominant	648	1.46	946	0.0	0.0	N	-	18.7	0.00	0.000
W	R2	2	Excl. Slip	648	1.46	946	0.0	0.0	N	-	18.7	0.00	0.000

West: WB Ramp													
N	L2	1	Dominant	80	1.06	85	0.0	0.0	N	-	30.0	0.00	0.000
S	R2	2	Continuous										

Roundabout Capacity Model: US HCM 6													

[Go to Table Links \(Top\)](#)

Roundabout Gap Acceptance Parameters Site: Roundabout3 (Theodore St & WB Ramps) - 2045AM - HCM6

Site ID: 1
Roundabout

Dest	Turn	Lane No.	Lane Type	In-Bunch Headway sec	Prop. Bunched	Priority Sharing	HVE for Entry	Critical Gap		Follow-up Headway sec
				Headway sec	Bunched		Entry	Headway sec	Dist ft	Headway sec

South: Theodore St NB										
Model Calibration Factor (HCM 6): 1.00										
Entry/Circ. Flow Adjustment (HCM 6): None										
W	L2	1	Subdominant	0.00	0.000	N	1.46	4.54	124.9	2.54
W	L2	2	Dominant	0.00	0.000	N	1.46	4.54	124.9	2.54
N	T1	2	Dominant	0.00	0.000	N	1.03	4.54	124.9	2.54

 North: Theodore St SB
 Model Calibration Factor (HCM 6): 1.00
 Entry/Circ. Flow Adjustment (HCM 6): None

S	T1	1	Dominant	0.00	0.000	N	1.06	4.33	118.6	2.54
W	R2	2	Excl. Slip	0.00	0.000	N	1.02	4.33	118.6	2.54

West: WB Ramp
 Model Calibration Factor (HCM 6): 1.00
 Entry/Circ. Flow Adjustment (HCM 6): None

N	L2	1	Dominant	0.00	0.000	N	1.08	4.54	199.8	2.54
S	R2	2	Continuous							

Roundabout Capacity Model: US HCM 6

Dist (Distance): Spacing, i.e. distance between the front ends of two successive vehicles across all lanes in the circulating or exiting stream

[Go to Table Links \(Top\)](#)

Roundabout Flow Rates

Site: Roundabout3 (Theodore St & WB Ramps) - 2045AM - HCM6

Site ID: 1
 Roundabout

CIRCULATING LANE FLOW RATES

Lane No.	Circulating Flow Rate		
	veh/h	pcu/h	Percent

South: Theodore St NB			
1	50	54	100.0%
Total	50	54	

North: Theodore St SB			
1	503	735	77.7%
2	145	211	22.3%
Total	648	946	

West: WB Ramp			
1	80	85	100.0%
Total	80	85	

The US HCM 6 roundabout capacity model option is in use. This model considers only the total circulating flow and not the flow rates in individual circulating lanes. To model the effects of flow distribution in circulating lanes on the entry capacity results, you should use the SIDRA Standard roundabout capacity model.

APPROACH LANE FLOW RATES

Lane No.	Approach Flows (veh/h)		
	Out	To Downst	Total

South: Theodore St NB			
1	0	506	506
2	523	141	664
Total	523	647	1170

North: Theodore St SB			
1	0	80	80
2	520	0	520
Total	520	80	600

West: WB Ramp			
1	0	50	50
2	390	0	390
Total	390	50	440

[Go to Table Links \(Top\)](#)

Movements

Intersection Negotiation and Travel Data

Site: Roundabout3 (Theodore St & WB Ramps) - 2045AM - HCM6

Site ID: 1
Roundabout

TRAVEL SPEED, TRAVEL DISTANCE AND TRAVEL TIME

From Approach	To Exit	Turn	Running Speed mph	Travel Speed mph	Travel Distance ft	Travel Time s	Total Dem Flows veh-mi/h	Arv Flows veh-mi/h	Tot.Trav. Time veh-h/h
South: Theodore St NB									
	West	L2	35.1	30.9	3541.4#	78.2#	434.4	434.4	14.1
	North	T1	38.5	34.3	3442.4#	68.4#	340.8	340.8	9.9
North: Theodore St SB									
	South	T1	37.3	35.5	3402.3#	65.4#	51.6	51.6	1.5
	West	R2	31.0	24.5	3282.9#	91.2#	323.3	323.3	13.2
West: WB Ramp									
	North	L2	35.7	34.5	3572.1#	70.6#	33.8	33.8	1.0
	South	R2	38.1	38.1	3276.9#	58.6#	242.0	242.0	6.4
ALL VEHICLES:			35.6	31.0	3406.2#	74.8#	1426.0	1426.0	46.0

"Running Speed" is the average speed excluding stopped periods.

Travel Time values include cruise times and intersection delays including acceleration, deceleration and idling delays.

Travel Distance and Travel Time values include travel on the External Exit section based on the Exit Distance or user-specified Downstream Distance value as applicable.

INTERSECTION NEGOTIATION DATA

From Approach	To Exit	Turn	Negn Radius ft	Negn Speed mph	Negn Dist ft	App Dist ft	Exit Dist ft	Downstr Dist ft
South: Theodore St NB								
	West	L2	94.0	18.7	369.1	1600	488	NA
	North	T1	328.1	30.0	223.3	1600	488	NA

North: Theodore St SB								
	South	T1	328.1	30.0	202.3	1600	488	NA
	West	R2	198.0	24.8	82.9	1600	488	NA
West: WB Ramp								
	North	L2	94.8	18.7	372.1	1600	488	NA
	South	R2	222.3	25.9	76.9	1600	488	NA

Maximum Negotiation (Design) Speed = 30.0 mph

NA Downstream Distance does not apply if:

- Exit is an internal leg of a network
- "Program" option was specified
- Distance specified was less than the Exit Negotiation Distance
- Distance specified was greater than the exit leg length

MOVEMENT SPEEDS AND GEOMETRIC DELAY

Mov ID	Turn	App. Speeds		Exit Speeds		Queue Move-up Speed	Geom Delay
		Cruise mph	Negn mph	Negn mph	Cruise mph		
South: Theodore St NB							
3	L2	40.0	18.7	18.7	40.0	33.2	0.0
8	T1	40.0	30.0	30.0	40.0	44.4	0.0
North: Theodore St SB							
4	T1	40.0	30.0	30.0	40.0	15.5	0.0
14	R2	40.0	24.8	24.8	40.0	15.3	0.0
West: WB Ramp							
5	L2	40.0	18.7	18.7	40.0	30.2	0.0
12	R2	40.0	25.9	25.9	40.0	41.7	0.0

HCM Delay Formula option used: Geometric Delay is not included in Control Delay.

[Go to Table Links \(Top\)](#)

Movement Capacity and Performance Parameters
 Site: Roundabout3 (Theodore St & WB Ramps) - 2045AM - HCM6

Site ID: 1
 Roundabout

MOVEMENT CAPACITY PARAMETERS

Mov ID	Turn	Mov Cl.	Arv Flow	Opng Flow	Movement Adjust. Flow	Total Cap.	Prac. Deg. xp	Prac. Spare Cap. %	Deg. Satn x
South: Theodore St NB									
3	L2	#	648	50	54	1185	0.85	56	0.546
8	T1	#	523	50	54	957	0.85	56	0.546
North: Theodore St SB									
4	T1	#	80	648	946	600	0.85	537	0.133
14	R2	#	520	648	946	623	0.85	2	0.834*

West: WB Ramp										
5	L2	#	50	80	85	1217	0.85	1969	0.041	
12	R2	#	390	80	85	1536	0.98	286	0.254	

* Maximum degree of saturation
Combined Movement Capacity parameters are shown for all Movement Classes.

MOVEMENT PERFORMANCE

Mov ID	Turn	Total Delay (veh-h/h)	Total Delay (pers-h/h)	Aver. Delay (sec)	Eff. Stop Rate	Total Stops	Perf. Index	Tot.Trav. Distance (veh-mi/h)	Tot.Trav. Time (veh-h/h)	Aver. Speed (mph)
South: Theodore St NB										
3	L2	1.97	2.37	11.0	0.10	63.8	15.21	434.4	14.1	30.9
8	T1	1.30	1.56	9.0	0.11	59.6	13.00	340.8	9.9	34.3
North: Theodore St SB										
4	T1	0.17	0.20	7.6	0.60	48.2	2.08	51.6	1.5	35.5
14	R2	4.67	5.61	32.3	1.37	709.8	24.26	323.3	13.2	24.5
West: WB Ramp										
5	L2	0.05	0.05	3.3	0.08	3.8	1.03	33.8	1.0	34.5
12	R2	0.00	0.00	0.0	0.00	0.0	6.05	242.0	6.4	38.1

[Go to Table Links \(Top\)](#)

Fuel Consumption, Emissions and Cost
Site: Roundabout3 (Theodore St & WB Ramps) - 2045AM - HCM6

Site ID: 1
Roundabout

FUEL CONSUMPTION, EMISSIONS AND COST (TOTAL)

Mov ID	Turn	Cost Total (\$/h)	Fuel Total (gal/h)	CO2 Total (kg/h)	CO Total (kg/h)	HC Total (kg/h)	NOX Total (kg/h)
South: Theodore St NB							
3	L2	409.43	48.1	455.3	0.71	0.058	2.843
8	T1	188.78	17.3	156.0	0.56	0.038	0.596
		598.21	65.4	611.3	1.27	0.096	3.439
North: Theodore St SB							
4	T1	23.88	2.2	20.2	0.08	0.006	0.057
14	R2	204.44	14.5	129.2	0.61	0.050	0.210
		228.31	16.7	149.4	0.69	0.056	0.266
West: WB Ramp							
5	L2	19.16	1.7	15.5	0.06	0.004	0.051
12	R2	105.07	11.1	100.7	0.38	0.024	0.342
		124.22	12.8	116.2	0.44	0.028	0.393
INTERSECTION:		950.75	94.9	876.8	2.40	0.180	4.098

FUEL CONSUMPTION, EMISSIONS AND COST (RATE)

Mov ID	Turn	Cost Rate \$/mi	Fuel Eff. mpg	CO2 Rate g/km	CO Rate g/km	HC Rate g/km	NOX Rate g/km
South: Theodore St NB							
3	L2	0.59	9.0	651.1	1.02	0.083	4.066
8	T1	0.34	19.7	284.4	1.02	0.070	1.087
		0.48	11.9	489.9	1.02	0.077	2.756
North: Theodore St SB							
4	T1	0.29	23.1	243.0	1.01	0.069	0.682
14	R2	0.39	22.4	248.3	1.17	0.096	0.403
		0.38	22.5	247.6	1.15	0.092	0.442
West: WB Ramp							
5	L2	0.35	19.7	285.5	1.07	0.077	0.929
12	R2	0.27	21.8	258.5	0.97	0.062	0.879
		0.28	21.5	261.8	0.98	0.064	0.885
INTERSECTION:		0.41	15.0	382.1	1.05	0.078	1.786

[Go to Table Links \(Top\)](#)

Lanes

Lane Performance and Capacity Information

Site: Roundabout3 (Theodore St & WB Ramps) - 2045AM - HCM6

Site ID: 1
Roundabout

LANE PERFORMANCE

Lane No.	Flow veh/h	Cap veh/h	Deg. Satn x	Aver. Delay sec	Eff. Stop Rate	Q u e u e		Lane Length ft
						95% Back veh	ft	
South: Theodore St NB								
1	506	926	0.546	11.2	0.09	2.2	76.2	1600.0
2	664	1216	0.546	9.2	0.11	3.5	97.1	1600.0
North: Theodore St SB								
1	80	600	0.133	7.6	0.60	0.4	11.5	1600.0
2	520	623	0.834	32.3	1.37	9.4	238.6	1600.0
West: WB Ramp								
1	50	1217	0.041	3.3	0.08	0.2	4.0	1600.0
2	390	1536	0.254	0.0	0.00			1600.0

LANE FLOW AND CAPACITY INFORMATION

Lane No.	Total Arv Flow veh/h	Min Cap veh/h	Tot Cap veh/h	Deg. Satn x	Lane Util %

South: Theodore St NB					
1	506	150	926	0.546	100
2	664	150	1216	0.546	100

North: Theodore St SB					
1	80	80	600	0.133	100
2	520	150	623	0.834	100

West: WB Ramp					
1	50	50	1217	0.041	100
2	390	390	1536	0.254	100

The capacity values of Continuous Lanes are obtained by adjusting the basic saturation flow for lane width, grade, movement class and turning vehicle effects. Saturation flow scale applies if specified.

[Go to Table Links \(Top\)](#)

Lane, Approach and Intersection Performance Site: Roundabout3 (Theodore St & WB Ramps) - 2045AM - HCM6

Site ID: 1
Roundabout

Lane No.	Arrival Flow (veh/h)	%HV	Adj. Basic Satf.	Deg Sat x	Aver. Delay sec	Longest Queue ft	Lane Length ft

South: Theodore St NB							
1	506	46		0.546	11.2	76	1600
2	664	12		0.546	9.2	97	1600

	1170	27		0.546	10.1	97	

North: Theodore St SB							
1	80	6		0.133	7.6	12	1600
2	520	2		0.834	32.3	239	1600

	600	3		0.834	29.0	239	

West: WB Ramp							
1	50	8		0.041	3.3	4	1600
2	390	9	1975	0.254	0.0		1600

	440	9		0.254	0.4	4	
=====							
ALL VEHICLES							
	Total Flow	% HV		Max X	Aver. Delay	Max Queue	
	2210	17		0.834	13.3	239	
=====							

Peak flow period = 15 minutes.

Queue values in this table are 95% queue (feet)
Note: Basic Saturation Flows at roundabouts or sign-controlled intersections apply only to continuous lanes.

[Go to Table Links \(Top\)](#)

Driver Characteristics
 Site: Roundabout3 (Theodore St & WB Ramps) - 2045AM - HCM6

Site ID: 1
 Roundabout

Lane No.	Satn Speed mph	Satn Flow veh/h	Satn Hdwy sec	Satn Spacing ft	Average Queue Space ft	Driver Response Time sec

South: Theodore St NB						
1	18.7	1420	2.54	69.50	34.20	1.29
2	27.6	1420	2.54	102.53	27.43	1.86

North: Theodore St SB						
1	30.0	1420	2.54	111.48	26.20	1.94
2	24.8	1420	2.54	92.14	25.40	1.84

West: WB Ramp						
1	18.7	1420	2.54	69.71	26.60	1.57
2	NA - Continuous Movement					

Saturation Flow and Saturation Headway are derived from follow-up headway.

[Go to Table Links \(Top\)](#)

Lane Delays
 Site: Roundabout3 (Theodore St & WB Ramps) - 2045AM - HCM6

Site ID: 1
 Roundabout

LANE DELAYS

Lane No.	Deg. Satn x	% Arv During Green	Prog. Factor	Delay (seconds/veh)									
				Min Del dm	Stop-line d1	Delay d2	Total dSL	Acc. Dec. dn	Queuing Total dq	MvUp dqm	Stopd (Idle) di	Geom dig	Control dic

South: Theodore St NB													
1	0.546	NA	NA	3.9	6.6	4.6	11.2	5.5	10.0	0.0	10.0	0.0	11.2
2	0.546	NA	NA	3.0	5.7	3.5	9.2	6.8	7.4	0.0	7.4	0.0	9.2

North: Theodore St SB													
1	0.133	NA	NA	6.0	6.7	0.9	7.6	7.2	3.3	0.0	3.3	0.0	7.6
2	0.834	NA	NA	5.8	9.9	22.4	32.3	5.1	27.8	8.7	19.1	0.0	32.3

West: WB Ramp													
1	0.041	NA	NA	3.0	3.2	0.1	3.3	5.5	2.3	0.0	2.3	0.0	3.3
2	0.254					0.0					0.0	0.0	

HCM Delay Formula option used (Exclude Geometric Delay option applies). Control

Delay does not include Geometric Delay, and Stop-line Delay is treated as being same as Control Delay.

dm: Minimum delay for gap acceptance cases

dSL: Stop-line delay (=dl+d2)

dn: Average stop-start delay for all vehicles queued and unqueued

dq: Queuing delay (the part of the stop-line delay that includes stopped delay and queue move-up delay)

dqm: Queue move-up delay

di: Stopped delay (stopped (idling) time at near-zero speed)

dig: Geometric delay

dic: Control delay

[Go to Table Links \(Top\)](#)

Lane Queues

Site: Roundabout3 (Theodore St & WB Ramps) - 2045AM - HCM6

Site ID: 1
Roundabout

BACK OF QUEUE (VEHICLES)

Lane No.	Deg. Satn x	% Arv During Green	Prog. Factor	Ovrfl. Queue No	Back of Queue (veh)				Queue Stor. Ratio		Prob. Block %	Prob. SL Ov. %
					Nb1	Nb2	Nb	95%	Av.	95%		
South: Theodore St NB												
1	0.546	NA	NA	0.0	0.9	0.0	0.9	2.2	0.02	0.05	0.0	NA
2	0.546	NA	NA	0.0	1.4	0.0	1.4	3.5	0.02	0.06	0.0	NA
North: Theodore St SB												
1	0.133	NA	NA	0.0	0.2	0.0	0.2	0.4	0.00	0.01	0.0	NA
2	0.834	NA	NA	1.9	1.7	2.1	3.8	9.4	0.06	0.15	0.0	NA
West: WB Ramp												
1	0.041	NA	NA	0.0	0.1	0.0	0.1	0.2	0.00	0.00	0.0	NA

SIDRA Standard models are used for Back of Queue estimation since HCM only gives Cycle-Average Queues for unsignalised intersections.

BACK OF QUEUE (DISTANCE)

Lane No.	Deg. Satn x	% Arv During Green	Prog. Factor	Ovrfl. Queue No	Back of Queue (ft)				Queue Stor. Ratio		Prob. Block %	Prob. SL Ov. %
					Nb1	Nb2	Nb	95%	Av.	95%		
South: Theodore St NB												
1	0.546	NA	NA	0.0	30.7	0.0	30.7	76.2	0.02	0.05	0.0	NA
2	0.546	NA	NA	0.0	39.1	0.0	39.1	97.1	0.02	0.06	0.0	NA
North: Theodore St SB												
1	0.133	NA	NA	0.0	4.6	0.0	4.6	11.5	0.00	0.01	0.0	NA
2	0.834	NA	NA	48.3	43.5	52.5	96.0	238.6	0.06	0.15	0.0	NA
West: WB Ramp												
1	0.041	NA	NA	0.0	1.6	0.0	1.6	4.0	0.00	0.00	0.0	NA

SIDRA Standard models are used for Back of Queue estimation since HCM only gives Cycle-Average Queues for unsignalised intersections.

OTHER QUEUE RESULTS (VEHICLES)

Lane No.	Deg. Satn	% Arv During Green	Prog. Factor	Ovrfl. Queue No	Cyc-Av. Nc	Queue 95%
	x					
South: Theodore St NB						
1	0.546	NA	NA	0.0	1.6	2.9
2	0.546	NA	NA	0.0	1.7	3.1
North: Theodore St SB						
1	0.133	NA	NA	0.0	0.2	0.3
2	0.834	NA	NA	1.9	4.7	8.5
West: WB Ramp						
1	0.041	NA	NA	0.0	0.0	0.1

HCM Delay Formula option used:

Cycle-Average Queue is calculated using average delay from the HCM equation. (i.e. HCM delays are treated as stop-line delays for this purpose).

OTHER QUEUE RESULTS (DISTANCE)

Lane No.	Deg. Satn	% Arv During Green	Prog. Factor	Ovrfl. Queue No	Cyc-Av. Nc	Queue 95%
	x					
South: Theodore St NB						
1	0.546	NA	NA	0.0	53.8	97.7
2	0.546	NA	NA	0.0	46.7	84.7
North: Theodore St SB						
1	0.133	NA	NA	0.0	4.4	8.0
2	0.834	NA	NA	48.3	118.7	215.3
West: WB Ramp						
1	0.041	NA	NA	0.0	1.2	2.2

HCM Delay Formula option used:

Cycle-Average Queue is calculated using average delay from the HCM equation. (i.e. HCM delays are treated as stop-line delays for this purpose).

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Lane Queue Percentiles
Site: Roundabout3 (Theodore St & WB Ramps) - 2045AM - HCM6

Site ID: 1
Roundabout

LANE QUEUE PERCENTILES (VEHICLES)

Lane No.	Deg. Satn	Percentile Back of Queue (veh)						
	x	50%	70%	85%	90%	95%	98%	100%
South: Theodore St NB								

1	0.546	0.9	1.2	1.6	1.9	2.2	2.5	2.7
2	0.546	1.4	1.8	2.6	3.0	3.5	3.9	4.2

North: Theodore St SB

1	0.133	0.2	0.2	0.3	0.4	0.4	0.5	0.5
2	0.834	3.8	4.9	6.9	8.0	9.4	10.4	11.2

West: WB Ramp

1	0.041	0.1	0.1	0.1	0.1	0.2	0.2	0.2
---	-------	-----	-----	-----	-----	-----	-----	-----

SIDRA Standard models are used for Back of Queue estimation since HCM only gives Cycle-Average Queues for unsignalised intersections.

LANE QUEUE PERCENTILES (DISTANCE)

Deg.		Percentile Back of Queue (feet)						
Lane No.	Satn x	50%	70%	85%	90%	95%	98%	100%

South: Theodore St NB

1	0.546	30.6	39.7	56.0	64.8	76.2	84.6	90.9
2	0.546	39.1	50.6	71.3	82.6	97.1	107.8	115.9

North: Theodore St SB

1	0.133	4.6	6.0	8.5	9.8	11.5	12.8	13.7
2	0.834	96.0	124.3	175.2	202.9	238.6	264.8	284.7

West: WB Ramp

1	0.041	1.6	2.1	2.9	3.4	4.0	4.4	4.8
---	-------	-----	-----	-----	-----	-----	-----	-----

SIDRA Standard models are used for Back of Queue estimation since HCM only gives Cycle-Average Queues for unsignalised intersections.

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Lane Stops
Site: Roundabout3 (Theodore St & WB Ramps) - 2045AM - HCM6

Site ID: 1
Roundabout

Lane No.	Deg. Satn x	% Arv During Green	Prog. Factor	-- Effective Stop Rate --				Total Stops H	Queue Move-up Rate hqm	Total Queue Move-ups Hqm	Prop. Queued pq	Aver. Num. of Cycles to Depart
				he1	he2	Geom. hig	Overall h					

South: Theodore St NB												
1	0.546	NA	NA	0.09	0.00	0.00	0.09	47.6	0.00	0.0	0.22	0.22
2	0.546	NA	NA	0.11	0.00	0.00	0.11	75.7	0.00	0.0	0.26	0.26

North: Theodore St SB												
1	0.133	NA	NA	0.60	0.00	0.00	0.60	48.2	0.00	0.0	0.60	0.60
2	0.834	NA	NA	0.90	0.47	0.00	1.37	709.8	1.54	800.6	0.90	2.44

West: WB Ramp												
1	0.041	NA	NA	0.08	0.00	0.00	0.08	3.8	0.00	0.0	0.19	0.19
2	0.254	NA	NA			0.00	0.00	0.0				

hig is the average value for all movements in a shared lane
hqm is average queue move-up rate for all vehicles queued and unqueued

[Go to Table Links \(Top\)](#)

Flow Rates

Origin-Destination Flow Rates (Total)

Site: Roundabout3 (Theodore St & WB Ramps) - 2045AM - HCM6

Site ID: 1
Roundabout

TOTAL FLOW RATES for All Movement Classes (veh/h)

From SOUTH To:	W	N	
Turn:	L2	T1	TOT
Flow Rate	647.7	522.7	1170.5
%HV (all designations)	46.0	3.0	26.8

From NORTH To:	S	W	
Turn:	T1	R2	TOT
Flow Rate	80.0	520.0	600.0
%HV (all designations)	6.0	2.0	2.5

From WEST To:	N	S	
Turn:	L2	R2	TOT
Flow Rate	50.0	390.0	440.0
%HV (all designations)	8.0	9.0	8.9

Flow rates shown above are Arrival Flow Rates (veh/h) based on the following input specifications:
Unit Time for Volumes = 60 minutes
Peak Flow Period = 15 minutes
Effects of Volume Factors (Peak Flow Factor, Flow Scale, Growth Rate) are included.
Arrival Flow Rates may be less than Demand Flow Rates if capacity constraint applies in network analysis.

[Go to Table Links \(Top\)](#)

Origin-Destination Flow Rates by Movement Class

Site: Roundabout3 (Theodore St & WB Ramps) - 2045AM - HCM6

Site ID: 1
Roundabout

FLOW RATES for Light Vehicles (veh/h)

From SOUTH To:	W	N	
Turn:	L2	T1	TOT

Flow Rate	349.8	507.0	856.8
Mov Class %	54.0	97.0	73.2
Flow Scale	1.00	1.00	-
Peak Flow Factor	0.88	0.88	-
Residual Demand	0.0	0.0	0.0

From NORTH To:	S	W	
Turn:	T1	R2	TOT
Flow Rate	75.2	509.6	584.8
Mov Class %	94.0	98.0	97.5
Flow Scale	1.00	1.00	-
Peak Flow Factor	1.00	1.00	-
Residual Demand	0.0	0.0	0.0

From WEST To:	N	S	
Turn:	L2	R2	TOT
Flow Rate	46.0	354.9	400.9
Mov Class %	92.0	91.0	91.1
Flow Scale	1.00	1.00	-
Peak Flow Factor	1.00	1.00	-
Residual Demand	0.0	0.0	0.0

FLOW RATES for Heavy Vehicles (veh/h)

From SOUTH To:	W	N	
Turn:	L2	T1	TOT
Flow Rate	298.0	15.7	313.6
Mov Class %	46.0	3.0	26.8
Flow Scale	1.00	1.00	-
Peak Flow Factor	0.88	0.88	-
Residual Demand	0.0	0.0	0.0

From NORTH To:	S	W	
Turn:	T1	R2	TOT
Flow Rate	4.8	10.4	15.2
Mov Class %	6.0	2.0	2.5
Flow Scale	1.00	1.00	-
Peak Flow Factor	1.00	1.00	-
Residual Demand	0.0	0.0	0.0

From WEST To:	N	S	
Turn:	L2	R2	TOT
Flow Rate	4.0	35.1	39.1
Mov Class %	8.0	9.0	8.9
Flow Scale	1.00	1.00	-
Peak Flow Factor	1.00	1.00	-
Residual Demand	0.0	0.0	0.0

Flow rates shown above are Arrival Flow Rates (veh/h) based on the following input specifications:
Unit Time for Volumes = 60 minutes
Peak Flow Period = 15 minutes
Effects of Volume Factors (Peak Flow Factor, Flow Scale, Growth Rate) are included.
Arrival Flow Rates may be less than Demand Flow Rates if capacity constraint applies in network analysis.

[Go to Table Links \(Top\)](#)

Lane Flow Rates
Site: Roundabout3 (Theodore St & WB Ramps) - 2045AM - HCM6

Site ID: 1
Roundabout

LANE FLOW RATES AT STOP LINE (veh/h)

From SOUTH To:	W	N	
Turn:	L2	T1	TOT

Lane 1			
LV	273.2	*	273.2
HV	232.8	*	232.8
Total	506.0	*	506.0
Lane 2			
LV	76.5	507.0	583.6
HV	65.2	15.7	80.9
Total	141.7	522.7	664.5

Approach	647.7	522.7	1170.5

From NORTH To:	S	W	
Turn:	T1	R2	TOT

Lane 1			
LV	75.2	*	75.2
HV	4.8	*	4.8
Total	80.0	*	80.0
Lane 2			
LV	*	509.6	509.6
HV	*	10.4	10.4
Total	*	520.0	520.0

Approach	80.0	520.0	600.0

From WEST To:	N	S	
Turn:	L2	R2	TOT

Lane 1			
LV	46.0	*	46.0
HV	4.0	*	4.0
Total	50.0	*	50.0
Lane 2			
LV	*	354.9	354.9
HV	*	35.1	35.1
Total	*	390.0	390.0

Approach	50.0	390.0	440.0

* Movement not allocated to the lane

EXIT LANE FLOW RATES

Movement Class:	LV	HV	TOT

Exit: SOUTH			
Lane: 1	75.2	4.8	80.0
Lane: 2	354.9	35.1	390.0
Total	430.1	39.9	470.0

Exit: NORTH			
Lane: 1	553.0	19.7	572.7
Total	553.0	19.7	572.7

Exit: WEST			
Lane: 1	273.2	232.8	506.0
Lane: 2	586.1	75.6	661.7
Total	859.4	308.4	1167.7

* Movement not allocated to the lane

DOWNSTREAM LANE FLOW RATES FOR EXIT ROADS

Movement Class:	LV	HV	TOT

Exit: SOUTH			
Lane: 1	75.2	4.8	80.0
Lane: 2	354.9	35.1	390.0
Total	430.1	39.9	470.0

Exit: NORTH			
Lane: 1	553.0	19.7	572.7
Total	553.0	19.7	572.7

Exit: WEST			
Lane: 1	273.2	232.8	506.0
Lane: 2	586.1	75.6	661.7
Total	859.4	308.4	1167.7

* Movement not allocated to the lane

Flow rates shown above are Arrival Flow Rates (veh/h) based on the following input specifications:
 Unit Time for Volumes = 60 minutes
 Peak Flow Period = 15 minutes
 Effects of Volume Factors (Peak Flow Factor, Flow Scale, Growth Rate) are included.
 Arrival Flow Rates may be less than Demand Flow Rates if capacity constraint applies in network analysis.

[Go to Table Links \(Top\)](#)

Other

Parameter Settings Summary
 Site: Roundabout3 (Theodore St & WB Ramps) - 2045AM - HCM6

Site ID: 1
 Roundabout

* Basic Parameters:
 Intersection Type: Roundabout
 US HCM 6 Roundabout Capacity Model used
 Driving on the right-hand side of the road
 Input data specified in US units
 Model Defaults: US HCM (Customary)
 Peak Flow Period (for performance): 15 minutes
 Unit time (for volumes): 60 minutes.
 HCM Delay Model option used
 HCM Queue Model option used
 Level of Service based on: Delay and v/c (HCM 6)
 Queue percentile: 95%

[Go to Table Links \(Top\)](#)

Diagnostics
 Site: Roundabout3 (Theodore St & WB Ramps) - 2045AM - HCM6

Site ID: 1
Roundabout

Lane Flow-Capacity Iterations:

Site Model Variability Index (Iterations 3 to N): 0.9%
Number of Iterations: 4 (Maximum: 10)
Largest change in Lane Degrees of Saturation for the last three Flow-Capacity Iterations:
94.0% 1.3% 0.6%

Other Diagnostic Messages (if any):

[Go to Table Links \(Top\)](#)

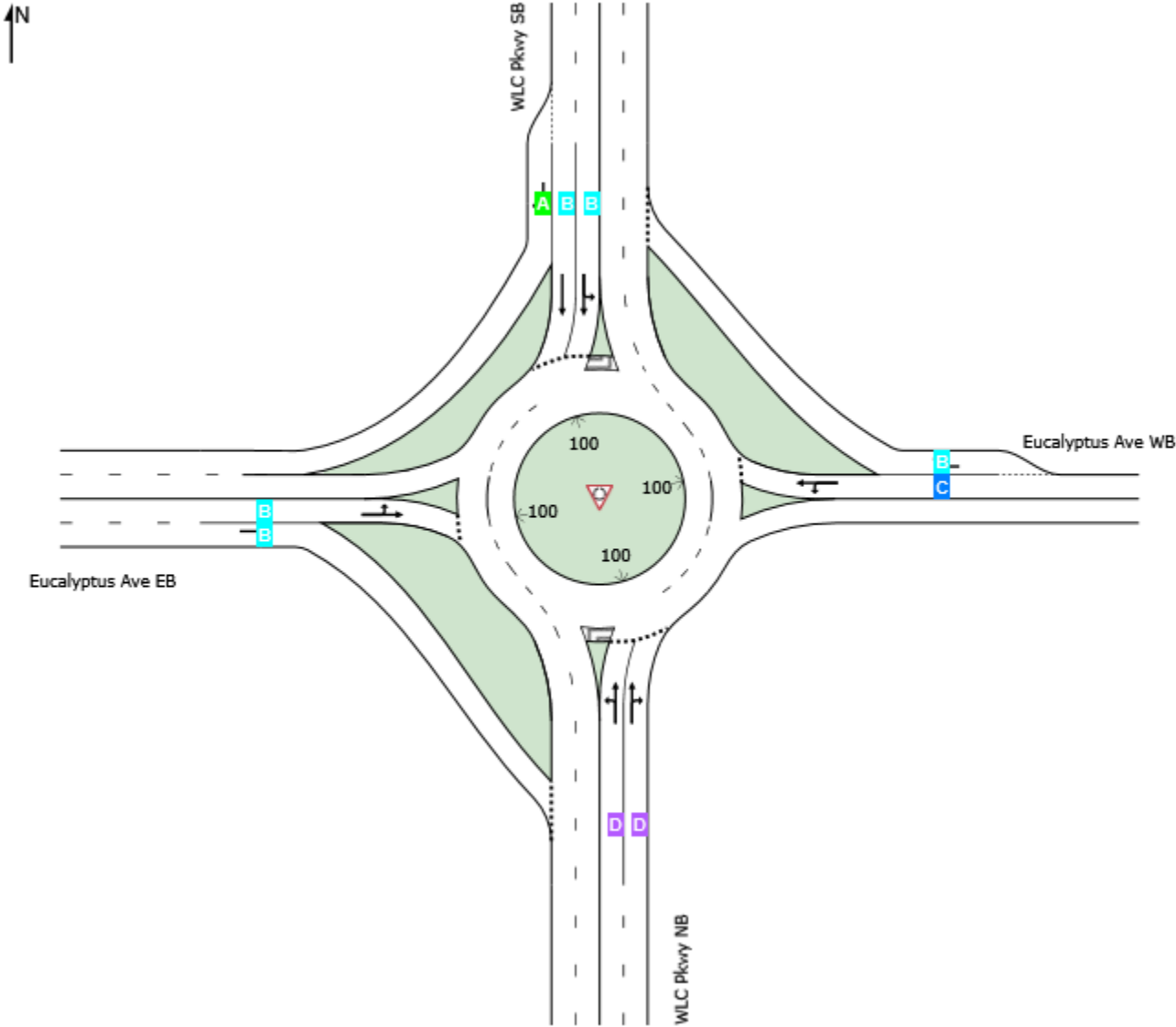
LANE LEVEL OF SERVICE

Lane Level of Service

 Site: 1 [Roundabout1 (WLC Pkwy & Eucalyptus Ave) - 2045PM - HCM6]

Site Category: (None)
Roundabout

LOS	Approaches				Intersection
	South East	North West	A	B	
D	C	A	B	C	



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: Same as Sign Control.

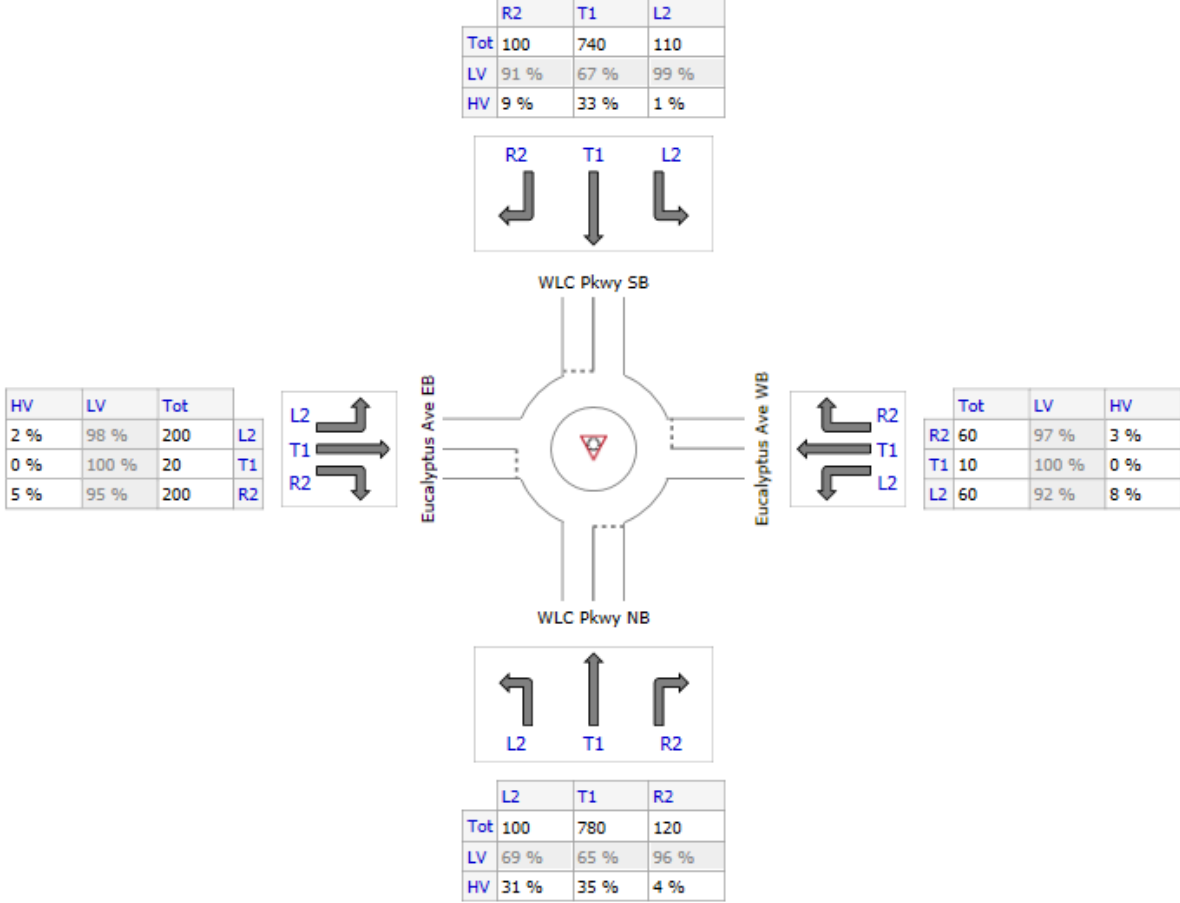
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

VOLUMES








DETAILED OUTPUT

Site: 1 [Roundabout1 (WLC Pkwy & Eucalyptus Ave) - 2045PM - HCM6]

Site Category: (None)
Roundabout

OUTPUT TABLE LINKS

-  Roundabouts
 - Roundabout Basic Parameters
 - Roundabout Circulating / Exiting Stream Parameters
 - Roundabout Gap Acceptance Parameters
 - Roundabout Flow Rates
-  Movements
 - Intersection Negotiation and Travel Data
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Roundabouts

Roundabout Basic Parameters Site: Roundabout1 (WLC Pkwy & Eucalyptus Ave) - 2045PM - HCM6

Site ID: 1
Roundabout

Central Island Diam	Circ Width	Insc Diam.	Entry Radius	Entry Angle	Circ Lanes	Entry Lanes	Av.Entry Lane Width	App Dist	Prop Upstr	Queued Signal	Extra Bunching
ft	ft	ft	ft	deg			ft	ft			%

South: WLC Pkwy NB											
100.0*	30.0*	160.0*	65.0*	30.0*	1	2	13.00*	1600		NA	0.0U

East: Eucalyptus Ave WB											
100.0*	30.0*	160.0*	65.0*	30.0*	2	2	13.00*	1600		NA	0.0U

North: WLC Pkwy SB											

100.0* 30.0* 160.0* 65.0* 30.0* 1 3 13.00* 1600 NA 0.0U

West: Eucalyptus Ave EB
 100.0* 30.0* 160.0* 65.0* 30.0* 2 2 13.00* 1600 NA 0.0U

Roundabout Capacity Model: US HCM 6
 * These parameters do not affect estimated capacity values in the HCM 6 Capacity Model.
 NA Not Applicable (single Site analysis or unconnected Site in Network analysis).
 U User-specified Extra Bunching

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Roundabout Circulating / Exiting Stream Parameters
 Site: Roundabout1 (WLC Pkwy & Eucalyptus Ave) - 2045PM - HCM6

Site ID: 1
 Roundabout

Dest	Turn	Lane No.	Lane Type	Opng Flow veh/h	HVE pcu/veh	Adj. Flow pcu/h	%Near Lane Only	%Exit Flow Incl.	Cap. Const. Effect	O-D Factor	Aver Speed mph	In-Bunch Headway sec	Prop. Bunched
South: WLC Pkwy NB													
W	L2	1	Subdominant	332	1.02	337	0.0	0.0	N	-	16.5	0.00	0.000
N	T1	1	Subdominant	332	1.02	337	0.0	0.0	N	-	16.5	0.00	0.000
N	T1	2	Dominant	332	1.02	337	0.0	0.0	N	-	16.5	0.00	0.000
E	R2	2	Dominant	332	1.02	337	0.0	0.0	N	-	16.5	0.00	0.000
East: Eucalyptus Ave WB													
S	L2	1	Dominant	1405	1.30	1826	0.0	0.0	N	-	22.4	0.00	0.000
W	T1	1	Dominant	1405	1.30	1826	0.0	0.0	N	-	22.4	0.00	0.000
N	R2	2	Excl. Slip	1268	1.30	1646	0.0	0.0	N	-	23.1	0.00	0.000
North: WLC Pkwy SB													
E	L2	1	Dominant	208	1.23	255	0.0	0.0	N	-	16.4	0.00	0.000
S	T1	1	Dominant	208	1.23	255	0.0	0.0	N	-	16.4	0.00	0.000
S	T1	2	Subdominant	208	1.23	255	0.0	0.0	N	-	16.4	0.00	0.000
W	R2	3	Continuous										
West: Eucalyptus Ave EB													
N	L2	1	Dominant	910	1.27	1160	0.0	0.0	N	-	22.8	0.00	0.000
E	T1	1	Dominant	910	1.27	1160	0.0	0.0	N	-	22.8	0.00	0.000
S	R2	2	Excl. Slip	800	1.31	1049	0.0	0.0	N	-	23.8	0.00	0.000

Roundabout Capacity Model: US HCM 6

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Roundabout Gap Acceptance Parameters
 Site: Roundabout1 (WLC Pkwy & Eucalyptus Ave) - 2045PM - HCM6

Site ID: 1
 Roundabout

Dest	Turn	Lane No.	Lane Type	In-Bunch Headway sec	Prop. Bunched	Priority Sharing	HVE for Entry	Critical Gap		Follow-up Headway sec
				sec				Headway sec	Dist ft	sec

South: WLC Pkwy NB
 Model Calibration Factor (HCM 6): 1.00

Entry/Circ. Flow Adjustment (HCM 6): None										
W	L2	1	Subdominant	0.00	0.000	N	1.31	4.54	110.1	2.54
N	T1	1	Subdominant	0.00	0.000	N	1.35	4.54	110.1	2.54
N	T1	2	Dominant	0.00	0.000	N	1.35	4.54	110.1	2.54
E	R2	2	Dominant	0.00	0.000	N	1.04	4.54	110.1	2.54

East: Eucalyptus Ave WB
Model Calibration Factor (HCM 6): 1.00
Entry/Circ. Flow Adjustment (HCM 6): None

S	L2	1	Dominant	0.00	0.000	N	1.08	4.33	142.1	2.54
W	T1	1	Dominant	0.00	0.000	N	1.00	4.33	142.1	2.54
N	R2	2	Excl. Slip	0.00	0.000	N	1.03	4.33	146.5	2.54

North: WLC Pkwy SB
Model Calibration Factor (HCM 6): 1.00
Entry/Circ. Flow Adjustment (HCM 6): None

E	L2	1	Dominant	0.00	0.000	N	1.01	4.54	109.3	2.54
S	T1	1	Dominant	0.00	0.000	N	1.33	4.54	109.3	2.54
S	T1	2	Subdominant	0.00	0.000	N	1.33	4.54	109.3	2.54
W	R2	3	Continuous							

West: Eucalyptus Ave EB
Model Calibration Factor (HCM 6): 1.00
Entry/Circ. Flow Adjustment (HCM 6): None

N	L2	1	Dominant	0.00	0.000	N	1.02	4.33	145.0	2.54
E	T1	1	Dominant	0.00	0.000	N	1.00	4.33	145.0	2.54
S	R2	2	Excl. Slip	0.00	0.000	N	1.05	4.33	151.0	2.54

Roundabout Capacity Model: US HCM 6

Dist (Distance): Spacing, i.e. distance between the front ends of two successive vehicles across all lanes in the circulating or exiting stream

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Roundabout Flow Rates

Site: Roundabout1 (WLC Pkwy & Eucalyptus Ave) - 2045PM - HCM6

Site ID: 1
Roundabout

CIRCULATING LANE FLOW RATES

Lane No.	Circulating Flow Rate		
	veh/h	pcu/h	Percent

South: WLC Pkwy NB			
1	332	337	100.0%
Total	332	337	

East: Eucalyptus Ave WB			
1	868	1100	60.2%
2	538	726	39.8%
Total	1406	1826	

North: WLC Pkwy SB			
1	208	255	100.0%
Total	208	255	

West: Eucalyptus Ave EB			
1	499	613	52.8%
2	411	547	47.2%
Total	910	1160	

The US HCM 6 roundabout capacity model option is in use.
 This model considers only the total circulating flow and not the flow rates in individual circulating lanes. To model the effects of flow distribution in circulating lanes on the entry capacity results, you should use the SIDRA Standard roundabout capacity model.

APPROACH LANE FLOW RATES

Lane No.	Approach Flows (veh/h)		
	Out	To Downst	Total

South: WLC Pkwy NB			
1	0	668	668
2	164	538	702
Total	164	1206	1370

East: Eucalyptus Ave WB			
1	0	71	71
2	60	0	60
Total	60	71	131

North: WLC Pkwy SB			
1	0	438	438
2	0	412	412
3	100	0	100
Total	100	850	950

West: Eucalyptus Ave EB			
1	0	222	222
2	200	0	200
Total	200	222	422

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Movements

Intersection Negotiation and Travel Data
 Site: Roundabout1 (WLC Pkwy & Eucalyptus Ave) - 2045PM - HCM6

Site ID: 1
 Roundabout

TRAVEL SPEED, TRAVEL DISTANCE AND TRAVEL TIME

From Approach	To Exit	Turn	Running Speed mph	Travel Speed mph	Travel Distance ft	Travel Time s	Total Dem Flows veh-mi/h	Travel Distance Arv Flows veh-mi/h	Tot.Trav. Time veh-h/h

South: WLC Pkwy NB									
	West	L2	28.8	24.8	3371.3#	92.8#	87.5	87.5	3.5
	North	T1	29.2	25.2	3347.3#	90.7#	677.4	677.4	26.9
	East	R2	29.0	25.1	3323.6#	90.3#	103.5	103.5	4.1

East: Eucalyptus Ave WB									
	South	L2	33.2	27.7	3428.3#	84.3#	39.0	39.0	1.4
	West	T1	33.3	27.8	3428.3#	84.1#	7.1	7.1	0.3
	North	R2	35.0	30.2	3261.8#	73.7#	37.1	37.1	1.2

North: WLC Pkwy SB									
	East	L2	35.8	32.0	3381.9#	72.0#	70.5	70.5	2.2

South	T1	35.5	31.7	3365.0#	72.3#	471.6	471.6	14.9
West	R2	37.0	37.0	3261.8#	60.2#	61.8	61.8	1.7

West: Eucalyptus Ave EB								
North	L2	32.8	29.2	3434.3#	80.2#	130.1	130.1	4.5
East	T1	32.7	29.1	3434.3#	80.4#	14.1	14.1	0.5
South	R2	34.6	30.9	3261.8#	72.0#	123.6	123.6	4.0

ALL VEHICLES:		32.2	28.0	3351.0#	81.6#	1823.0	1823.0	65.1

"Running Speed" is the average speed excluding stopped periods.

Travel Time values include cruise times and intersection delays including acceleration, deceleration and idling delays.

Travel Distance and Travel Time values include travel on the External Exit section based on the Exit Distance or user-specified Downstream Distance value as applicable.

INTERSECTION NEGOTIATION DATA

From Approach	To Exit	Turn	Negn Radius ft	Negn Speed mph	Negn Dist ft	App Dist ft	Exit Dist ft	Downstr Dist ft

South: WLC Pkwy NB								
West	L2		62.0	16.0	243.5	1600	488	NA
North	T1		190.4	24.4	151.5	1600	488	NA
East	R2		115.2	20.2	62.0	1600	488	NA

East: Eucalyptus Ave WB								
South	L2		62.0	16.0	243.5	1600	488	NA
West	T1		190.4	24.4	151.5	1600	488	NA
North	R2		131.6	21.2	61.8	1600	488	NA

North: WLC Pkwy SB								
East	L2		62.0	16.0	243.5	1600	488	NA
South	T1		190.4	24.4	151.5	1600	488	NA
West	R2		135.0	21.4	61.8	1600	488	NA

West: Eucalyptus Ave EB								
North	L2		62.0	16.0	243.5	1600	488	NA
East	T1		190.4	24.4	151.5	1600	488	NA
South	R2		131.6	21.2	61.8	1600	488	NA

Maximum Negotiation (Design) Speed = 30.0 mph

NA Downstream Distance does not apply if:

- Exit is an internal leg of a network
- "Program" option was specified
- Distance specified was less than the Exit Negotiation Distance
- Distance specified was greater than the exit leg length

MOVEMENT SPEEDS AND GEOMETRIC DELAY

Mov ID	Turn	App. Speeds		Exit Speeds		Queue	Geom Delay sec
		Cruise mph	Negn mph	Negn Cruise mph	Cruise mph	Move-up Speed mph	

South: WLC Pkwy NB							
3	L2	40.0	16.0	16.0	40.0	26.2	0.0
8	T1	40.0	24.4	24.4	40.0	26.0	0.0
18	R2	40.0	20.2	20.2	40.0	25.7	0.0

East: Eucalyptus Ave WB							
1	L2	40.0	16.0	16.0	40.0	12.4	0.0

6	T1	40.0	24.4	24.4	40.0	12.4	0.0
16	R2	40.0	21.2	21.2	40.0	12.7	0.0

North: WLC Pkwy SB							
7	L2	40.0	16.0	16.0	40.0	28.9	0.0
4	T1	40.0	24.4	24.4	40.0	29.3	0.0
14	R2	40.0	21.4	21.4	40.0	27.3	0.0

West: Eucalyptus Ave EB							
5	L2	40.0	16.0	16.0	40.0	14.2	0.0
2	T1	40.0	24.4	24.4	40.0	14.2	0.0
12	R2	40.0	21.2	21.2	40.0	14.9	0.0

HCM Delay Formula option used: Geometric Delay is not included in Control Delay.

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Movement Capacity and Performance Parameters Site: Roundabout1 (WLC Pkwy & Eucalyptus Ave) - 2045PM - HCM6

Site ID: 1
Roundabout

MOVEMENT CAPACITY PARAMETERS

Mov ID	Turn Cl.	Mov Arv Flow veh/h	Opng Flow veh/h	Movement Adjust. Flow pcu/h	Total Cap. veh/h	Prac. Deg. Satn xp	Prac. Spare Cap. %	Deg. Satn x

South: WLC Pkwy NB								
3	L2 #	137	332	337	160	0.85	-1	0.857*
8	T1 #	1068	332	337	1246	0.85	-1	0.857*
18	R2 #	164	332	337	192	0.85	-1	0.857*

East: Eucalyptus Ave WB								
1	L2 #	60	1405	1826	238	0.85	238	0.252
6	T1 #	11	1405	1826	43	0.85	238	0.252
16	R2 #	60	1268	1646	340	0.85	382	0.176

North: WLC Pkwy SB								
7	L2 #	110	208	255	226	0.85	75	0.486
4	T1 #	740	208	255	1522	0.85	75	0.486
14	R2 #	100	208	255	1536	0.98	1406	0.065

West: Eucalyptus Ave EB								
5	L2 #	200	910	1160	469	0.85	99	0.426
2	T1 #	22	910	1160	51	0.85	99	0.426
12	R2 #	200	800	1049	554	0.85	136	0.361

* Maximum degree of saturation

Combined Movement Capacity parameters are shown for all Movement Classes.

MOVEMENT PERFORMANCE

Mov ID	Turn	Total Delay (veh-h/h)	Total Delay (pers-h/h)	Aver. Delay (sec)	Eff. Stop Rate	Total Stops	Perf. Index	Tot. Trav. Distance (veh-mi/h)	Tot. Trav. Time (veh-h/h)	Aver. Speed (mph)

South: WLC Pkwy NB										
3	L2	1.13	1.36	29.8	1.45	198.3	18.60	87.5	3.5	24.8
8	T1	8.75	10.50	29.5	1.44	1540.7	48.75	677.4	26.9	25.2
18	R2	1.28	1.53	28.0	1.44	236.1	20.01	103.5	4.1	25.1

East: Eucalyptus Ave WB										
1	L2	0.31	0.37	18.4	0.86	51.3	2.19	39.0	1.4	27.7
6	T1	0.05	0.06	17.5	0.86	9.3	0.59	7.1	0.3	27.8
16	R2	0.23	0.27	13.7	0.79	47.2	1.86	37.1	1.2	30.2

North: WLC Pkwy SB										
7	L2	0.29	0.34	9.4	0.37	41.2	3.98	70.5	2.2	32.0
4	T1	2.17	2.60	10.5	0.37	272.8	17.09	471.6	14.9	31.7
14	R2	0.00	0.00	0.0	0.00	0.0	1.54	61.8	1.7	37.0

West: Eucalyptus Ave EB										
5	L2	0.78	0.94	14.1	0.83	166.6	6.50	130.1	4.5	29.2
2	T1	0.08	0.10	14.0	0.83	18.1	1.31	14.1	0.5	29.1
12	R2	0.66	0.79	11.9	0.75	149.2	5.76	123.6	4.0	30.9

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Fuel Consumption, Emissions and Cost Site: Roundabout1 (WLC Pkwy & Eucalyptus Ave) - 2045PM - HCM6

Site ID: 1
Roundabout

FUEL CONSUMPTION, EMISSIONS AND COST (TOTAL)

Mov ID	Turn	Cost Total \$/h	Fuel Total gal/h	CO2 Total kg/h	CO Total kg/h	HC Total kg/h	NOX Total kg/h

South: WLC Pkwy NB							
3	L2	92.99	9.7	90.3	0.17	0.014	0.557
8	T1	685.96	72.4	676.6	1.26	0.110	4.091
18	R2	98.34	9.0	82.5	0.20	0.016	0.461
		877.29	91.0	849.4	1.63	0.140	5.109

East: Eucalyptus Ave WB							
1	L2	27.50	2.2	20.1	0.08	0.006	0.061
6	T1	4.96	0.4	3.4	0.01	0.001	0.009
16	R2	19.42	1.6	14.3	0.07	0.005	0.029
		51.88	4.2	37.8	0.16	0.012	0.099

North: WLC Pkwy SB							
7	L2	50.90	4.9	44.3	0.12	0.009	0.221
4	T1	362.09	42.0	392.5	0.77	0.059	2.252
14	R2	28.80	3.0	27.3	0.10	0.007	0.095
		441.80	49.9	464.1	0.99	0.074	2.568

West: Eucalyptus Ave EB							
5	L2	80.54	6.0	53.5	0.25	0.020	0.085
2	T1	8.75	0.6	5.7	0.03	0.002	0.008
12	R2	65.92	5.7	51.7	0.22	0.016	0.135
		155.20	12.4	110.8	0.50	0.038	0.228

INTERSECTION:		1526.17	157.5	1462.2	3.27	0.265	8.004

FUEL CONSUMPTION, EMISSIONS AND COST (RATE)

Mov ID	Turn	Cost Rate \$/mi	Fuel Eff. mpg	CO2 Rate g/km	CO Rate g/km	HC Rate g/km	NOX Rate g/km

South: WLC Pkwy NB							
3	L2	0.66	9.1	641.7	1.18	0.102	3.958
8	T1	0.63	9.4	620.7	1.16	0.100	3.753
18	R2	0.59	11.5	495.5	1.20	0.098	2.770
		0.63	9.5	607.9	1.17	0.100	3.656

East: Eucalyptus Ave WB							
1	L2	0.44	17.5	320.8	1.22	0.098	0.976
6	T1	0.44	18.7	297.7	1.23	0.098	0.803
16	R2	0.33	23.2	240.5	1.12	0.082	0.482
		0.39	19.8	283.0	1.17	0.091	0.741

North: WLC Pkwy SB							
7	L2	0.45	14.5	391.0	1.08	0.078	1.948
4	T1	0.48	11.2	517.1	1.01	0.077	2.966
14	R2	0.29	20.6	274.5	1.01	0.066	0.960
		0.45	12.1	477.6	1.02	0.076	2.642

West: Eucalyptus Ave EB							
5	L2	0.38	21.7	255.3	1.21	0.095	0.406
2	T1	0.38	22.2	249.6	1.21	0.095	0.363
12	R2	0.33	21.5	260.0	1.10	0.080	0.678
		0.36	21.7	257.2	1.16	0.088	0.529

INTERSECTION:		0.52	11.6	498.4	1.12	0.090	2.728

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Lanes

Lane Performance and Capacity Information Site: Roundabout1 (WLC Pkwy & Eucalyptus Ave) - 2045PM - HCM6

Site ID: 1
Roundabout

LANE PERFORMANCE

Lane No.	Flow veh/h	Cap veh/h	Deg. Satn x	Aver. Delay sec	Eff. Stop Rate	Q u e u e		Lane Length ft
						95% Back veh	ft	

South: WLC Pkwy NB								
1	668	779	0.857	29.9	1.45	17.6	560.8	1600.0
2	702	819	0.857	28.8	1.44	18.4	562.9	1600.0

East: Eucalyptus Ave WB								
1	71	282	0.252	18.3	0.86	0.8	20.3	1600.0
2	60	340	0.176	13.7	0.79	0.5	14.0	200.0T

North: WLC Pkwy SB								
1	438	902	0.486	10.1	0.37	2.1	63.3	1600.0

2	412	846	0.486	10.6	0.36	1.9	61.0	1600.0
3	100	1536	0.065	0.0	0.00			600.0T

 West: Eucalyptus Ave EB

1	222	520	0.426	14.1	0.83	1.9	48.4	1600.0
2	200	554	0.361	11.9	0.75	1.5	38.3	1600.0

 T Short lane due to specification of Turn Bay

LANE FLOW AND CAPACITY INFORMATION

Lane No.	Total Arv Flow veh/h	Min Cap veh/h	Tot Cap veh/h	Deg. Satn x	Lane Util %

South: WLC Pkwy NB					
1	668	150	779	0.857	100
2	702	150	819	0.857	100

East: Eucalyptus Ave WB					
1	71	71	282	0.252	100
2	60	60	340	0.176	100

North: WLC Pkwy SB					
1	438	150	902	0.486	100
2	412	150	846	0.486	100
3	100	100	1536	0.065	100

West: Eucalyptus Ave EB					
1	222	150	520	0.426	100
2	200	150	554	0.361	100

The capacity values of Continuous Lanes are obtained by adjusting the basic saturation flow for lane width, grade, movement class and turning vehicle effects. Saturation flow scale applies if specified.

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Lane, Approach and Intersection Performance
 Site: Roundabout1 (WLC Pkwy & Eucalyptus Ave) - 2045PM - HCM6

Site ID: 1
 Roundabout

Lane No.	Arrival Flow (veh/h)	%HV	Adj. Basic Satf.	Deg Sat x	Aver. Delay sec	Longest Queue ft	Lane Length ft

South: WLC Pkwy NB							
1	668	34		0.857	29.9	561	1600
2	702	28		0.857	28.8	563	1600
	1370	31		0.857	29.3	563	

East: Eucalyptus Ave WB							
1	71	7		0.252	18.3	20	1600
2	60	3		0.176	13.7	14	200
	131	5		0.252	16.2	20	

North: WLC Pkwy SB							
1	438	25		0.486	10.1	63	1600
2	412	33		0.486	10.6	61	1600

3	100	9	1975	0.065	0.0	600
	950	27		0.486	9.3	63

West: Eucalyptus Ave EB						
1	222	2		0.426	14.1	48
2	200	5		0.361	11.9	38
	422	3		0.426	13.1	48
=====						
ALL VEHICLES						
	Total	%		Max	Aver.	Max
	Flow	HV		X	Delay	Queue
	2872	24		0.857	19.7	563
=====						

Peak flow period = 15 minutes.

Queue values in this table are 95% queue (feet)
 Note: Basic Saturation Flows at roundabouts or sign-controlled intersections apply only to continuous lanes.

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Driver Characteristics Site: Roundabout1 (WLC Pkwy & Eucalyptus Ave) - 2045PM - HCM6

Site ID: 1
 Roundabout

Lane No.	Satn Speed mph	Satn Flow veh/h	Satn Hdwy sec	Satn Spacing ft	Average Queue Space ft	Driver Response Time sec

South: WLC Pkwy NB						
1	22.7	1420	2.54	84.35	31.84	1.58
2	23.4	1420	2.54	87.11	30.55	1.65

East: Eucalyptus Ave WB						
1	17.3	1420	2.54	64.17	26.35	1.49
2	NA - Short Lane					

North: WLC Pkwy SB						
1	22.3	1420	2.54	82.91	29.99	1.62
2	24.4	1420	2.54	90.80	31.60	1.65
3	NA - Continuous Movement					

West: Eucalyptus Ave EB						
1	16.8	1420	2.54	62.43	25.36	1.51
2	21.2	1420	2.54	78.95	26.00	1.70

Saturation Flow and Saturation Headway are derived from follow-up headway.

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Lane Delays Site: Roundabout1 (WLC Pkwy & Eucalyptus Ave) - 2045PM - HCM6

Site ID: 1
 Roundabout

LANE DELAYS

Lane No.	Deg. Satn x	% Arv During Green	Prog. Factor	Delay (seconds/veh)									
				Min Del dm	Stop-line 1st d1	2nd d2	Total dSL	Acc. Dec. dn	Queueing Total dq	MvUp (Idle) dqm	Stopd di	Geom dig	Control dic
South: WLC Pkwy NB													
1	0.857	NA	NA	4.6	8.9	21.0	29.9	5.8	25.7	12.7	13.0	0.0	29.9
2	0.857	NA	NA	4.4	8.7	20.1	28.8	6.0	24.3	12.1	12.2	0.0	28.8
East: Eucalyptus Ave WB													
1	0.252	NA	NA	12.8	14.0	4.2	18.3	4.7	14.4	0.5	13.9	0.0	18.3
2	0.176	NA	NA	10.6	11.5	2.3	13.7	4.6	10.1	0.0	10.1	0.0	13.7
North: WLC Pkwy SB													
1	0.486	NA	NA	4.0	6.4	3.7	10.1	5.3	7.6	0.0	7.6	0.0	10.1
2	0.486	NA	NA	4.3	6.7	4.0	10.6	6.6	7.5	0.0	7.5	0.0	10.6
3	0.065					0.0					0.0	0.0	
West: Eucalyptus Ave EB													
1	0.426	NA	NA	6.9	9.0	5.0	14.1	4.7	10.6	1.7	8.9	0.0	14.1
2	0.361	NA	NA	6.5	8.3	3.6	11.9	4.6	8.7	1.1	7.6	0.0	11.9

HCM Delay Formula option used (Exclude Geometric Delay option applies). Control Delay does not include Geometric Delay, and Stop-line Delay is treated as being same as Control Delay.
 dm: Minimum delay for gap acceptance cases
 dSL: Stop-line delay (=d1+d2)
 dn: Average stop-start delay for all vehicles queued and unqueued
 dq: Queuing delay (the part of the stop-line delay that includes stopped delay and queue move-up delay)
 dqm: Queue move-up delay
 di: Stopped delay (stopped (idling) time at near-zero speed)
 dig: Geometric delay
 dic: Control delay

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Lane Queues
 Site: Roundabout1 (WLC Pkwy & Eucalyptus Ave) - 2045PM - HCM6

Site ID: 1
 Roundabout

BACK OF QUEUE (VEHICLES)

Lane No.	Deg. Satn x	% Arv During Green	Prog. Factor	Ovrfl. Queue No	Back of Queue (veh)				Queue Stor. Ratio		Prob. Block %	Prob. SL Ov. %
					Nb1	Nb2	Nb	95%	Av.	95%		
South: WLC Pkwy NB												
1	0.857	NA	NA	3.7	1.8	5.3	7.1	17.6	0.14	0.35	0.0	NA
2	0.857	NA	NA	3.7	2.0	5.4	7.4	18.4	0.14	0.35	0.0	NA
East: Eucalyptus Ave WB												
1	0.252	NA	NA	0.0	0.3	0.0	0.3	0.8	0.01	0.01	0.0	NA
2	0.176	NA	NA	0.0	0.2	0.0	0.2	0.5	0.03	0.07	NA	0.0
North: WLC Pkwy SB												
1	0.486	NA	NA	0.0	0.8	0.0	0.8	2.1	0.02	0.04	0.0	NA
2	0.486	NA	NA	0.0	0.8	0.0	0.8	1.9	0.02	0.04	0.0	NA

West: Eucalyptus Ave EB													
Lane No.	Deg. Satn	% Arv During Green	Prog. Factor	Ovrfl. Queue No	0.2	0.6	0.1	0.8	1.9	0.01	0.03	0.0	NA
1	0.426	NA	NA	0.2	0.6	0.1	0.8	1.9	0.01	0.03	0.0	0.0	NA
2	0.361	NA	NA	0.1	0.5	0.1	0.6	1.5	0.01	0.02	0.0	0.0	NA

SIDRA Standard models are used for Back of Queue estimation since HCM only gives Cycle-Average Queues for unsignalised intersections.

BACK OF QUEUE (DISTANCE)

Lane No.	Deg. Satn x	% Arv During Green	Prog. Factor	Ovrfl. Queue No	Back of Queue (ft)				Queue Stor. Ratio		Prob. Block %	Prob. SL Ov. %	
					Nb1	Nb2	Nb	95%	Av.	95%			
South: WLC Pkwy NB													
1	0.857	NA	NA	117.0	57.4	168.2	225.6	560.8	0.14	0.35	0.0	0.0	NA
2	0.857	NA	NA	113.3	60.6	165.9	226.5	562.9	0.14	0.35	0.0	0.0	NA
East: Eucalyptus Ave WB													
1	0.252	NA	NA	0.6	7.9	0.3	8.2	20.3	0.01	0.01	0.0	0.0	NA
2	0.176	NA	NA	0.0	5.6	0.0	5.6	14.0	0.03	0.07	NA	0.0	0.0
North: WLC Pkwy SB													
1	0.486	NA	NA	0.0	25.5	0.0	25.5	63.3	0.02	0.04	0.0	0.0	NA
2	0.486	NA	NA	0.0	24.5	0.0	24.5	61.0	0.02	0.04	0.0	0.0	NA
West: Eucalyptus Ave EB													
1	0.426	NA	NA	4.2	16.3	3.2	19.5	48.4	0.01	0.03	0.0	0.0	NA
2	0.361	NA	NA	2.4	13.6	1.8	15.4	38.3	0.01	0.02	0.0	0.0	NA

SIDRA Standard models are used for Back of Queue estimation since HCM only gives Cycle-Average Queues for unsignalised intersections.

OTHER QUEUE RESULTS (VEHICLES)

Lane No.	Deg. Satn x	% Arv During Green	Prog. Factor	Ovrfl. Queue No	Cyc-Av. Queue	
					Nc	95%
South: WLC Pkwy NB						
1	0.857	NA	NA	3.7	5.5	10.1
2	0.857	NA	NA	3.7	5.6	10.2
East: Eucalyptus Ave WB						
1	0.252	NA	NA	0.0	0.4	0.7
2	0.176	NA	NA	0.0	0.2	0.4
North: WLC Pkwy SB						
1	0.486	NA	NA	0.0	1.2	2.2
2	0.486	NA	NA	0.0	1.2	2.2
West: Eucalyptus Ave EB						
1	0.426	NA	NA	0.2	0.9	1.6
2	0.361	NA	NA	0.1	0.7	1.2

HCM Delay Formula option used:
Cycle-Average Queue is calculated using average delay from the HCM equation.
(i.e. HCM delays are treated as stop-line delays for this purpose).

OTHER QUEUE RESULTS (DISTANCE)

Lane No.	Deg. Satn x	% Arv During Green	Prog. Factor	Ovrfl. Queue No	Cyc-Av. Queue	
					Nc	95%

South: WLC Pkwy NB						
1	0.857	NA	NA	117.0	176.4	320.0
2	0.857	NA	NA	113.3	171.7	311.5

East: Eucalyptus Ave WB						
1	0.252	NA	NA	0.6	9.5	17.2
2	0.176	NA	NA	0.0	5.9	10.6

North: WLC Pkwy SB						
1	0.486	NA	NA	0.0	37.1	67.2
2	0.486	NA	NA	0.0	38.4	69.7

West: Eucalyptus Ave EB						
1	0.426	NA	NA	4.2	22.0	39.9
2	0.361	NA	NA	2.4	17.2	31.2

HCM Delay Formula option used:
Cycle-Average Queue is calculated using average delay from the HCM equation.
(i.e. HCM delays are treated as stop-line delays for this purpose).

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Lane Queue Percentiles Site: Roundabout1 (WLC Pkwy & Eucalyptus Ave) - 2045PM - HCM6

Site ID: 1
Roundabout

LANE QUEUE PERCENTILES (VEHICLES)

Lane No.	Deg. Satn x	Percentile Back of Queue (veh)						
		50%	70%	85%	90%	95%	98%	100%

South: WLC Pkwy NB								
1	0.857	7.1	9.2	12.9	15.0	17.6	19.5	21.0
2	0.857	7.4	9.6	13.5	15.7	18.4	20.5	22.0

East: Eucalyptus Ave WB								
1	0.252	0.3	0.4	0.6	0.7	0.8	0.9	0.9
2	0.176	0.2	0.3	0.4	0.5	0.5	0.6	0.7

North: WLC Pkwy SB								
1	0.486	0.8	1.1	1.6	1.8	2.1	2.3	2.5
2	0.486	0.8	1.0	1.4	1.6	1.9	2.1	2.3

West: Eucalyptus Ave EB								
1	0.426	0.8	1.0	1.4	1.6	1.9	2.1	2.3
2	0.361	0.6	0.8	1.1	1.3	1.5	1.6	1.8

SIDRA Standard models are used for Back of Queue estimation since HCM only gives Cycle-Average Queues for unsignalised intersections.

LANE QUEUE PERCENTILES (DISTANCE)

Lane No.	Deg. Satn x	Percentile Back of Queue (feet)						
		50%	70%	85%	90%	95%	98%	100%

South: WLC Pkwy NB								

1	0.857	225.5	292.1	411.8	476.8	560.8	622.4	669.0
2	0.857	226.4	293.2	413.4	478.7	562.9	624.8	671.6

 East: Eucalyptus Ave WB

1	0.252	8.2	10.6	14.9	17.2	20.3	22.5	24.2
2	0.176	5.6	7.3	10.3	11.9	14.0	15.6	16.7

 North: WLC Pkwy SB

1	0.486	25.5	33.0	46.5	53.9	63.3	70.3	75.6
2	0.486	24.5	31.8	44.8	51.8	61.0	67.7	72.7

 West: Eucalyptus Ave EB

1	0.426	19.5	25.2	35.6	41.2	48.4	53.8	57.8
2	0.361	15.4	19.9	28.1	32.6	38.3	42.5	45.7

SIDRA Standard models are used for Back of Queue estimation since HCM only gives Cycle-Average Queues for unsignalised intersections.

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Lane Stops
 Site: Roundabout1 (WLC Pkwy & Eucalyptus Ave) - 2045PM - HCM6

Site ID: 1
 Roundabout

Lane No.	Deg. Satn x	% Arv During Green	Prog. Factor	-- Effective Stop		Geom. hig	Rate Overall h	Total Stops H	Queue	Total	Prop. Queued pq	Aver. Num. of Cycles to Depart
				he1	he2				Move-up Rate hqm	Queue Move-ups Hqm		

South: WLC Pkwy NB												
1	0.857	NA	NA	0.66	0.79	0.00	1.45	966.9	1.64	1094.6	0.72	2.36
2	0.857	NA	NA	0.69	0.75	0.00	1.44	1008.1	1.58	1106.5	0.76	2.33

East: Eucalyptus Ave WB												
1	0.252	NA	NA	0.83	0.03	0.00	0.86	60.6	0.10	7.2	0.83	0.93
2	0.176	NA	NA	0.79	0.00	0.00	0.79	47.2	0.00	0.0	0.79	0.79

North: WLC Pkwy SB												
1	0.486	NA	NA	0.37	0.00	0.00	0.37	164.1	0.00	0.0	0.48	0.48
2	0.486	NA	NA	0.36	0.00	0.00	0.36	149.9	0.00	0.0	0.47	0.47
3	0.065	NA	NA			0.00	0.00	0.0				

West: Eucalyptus Ave EB												
1	0.426	NA	NA	0.74	0.09	0.00	0.83	184.8	0.32	70.3	0.74	1.06
2	0.361	NA	NA	0.69	0.06	0.00	0.75	149.2	0.20	39.9	0.69	0.89

hig is the average value for all movements in a shared lane
 hqm is average queue move-up rate for all vehicles queued and unqueued

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Flow Rates

Origin-Destination Flow Rates (Total)
 Site: Roundabout1 (WLC Pkwy & Eucalyptus Ave) - 2045PM - HCM6

Site ID: 1
 Roundabout

TOTAL FLOW RATES for All Movement Classes (veh/h)

From SOUTH To:	W	N	E	
Turn:	L2	T1	R2	TOT
Flow Rate	137.0	1068.5	164.4	1369.9
%HV (all designations)	31.0	35.0	4.0	30.9

From EAST To:	S	W	N	
Turn:	L2	T1	R2	TOT
Flow Rate	60.0	10.9	60.0	130.9
%HV (all designations)	8.0	0.0	3.0	5.0

From NORTH To:	E	S	W	
Turn:	L2	T1	R2	TOT
Flow Rate	110.0	740.0	100.0	950.0
%HV (all designations)	1.0	33.0	9.0	26.8

From WEST To:	N	E	S	
Turn:	L2	T1	R2	TOT
Flow Rate	200.0	21.7	200.0	421.7
%HV (all designations)	2.0	0.0	5.0	3.3

Flow rates shown above are Arrival Flow Rates (veh/h) based on the following input specifications:
 Unit Time for Volumes = 60 minutes
 Peak Flow Period = 15 minutes
 Effects of Volume Factors (Peak Flow Factor, Flow Scale, Growth Rate) are included.
 Arrival Flow Rates may be less than Demand Flow Rates if capacity constraint applies in network analysis.

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Origin-Destination Flow Rates by Movement Class
 Site: Roundabout1 (WLC Pkwy & Eucalyptus Ave) - 2045PM - HCM6

Site ID: 1
 Roundabout

FLOW RATES for Light Vehicles (veh/h)

From SOUTH To:	W	N	E	
Turn:	L2	T1	R2	TOT

Flow Rate	94.5	694.5	157.8	946.8
Mov Class %	69.0	65.0	96.0	69.1
Flow Scale	1.00	1.00	1.00	-
Peak Flow Factor	0.73	0.73	0.73	-
Residual Demand	0.0	0.0	0.0	0.0

From EAST To:	S	W	N	
Turn:	L2	T1	R2	TOT

Flow Rate	55.2	10.9	58.2	124.3
Mov Class %	92.0	100.0	97.0	95.0
Flow Scale	1.00	1.00	1.00	-
Peak Flow Factor	1.00	0.92	1.00	-
Residual Demand	0.0	0.0	0.0	0.0

From NORTH To:	E	S	W	
Turn:	L2	T1	R2	TOT

Flow Rate	108.9	495.8	91.0	695.7

Mov Class %	99.0	67.0	91.0	73.2
Flow Scale	1.00	1.00	1.00	-
Peak Flow Factor	1.00	1.00	1.00	-
Residual Demand	0.0	0.0	0.0	0.0

From WEST To:	N	E	S	
Turn:	L2	T1	R2	TOT

Flow Rate	196.0	21.7	190.0	407.7
Mov Class %	98.0	100.0	95.0	96.7
Flow Scale	1.00	1.00	1.00	-
Peak Flow Factor	1.00	0.92	1.00	-
Residual Demand	0.0	0.0	0.0	0.0

FLOW RATES for Heavy Vehicles (veh/h)

From SOUTH To:	W	N	E	
Turn:	L2	T1	R2	TOT

Flow Rate	42.5	374.0	6.6	423.0
Mov Class %	31.0	35.0	4.0	30.9
Flow Scale	1.00	1.00	1.00	-
Peak Flow Factor	0.73	0.73	0.73	-
Residual Demand	0.0	0.0	0.0	0.0

From EAST To:	S	W	N	
Turn:	L2	T1	R2	TOT

Flow Rate	4.8	0.0	1.8	6.6
Mov Class %	8.0	0.0	3.0	5.0
Flow Scale	1.00	1.00	1.00	-
Peak Flow Factor	1.00	0.92	1.00	-
Residual Demand	0.0	0.0	0.0	0.0

From NORTH To:	E	S	W	
Turn:	L2	T1	R2	TOT

Flow Rate	1.1	244.2	9.0	254.3
Mov Class %	1.0	33.0	9.0	26.8
Flow Scale	1.00	1.00	1.00	-
Peak Flow Factor	1.00	1.00	1.00	-
Residual Demand	0.0	0.0	0.0	0.0

From WEST To:	N	E	S	
Turn:	L2	T1	R2	TOT

Flow Rate	4.0	0.0	10.0	14.0
Mov Class %	2.0	0.0	5.0	3.3
Flow Scale	1.00	1.00	1.00	-
Peak Flow Factor	1.00	0.92	1.00	-
Residual Demand	0.0	0.0	0.0	0.0

Flow rates shown above are Arrival Flow Rates (veh/h) based on the following input specifications:
Unit Time for Volumes = 60 minutes
Peak Flow Period = 15 minutes
Effects of Volume Factors (Peak Flow Factor, Flow Scale, Growth Rate) are included.
Arrival Flow Rates may be less than Demand Flow Rates if capacity constraint applies in network analysis.

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Lane Flow Rates
Site: Roundabout1 (WLC Pkwy & Eucalyptus Ave) - 2045PM - HCM6

Site ID: 1
 Roundabout

LANE FLOW RATES AT STOP LINE (veh/h)

From SOUTH To: Turn:	W L2	N T1	E R2	TOT

Lane 1				
LV	94.5	345.0	*	439.6
HV	42.5	185.8	*	228.3
Total	137.0	530.8	*	667.8
Lane 2				
LV	*	349.5	157.8	507.3
HV	*	188.2	6.6	194.8
Total	*	537.6	164.4	702.0

Approach	137.0	1068.5	164.4	1369.9

From EAST To: Turn:	S L2	W T1	N R2	TOT

Lane 1				
LV	55.2	10.9	*	66.1
HV	4.8	*	*	4.8
Total	60.0	10.9	*	70.9
Lane 2				
LV	*	*	58.2	58.2
HV	*	*	1.8	1.8
Total	*	*	60.0	60.0

Approach	60.0	10.9	60.0	130.9

From NORTH To: Turn:	E L2	S T1	W R2	TOT

Lane 1				
LV	108.9	220.1	*	329.0
HV	1.1	108.4	*	109.5
Total	110.0	328.4	*	438.4
Lane 2				
LV	*	275.7	*	275.7
HV	*	135.8	*	135.8
Total	*	411.6	*	411.6
Lane 3				
LV	*	*	91.0	91.0
HV	*	*	9.0	9.0
Total	*	*	100.0	100.0

Approach	110.0	740.0	100.0	950.0

From WEST To: Turn:	N L2	E T1	S R2	TOT

Lane 1				
LV	196.0	21.7	*	217.7
HV	4.0	*	*	4.0
Total	200.0	21.7	*	221.7
Lane 2				
LV	*	*	190.0	190.0
HV	*	*	10.0	10.0
Total	*	*	200.0	200.0

Approach	200.0	21.7	200.0	421.7

* Movement not allocated to the lane

EXIT LANE FLOW RATES

Movement Class:	LV	HV	TOT
Exit: SOUTH			
Lane: 1	275.3	113.2	388.4
Lane: 2	465.7	145.8	611.6
Total	741.0	259.0	1000.0
Exit: EAST			
Lane: 1	288.4	7.7	296.1
Total	288.4	7.7	296.1
Exit: NORTH			
Lane: 1	541.0	189.8	730.8
Lane: 2	407.7	190.0	597.6
Total	948.7	379.8	1328.5
Exit: WEST			
Lane: 1	105.4	42.5	147.9
Lane: 2	91.0	9.0	100.0
Total	196.4	51.5	247.9

* Movement not allocated to the lane

DOWNSTREAM LANE FLOW RATES FOR EXIT ROADS

Movement Class:	LV	HV	TOT
Exit: SOUTH			
Lane: 1	275.3	113.2	388.4
Lane: 2	465.7	145.8	611.6
Total	741.0	259.0	1000.0
Exit: EAST			
Lane: 1	288.4	7.7	296.1
Total	288.4	7.7	296.1
Exit: NORTH			
Lane: 1	541.0	189.8	730.8
Lane: 2	407.7	190.0	597.6
Total	948.7	379.8	1328.5
Exit: WEST			
Lane: 1	105.4	42.5	147.9
Lane: 2	91.0	9.0	100.0
Total	196.4	51.5	247.9

* Movement not allocated to the lane

Flow rates shown above are Arrival Flow Rates (veh/h) based on the following input specifications:
Unit Time for Volumes = 60 minutes
Peak Flow Period = 15 minutes
Effects of Volume Factors (Peak Flow Factor, Flow Scale, Growth Rate) are included.
Arrival Flow Rates may be less than Demand Flow Rates if capacity constraint applies in network analysis.

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Other

Parameter Settings Summary
Site: Roundabout1 (WLC Pkwy & Eucalyptus Ave) - 2045PM - HCM6

Site ID: 1
Roundabout

* Basic Parameters:
Intersection Type: Roundabout
US HCM 6 Roundabout Capacity Model used
Driving on the right-hand side of the road
Input data specified in US units
Model Defaults: US HCM (Customary)
Peak Flow Period (for performance): 15 minutes
Unit time (for volumes): 60 minutes.
HCM Delay Model option used
HCM Queue Model option used
Level of Service based on: Delay and v/c (HCM 6)
Queue percentile: 95%

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Diagnostics

Site: Roundabout1 (WLC Pkwy & Eucalyptus Ave) - 2045PM - HCM6

Site ID: 1
Roundabout

Lane Flow-Capacity Iterations:

Site Model Variability Index (Iterations 3 to N): 0.1%
Number of Iterations: 3 (Maximum: 10)

Other Diagnostic Messages (if any):

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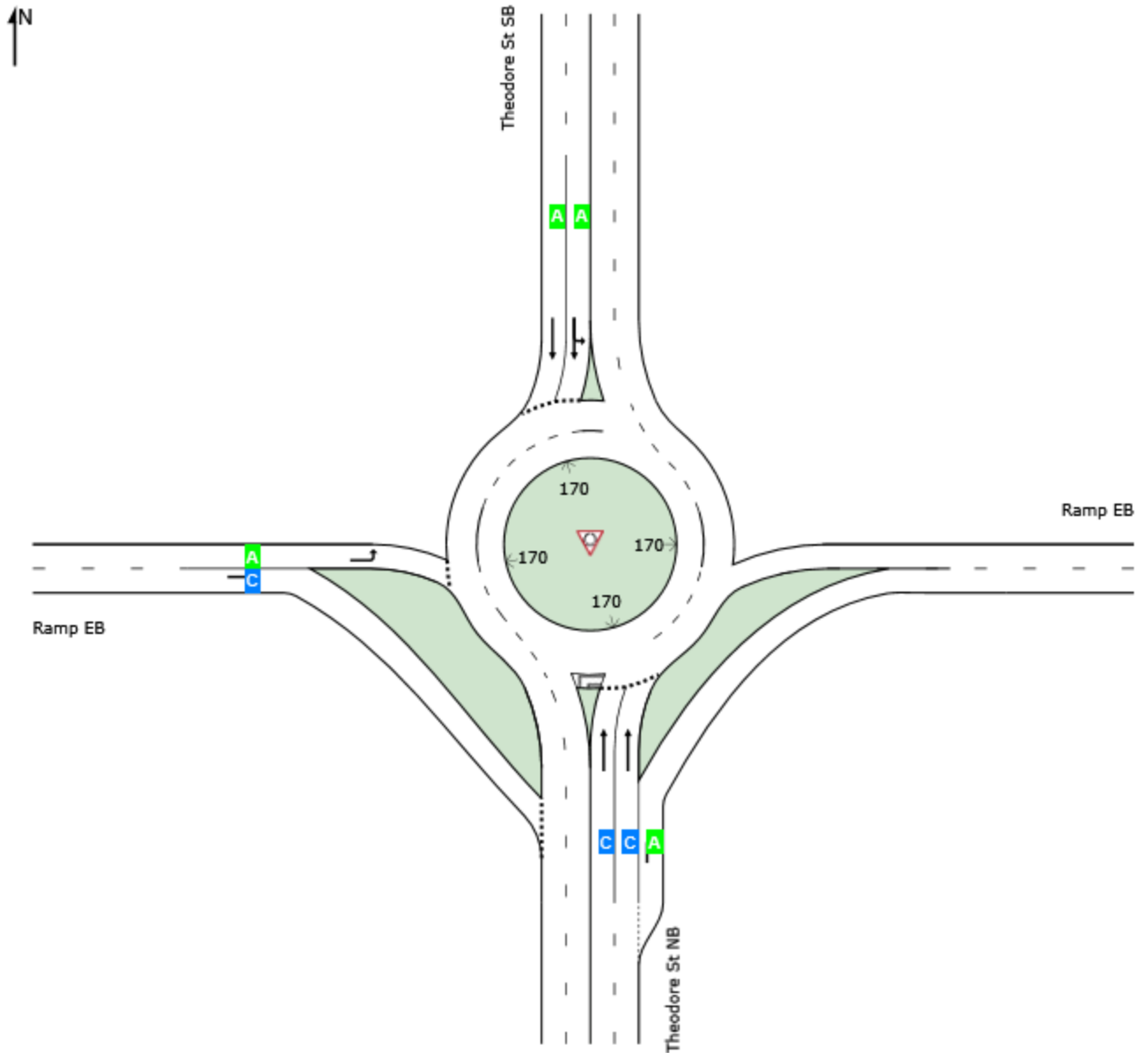
LANE LEVEL OF SERVICE

Lane Level of Service

 **Site: 1 [Roundabout2 (Theodore St & EB Ramps) - 2045PM - HCM6]**

Site Category: (None)
Roundabout

	Approaches			Intersection
	South	North	West	
LOS	B	A	C	B



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: Same as Sign Control.

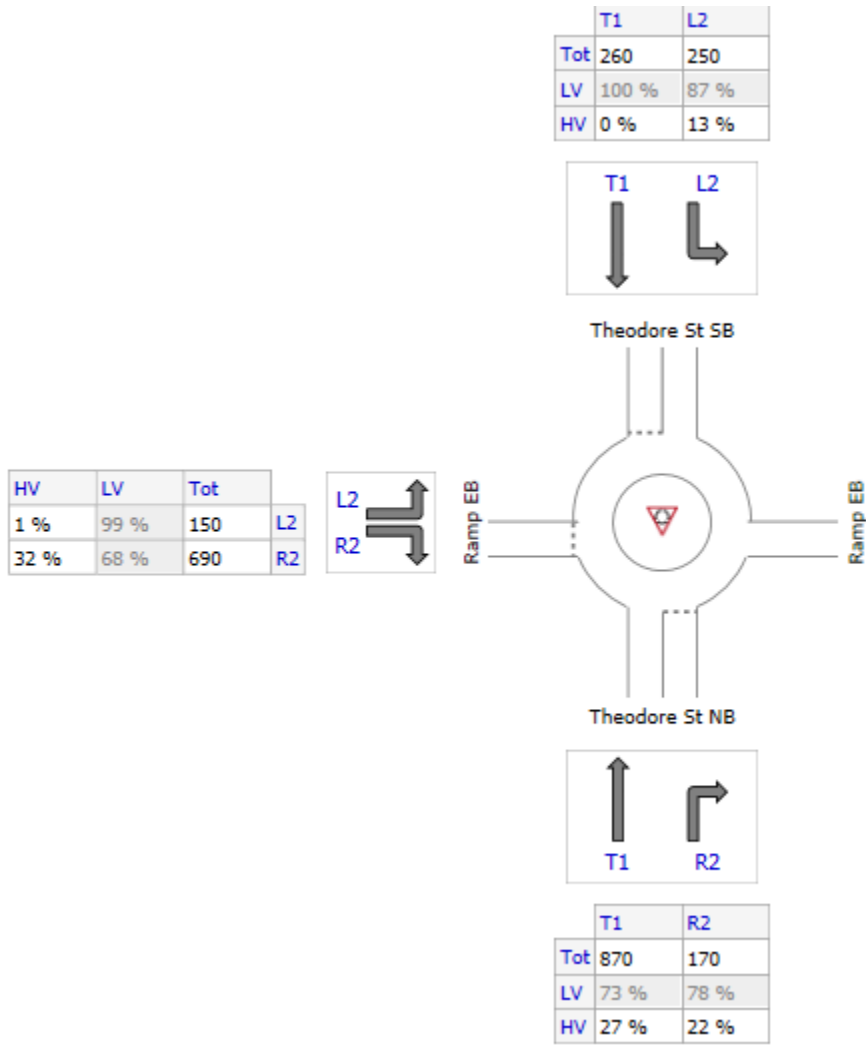
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

LOS F will result if $v/c > 1$ irrespective of lane delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

VOLUMES








DETAILED OUTPUT

Site: 1 [Roundabout2 (Theodore St & EB Ramps) - 2045PM - HCM6]

Site Category: (None)
Roundabout

OUTPUT TABLE LINKS

-  Roundabouts
 - Roundabout Basic Parameters
 - Roundabout Circulating / Exiting Stream Parameters
 - Roundabout Gap Acceptance Parameters
 - Roundabout Flow Rates
-  Movements
 - Intersection Negotiation and Travel Data
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 - Fuel Consumption, Emissions and Cost
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Roundabouts

Roundabout Basic Parameters Site: Roundabout2 (Theodore St & EB Ramps) - 2045PM - HCM6

Site ID: 1
Roundabout

Central Island Diam	Circ Width	Insc Diam.	Entry Radius	Entry Angle	Circ Lanes	Entry Lanes	Av.Entry Lane Width	App Dist	Prop Upstr	Queued Signal	Extra Bunching
ft	ft	ft	ft	deg			ft	ft			%

South: Theodore St NB											
170.0*	30.0*	230.0*	65.0*	30.0*	1	3	13.00*	1600		NA	0.0U

North: Theodore St SB											
170.0*	30.0*	230.0*	65.0*	30.0*	2	2	13.00*	1600		NA	0.0U

West: Ramp EB

170.0* 30.0* 230.0* 65.0* 30.0* 2 2 13.00* 1600 NA 0.0U

Roundabout Capacity Model: US HCM 6

* These parameters do not affect estimated capacity values in the HCM 6 Capacity Model.

NA Not Applicable (single Site analysis or unconnected Site in Network analysis).

U User-specified Extra Bunching

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Roundabout Circulating / Exiting Stream Parameters
Site: Roundabout2 (Theodore St & EB Ramps) - 2045PM - HCM6

Site ID: 1
 Roundabout

Dest	Turn	Lane No.	Lane Type	Opng Flow veh/h	HVE pcu/veh	Adj. Flow pcu/h	%Near Lane Only	%Exit Flow Incl.	Cap. Const. Effect	O-D Factor	Aver Speed mph	In-Bunch Headway sec	Prop. Bunched
South: Theodore St NB													
N	T1	1	Subdominant	400	1.09	434	0.0	0.0	N	-	18.9	0.00	0.000
N	T1	2	Dominant	400	1.09	434	0.0	0.0	N	-	18.9	0.00	0.000
E	R2	3	Continuous										
North: Theodore St SB													
E	L2	1	Subdominant	0	0.00	0	0.0	0.0	N	-	NA	0.00	0.000
S	T1	2	Dominant	0	0.00	0	0.0	0.0	N	-	NA	0.00	0.000
West: Ramp EB													
N	L2	1	Dominant	510	1.06	543	0.0	0.0	N	-	24.6	0.00	0.000
S	R2	2	Excl. Slip	260	1.00	260	0.0	0.0	N	-	30.0	0.00	0.000

Roundabout Capacity Model: US HCM 6

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Roundabout Gap Acceptance Parameters
Site: Roundabout2 (Theodore St & EB Ramps) - 2045PM - HCM6

Site ID: 1
 Roundabout

Dest	Turn	Lane No.	Lane Type	In-Bunch Headway sec	Prop. Bunched	Priority Sharing	HVE for Entry	Critical Gap		Follow-up Headway sec
				sec				Headway sec	Dist ft	sec
South: Theodore St NB										
Model Calibration Factor (HCM 6): 1.00										
Entry/Circ. Flow Adjustment (HCM 6): None										
N	T1	1	Subdominant	0.00	0.000	N	1.27	4.54	126.1	2.54
N	T1	2	Dominant	0.00	0.000	N	1.27	4.54	126.1	2.54
E	R2	3	Continuous							
North: Theodore St SB										
Model Calibration Factor (HCM 6): 1.00										
Entry/Circ. Flow Adjustment (HCM 6): None										
E	L2	1	Subdominant	0.00	0.000	N	1.13	4.65	NA	2.67
S	T1	2	Dominant	0.00	0.000	N	1.00	4.33	NA	2.54
West: Ramp EB										

Model Calibration Factor (HCM 6): 1.00
 Entry/Circ. Flow Adjustment (HCM 6): None

N	L2	1 Dominant	0.00	0.000	N	1.01	4.33	155.9	2.54
S	R2	2 Excl. Slip	0.00	0.000	N	1.32	4.33	190.3	2.54

 Roundabout Capacity Model: US HCM 6

Dist (Distance): Spacing, i.e. distance between the front ends of two successive vehicles across all lanes in the circulating or exiting stream

[Go to Table Links \(Top\)](#)

Roundabout Flow Rates
 Site: Roundabout2 (Theodore St & EB Ramps) - 2045PM - HCM6

Site ID: 1
 Roundabout

CIRCULATING LANE FLOW RATES

Lane No.	Circulating Flow Rate		
	veh/h	pcu/h	Percent

South: Theodore St NB			
1	400	434	100.0%
Total	400	434	

North: Theodore St SB			
1	0	0	0.0%
2	0	0	0.0%
Total	0	0	

West: Ramp EB			
1	250	283	52.1%
2	260	260	47.9%
Total	510	543	

The US HCM 6 roundabout capacity model option is in use. This model considers only the total circulating flow and not the flow rates in individual circulating lanes. To model the effects of flow distribution in circulating lanes on the entry capacity results, you should use the SIDRA Standard roundabout capacity model.

APPROACH LANE FLOW RATES

Lane No.	Approach Flows (veh/h)		
	Out	To Downst	Total

South: Theodore St NB			
1	0	512	512
2	0	512	512
3	200	0	200
Total	200	1024	1224

North: Theodore St SB			
1	0	250	250
2	0	260	260
Total	0	510	510

West: Ramp EB			
1	0	150	150
2	690	0	690

Total 690 150 840

[Go to Table Links \(Top\)](#)

Movements

Intersection Negotiation and Travel Data Site: Roundabout2 (Theodore St & EB Ramps) - 2045PM - HCM6

Site ID: 1
Roundabout

TRAVEL SPEED, TRAVEL DISTANCE AND TRAVEL TIME

From Approach	To Exit	Turn	Running Speed mph	Travel Speed mph	Travel Distance ft	Travel Time s	Total Dem Flows veh-mi/h	Travel Distance Arv Flows veh-mi/h	Tot.Trav. Time veh-h/h
South: Theodore St NB									
	North	T1	33.9	30.7	3423.3#	75.9#	663.6	663.6	21.6
	East	R2	37.9	37.9	3288.6#	59.1#	124.6	124.6	3.3
North: Theodore St SB									
	East	L2	36.2	36.2	3580.9#	67.5#	169.6	169.6	4.7
	South	T1	40.4	40.4	3423.3#	57.8#	168.6	168.6	4.2
West: Ramp EB									
	North	L2	35.0	33.6	3580.9#	72.6#	101.7	101.7	3.0
	South	R2	31.6	27.3	3288.6#	82.0#	429.8	429.8	15.7
ALL VEHICLES:			34.5	31.6	3401.2#	73.4#	1657.8	1657.8	52.5

"Running Speed" is the average speed excluding stopped periods.

Travel Time values include cruise times and intersection delays including acceleration, deceleration and idling delays.

Travel Distance and Travel Time values include travel on the External Exit section based on the Exit Distance or user-specified Downstream Distance value as applicable.

INTERSECTION NEGOTIATION DATA

From Approach	To Exit	Turn	Negn Radius ft	Negn Speed mph	Negn Dist ft	App Dist ft	Exit Dist ft	Downstr Dist ft
South: Theodore St NB								
	North	T1	328.1	30.0	223.3	1600	488	NA
	East	R2	219.5	25.8	88.6	1600	488	NA
North: Theodore St SB								
	East	L2	97.0	18.9	380.9	1600	488	NA
	South	T1	328.1	30.0	223.3	1600	488	NA
West: Ramp EB								
	North	L2	97.0	18.9	380.9	1600	488	NA
	South	R2	216.1	25.6	88.6	1600	488	NA

Maximum Negotiation (Design) Speed = 30.0 mph

- NA Downstream Distance does not apply if:
- Exit is an internal leg of a network
 - "Program" option was specified
 - Distance specified was less than the Exit Negotiation Distance
 - Distance specified was greater than the exit leg length

MOVEMENT SPEEDS AND GEOMETRIC DELAY

Mov ID	Turn	App. Speeds		Exit Speeds		Queue Move-up Speed mph	Geom Delay sec
		Cruise mph	Negn mph	Negn mph	Cruise mph		
South: Theodore St NB							
8	T1	40.0	30.0	30.0	40.0	22.9	0.0
18	R2	40.0	25.8	25.8	40.0	22.6	0.0
North: Theodore St SB							
7	L2	40.0	18.9	18.9	40.0	30.4	0.0
4	T1	40.0	30.0	30.0	40.0	48.3	0.0
West: Ramp EB							
5	L2	40.0	18.9	18.9	40.0	19.0	0.0
12	R2	40.0	25.6	25.6	40.0	29.3	0.0

HCM Delay Formula option used: Geometric Delay is not included in Control Delay.

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Movement Capacity and Performance Parameters
 Site: Roundabout2 (Theodore St & EB Ramps) - 2045PM - HCM6

Site ID: 1
 Roundabout

MOVEMENT CAPACITY PARAMETERS

Mov ID	Turn	Mov Cl.	Arv Flow veh/h	Opng Movement Flow veh/h	Movement Adjust. Flow pcu/h	Total Cap. veh/h	Prac. Deg. Satn xp	Prac. Spare Cap. %	Deg. Satn x
South: Theodore St NB									
8	T1	#	1024	400	434	1507	0.85	25	0.679
18	R2	#	200	400	434	1373	0.98	573	0.146
North: Theodore St SB									
7	L2	#	250	0	0	1196	0.85	307	0.209
4	T1	#	260	0	0	1420	0.85	364	0.183
West: Ramp EB									
5	L2	#	150	510	543	887	0.85	402	0.169
12	R2	#	690	260	260	862	0.85	6	0.800*

* Maximum degree of saturation
 # Combined Movement Capacity parameters are shown for all Movement Classes.

MOVEMENT PERFORMANCE

Mov ID	Turn	Total	Total	Aver. Eff.	Total Perf.	Tot.Trav.	Tot.Trav.	Aver.
--------	------	-------	-------	------------	-------------	-----------	-----------	-------

ID		Delay (veh-h/h)	Delay (pers-h/h)	Delay (sec)	Stop Rate	Stops	Index	Distance (veh-mi/h)	Time (veh-h/h)	Speed (mph)

South: Theodore St NB										
8	T1	5.03	6.03	17.7	0.98	1007.9	32.53	663.6	21.6	30.7
18	R2	0.00	0.00	0.0	0.00	0.0	3.11	124.6	3.3	37.9

North: Theodore St SB										
7	L2	0.34	0.40	4.9	0.00	0.0	4.58	169.6	4.7	36.2
4	T1	0.29	0.35	4.0	0.00	0.0	4.50	168.6	4.2	40.4

West: Ramp EB										
5	L2	0.24	0.29	5.7	0.46	69.6	3.69	101.7	3.0	33.6
12	R2	4.33	5.19	22.6	1.04	718.3	30.80	429.8	15.7	27.3

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Fuel Consumption, Emissions and Cost Site: Roundabout2 (Theodore St & EB Ramps) - 2045PM - HCM6

Site ID: 1
Roundabout

FUEL CONSUMPTION, EMISSIONS AND COST (TOTAL)

Mov ID	Turn	Cost Total \$/h	Fuel Total gal/h	CO2 Total kg/h	CO Total kg/h	HC Total kg/h	NOX Total kg/h

South: Theodore St NB							
8	T1	508.54	55.5	516.4	1.09	0.085	2.914
18	R2	69.63	8.4	77.3	0.19	0.013	0.392
		578.17	63.9	593.8	1.28	0.098	3.306

North: Theodore St SB							
7	L2	95.48	9.5	86.9	0.27	0.019	0.360
4	T1	56.54	4.9	43.8	0.26	0.015	0.032
		152.01	14.4	130.7	0.53	0.034	0.393

West: Ramp EB							
5	L2	57.11	4.3	38.5	0.19	0.014	0.049
12	R2	405.04	44.1	411.8	0.77	0.064	2.490
		462.15	48.4	450.3	0.96	0.078	2.540

INTERSECTION:		1192.33	126.7	1174.8	2.77	0.211	6.238

FUEL CONSUMPTION, EMISSIONS AND COST (RATE)

Mov ID	Turn	Cost Rate \$/mi	Fuel Eff. mpg	CO2 Rate g/km	CO Rate g/km	HC Rate g/km	NOX Rate g/km

South: Theodore St NB							
8	T1	0.48	12.0	483.6	1.02	0.080	2.728
18	R2	0.35	14.9	385.8	0.94	0.063	1.955
		0.46	12.3	468.1	1.01	0.077	2.606

North: Theodore St SB							
7	L2	0.35	17.8	318.6	1.00	0.070	1.320
4	T1	0.21	34.3	161.3	0.95	0.056	0.119
		0.28	23.4	240.2	0.97	0.063	0.721

West: Ramp EB							
5	L2	0.35	23.6	235.2	1.17	0.088	0.302
12	R2	0.59	9.8	595.4	1.11	0.092	3.601
		0.54	11.0	526.5	1.12	0.091	2.969

INTERSECTION:		0.45	13.1	440.3	1.04	0.079	2.338

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Lanes

Lane Performance and Capacity Information Site: Roundabout2 (Theodore St & EB Ramps) - 2045PM - HCM6

Site ID: 1
Roundabout

LANE PERFORMANCE

Lane No.	Flow veh/h	Cap veh/h	Deg. Satn x	Aver. Delay sec	Eff. Stop Rate	Q u e u e		Lane Length ft
						95% Back veh	ft	

South: Theodore St NB								
1	512	753	0.679	17.7	0.98	6.6	200.9	1600.0
2	512	753	0.679	17.7	0.98	6.6	200.9	1600.0
3	200	1373	0.146	0.0	0.00			600.0T

North: Theodore St SB								
1	250	1196	0.209	4.9	0.00	0.0	0.0	1600.0
2	260	1420	0.183	4.0	0.00	0.0	0.0	1600.0

West: Ramp EB								
1	150	887	0.169	5.7	0.46	0.6	16.2	1600.0
2	690	862	0.800	22.6	1.04	14.6	457.9	1600.0

T Short lane due to specification of Turn Bay

LANE FLOW AND CAPACITY INFORMATION

Lane No.	Total Arv Flow veh/h	Min Cap veh/h	Tot Cap veh/h	Deg. Satn x	Lane Util %
South: Theodore St NB					
1	512	150	753	0.679	100
2	512	150	753	0.679	100
3	200	200	1373	0.146	100

North: Theodore St SB					
1	250	150	1196	0.209	100
2	260	150	1420	0.183	88P

```

-----
West: Ramp EB
1      150    150  887  0.169  100
2      690    150  862  0.800  100
-----

```

P Lane under-utilisation found by the Program

The capacity values of Continuous Lanes are obtained by adjusting the basic saturation flow for lane width, grade, movement class and turning vehicle effects. Saturation flow scale applies if specified.

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Lane, Approach and Intersection Performance
Site: Roundabout2 (Theodore St & EB Ramps) - 2045PM - HCM6

Site ID: 1
Roundabout

```

-----
Lane   Arrival   Adj.   Deg   Aver.   Longest   Lane
No.    Flow      %HV   Basic Sat   Delay   Queue    Length
      (veh/h)                Satf.   x     sec     ft      ft
-----
South: Theodore St NB
1      512     27                0.679  17.7    201    1600
2      512     27                0.679  17.7    201    1600
3      200     22    1975  0.146   0.0     0      600
-----
      1224    26                0.679  14.8    201
-----
North: Theodore St SB
1      250     13                0.209   4.9     0     1600
2      260     0                0.183   4.0     0     1600
-----
      510     6                0.209   4.4
-----
West: Ramp EB
1      150     1                0.169   5.7     16    1600
2      690    32                0.800  22.6    458   1600
-----
      840    26                0.800  19.6    458
=====
ALL VEHICLES
      Total    %      Max   Aver.   Max
      Flow    HV      X     Delay  Queue
      2574    22     0.800  14.3   458
=====

```

Peak flow period = 15 minutes.

Queue values in this table are 95% queue (feet)
Note: Basic Saturation Flows at roundabouts or sign-controlled intersections apply only to continuous lanes.

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Driver Characteristics
Site: Roundabout2 (Theodore St & EB Ramps) - 2045PM - HCM6

Site ID: 1
Roundabout

Lane No.	Satn Speed mph	Satn Flow veh/h	Satn Hdwy sec	Satn Spacing ft	Average Queue Space ft	Driver Response Time sec

South: Theodore St NB						
1	30.0	1420	2.54	111.48	30.40	1.84
2	30.0	1420	2.54	111.48	30.40	1.84
3	NA - Continuous Movement					

North: Theodore St SB						
1	18.9	1350	2.67	73.98	27.60	1.67
2	30.0	1420	2.54	111.48	25.00	1.97

West: Ramp EB						
1	18.9	1420	2.54	70.34	25.20	1.63
2	25.6	1420	2.54	95.24	31.40	1.70

Saturation Flow and Saturation Headway are derived from follow-up headway.

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Lane Delays
Site: Roundabout2 (Theodore St & EB Ramps) - 2045PM - HCM6

Site ID: 1
Roundabout

LANE DELAYS

Lane No.	Deg. Satn x	% Arv During Green	Prog. Factor	Delay (seconds/veh)									
				Min Del dm	Stop-line 1st d1	2nd d2	Total dSL	Acc. Dec. dn	Queuing Total dq	MvUp dqm	Stopd (Idle) di	Geom dig	Control dic

South: Theodore St NB													
1	0.679	NA	NA	4.8	8.2	9.5	17.7	7.5	12.6	5.5	7.1	0.0	17.7
2	0.679	NA	NA	4.8	8.2	9.5	17.7	7.5	12.6	5.5	7.1	0.0	17.7
3	0.146					0.0					0.0	0.0	

North: Theodore St SB													
1	0.209	NA	NA	3.0	4.1	0.8	4.9	0.0	0.0	0.0	0.0	0.0	4.9
2	0.183	NA	NA	2.5	3.5	0.6	4.0	0.0	0.0	0.0	0.0	0.0	4.0

West: Ramp EB													
1	0.169	NA	NA	4.1	4.9	0.8	5.7	5.6	2.9	0.0	2.9	0.0	5.7
2	0.800	NA	NA	4.2	8.2	14.4	22.6	5.2	19.4	8.2	11.1	0.0	22.6

HCM Delay Formula option used (Exclude Geometric Delay option applies). Control Delay does not include Geometric Delay, and Stop-line Delay is treated as being same as Control Delay.

- dm: Minimum delay for gap acceptance cases
- dSL: Stop-line delay (=d1+d2)
- dn: Average stop-start delay for all vehicles queued and unqueued
- dq: Queuing delay (the part of the stop-line delay that includes stopped delay and queue move-up delay)
- dqm: Queue move-up delay
- di: Stopped delay (stopped (idling) time at near-zero speed)
- dig: Geometric delay
- dic: Control delay

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Lane Queues
Site: Roundabout2 (Theodore St & EB Ramps) - 2045PM - HCM6

Site ID: 1
 Roundabout

BACK OF QUEUE (VEHICLES)

Lane No.	Deg. Satn x	% Arv During Green	Prog. Factor	Ovrfl. Queue No	Back of Queue (veh)				Queue Stor. Ratio		Prob. Block %	Prob. SL Ov. %
					Nb1	Nb2	Nb	95%	Av.	95%		
South: Theodore St NB												
1	0.679	NA	NA	1.1	1.2	1.4	2.7	6.6	0.05	0.13	0.0	NA
2	0.679	NA	NA	1.1	1.2	1.4	2.7	6.6	0.05	0.13	0.0	NA
North: Theodore St SB												
1	0.209	NA	NA	0.0	0.0	0.0	0.0	0.0	0.00	0.00	0.0	NA
2	0.183	NA	NA	0.0	0.0	0.0	0.0	0.0	0.00	0.00	0.0	NA
West: Ramp EB												
1	0.169	NA	NA	0.0	0.3	0.0	0.3	0.6	0.00	0.01	0.0	NA
2	0.800	NA	NA	2.6	1.7	4.2	5.9	14.6	0.12	0.29	0.0	NA

SIDRA Standard models are used for Back of Queue estimation since HCM only gives Cycle-Average Queues for unsignalised intersections.

BACK OF QUEUE (DISTANCE)

Lane No.	Deg. Satn x	% Arv During Green	Prog. Factor	Ovrfl. Queue No	Back of Queue (ft)				Queue Stor. Ratio		Prob. Block %	Prob. SL Ov. %
					Nb1	Nb2	Nb	95%	Av.	95%		
South: Theodore St NB												
1	0.679	NA	NA	33.1	37.5	43.3	80.8	200.9	0.05	0.13	0.0	NA
2	0.679	NA	NA	33.1	37.5	43.3	80.8	200.9	0.05	0.13	0.0	NA
North: Theodore St SB												
1	0.209	NA	NA	0.0	0.0	0.0	0.0	0.0	0.00	0.00	0.0	NA
2	0.183	NA	NA	0.0	0.0	0.0	0.0	0.0	0.00	0.00	0.0	NA
West: Ramp EB												
1	0.169	NA	NA	0.0	6.5	0.0	6.5	16.2	0.00	0.01	0.0	NA
2	0.800	NA	NA	82.2	52.5	131.7	184.3	457.9	0.12	0.29	0.0	NA

SIDRA Standard models are used for Back of Queue estimation since HCM only gives Cycle-Average Queues for unsignalised intersections.

OTHER QUEUE RESULTS (VEHICLES)

Lane No.	Deg. Satn x	% Arv During Green	Prog. Factor	Ovrfl. Queue No	Cyc-Av. Queue	
					Nc	95%
South: Theodore St NB						
1	0.679	NA	NA	1.1	2.5	4.6
2	0.679	NA	NA	1.1	2.5	4.6
North: Theodore St SB						
1	0.209	NA	NA	0.0	0.3	0.6
2	0.183	NA	NA	0.0	0.3	0.5

West: Ramp EB						
Lane No.	Deg. Satn	% Arv During Green	Prog. Factor	Ovrfl. Queue No	Cyc-Av. Queue Nc	95%
1	0.169	NA	NA	0.0	0.2	0.4
2	0.800	NA	NA	2.6	4.3	7.8

HCM Delay Formula option used:
 Cycle-Average Queue is calculated using average delay from the HCM equation.
 (i.e. HCM delays are treated as stop-line delays for this purpose).

OTHER QUEUE RESULTS (DISTANCE)

South: Theodore St NB						
Lane No.	Deg. Satn	% Arv During Green	Prog. Factor	Ovrfl. Queue No	Cyc-Av. Queue Nc	95%
1	0.679	NA	NA	33.1	76.4	138.6
2	0.679	NA	NA	33.1	76.4	138.6
North: Theodore St SB						
1	0.209	NA	NA	0.0	9.3	16.9
2	0.183	NA	NA	0.0	7.3	13.2
West: Ramp EB						
1	0.169	NA	NA	0.0	6.0	10.9
2	0.800	NA	NA	82.2	135.8	246.4

HCM Delay Formula option used:
 Cycle-Average Queue is calculated using average delay from the HCM equation.
 (i.e. HCM delays are treated as stop-line delays for this purpose).

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Lane Queue Percentiles
 Site: Roundabout2 (Theodore St & EB Ramps) - 2045PM - HCM6

Site ID: 1
 Roundabout

LANE QUEUE PERCENTILES (VEHICLES)

Lane No.	Deg. Satn	Percentile Back of Queue (veh)						
		50%	70%	85%	90%	95%	98%	100%
South: Theodore St NB								
1	0.679	2.7	3.4	4.9	5.6	6.6	7.3	7.9
2	0.679	2.7	3.4	4.9	5.6	6.6	7.3	7.9
North: Theodore St SB								
1	0.209	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	0.183	0.0	0.0	0.0	0.0	0.0	0.0	0.0
West: Ramp EB								
1	0.169	0.3	0.3	0.5	0.5	0.6	0.7	0.8
2	0.800	5.9	7.6	10.7	12.4	14.6	16.2	17.4

SIDRA Standard models are used for Back of Queue estimation since HCM only gives Cycle-Average Queues for unsignalised intersections.

LANE QUEUE PERCENTILES (DISTANCE)

Lane No.	Deg. Satn x	Percentile Back of Queue (feet)						
		50%	70%	85%	90%	95%	98%	100%
South: Theodore St NB								
1	0.679	80.8	104.6	147.5	170.8	200.9	222.9	239.7
2	0.679	80.8	104.6	147.5	170.8	200.9	222.9	239.7
North: Theodore St SB								
1	0.209	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	0.183	0.0	0.0	0.0	0.0	0.0	0.0	0.0
West: Ramp EB								
1	0.169	6.5	8.4	11.9	13.8	16.2	18.0	19.3
2	0.800	184.2	238.6	336.3	389.4	457.9	508.3	546.4

SIDRA Standard models are used for Back of Queue estimation since HCM only gives Cycle-Average Queues for unsignalised intersections.

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Lane Stops

Site: Roundabout2 (Theodore St & EB Ramps) - 2045PM - HCM6

Site ID: 1
Roundabout

Lane No.	Deg. Satn x	% Arv During Green	Prog. Factor	-- Effective Stop Rate --				Total Stops H	Queue Move-up Rate hqm	Total Queue Move-ups Hqm	Prop. Queued pq	Aver. Num. of Cycles to Depart
				he1	he2	Geom. hig	Overall h					
South: Theodore St NB												
1	0.679	NA	NA	0.66	0.33	0.00	0.98	504.0	0.76	388.3	0.68	1.44
2	0.679	NA	NA	0.66	0.33	0.00	0.98	504.0	0.76	388.3	0.68	1.44
3	0.146	NA	NA			0.00	0.00	0.0				
North: Theodore St SB												
1	0.209	NA	NA	0.00	0.00	0.00	0.00	0.0	0.00	0.0	0.00	0.00
2	0.183	NA	NA	0.00	0.00	0.00	0.00	0.0	0.00	0.0	0.00	0.00
West: Ramp EB												
1	0.169	NA	NA	0.46	0.00	0.00	0.46	69.6	0.00	0.0	0.51	0.51
2	0.800	NA	NA	0.51	0.53	0.00	1.04	718.3	1.01	698.9	0.61	1.63

hig is the average value for all movements in a shared lane
hqm is average queue move-up rate for all vehicles queued and unqueued

[Go to Table Links \(Top\)](#)

Flow Rates

Origin-Destination Flow Rates (Total)

Site: Roundabout2 (Theodore St & EB Ramps) - 2045PM - HCM6

Site ID: 1

Roundabout

TOTAL FLOW RATES for All Movement Classes (veh/h)

From SOUTH To:	N	E	
Turn:	T1	R2	TOT
Flow Rate	1023.5	200.0	1223.5
%HV (all designations)	27.0	22.0	26.2

From NORTH To:	E	S	
Turn:	L2	T1	TOT
Flow Rate	250.0	260.0	510.0
%HV (all designations)	13.0	0.0	6.4

From WEST To:	N	S	
Turn:	L2	R2	TOT
Flow Rate	150.0	690.0	840.0
%HV (all designations)	1.0	32.0	26.5

Flow rates shown above are Arrival Flow Rates (veh/h) based on the following input specifications:
 Unit Time for Volumes = 60 minutes
 Peak Flow Period = 15 minutes
 Effects of Volume Factors (Peak Flow Factor, Flow Scale, Growth Rate) are included.
 Arrival Flow Rates may be less than Demand Flow Rates if capacity constraint applies in network analysis.

[Go to Table Links \(Top\)](#)

Origin-Destination Flow Rates by Movement Class
 Site: Roundabout2 (Theodore St & EB Ramps) - 2045PM - HCM6

Site ID: 1
 Roundabout

FLOW RATES for Light Vehicles (veh/h)

From SOUTH To:	N	E	
Turn:	T1	R2	TOT
Flow Rate	747.2	156.0	903.2
Mov Class %	73.0	78.0	73.8
Flow Scale	1.00	1.00	-
Peak Flow Factor	0.85	0.85	-
Residual Demand	0.0	0.0	0.0

From NORTH To:	E	S	
Turn:	L2	T1	TOT
Flow Rate	217.5	260.0	477.5
Mov Class %	87.0	100.0	93.6
Flow Scale	1.00	1.00	-
Peak Flow Factor	1.00	1.00	-
Residual Demand	0.0	0.0	0.0

From WEST To:	N	S	
Turn:	L2	R2	TOT
Flow Rate	148.5	469.2	617.7
Mov Class %	99.0	68.0	73.5
Flow Scale	1.00	1.00	-
Peak Flow Factor	1.00	1.00	-
Residual Demand	0.0	0.0	0.0

 FLOW RATES for Heavy Vehicles (veh/h)

From SOUTH To:	N	E	
Turn:	T1	R2	TOT
Flow Rate	276.4	44.0	320.4
Mov Class %	27.0	22.0	26.2
Flow Scale	1.00	1.00	-
Peak Flow Factor	0.85	0.85	-
Residual Demand	0.0	0.0	0.0

From NORTH To:	E	S	
Turn:	L2	T1	TOT
Flow Rate	32.5	0.0	32.5
Mov Class %	13.0	0.0	6.4
Flow Scale	1.00	1.00	-
Peak Flow Factor	1.00	1.00	-
Residual Demand	0.0	0.0	0.0

From WEST To:	N	S	
Turn:	L2	R2	TOT
Flow Rate	1.5	220.8	222.3
Mov Class %	1.0	32.0	26.5
Flow Scale	1.00	1.00	-
Peak Flow Factor	1.00	1.00	-
Residual Demand	0.0	0.0	0.0

Flow rates shown above are Arrival Flow Rates (veh/h) based on the following input specifications:
 Unit Time for Volumes = 60 minutes
 Peak Flow Period = 15 minutes
 Effects of Volume Factors (Peak Flow Factor, Flow Scale, Growth Rate) are included.
 Arrival Flow Rates may be less than Demand Flow Rates if capacity constraint applies in network analysis.

[Go to Table Links \(Top\)](#)

Lane Flow Rates
 Site: Roundabout2 (Theodore St & EB Ramps) - 2045PM - HCM6

Site ID: 1
 Roundabout

LANE FLOW RATES AT STOP LINE (veh/h)

From SOUTH To:	N	E	
Turn:	T1	R2	TOT

Lane 1			
LV	373.6	*	373.6
HV	138.2	*	138.2
Total	511.8	*	511.8
Lane 2			
LV	373.6	*	373.6
HV	138.2	*	138.2
Total	511.8	*	511.8
Lane 3			
LV	*	156.0	156.0
HV	*	44.0	44.0
Total	*	200.0	200.0

Approach	1023.5	200.0	1223.5
From NORTH To:	E	S	
Turn:	L2	T1	TOT

Lane 1			
LV	217.5	*	217.5
HV	32.5	*	32.5
Total	250.0	*	250.0
Lane 2			
LV	*	260.0	260.0
Total	*	260.0	260.0

Approach	250.0	260.0	510.0

From WEST To:	N	S	
Turn:	L2	R2	TOT

Lane 1			
LV	148.5	*	148.5
HV	1.5	*	1.5
Total	150.0	*	150.0
Lane 2			
LV	*	469.2	469.2
HV	*	220.8	220.8
Total	*	690.0	690.0

Approach	150.0	690.0	840.0

* Movement not allocated to the lane

EXIT LANE FLOW RATES

Movement Class:	LV	HV	TOT

Exit: SOUTH			
Lane: 1	*	*	0.0
Lane: 2	729.2	220.8	950.0
Total	729.2	220.8	950.0

Exit: EAST			
Lane: 1	217.5	32.5	250.0
Lane: 2	156.0	44.0	200.0
Total	373.5	76.5	450.0

Exit: NORTH			
Lane: 1	522.1	139.7	661.8
Lane: 2	373.6	138.2	511.8
Total	895.7	277.9	1173.5

* Movement not allocated to the lane

DOWNSTREAM LANE FLOW RATES FOR EXIT ROADS

Movement Class:	LV	HV	TOT

Exit: SOUTH			
Lane: 2	729.2	220.8	950.0
Total	729.2	220.8	950.0

Exit: EAST			
Lane: 1	217.5	32.5	250.0
Lane: 2	156.0	44.0	200.0
Total	373.5	76.5	450.0

Exit: NORTH

Lane: 1	522.1	139.7	661.8
Lane: 2	373.6	138.2	511.8
Total	895.7	277.9	1173.5

* Movement not allocated to the lane

Flow rates shown above are Arrival Flow Rates (veh/h) based on the following input specifications:
Unit Time for Volumes = 60 minutes
Peak Flow Period = 15 minutes
Effects of Volume Factors (Peak Flow Factor, Flow Scale, Growth Rate) are included.
Arrival Flow Rates may be less than Demand Flow Rates if capacity constraint applies in network analysis.

[Go to Table Links \(Top\)](#)

Other

Parameter Settings Summary

Site: Roundabout2 (Theodore St & EB Ramps) - 2045PM - HCM6

Site ID: 1
Roundabout

* Basic Parameters:
Intersection Type: Roundabout
US HCM 6 Roundabout Capacity Model used
Driving on the right-hand side of the road
Input data specified in US units
Model Defaults: US HCM (Customary)
Peak Flow Period (for performance): 15 minutes
Unit time (for volumes): 60 minutes.
HCM Delay Model option used
HCM Queue Model option used
Level of Service based on: Delay and v/c (HCM 6)
Queue percentile: 95%

[Go to Table Links \(Top\)](#)

Diagnostics

Site: Roundabout2 (Theodore St & EB Ramps) - 2045PM - HCM6

Site ID: 1
Roundabout

Lane Flow-Capacity Iterations:

Site Model Variability Index (Iterations 3 to N): 0.1%
Number of Iterations: 3 (Maximum: 10)

Other Diagnostic Messages (if any):

[Go to Table Links \(Top\)](#)

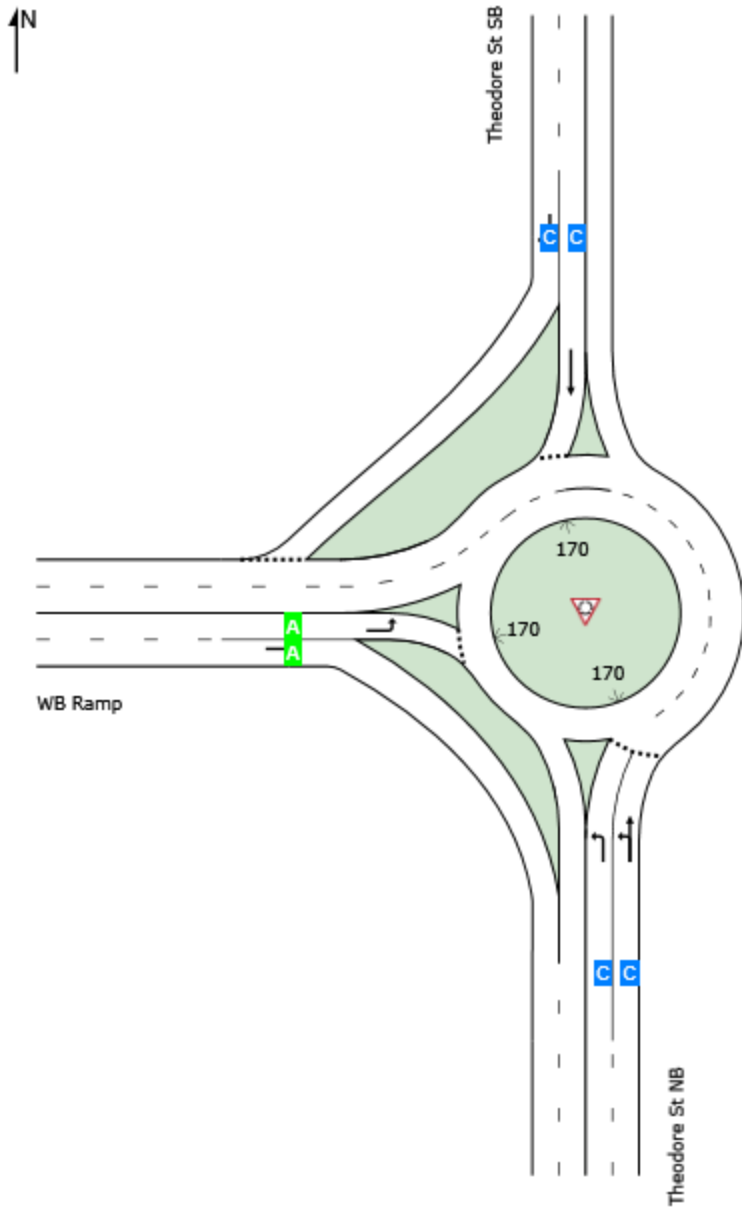
LANE LEVEL OF SERVICE

Lane Level of Service

 **Site: 1 [Roundabout3 (Theodore St & WB Ramps) - 2045PM - HCM6]**

Site Category: (None)
Roundabout

	Approaches			Intersection
	South	North	West	
LOS	C	C	A	B



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: Same as Sign Control.

Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

LOS F will result if $v/c > 1$ irrespective of lane delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

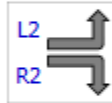
VOLUMES

	R2	T1
Tot	270	300
LV	100 %	99 %
HV	0 %	1 %



Theodore St SB

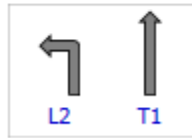
HV	LV	Tot	
0 %	100 %	150	L2
16 %	84 %	210	R2



WB Ramp



Theodore St NB








	L2	T1
Tot	570	450
LV	58 %	99 %
HV	42 %	1 %

DETAILED OUTPUT

Site: 1 [Roundabout3 (Theodore St & WB Ramps) - 2045PM - HCM6]

Site Category: (None)
Roundabout

OUTPUT TABLE LINKS

-  Roundabouts
 - Roundabout Basic Parameters
 - Roundabout Circulating / Exiting Stream Parameters
 - Roundabout Gap Acceptance Parameters
 - Roundabout Flow Rates
-  Movements
 - Intersection Negotiation and Travel Data
 - Movement Capacity and Performance Parameters
 - Fuel Consumption, Emissions and Cost
-  Lanes
 - Lane Performance and Capacity Information
 - Lane, Approach and Intersection Performance
 - Driver Characteristics
 - Lane Delays
 - Lane Queues
 - Lane Queue Percentiles
 - Lane Stops
-  Flow Rates
 - Origin-Destination Flow Rates (Total)
 - Origin-Destination Flow Rates by Movement Class
 - Lane Flow Rates
-  Other
 - Parameter Settings Summary
 - Diagnostics

Roundabouts

Roundabout Basic Parameters Site: Roundabout3 (Theodore St & WB Ramps) - 2045PM - HCM6

Site ID: 1
Roundabout

Central Island Diam	Circ Width	Insc Diam.	Entry Radius	Entry Angle	Circ Lanes	Entry Lanes	Av.Entry Lane Width	App Dist	Prop Upstr	Queued Signal	Extra Bunching
ft	ft	ft	ft	deg			ft	ft			%

South: Theodore St NB	170.0*	15.0*	215.0*	65.0*	30.0*	1	2	13.00*	1600	NA	0.0U

North: Theodore St SB	170.0*	30.0*	215.0*	65.0*	30.0*	2	2	13.00*	1600	NA	0.0U

West: WB Ramp

170.0* 15.0* 200.0* 65.0* 30.0* 1 2 13.00* 1600 NA 0.0U

 Roundabout Capacity Model: US HCM 6

* These parameters do not affect estimated capacity values in the HCM 6 Capacity Model.

NA Not Applicable (single Site analysis or unconnected Site in Network analysis).

U User-specified Extra Bunching

[Go to Table Links \(Top\)](#)

Roundabout Circulating / Exiting Stream Parameters
Site: Roundabout3 (Theodore St & WB Ramps) - 2045PM - HCM6

Site ID: 1
 Roundabout

Dest	Turn	Lane No.	Lane Type	Opng Flow veh/h	HVE pcu/veh	Adj. Flow pcu/h	%Near Lane Only	%Exit Flow Incl.	Cap. Const. Effect	O-D Factor	Aver Speed mph	In-Bunch Headway sec	Prop. Bunched

South: Theodore St NB													
W	L2	1	Subdominant	150	1.00	150	0.0	0.0	N	-	18.7	0.00	0.000
W	L2	2	Dominant	150	1.00	150	0.0	0.0	N	-	18.7	0.00	0.000
N	T1	2	Dominant	150	1.00	150	0.0	0.0	N	-	18.7	0.00	0.000

North: Theodore St SB													
S	T1	1	Dominant	826	1.42	1173	0.0	0.0	N	-	18.7	0.00	0.000
W	R2	2	Excl. Slip	826	1.42	1173	0.0	0.0	N	-	18.7	0.00	0.000

West: WB Ramp													
N	L2	1	Dominant	300	1.01	303	0.0	0.0	N	-	30.0	0.00	0.000
S	R2	2	Continuous										

 Roundabout Capacity Model: US HCM 6

[Go to Table Links \(Top\)](#)

Roundabout Gap Acceptance Parameters
Site: Roundabout3 (Theodore St & WB Ramps) - 2045PM - HCM6

Site ID: 1
 Roundabout

Dest	Turn	Lane No.	Lane Type	In-Bunch Headway sec	Prop. Bunched	Priority Sharing	HVE for Entry	Critical Gap		Follow-up Headway sec
				sec				Headway sec	Dist ft	sec

South: Theodore St NB										
Model Calibration Factor (HCM 6): 1.00										
Entry/Circ. Flow Adjustment (HCM 6): None										
W	L2	1	Subdominant	0.00	0.000	N	1.42	4.54	124.9	2.54
W	L2	2	Dominant	0.00	0.000	N	1.42	4.54	124.9	2.54
N	T1	2	Dominant	0.00	0.000	N	1.01	4.54	124.9	2.54

North: Theodore St SB										
Model Calibration Factor (HCM 6): 1.00										
Entry/Circ. Flow Adjustment (HCM 6): None										
S	T1	1	Dominant	0.00	0.000	N	1.01	4.33	118.6	2.54
W	R2	2	Excl. Slip	0.00	0.000	N	1.00	4.33	118.6	2.54

West: WB Ramp										

Model Calibration Factor (HCM 6): 1.00
 Entry/Circ. Flow Adjustment (HCM 6): None
 N L2 1 Dominant 0.00 0.000 N 1.00 4.54 199.8 2.54
 S R2 2 Continuous

 Roundabout Capacity Model: US HCM 6

Dist (Distance): Spacing, i.e. distance between the front ends of two successive vehicles across all lanes in the circulating or exiting stream

[Go to Table Links \(Top\)](#)

Roundabout Flow Rates
 Site: Roundabout3 (Theodore St & WB Ramps) - 2045PM - HCM6

Site ID: 1
 Roundabout

CIRCULATING LANE FLOW RATES

Lane No.	Circulating Flow Rate		
	veh/h	pcu/h	Percent

South: Theodore St NB			
1	150	150	100.0%
Total	150	150	

North: Theodore St SB			
1	639	907	77.3%
2	187	266	22.7%
Total	826	1173	

West: WB Ramp			
1	300	303	100.0%
Total	300	303	

The US HCM 6 roundabout capacity model option is in use. This model considers only the total circulating flow and not the flow rates in individual circulating lanes. To model the effects of flow distribution in circulating lanes on the entry capacity results, you should use the SIDRA Standard roundabout capacity model.

APPROACH LANE FLOW RATES

Lane No.	Approach Flows (veh/h)		
	Out	To Downst	Total

South: Theodore St NB			
1	0	642	642
2	652	184	836
Total	652	826	1478

North: Theodore St SB			
1	0	300	300
2	270	0	270
Total	270	300	570

West: WB Ramp			
1	0	150	150
2	210	0	210
Total	210	150	360

[Go to Table Links \(Top\)](#)

Movements

Intersection Negotiation and Travel Data Site: Roundabout3 (Theodore St & WB Ramps) - 2045PM - HCM6

Site ID: 1
Roundabout

TRAVEL SPEED, TRAVEL DISTANCE AND TRAVEL TIME

From Approach	To Exit	Turn	Running Speed mph	Travel Speed mph	Travel Distance ft	Travel Time s	Total Dem Flows veh-mi/h	Travel Distance Arv Flows veh-mi/h	Tot.Trav. Time veh-h/h
South: Theodore St NB									
	West	L2	34.2	28.5	3541.3#	84.8#	554.1	554.1	19.5
	North	T1	36.7	31.6	3443.9#	74.4#	425.4	425.4	13.5
North: Theodore St SB									
	South	T1	34.9	30.3	3402.3#	76.6#	193.3	193.3	6.4
	West	R2	34.3	29.7	3282.9#	75.3#	167.9	167.9	5.6
West: WB Ramp									
	North	L2	35.3	34.1	3572.1#	71.4#	101.5	101.5	3.0
	South	R2	38.0	38.0	3276.9#	58.8#	130.3	130.3	3.4
ALL VEHICLES:			35.4	30.6	3447.5#	76.8#	1572.4	1572.4	51.4

"Running Speed" is the average speed excluding stopped periods.

Travel Time values include cruise times and intersection delays including acceleration, deceleration and idling delays.

Travel Distance and Travel Time values include travel on the External Exit section based on the Exit Distance or user-specified Downstream Distance value as applicable.

INTERSECTION NEGOTIATION DATA

From Approach	To Exit	Turn	Negn Radius ft	Negn Speed mph	Negn Dist ft	App Dist ft	Exit Dist ft	Downstr Dist ft
South: Theodore St NB								
	West	L2	94.0	18.7	369.1	1600	488	NA
	North	T1	328.1	30.0	223.3	1600	488	NA
North: Theodore St SB								
	South	T1	328.1	30.0	202.3	1600	488	NA
	West	R2	198.0	24.8	82.9	1600	488	NA
West: WB Ramp								
	North	L2	94.8	18.7	372.1	1600	488	NA
	South	R2	222.3	25.9	76.9	1600	488	NA

Maximum Negotiation (Design) Speed = 30.0 mph

NA Downstream Distance does not apply if:

- Exit is an internal leg of a network
- "Program" option was specified
- Distance specified was less than the Exit Negotiation Distance
- Distance specified was greater than the exit leg length

MOVEMENT SPEEDS AND GEOMETRIC DELAY

Mov ID	Turn	App. Speeds		Exit Speeds		Queue Move-up Speed mph	Geom Delay sec
		Cruise mph	Negn mph	Negn mph	Cruise mph		

South: Theodore St NB							
3	L2	40.0	18.7	18.7	40.0	31.2	0.0
8	T1	40.0	30.0	30.0	40.0	35.1	0.0

North: Theodore St SB							
4	T1	40.0	30.0	30.0	40.0	14.1	0.0
14	R2	40.0	24.8	24.8	40.0	14.0	0.0

West: WB Ramp							
5	L2	40.0	18.7	18.7	40.0	24.4	0.0
12	R2	40.0	25.9	25.9	40.0	25.9	0.0

HCM Delay Formula option used: Geometric Delay is not included in Control Delay.

[Go to Table Links \(Top\)](#)

Movement Capacity and Performance Parameters
 Site: Roundabout3 (Theodore St & WB Ramps) - 2045PM - HCM6

Site ID: 1
 Roundabout

MOVEMENT CAPACITY PARAMETERS

Mov ID	Turn	Mov Cl.	Arv Flow veh/h	Opng Flow veh/h	Movement Adjust. Flow pcu/h	Total Cap. veh/h	Prac. Deg. xp	Prac. Spare Cap. %	Deg. Satn x

South: Theodore St NB									
3	L2	#	826	150	150	1122	0.85	15	0.736*
8	T1	#	652	150	150	886	0.85	15	0.736*

North: Theodore St SB									
4	T1	#	300	826	1173	519	0.85	47	0.578
14	R2	#	270	826	1173	524	0.85	65	0.515

West: WB Ramp									
5	L2	#	150	300	303	1078	0.85	511	0.139
12	R2	#	210	300	303	1444	0.98	574	0.145

* Maximum degree of saturation
 # Combined Movement Capacity parameters are shown for all Movement Classes.

MOVEMENT PERFORMANCE

Mov ID	Turn	Total Delay (veh-h/h)	Total Delay (pers-h/h)	Aver. Delay (sec)	Eff. Stop Rate	Total Stops	Perf. Index	Tot.Trav. Distance (veh-mi/h)	Tot.Trav. Time (veh-h/h)	Aver. Speed (mph)

South: Theodore St NB										
3	L2	4.10	4.92	17.9	0.37	306.2	24.19	554.1	19.5	28.5
8	T1	2.70	3.24	14.9	0.44	290.2	21.23	425.4	13.5	31.6

North: Theodore St SB										
4	T1	1.58	1.89	18.9	0.96	289.3	10.60	193.3	6.4	30.3
14	R2	1.24	1.49	16.5	0.91	245.2	7.86	167.9	5.6	29.7

West: WB Ramp										
5	L2	0.19	0.23	4.6	0.30	44.5	3.21	101.5	3.0	34.1
12	R2	0.00	0.00	0.0	0.00	0.0	3.26	130.3	3.4	38.0

[Go to Table Links \(Top\)](#)

Fuel Consumption, Emissions and Cost
Site: Roundabout3 (Theodore St & WB Ramps) - 2045PM - HCM6

Site ID: 1
Roundabout

FUEL CONSUMPTION, EMISSIONS AND COST (TOTAL)

Mov ID	Turn	Cost Total \$/h	Fuel Total gal/h	CO2 Total kg/h	CO Total kg/h	HC Total kg/h	NOX Total kg/h

South: Theodore St NB							
3	L2	557.20	61.5	579.3	0.99	0.083	3.550
8	T1	252.97	21.7	194.9	0.74	0.054	0.673
		810.17	83.2	774.2	1.73	0.137	4.223

North: Theodore St SB							
4	T1	95.06	7.3	65.1	0.33	0.025	0.082
14	R2	83.50	6.3	55.8	0.30	0.022	0.047
		178.56	13.6	121.0	0.64	0.047	0.129

West: WB Ramp							
5	L2	53.16	4.0	35.3	0.19	0.014	0.031
12	R2	65.19	7.5	68.5	0.20	0.013	0.306
		118.35	11.4	103.8	0.39	0.027	0.337

INTERSECTION:		1107.08	108.2	999.0	2.75	0.211	4.688

FUEL CONSUMPTION, EMISSIONS AND COST (RATE)

Mov ID	Turn	Cost Rate \$/mi	Fuel Eff. mpg	CO2 Rate g/km	CO Rate g/km	HC Rate g/km	NOX Rate g/km

South: Theodore St NB							
3	L2	0.62	9.0	649.7	1.11	0.093	3.981
8	T1	0.37	19.6	284.7	1.08	0.079	0.983
		0.51	11.8	491.2	1.10	0.087	2.679

North: Theodore St SB							
4	T1	0.31	26.5	209.4	1.07	0.079	0.262

14	R2	0.31	26.7	206.7	1.11	0.082	0.175
		0.31	26.6	208.1	1.09	0.080	0.222
West: WB Ramp							
5	L2	0.33	25.6	216.2	1.14	0.084	0.189
12	R2	0.31	17.5	326.5	0.95	0.062	1.457
		0.32	20.3	278.2	1.03	0.072	0.902
INTERSECTION:							
		0.44	14.5	394.8	1.09	0.083	1.852

[Go to Table Links \(Top\)](#)

Lanes

Lane Performance and Capacity Information Site: Roundabout3 (Theodore St & WB Ramps) - 2045PM - HCM6

Site ID: 1
Roundabout

LANE PERFORMANCE

Lane No.	Flow veh/h	Cap veh/h	Deg. Satn x	Aver. Delay sec	Eff. Stop Rate	Q u e u e		Lane Length ft
						95% Back veh	ft	
South: Theodore St NB								
1	642	872	0.736	18.4	0.35	5.0	167.3	1600.0
2	836	1135	0.736	15.2	0.44	7.8	211.0	1600.0
North: Theodore St SB								
1	300	519	0.578	18.9	0.96	3.2	80.9	1600.0
2	270	524	0.515	16.5	0.91	2.6	66.0	1600.0
West: WB Ramp								
1	150	1078	0.139	4.6	0.30	0.6	14.5	1600.0
2	210	1444	0.145	0.0	0.00			1600.0

LANE FLOW AND CAPACITY INFORMATION

Lane No.	Total Arv Flow veh/h	Min Cap veh/h	Tot Cap veh/h	Deg. Satn x	Lane Util %
South: Theodore St NB					
1	642	150	872	0.736	100
2	836	150	1135	0.736	100
North: Theodore St SB					
1	300	150	519	0.578	100
2	270	150	524	0.515	100
West: WB Ramp					
1	150	150	1078	0.139	100
2	210	210	1444	0.145	100

The capacity values of Continuous Lanes are obtained by adjusting the basic saturation flow for lane width, grade, movement class and turning vehicle effects. Saturation flow scale applies if specified.

[Go to Table Links \(Top\)](#)

Lane, Approach and Intersection Performance
Site: Roundabout3 (Theodore St & WB Ramps) - 2045PM - HCM6

Site ID: 1
 Roundabout

Lane No.	Arrival Flow (veh/h)	%HV	Adj. Basic Satf.	Deg Sat x	Aver. Delay sec	Longest Queue ft	Lane Length ft

South: Theodore St NB							
1	642	42		0.736	18.4	167	1600
2	836	10		0.736	15.2	211	1600
	1478	24		0.736	16.6	211	

North: Theodore St SB							
1	300	1		0.578	18.9	81	1600
2	270	0		0.515	16.5	66	1600
	570	1		0.578	17.8	81	

West: WB Ramp							
1	150	0		0.139	4.6	15	1600
2	210	16	1975	0.145	0.0		1600
	360	9		0.145	1.9	15	
=====							
ALL VEHICLES							
	Total	%		Max	Aver.	Max	
	Flow	HV		X	Delay	Queue	
	2408	16		0.736	14.7	211	
=====							

Peak flow period = 15 minutes.

Queue values in this table are 95% queue (feet)
 Note: Basic Saturation Flows at roundabouts or sign-controlled intersections apply only to continuous lanes.

[Go to Table Links \(Top\)](#)

Driver Characteristics
Site: Roundabout3 (Theodore St & WB Ramps) - 2045PM - HCM6

Site ID: 1
 Roundabout

Lane No.	Satn Speed mph	Satn Flow veh/h	Satn Hdwy sec	Satn Spacing ft	Average Queue Space ft	Driver Response Time sec

South: Theodore St NB						
1	18.7	1420	2.54	69.50	33.40	1.32

2	27.5	1420	2.54	102.25	27.00	1.87

North: Theodore St SB						
1	30.0	1420	2.54	111.48	25.20	1.96
2	24.8	1420	2.54	92.14	25.00	1.85

West: WB Ramp						
1	18.7	1420	2.54	69.71	25.00	1.63
2	NA - Continuous Movement					

Saturation Flow and Saturation Headway are derived from follow-up headway.

[Go to Table Links \(Top\)](#)

Lane Delays

Site: Roundabout3 (Theodore St & WB Ramps) - 2045PM - HCM6

Site ID: 1
Roundabout

LANE DELAYS

Lane No.	Deg. Satn x	% Arv During Green	Prog. Factor	Delay (seconds/veh)									
				Min Del dm	Stop-line 1st d1	2nd d2	Total dSL	Acc. Dec. dn	Queuing Total dq	MvUp dqm	Stopd (Idle) di	Geom dig	Control dic

South: Theodore St NB													
1	0.736	NA	NA	4.1	7.8	10.6	18.4	5.5	15.9	0.5	15.4	0.0	18.4
2	0.736	NA	NA	3.2	6.9	8.3	15.2	6.8	11.0	0.6	10.5	0.0	15.2

North: Theodore St SB													
1	0.578	NA	NA	6.9	9.8	9.1	18.9	7.2	13.2	3.1	10.1	0.0	18.9
2	0.515	NA	NA	6.9	9.4	7.1	16.5	5.1	12.6	2.4	10.1	0.0	16.5

West: WB Ramp													
1	0.139	NA	NA	3.3	4.0	0.5	4.6	5.5	2.3	0.0	2.3	0.0	4.6
2	0.145					0.0					0.0	0.0	

HCM Delay Formula option used (Exclude Geometric Delay option applies). Control Delay does not include Geometric Delay, and Stop-line Delay is treated as being same as Control Delay.

dm: Minimum delay for gap acceptance cases

dSL: Stop-line delay (=d1+d2)

dn: Average stop-start delay for all vehicles queued and unqueued

dq: Queuing delay (the part of the stop-line delay that includes stopped delay and queue move-up delay)

dqm: Queue move-up delay

di: Stopped delay (stopped (idling) time at near-zero speed)

dig: Geometric delay

dic: Control delay

[Go to Table Links \(Top\)](#)

Lane Queues

Site: Roundabout3 (Theodore St & WB Ramps) - 2045PM - HCM6

Site ID: 1
Roundabout

BACK OF QUEUE (VEHICLES)

Lane No.	Deg. Satn	% Arv During Green	Prog. Factor	Ovrfl. Queue No	Back of Queue (veh)				Queue Stor. Ratio		Prob. Block %	Prob. SL Ov. %
	x				Nb1	Nb2	Nb	95%	Av.	95%		
South: Theodore St NB												
1	0.736	NA	NA	0.3	1.4	0.6	2.0	5.0	0.04	0.10	0.0	NA
2	0.736	NA	NA	0.3	2.5	0.6	3.1	7.8	0.05	0.13	0.0	NA
North: Theodore St SB												
1	0.578	NA	NA	0.4	0.9	0.4	1.3	3.2	0.02	0.05	0.0	NA
2	0.515	NA	NA	0.3	0.8	0.2	1.1	2.6	0.02	0.04	0.0	NA
West: WB Ramp												
1	0.139	NA	NA	0.0	0.2	0.0	0.2	0.6	0.00	0.01	0.0	NA

SIDRA Standard models are used for Back of Queue estimation since HCM only gives Cycle-Average Queues for unsignalised intersections.

BACK OF QUEUE (DISTANCE)

Lane No.	Deg. Satn	% Arv During Green	Prog. Factor	Ovrfl. Queue No	Back of Queue (ft)				Queue Stor. Ratio		Prob. Block %	Prob. SL Ov. %
	x				Nb1	Nb2	Nb	95%	Av.	95%		
South: Theodore St NB												
1	0.736	NA	NA	9.9	48.3	19.1	67.3	167.3	0.04	0.10	0.0	NA
2	0.736	NA	NA	8.1	67.6	17.3	84.9	211.0	0.05	0.13	0.0	NA
North: Theodore St SB												
1	0.578	NA	NA	10.5	23.7	8.9	32.6	80.9	0.02	0.05	0.0	NA
2	0.515	NA	NA	7.4	20.6	6.0	26.6	66.0	0.02	0.04	0.0	NA
West: WB Ramp												
1	0.139	NA	NA	0.0	5.8	0.0	5.8	14.5	0.00	0.01	0.0	NA

SIDRA Standard models are used for Back of Queue estimation since HCM only gives Cycle-Average Queues for unsignalised intersections.

OTHER QUEUE RESULTS (VEHICLES)

Lane No.	Deg. Satn	% Arv During Green	Prog. Factor	Ovrfl. Queue No	Cyc-Av. Queue	
	x				Nc	95%
South: Theodore St NB						
1	0.736	NA	NA	0.3	3.3	5.9
2	0.736	NA	NA	0.3	3.5	6.4
North: Theodore St SB						
1	0.578	NA	NA	0.4	1.6	2.9
2	0.515	NA	NA	0.3	1.2	2.2
West: WB Ramp						
1	0.139	NA	NA	0.0	0.2	0.3

HCM Delay Formula option used:
 Cycle-Average Queue is calculated using average delay from the HCM equation.
 (i.e. HCM delays are treated as stop-line delays for this purpose).

OTHER QUEUE RESULTS (DISTANCE)

Lane No.	Deg. Satn x	% Arv During Green	Prog. Factor	Ovrfl. Queue No	Cyc-Av. Nc	Queue 95%

South: Theodore St NB						
1	0.736	NA	NA	9.9	109.5	198.7
2	0.736	NA	NA	8.1	95.0	172.3

North: Theodore St SB						
1	0.578	NA	NA	10.5	39.7	72.1
2	0.515	NA	NA	7.4	31.0	56.2

West: WB Ramp						
1	0.139	NA	NA	0.0	4.8	8.6

HCM Delay Formula option used:
Cycle-Average Queue is calculated using average delay from the HCM equation.
(i.e. HCM delays are treated as stop-line delays for this purpose).

[Go to Table Links \(Top\)](#)

Lane Queue Percentiles Site: Roundabout3 (Theodore St & WB Ramps) - 2045PM - HCM6

Site ID: 1
Roundabout

LANE QUEUE PERCENTILES (VEHICLES)

Lane No.	Deg. Satn x	Percentile Back of Queue (veh)						
		50%	70%	85%	90%	95%	98%	100%

South: Theodore St NB								
1	0.736	2.0	2.6	3.7	4.3	5.0	5.6	6.0
2	0.736	3.1	4.1	5.7	6.6	7.8	8.7	9.3

North: Theodore St SB								
1	0.578	1.3	1.7	2.4	2.7	3.2	3.6	3.8
2	0.515	1.1	1.4	1.9	2.2	2.6	2.9	3.2

West: WB Ramp								
1	0.139	0.2	0.3	0.4	0.5	0.6	0.6	0.7

SIDRA Standard models are used for Back of Queue estimation since
HCM only gives Cycle-Average Queues for unsignalised intersections.

LANE QUEUE PERCENTILES (DISTANCE)

Lane No.	Deg. Satn x	Percentile Back of Queue (feet)						
		50%	70%	85%	90%	95%	98%	100%

South: Theodore St NB								
1	0.736	67.3	87.1	122.8	142.2	167.3	185.7	199.6
2	0.736	84.9	109.9	155.0	179.5	211.0	234.2	251.8

North: Theodore St SB								
1	0.578	32.5	42.2	59.4	68.8	80.9	89.8	96.6

2 0.515 26.6 34.4 48.5 56.2 66.0 73.3 78.8

 West: WB Ramp
 1 0.139 5.8 7.6 10.6 12.3 14.5 16.1 17.3

SIDRA Standard models are used for Back of Queue estimation since HCM only gives Cycle-Average Queues for unsignalised intersections.

[Go to Table Links \(Top\)](#)

Lane Stops
 Site: Roundabout3 (Theodore St & WB Ramps) - 2045PM - HCM6

Site ID: 1
 Roundabout

Lane No.	Deg. Satn x	% Arv During Green	Prog. Factor	-- Effective Stop Rate --				Total Stops H	Queue Move-up Rate hqm	Total Queue Move-ups Hqm	Prop. Queued pq	Aver. Num. of Cycles to Depart
				he1	he2	Geom. hig	Overall h					

South: Theodore St NB												
1	0.736	NA	NA	0.30	0.05	0.00	0.35	224.4	0.09	55.0	0.46	0.54
2	0.736	NA	NA	0.40	0.04	0.00	0.44	371.9	0.07	55.7	0.61	0.67

North: Theodore St SB												
1	0.578	NA	NA	0.80	0.16	0.00	0.96	289.3	0.58	174.1	0.80	1.38
2	0.515	NA	NA	0.78	0.13	0.00	0.91	245.2	0.46	123.5	0.78	1.24

West: WB Ramp												
1	0.139	NA	NA	0.30	0.00	0.00	0.30	44.5	0.00	0.0	0.41	0.41
2	0.145	NA	NA			0.00	0.00	0.0				

hig is the average value for all movements in a shared lane
 hqm is average queue move-up rate for all vehicles queued and unqueued

[Go to Table Links \(Top\)](#)

Flow Rates

Origin-Destination Flow Rates (Total)
 Site: Roundabout3 (Theodore St & WB Ramps) - 2045PM - HCM6

Site ID: 1
 Roundabout

TOTAL FLOW RATES for All Movement Classes (veh/h)

From SOUTH To:	W	N	
Turn:	L2	T1	TOT
Flow Rate	826.1	652.2	1478.3
%HV (all designations)	42.0	1.0	23.9

From NORTH To:	S	W	
Turn:	T1	R2	TOT
Flow Rate	300.0	270.0	570.0
%HV (all designations)	1.0	0.0	0.5

From WEST To:	N	S	
Turn:	L2	R2	TOT
Flow Rate	150.0	210.0	360.0
%HV (all designations)	0.0	16.0	9.3

Flow rates shown above are Arrival Flow Rates (veh/h) based on the following input specifications:
Unit Time for Volumes = 60 minutes
Peak Flow Period = 15 minutes
Effects of Volume Factors (Peak Flow Factor, Flow Scale, Growth Rate) are included.
Arrival Flow Rates may be less than Demand Flow Rates if capacity constraint applies in network analysis.

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Origin-Destination Flow Rates by Movement Class
Site: Roundabout3 (Theodore St & WB Ramps) - 2045PM - HCM6

Site ID: 1
Roundabout

FLOW RATES for Light Vehicles (veh/h)

From SOUTH To:	W	N	
Turn:	L2	T1	TOT
Flow Rate	479.1	645.7	1124.8
Mov Class %	58.0	99.0	76.1
Flow Scale	1.00	1.00	-
Peak Flow Factor	0.69	0.69	-
Residual Demand	0.0	0.0	0.0
From NORTH To:	S	W	
Turn:	T1	R2	TOT
Flow Rate	297.0	270.0	567.0
Mov Class %	99.0	100.0	99.5
Flow Scale	1.00	1.00	-
Peak Flow Factor	1.00	1.00	-
Residual Demand	0.0	0.0	0.0
From WEST To:	N	S	
Turn:	L2	R2	TOT
Flow Rate	150.0	176.4	326.4
Mov Class %	100.0	84.0	90.7
Flow Scale	1.00	1.00	-
Peak Flow Factor	1.00	1.00	-
Residual Demand	0.0	0.0	0.0

FLOW RATES for Heavy Vehicles (veh/h)

From SOUTH To:	W	N	
Turn:	L2	T1	TOT
Flow Rate	347.0	6.5	353.5
Mov Class %	42.0	1.0	23.9
Flow Scale	1.00	1.00	-
Peak Flow Factor	0.69	0.69	-
Residual Demand	0.0	0.0	0.0
From NORTH To:	S	W	
Turn:	T1	R2	TOT

From WEST To:	N	S	TOT
Flow Rate	3.0	0.0	3.0
Mov Class %	1.0	0.0	0.5
Flow Scale	1.00	1.00	-
Peak Flow Factor	1.00	1.00	-
Residual Demand	0.0	0.0	0.0
Turn:	L2	R2	TOT
Flow Rate	0.0	33.6	33.6
Mov Class %	0.0	16.0	9.3
Flow Scale	1.00	1.00	-
Peak Flow Factor	1.00	1.00	-
Residual Demand	0.0	0.0	0.0

Flow rates shown above are Arrival Flow Rates (veh/h) based on the following input specifications:
Unit Time for Volumes = 60 minutes
Peak Flow Period = 15 minutes
Effects of Volume Factors (Peak Flow Factor, Flow Scale, Growth Rate) are included.
Arrival Flow Rates may be less than Demand Flow Rates if capacity constraint applies in network analysis.

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Lane Flow Rates Site: Roundabout3 (Theodore St & WB Ramps) - 2045PM - HCM6

Site ID: 1
Roundabout

LANE FLOW RATES AT STOP LINE (veh/h)

From SOUTH To:	W	N	TOT
Turn:	L2	T1	TOT
Lane 1			
LV	372.5	*	372.5
HV	269.8	*	269.8
Total	642.3	*	642.3
Lane 2			
LV	106.6	645.7	752.3
HV	77.2	6.5	83.7
Total	183.8	652.2	836.0
Approach	826.1	652.2	1478.3
From NORTH To:	S	W	TOT
Turn:	T1	R2	TOT
Lane 1			
LV	297.0	*	297.0
HV	3.0	*	3.0
Total	300.0	*	300.0
Lane 2			
LV	*	270.0	270.0
Total	*	270.0	270.0
Approach	300.0	270.0	570.0
From WEST To:	N	S	TOT
Turn:	L2	R2	TOT
Lane 1			

LV	150.0	*	150.0
Total	150.0	*	150.0
Lane 2			
LV	*	176.4	176.4
HV	*	33.6	33.6
Total	*	210.0	210.0

Approach	150.0	210.0	360.0

* Movement not allocated to the lane

EXIT LANE FLOW RATES

Movement Class:	LV	HV	TOT

Exit: SOUTH			
Lane: 1	297.0	3.0	300.0
Lane: 2	176.4	33.6	210.0
Total	473.4	36.6	510.0

Exit: NORTH			
Lane: 1	795.7	6.5	802.2
Total	795.7	6.5	802.2

Exit: WEST			
Lane: 1	372.5	269.8	642.3
Lane: 2	376.6	77.2	453.8
Total	749.1	347.0	1096.1

* Movement not allocated to the lane

DOWNSTREAM LANE FLOW RATES FOR EXIT ROADS

Movement Class:	LV	HV	TOT

Exit: SOUTH			
Lane: 1	297.0	3.0	300.0
Lane: 2	176.4	33.6	210.0
Total	473.4	36.6	510.0

Exit: NORTH			
Lane: 1	795.7	6.5	802.2
Total	795.7	6.5	802.2

Exit: WEST			
Lane: 1	372.5	269.8	642.3
Lane: 2	376.6	77.2	453.8
Total	749.1	347.0	1096.1

* Movement not allocated to the lane

Flow rates shown above are Arrival Flow Rates (veh/h) based on the following input specifications:
Unit Time for Volumes = 60 minutes
Peak Flow Period = 15 minutes
Effects of Volume Factors (Peak Flow Factor, Flow Scale, Growth Rate) are included.
Arrival Flow Rates may be less than Demand Flow Rates if capacity constraint applies in network analysis.

[Go to Table Links \(Top\)](#)

Other

Parameter Settings Summary
Site: Roundabout3 (Theodore St & WB Ramps) - 2045PM - HCM6

Site ID: 1
Roundabout

* Basic Parameters:
Intersection Type: Roundabout
US HCM 6 Roundabout Capacity Model used
Driving on the right-hand side of the road
Input data specified in US units
Model Defaults: US HCM (Customary)
Peak Flow Period (for performance): 15 minutes
Unit time (for volumes): 60 minutes.
HCM Delay Model option used
HCM Queue Model option used
Level of Service based on: Delay and v/c (HCM 6)
Queue percentile: 95%

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Diagnostics
Site: Roundabout3 (Theodore St & WB Ramps) - 2045PM - HCM6

Site ID: 1
Roundabout

Lane Flow-Capacity Iterations:

Site Model Variability Index (Iterations 3 to N): 0.9%
Number of Iterations: 4 (Maximum: 10)
Largest change in Lane Degrees of Saturation for the last three Flow-Capacity Iterations:
94.8% 1.2% 0.5%

Other Diagnostic Messages (if any):

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Appendix J

Freeway LOS Worksheets for Alternative 6

Appendix J-1

Freeway LOS Worksheets for Alternative 6, Existing

HCS7 Freeway Facilities Report

Project Information

Analyst	WSP	Date	10/15/2018
Agency	City of Moreno Valley	Analysis Year	2018 with Alternative 6
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	WLC Pkwy IC - Eastbound SR-60		

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	7
Total Time Periods	8	Time Period Duration, min	15

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic	Moreno Beach Rd to Redlands Blvd	1350	3
2	Diverge	Basic	Off-Ramp to Redlands Blvd	1500	3
3	Basic	Basic	between Redlands Blvd Off and SB Redlands Blvd On Ramp	770	2
4	Weaving	Basic	Redlands Blvd to WLC Pkwy	3925	3
5	Basic	Basic	between WLC Pkwy Off- and On-Ramps	2900	2
6	Weaving	Weaving	WLC Pkwy On-Ramp to Gilman Springs Off-Ramp	1950	3
7	Basic	Basic	east of Gilman Springs Rd Off Ramp	1350	2

Facility Segment Data

Segment 1: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	1.00	0.901	2238	7200	0.31	75.4	9.9	A
2	1.00	0.901	2212	7200	0.31	75.4	9.8	A
3	1.00	0.901	2358	7200	0.33	75.4	10.4	A
4	1.00	0.901	2325	7200	0.32	75.4	10.3	A
5	1.00	0.901	1973	7200	0.27	75.4	8.7	A
6	1.00	0.901	1982	7200	0.28	75.4	8.8	A
7	1.00	0.901	2179	7200	0.30	75.4	9.6	A
8	1.00	0.901	2400	7200	0.33	75.4	10.6	A

Segment 2: Diverge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	1.00	1.00	0.901	0.917	2238	279	7200	2000	0.31	0.14	75.4	-	9.9	-	A
2	1.00	1.00	0.901	0.917	2212	236	7200	2000	0.31	0.12	75.4	-	9.8	-	A
3	1.00	1.00	0.901	0.917	2358	297	7200	2000	0.33	0.15	75.4	-	10.4	-	A

4	1.00	1.00	0.901	0.917	2325	314	7200	2000	0.32	0.16	75.4	-	10.3	-	A
5	1.00	1.00	0.901	0.917	1973	366	7200	2000	0.27	0.18	75.4	-	8.7	-	A
6	1.00	1.00	0.901	0.917	1982	414	7200	2000	0.28	0.21	75.4	-	8.8	-	A
7	1.00	1.00	0.901	0.917	2179	336	7200	2000	0.30	0.17	75.4	-	9.6	-	A
8	1.00	1.00	0.901	0.917	2400	401	7200	2000	0.33	0.20	75.4	-	10.6	-	A

Segment 3: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	1.00	0.893	1971	4800	0.41	72.6	13.6	B
2	1.00	0.893	1990	4800	0.41	72.6	13.7	B
3	1.00	0.893	2075	4800	0.43	72.6	14.3	B
4	1.00	0.893	2024	4800	0.42	72.6	13.9	B
5	1.00	0.893	1615	4800	0.34	72.6	11.1	B
6	1.00	0.893	1574	4800	0.33	72.6	10.8	A
7	1.00	0.893	1853	4800	0.39	72.6	12.8	B
8	1.00	0.893	2009	4800	0.42	72.6	13.8	B

Segment 4: Weaving

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	1.00	0.893	2051	7200	0.28	75.4	9.1	A
2	1.00	0.893	2126	7200	0.28	75.4	8.8	A
3	1.00	0.893	2174	7200	0.29	75.4	9.2	A
4	1.00	0.893	2151	7200	0.28	75.4	9.0	A
5	1.00	0.893	1748	7200	0.22	75.4	7.1	A
6	1.00	0.893	1652	7200	0.22	75.4	7.0	A
7	1.00	0.893	1955	7200	0.26	75.4	8.2	A
8	1.00	0.893	2091	7200	0.28	75.4	8.9	A

Segment 5: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	1.00	0.901	1943	4800	0.40	72.6	13.4	B
2	1.00	0.901	2006	4800	0.42	72.6	13.8	B
3	1.00	0.901	2057	4800	0.43	72.6	14.2	B
4	1.00	0.901	2029	4800	0.42	72.6	14.0	B
5	1.00	0.901	1590	4800	0.33	72.6	11.0	A
6	1.00	0.901	1452	4800	0.30	72.6	10.0	A
7	1.00	0.901	1766	4800	0.37	72.6	12.2	B
8	1.00	0.901	1939	4800	0.40	72.6	13.4	B

Segment 6: Weaving

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	1.00	0.901	1954	6313	0.31	68.2	9.6	A

2	1.00	0.901	2047	6285	0.33	67.6	10.1	B
3	1.00	0.901	2097	6249	0.34	67.2	10.4	B
4	1.00	0.901	2087	6267	0.33	67.4	10.3	B
5	1.00	0.901	1637	6300	0.26	69.1	7.9	A
6	1.00	0.901	1477	6279	0.24	69.5	7.1	A
7	1.00	0.901	1798	6258	0.29	68.3	8.8	A
8	1.00	0.901	2004	6294	0.32	67.8	9.9	A

Segment 7: Basic

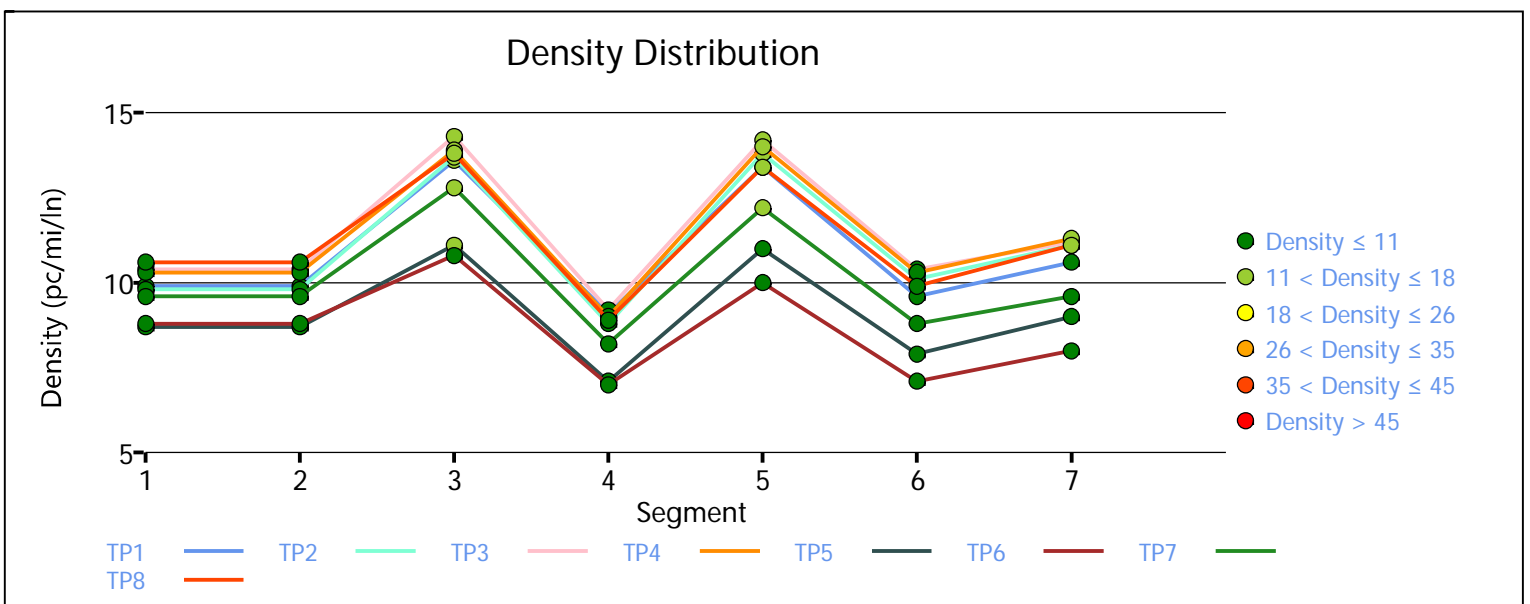
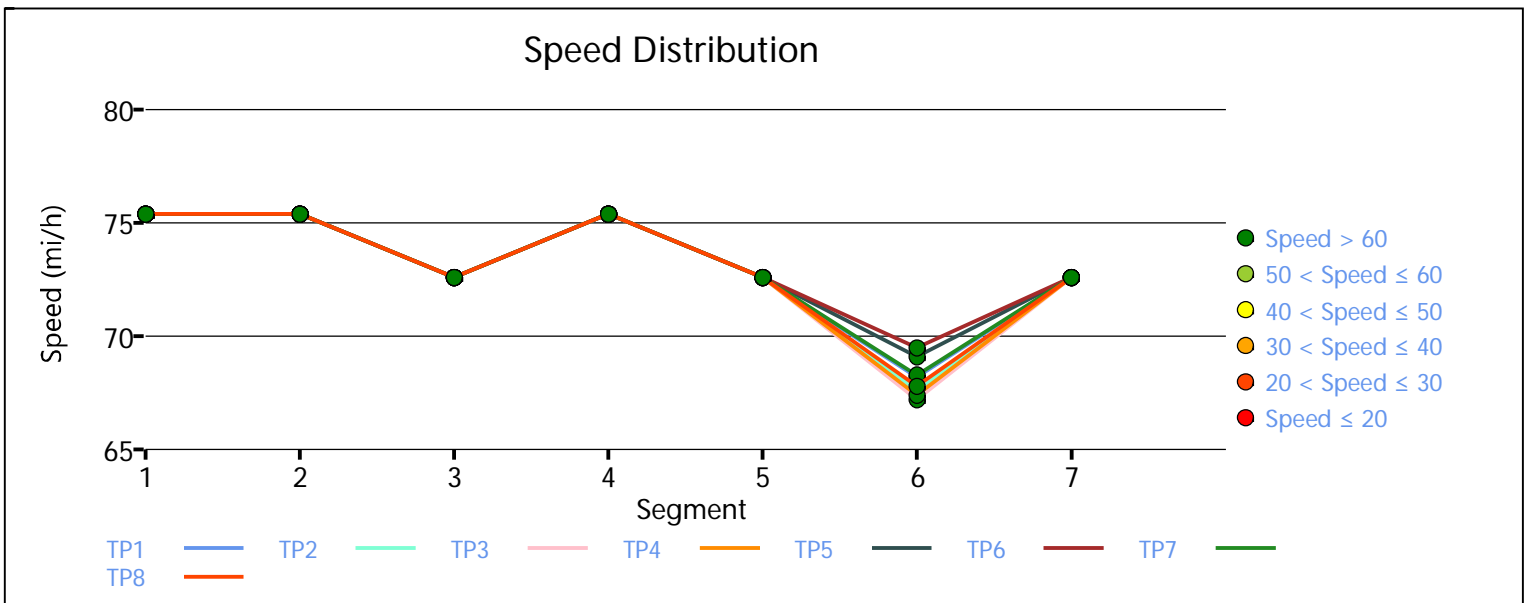
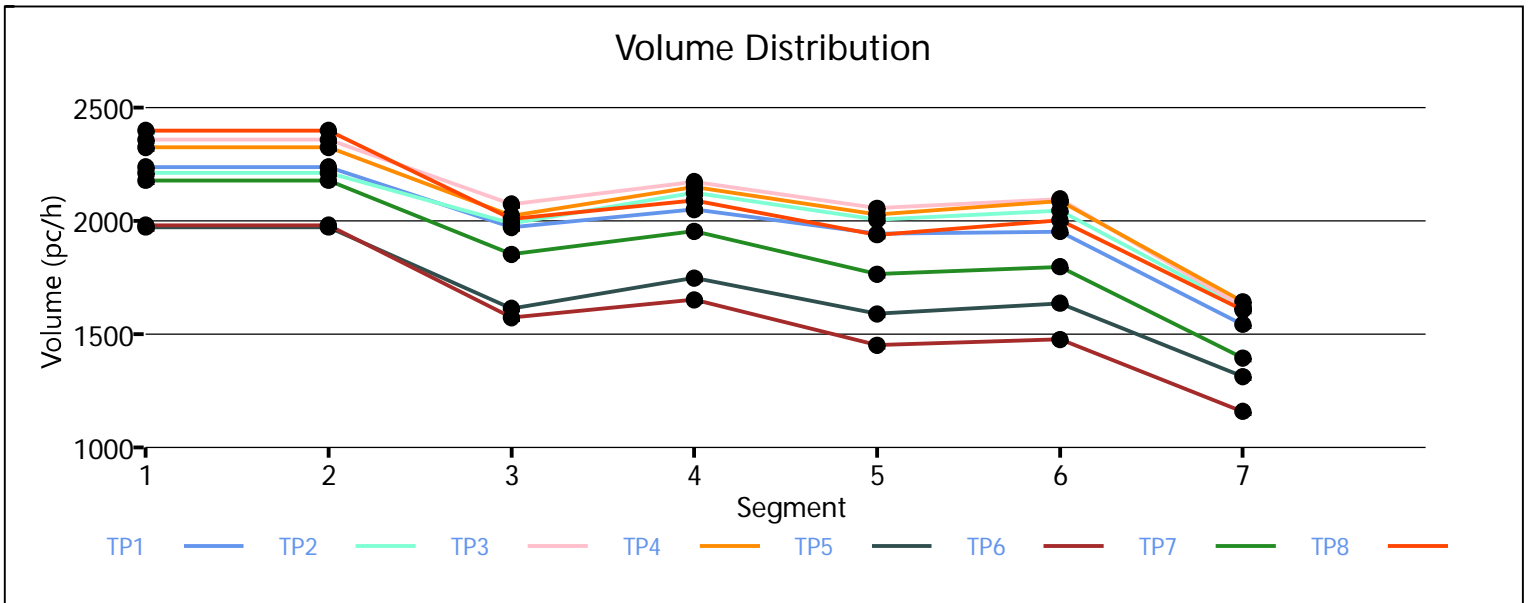
Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	1.00	0.893	1544	4800	0.32	72.6	10.6	A
2	1.00	0.893	1616	4800	0.34	72.6	11.1	B
3	1.00	0.893	1623	4800	0.34	72.6	11.2	B
4	1.00	0.893	1644	4800	0.34	72.6	11.3	B
5	1.00	0.893	1314	4800	0.27	72.6	9.0	A
6	1.00	0.893	1160	4800	0.24	72.6	8.0	A
7	1.00	0.893	1396	4800	0.29	72.6	9.6	A
8	1.00	0.893	1607	4800	0.33	72.6	11.1	B

Facility Time Period Results

T	Speed, mi/h	Density, pc/mi/ln	Density, veh/mi/ln	Travel Time, min	LOS
1	73.4	10.4	9.3	2.1	A
2	73.2	10.4	9.4	2.1	A
3	73.2	10.8	9.7	2.1	A
4	73.2	10.7	9.6	2.1	A
5	73.5	8.5	7.6	2.1	A
6	73.7	8.2	7.3	2.1	A
7	73.4	9.6	8.6	2.1	A
8	73.3	10.6	9.5	2.1	A

Facility Overall Results

Space Mean Speed, mi/h	73.4	Density, veh/mi/ln	8.9
Average Travel Time, min	2.1	Density, pc/mi/ln	9.9



HCS7 Freeway Facilities Report

Project Information

Analyst	WSP	Date	10/15/2018
Agency	City of Moreno Valley	Analysis Year	2018 with Alternative 6
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	WLC Pkwy IC - Eastbound SR-60		

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	7
Total Time Periods	8	Time Period Duration, min	15

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic	Moreno Beach Rd to Redlands Blvd	1350	3
2	Diverge	Basic	Off-Ramp to Redlands Blvd	1500	3
3	Basic	Basic	between Redlands Blvd Off and SB Redlands Blvd On Ramp	770	2
4	Weaving	Basic	Redlands Blvd to WLC Pkwy	3925	3
5	Basic	Basic	between WLC Pkwy Off- and On-Ramps	2900	2
6	Weaving	Weaving	WLC Pkwy On-Ramp to Gilman Springs Off-Ramp	1950	3
7	Basic	Basic	east of Gilman Springs Rd Off Ramp	1350	2

Facility Segment Data

Segment 1: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	1.00	0.943	2821	7200	0.39	75.4	12.5	B
2	1.00	0.943	3027	7200	0.42	75.4	13.4	B
3	1.00	0.943	3075	7200	0.43	75.4	13.6	B
4	1.00	0.943	3127	7200	0.43	75.4	13.8	B
5	1.00	0.943	2973	7200	0.41	75.4	13.1	B
6	1.00	0.943	3095	7200	0.43	75.4	13.7	B
7	1.00	0.943	2759	7200	0.38	75.4	12.2	B
8	1.00	0.943	3172	7200	0.44	75.3	14.0	B

Segment 2: Diverge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	1.00	1.00	0.943	0.980	2821	514	7200	2000	0.39	0.26	75.4	-	12.5	-	B
2	1.00	1.00	0.943	0.980	3027	567	7200	2000	0.42	0.28	75.4	-	13.4	-	B
3	1.00	1.00	0.943	0.980	3075	559	7200	2000	0.43	0.28	75.4	-	13.6	-	B

4	1.00	1.00	0.943	0.980	3127	584	7200	2000	0.43	0.29	75.4	-	13.8	-	B
5	1.00	1.00	0.943	0.980	2973	588	7200	2000	0.41	0.29	75.4	-	13.1	-	B
6	1.00	1.00	0.943	0.980	3095	535	7200	2000	0.43	0.27	75.4	-	13.7	-	B
7	1.00	1.00	0.943	0.980	2759	510	7200	2000	0.38	0.26	75.4	-	12.2	-	B
8	1.00	1.00	0.943	0.980	3172	563	7200	2000	0.44	0.28	75.3	-	14.0	-	B

Segment 3: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	1.00	0.935	2306	4800	0.48	72.6	15.9	B
2	1.00	0.935	2458	4800	0.51	72.4	17.0	B
3	1.00	0.935	2516	4800	0.52	72.3	17.4	B
4	1.00	0.935	2542	4800	0.53	72.3	17.6	B
5	1.00	0.935	2383	4800	0.50	72.5	16.4	B
6	1.00	0.935	2561	4800	0.53	72.2	17.7	B
7	1.00	0.935	2248	4800	0.47	72.6	15.5	B
8	1.00	0.935	2609	4800	0.54	72.1	18.1	C

Segment 4: Weaving

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	1.00	0.935	2402	7200	0.33	75.4	10.6	A
2	1.00	0.935	2582	7200	0.34	75.4	10.9	A
3	1.00	0.935	2623	7200	0.35	75.4	11.1	B
4	1.00	0.935	2720	7200	0.35	75.4	11.2	B
5	1.00	0.935	2498	7200	0.33	75.4	10.5	A
6	1.00	0.935	2661	7200	0.36	75.4	11.3	B
7	1.00	0.935	2348	7200	0.31	75.4	9.9	A
8	1.00	0.935	2706	7200	0.36	75.4	11.5	B

Segment 5: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	1.00	0.935	2370	4800	0.49	72.5	16.3	B
2	1.00	0.935	2544	4800	0.53	72.2	17.6	B
3	1.00	0.935	2538	4800	0.53	72.3	17.6	B
4	1.00	0.935	2661	4800	0.55	72.0	18.5	C
5	1.00	0.935	2442	4800	0.51	72.4	16.9	B
6	1.00	0.935	2612	4800	0.54	72.1	18.1	C
7	1.00	0.935	2280	4800	0.48	72.6	15.7	B
8	1.00	0.935	2663	4800	0.55	72.0	18.5	C

Segment 6: Weaving

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	1.00	0.935	2377	6081	0.39	64.9	12.2	B

2	1.00	0.935	2534	5955	0.43	63.3	13.3	B
3	1.00	0.935	2554	5912	0.43	63.0	13.5	B
4	1.00	0.935	2676	5982	0.45	63.0	14.2	B
5	1.00	0.935	2437	6021	0.40	64.3	12.6	B
6	1.00	0.935	2596	5868	0.44	62.5	13.8	B
7	1.00	0.935	2285	5868	0.39	63.8	11.9	B
8	1.00	0.935	2642	5825	0.45	62.2	14.2	B

Segment 7: Basic

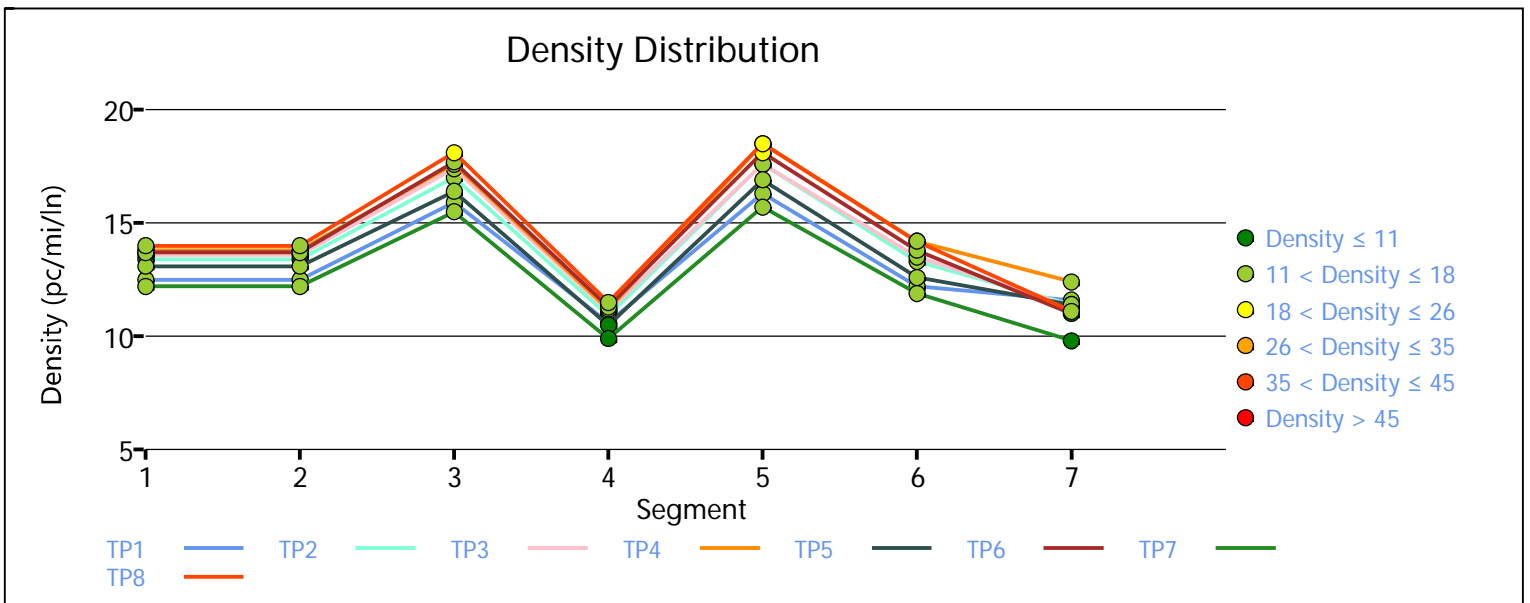
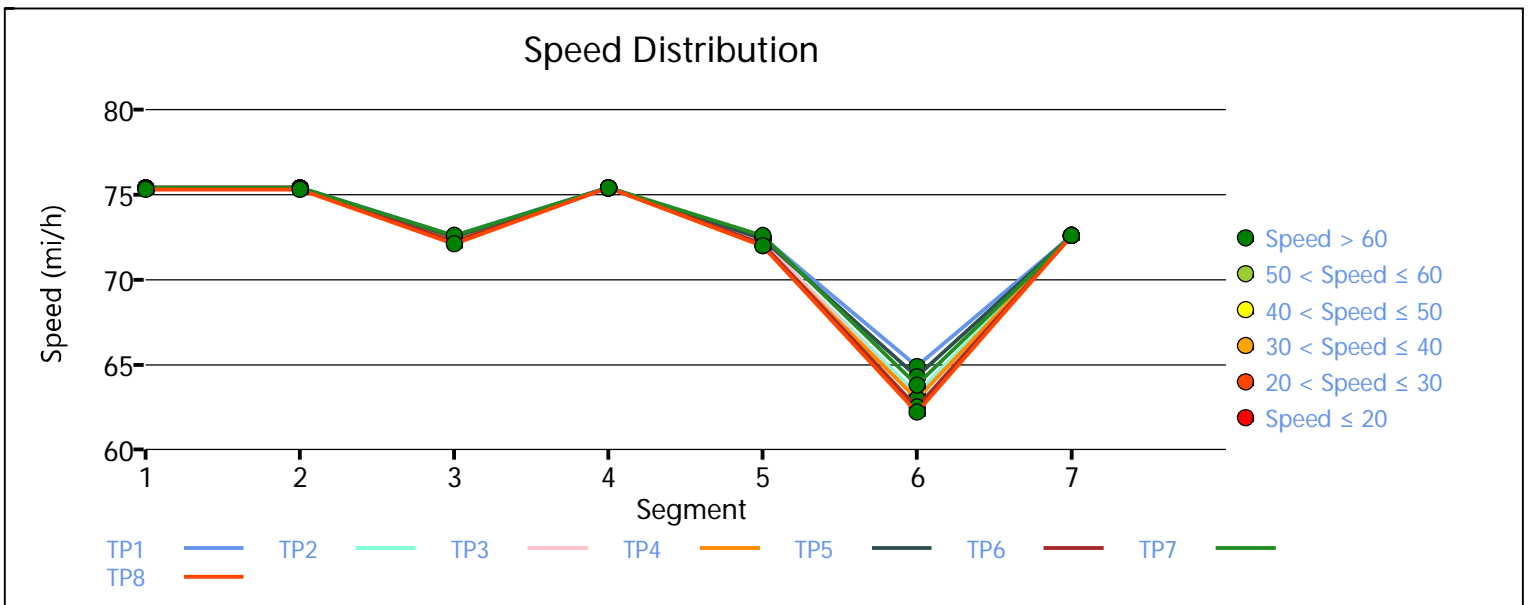
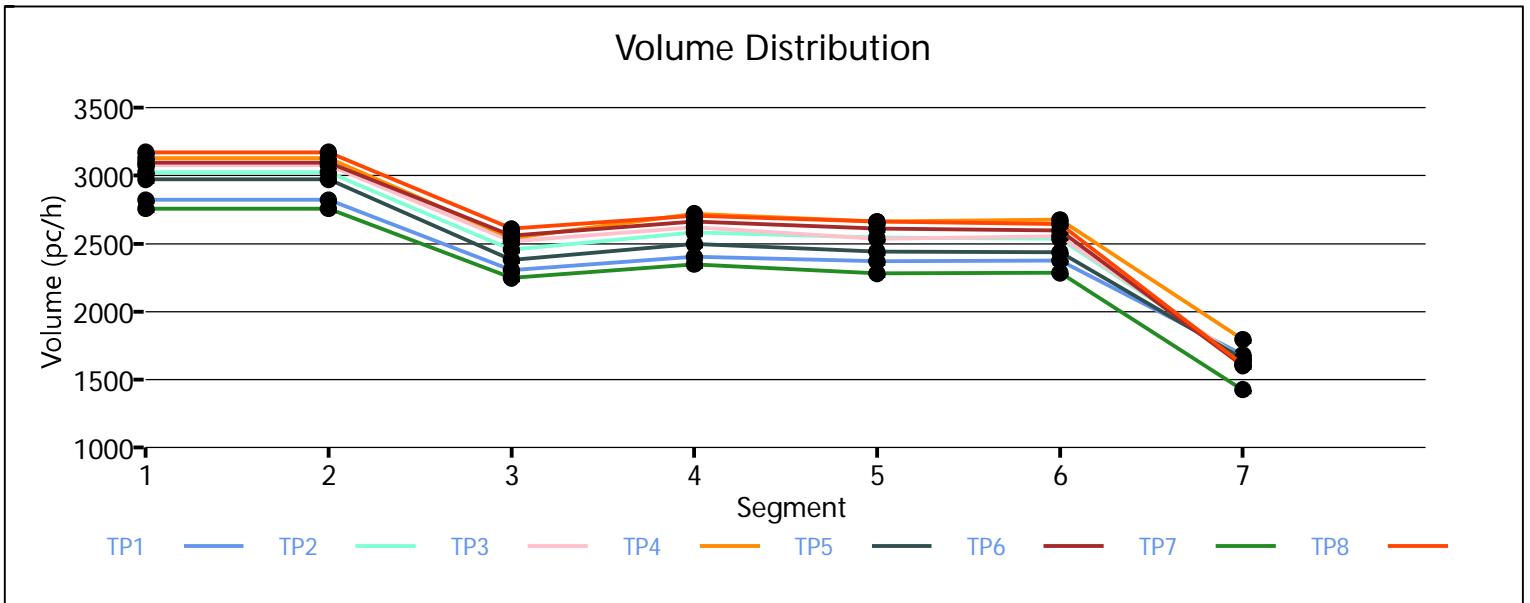
Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	1.00	0.917	1684	4800	0.35	72.6	11.6	B
2	1.00	0.917	1652	4800	0.34	72.6	11.4	B
3	1.00	0.917	1646	4800	0.34	72.6	11.3	B
4	1.00	0.917	1797	4800	0.37	72.6	12.4	B
5	1.00	0.917	1656	4800	0.35	72.6	11.4	B
6	1.00	0.917	1603	4800	0.33	72.6	11.0	A
7	1.00	0.917	1426	4800	0.30	72.6	9.8	A
8	1.00	0.917	1612	4800	0.34	72.6	11.1	B

Facility Time Period Results

T	Speed, mi/h	Density, pc/mi/ln	Density, veh/mi/ln	Travel Time, min	LOS
1	72.8	12.5	11.7	2.1	B
2	72.4	13.3	12.4	2.2	B
3	72.4	13.4	12.6	2.2	B
4	72.3	13.8	13.0	2.2	B
5	72.7	12.8	12.0	2.1	B
6	72.2	13.6	12.7	2.2	B
7	72.6	11.9	11.2	2.2	B
8	72.1	13.9	13.0	2.2	B

Facility Overall Results

Space Mean Speed, mi/h	72.4	Density, veh/mi/ln	12.3
Average Travel Time, min	2.2	Density, pc/mi/ln	13.2



HCS7 Freeway Facilities Report

Project Information

Analyst	WSP	Date	7/3/2018
Agency	City of Moreno Valley	Analysis Year	2018 With Alternative 6
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	WLC Pkwy IC - Westbound SR-60		

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	7
Total Time Periods	8	Time Period Duration, min	15

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic	east of Gilman Springs Rd On Ramp	1100	2
2	Weaving	Weaving	On-Ramp from Gilman Spring to Off-Ramp to WLC Pkwy	2700	3
3	Basic	Basic	between WLC Pkwy Off and WLC Pkwy On Ramps	1820	2
4	Weaving	Weaving	WLC Pkwy On-Ramp to Redlands Blvd Off-Ramp	2890	3
5	Basic	Basic	between Redlands Blvd Off and On Ramps	560	2
6	Merge	Merge	On-Ramp from Redlands Blvd	1500	2
7	Basic	Basic	Redlands Blvd to Moreno Beach Rd	2470	2

Facility Segment Data

Segment 1: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	1.00	0.893	1250	4800	0.26	75.4	8.3	A
2	1.00	0.893	1415	4800	0.29	75.4	9.4	A
3	1.00	0.893	1151	4800	0.24	75.4	7.6	A
4	1.00	0.893	1191	4800	0.25	75.4	7.9	A
5	1.00	0.893	1017	4800	0.21	75.4	6.7	A
6	1.00	0.893	1102	4800	0.23	75.4	7.3	A
7	1.00	0.893	1030	4800	0.21	75.4	6.8	A
8	1.00	0.893	1142	4800	0.24	75.4	7.6	A

Segment 2: Weaving

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	1.00	0.917	2182	6264	0.35	64.5	11.3	B
2	1.00	0.917	2154	6429	0.34	65.8	10.9	B
3	1.00	0.917	1896	6318	0.30	66.1	9.6	A

4	1.00	0.917	1870	6339	0.29	66.5	9.4	A
5	1.00	0.917	1644	6336	0.26	67.1	8.2	A
6	1.00	0.917	1717	6408	0.27	67.1	8.5	A
7	1.00	0.917	1467	6555	0.22	68.6	7.1	A
8	1.00	0.917	1605	6557	0.24	68.3	7.8	A

Segment 3: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	1.00	0.926	2160	4800	0.45	72.6	14.9	B
2	1.00	0.926	2069	4800	0.43	72.6	14.2	B
3	1.00	0.926	1840	4800	0.38	72.6	12.7	B
4	1.00	0.926	1758	4800	0.37	72.6	12.1	B
5	1.00	0.926	1585	4800	0.33	72.6	10.9	A
6	1.00	0.926	1667	4800	0.35	72.6	11.5	B
7	1.00	0.926	1417	4800	0.30	72.6	9.8	A
8	1.00	0.926	1533	4800	0.32	72.6	10.6	A

Segment 4: Weaving

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	1.00	0.917	2209	6945	0.32	71.0	10.4	B
2	1.00	0.917	2125	6936	0.31	71.1	10.0	A
3	1.00	0.917	1905	6897	0.28	71.2	8.9	A
4	1.00	0.917	1802	6895	0.26	71.3	8.4	A
5	1.00	0.917	1654	6879	0.24	71.6	7.7	A
6	1.00	0.917	1738	6912	0.25	71.6	8.1	A
7	1.00	0.917	1510	6834	0.22	71.6	7.0	A
8	1.00	0.917	1585	6939	0.23	72.1	7.3	A

Segment 5: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	1.00	0.917	2133	4800	0.44	72.6	14.7	B
2	1.00	0.917	2046	4800	0.43	72.6	14.1	B
3	1.00	0.917	1810	4800	0.38	72.6	12.5	B
4	1.00	0.917	1701	4800	0.35	72.6	11.7	B
5	1.00	0.917	1566	4800	0.33	72.6	10.8	A
6	1.00	0.917	1671	4800	0.35	72.6	11.5	B
7	1.00	0.917	1418	4800	0.30	72.6	9.8	A
8	1.00	0.917	1535	4800	0.32	72.6	10.6	A

Segment 6: Merge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	

1	1.00	1.00	0.926	0.962	2478	366	4800	2000	0.52	0.18	65.1	65.1	19.0	19.4	B
2	1.00	1.00	0.926	0.962	2475	449	4800	2000	0.52	0.22	65.1	65.1	19.0	19.3	B
3	1.00	1.00	0.926	0.962	2230	437	4800	2000	0.46	0.22	65.4	65.4	17.0	17.4	B
4	1.00	1.00	0.926	0.962	2076	391	4800	2000	0.43	0.20	65.6	65.6	15.8	16.2	B
5	1.00	1.00	0.926	0.962	1896	345	4800	2000	0.40	0.17	65.8	65.8	14.4	14.8	B
6	1.00	1.00	0.926	0.962	1978	324	4800	2000	0.41	0.16	65.7	65.7	15.1	15.5	B
7	1.00	1.00	0.926	0.962	1832	428	4800	2000	0.38	0.21	65.8	65.8	13.9	14.3	B
8	1.00	1.00	0.926	0.962	1862	341	4800	2000	0.39	0.17	65.8	65.8	14.1	14.6	B

Segment 7: Basic

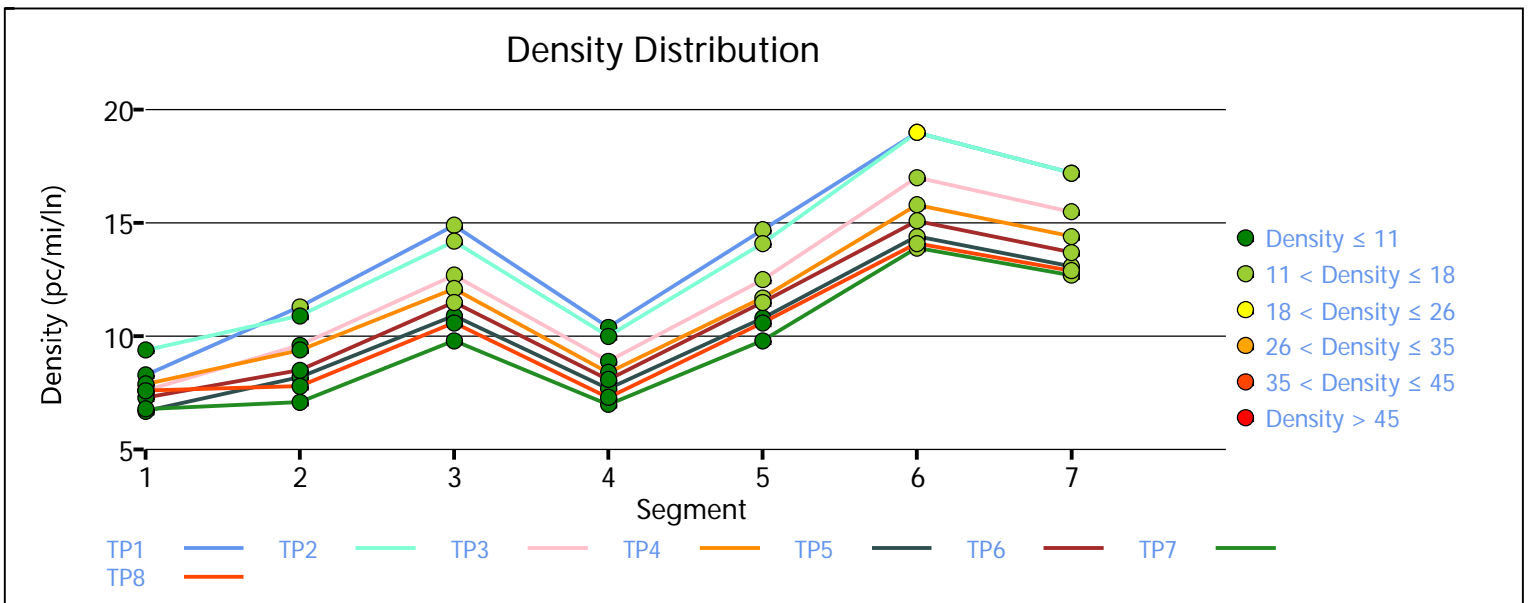
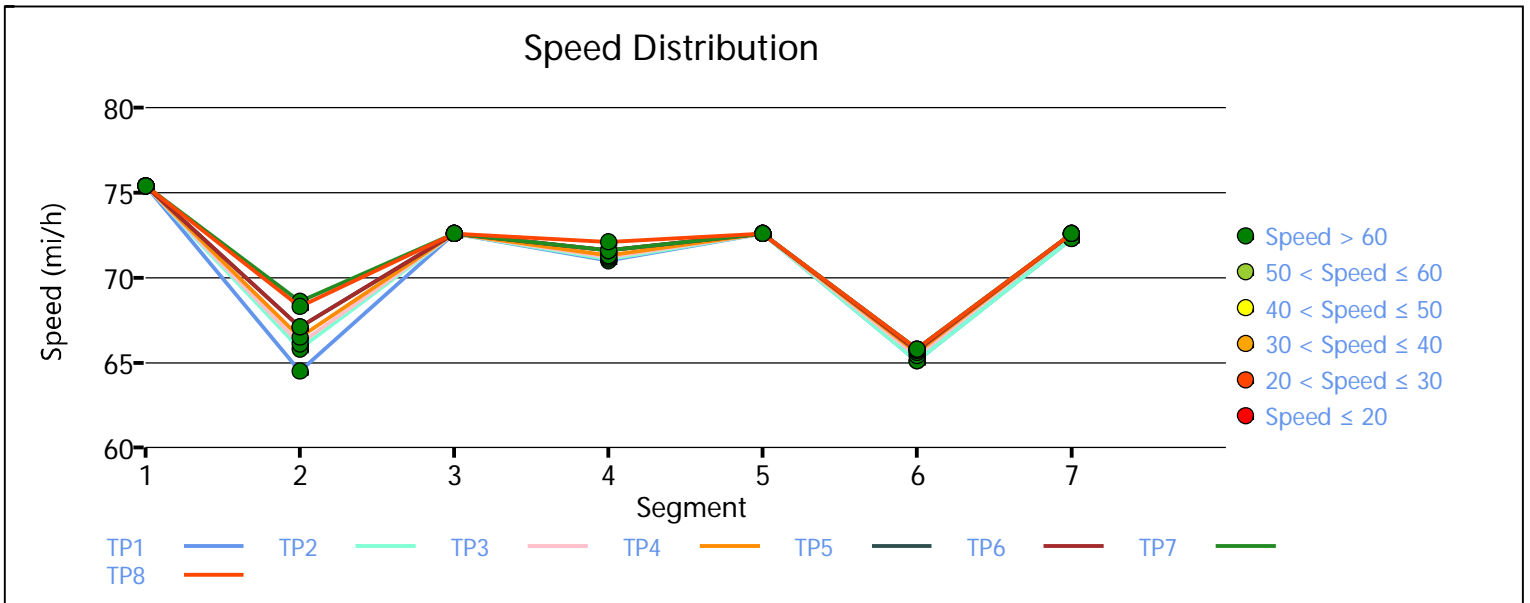
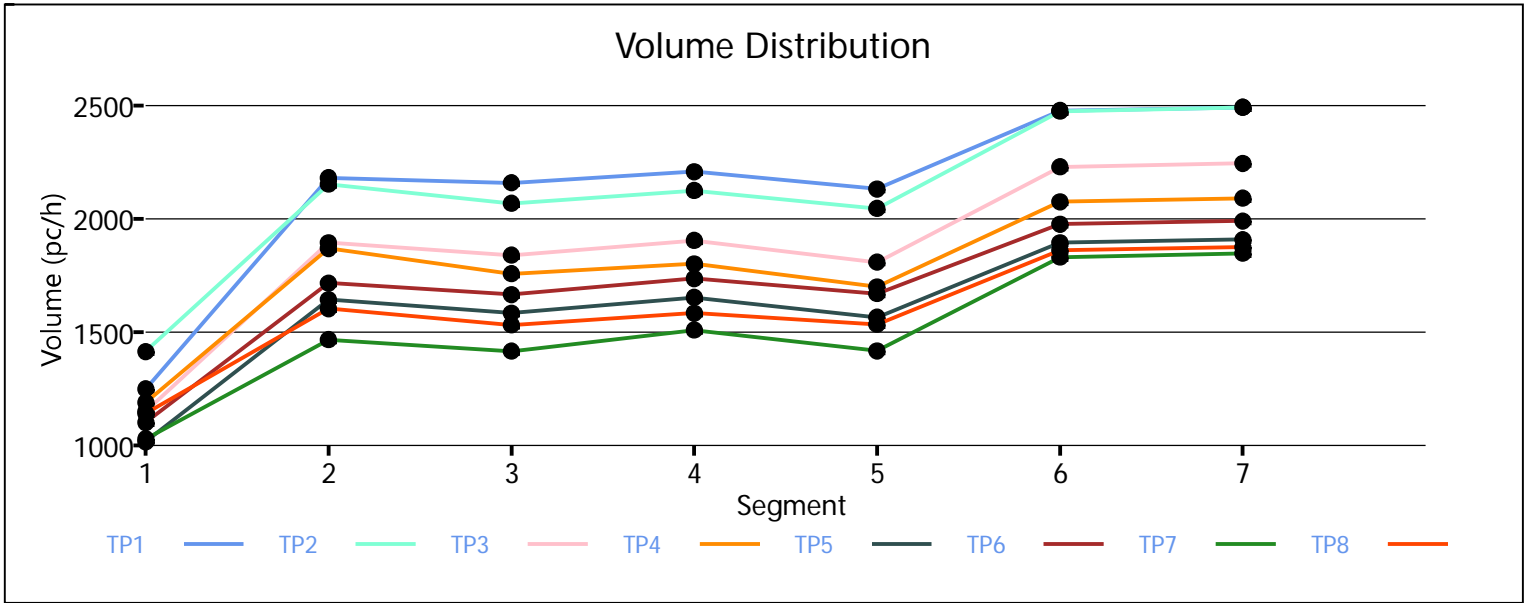
Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	1.00	0.926	2492	4800	0.52	72.3	17.2	B
2	1.00	0.926	2492	4800	0.52	72.3	17.2	B
3	1.00	0.926	2246	4800	0.47	72.6	15.5	B
4	1.00	0.926	2091	4800	0.44	72.6	14.4	B
5	1.00	0.926	1909	4800	0.40	72.6	13.1	B
6	1.00	0.926	1991	4800	0.41	72.6	13.7	B
7	1.00	0.926	1849	4800	0.39	72.6	12.7	B
8	1.00	0.926	1875	4800	0.39	72.6	12.9	B

Facility Time Period Results

T	Speed, mi/h	Density, pc/mi/ln	Density, veh/mi/ln	Travel Time, min	LOS
1	69.5	13.0	12.0	2.1	B
2	69.8	12.8	11.8	2.1	B
3	70.0	11.4	10.5	2.1	B
4	70.1	10.8	9.9	2.1	A
5	70.4	9.7	8.9	2.1	A
6	70.4	10.2	9.4	2.1	A
7	70.7	9.0	8.3	2.1	A
8	70.8	9.5	8.7	2.1	A

Facility Overall Results

Space Mean Speed, mi/h	70.2	Density, veh/mi/ln	9.9
Average Travel Time, min	2.1	Density, pc/mi/ln	10.8



HCS7 Freeway Facilities Report

Project Information

Analyst	WSP	Date	7/3/2018
Agency	City of Moreno Valley	Analysis Year	2018 With Alternative 6
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	WLC Pkwy IC - Westbound SR-60		

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	7
Total Time Periods	8	Time Period Duration, min	15

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic	east of Gilman Springs Rd On Ramp	1100	2
2	Weaving	Weaving	On-Ramp from Gilman Spring to Off-Ramp to WLC Pkwy	2700	3
3	Basic	Basic	between WLC Pkwy Off and WLC Pkwy On Ramps	1820	2
4	Weaving	Weaving	WLC Pkwy On-Ramp to Redlands Blvd Off-Ramp	2890	3
5	Basic	Basic	between Redlands Blvd Off and On Ramps	560	2
6	Merge	Merge	On-Ramp from Redlands Blvd	1500	2
7	Basic	Basic	Redlands Blvd to Moreno Beach Rd	2470	2

Facility Segment Data

Segment 1: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	1.00	0.893	1617	4800	0.34	75.4	10.7	A
2	1.00	0.893	2047	4800	0.43	75.4	13.6	B
3	1.00	0.893	1769	4800	0.37	75.4	11.7	B
4	1.00	0.893	1805	4800	0.38	75.4	12.0	B
5	1.00	0.893	2034	4800	0.42	75.4	13.5	B
6	1.00	0.893	2016	4800	0.42	75.4	13.4	B
7	1.00	0.893	1756	4800	0.37	75.4	11.6	B
8	1.00	0.893	1845	4800	0.38	75.4	12.2	B

Segment 2: Weaving

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	1.00	0.909	2046	6834	0.30	68.1	10.0	A
2	1.00	0.909	2522	6852	0.37	67.1	12.5	B
3	1.00	0.909	2320	6759	0.34	66.9	11.6	B

4	1.00	0.909	2176	6912	0.31	68.4	10.6	B
5	1.00	0.909	2463	6900	0.36	67.6	12.1	B
6	1.00	0.909	2429	6916	0.35	67.7	12.0	B
7	1.00	0.909	2228	6825	0.33	67.5	11.0	B
8	1.00	0.909	2191	6939	0.32	68.6	10.6	B

Segment 3: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	1.00	0.909	2055	4800	0.43	72.6	14.2	B
2	1.00	0.909	2491	4800	0.52	72.3	17.2	B
3	1.00	0.909	2323	4800	0.48	72.6	16.0	B
4	1.00	0.909	2165	4800	0.45	72.6	14.9	B
5	1.00	0.909	2451	4800	0.51	72.4	16.9	B
6	1.00	0.909	2425	4800	0.51	72.4	16.7	B
7	1.00	0.909	2235	4800	0.47	72.6	15.4	B
8	1.00	0.909	2178	4800	0.45	72.6	15.0	B

Segment 4: Weaving

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	1.00	0.909	2155	6849	0.31	70.3	10.2	B
2	1.00	0.909	2565	6918	0.37	70.1	12.2	B
3	1.00	0.909	2409	6930	0.35	70.5	11.4	B
4	1.00	0.909	2208	6921	0.32	70.8	10.4	B
5	1.00	0.909	2495	6945	0.36	70.4	11.8	B
6	1.00	0.909	2451	6948	0.35	70.5	11.6	B
7	1.00	0.909	2296	6906	0.33	70.5	10.9	B
8	1.00	0.909	2210	6960	0.32	71.1	10.4	B

Segment 5: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	1.00	0.909	2064	4800	0.43	72.6	14.2	B
2	1.00	0.909	2495	4800	0.52	72.3	17.3	B
3	1.00	0.909	2372	4800	0.49	72.5	16.4	B
4	1.00	0.909	2130	4800	0.44	72.6	14.7	B
5	1.00	0.909	2429	4800	0.51	72.4	16.8	B
6	1.00	0.909	2376	4800	0.50	72.5	16.4	B
7	1.00	0.909	2213	4800	0.46	72.6	15.2	B
8	1.00	0.909	2161	4800	0.45	72.6	14.9	B

Segment 6: Merge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	

1	1.00	1.00	0.917	0.962	2470	424	4800	2000	0.51	0.21	65.1	65.1	19.0	19.3	B
2	1.00	1.00	0.917	0.962	2930	457	4800	2000	0.61	0.23	64.2	64.2	22.8	22.9	C
3	1.00	1.00	0.917	0.962	2804	453	4800	2000	0.58	0.23	64.5	64.5	21.7	21.9	C
4	1.00	1.00	0.917	0.962	2510	399	4800	2000	0.52	0.20	65.1	65.1	19.3	19.6	B
5	1.00	1.00	0.917	0.962	2845	437	4800	2000	0.59	0.22	64.4	64.4	22.1	22.2	C
6	1.00	1.00	0.917	0.962	2830	474	4800	2000	0.59	0.24	64.4	64.4	22.0	22.1	C
7	1.00	1.00	0.917	0.962	2726	532	4800	2000	0.57	0.27	64.7	64.7	21.1	21.2	C
8	1.00	1.00	0.917	0.962	2566	424	4800	2000	0.53	0.21	65.0	65.0	19.7	20.0	B

Segment 7: Basic

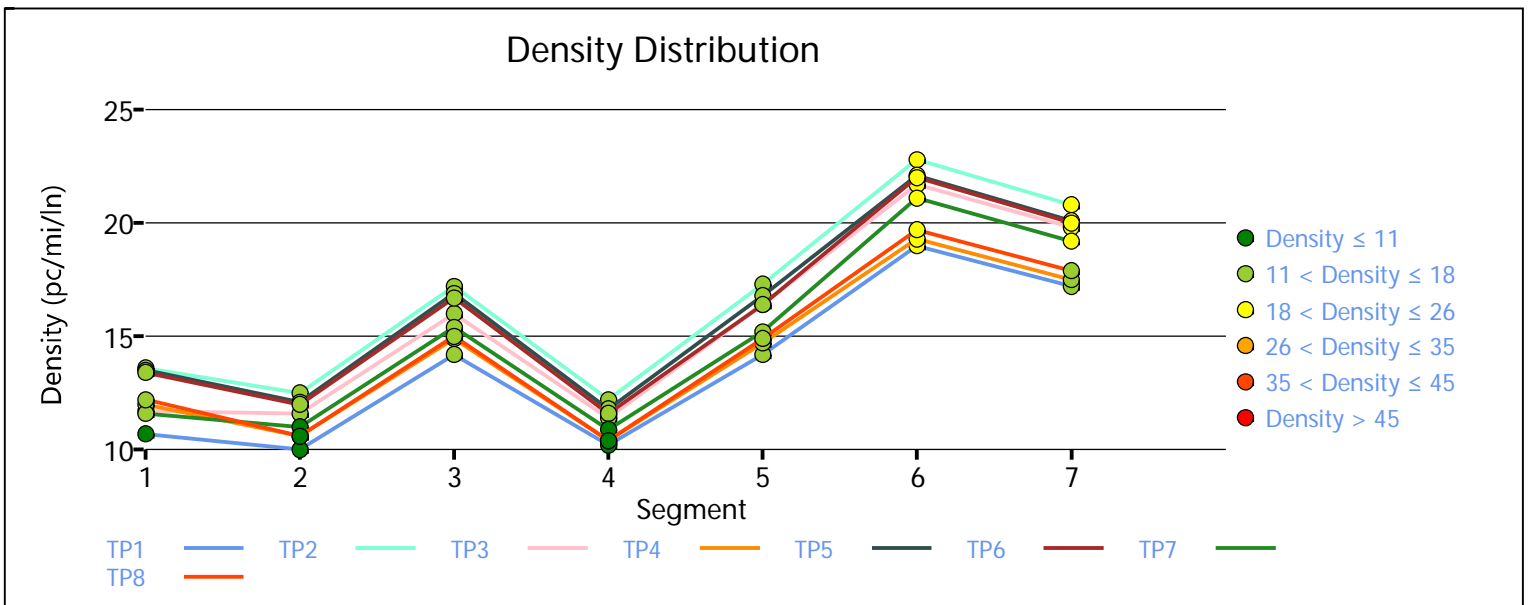
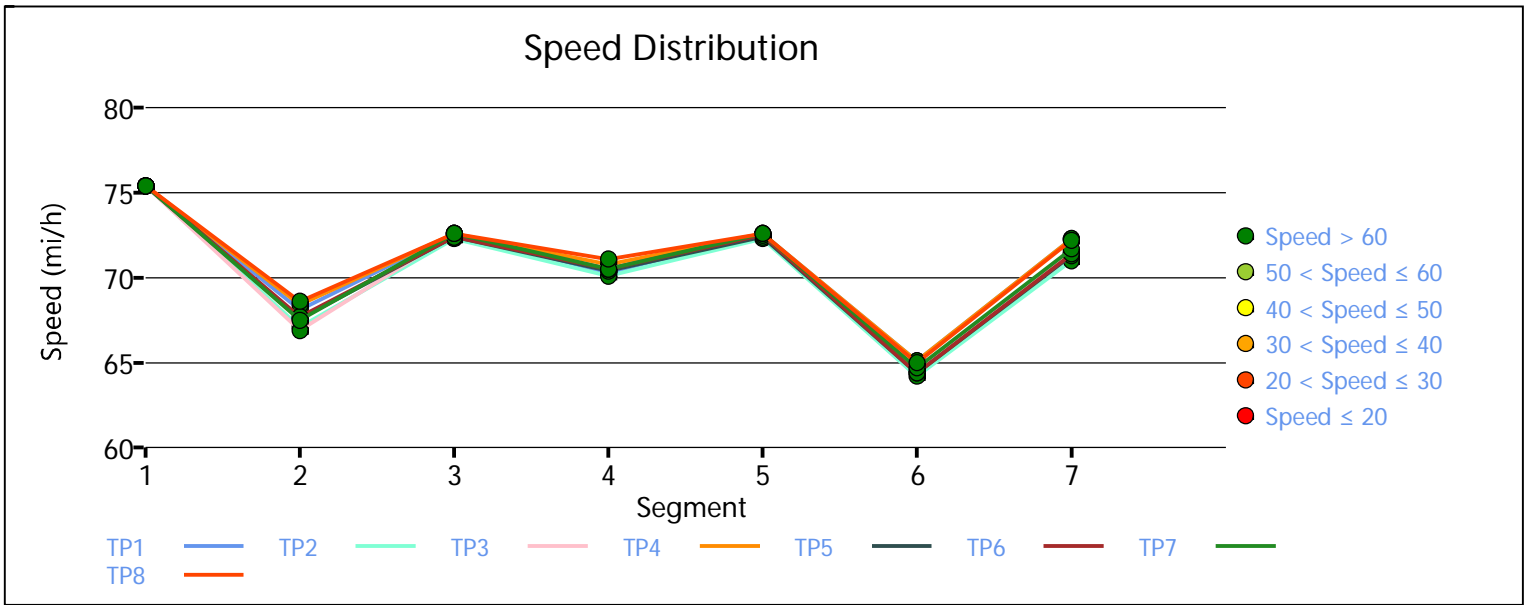
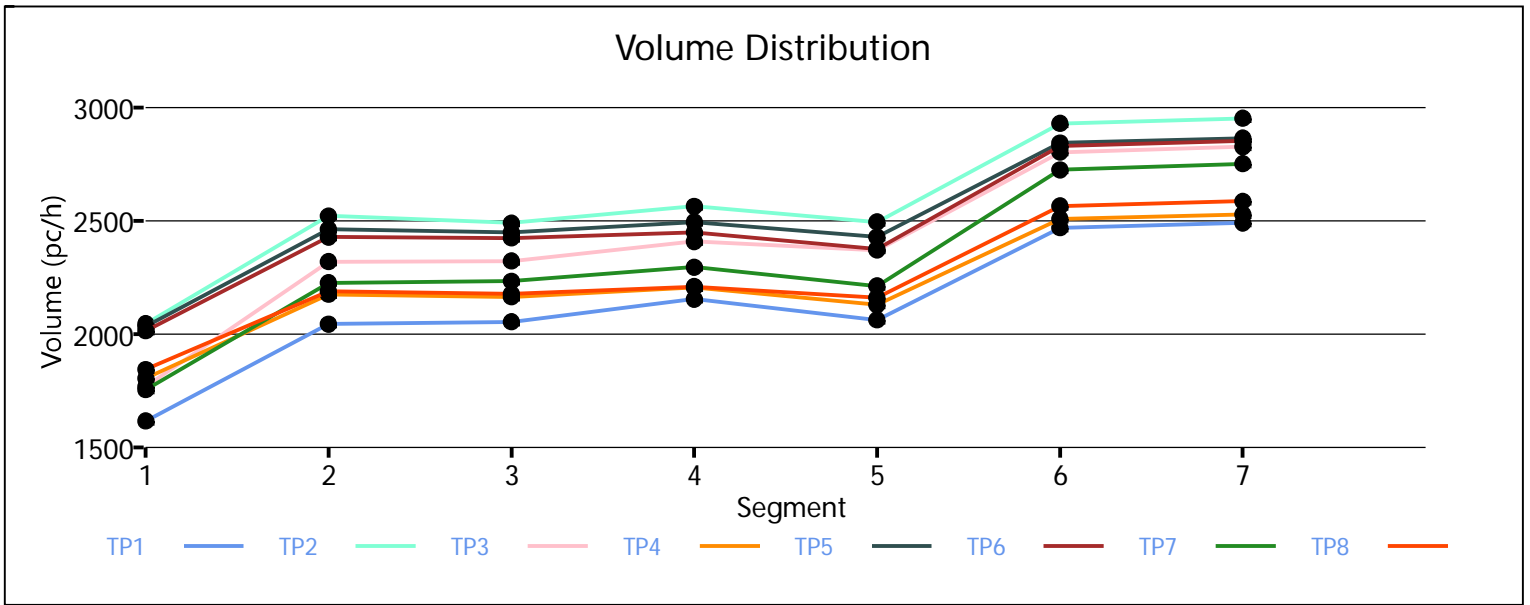
Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	1.00	0.917	2491	4800	0.52	72.3	17.2	B
2	1.00	0.917	2953	4800	0.62	71.0	20.8	C
3	1.00	0.917	2827	4800	0.59	71.5	19.8	C
4	1.00	0.917	2530	4800	0.53	72.3	17.5	B
5	1.00	0.917	2866	4800	0.60	71.3	20.1	C
6	1.00	0.917	2853	4800	0.59	71.4	20.0	C
7	1.00	0.917	2752	4800	0.57	71.7	19.2	C
8	1.00	0.917	2587	4800	0.54	72.2	17.9	B

Facility Time Period Results

T	Speed, mi/h	Density, pc/mi/ln	Density, veh/mi/ln	Travel Time, min	LOS
1	70.2	12.7	11.6	2.1	B
2	69.5	15.5	14.1	2.1	B
3	69.7	14.5	13.2	2.1	B
4	70.4	13.2	12.0	2.1	B
5	69.8	15.0	13.7	2.1	B
6	69.9	14.9	13.5	2.1	B
7	69.9	13.9	12.7	2.1	B
8	70.5	13.3	12.1	2.1	B

Facility Overall Results

Space Mean Speed, mi/h	70.0	Density, veh/mi/ln	12.9
Average Travel Time, min	2.1	Density, pc/mi/ln	14.1



Appendix J-2

Freeway LOS Worksheets for Alternative 6, 2025

HCS7 Freeway Facilities Report

Project Information

Analyst	WSP	Date	7/3/2018
Agency	City of Moreno Valley	Analysis Year	2025 with Alternative 6
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	WLC Pkwy IC - Eastbound SR-60		

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	8
Total Time Periods	8	Time Period Duration, min	15

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic	Moreno Beach Rd to Redlands Blvd	600	3
2	Diverge	Diverge	Off-Ramp to Redlands Blvd	1500	3
3	Basic	Basic	between Redlands Blvd Off and SB Redlands Blvd On Ramp	2150	3
4	Merge	Basic	On-Ramp from SB Redlands Blvd (Loop)	750	3
5	Weaving	Weaving	Redlands Blvd to WLC Pkwy	2545	4
6	Basic	Basic	WLC Pkwy Off-Ramp to WLC Pkwy On Ramp	2900	3
7	Weaving	Weaving	WLC Pkwy NB On-Ramp to Gilman Spring Off-Ramp	2450	4
8	Basic	Basic	east of Gilman Springs Rd Off Ramp	1350	3

Facility Segment Data

Segment 1: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	1.00	0.870	3311	7200	0.46	75.2	14.7	B
2	1.00	0.870	3243	7200	0.45	75.3	14.4	B
3	1.00	0.870	3493	7200	0.49	75.0	15.5	B
4	1.00	0.870	3424	7200	0.48	75.1	15.2	B
5	1.00	0.870	2899	7200	0.40	75.4	12.8	B
6	1.00	0.870	2962	7200	0.41	75.4	13.1	B
7	1.00	0.870	3206	7200	0.45	75.3	14.2	B
8	1.00	0.870	3562	7200	0.49	74.9	15.8	B

Segment 2: Diverge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	1.00	1.00	0.870	0.909	3311	404	7200	4000	0.46	0.10	67.5	59.9	16.4	7.0	A

2	1.00	1.00	0.870	0.909	3243	341	7200	4000	0.45	0.09	67.6	60.1	16.0	6.7	A
3	1.00	1.00	0.870	0.909	3493	429	7200	4000	0.49	0.11	67.3	59.8	17.3	7.9	A
4	1.00	1.00	0.870	0.909	3424	454	7200	4000	0.48	0.11	67.3	59.7	17.0	7.6	A
5	1.00	1.00	0.870	0.909	2899	530	7200	4000	0.40	0.13	67.4	59.5	14.3	5.0	A
6	1.00	1.00	0.870	0.909	2962	600	7200	4000	0.41	0.15	67.2	59.3	14.7	5.3	A
7	1.00	1.00	0.870	0.909	3206	486	7200	4000	0.45	0.12	67.3	59.6	15.9	6.5	A
8	1.00	1.00	0.870	0.909	3562	581	7200	4000	0.49	0.15	67.0	59.4	17.7	8.3	A

Segment 3: Basic

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
1	1.00		0.870		2890		7200		0.40		72.2		13.3		B
2	1.00		0.870		2886		7200		0.40		72.2		13.3		B
3	1.00		0.870		3045		7200		0.42		72.2		14.1		B
4	1.00		0.870		2949		7200		0.41		72.2		13.6		B
5	1.00		0.870		2345		7200		0.33		72.2		10.8		A
6	1.00		0.870		2336		7200		0.32		72.2		10.8		A
7	1.00		0.870		2698		7200		0.37		72.2		12.5		B
8	1.00		0.870		2955		7200		0.41		72.2		13.6		B

Segment 4: Merge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	1.00	1.00	0.870	0.877	2947	57	7200	2000	0.40	0.03	75.4	-	12.8	-	B
2	1.00	1.00	0.870	0.877	3000	114	7200	2000	0.40	0.06	75.4	-	12.8	-	B
3	1.00	1.00	0.870	0.877	3102	57	7200	2000	0.42	0.03	75.4	-	13.5	-	B
4	1.00	1.00	0.870	0.877	3040	91	7200	2000	0.41	0.05	75.4	-	13.0	-	B
5	1.00	1.00	0.870	0.877	2436	91	7200	2000	0.33	0.05	75.4	-	10.4	-	A
6	1.00	1.00	0.870	0.877	2336	0	7200	2000	0.32	0.00	75.4	-	10.3	-	A
7	1.00	1.00	0.870	0.877	2789	91	7200	2000	0.37	0.05	75.4	-	11.9	-	B
8	1.00	1.00	0.870	0.877	3001	46	7200	2000	0.41	0.02	75.4	-	13.1	-	B

Segment 5: Weaving

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
1	1.00		0.870		3095		9096		0.34		70.4		11.0		B
2	1.00		0.870		3196		8976		0.36		70.0		11.4		B
3	1.00		0.870		3280		9045		0.36		70.0		11.7		B
4	1.00		0.870		3237		8989		0.36		69.9		11.6		B
5	1.00		0.870		2675		8475		0.32		70.1		9.5		A
6	1.00		0.870		2592		6757		0.38		70.1		9.2		A
7	1.00		0.870		3026		8413		0.36		70.0		10.8		B
8	1.00		0.870		3197		8808		0.36		70.0		11.4		B

Segment 6: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	1.00	0.909	2344	7200	0.33	72.2	10.8	A
2	1.00	0.909	2336	7200	0.32	72.2	10.8	A
3	1.00	0.909	2450	7200	0.34	72.2	11.3	B
4	1.00	0.909	2374	7200	0.33	72.2	11.0	A
5	1.00	0.909	1581	7200	0.22	72.2	7.3	A
6	1.00	0.909	1243	7200	0.17	72.2	5.7	A
7	1.00	0.909	1728	7200	0.24	72.2	8.0	A
8	1.00	0.909	2151	7200	0.30	72.2	9.9	A

Segment 7: Weaving

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	1.00	0.901	2467	9088	0.27	70.7	8.7	A
2	1.00	0.901	2595	8944	0.29	69.5	9.3	A
3	1.00	0.901	2709	8928	0.30	69.3	9.8	A
4	1.00	0.901	2702	8893	0.30	68.9	9.8	A
5	1.00	0.901	1837	8796	0.21	70.2	6.5	A
6	1.00	0.901	1406	8696	0.16	71.1	4.9	A
7	1.00	0.901	1937	8776	0.22	70.4	6.9	A
8	1.00	0.901	2501	8856	0.28	68.9	9.1	A

Segment 8: Basic

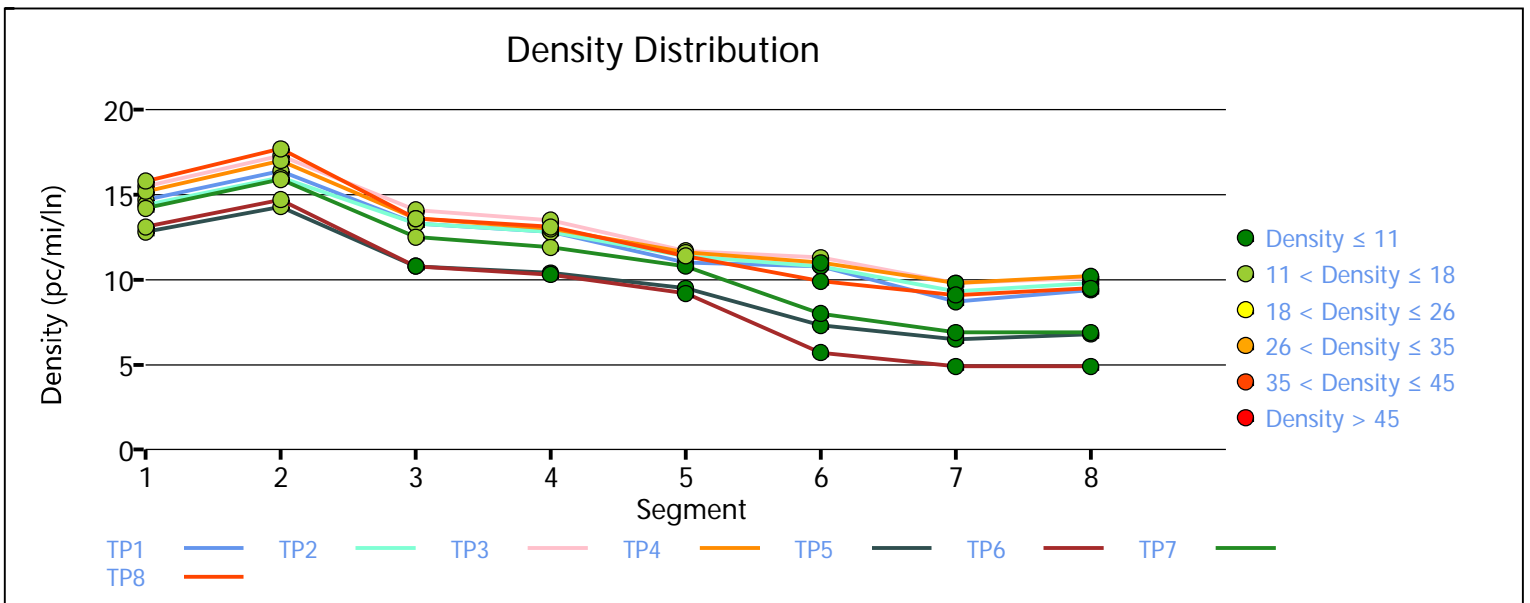
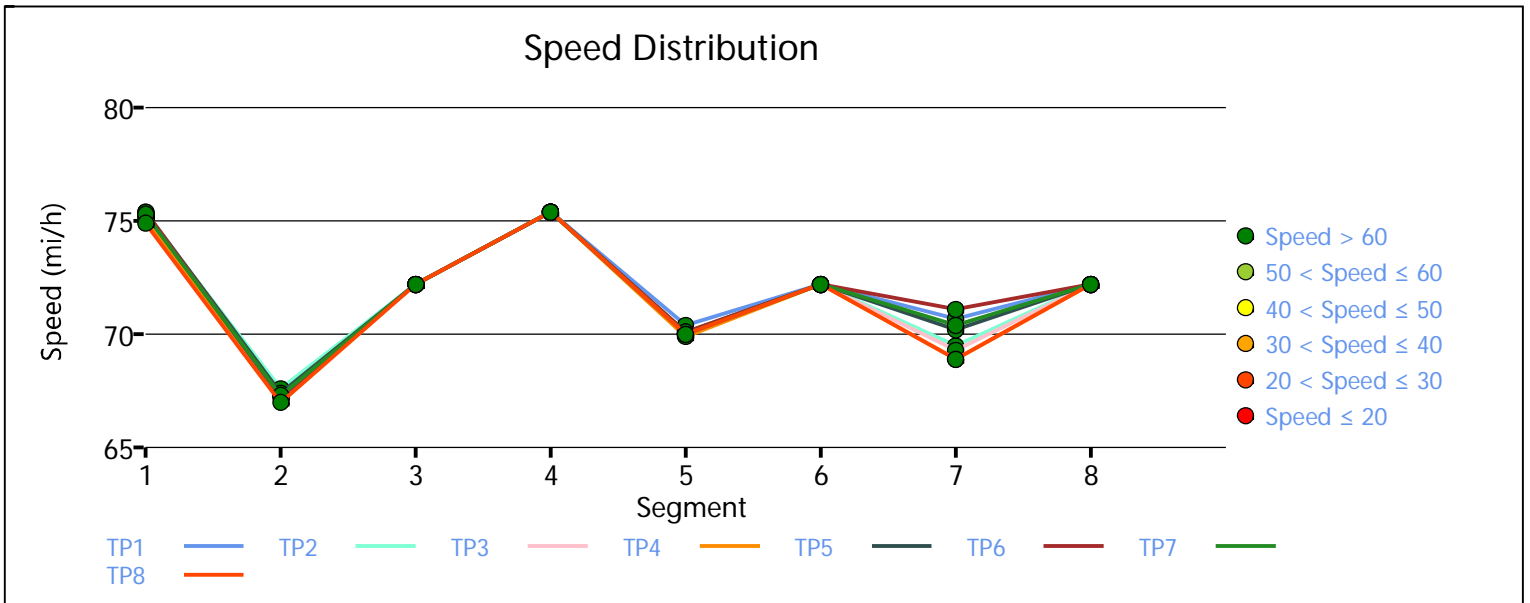
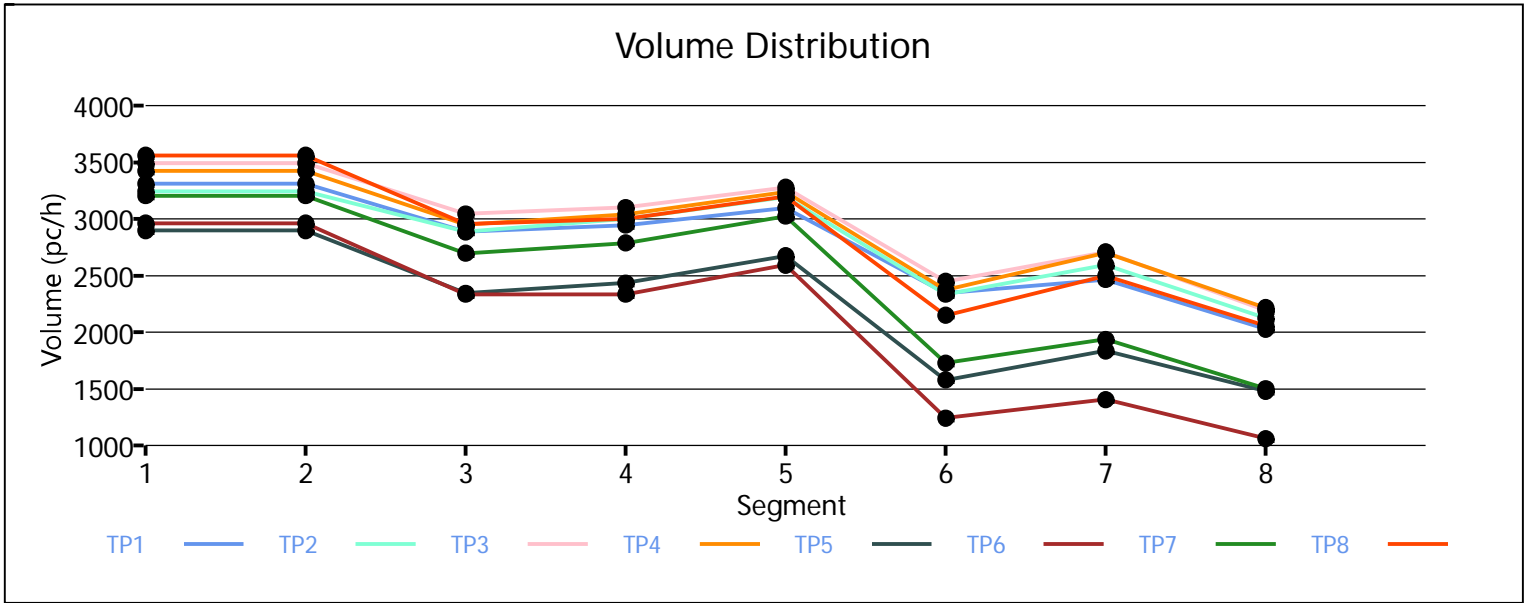
Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	1.00	0.901	2029	7200	0.28	72.2	9.4	A
2	1.00	0.901	2125	7200	0.30	72.2	9.8	A
3	1.00	0.901	2196	7200	0.31	72.2	10.1	A
4	1.00	0.901	2218	7200	0.31	72.2	10.2	A
5	1.00	0.901	1481	7200	0.21	72.2	6.8	A
6	1.00	0.901	1062	7200	0.15	72.2	4.9	A
7	1.00	0.901	1503	7200	0.21	72.2	6.9	A
8	1.00	0.901	2061	7200	0.29	72.2	9.5	A

Facility Time Period Results

T	Speed, mi/h	Density, pc/mi/ln	Density, veh/mi/ln	Travel Time, min	LOS
1	71.3	11.4	10.1	2.3	B
2	71.0	11.6	10.2	2.3	B
3	70.9	12.2	10.8	2.3	B
4	70.8	12.0	10.6	2.3	B
5	71.1	9.1	8.0	2.3	A
6	71.1	8.3	7.3	2.3	A
7	71.1	10.1	J-2-3 ^{8.9}	2.3	A
8	70.8	11.6	10.3	2.3	B

Facility Overall Results

Space Mean Speed, mi/h	71.0	Density, veh/mi/ln	9.5
Average Travel Time, min	2.3	Density, pc/mi/ln	10.8



HCS7 Freeway Facilities Report

Project Information

Analyst	WSP	Date	7/3/2018
Agency	City of Moreno Valley	Analysis Year	2025 with Alternative 6
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	WLC Pkwy IC - Eastbound SR-60		

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	8
Total Time Periods	8	Time Period Duration, min	15

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic	Moreno Beach Rd to Redlands Blvd	600	3
2	Diverge	Diverge	Off-Ramp to Redlands Blvd	1500	3
3	Basic	Basic	between Redlands Blvd Off and SB Redlands Blvd On Ramp	2150	3
4	Merge	Basic	On-Ramp from SB Redlands Blvd (Loop)	750	3
5	Weaving	Weaving	Redlands Blvd to WLC Pkwy	2545	4
6	Basic	Basic	WLC Pkwy Off-Ramp to WLC Pkwy On Ramp	2900	3
7	Weaving	Weaving	WLC Pkwy NB On-Ramp to Gilman Spring Off-Ramp	2450	4
8	Basic	Basic	east of Gilman Springs Rd Off Ramp	1350	3

Facility Segment Data

Segment 1: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	1.00	0.917	4092	7200	0.57	73.8	18.5	C
2	1.00	0.917	4376	7200	0.61	72.9	20.0	C
3	1.00	0.917	4460	7200	0.62	72.6	20.5	C
4	1.00	0.917	4507	7200	0.63	72.4	20.7	C
5	1.00	0.917	4317	7200	0.60	73.1	19.7	C
6	1.00	0.917	4514	7200	0.63	72.4	20.8	C
7	1.00	0.917	3973	7200	0.55	74.1	17.9	B
8	1.00	0.917	4602	7200	0.64	72.1	21.3	C

Segment 2: Diverge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	1.00	1.00	0.917	0.962	4092	774	7200	4000	0.57	0.19	66.3	58.8	20.6	10.9	B

2	1.00	1.00	0.917	0.962	4376	853	7200	4000	0.61	0.21	65.9	58.5	22.1	12.3	B
3	1.00	1.00	0.917	0.962	4460	842	7200	4000	0.62	0.21	65.9	58.6	22.6	12.7	B
4	1.00	1.00	0.917	0.962	4507	878	7200	4000	0.63	0.22	65.9	58.5	22.8	12.9	B
5	1.00	1.00	0.917	0.962	4317	885	7200	4000	0.60	0.22	65.9	58.4	21.8	12.0	B
6	1.00	1.00	0.917	0.962	4514	805	7200	4000	0.63	0.20	66.0	58.7	22.8	12.9	B
7	1.00	1.00	0.917	0.962	3973	768	7200	4000	0.55	0.19	66.3	58.8	20.0	10.3	B
8	1.00	1.00	0.917	0.962	4602	848	7200	4000	0.64	0.21	65.9	58.6	23.3	13.4	B

Segment 3: Basic

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
1	1.00		0.909		3308		7200		0.46		72.2		15.3		B
2	1.00		0.909		3512		7200		0.49		72.2		16.2		B
3	1.00		0.909		3608		7200		0.50		72.1		16.7		B
4	1.00		0.909		3617		7200		0.50		72.1		16.7		B
5	1.00		0.909		3419		7200		0.47		72.2		15.8		B
6	1.00		0.909		3702		7200		0.51		72.0		17.1		B
7	1.00		0.909		3195		7200		0.44		72.2		14.8		B
8	1.00		0.909		3745		7200		0.52		72.0		17.3		B

Segment 4: Merge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	1.00	1.00	0.917	0.952	3534	255	7200	2000	0.46	0.13	75.3	-	14.5	-	B
2	1.00	1.00	0.917	0.952	3821	340	7200	2000	0.48	0.17	75.1	-	15.4	-	B
3	1.00	1.00	0.917	0.952	3861	284	7200	2000	0.50	0.14	74.9	-	15.9	-	B
4	1.00	1.00	0.917	0.952	4011	425	7200	2000	0.50	0.21	74.9	-	16.0	-	B
5	1.00	1.00	0.917	0.952	3644	255	7200	2000	0.47	0.13	75.2	-	15.0	-	B
6	1.00	1.00	0.917	0.952	3840	170	7200	2000	0.51	0.09	74.8	-	16.4	-	B
7	1.00	1.00	0.917	0.952	3564	397	7200	2000	0.44	0.20	75.3	-	14.0	-	B
8	1.00	1.00	0.917	0.952	3996	284	7200	2000	0.52	0.14	74.7	-	16.6	-	B

Segment 5: Weaving

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
1	1.00		0.917		3670		9408		0.39		70.0		13.1		B
2	1.00		0.917		3986		9380		0.42		69.6		14.3		B
3	1.00		0.917		4103		9004		0.46		69.1		14.8		B
4	1.00		0.917		4267		9191		0.46		68.7		15.5		B
5	1.00		0.917		3842		9208		0.42		69.5		13.8		B
6	1.00		0.917		4023		9280		0.43		69.4		14.5		B
7	1.00		0.917		3750		9112		0.41		69.8		13.4		B
8	1.00		0.917		4152		9356		0.44		69.5		14.9		B

Segment 6: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	1.00	0.952	3160	7200	0.44	72.2	14.6	B
2	1.00	0.952	3402	7200	0.47	72.2	15.7	B
3	1.00	0.952	3008	7200	0.42	72.2	13.9	B
4	1.00	0.952	3422	7200	0.48	72.2	15.8	B
5	1.00	0.952	3075	7200	0.43	72.2	14.2	B
6	1.00	0.952	3311	7200	0.46	72.2	15.3	B
7	1.00	0.952	2855	7200	0.40	72.2	13.2	B
8	1.00	0.952	3498	7200	0.49	72.2	16.1	B

Segment 7: Weaving

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	1.00	0.943	3423	9111	0.38	68.5	12.5	B
2	1.00	0.943	3611	9016	0.40	68.5	13.2	B
3	1.00	0.943	3367	8621	0.39	67.8	12.4	B
4	1.00	0.943	3786	8944	0.42	67.5	14.0	B
5	1.00	0.943	3284	9016	0.36	68.8	11.9	B
6	1.00	0.943	3516	8868	0.40	68.6	12.8	B
7	1.00	0.943	3137	8804	0.36	68.4	11.5	B
8	1.00	0.943	3677	8908	0.41	68.5	13.4	B

Segment 8: Basic

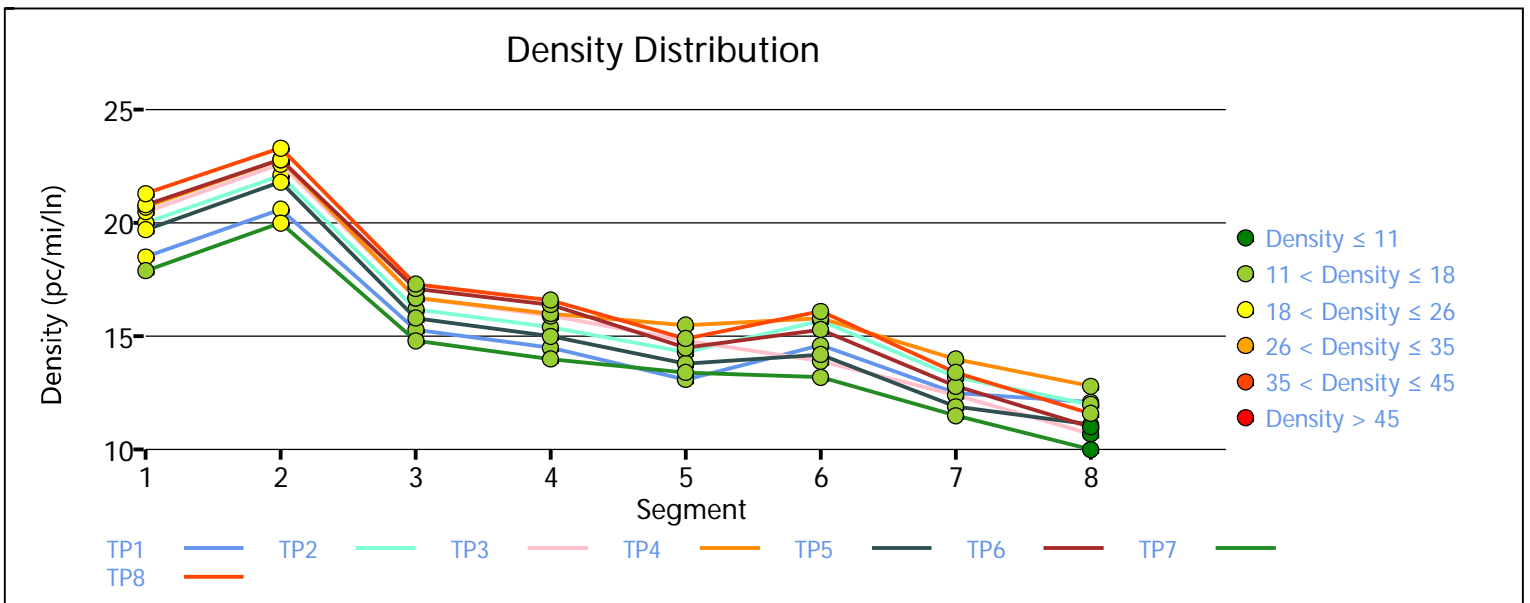
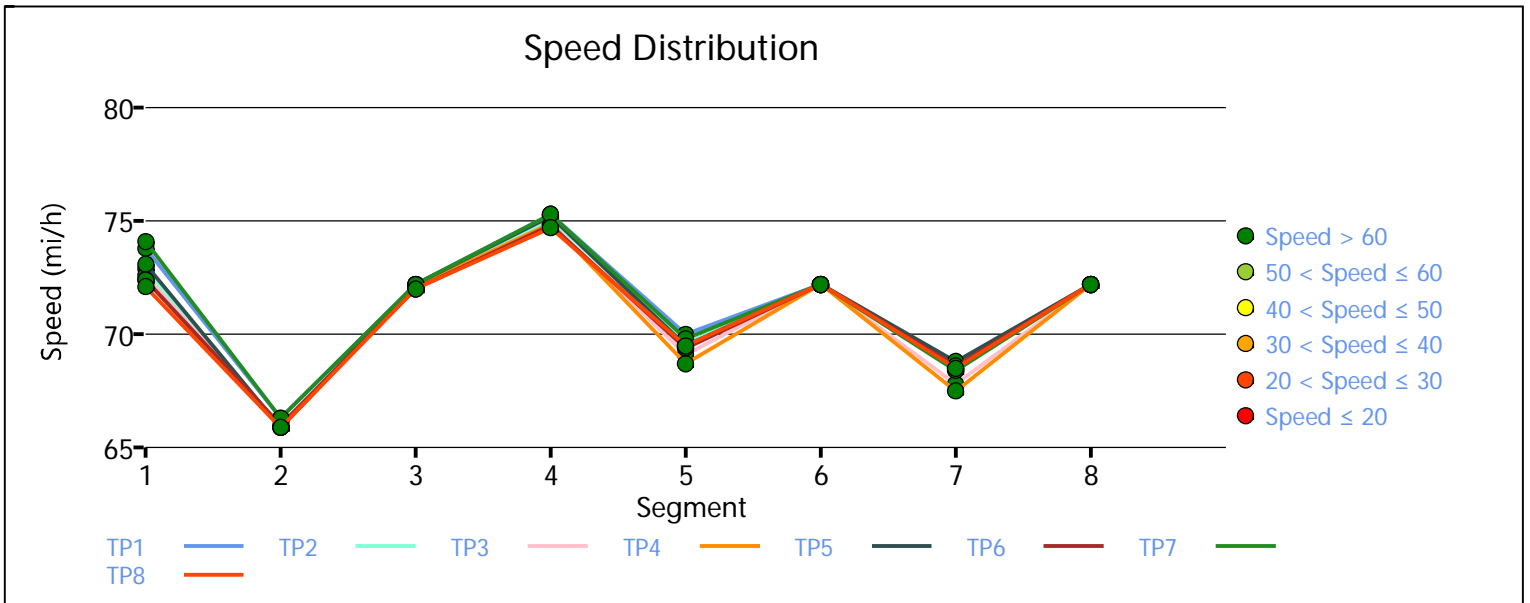
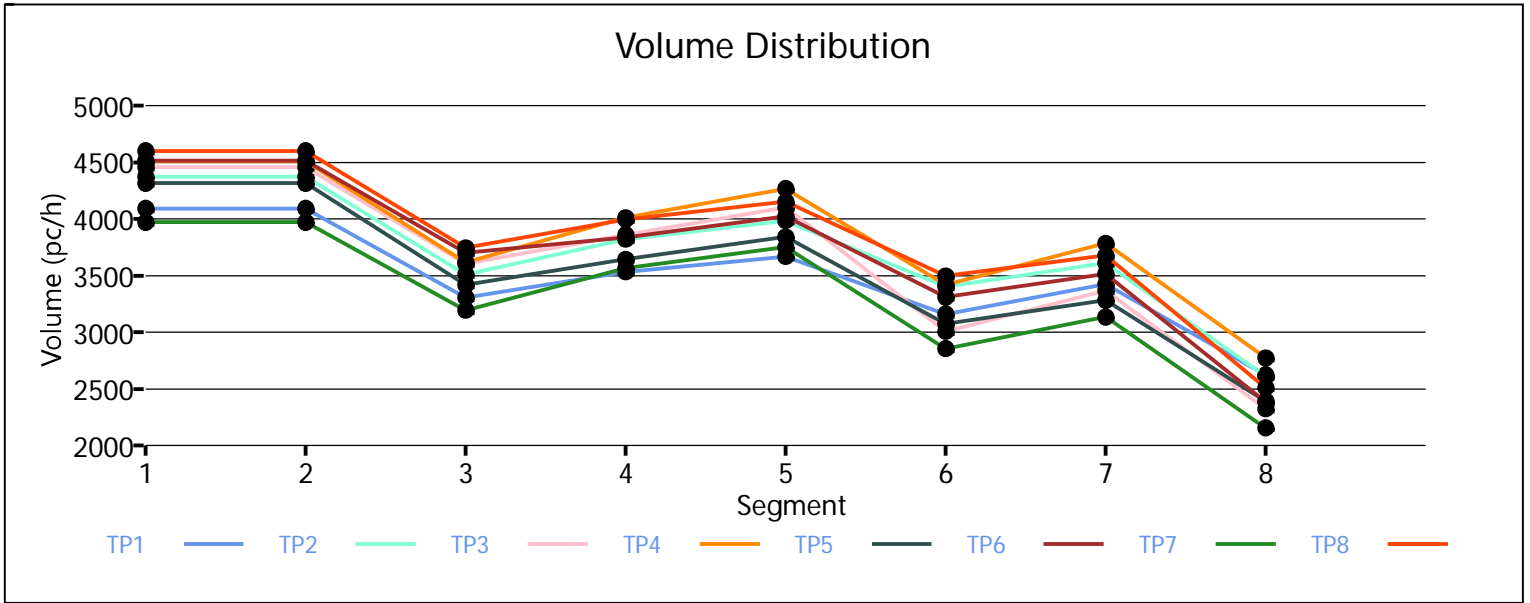
Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	1.00	0.935	2626	7200	0.36	72.2	12.1	B
2	1.00	0.935	2610	7200	0.36	72.2	12.0	B
3	1.00	0.935	2325	7200	0.32	72.2	10.7	A
4	1.00	0.935	2775	7200	0.39	72.2	12.8	B
5	1.00	0.935	2393	7200	0.33	72.2	11.1	B
6	1.00	0.935	2389	7200	0.33	72.2	11.0	A
7	1.00	0.935	2157	7200	0.30	72.2	10.0	A
8	1.00	0.935	2513	7200	0.35	72.2	11.6	B

Facility Time Period Results

T	Speed, mi/h	Density, pc/mi/ln	Density, veh/mi/ln	Travel Time, min	LOS
1	70.6	14.4	13.4	2.3	B
2	70.4	15.4	14.3	2.3	B
3	70.1	15.1	14.0	2.3	B
4	70.0	16.1	14.9	2.3	B
5	70.4	14.6	13.5	2.3	B
6	70.3	15.5	14.4	2.3	B
7	70.5	13.7	J-2-8 ^{12.7}	2.3	B
8	70.3	16.0	14.8	2.3	B

Facility Overall Results

Space Mean Speed, mi/h	70.3	Density, veh/mi/ln	14.0
Average Travel Time, min	2.3	Density, pc/mi/ln	15.1



HCS7 Freeway Facilities Report

Project Information

Analyst	WSP	Date	7/3/2018
Agency	City of Moreno Valley	Analysis Year	2025 with Alternative 6
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	WLC Pkwy IC - Westbound SR-60		

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	8
Total Time Periods	8	Time Period Duration, min	15

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic	east of Gilman Springs Rd On Ramp	2200	3
2	Weaving	Weaving	On-Ramp from Gilman Spring to Off-Ramp to WLC Pkwy	3200	4
3	Basic	Basic	between WLC Pkwy Off and WLC Pkwy On Ramps	1820	3
4	Weaving	Weaving	WLC Pkwy to Redlands Blvd	2090	4
5	Basic	Basic	between Redlands Blvd Off and On Ramps	1500	3
6	Merge	Merge	On-Ramp from NB Redlands Blvd	1300	3
7	Merge	Merge	On-Ramp from SB Redlands Blvd	1500	3
8	Basic	Basic	Redlands Blvd to Moreno Beach Rd	1070	3

Facility Segment Data

Segment 1: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	1.00	0.926	2070	7200	0.29	75.4	9.2	A
2	1.00	0.926	2344	7200	0.33	75.4	10.4	A
3	1.00	0.926	1906	7200	0.26	75.4	8.4	A
4	1.00	0.926	1973	7200	0.27	75.4	8.7	A
5	1.00	0.926	1684	7200	0.23	75.4	7.4	A
6	1.00	0.926	1825	7200	0.25	75.4	8.1	A
7	1.00	0.926	1706	7200	0.24	75.4	7.5	A
8	1.00	0.926	1892	7200	0.26	75.4	8.4	A

Segment 2: Weaving

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	1.00	0.935	3023	8852	0.34	64.6	11.7	B
2	1.00	0.935	3112	8852	0.35	65.8	11.8	B
3	1.00	0.935	2674	8852	0.30	66.1	10.1	B

4	1.00	0.935	2683	8768	0.31	66.5	10.1	B
5	1.00	0.935	2333	8848	0.26	67.1	8.7	A
6	1.00	0.935	2461	8960	0.27	67.1	9.2	A
7	1.00	0.935	2163	9104	0.24	68.6	7.9	A
8	1.00	0.935	2379	9076	0.26	68.2	8.7	A

Segment 3: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	1.00	0.943	2887	7200	0.40	72.2	13.3	B
2	1.00	0.943	2818	7200	0.39	72.2	13.0	B
3	1.00	0.943	2459	7200	0.34	72.2	11.4	B
4	1.00	0.943	2314	7200	0.32	72.2	10.7	A
5	1.00	0.943	2118	7200	0.29	72.2	9.8	A
6	1.00	0.943	2275	7200	0.32	72.2	10.5	A
7	1.00	0.943	1989	7200	0.28	72.2	9.2	A
8	1.00	0.943	2143	7200	0.30	72.2	9.9	A

Segment 4: Weaving

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	1.00	0.885	3756	8828	0.43	65.0	14.4	B
2	1.00	0.885	3822	8724	0.44	64.0	14.9	B
3	1.00	0.885	3717	8396	0.44	62.2	14.9	B
4	1.00	0.885	3138	8545	0.37	65.6	12.0	B
5	1.00	0.885	3495	7830	0.45	61.4	14.2	B
6	1.00	0.885	3669	8359	0.44	61.2	15.0	B
7	1.00	0.885	3921	6518	0.60	57.8	17.0	B
8	1.00	0.885	3113	8632	0.36	64.6	12.0	B

Segment 5: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	1.00	0.885	3304	7200	0.46	72.2	15.2	B
2	1.00	0.885	3344	7200	0.46	72.2	15.4	B
3	1.00	0.885	3124	7200	0.43	72.2	14.4	B
4	1.00	0.885	2567	7200	0.36	72.2	11.9	B
5	1.00	0.885	2915	7200	0.40	72.2	13.5	B
6	1.00	0.885	3188	7200	0.44	72.2	14.7	B
7	1.00	0.885	3252	7200	0.45	72.2	15.0	B
8	1.00	0.885	2772	7200	0.39	72.2	12.8	B

Segment 6: Merge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	

1	1.00	1.00	0.901	0.909	3449	204	7200	2000	0.48	0.10	67.2	64.3	17.1	20.0	B
2	1.00	1.00	0.901	0.909	3525	241	7200	2000	0.49	0.12	67.1	64.2	17.5	20.4	C
3	1.00	1.00	0.901	0.909	3296	227	7200	2000	0.46	0.11	67.3	64.4	16.3	19.4	B
4	1.00	1.00	0.901	0.909	2643	121	7200	2000	0.37	0.06	67.9	64.7	13.0	16.1	B
5	1.00	1.00	0.901	0.909	3029	166	7200	2000	0.42	0.08	67.5	64.5	15.0	18.0	B
6	1.00	1.00	0.901	0.909	3289	158	7200	2000	0.46	0.08	67.4	64.4	16.3	19.1	B
7	1.00	1.00	0.901	0.909	3548	354	7200	2000	0.49	0.18	67.0	64.2	17.7	20.9	C
8	1.00	1.00	0.901	0.909	3032	309	7200	2000	0.42	0.15	67.4	64.5	15.0	18.4	B

Segment 7: Merge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	1.00	1.00	0.901	0.980	3846	395	7200	2000	0.53	0.20	67.7	65.4	18.9	18.5	B
2	1.00	1.00	0.901	0.980	4019	492	7200	2000	0.56	0.25	67.5	65.2	19.8	19.6	B
3	1.00	1.00	0.901	0.980	3783	486	7200	2000	0.53	0.24	67.7	65.4	18.6	18.4	B
4	1.00	1.00	0.901	0.980	3149	505	7200	2000	0.44	0.25	68.2	65.9	15.4	15.5	B
5	1.00	1.00	0.901	0.980	3426	395	7200	2000	0.48	0.20	68.1	65.8	16.8	16.5	B
6	1.00	1.00	0.901	0.980	3660	369	7200	2000	0.51	0.18	67.9	65.6	18.0	17.5	B
7	1.00	1.00	0.901	0.980	3914	362	7200	2000	0.54	0.18	67.7	65.4	19.3	18.7	B
8	1.00	1.00	0.901	0.980	3299	265	7200	2000	0.46	0.13	68.3	65.9	16.1	15.6	B

Segment 8: Basic

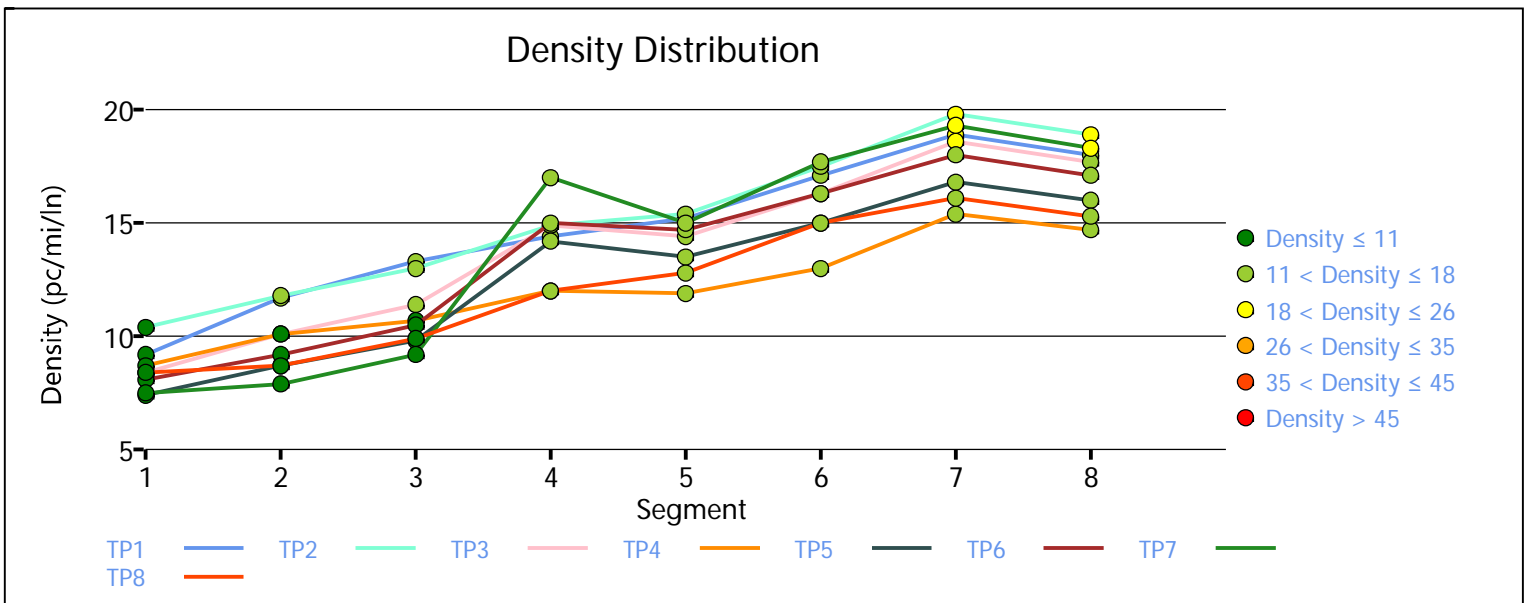
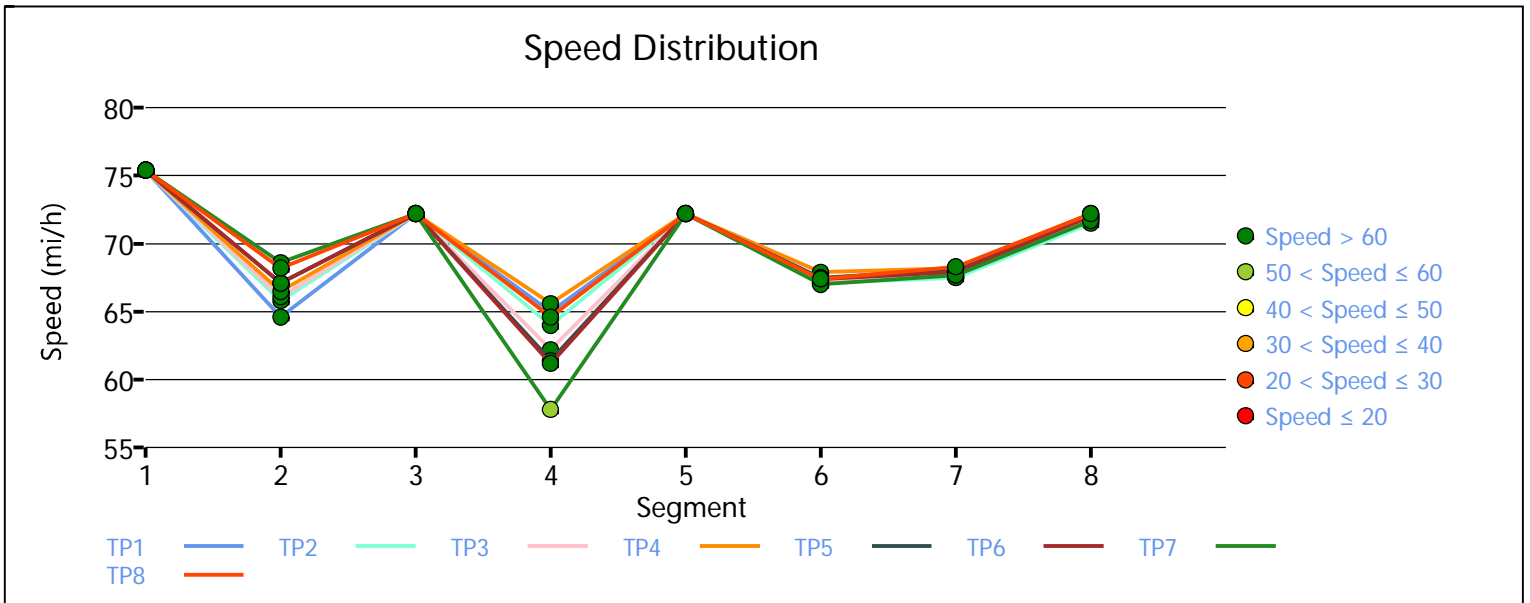
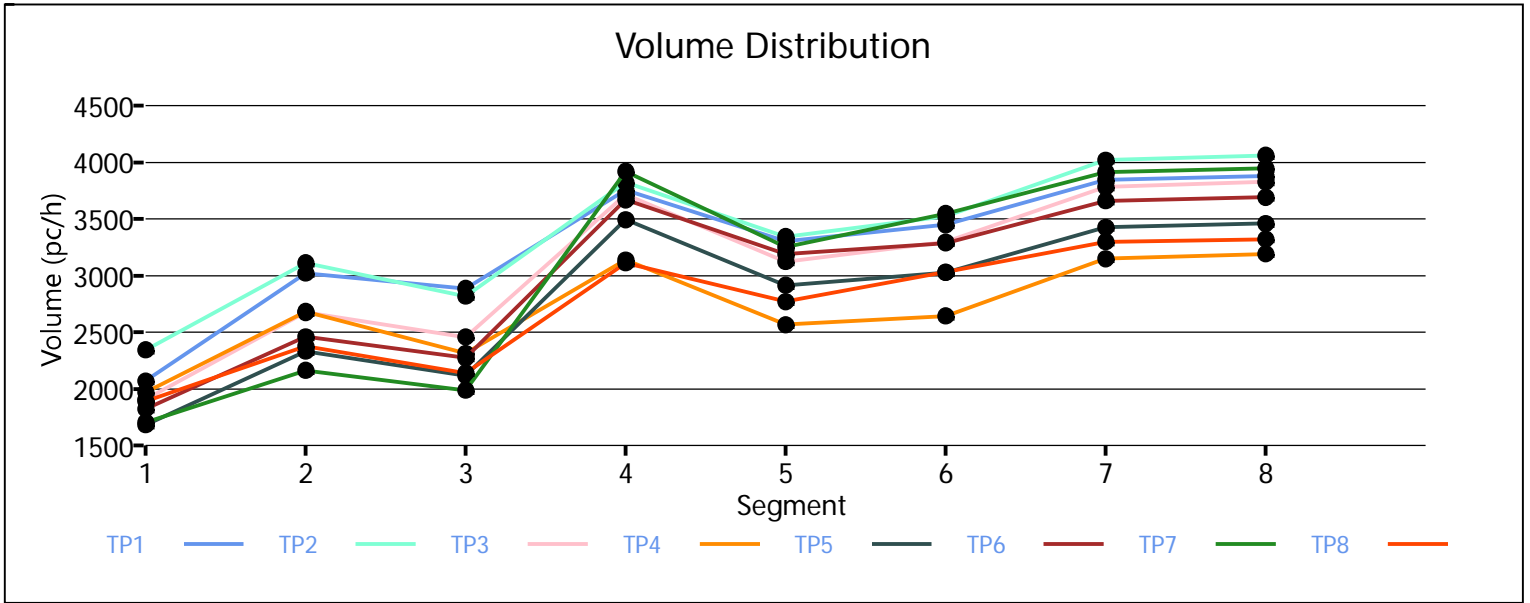
Time Period	PHF		fHV	Flow Rate (pc/h)		Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	1.00		0.901	3880		7200	0.54	71.8	18.0	B
2	1.00		0.901	4062		7200	0.56	71.5	18.9	C
3	1.00		0.901	3826		7200	0.53	71.9	17.7	B
4	1.00		0.901	3193		7200	0.44	72.2	14.7	B
5	1.00		0.901	3461		7200	0.48	72.2	16.0	B
6	1.00		0.901	3693		7200	0.51	72.0	17.1	B
7	1.00		0.901	3946		7200	0.55	71.7	18.3	C
8	1.00		0.901	3323		7200	0.46	72.2	15.3	B

Facility Time Period Results

T	Speed, mi/h	Density, pc/mi/ln	Density, veh/mi/ln	Travel Time, min	LOS
1	68.5	13.8	12.6	2.4	B
2	68.6	14.2	13.0	2.4	B
3	68.3	13.0	11.8	2.4	B
4	69.2	11.5	10.5	2.4	B
5	68.4	11.7	10.7	2.4	B
6	68.3	12.6	11.4	2.4	B
7	67.6	12.7	11.5	2.5	B
8	69.4	11.3	J-2-13 10.3	2.4	B

Facility Overall Results

Space Mean Speed, mi/h	68.5	Density, veh/mi/ln	11.5
Average Travel Time, min	2.4	Density, pc/mi/ln	12.6



HCS7 Freeway Facilities Report

Project Information

Analyst	WSP	Date	7/3/2018
Agency	City of Moreno Valley	Analysis Year	2025 with Alternative 6
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	WLC Pkwy IC - Westbound SR-60		

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	8
Total Time Periods	8	Time Period Duration, min	15

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic	east of Gilman Springs Rd On Ramp	2200	3
2	Weaving	Weaving	On-Ramp from Gilman Spring to Off-Ramp to WLC Pkwy	3200	4
3	Basic	Basic	between WLC Pkwy Off and WLC Pkwy On Ramps	1820	3
4	Weaving	Weaving	WLC Pkwy to Redlands Blvd	2090	4
5	Basic	Basic	between Redlands Blvd Off and On Ramps	1500	3
6	Merge	Merge	On-Ramp from NB Redlands Blvd	1300	3
7	Merge	Merge	On-Ramp from SB Redlands Blvd	1500	3
8	Basic	Basic	Redlands Blvd to Moreno Beach Rd	1070	3

Facility Segment Data

Segment 1: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	1.00	0.901	2270	7200	0.32	75.4	10.0	A
2	1.00	0.901	2872	7200	0.40	75.4	12.7	B
3	1.00	0.901	2483	7200	0.34	75.4	11.0	A
4	1.00	0.901	2534	7200	0.35	75.4	11.2	B
5	1.00	0.901	2853	7200	0.40	75.4	12.6	B
6	1.00	0.901	2829	7200	0.39	75.4	12.5	B
7	1.00	0.901	2464	7200	0.34	75.4	10.9	A
8	1.00	0.901	2590	7200	0.36	75.4	11.4	B

Segment 2: Weaving

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	1.00	0.909	2741	9324	0.29	68.0	10.1	B
2	1.00	0.909	3410	9216	0.37	66.9	12.7	B
3	1.00	0.909	3088	9188	0.34	66.7	11.6	B

4	1.00	0.909	2952	9328	0.32	68.1	10.8	B
5	1.00	0.909	3336	9316	0.36	67.3	12.4	B
6	1.00	0.909	3291	9372	0.35	67.5	12.2	B
7	1.00	0.909	2983	9300	0.32	67.4	11.1	B
8	1.00	0.909	2981	9360	0.32	68.3	10.9	B

Segment 3: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	1.00	0.917	2632	7200	0.37	72.2	12.1	B
2	1.00	0.917	3032	7200	0.42	72.2	14.0	B
3	1.00	0.917	2903	7200	0.40	72.2	13.4	B
4	1.00	0.917	2732	7200	0.38	72.2	12.6	B
5	1.00	0.917	3089	7200	0.43	72.2	14.3	B
6	1.00	0.917	3097	7200	0.43	72.2	14.3	B
7	1.00	0.917	2848	7200	0.40	72.2	13.1	B
8	1.00	0.917	2759	7200	0.38	72.2	12.7	B

Segment 4: Weaving

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	1.00	0.877	3912	8540	0.46	61.5	15.9	B
2	1.00	0.877	4038	8852	0.46	63.5	15.9	B
3	1.00	0.877	4011	8820	0.45	62.7	16.0	B
4	1.00	0.877	3378	9004	0.38	66.6	12.7	B
5	1.00	0.877	3756	9088	0.41	66.3	14.2	B
6	1.00	0.877	3565	9211	0.39	68.1	13.1	B
7	1.00	0.877	3697	8884	0.42	64.8	14.3	B
8	1.00	0.877	3267	9172	0.36	68.0	12.0	B

Segment 5: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	1.00	0.877	3441	7200	0.48	72.2	15.9	B
2	1.00	0.877	3681	7200	0.51	72.0	17.0	B
3	1.00	0.877	3706	7200	0.51	72.0	17.2	B
4	1.00	0.877	3080	7200	0.43	72.2	14.2	B
5	1.00	0.877	3485	7200	0.48	72.2	16.1	B
6	1.00	0.877	3319	7200	0.46	72.2	15.3	B
7	1.00	0.877	3344	7200	0.46	72.2	15.4	B
8	1.00	0.877	3067	7200	0.43	72.2	14.2	B

Segment 6: Merge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	

1	1.00	1.00	0.885	0.840	3623	213	7200	2000	0.50	0.11	67.1	64.2	18.0	20.8	C
2	1.00	1.00	0.885	0.840	3907	260	7200	2000	0.54	0.13	66.7	63.9	19.5	22.2	C
3	1.00	1.00	0.885	0.840	3893	221	7200	2000	0.54	0.11	66.8	64.0	19.4	22.1	C
4	1.00	1.00	0.885	0.840	3242	190	7200	2000	0.45	0.10	67.4	64.4	16.0	19.0	B
5	1.00	1.00	0.885	0.840	3689	236	7200	2000	0.51	0.12	67.0	64.1	18.4	21.2	C
6	1.00	1.00	0.885	0.840	3594	305	7200	2000	0.50	0.15	67.0	64.2	17.9	20.9	C
7	1.00	1.00	0.885	0.840	3520	206	7200	2000	0.49	0.10	67.2	64.3	17.5	20.3	C
8	1.00	1.00	0.885	0.840	3238	198	7200	2000	0.45	0.10	67.4	64.4	16.0	19.0	B

Segment 7: Merge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	1.00	1.00	0.885	0.980	3975	363	7200	2000	0.55	0.18	67.6	65.3	19.6	19.0	B
2	1.00	1.00	0.885	0.980	4267	373	7200	2000	0.59	0.19	67.3	65.0	21.1	20.4	C
3	1.00	1.00	0.885	0.980	4275	393	7200	2000	0.59	0.20	67.2	65.0	21.2	20.5	C
4	1.00	1.00	0.885	0.980	3582	349	7200	2000	0.50	0.17	68.0	65.7	17.6	17.1	B
5	1.00	1.00	0.885	0.980	4040	363	7200	2000	0.56	0.18	67.6	65.3	19.9	19.3	B
6	1.00	1.00	0.885	0.980	3942	363	7200	2000	0.55	0.18	67.6	65.4	19.4	18.9	B
7	1.00	1.00	0.885	0.980	4006	496	7200	2000	0.56	0.25	67.5	65.2	19.8	19.5	B
8	1.00	1.00	0.885	0.980	3600	373	7200	2000	0.50	0.19	68.0	65.7	17.6	17.3	B

Segment 8: Basic

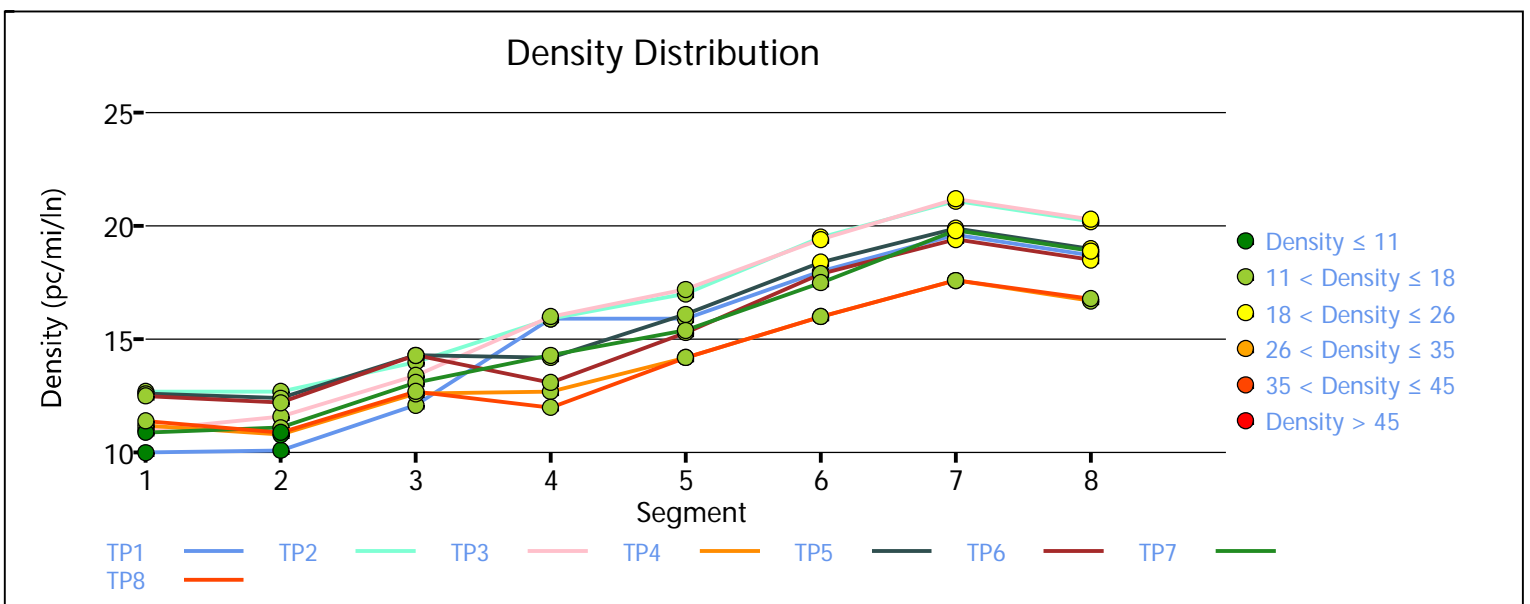
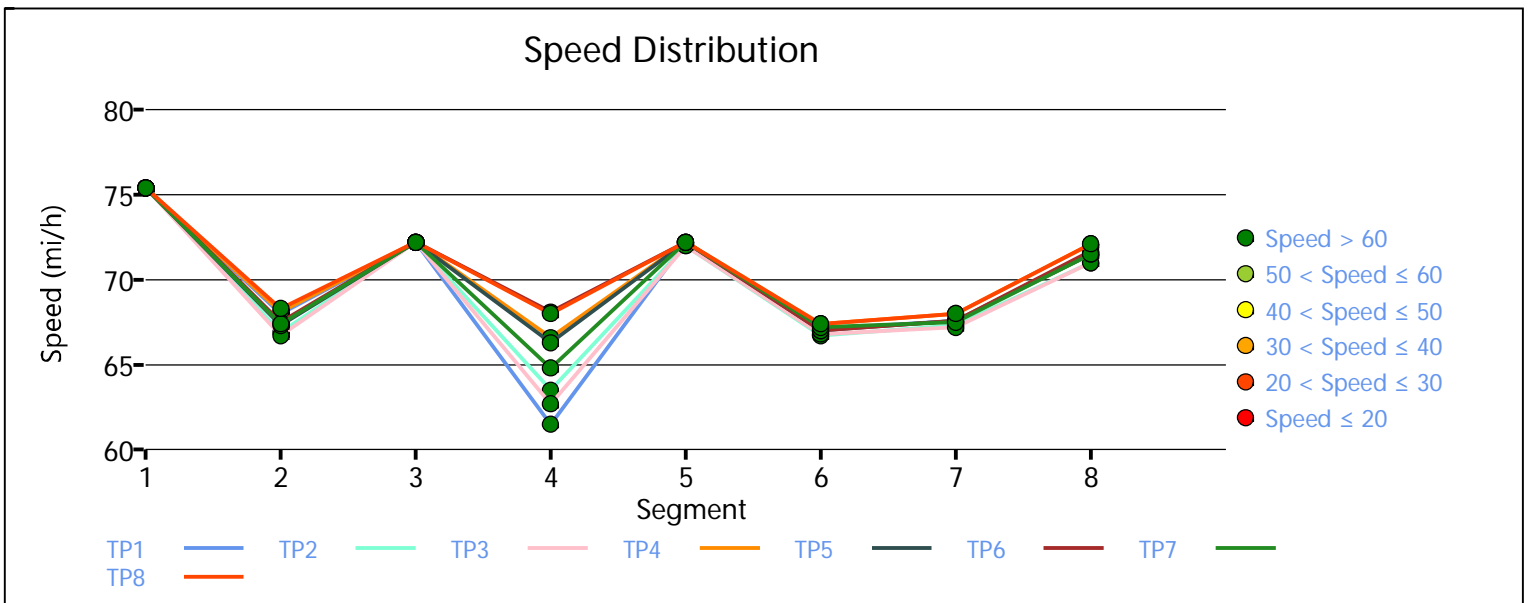
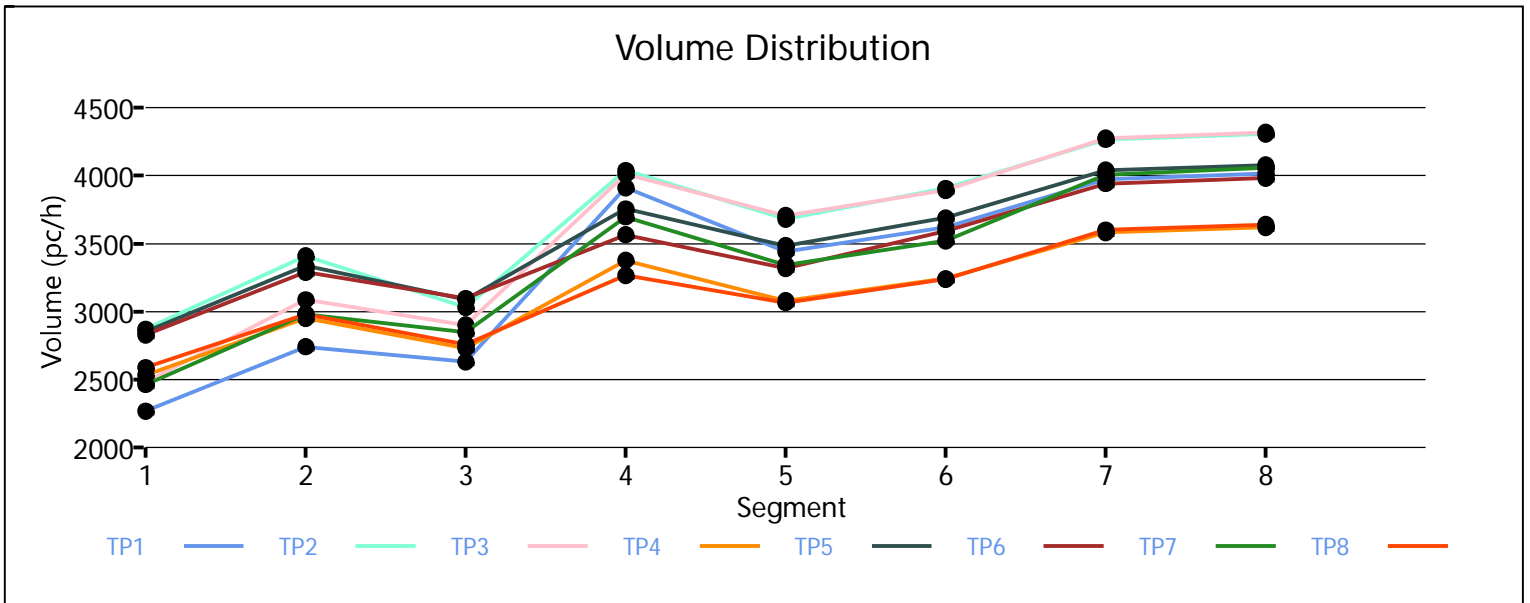
Time Period	PHF		fHV	Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
1	1.00		0.885	4015		7200		0.56		71.6		18.7	C	
2	1.00		0.885	4307		7200		0.60		71.0		20.2	C	
3	1.00		0.885	4318		7200		0.60		71.0		20.3	C	
4	1.00		0.885	3619		7200		0.50		72.1		16.7	B	
5	1.00		0.885	4079		7200		0.57		71.5		19.0	C	
6	1.00		0.885	3981		7200		0.55		71.7		18.5	C	
7	1.00		0.885	4059		7200		0.56		71.5		18.9	C	
8	1.00		0.885	3641		7200		0.51		72.1		16.8	B	

Facility Time Period Results

T	Speed, mi/h	Density, pc/mi/ln	Density, veh/mi/ln	Travel Time, min	LOS
1	68.6	13.9	12.4	2.4	B
2	68.7	15.6	13.9	2.4	B
3	68.5	15.0	13.4	2.4	B
4	69.8	13.1	11.7	2.4	B
5	69.5	14.9	13.3	2.4	B
6	69.8	14.4	12.9	2.4	B
7	69.2	14.0	12.5	2.4	B
8	70.1	13.1	J-2-18 11.7	2.4	B

Facility Overall Results

Space Mean Speed, mi/h	69.2	Density, veh/mi/ln	12.7
Average Travel Time, min	2.4	Density, pc/mi/ln	14.2



Appendix J-3

Freeway LOS Worksheets for Alternative 6, 2045

HCS7 Freeway Facilities Report

Project Information

Analyst	WSP	Date	7/3/2018
Agency	City of Moreno Valley	Analysis Year	2045 with Alternative 6
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	Theodore Interchange		

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	8
Total Time Periods	8	Time Period Duration, min	15

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic	Moreno Beach Rd to Redlands Blvd	600	3
2	Diverge	Diverge	Off-Ramp to Redlands Blvd	1500	3
3	Basic	Basic	between Redlands Blvd Off and SB Redlands Blvd On Ramp	2150	3
4	Merge	Basic	On-Ramp from SB Redlands Blvd (Loop)	750	3
5	Weaving	Weaving	Redlands Blvd to WLC Pkwy	2545	4
6	Basic	Basic	WLC Pkwy Off-Ramp to WLC Pkwy On Ramp	2900	3
7	Weaving	Weaving	WLC Pkwy NB On-Ramp to Gilman Spring Off-Ramp	2450	4
8	Basic	Basic	east of Gilman Springs Rd Off Ramp	1350	3

Facility Segment Data

Segment 1: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	1.00	0.877	4238	7200	0.59	73.4	19.3	C
2	1.00	0.877	4151	7200	0.58	73.6	18.8	C
3	1.00	0.877	4470	7200	0.62	72.6	20.5	C
4	1.00	0.877	4382	7200	0.61	72.9	20.0	C
5	1.00	0.877	3710	7200	0.52	74.7	16.6	B
6	1.00	0.877	3790	7200	0.53	74.5	17.0	B
7	1.00	0.877	4103	7200	0.57	73.8	18.5	C
8	1.00	0.877	4558	7200	0.63	72.2	21.0	C

Segment 2: Diverge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	1.00	1.00	0.877	0.926	4238	396	7200	4000	0.59	0.10	67.0	59.9	21.1	11.6	B

2	1.00	1.00	0.877	0.926	4151	335	7200	4000	0.58	0.08	67.2	60.1	20.6	11.2	B
3	1.00	1.00	0.877	0.926	4470	421	7200	4000	0.62	0.11	66.8	59.8	22.3	12.7	B
4	1.00	1.00	0.877	0.926	4382	446	7200	4000	0.61	0.11	66.8	59.8	21.9	12.3	B
5	1.00	1.00	0.877	0.926	3710	521	7200	4000	0.52	0.13	67.0	59.5	18.5	9.0	A
6	1.00	1.00	0.877	0.926	3790	589	7200	4000	0.53	0.15	66.8	59.3	18.9	9.4	A
7	1.00	1.00	0.877	0.926	4103	477	7200	4000	0.57	0.12	66.9	59.7	20.4	10.9	B
8	1.00	1.00	0.877	0.926	4558	570	7200	4000	0.63	0.14	66.5	59.4	22.8	13.2	B

Segment 3: Basic

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
1	1.00		0.877		3820		7200		0.53		71.9		17.7		B
2	1.00		0.877		3797		7200		0.53		71.9		17.6		B
3	1.00		0.877		4025		7200		0.56		71.6		18.7		C
4	1.00		0.877		3911		7200		0.54		71.8		18.2		C
5	1.00		0.877		3161		7200		0.44		72.2		14.6		B
6	1.00		0.877		3169		7200		0.44		72.2		14.6		B
7	1.00		0.877		3599		7200		0.50		72.1		16.6		B
8	1.00		0.877		3956		7200		0.55		71.7		18.4		C

Segment 4: Merge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	1.00	1.00	0.885	0.962	3904	119	7200	2000	0.53	0.06	74.5	-	16.9	-	B
2	1.00	1.00	0.885	0.962	4001	238	7200	2000	0.52	0.12	74.6	-	16.8	-	B
3	1.00	1.00	0.885	0.962	4108	119	7200	2000	0.55	0.06	74.1	-	17.9	-	B
4	1.00	1.00	0.885	0.962	4066	190	7200	2000	0.54	0.10	74.4	-	17.4	-	B
5	1.00	1.00	0.885	0.962	3322	190	7200	2000	0.44	0.10	75.4	-	13.8	-	B
6	1.00	1.00	0.885	0.962	3140	0	7200	2000	0.44	0.00	75.4	-	13.9	-	B
7	1.00	1.00	0.885	0.962	3756	190	7200	2000	0.50	0.10	74.9	-	15.9	-	B
8	1.00	1.00	0.885	0.962	4015	95	7200	2000	0.54	0.05	74.3	-	17.6	-	B

Segment 5: Weaving

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
1	1.00		0.885		4216		9080		0.46		68.4		15.4		B
2	1.00		0.885		4455		8948		0.50		67.4		16.5		B
3	1.00		0.885		4498		9020		0.50		67.7		16.6		B
4	1.00		0.885		4516		8960		0.50		67.4		16.8		B
5	1.00		0.885		3836		8512		0.45		67.8		14.1		B
6	1.00		0.885		3611		7071		0.51		68.5		13.2		B
7	1.00		0.885		4196		8516		0.49		68.2		15.4		B
8	1.00		0.885		4397		8828		0.50		68.1		16.1		B

Segment 6: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	1.00	0.926	3259	7200	0.45	72.2	15.0	B
2	1.00	0.926	3359	7200	0.47	72.2	15.5	B
3	1.00	0.926	3442	7200	0.48	72.2	15.9	B
4	1.00	0.926	3417	7200	0.47	72.2	15.8	B
5	1.00	0.926	2444	7200	0.34	72.2	11.3	B
6	1.00	0.926	1897	7200	0.26	72.2	8.8	A
7	1.00	0.926	2545	7200	0.35	72.2	11.7	B
8	1.00	0.926	3064	7200	0.43	72.2	14.1	B

Segment 7: Weaving

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	1.00	0.917	3446	8448	0.41	68.6	12.6	B
2	1.00	0.917	3787	7883	0.48	66.7	14.2	B
3	1.00	0.917	3866	7494	0.52	66.6	14.5	B
4	1.00	0.917	3965	7642	0.52	65.8	15.1	B
5	1.00	0.917	2877	7416	0.39	67.5	10.7	B
6	1.00	0.917	2162	6329	0.34	69.0	7.8	A
7	1.00	0.917	2888	6641	0.43	67.9	10.6	B
8	1.00	0.917	3657	7446	0.49	65.8	13.9	B

Segment 8: Basic

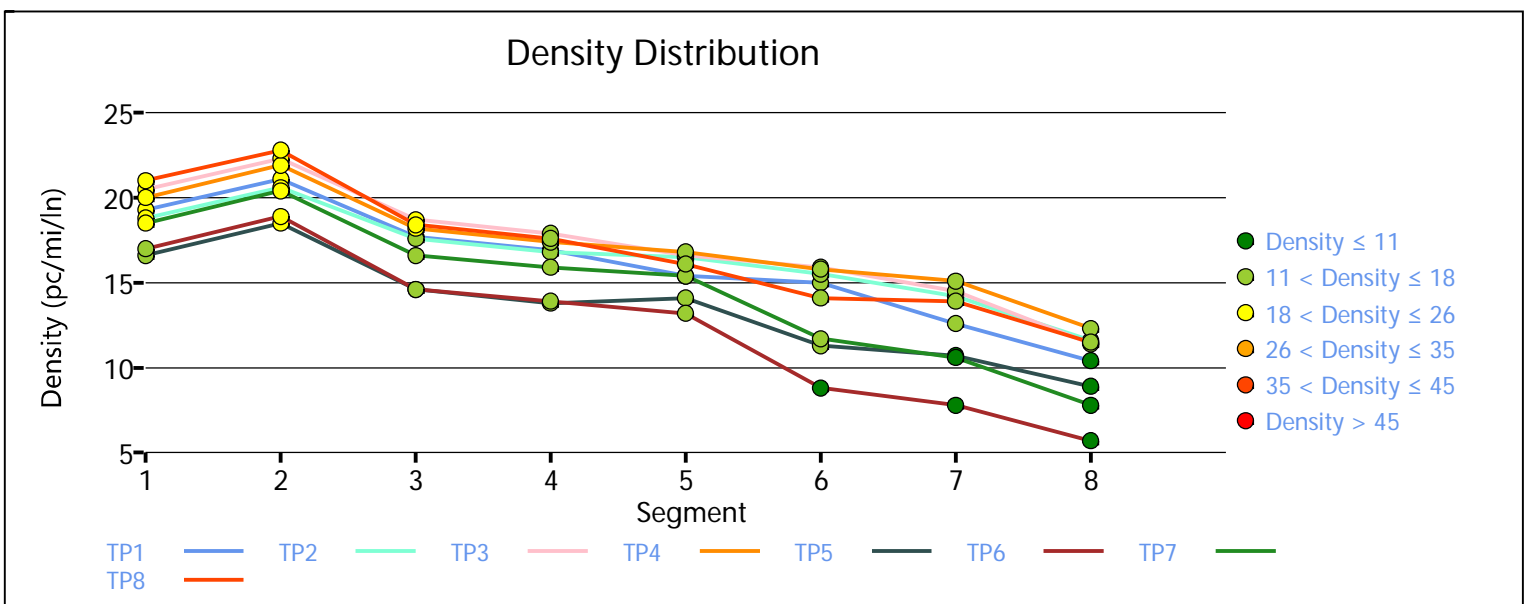
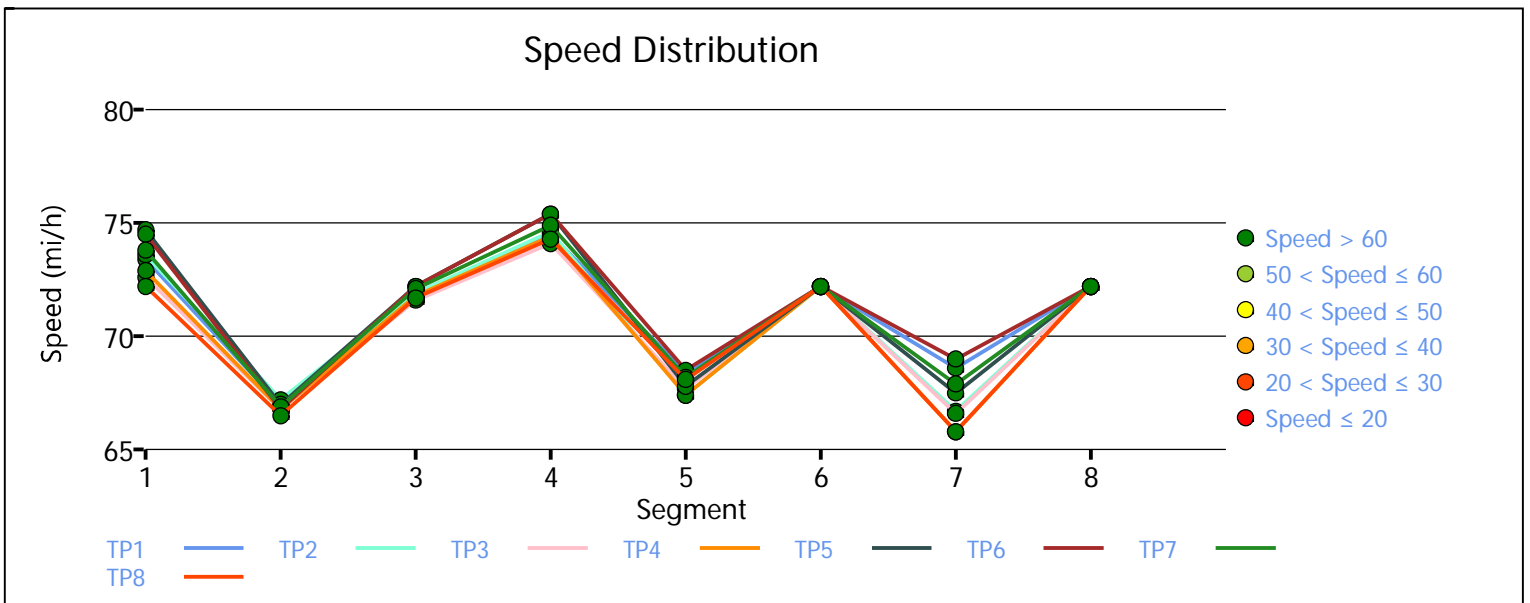
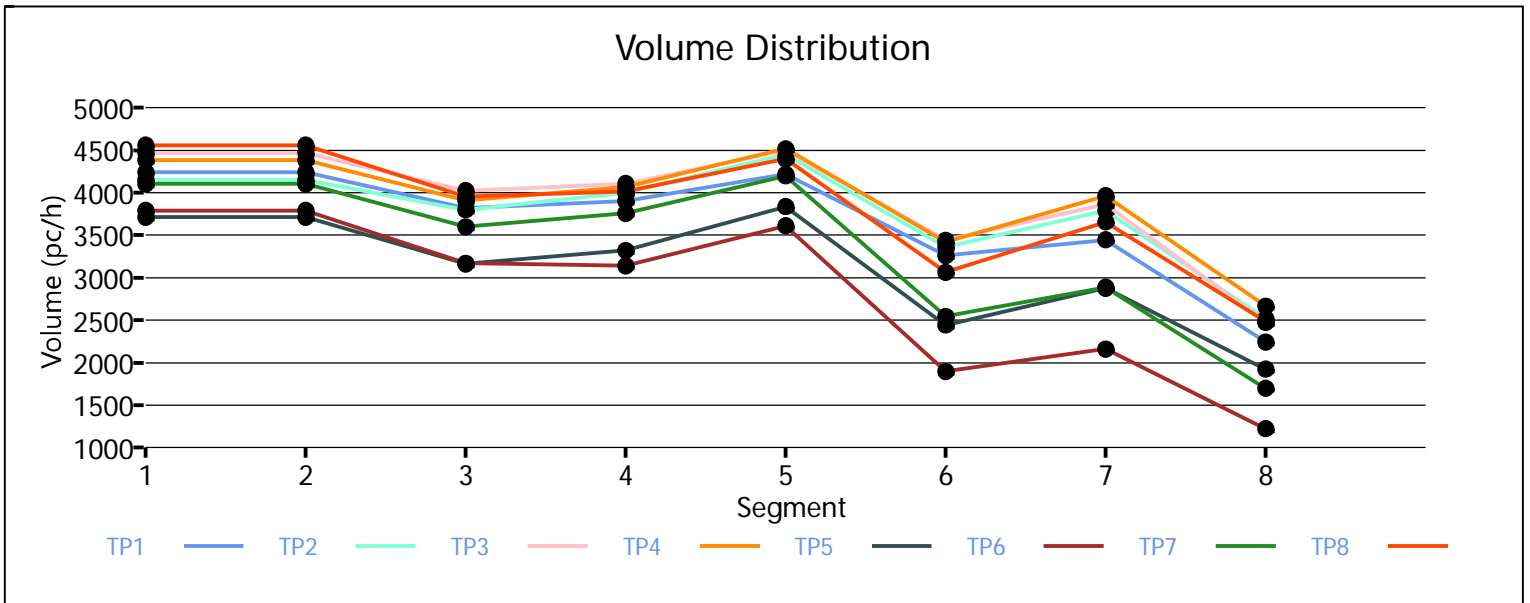
Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	1.00	0.901	2243	7200	0.31	72.2	10.4	A
2	1.00	0.901	2519	7200	0.35	72.2	11.6	B
3	1.00	0.901	2473	7200	0.34	72.2	11.4	B
4	1.00	0.901	2666	7200	0.37	72.2	12.3	B
5	1.00	0.901	1923	7200	0.27	72.2	8.9	A
6	1.00	0.901	1223	7200	0.17	72.2	5.7	A
7	1.00	0.901	1699	7200	0.24	72.2	7.8	A
8	1.00	0.901	2486	7200	0.35	72.2	11.5	B

Facility Time Period Results

T	Speed, mi/h	Density, pc/mi/ln	Density, veh/mi/ln	Travel Time, min	LOS
1	70.3	15.4	13.8	2.3	B
2	69.7	16.1	14.4	2.3	B
3	69.6	16.6	14.9	2.3	B
4	69.4	16.7	15.0	2.3	B
5	70.0	13.0	11.7	2.3	B
6	70.4	11.6	10.3	2.3	B
7	70.1	13.9	J-3-3 ^{12.4}	2.3	B
8	69.5	16.1	14.4	2.3	B

Facility Overall Results

Space Mean Speed, mi/h	69.8	Density, veh/mi/ln	13.4
Average Travel Time, min	2.3	Density, pc/mi/ln	14.9



HCS7 Freeway Facilities Report

Project Information

Analyst	WSP	Date	7/3/2018
Agency	City of Moreno Valley	Analysis Year	2045 with Alternative 6
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	Theodore Interchange		

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	8
Total Time Periods	8	Time Period Duration, min	15

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic	Moreno Beach Rd to Redlands Blvd	600	3
2	Diverge	Diverge	Off-Ramp to Redlands Blvd	1500	3
3	Basic	Basic	between Redlands Blvd Off and SB Redlands Blvd On Ramp	2150	3
4	Merge	Basic	On-Ramp from SB Redlands Blvd (Loop)	750	3
5	Weaving	Weaving	Redlands Blvd to WLC Pkwy	2545	4
6	Basic	Basic	WLC Pkwy Off-Ramp to WLC Pkwy On Ramp	2900	3
7	Weaving	Weaving	WLC Pkwy NB On-Ramp to Gilman Spring Off-Ramp	2450	4
8	Basic	Basic	east of Gilman Springs Rd Off Ramp	1350	3

Facility Segment Data

Segment 1: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	1.00	0.909	5514	7200	0.77	67.4	27.3	D
2	1.00	0.909	5898	7200	0.82	64.8	30.3	D
3	1.00	0.909	6010	7200	0.83	64.0	31.3	D
4	1.00	0.909	6074	7200	0.84	63.5	31.9	D
5	1.00	0.909	5817	7200	0.81	65.4	29.6	D
6	1.00	0.909	6081	7200	0.84	63.4	32.0	D
7	1.00	0.909	5353	7200	0.74	68.4	26.1	D
8	1.00	0.909	6201	7200	0.86	62.5	33.1	D

Segment 2: Diverge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	1.00	1.00	0.909	0.971	5514	580	7200	4000	0.77	0.15	66.0	59.4	27.8	17.9	B

2	1.00	1.00	0.909	0.971	5898	640	7200	4000	0.82	0.16	65.6	59.2	30.0	19.7	B
3	1.00	1.00	0.909	0.971	6010	630	7200	4000	0.83	0.16	65.6	59.2	30.5	20.3	C
4	1.00	1.00	0.909	0.971	6074	658	7200	4000	0.84	0.16	65.5	59.1	30.9	20.6	C
5	1.00	1.00	0.909	0.971	5817	662	7200	4000	0.81	0.17	65.6	59.1	29.6	19.3	B
6	1.00	1.00	0.909	0.971	6081	602	7200	4000	0.84	0.15	65.6	59.3	30.9	20.6	C
7	1.00	1.00	0.909	0.971	5353	576	7200	4000	0.74	0.14	66.1	59.4	27.0	17.1	B
8	1.00	1.00	0.909	0.971	6201	635	7200	4000	0.86	0.16	65.5	59.2	31.6	21.2	C

Segment 3: Basic

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
1	1.00		0.909		4894		7200		0.68		69.1		23.6		C
2	1.00		0.909		5215		7200		0.72		67.7		25.7		C
3	1.00		0.909		5337		7200		0.74		67.1		26.5		D
4	1.00		0.909		5371		7200		0.75		67.0		26.7		D
5	1.00		0.909		5110		7200		0.71		68.2		25.0		C
6	1.00		0.909		5438		7200		0.76		66.6		27.2		D
7	1.00		0.909		4738		7200		0.66		69.7		22.7		C
8	1.00		0.909		5523		7200		0.77		66.2		27.8		D

Segment 4: Merge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	1.00	1.00	0.917	0.917	5333	481	7200	2000	0.67	0.24	71.0	-	22.8	-	C
2	1.00	1.00	0.917	0.917	5810	641	7200	2000	0.72	0.32	69.4	-	24.8	-	C
3	1.00	1.00	0.917	0.917	5824	534	7200	2000	0.73	0.27	68.7	-	25.7	-	C
4	1.00	1.00	0.917	0.917	6126	802	7200	2000	0.74	0.40	68.5	-	25.9	-	C
5	1.00	1.00	0.917	0.917	5546	481	7200	2000	0.70	0.24	69.9	-	24.1	-	C
6	1.00	1.00	0.917	0.917	5711	321	7200	2000	0.75	0.16	68.1	-	26.4	-	D
7	1.00	1.00	0.917	0.917	5445	748	7200	2000	0.65	0.37	71.7	-	21.8	-	C
8	1.00	1.00	0.917	0.917	6008	534	7200	2000	0.76	0.27	67.6	-	27.0	-	D

Segment 5: Weaving

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
1	1.00		0.917		6186		9132		0.68		62.4		24.8		C
2	1.00		0.917		6888		9064		0.76		60.3		28.6		D
3	1.00		0.917		6749		8812		0.77		62.4		27.0		C
4	1.00		0.917		7817		8772		0.89		56.3		34.7		D
5	1.00		0.917		6669		8908		0.75		60.8		27.4		C
6	1.00		0.917		6819		8972		0.76		60.6		28.1		D
7	1.00		0.917		5978		9008		0.66		65.3		22.9		C
8	1.00		0.917		6823		9140		0.75		62.2		27.4		C

Segment 6: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	1.00	0.952	5462	7200	0.76	66.5	27.4	D
2	1.00	0.952	6061	7200	0.84	62.8	32.2	D
3	1.00	0.952	5148	7200	0.72	68.1	25.2	C
4	1.00	0.952	6629	7200	0.92	58.5	37.8	E
5	1.00	0.952	5568	7200	0.77	65.9	28.2	D
6	1.00	0.952	5807	7200	0.81	64.5	30.0	D
7	1.00	0.952	4657	7200	0.65	70.0	22.2	C
8	1.00	0.952	5881	7200	0.82	64.0	30.6	D

Segment 7: Weaving

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	1.00	0.943	5883	8644	0.68	64.9	22.7	C
2	1.00	0.943	6391	8548	0.75	64.8	24.7	C
3	1.00	0.943	5720	7384	0.77	64.1	22.3	C
4	1.00	0.943	7217	8588	0.84	62.6	28.8	D
5	1.00	0.943	5901	8576	0.69	65.3	22.6	C
6	1.00	0.943	6127	7991	0.77	65.2	23.5	C
7	1.00	0.943	5102	7217	0.71	65.4	19.5	B
8	1.00	0.943	6158	7901	0.78	65.4	23.5	C

Segment 8: Basic

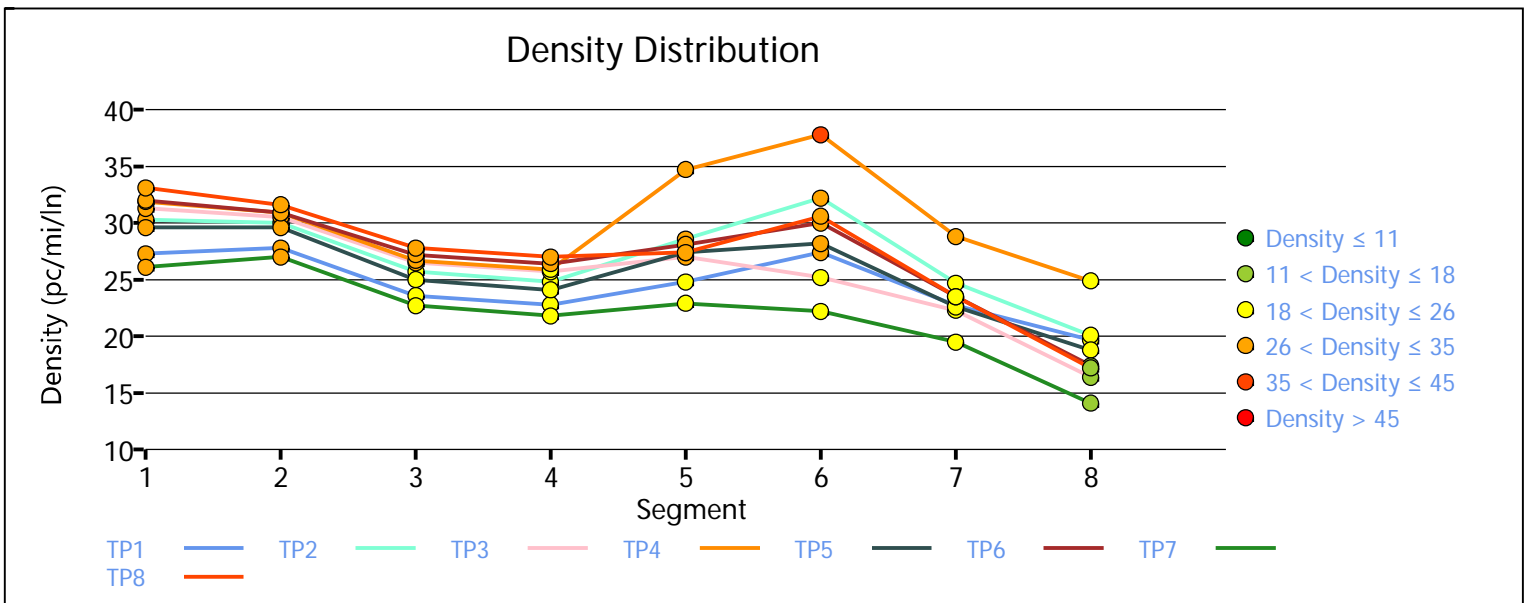
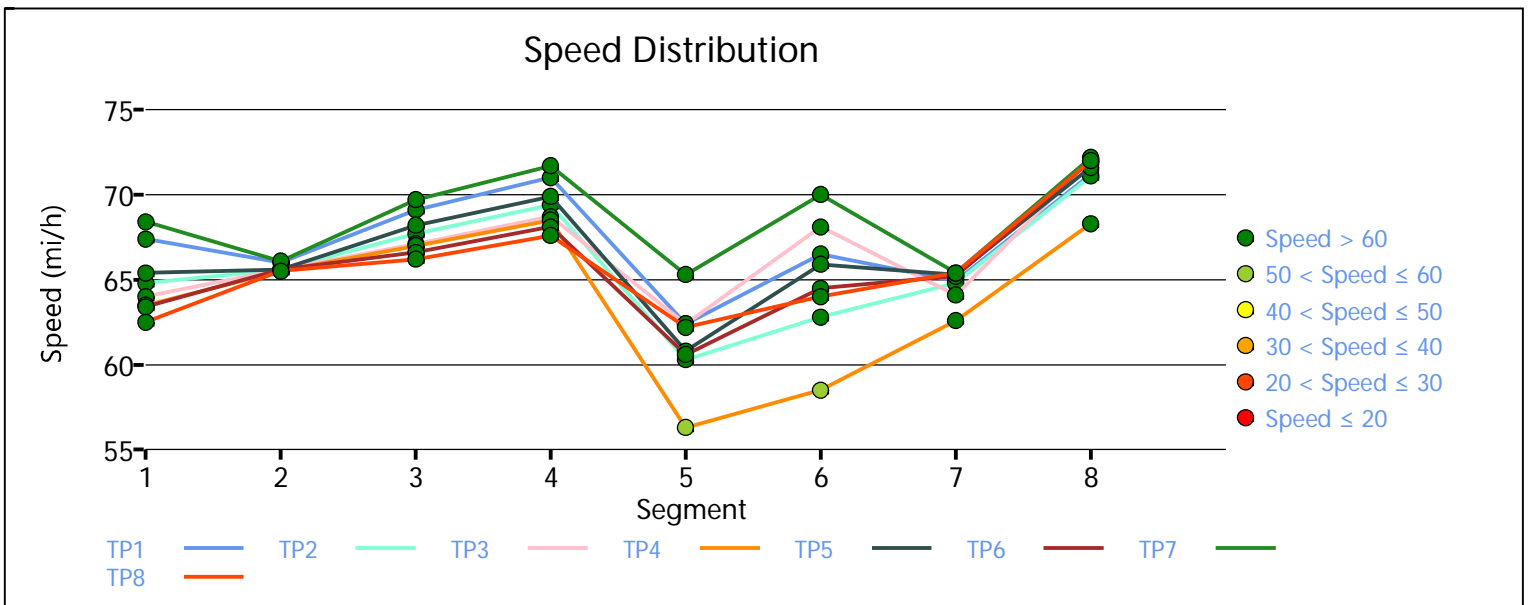
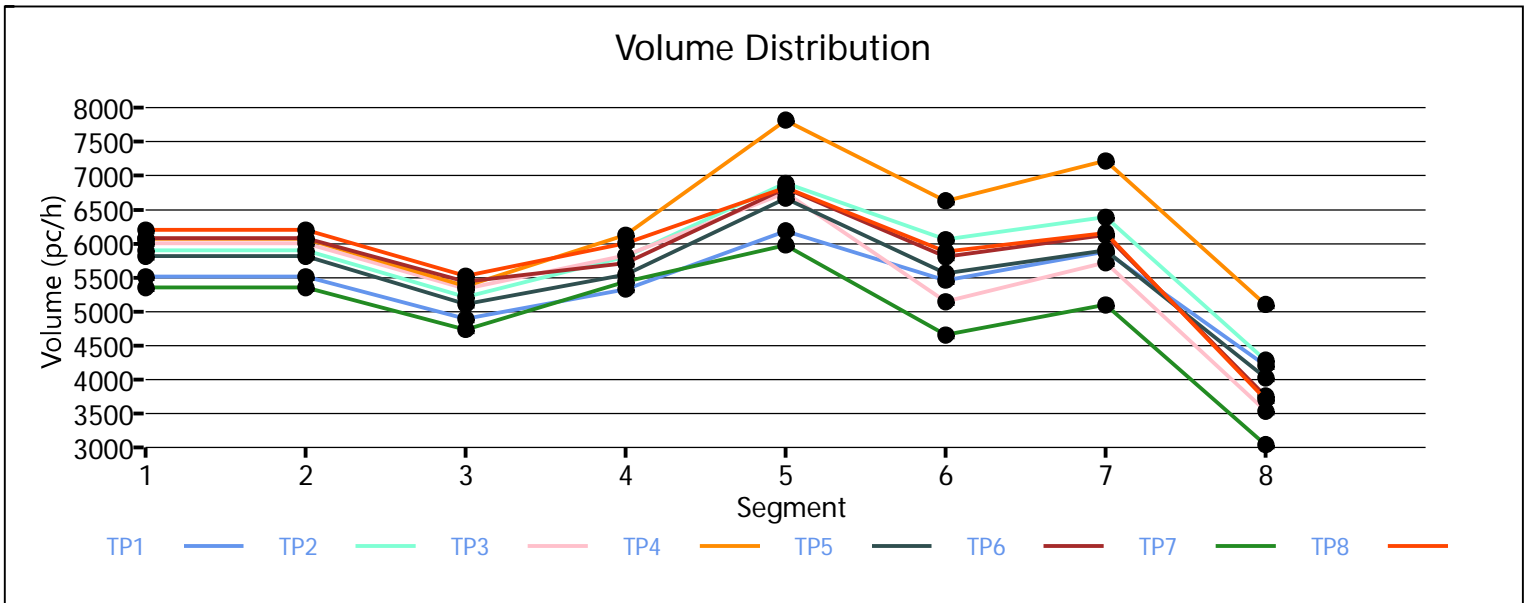
Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	1.00	0.935	4209	7200	0.58	71.2	19.7	C
2	1.00	0.935	4284	7200	0.60	71.1	20.1	C
3	1.00	0.935	3536	7200	0.49	72.1	16.4	B
4	1.00	0.935	5103	7200	0.71	68.3	24.9	C
5	1.00	0.935	4029	7200	0.56	71.6	18.8	C
6	1.00	0.935	3760	7200	0.52	72.0	17.4	B
7	1.00	0.935	3044	7200	0.42	72.2	14.1	B
8	1.00	0.935	3708	7200	0.52	72.0	17.2	B

Facility Time Period Results

T	Speed, mi/h	Density, pc/mi/ln	Density, veh/mi/ln	Travel Time, min	LOS
1	66.2	24.5	22.8	2.4	C
2	64.4	27.4	25.4	2.5	D
3	65.7	25.2	23.3	2.5	C
4	61.7	31.3	29.1	2.6	D
5	65.4	25.6	23.8	2.5	C
6	64.7	26.8	24.9	2.5	D
7	67.8	21.8	J-3-8 ^{20.2}	2.4	C
8	64.9	27.0	25.0	2.5	D

Facility Overall Results

Space Mean Speed, mi/h	64.9	Density, veh/mi/ln	24.3
Average Travel Time, min	2.5	Density, pc/mi/ln	26.2



HCS7 Freeway Facilities Report

Project Information

Analyst	WSP	Date	7/3/2018
Agency	City of Moreno Valley	Analysis Year	2045 with Alternative 6
Jurisdiction	Caltrans	Time Period Analyzed	AM Peak Hour
Project Description	WLC Pkwy IC - Westbound SR-60		

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	8
Total Time Periods	8	Time Period Duration, min	15

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic	east of Gilman Springs Rd On Ramp	2200	3
2	Weaving	Weaving	On-Ramp from Gilman Spring to Off-Ramp to WLC Pkwy	3200	4
3	Basic	Basic	between WLC Pkwy Off and WLC Pkwy On Ramps	1820	3
4	Weaving	Weaving	WLC Pkwy to Redlands Blvd	2090	4
5	Basic	Basic	between Redlands Blvd Off and On Ramps	1500	3
6	Merge	Merge	On-Ramp from NB Redlands Blvd	1300	3
7	Merge	Merge	On-Ramp from SB Redlands Blvd	1500	3
8	Basic	Basic	Redlands Blvd to Moreno Beach Rd	1070	3

Facility Segment Data

Segment 1: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	1.00	0.952	4173	7200	0.58	73.6	18.9	C
2	1.00	0.952	4727	7200	0.66	71.5	22.0	C
3	1.00	0.952	3845	7200	0.53	74.4	17.2	B
4	1.00	0.952	3979	7200	0.55	74.1	17.9	B
5	1.00	0.952	3395	7200	0.47	75.2	15.1	B
6	1.00	0.952	3680	7200	0.51	74.8	16.4	B
7	1.00	0.952	3440	7200	0.48	75.1	15.3	B
8	1.00	0.952	3814	7200	0.53	74.5	17.1	B

Segment 2: Weaving

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	1.00	0.952	6403	8757	0.73	54.6	29.3	D
2	1.00	0.952	6510	8848	0.73	57.0	28.6	D
3	1.00	0.952	5628	8764	0.64	57.9	24.3	C

4	1.00	0.952	5605	8621	0.65	59.1	23.7	C
5	1.00	0.952	4901	8764	0.56	60.1	20.4	C
6	1.00	0.952	5162	8876	0.58	59.8	21.6	C
7	1.00	0.952	4501	9036	0.50	62.7	17.9	B
8	1.00	0.952	4933	9008	0.55	61.9	19.9	B

Segment 3: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	1.00	0.962	6079	7200	0.84	62.7	32.3	D
2	1.00	0.962	5868	7200	0.82	64.1	30.5	D
3	1.00	0.962	5152	7200	0.72	68.0	25.2	C
4	1.00	0.962	4815	7200	0.67	69.4	23.1	C
5	1.00	0.962	4428	7200	0.62	70.7	20.9	C
6	1.00	0.962	4749	7200	0.66	69.7	22.7	C
7	1.00	0.962	4173	7200	0.57	72.0	18.9	C
8	1.00	0.962	4573	7200	0.62	72.0	21.1	C

Segment 4: Weaving

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	1.00	0.917	7459	8823	0.85	58.4	31.9	D
2	1.00	0.917	7467	8728	0.86	57.0	32.8	D
3	1.00	0.917	7162	8396	0.85	54.8	32.7	D
4	1.00	0.917	6113	8443	0.72	59.8	25.6	C
5	1.00	0.917	6641	7936	0.84	54.1	30.7	D
6	1.00	0.917	6999	8428	0.83	53.5	32.7	D
7	1.00	0.917	6654	6679	1.09	52.0	32.0	F
8	1.00	0.917	5718	8684	0.69	60.0	23.8	C

Segment 5: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	1.00	0.909	6413	7200	0.89	60.2	35.5	E
2	1.00	0.909	6382	7200	0.89	60.5	35.2	E
3	1.00	0.909	5824	7200	0.81	64.4	30.1	D
4	1.00	0.909	4705	7200	0.65	69.8	22.5	C
5	1.00	0.909	5374	7200	0.75	67.0	26.7	D
6	1.00	0.909	6021	7200	0.84	63.1	31.8	D
7	1.00	0.909	5759	7200	0.82	65.8	29.2	D
8	1.00	0.909	4949	7200	0.74	70.5	23.4	C

Segment 6: Merge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	

1	1.00	1.00	0.917	0.901	6482	125	7200	2000	0.90	0.06	62.2	59.3	34.7	33.6	D
2	1.00	1.00	0.917	0.901	6475	149	7200	2000	0.90	0.07	62.1	59.2	34.8	33.7	D
3	1.00	1.00	0.917	0.901	5913	140	7200	2000	0.82	0.07	63.8	61.0	30.9	31.1	D
4	1.00	1.00	0.917	0.901	4738	74	7200	2000	0.66	0.04	65.9	63.2	24.0	25.5	C
5	1.00	1.00	0.917	0.901	5429	102	7200	2000	0.75	0.05	64.8	62.1	27.9	28.8	D
6	1.00	1.00	0.917	0.901	6066	98	7200	2000	0.84	0.05	63.3	60.6	31.9	31.7	D
7	1.00	1.00	0.917	0.901	5978	219	7200	2000	0.84	0.11	63.5	60.6	31.4	31.6	D
8	1.00	1.00	0.917	0.901	5140	191	7200	2000	0.76	0.10	65.2	62.5	26.3	27.7	C

Segment 7: Merge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	1.00	1.00	0.917	0.980	6643	163	7200	2000	0.92	0.08	62.1	59.2	35.7	31.1	D
2	1.00	1.00	0.917	0.980	6675	203	7200	2000	0.93	0.10	61.9	59.0	35.9	31.4	D
3	1.00	1.00	0.917	0.980	6112	201	7200	2000	0.85	0.10	63.9	61.3	31.9	28.7	D
4	1.00	1.00	0.917	0.980	4945	208	7200	2000	0.69	0.10	66.4	64.2	24.8	23.2	C
5	1.00	1.00	0.917	0.980	5590	163	7200	2000	0.78	0.08	65.3	62.9	28.5	26.1	C
6	1.00	1.00	0.917	0.980	6216	152	7200	2000	0.86	0.08	63.6	61.0	32.6	29.1	D
7	1.00	1.00	0.917	0.980	6128	150	7200	2000	0.86	0.08	63.9	61.3	32.0	28.6	D
8	1.00	1.00	0.917	0.980	5249	109	7200	2000	0.77	0.05	66.0	63.7	26.5	24.4	C

Segment 8: Basic

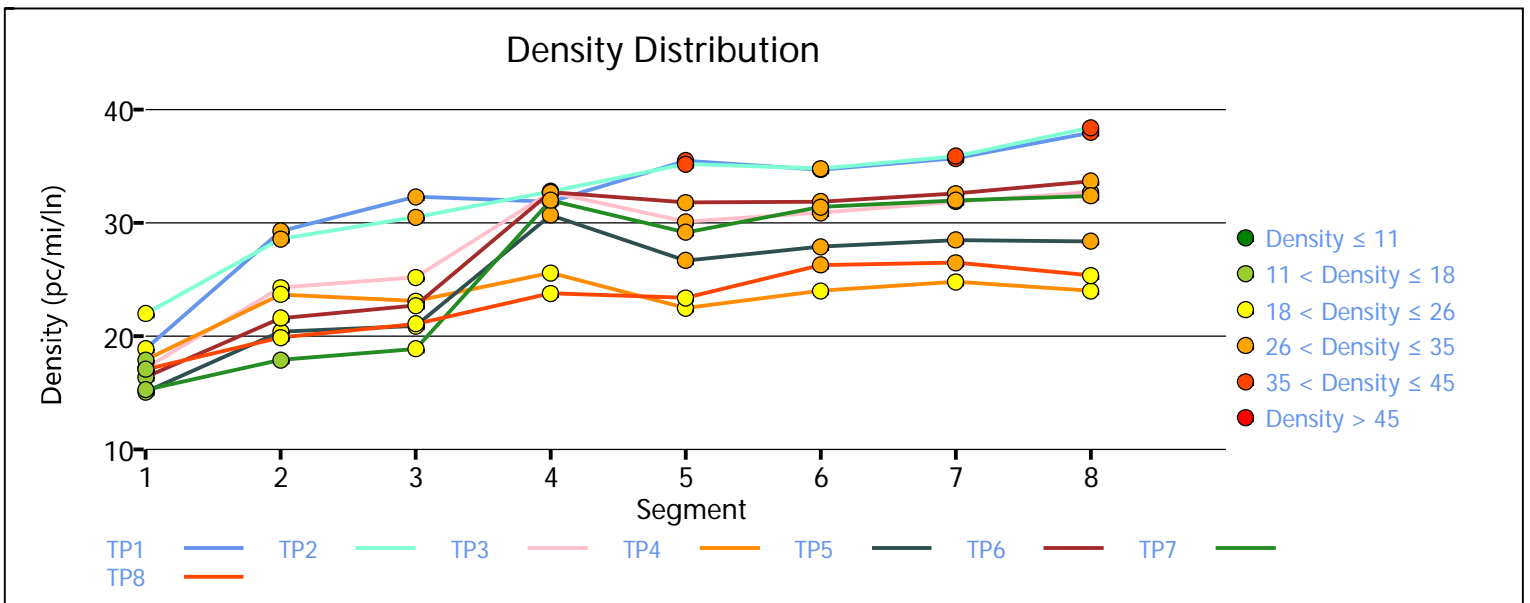
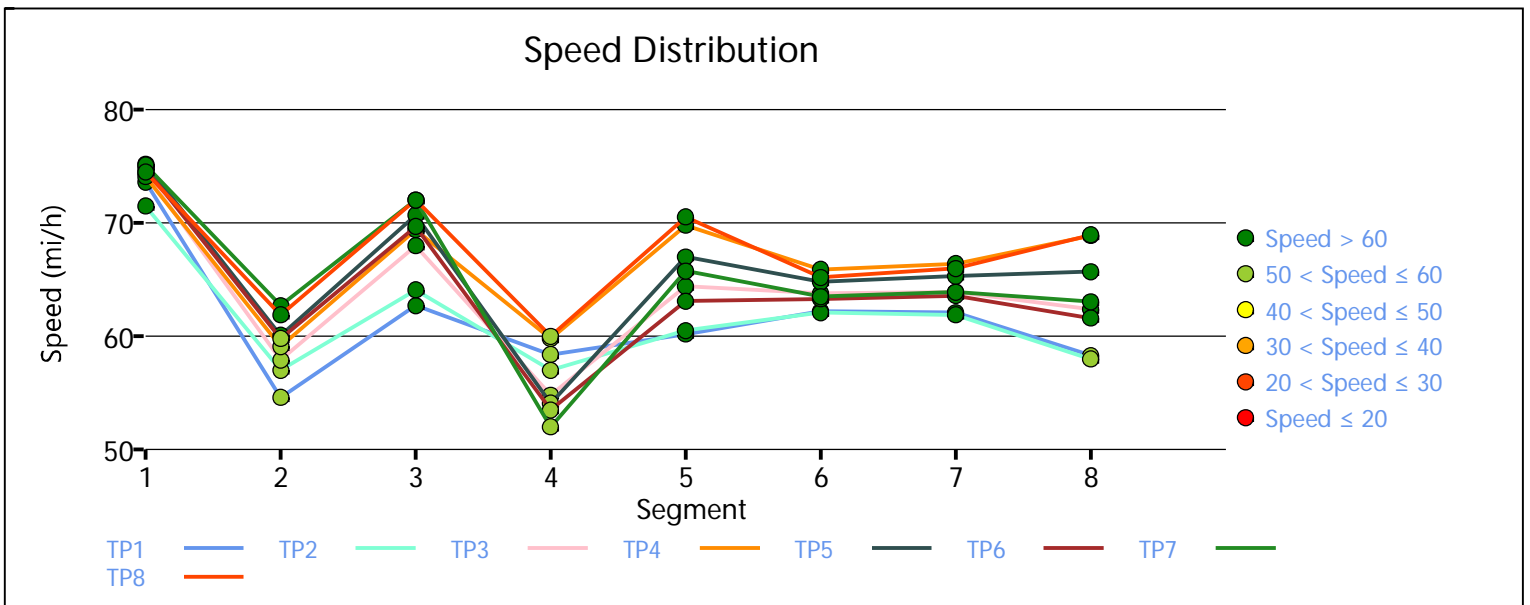
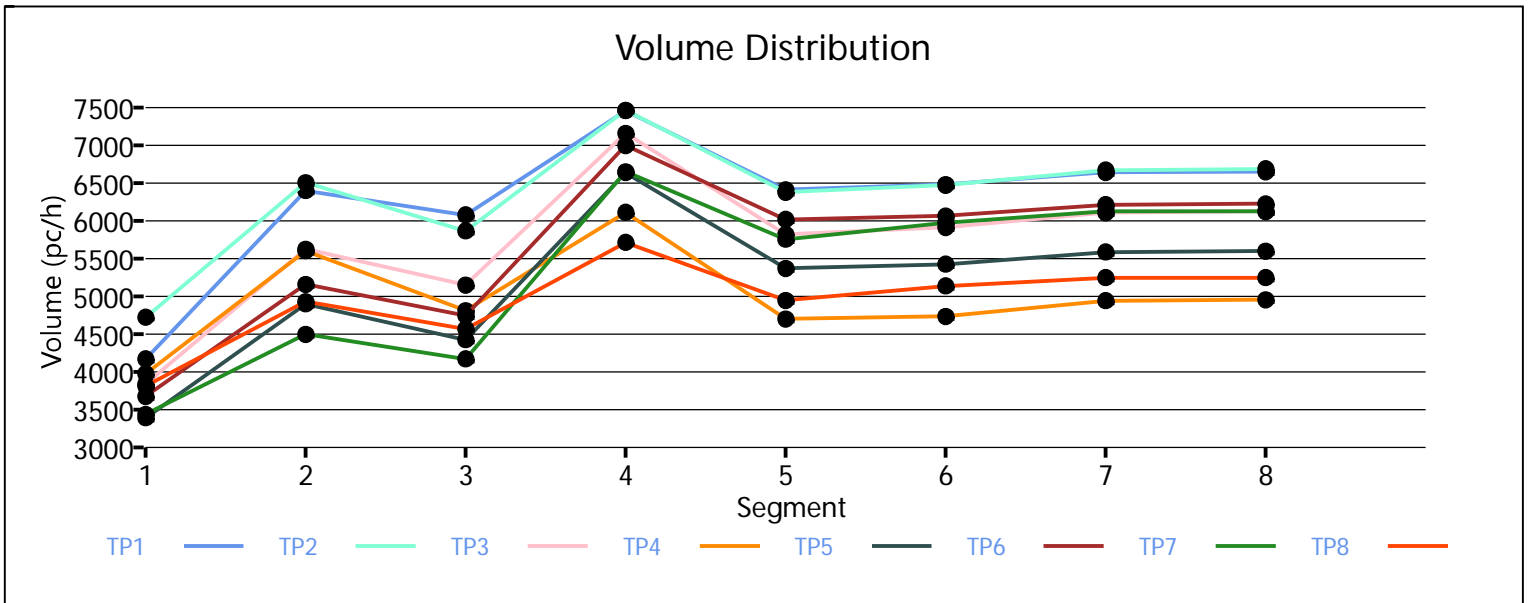
Time Period	PHF		fHV	Flow Rate (pc/h)		Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	1.00		0.917	6654	7200	0.92	58.3	38.0	E	
2	1.00		0.917	6689	7200	0.93	58.0	38.4	E	
3	1.00		0.917	6125	7200	0.85	62.4	32.7	D	
4	1.00		0.917	4960	7200	0.69	68.9	24.0	C	
5	1.00		0.917	5602	7200	0.78	65.7	28.4	D	
6	1.00		0.917	6227	7200	0.86	61.6	33.7	D	
7	1.00		0.917	6128	7200	0.86	63.1	32.4	D	
8	1.00		0.917	5249	7200	0.77	68.9	25.4	C	

Facility Time Period Results

T	Speed, mi/h	Density, pc/mi/ln	Density, veh/mi/ln	Travel Time, min	LOS
1	60.1	30.8	28.8	2.8	D
2	60.6	31.0	28.9	2.8	D
3	62.0	27.2	25.3	2.7	D
4	64.8	23.2	21.7	2.6	C
5	63.4	23.9	22.3	2.6	C
6	62.1	26.4	24.6	2.7	D
7	63.0	24.4	22.4	2.6	F
8	66.1	22.1	J-3-13 20.5	2.5	C

Facility Overall Results

Space Mean Speed, mi/h	62.5	Density, veh/mi/ln	24.3
Average Travel Time, min	2.7	Density, pc/mi/ln	26.1



HCS7 Freeway Facilities Report

Project Information

Analyst	WSP	Date	7/3/2018
Agency	City of Moreno Valley	Analysis Year	2045 with Alternative 6
Jurisdiction	Caltrans	Time Period Analyzed	PM Peak Hour
Project Description	WLC Pkwy IC - Westbound SR-60		

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	8
Total Time Periods	8	Time Period Duration, min	15

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic	east of Gilman Springs Rd On Ramp	2200	3
2	Weaving	Weaving	On-Ramp from Gilman Spring to Off-Ramp to WLC Pkwy	3200	4
3	Basic	Basic	between WLC Pkwy Off and WLC Pkwy On Ramps	1820	3
4	Weaving	Weaving	WLC Pkwy to Redlands Blvd	2090	4
5	Basic	Basic	between Redlands Blvd Off and On Ramps	1500	3
6	Merge	Merge	On-Ramp from NB Redlands Blvd	1300	3
7	Merge	Merge	On-Ramp from SB Redlands Blvd	1500	3
8	Basic	Basic	Redlands Blvd to Moreno Beach Rd	1070	3

Facility Segment Data

Segment 1: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	1.00	0.917	2683	7200	0.37	75.4	11.9	B
2	1.00	0.917	3397	7200	0.47	75.2	15.1	B
3	1.00	0.917	2936	7200	0.41	75.4	13.0	B
4	1.00	0.917	2996	7200	0.42	75.4	13.2	B
5	1.00	0.917	3374	7200	0.47	75.2	15.0	B
6	1.00	0.917	3345	7200	0.46	75.2	14.8	B
7	1.00	0.917	2914	7200	0.40	75.4	12.9	B
8	1.00	0.917	3062	7200	0.43	75.4	13.5	B

Segment 2: Weaving

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	1.00	0.935	4181	8413	0.50	60.5	17.3	B
2	1.00	0.935	5087	7346	0.69	59.1	21.5	C
3	1.00	0.935	4856	7368	0.66	58.0	20.9	C

4	1.00	0.935	4315	8599	0.50	61.4	17.6	B
5	1.00	0.935	4899	8495	0.58	59.8	20.5	C
6	1.00	0.935	4810	8752	0.55	60.0	20.0	B
7	1.00	0.935	4565	8216	0.56	59.3	19.2	B
8	1.00	0.935	4297	8744	0.49	61.8	17.4	B

Segment 3: Basic

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)	d/c Ratio	Speed (mi/h)		Density (pc/mi/ln)		LOS
1	1.00		0.935		4007		7200	0.56	71.6		18.7		C
2	1.00		0.935		4371		7200	0.61	70.8		20.6		C
3	1.00		0.935		4530		7200	0.63	70.4		21.4		C
4	1.00		0.935		3917		7200	0.54	71.8		18.2		C
5	1.00		0.935		4452		7200	0.62	70.6		21.0		C
6	1.00		0.935		4471		7200	0.62	70.6		21.1		C
7	1.00		0.935		4340		7200	0.60	70.9		20.4		C
8	1.00		0.935		3896		7200	0.54	71.8		18.1		C

Segment 4: Weaving

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)	d/c Ratio	Speed (mi/h)		Density (pc/mi/ln)		LOS
1	1.00		0.901		6255		6654	0.94	54.2		28.9		D
2	1.00		0.901		6105		8340	0.73	56.8		26.9		C
3	1.00		0.901		6494		8532	0.76	55.1		29.5		D
4	1.00		0.901		4984		8376	0.60	61.8		20.2		C
5	1.00		0.901		5553		8616	0.64	61.2		22.7		C
6	1.00		0.901		5198		8684	0.60	63.9		20.3		C
7	1.00		0.901		5784		8332	0.69	58.8		24.6		C
8	1.00		0.901		4722		8756	0.54	63.8		18.5		B

Segment 5: Basic

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)	d/c Ratio	Speed (mi/h)		Density (pc/mi/ln)		LOS
1	1.00		0.885		4747		7200	0.66	69.7		22.7		C
2	1.00		0.885		4972		7200	0.69	68.8		24.1		C
3	1.00		0.885		5784		7200	0.80	64.6		29.8		D
4	1.00		0.885		3826		7200	0.53	71.9		17.7		B
5	1.00		0.885		4576		7200	0.64	70.3		21.7		C
6	1.00		0.885		4164		7200	0.58	71.3		19.5		C
7	1.00		0.885		4523		7200	0.63	70.4		21.4		C
8	1.00		0.885		4002		7200	0.56	71.6		18.6		C

Segment 6: Merge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)	d/c Ratio	Speed (mi/h)		Density (pc/mi/ln)		LOS	
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp

1	1.00	1.00	0.893	0.893	4884	180	7200	2000	0.68	0.09	65.6	62.9	24.8	26.5	C
2	1.00	1.00	0.893	0.893	5146	219	7200	2000	0.71	0.11	65.2	62.5	26.3	27.8	C
3	1.00	1.00	0.893	0.893	5919	187	7200	2000	0.82	0.09	63.7	60.9	31.0	31.2	D
4	1.00	1.00	0.893	0.893	3953	161	7200	2000	0.55	0.08	66.8	64.0	19.7	22.2	C
5	1.00	1.00	0.893	0.893	4735	200	7200	2000	0.66	0.10	65.8	63.1	24.0	25.9	C
6	1.00	1.00	0.893	0.893	4385	258	7200	2000	0.61	0.13	66.2	63.5	22.1	24.4	C
7	1.00	1.00	0.893	0.893	4658	175	7200	2000	0.65	0.09	65.9	63.2	23.6	25.4	C
8	1.00	1.00	0.893	0.893	4134	168	7200	2000	0.57	0.08	66.6	63.8	20.7	23.0	C

Segment 7: Merge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	1.00	1.00	0.893	0.980	5188	303	7200	2000	0.72	0.15	65.9	63.6	26.2	24.6	C
2	1.00	1.00	0.893	0.980	5458	311	7200	2000	0.76	0.16	65.4	63.0	27.8	25.9	C
3	1.00	1.00	0.893	0.980	6247	328	7200	2000	0.87	0.16	63.3	60.5	32.9	29.7	D
4	1.00	1.00	0.893	0.980	4244	291	7200	2000	0.59	0.15	67.3	65.1	21.0	20.1	C
5	1.00	1.00	0.893	0.980	5039	303	7200	2000	0.70	0.15	66.2	63.9	25.4	23.9	C
6	1.00	1.00	0.893	0.980	4687	303	7200	2000	0.65	0.15	66.8	64.5	23.4	22.2	C
7	1.00	1.00	0.893	0.980	5070	413	7200	2000	0.70	0.21	66.0	63.7	25.6	24.3	C
8	1.00	1.00	0.893	0.980	4445	311	7200	2000	0.62	0.16	67.0	64.8	22.1	21.1	C

Segment 8: Basic

Time Period	PHF		fHV	Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
1	1.00		0.893	5217		7200		0.72		67.7		25.7		C
2	1.00		0.893	5488		7200		0.76		66.4		27.5		D
3	1.00		0.893	6279		7200		0.87		61.3		34.1		D
4	1.00		0.893	4272		7200		0.59		71.1		20.0		C
5	1.00		0.893	5068		7200		0.70		68.4		24.7		C
6	1.00		0.893	4717		7200		0.66		69.8		22.5		C
7	1.00		0.893	5111		7200		0.71		68.2		25.0		C
8	1.00		0.893	4476		7200		0.62		70.6		21.1		C

Facility Time Period Results

T	Speed, mi/h	Density, pc/mi/ln	Density, veh/mi/ln	Travel Time, min	LOS
1	63.9	21.1	19.2	2.6	C
2	64.0	23.0	21.0	2.6	C
3	62.1	24.9	22.6	2.7	C
4	66.7	18.2	16.6	2.5	C
5	65.5	21.3	19.4	2.5	C
6	66.3	20.1	18.3	2.5	C
7	64.8	20.9	19.1	2.6	C
8	67.2	18.2	J-3-18 16.6	2.5	C

Facility Overall Results

Space Mean Speed, mi/h	64.9	Density, veh/mi/ln	19.1
Average Travel Time, min	2.6	Density, pc/mi/ln	21.0

