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## **APPENDIX A**

### **GLOSSARY**

# GLOSSARY OF TERMS

## ACRONYMS

AC	Acres
ADT	Average Daily Traffic
Caltrans	California Department of Transportation
DU	Dwelling Unit
ICU	Intersection Capacity Utilization
LOS	Level of Service
TSF	Thousand Square Feet
V/C	Volume/Capacity
VMT	Vehicle Miles Traveled

## TERMS

**AVERAGE DAILY TRAFFIC:** The average 24-hour volume for a stated period divided by the number of days in that period. For example, Annual Average Daily Traffic is the total volume during a year divided by 365 days.

**BANDWIDTH:** The number of seconds of green time available for through traffic in a signal progression.

**BOTTLENECK:** A point of constriction along a roadway that limits the amount of traffic that can proceed downstream from its location.

**CAPACITY:** The maximum number of vehicles that can be reasonably expected to pass over a given section of a lane or a roadway in a given time period.

**CHANNELIZATION:** The separation or regulation of conflicting traffic movements into definite paths of travel by the use of pavement markings, raised islands, or other suitable means to facilitate the safe and orderly movements of both vehicles and pedestrians.

**CLEARANCE INTERVAL:** Nearly same as yellow time. If there is an all red interval after the end of a yellow, then that is also added into the clearance interval.

**CONTROL DELAY:** The component of delay, typically expressed in seconds per vehicle, resulting from the type of traffic control at an intersection. Control delay is measured by comparison with the uncontrolled condition; it includes delay incurred by slowing down, stopping/waiting, and speeding up.

**CORDON:** An imaginary line around an area across which vehicles, persons, or other items are counted (in and out).

**CORNER SIGHT DISTANCE:** The minimum sight distance required by the driver of a vehicle to cross or enter the lanes of the major roadway without requiring approaching traffic travelling at a given speed to radically alter their speed or trajectory. Corner sight distance is measured from the driver's eye at 42 inches above the pavement to an object height of 36 inches above the pavement in the center of the nearest approach lane.

**CYCLE LENGTH:** The time period in seconds required for a traffic signal to complete one full cycle of indications.

**CUL-DE-SAC:** A local street open at one end only and with special provisions for turning around.

**DAILY CAPACITY:** A theoretical value representing the daily traffic volume that will typically result in a peak hour volume equal to the capacity of the roadway.

**DELAY:** The time consumed while traffic is impeded in its movement by some element over which it has no control, usually expressed in seconds per vehicle.

**DEMAND RESPONSIVE SIGNAL:** Same as traffic-actuated signal.

**DENSITY:** The number of vehicles occupying in a unit length of the through traffic lanes of a roadway at any given instant. Usually expressed in vehicles per mile.

**DETECTOR:** A device that responds to a physical stimulus and transmits a resulting impulse to the signal controller.

**DESIGN SPEED:** A speed selected for purposes of design. Features of a highway, such as curvature, superelevation, and sight distance (upon which the safe operation of vehicles is dependent) are correlated to design speed.

**DIRECTIONAL SPLIT:** The percent of traffic in the peak direction at any point in time.

**DIVERSION:** The rerouting of peak hour traffic to avoid congestion.

**FORCED FLOW:** Opposite of free flow.

**FREE FLOW:** Volumes are well below capacity. Vehicles can maneuver freely and travel is unimpeded by other traffic.

**GAP:** Time or distance between successive vehicles in a traffic stream, rear bumper to front bumper.

**HEADWAY:** Time or distance spacing between successive vehicles in a traffic stream, front bumper to front bumper.

**INTERCONNECTED SIGNAL SYSTEM:** A number of intersections that are connected to achieve signal progression.

**LEVEL OF SERVICE:** A qualitative measure of a number of factors, which include speed and travel time, traffic interruptions, freedom to maneuver, safety, driving comfort and convenience, and operating costs.

**LOOP DETECTOR:** A vehicle detector consisting of a loop of wire embedded in the roadway, energized by alternating current and producing an output circuit closure when passed over by a vehicle.

**MINIMUM ACCEPTABLE GAP:** Smallest time headway between successive vehicles in a traffic stream into which another vehicle is willing and able to cross or merge.

**MULTI-MODAL:** More than one mode; such as automobile, bus transit, rail rapid transit, and bicycle transportation modes.

**OFFSET:** The time interval in seconds between the beginning of green at one intersection and the beginning of green at an adjacent intersection.

**PLATOON:** A closely grouped component of traffic that is composed of several vehicles moving, or standing ready to move, with clear spaces ahead and behind.



**PASSENGER CAR EQUIVALENT (PCE):** A metric used to assess the impact of larger vehicles, such as trucks, recreational vehicles, and buses, by converting the traffic volume of larger vehicles to an equivalent number of passenger cars.

**PEAK HOUR:** The 60 consecutive minutes with the highest number of vehicles.

**PRETIMED SIGNAL:** A type of traffic signal that directs traffic to stop and go on a predetermined time schedule without regard to traffic conditions. Also, fixed time signal.

**PROGRESSION:** A term used to describe the progressive movement of traffic through several signalized intersections.

**QUEUE:** The number of vehicles waiting at a service area such as a traffic signal, stop sign, or access gate.

**QUEUE LENGTH:** The length of vehicle queue, typically expressed in feet, waiting at a service area such as a traffic signal, stop sign, or access gate.

**SCREEN-LINE:** An imaginary line or physical feature across which all trips are counted, normally to verify the validity of mathematical traffic models.

**SHARED/RECIPROCAL PARKING AGREEMENT:** A written binding document executed between property owners to provide a designated number of off-street parking stalls within a designated area to be available for specified businesses or land uses.

**SIGHT DISTANCE:** The continuous length of roadway visible to a driver or roadway user.

**SIGNAL CYCLE:** The time period in seconds required for one complete sequence of signal indications.

**SIGNAL PHASE:** The part of the signal cycle allocated to one or more traffic movements.

**STACKING DISTANCE:** The length of area available behind a service area, such as a traffic signal or gate, for vehicle queuing to occur.

**STARTING DELAY:** The delay experienced in initiating the movement of queued traffic from a stop to an average running speed through an intersection.

**STOPPING SIGHT DISTANCE:** The minimum distance required by the driver of a vehicle on the major roadway travelling at a given speed to bring the vehicle to a stop after an object on the road becomes visible. Stopping sight distance is measured from the driver's eye at 42 inches above the pavement to an object height of 6 inches above the pavement.

**TRAFFIC-ACTUATED SIGNAL:** A type of traffic signal that directs traffic to stop and go in accordance with the demands of traffic, as registered by the actuation of detectors.

**TRIP:** The movement of a person or vehicle from one location (origin) to another (destination). For example, from home to store to home is two trips, not one.

**TRIP-END:** One end of a trip at either the origin or destination (i.e., each trip has two trip-ends). A trip-end occurs when a person, object, or message is transferred to or from a vehicle.

**TRIP GENERATION RATE:** The quantity of trips produced and/or attracted by a specific land use stated in terms of units such as per dwelling, per acre, and per 1,000 square feet of floor space.

**TRUCK:** A vehicle having dual tires on one or more axles, or having more than two axles.

**TURNING RADIUS:** The circular arc formed by the smallest turning path radius of the front outside tire of a vehicle, such as that performed by a U-turn maneuver. This is based on the length and width of the wheel base as well as the steering mechanism of the vehicle.

**UNBALANCED FLOW:** Heavier traffic flow in one direction than the other. On a daily basis, most facilities have balanced flow. During the peak hours, flow is seldom balanced in an urban area.

**VEHICLE MILES OF TRAVEL:** A measure of the amount of usage of a section of highway, obtained by multiplying the average daily traffic by length of facility in miles.

**APPENDIX B**  
**SCOPING AGREEMENT**

# SCOPING AGREEMENT FOR TRAFFIC ANALYSIS STUDY



Date: May 30, 2019

This letter acknowledges the City of Moreno Valley Transportation Engineering Division requirements for the traffic impact analysis of the following project.

Case No. **PEN 18-0038**

Project Name: **Arco AM/PM Service Station Project**

Project Address: West of Redlands Boulevard between Hemlock Avenue and Spruce Avenue

Project Description: An approximately 6.7-acre vacant site is proposed to be development with 16 fueling position service station with convenience market land use.

	<u>Consultant</u>	<u>Developer</u>
Name:	GANDINI GROUP, INC. Perrie Ilercil	ANTHEM OIL, INC. Chandresh Ravaliya
Address:	550 Parkcenter Drive, Suite 202 Santa Ana, CA 92705	2640 Camino Del Sol Fullerton, CA 92833
Telephone:	714-795-310 x103 / 949-257-3126	909-562-6388
email:	perrie@gandini.com	cravaliya@gmail.com

## I. Background

The proposed development is located west of Redlands Boulevard between Spruce Avenue and Hemlock Avenue in the City of Moreno Valley. The project is adjacent to the existing SR-60/Redlands Boulevard interchange which will be reconstructed with ramp reconfiguration after Opening Year and included in the General Plan Build-out. For purposes of this analysis, the project will have different interim-only and ultimate-only project access for the eastern project driveway. The eastern access will be phased such that either the interim-only or the ultimate-only access will be open to accommodate the SR-60/Redlands Boulevard interchange configuration for existing or future conditions.

For Opening Year (2022), the Spruce Avenue (interim-only condition) project driveway will provide full ingress and egress to the site. The project driveway on Hemlock Avenue will provide full ingress and egress to the site. Existing Plus Project will exemplify the existing traffic conditions with the interim access condition.

For General Build-out (Year 2040), the Redlands Avenue (ultimate-only condition) project driveway will provide restricted to right turns in/out only access. The project driveway on Hemlock Avenue will continue to provide full ingress and egress to the site.

## II. Trip Geographic Distribution and Assignment\*\*

N:   \*%      S:   \*%      E:   \*%      W:   \*%  

**\*See attached trip distributions.**

III. Site Trip Generation Forecast

- A. ITE Trip Generation Manual (latest edition).
- B. AM Peak: 7:00-9:00 AM
- C. PM Peak: 4:00-6:00 PM
- D. Intersection and link acceptable Level of Service “D” for some intersections and links and Level of Service “C” for others based upon the current City policy. (Use Highway Capacity Manual - latest edition - operations procedures; parameters per County of Riverside Traffic Impact Analysis Guidelines.)

Proposed Use Rates\*\*

Land Use (per unit):	AM: <u>  **  </u>	PM: <u>  **  </u>	Daily: <u>  **  </u>
Internal Trip Allowance:	No <u>  **  </u>	No <u>  **  </u>	Percentage <u>  **  </u>
Pass-by Trip Allowance:	No <u>  **  </u>	No <u>  **  </u>	Percentage <u>  **  </u>

**\*\*See attached trip generation tables**

IV. Specific Project Issues to be Analyzed

- A. The focus of this traffic study will be on addressing the adequacy of site access and identifying specific near-term and future circulation improvements required in the study area to maintain acceptable peak hour and daily Levels of Service (LOS).
- B. The traffic study shall address the project traffic impacts at all study intersections listed in Section VI and provide appropriate mitigation measures if applicable. Peak-hour traffic signal warrants shall be evaluated for all intersections that are not currently signalized.
- C. Qualitative assessment of existing and planned non-motorized facilities (e.g., pedestrians, bike routes, trails, etc.) within the study area.
- D. The traffic study shall provide a Queuing Analysis section to determine the 95th percentile queues for the applicable turning movements (left-turn, right-turn, and/ or U-turn) at the intersections listed below based on project distribution and forecasted Existing + Project ( V.B), Opening Year + Project ( V.D) and General Buildout (2040) + Project ( V.F) traffic volumes using Synchro software:
  - 1. Redlands Boulevard (NS) at Ironwood Avenue (EW)
  - 2. Redlands Boulevard (NS) at Hemlock Avenue (EW)
  - 3. Redlands Boulevard (NS) at SR-60 Freeway WB Ramps (EW)
  - 4. Redlands Boulevard (NS) at SR-60 Freeway EB Ramps (EW)
  - 5. Redlands Boulevard (NS) at Eucalyptus Avenue (EW)
  - 6. Project North Driveway (NS) at Hemlock Avenue (EW)
  - 7. Redlands Boulevard (NS) at Project Interim Driveway (EW) [Interim condition]  
Interim project driveway for opening year to be closed/not available at General Plan Build-out.
  - 8. Redlands Boulevard (NS) at Project East Driveway (EW) [Ultimate condition]  
Ultimate project driveway to be constructed during the SR-60/Redlands Boulevard Interchange reconfiguration project and opened with the closure of the interim driveway.

If there is not sufficient queuing storage length available, the traffic study shall provide mitigation measures for such issue.

- E. The traffic study shall include a section that addresses anticipated changes in both the project interim site plan and the project interim access after the SR-60/Redlands Boulevard freeway interchange reconstruction project (General Plan Build-Out). This section of the study shall include figures/exhibits

that identify those changes (from interim to ultimate condition) and discussion about any anticipated reduction in building size, on-site parking spaces, and project access. A detail analysis of the recommended vehicle queue storage and turn restrictions shall be included for each proposed ultimate driveway locations in General Plan Build-Out scenario.

- F. For any facilities in Section VI (below) impacted by the project and requires mitigation measures, the traffic study will identify the amount of impact by project generated traffic (in percentage) and determine the fair share calculations for each of the required mitigation measure.

V. Study of Horizon Years

- A. Existing
- B. Existing + Project
- C. Existing + Ambient Growth + Cumulative (Assume growth rate of 2% per year)
- D. Existing + Ambient Growth + Cumulative + Project
- E. General Buildout (2040) Without Project
- F. General Buildout (2040) With Project  
\*\*\* Opening year should have (5) year minimum horizon

VI. Facilities to be Studied

A. Intersections

1. Redlands Boulevard (NS) at Ironwood Avenue (EW)
2. Redlands Boulevard (NS) at Hemlock Avenue (EW)
3. Redlands Boulevard (NS) at SR-60 Freeway WB Ramps (EW)
4. Redlands Boulevard (NS) at SR-60 Freeway EB Ramps (EW)
5. Redlands Boulevard (NS) at Eucalyptus Avenue (EW)
6. Project Driveway (NS) at Hemlock Avenue (EW)
7. Redlands Boulevard (NS) at Project Interim Driveway (EW) [Interim condition]  
Interim project driveway for opening year to be closed/not available at General Plan Build-out.
8. Redlands Boulevard (NS) at Project East Driveway (EW) [Ultimate condition]  
Ultimate project driveway to be constructed during the SR-60/Redlands Boulevard Interchange reconfiguration project and opened with the closure of the interim driveway.

B. Roadway Segments

1. Redlands Boulevard – Ironwood Avenue to Hemlock Avenue
2. Redlands Boulevard – Hemlock Avenue to SR-60 Freeway WB Ramps
3. Redlands Boulevard – SR-60 Freeway WB Ramps to Eucalyptus Avenue

VII. Deliverables

- A. Draft traffic impact study (2 hard copies + pdf file on either CD or USB thumb drive)
- B. Final traffic impact study (4 hard copies + pdf file on either CD or USB thumb drive)


All draft and final traffic impact studies shall be delivered with the appropriate review fee (**\$3,118 per the current approved City of Moreno Valley Fee Schedule**) to the Permit Technician, Land Development Division - Moreno Valley City Hall, 14177 Frederick Street, Moreno Valley, CA 92552. Please contact the Land Development Division at 951-413-3110 prior to the delivery of the traffic study.

A signed copy of this *Scoping Agreement* must be included in the submitted draft and final traffic impact studies.


If you have any questions regarding this *Scoping Agreement*, please contact Eric Lewis at (951) 413-3140.

Recommended By:

Approved By:

  
05.30.2019  
~~05.13.2019~~ ~~05.02.2019~~  
~~04.18.2019~~ ~~03.07.2019~~  
07.20.2018 10.25.2017

Perrie Ilercil, Senior Engineer  
Ganddini Group, Inc.  
**JN 01-7018a**

 (sign)

Eric Lewis, P.E., T.E., City Traffic Engineer  
City of Moreno Valley

Note: This scoping agreement is reviewed / approved based on the information submitted. Traffic engineering consultant, **GANDDINI GROUP, INC.** and the project applicant, **ANTHEM OIL, INC.** acknowledge that any changes to the project (zoning, size, type or use, number or location of access points, project phasing, etc.) after review / approval may require this scoping agreement to be revised and resubmitted for review / approval by the City of Moreno Valley.

**Table 1  
Project Trip Generation**

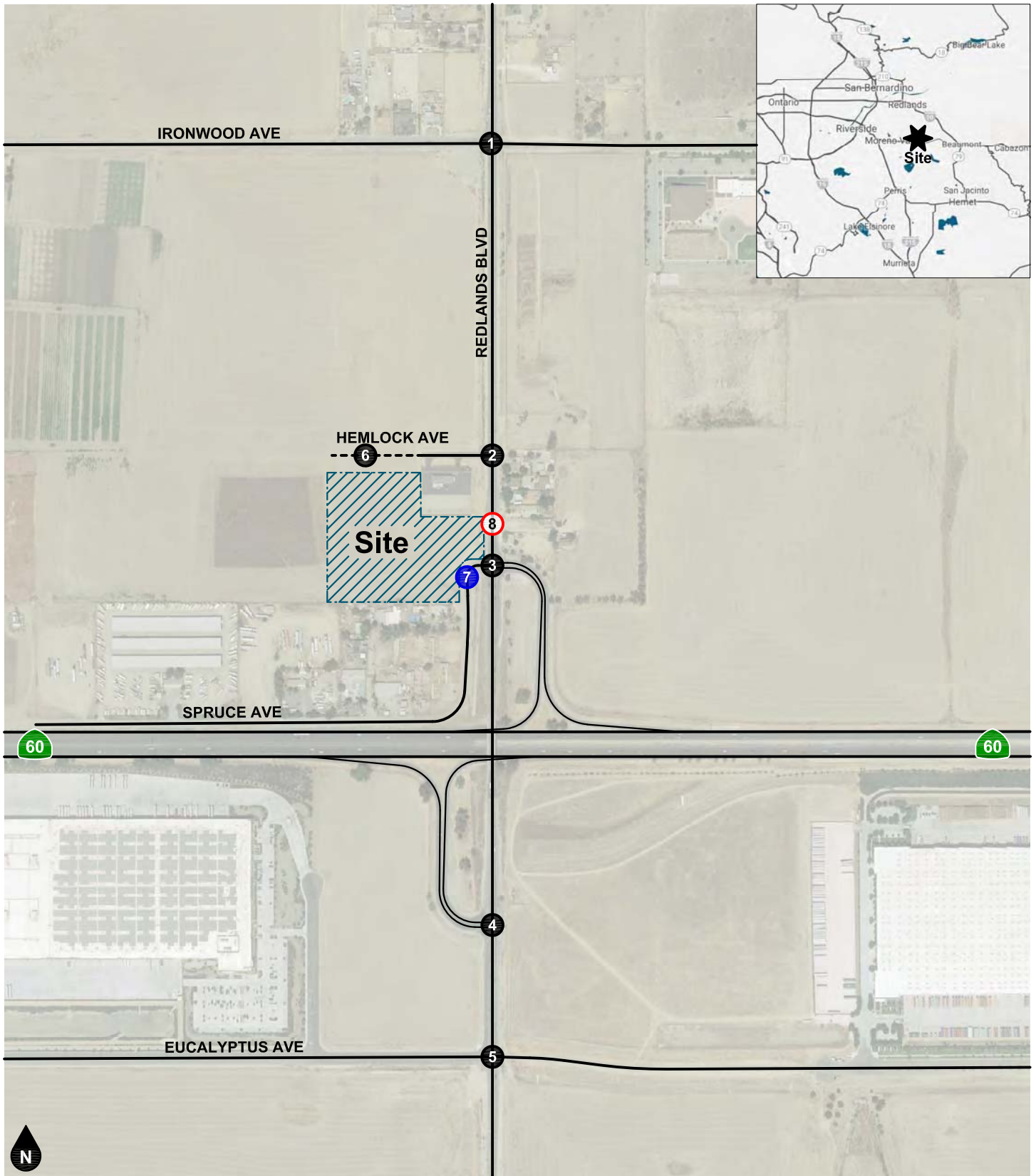
Trip Generation Rates									
Land Use	Source <sup>1</sup>	Unit <sup>2</sup>	AM Peak Hour			PM Peak Hour			Daily Rate
			% In	% Out	Rate	% In	% Out	Rate	
Gas Station with Convenience Market	ITE 945	VFP	51%	49%	12.47	51%	49%	13.99	205.36

Generated									
Land Use	Quantity <sup>3</sup>	Unit <sup>2</sup>	AM Peak Hour			PM Peak Hour			Daily
			In	Out	Total	In	Out	Total	
<u>Proposed Land Uses</u>									
Gas Station with Convenience Market	16	VFP	102	98	200	114	110	224	3,286
<u>Trip Credits<sup>4</sup></u>									
Pass-By - Cars Gas Station w/ Convenience Market (AM:62%, PM:56%)			-63	-61	-124	-64	-61	-125	-249
<b>TOTAL NET NEW TRIPS (PCE)</b>			<b>39</b>	<b>37</b>	<b>76</b>	<b>50</b>	<b>49</b>	<b>99</b>	<b>3,037</b>

Notes:

- (1) Source: Institute of Transportation Engineers (ITE), Trip Generation Manual, 10th Edition, 2017; ### = Land Use Code.
- (2) VFP = Vehicle Fueling Position.
- (3) Source: Drawing S-1 Site Plan for Project: Tesoro Refining & Marketing Co., received May 29, 2019.
- (4) Pass-by rates obtained from ITE Trip Generation Handbook (3rd Edition, 2017).

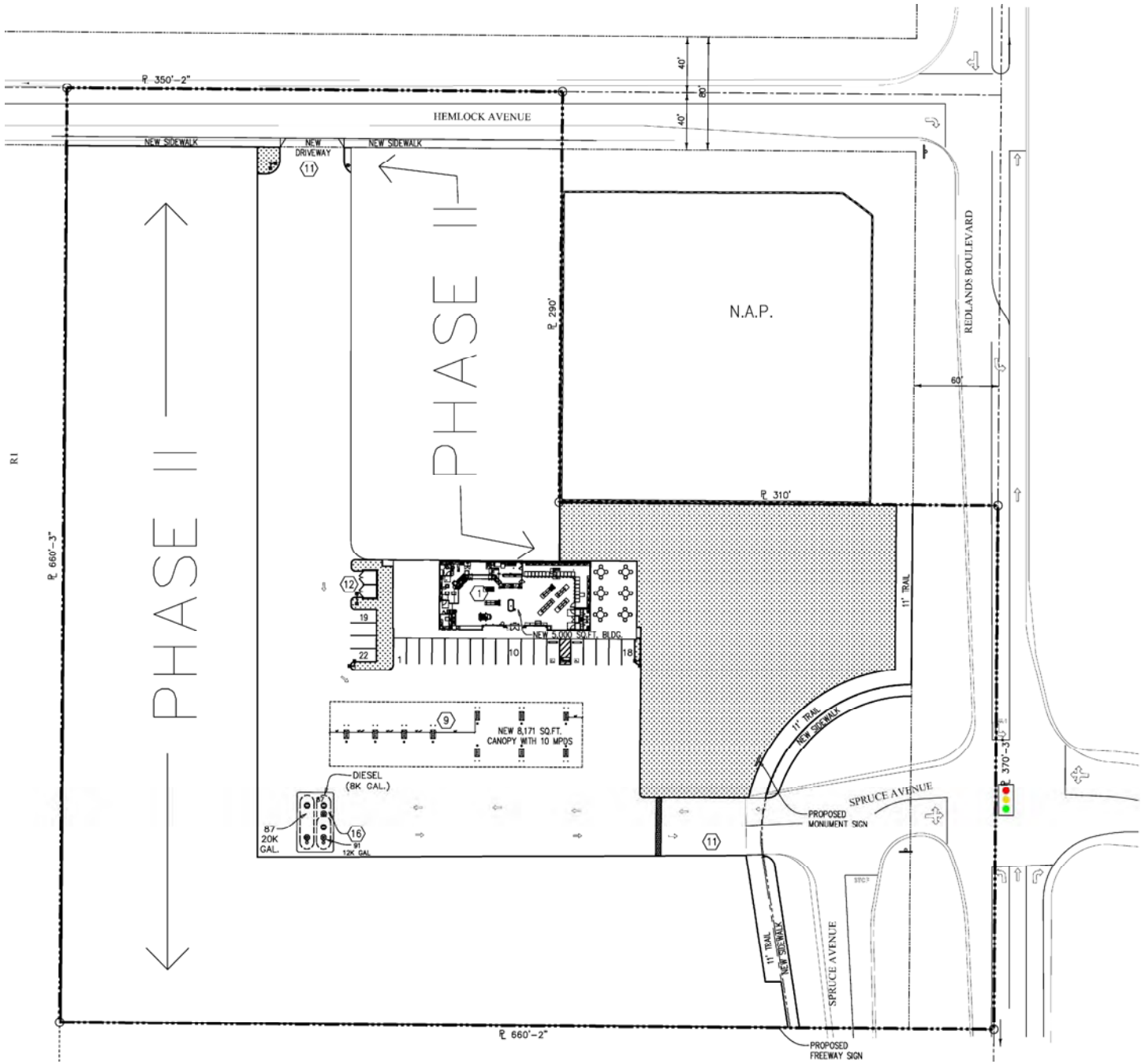




**Legend**

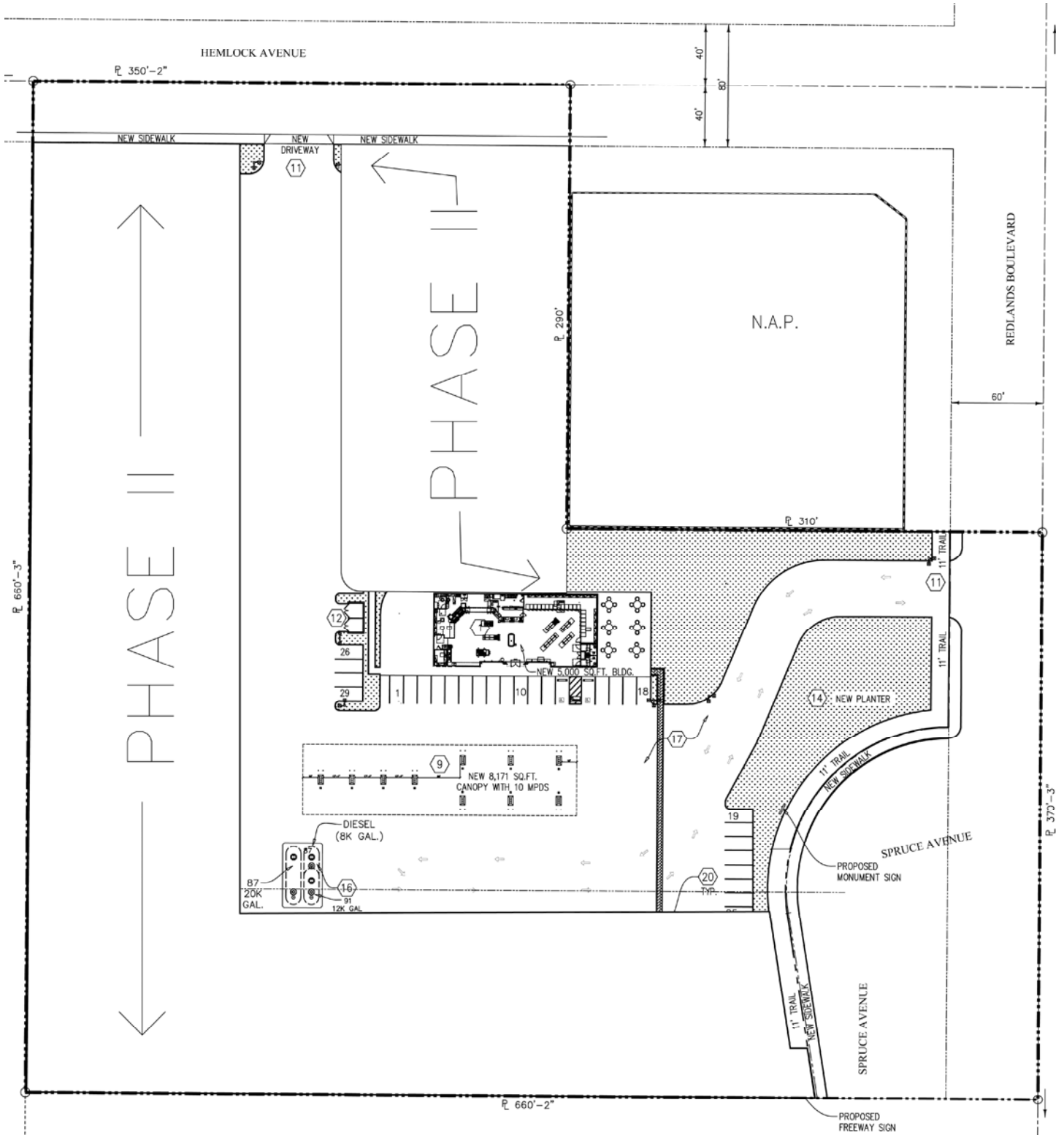
- ① Study Intersection
- ⑦ Interim Study Intersection
- ⑧ Ultimate Study Intersection
- Future Road

**Figure 1**  
**Project Location Map**



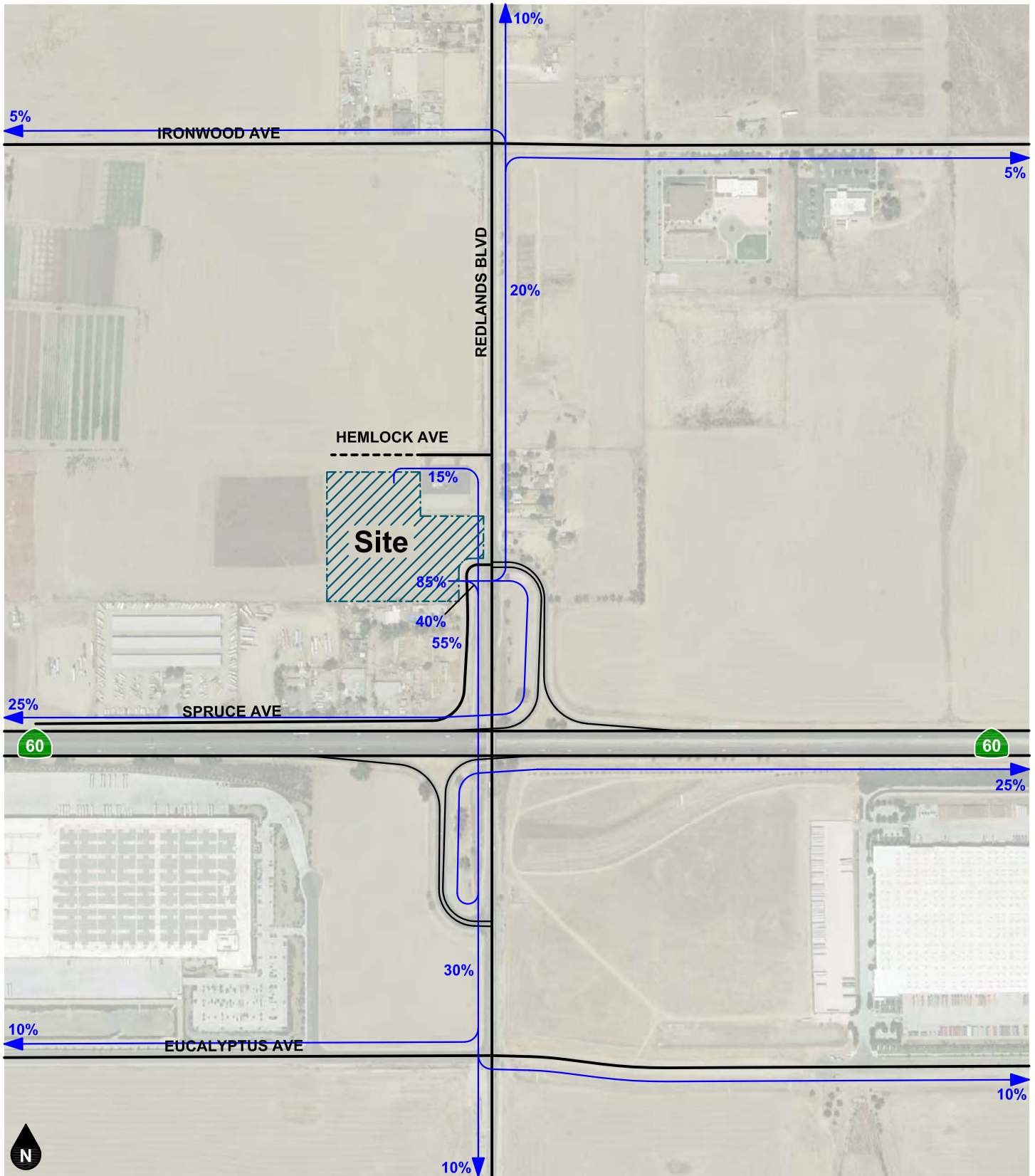
Legend

**Figure 2**  
**Site Plan - Interim**



Note: Redlands Boulevard driveway to be relocated in conjunction with roadway improvements for SR-60/REDLANDS interchange.

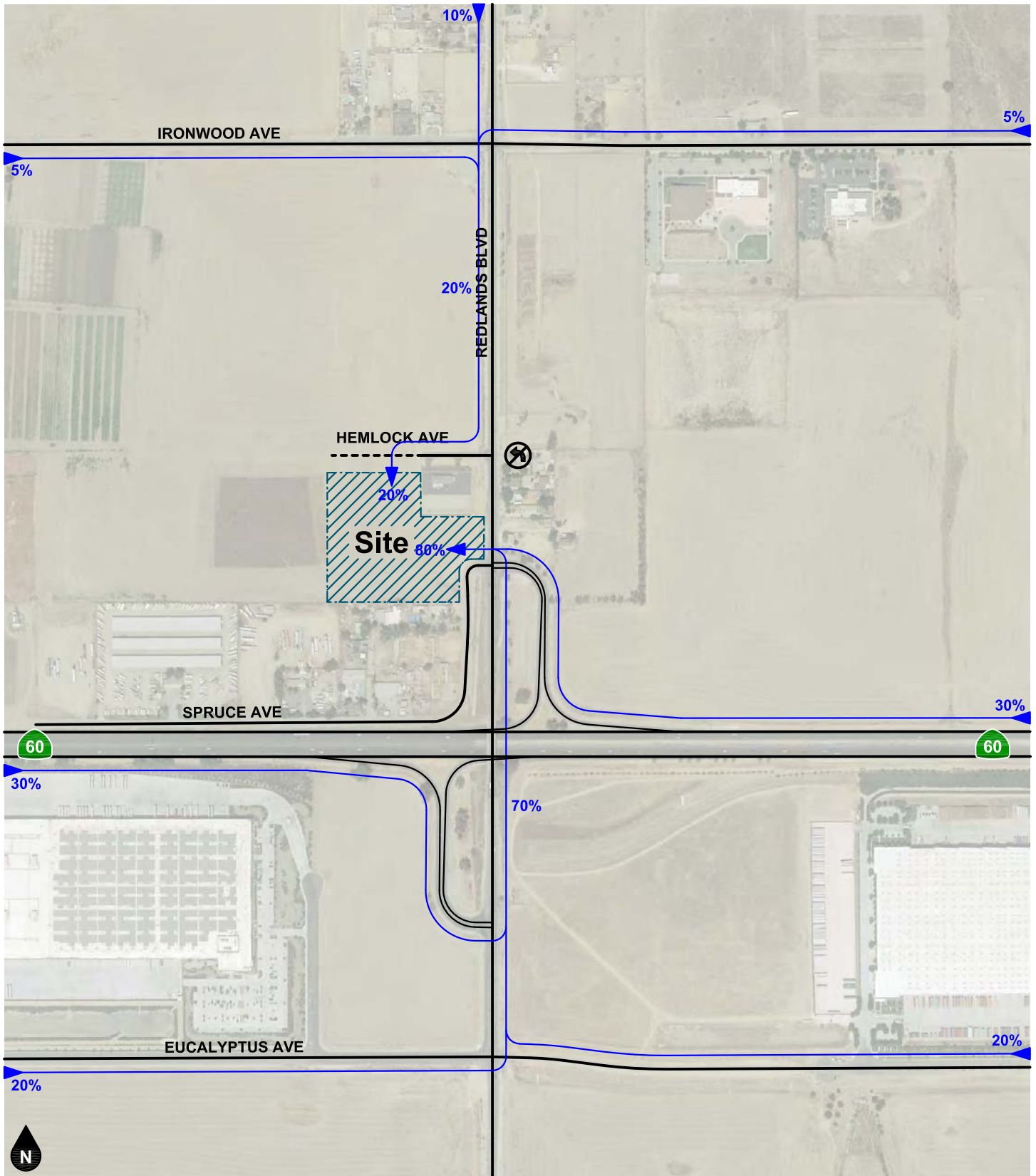
**Figure 3**  
**Site Plan - Ultimate**



Legend  
 ← 10% Percent From Project

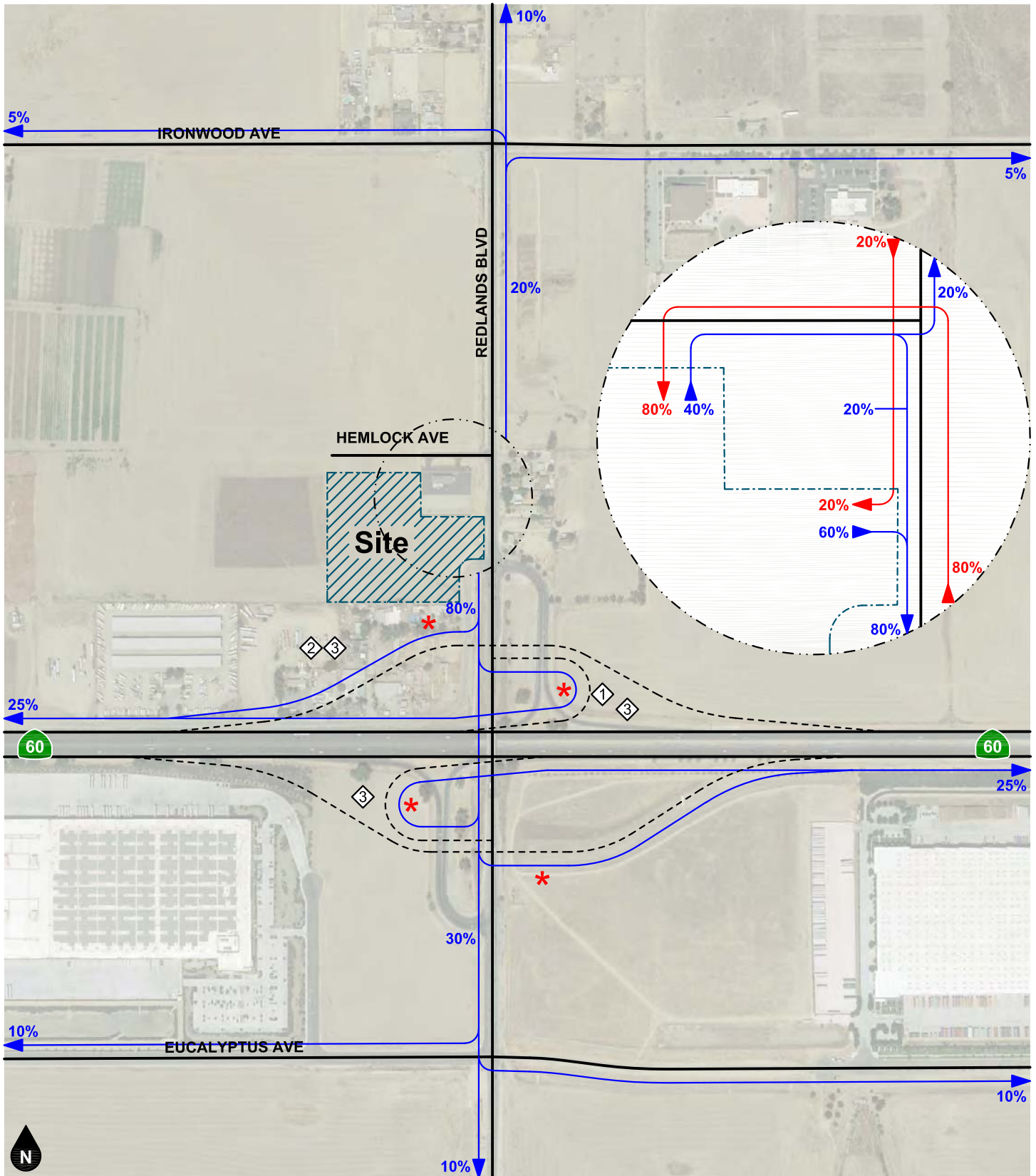
**Figure 14**  
**Project Outbound Trip Distribution**  
**- Interim**





Legend  
 ← 10% Percent To Project

**Figure 15**  
**Project Inbound Trip Distribution**  
**- Interim**



**Legend**

- 10% Percent To/From Project
- Freeway Ramp Access Varies With Interchange Alternative
- Future Interchange Ramp Alternatives

- Alternative 1 Modified Spread Diamond
- Alternative 2 Spread Diamond
- Alternative 3 Modified Cloverleaf

**Figure 33**  
**Project Trip Distribution**  
**- Ultimate**

**APPENDIX C**  
**VOLUME COUNT WORKSHEETS**

City of Moreno Valley  
 N/S: Redlands Boulevard  
 E/W: Ironwood Avenue  
 Weather: Clear

File Name : 1\_MR\_V\_Redlands\_Ironwood AM  
 Site Code : 22519381  
 Start Date : 5/23/2019  
 Page No : 1

Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

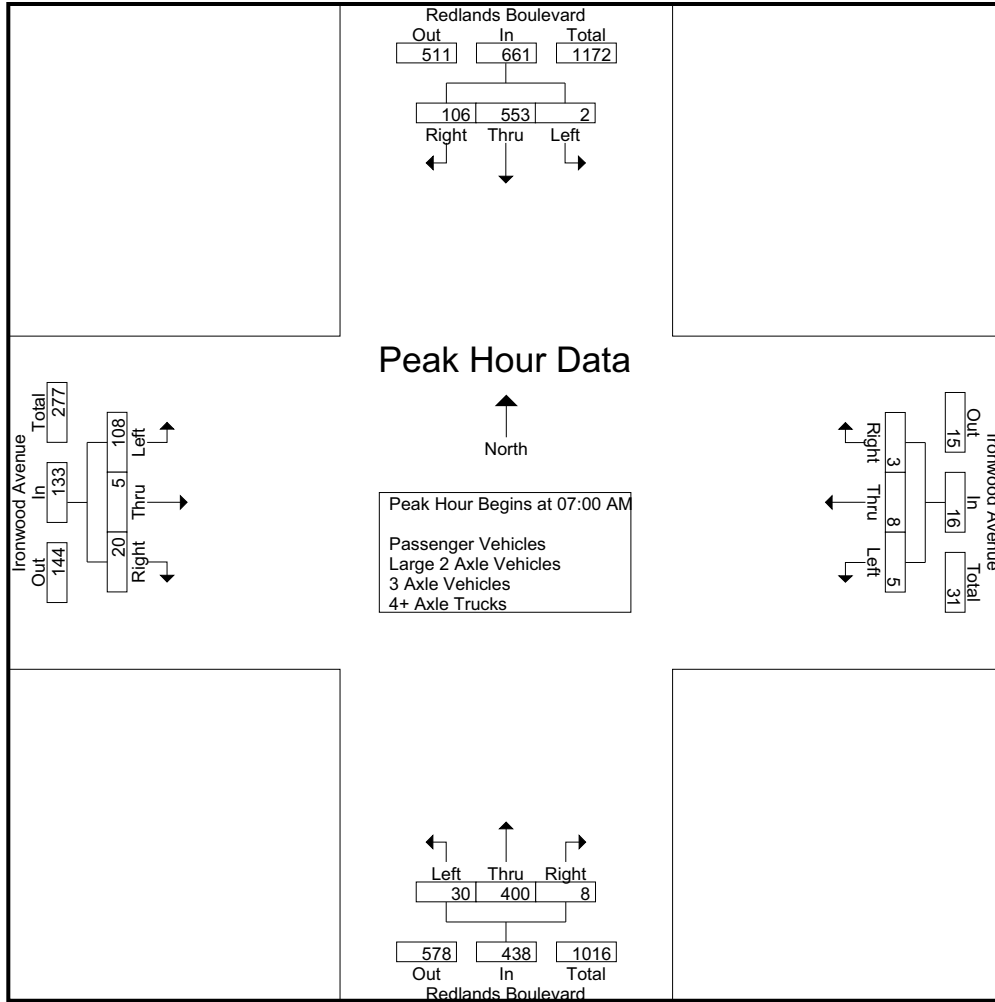
Start Time	Redlands Boulevard Southbound				Ironwood Avenue Westbound				Redlands Boulevard Northbound				Ironwood Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
07:00 AM	0	115	21	136	1	2	0	3	3	110	2	115	31	1	5	37	291
07:15 AM	1	141	35	177	1	2	1	4	7	98	1	106	26	0	3	29	316
07:30 AM	1	154	28	183	2	3	1	6	11	85	2	98	28	2	7	37	324
07:45 AM	0	143	22	165	1	1	1	3	9	107	3	119	23	2	5	30	317
Total	2	553	106	661	5	8	3	16	30	400	8	438	108	5	20	133	1248
08:00 AM	0	108	13	121	0	4	1	5	9	87	0	96	35	1	10	46	268
08:15 AM	1	131	10	142	2	1	2	5	4	93	1	98	25	1	8	34	279
08:30 AM	0	85	20	105	1	2	1	4	1	90	5	96	17	1	7	25	230
08:45 AM	0	86	21	107	0	2	3	5	4	81	2	87	9	0	15	24	223
Total	1	410	64	475	3	9	7	19	18	351	8	377	86	3	40	129	1000
Grand Total	3	963	170	1136	8	17	10	35	48	751	16	815	194	8	60	262	2248
Apprch %	0.3	84.8	15		22.9	48.6	28.6		5.9	92.1	2		74	3.1	22.9		
Total %	0.1	42.8	7.6	50.5	0.4	0.8	0.4	1.6	2.1	33.4	0.7	36.3	8.6	0.4	2.7	11.7	
Passenger Vehicles	3	939	169	1111	8	17	9	34	43	744	14	801	192	6	57	255	2201
% Passenger Vehicles	100	97.5	99.4	97.8	100	100	90	97.1	89.6	99.1	87.5	98.3	99	75	95	97.3	97.9
Large 2 Axle Vehicles	0	19	1	20	0	0	1	1	4	2	0	6	2	2	2	6	33
% Large 2 Axle Vehicles	0	2	0.6	1.8	0	0	10	2.9	8.3	0.3	0	0.7	1	25	3.3	2.3	1.5
3 Axle Vehicles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% 3 Axle Vehicles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4+ Axle Trucks	0	5	0	5	0	0	0	0	1	5	2	8	0	0	1	1	14
% 4+ Axle Trucks	0	0.5	0	0.4	0	0	0	0	2.1	0.7	12.5	1	0	0	1.7	0.4	0.6

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	0	115	21	136	1	2	0	3	3	110	2	115	31	1	5	37	291
07:15 AM	1	141	35	177	1	2	1	4	7	98	1	106	26	0	3	29	316
07:30 AM	1	154	28	183	2	3	1	6	11	85	2	98	28	2	7	37	324
07:45 AM	0	143	22	165	1	1	1	3	9	107	3	119	23	2	5	30	317
Total Volume	2	553	106	661	5	8	3	16	30	400	8	438	108	5	20	133	1248
% App. Total	0.3	83.7	16		31.2	50	18.8		6.8	91.3	1.8		81.2	3.8	15		
PHF	.500	.898	.757	.903	.625	.667	.750	.667	.682	.909	.667	.920	.871	.625	.714	.899	.963



City of Moreno Valley  
 N/S: Redlands Boulevard  
 E/W: Ironwood Avenue  
 Weather: Clear

File Name : 1\_MR\_V\_Redlands\_Ironwood AM  
 Site Code : 22519381  
 Start Date : 5/23/2019  
 Page No : 2



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1  
 Peak Hour for Each Approach Begins at:

	07:00 AM				07:30 AM				07:00 AM				07:30 AM			
+0 mins.	0	115	21	136	2	3	1	6	3	110	2	115	28	2	7	37
+15 mins.	1	141	35	177	1	1	1	3	7	98	1	106	23	2	5	30
+30 mins.	1	154	28	183	0	4	1	5	11	85	2	98	35	1	10	46
+45 mins.	0	143	22	165	2	1	2	5	9	107	3	119	25	1	8	34
Total Volume	2	553	106	661	5	9	5	19	30	400	8	438	111	6	30	147
% App. Total	0.3	83.7	16		26.3	47.4	26.3		6.8	91.3	1.8		75.5	4.1	20.4	
PHF	.500	.898	.757	.903	.625	.563	.625	.792	.682	.909	.667	.920	.793	.750	.750	.799

City of Moreno Valley  
 N/S: Redlands Boulevard  
 E/W: Ironwood Avenue  
 Weather: Clear

File Name : 1\_MR\_V\_Redlands\_Ironwood AM  
 Site Code : 22519381  
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 Page No : 1

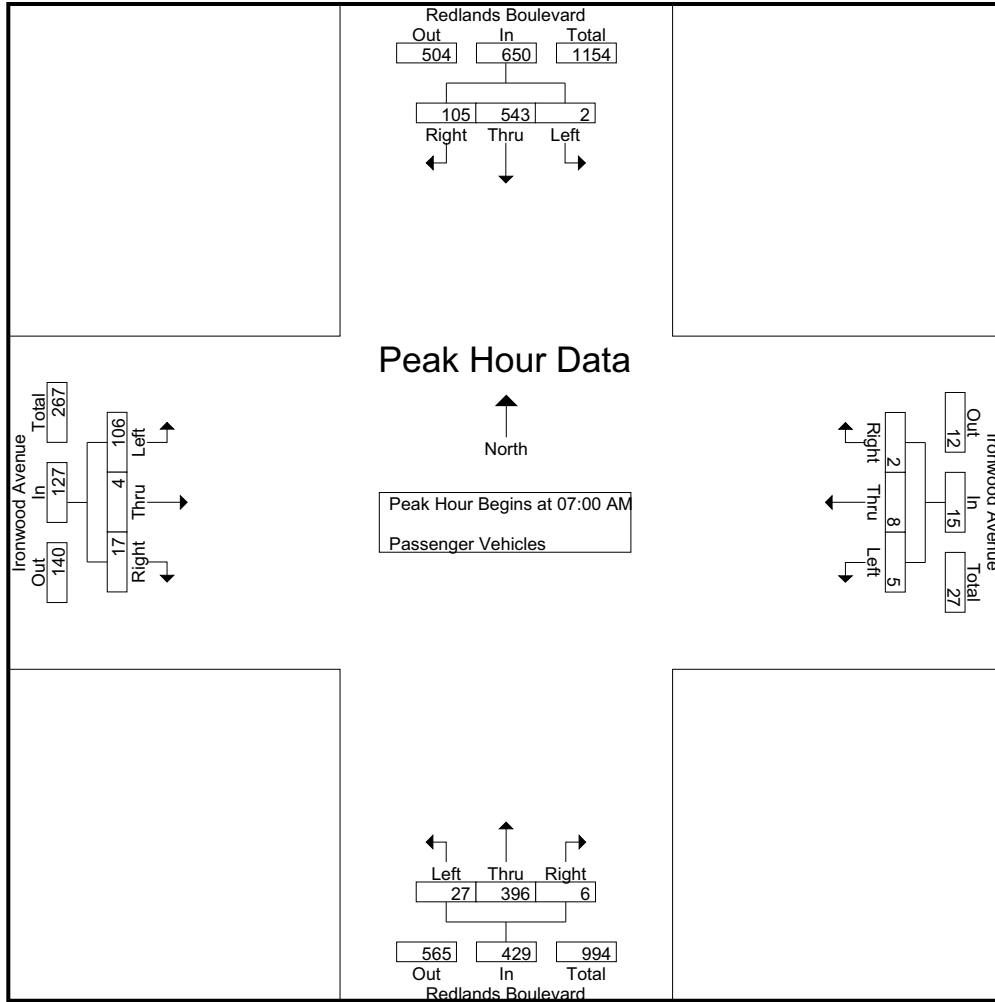
Groups Printed- Passenger Vehicles

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	112	21	133	1	2	0	3	3	109	2	114	31	1	3	35	285
07:15 AM	1	139	35	175	1	2	1	4	5	97	1	103	25	0	2	27	309
07:30 AM	1	153	27	181	2	3	1	6	10	84	1	95	27	1	7	35	317
07:45 AM	0	139	22	161	1	1	0	2	9	106	2	117	23	2	5	30	310
Total	2	543	105	650	5	8	2	15	27	396	6	429	106	4	17	127	1221
08:00 AM	0	102	13	115	0	4	1	5	8	87	0	95	35	1	10	46	261
08:15 AM	1	128	10	139	2	1	2	5	3	92	1	96	25	0	8	33	273
08:30 AM	0	82	20	102	1	2	1	4	1	88	5	94	17	1	7	25	225
08:45 AM	0	84	21	105	0	2	3	5	4	81	2	87	9	0	15	24	221
Total	1	396	64	461	3	9	7	19	16	348	8	372	86	2	40	128	980
Grand Total	3	939	169	1111	8	17	9	34	43	744	14	801	192	6	57	255	2201
Apprch %	0.3	84.5	15.2		23.5	50	26.5		5.4	92.9	1.7		75.3	2.4	22.4		
Total %	0.1	42.7	7.7	50.5	0.4	0.8	0.4	1.5	2	33.8	0.6	36.4	8.7	0.3	2.6	11.6	

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	112	21	133	1	2	0	3	3	<b>109</b>	2	114	31	1	3	<b>35</b>	285
07:15 AM	1	139	<b>35</b>	175	1	2	<b>1</b>	4	5	97	1	103	25	0	2	27	309
07:30 AM	1	<b>153</b>	27	<b>181</b>	<b>2</b>	<b>3</b>	1	<b>6</b>	<b>10</b>	84	1	95	27	1	<b>7</b>	35	<b>317</b>
07:45 AM	0	139	22	161	1	1	0	2	9	106	2	<b>117</b>	23	<b>2</b>	5	30	310
Total Volume	2	543	105	650	5	8	2	15	27	396	6	429	106	4	17	127	1221
% App. Total	0.3	83.5	16.2		33.3	53.3	13.3		6.3	92.3	1.4		83.5	3.1	13.4		
PHF	.500	.887	.750	.898	.625	.667	.500	.625	.675	.908	.750	.917	.855	.500	.607	.907	.963

City of Moreno Valley  
 N/S: Redlands Boulevard  
 E/W: Ironwood Avenue  
 Weather: Clear

File Name : 1\_MR\_V\_Redlands\_Ironwood AM  
 Site Code : 22519381  
 Start Date : 5/23/2019  
 Page No : 2



Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1  
 Peak Hour for Each Approach Begins at:

	07:00 AM				07:00 AM				07:00 AM				07:00 AM			
+0 mins.	0	112	21	133	1	2	0	3	3	<b>109</b>	2	114	<b>31</b>	1	3	<b>35</b>
+15 mins.	1	139	<b>35</b>	175	1	2	1	4	5	97	1	103	25	0	2	27
+30 mins.	1	<b>153</b>	27	<b>181</b>	2	3	1	6	10	84	1	95	27	1	7	35
+45 mins.	0	139	22	161	1	1	0	2	9	106	2	<b>117</b>	23	<b>2</b>	5	30
Total Volume	2	543	105	650	5	8	2	15	27	396	6	429	106	4	17	127
% App. Total	0.3	83.5	16.2		33.3	53.3	13.3		6.3	92.3	1.4		83.5	3.1	13.4	
PHF	.500	.887	.750	.898	.625	.667	.500	.625	.675	.908	.750	.917	.855	.500	.607	.907

City of Moreno Valley  
 N/S: Redlands Boulevard  
 E/W: Ironwood Avenue  
 Weather: Clear

File Name : 1\_MRV\_Redlands\_Ironwood AM  
 Site Code : 22519381  
 Start Date : 5/23/2019  
 Page No : 1

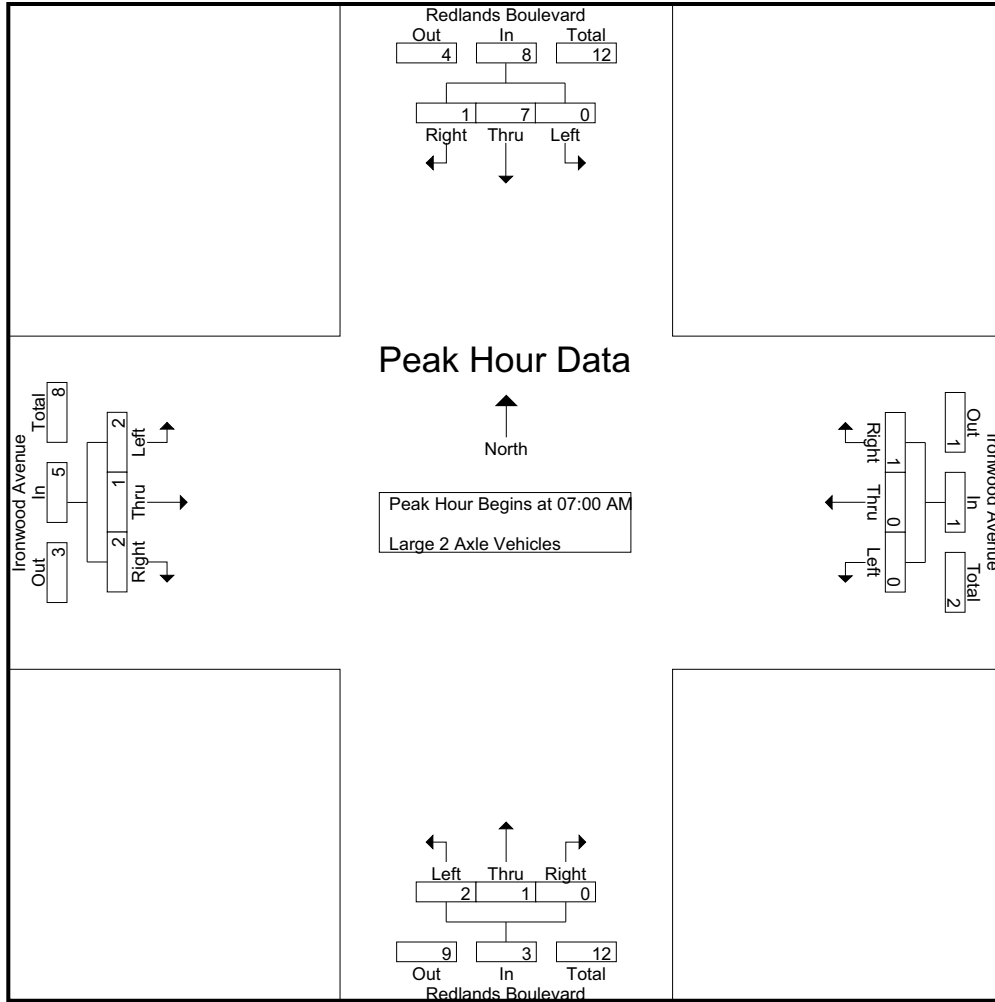
Groups Printed- Large 2 Axle Vehicles

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	0	0	1	1	5
07:15 AM	0	0	0	0	0	0	0	0	0	1	0	0	1	1	0	1	3
07:30 AM	0	1	1	2	0	0	0	0	0	1	0	0	1	1	1	0	5
07:45 AM	0	3	0	3	0	0	1	1	1	0	0	0	0	0	0	0	4
Total	0	7	1	8	0	0	1	1	2	1	0	3	2	1	2	5	17
08:00 AM	0	5	0	5	0	0	0	0	1	0	0	1	0	0	0	0	6
08:15 AM	0	3	0	3	0	0	0	0	1	0	0	1	0	1	0	1	5
08:30 AM	0	3	0	3	0	0	0	0	0	1	0	1	0	0	0	0	4
08:45 AM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
Total	0	12	0	12	0	0	0	0	2	1	0	3	0	1	0	1	16
Grand Total	0	19	1	20	0	0	1	1	4	2	0	6	2	2	2	6	33
Apprch %	0	95	5		0	0	100		66.7	33.3	0		33.3	33.3	33.3		
Total %	0	57.6	3	60.6	0	0	3	3	12.1	6.1	0	18.2	6.1	6.1	6.1	18.2	

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	0	0	1	1	5
07:15 AM	0	0	0	0	0	0	0	0	0	1	0	0	1	1	0	1	3
07:30 AM	0	1	1	2	0	0	0	0	0	1	0	0	1	1	1	0	5
07:45 AM	0	3	0	3	0	0	1	1	0	0	0	0	0	0	0	0	4
Total Volume	0	7	1	8	0	0	1	1	2	1	0	3	2	1	2	5	17
% App. Total	0	87.5	12.5		0	0	100		66.7	33.3	0		40	20	40		
PHF	.000	.583	.250	.667	.000	.000	.250	.250	.500	.250	.000	.750	.500	.250	.500	.625	.850

City of Moreno Valley  
 N/S: Redlands Boulevard  
 E/W: Ironwood Avenue  
 Weather: Clear

File Name : 1\_MR\_V\_Redlands\_Ironwood AM  
 Site Code : 22519381  
 Start Date : 5/23/2019  
 Page No : 2



Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1  
 Peak Hour for Each Approach Begins at:

	07:00 AM				07:00 AM				07:00 AM				07:00 AM			
+0 mins.	0	3	0	3	0	0	0	0	0	1	0	1	0	0	1	1
+15 mins.	0	0	0	0	0	0	0	0	1	0	0	1	1	0	1	2
+30 mins.	0	1	1	2	0	0	0	0	1	0	0	1	1	1	0	2
+45 mins.	0	3	0	3	0	0	1	1	0	0	0	0	0	0	0	0
Total Volume	0	7	1	8	0	0	1	1	2	1	0	3	2	1	2	5
% App. Total	0	87.5	12.5		0	0	100		66.7	33.3	0		40	20	40	
PHF	.000	.583	.250	.667	.000	.000	.250	.250	.500	.250	.000	.750	.500	.250	.500	.625

City of Moreno Valley  
 N/S: Redlands Boulevard  
 E/W: Ironwood Avenue  
 Weather: Clear

File Name : 1\_MRV\_Redlands\_Ironwood AM  
 Site Code : 22519381  
 Start Date : 5/23/2019  
 Page No : 1

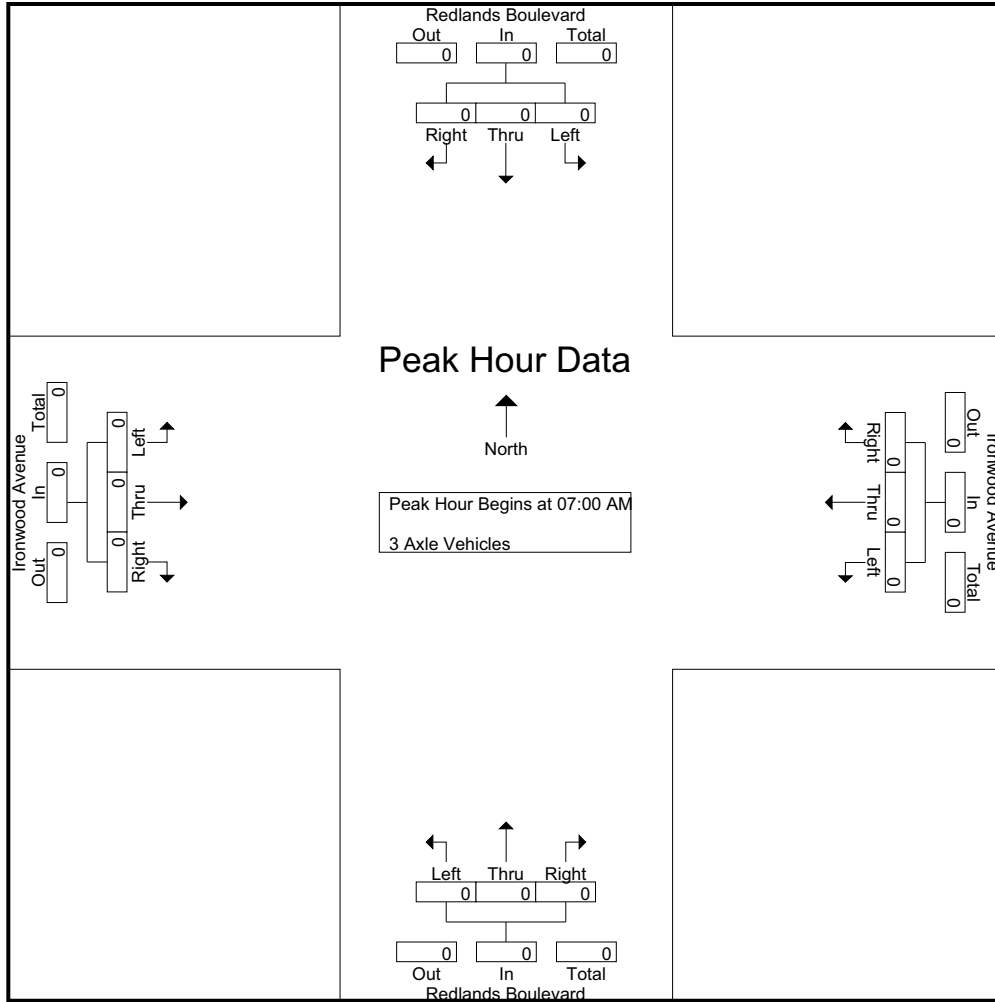
Groups Printed- 3 Axle Vehicles

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	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 : 1\_MR\_V\_Redlands\_Ironwood AM  
 Site Code : 22519381  
 Start Date : 5/23/2019  
 Page No : 2



Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1  
 Peak Hour for Each Approach Begins at:

	07:00 AM				07:00 AM				07:00 AM				07:00 AM			
+0 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+45 mins.	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
% App. Total	0	0	0	0	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

City of Moreno Valley  
 N/S: Redlands Boulevard  
 E/W: Ironwood Avenue  
 Weather: Clear

File Name : 1\_MRV\_Redlands\_Ironwood AM  
 Site Code : 22519381  
 Start Date : 5/23/2019  
 Page No : 1

Groups Printed- 4+ Axle Trucks

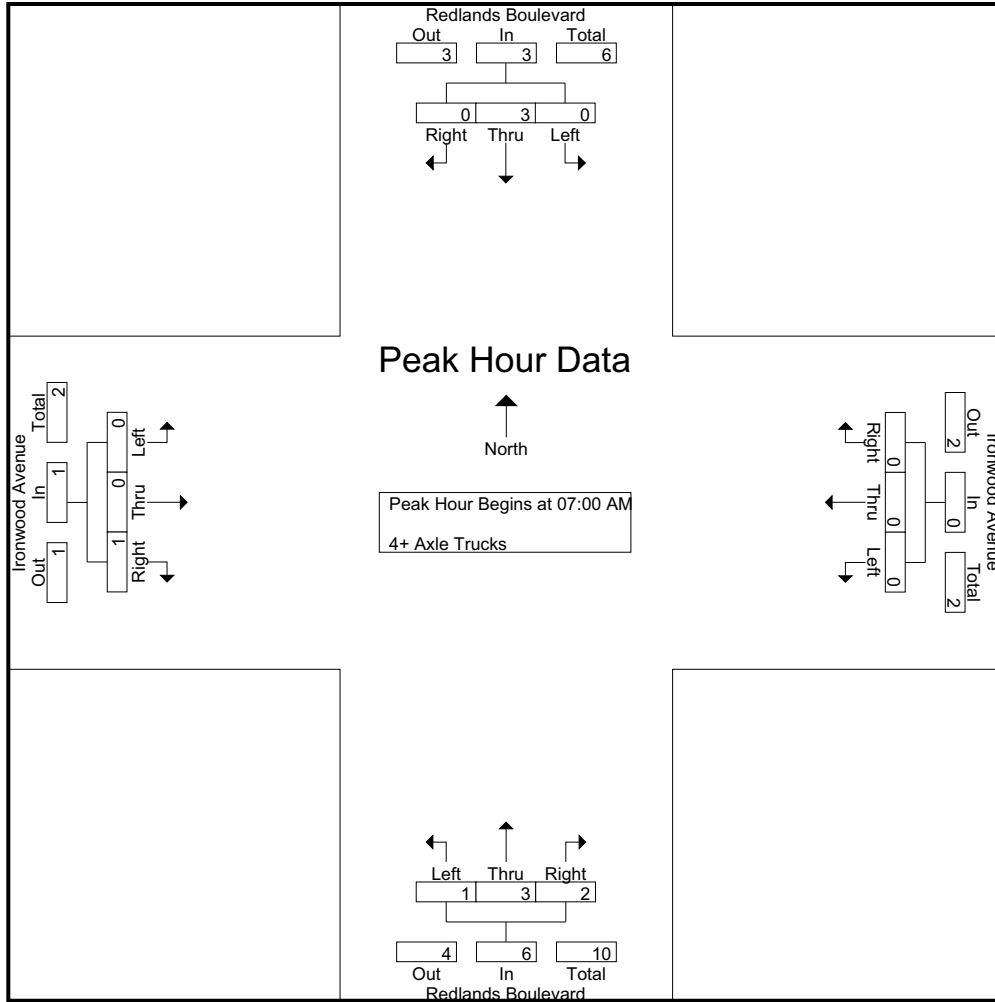
Start Time	Redlands Boulevard Southbound				Ironwood Avenue Westbound				Redlands Boulevard Northbound				Ironwood Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1
07:15 AM	0	2	0	2	0	0	0	0	1	1	0	2	0	0	0	0	4
07:30 AM	0	0	0	0	0	0	0	0	0	1	1	2	0	0	0	0	2
07:45 AM	0	1	0	1	0	0	0	0	0	1	1	2	0	0	0	0	3
Total	0	3	0	3	0	0	0	0	1	3	2	6	0	0	1	1	10
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	1	0	1	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	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
Total	0	2	0	2	0	0	0	0	0	2	0	2	0	0	0	0	4
Grand Total	0	5	0	5	0	0	0	0	1	5	2	8	0	0	1	1	14
Apprch %	0	100	0		0	0	0		12.5	62.5	25		0	0	100		
Total %	0	35.7	0	35.7	0	0	0	0	7.1	35.7	14.3	57.1	0	0	7.1	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 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	1	1	1
07:15 AM	0	2	0	2	0	0	0	0	1	1	0	2	0	0	0	0	4
07:30 AM	0	0	0	0	0	0	0	0	0	1	1	2	0	0	0	0	2
07:45 AM	0	1	0	1	0	0	0	0	0	1	1	2	0	0	0	0	3
Total Volume	0	3	0	3	0	0	0	0	1	3	2	6	0	0	1	1	10
% App. Total	0	100	0		0	0	0		16.7	50	33.3		0	0	100		
PHF	.000	.375	.000	.375	.000	.000	.000	.000	.250	.750	.500	.750	.000	.000	.250	.250	.625



City of Moreno Valley  
 N/S: Redlands Boulevard  
 E/W: Ironwood Avenue  
 Weather: Clear

File Name : 1\_MR\_V\_Redlands\_Ironwood AM  
 Site Code : 22519381  
 Start Date : 5/23/2019  
 Page No : 2



Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1  
 Peak Hour for Each Approach Begins at:

	07:00 AM				07:00 AM				07:00 AM				07:00 AM				
+0 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
+15 mins.	0	2	0	2	0	0	0	0	1	1	0	2	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0	1	1	2	0	0	0	0	0
+45 mins.	0	1	0	1	0	0	0	0	0	1	1	2	0	0	0	0	0
Total Volume	0	3	0	3	0	0	0	0	1	3	2	6	0	0	1	1	1
% App. Total	0	100	0		0	0	0		16.7	50	33.3		0	0	100		
PHF	.000	.375	.000	.375	.000	.000	.000	.000	.250	.750	.500	.750	.000	.000	.250	.250	

City of Moreno Valley  
 N/S: Redlands Boulevard  
 E/W: Ironwood Avenue  
 Weather: Clear

File Name : 1\_MR\_V\_Redlands\_Ironwood PM  
 Site Code : 22519381  
 Start Date : 5/23/2019  
 Page No : 1

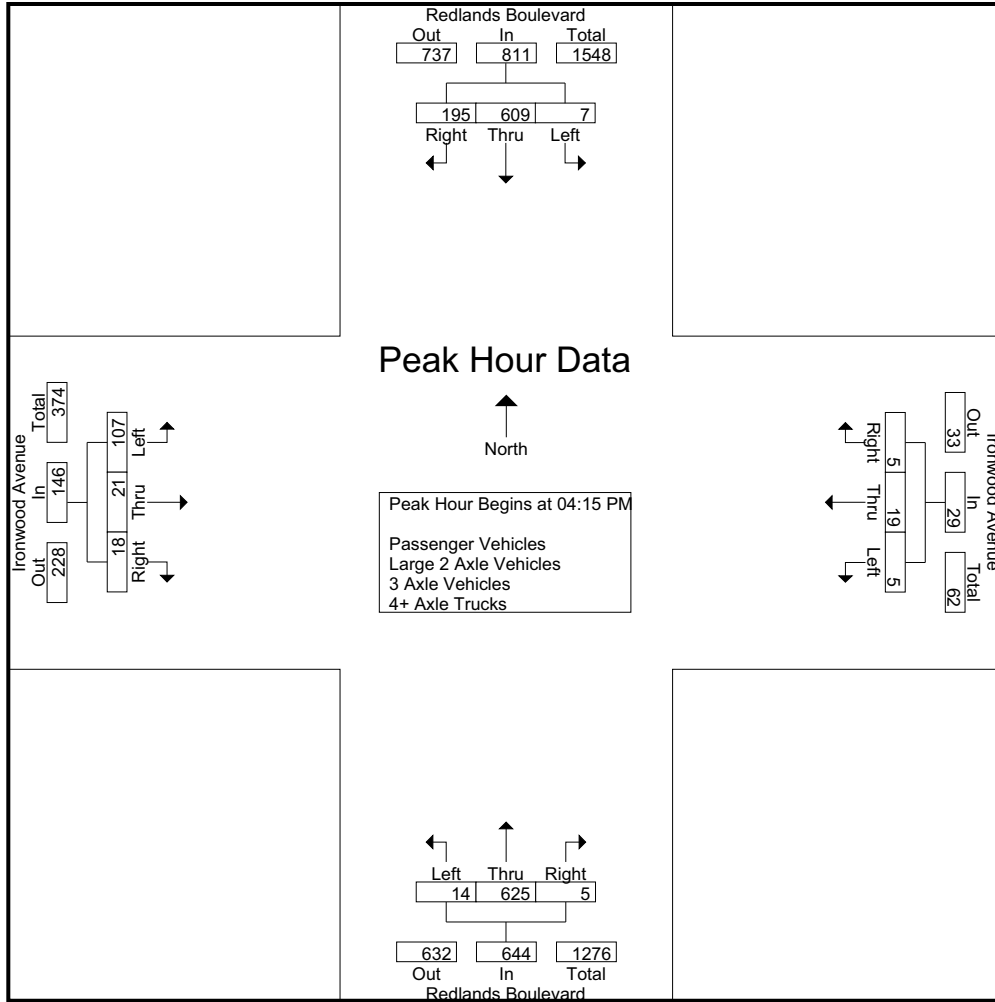
Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

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	5	166	35	206	1	8	2	11	3	139	1	143	19	7	8	34	394
04:15 PM	1	167	42	210	2	5	1	8	5	150	1	156	28	3	3	34	408
04:30 PM	2	143	55	200	1	5	1	7	4	160	2	166	25	5	6	36	409
04:45 PM	3	131	46	180	1	6	1	8	1	168	1	170	21	6	5	32	390
<b>Total</b>	<b>11</b>	<b>607</b>	<b>178</b>	<b>796</b>	<b>5</b>	<b>24</b>	<b>5</b>	<b>34</b>	<b>13</b>	<b>617</b>	<b>5</b>	<b>635</b>	<b>93</b>	<b>21</b>	<b>22</b>	<b>136</b>	<b>1601</b>
05:00 PM	1	168	52	221	1	3	2	6	4	147	1	152	33	7	4	44	423
05:15 PM	1	154	44	199	0	5	3	8	2	157	3	162	24	6	2	32	401
05:30 PM	2	175	49	226	1	4	1	6	5	123	2	130	37	4	8	49	411
05:45 PM	1	170	50	221	1	2	1	4	3	121	2	126	29	5	6	40	391
<b>Total</b>	<b>5</b>	<b>667</b>	<b>195</b>	<b>867</b>	<b>3</b>	<b>14</b>	<b>7</b>	<b>24</b>	<b>14</b>	<b>548</b>	<b>8</b>	<b>570</b>	<b>123</b>	<b>22</b>	<b>20</b>	<b>165</b>	<b>1626</b>
<b>Grand Total</b>	<b>16</b>	<b>1274</b>	<b>373</b>	<b>1663</b>	<b>8</b>	<b>38</b>	<b>12</b>	<b>58</b>	<b>27</b>	<b>1165</b>	<b>13</b>	<b>1205</b>	<b>216</b>	<b>43</b>	<b>42</b>	<b>301</b>	<b>3227</b>
Apprch %	1	76.6	22.4		13.8	65.5	20.7		2.2	96.7	1.1		71.8	14.3	14		
Total %	0.5	39.5	11.6	51.5	0.2	1.2	0.4	1.8	0.8	36.1	0.4	37.3	6.7	1.3	1.3	9.3	
Passenger Vehicles	16	1266	370	1652	8	37	12	57	24	1151	13	1188	214	42	40	296	3193
% Passenger Vehicles	100	99.4	99.2	99.3	100	97.4	100	98.3	88.9	98.8	100	98.6	99.1	97.7	95.2	98.3	98.9
Large 2 Axle Vehicles	0	8	3	11	0	0	0	0	3	9	0	12	2	1	2	5	28
% Large 2 Axle Vehicles	0	0.6	0.8	0.7	0	0	0	0	11.1	0.8	0	1	0.9	2.3	4.8	1.7	0.9
3 Axle Vehicles	0	0	0	0	0	1	0	1	0	1	0	1	0	0	0	0	2
% 3 Axle Vehicles	0	0	0	0	0	2.6	0	1.7	0	0.1	0	0.1	0	0	0	0	0.1
4+ Axle Trucks	0	0	0	0	0	0	0	0	0	4	0	4	0	0	0	0	4
% 4+ Axle Trucks	0	0	0	0	0	0	0	0	0	0.3	0	0.3	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 04:15 PM																	
04:15 PM	1	167	42	210	2	5	1	8	5	150	1	156	28	3	3	34	408
04:30 PM	2	143	55	200	1	5	1	7	4	160	2	166	25	5	6	36	409
04:45 PM	3	131	46	180	1	6	1	8	1	168	1	170	21	6	5	32	390
05:00 PM	1	168	52	221	1	3	2	6	4	147	1	152	33	7	4	44	423
Total Volume	7	609	195	811	5	19	5	29	14	625	5	644	107	21	18	146	1630
% App. Total	0.9	75.1	24		17.2	65.5	17.2		2.2	97	0.8		73.3	14.4	12.3		
PHF	.583	.906	.886	.917	.625	.792	.625	.906	.700	.930	.625	.947	.811	.750	.750	.830	.963

City of Moreno Valley  
 N/S: Redlands Boulevard  
 E/W: Ironwood Avenue  
 Weather: Clear

File Name : 1\_MR\_V\_Redlands\_Ironwood PM  
 Site Code : 22519381  
 Start Date : 5/23/2019  
 Page No : 2



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

	05:00 PM				04:00 PM				04:30 PM				05:00 PM			
+0 mins.	1	168	52	221	1	8	2	11	4	160	2	166	33	7	4	44
+15 mins.	1	154	44	199	2	5	1	8	1	168	1	170	24	6	2	32
+30 mins.	2	175	49	226	1	5	1	7	4	147	1	152	37	4	8	49
+45 mins.	1	170	50	221	1	6	1	8	2	157	3	162	29	5	6	40
Total Volume	5	667	195	867	5	24	5	34	11	632	7	650	123	22	20	165
% App. Total	0.6	76.9	22.5		14.7	70.6	14.7		1.7	97.2	1.1		74.5	13.3	12.1	
PHF	.625	.953	.938	.959	.625	.750	.625	.773	.688	.940	.583	.956	.831	.786	.625	.842

City of Moreno Valley  
 N/S: Redlands Boulevard  
 E/W: Ironwood Avenue  
 Weather: Clear

File Name : 1\_MR\_V\_Redlands\_Ironwood PM  
 Site Code : 22519381  
 Start Date : 5/23/2019  
 Page No : 1

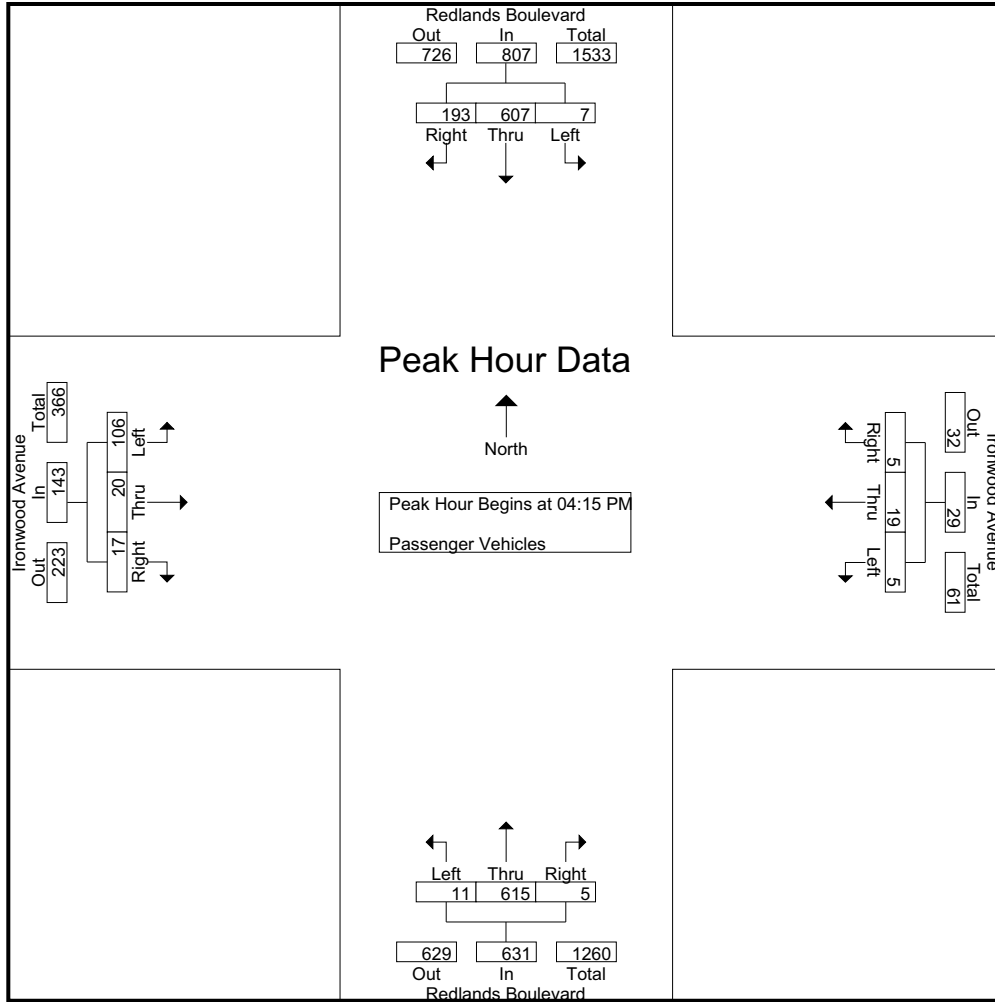
Groups Printed- Passenger Vehicles

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	5	166	35	206	1	7	2	10	3	139	1	143	19	7	7	33	392
04:15 PM	1	167	41	209	2	5	1	8	5	149	1	155	27	3	3	33	405
04:30 PM	2	142	55	199	1	5	1	7	1	153	2	156	25	5	5	35	397
04:45 PM	3	131	46	180	1	6	1	8	1	166	1	168	21	5	5	31	387
Total	11	606	177	794	5	23	5	33	10	607	5	622	92	20	20	132	1581
05:00 PM	1	167	51	219	1	3	2	6	4	147	1	152	33	7	4	44	421
05:15 PM	1	152	43	196	0	5	3	8	2	155	3	160	24	6	2	32	396
05:30 PM	2	174	49	225	1	4	1	6	5	123	2	130	36	4	8	48	409
05:45 PM	1	167	50	218	1	2	1	4	3	119	2	124	29	5	6	40	386
Total	5	660	193	858	3	14	7	24	14	544	8	566	122	22	20	164	1612
Grand Total	16	1266	370	1652	8	37	12	57	24	1151	13	1188	214	42	40	296	3193
Apprch %	1	76.6	22.4		14	64.9	21.1		2	96.9	1.1		72.3	14.2	13.5		
Total %	0.5	39.6	11.6	51.7	0.3	1.2	0.4	1.8	0.8	36	0.4	37.2	6.7	1.3	1.3	9.3	

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 04:15 PM to 05:00 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:15 PM																	
04:15 PM	1	<b>167</b>	41	209	<b>2</b>	5	1	<b>8</b>	<b>5</b>	149	1	155	27	3	3	33	405
04:30 PM	2	142	<b>55</b>	199	1	5	1	7	1	153	<b>2</b>	156	25	5	<b>5</b>	35	397
04:45 PM	<b>3</b>	131	46	180	1	<b>6</b>	1	8	1	<b>166</b>	1	<b>168</b>	21	5	5	31	387
05:00 PM	1	167	51	<b>219</b>	1	3	<b>2</b>	6	4	147	1	152	<b>33</b>	<b>7</b>	4	<b>44</b>	<b>421</b>
Total Volume	7	607	193	807	5	19	5	29	11	615	5	631	106	20	17	143	1610
% App. Total	0.9	75.2	23.9		17.2	65.5	17.2		1.7	97.5	0.8		74.1	14	11.9		
PHF	.583	.909	.877	.921	.625	.792	.625	.906	.550	.926	.625	.939	.803	.714	.850	.813	.956

City of Moreno Valley  
 N/S: Redlands Boulevard  
 E/W: Ironwood Avenue  
 Weather: Clear

File Name : 1\_MRV\_Redlands\_Ironwood PM  
 Site Code : 22519381  
 Start Date : 5/23/2019  
 Page No : 2



Peak Hour Analysis From 04:15 PM to 05:00 PM - Peak 1 of 1  
 Peak Hour for Each Approach Begins at:

	04:15 PM				04:15 PM				04:15 PM				04:15 PM			
+0 mins.	1	<b>167</b>	41	209	<b>2</b>	5	1	<b>8</b>	<b>5</b>	149	1	155	27	3	3	33
+15 mins.	2	142	<b>55</b>	199	1	5	1	7	1	153	<b>2</b>	156	25	5	<b>5</b>	35
+30 mins.	<b>3</b>	131	46	180	1	<b>6</b>	1	8	1	<b>166</b>	1	<b>168</b>	21	5	5	31
+45 mins.	1	167	51	<b>219</b>	1	3	<b>2</b>	6	4	147	1	152	<b>33</b>	<b>7</b>	4	<b>44</b>
Total Volume	7	607	193	807	5	19	5	29	11	615	5	631	106	20	17	143
% App. Total	0.9	75.2	23.9		17.2	65.5	17.2		1.7	97.5	0.8		74.1	14	11.9	
PHF	.583	.909	.877	.921	.625	.792	.625	.906	.550	.926	.625	.939	.803	.714	.850	.813

City of Moreno Valley  
 N/S: Redlands Boulevard  
 E/W: Ironwood Avenue  
 Weather: Clear

File Name : 1\_MRV\_Redlands\_Ironwood PM  
 Site Code : 22519381  
 Start Date : 5/23/2019  
 Page No : 1

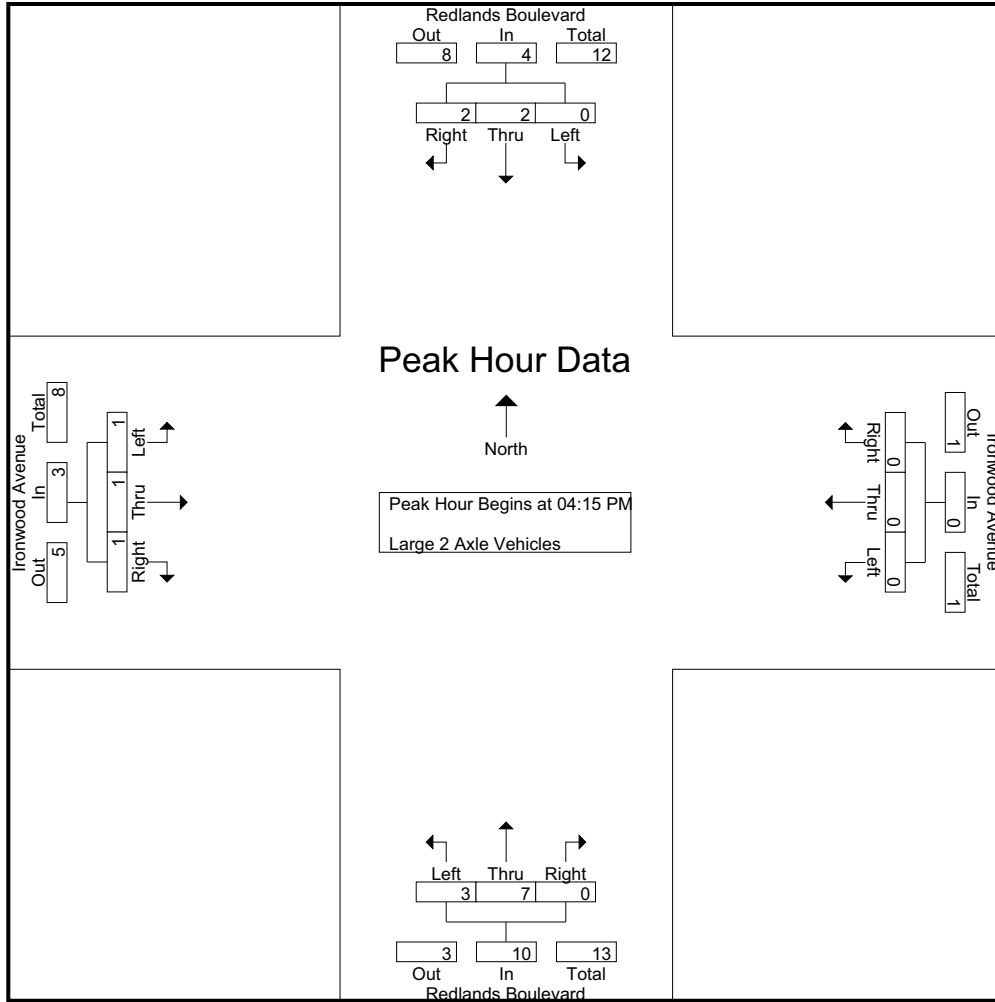
Groups Printed- Large 2 Axle Vehicles

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	0	0	0	0	0	1	1	1
04:15 PM	0	0	1	1	0	0	0	0	0	0	0	0	1	0	0	1	2
04:30 PM	0	1	0	1	0	0	0	0	3	6	0	9	0	0	1	1	11
04:45 PM	0	0	0	0	0	0	0	0	0	1	0	1	0	1	0	1	2
Total	0	1	1	2	0	0	0	0	3	7	0	10	1	1	2	4	16
05:00 PM	0	1	1	2	0	0	0	0	0	0	0	0	0	0	0	0	2
05:15 PM	0	2	1	3	0	0	0	0	0	1	0	1	0	0	0	0	4
05:30 PM	0	1	0	1	0	0	0	0	0	0	0	0	1	0	0	1	2
05:45 PM	0	3	0	3	0	0	0	0	0	1	0	1	0	0	0	0	4
Total	0	7	2	9	0	0	0	0	0	2	0	2	1	0	0	1	12
Grand Total	0	8	3	11	0	0	0	0	3	9	0	12	2	1	2	5	28
Apprch %	0	72.7	27.3		0	0	0		25	75	0		40	20	40		
Total %	0	28.6	10.7	39.3	0	0	0	0	10.7	32.1	0	42.9	7.1	3.6	7.1	17.9	

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 04:15 PM to 05:00 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:15 PM																	
04:15 PM	0	0	1	1	0	0	0	0	0	0	0	0	1	0	0	1	2
04:30 PM	0	1	0	1	0	0	0	0	3	6	0	9	0	0	1	1	11
04:45 PM	0	0	0	0	0	0	0	0	0	1	0	1	0	1	0	1	2
05:00 PM	0	1	1	2	0	0	0	0	0	0	0	0	0	0	0	0	2
Total Volume	0	2	2	4	0	0	0	0	3	7	0	10	1	1	1	3	17
% App. Total	0	50	50		0	0	0		30	70	0		33.3	33.3	33.3		
PHF	.000	.500	.500	.500	.000	.000	.000	.000	.250	.292	.000	.278	.250	.250	.250	.750	.386

City of Moreno Valley  
 N/S: Redlands Boulevard  
 E/W: Ironwood Avenue  
 Weather: Clear

File Name : 1\_MR\_V\_Redlands\_Ironwood PM  
 Site Code : 22519381  
 Start Date : 5/23/2019  
 Page No : 2



Peak Hour Analysis From 04:15 PM to 05:00 PM - Peak 1 of 1  
 Peak Hour for Each Approach Begins at:

	04:15 PM				04:15 PM				04:15 PM				04:15 PM			
+0 mins.	0	0	1	1	0	0	0	0	0	0	0	0	1	0	0	1
+15 mins.	0	1	0	1	0	0	0	0	3	6	0	9	0	0	0	1
+30 mins.	0	0	0	0	0	0	0	0	0	1	0	1	0	1	0	1
+45 mins.	0	1	1	2	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	2	2	4	0	0	0	0	3	7	0	10	1	1	1	3
% App. Total	0	50	50		0	0	0		30	70	0		33.3	33.3	33.3	
PHF	.000	.500	.500	.500	.000	.000	.000	.000	.250	.292	.000	.278	.250	.250	.250	.750

City of Moreno Valley  
 N/S: Redlands Boulevard  
 E/W: Ironwood Avenue  
 Weather: Clear

File Name : 1\_MRV\_Redlands\_Ironwood PM  
 Site Code : 22519381  
 Start Date : 5/23/2019  
 Page No : 1

Groups Printed- 3 Axle Vehicles

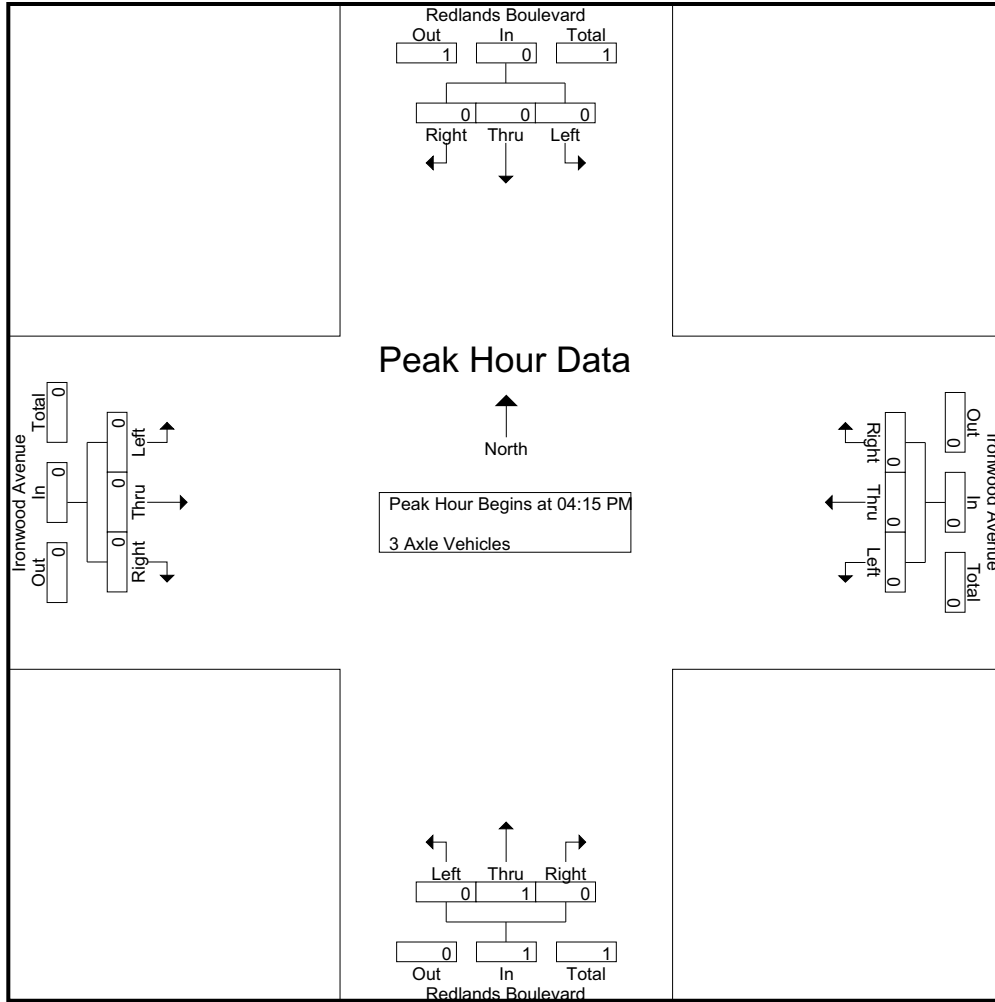
Start Time	Redlands Boulevard Southbound				Ironwood Avenue Westbound				Redlands Boulevard Northbound				Ironwood Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
04:00 PM	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	1
04:15 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	1	0	1	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	0	0	0	0	1	0	1	0	1	0	1	0	0	0	0	2
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	1	0	1	0	1	0	1	0	0	0	0	2
Apprch %	0	0	0		0	100	0		0	100	0		0	0	0		
Total %	0	0	0		0	50	0	50	0	50	0	50	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 04:15 PM to 05:00 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:15 PM																	
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	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
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: Ironwood Avenue  
 Weather: Clear

File Name : 1\_MR\_V\_Redlands\_Ironwood PM  
 Site Code : 22519381  
 Start Date : 5/23/2019  
 Page No : 2



Peak Hour Analysis From 04:15 PM to 05:00 PM - Peak 1 of 1  
 Peak Hour for Each Approach Begins at:

	04:15 PM				04:15 PM				04:15 PM				04:15 PM			
+0 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+45 mins.	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
% App. Total	0	0	0	0	0	0	0	0	0	100	0	0	0	0	0	0
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.250	.000	.250	.000	.000	.000	.000

City of Moreno Valley  
 N/S: Redlands Boulevard  
 E/W: Ironwood Avenue  
 Weather: Clear

File Name : 1\_MRV\_Redlands\_Ironwood PM  
 Site Code : 22519381  
 Start Date : 5/23/2019  
 Page No : 1

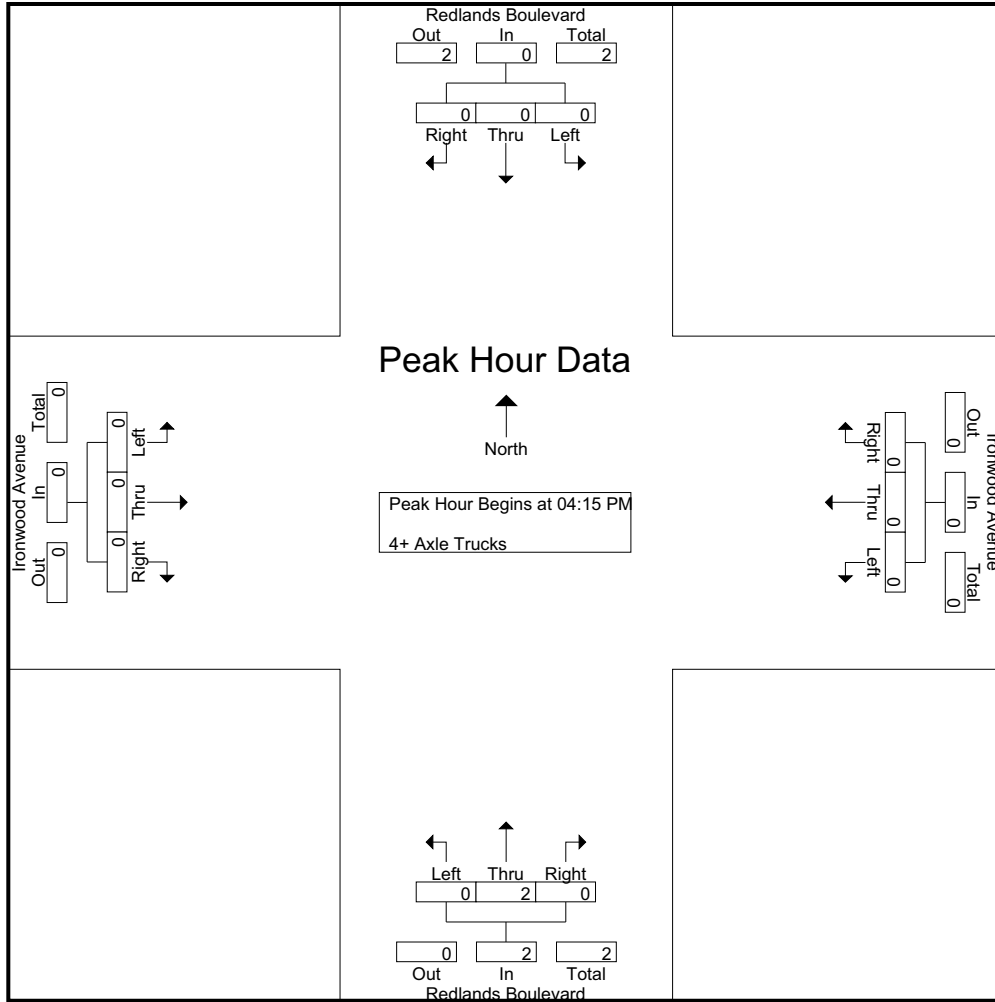
Groups Printed- 4+ Axle Trucks

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	1	0	1	0	0	0	0	1
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	2	0	2	0	0	0	0	2
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	1	0	1	0	0	0	0	1
Total	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	2
Grand Total	0	0	0	0	0	0	0	0	0	4	0	4	0	0	0	0	4
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				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 04:15 PM to 05:00 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:15 PM																	
04:15 PM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
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	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	2	0	2	0	0	0	0	2
% App. Total	0	0	0		0	0	0		0	100	0		0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.500	.000	.500	.000	.000	.000	.000	.500

City of Moreno Valley  
 N/S: Redlands Boulevard  
 E/W: Ironwood Avenue  
 Weather: Clear

File Name : 1\_MR\_V\_Redlands\_Ironwood PM  
 Site Code : 22519381  
 Start Date : 5/23/2019  
 Page No : 2



Peak Hour Analysis From 04:15 PM to 05:00 PM - Peak 1 of 1  
 Peak Hour for Each Approach Begins at:

	04:15 PM				04:15 PM				04:15 PM				04:15 PM			
+0 mins.	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0
+45 mins.	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	2	0	2	0	0	0	0
% App. Total	0	0	0	0	0	0	0	0	0	100	0	0	0	0	0	0
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.500	.000	.500	.000	.000	.000	.000



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

File Name : 2\_MRV\_Redlands\_60 WB\_AM  
 Site Code : 22519381  
 Start Date : 5/23/2019  
 Page No : 1

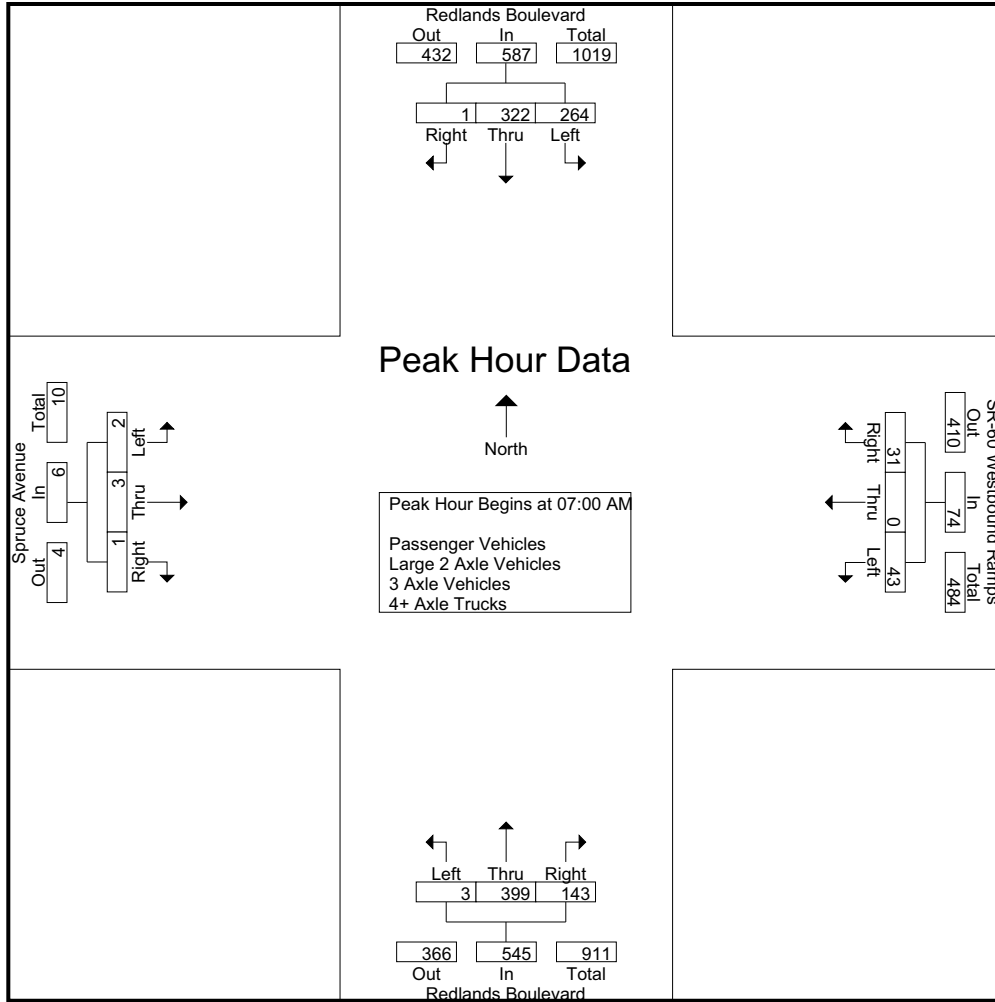
Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

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	64	71	0	135	10	0	3	13	1	101	34	136	1	1	1	3	287
07:15 AM	51	81	0	132	7	0	4	11	2	93	42	137	0	0	0	0	280
07:30 AM	79	87	0	166	15	0	13	28	0	88	35	123	0	1	0	1	318
07:45 AM	70	83	1	154	11	0	11	22	0	117	32	149	1	1	0	2	327
<b>Total</b>	<b>264</b>	<b>322</b>	<b>1</b>	<b>587</b>	<b>43</b>	<b>0</b>	<b>31</b>	<b>74</b>	<b>3</b>	<b>399</b>	<b>143</b>	<b>545</b>	<b>2</b>	<b>3</b>	<b>1</b>	<b>6</b>	<b>1212</b>
08:00 AM	58	49	2	109	8	0	4	12	2	87	28	117	1	2	1	4	242
08:15 AM	83	55	1	139	9	0	3	12	0	97	30	127	0	0	0	0	278
08:30 AM	38	44	4	86	7	1	4	12	2	86	33	121	1	2	1	4	223
08:45 AM	49	46	1	96	7	0	7	14	3	79	58	140	1	1	4	6	256
<b>Total</b>	<b>228</b>	<b>194</b>	<b>8</b>	<b>430</b>	<b>31</b>	<b>1</b>	<b>18</b>	<b>50</b>	<b>7</b>	<b>349</b>	<b>149</b>	<b>505</b>	<b>3</b>	<b>5</b>	<b>6</b>	<b>14</b>	<b>999</b>
<b>Grand Total</b>	<b>492</b>	<b>516</b>	<b>9</b>	<b>1017</b>	<b>74</b>	<b>1</b>	<b>49</b>	<b>124</b>	<b>10</b>	<b>748</b>	<b>292</b>	<b>1050</b>	<b>5</b>	<b>8</b>	<b>7</b>	<b>20</b>	<b>2211</b>
Apprch %	48.4	50.7	0.9		59.7	0.8	39.5		1	71.2	27.8		25	40	35		
Total %	22.3	23.3	0.4	46	3.3	0	2.2	5.6	0.5	33.8	13.2	47.5	0.2	0.4	0.3	0.9	
Passenger Vehicles	476	505	4	985	70	1	49	120	10	730	272	1012	3	7	6	16	2133
% Passenger Vehicles	96.7	97.9	44.4	96.9	94.6	100	100	96.8	100	97.6	93.2	96.4	60	87.5	85.7	80	96.5
Large 2 Axle Vehicles	12	7	1	20	3	0	0	3	0	6	5	11	1	1	1	3	37
% Large 2 Axle Vehicles	2.4	1.4	11.1	2	4.1	0	0	2.4	0	0.8	1.7	1	20	12.5	14.3	15	1.7
3 Axle Vehicles	0	2	4	6	0	0	0	0	0	4	1	5	0	0	0	0	11
% 3 Axle Vehicles	0	0.4	44.4	0.6	0	0	0	0	0	0.5	0.3	0.5	0	0	0	0	0.5
4+ Axle Trucks	4	2	0	6	1	0	0	1	0	8	14	22	1	0	0	1	30
% 4+ Axle Trucks	0.8	0.4	0	0.6	1.4	0	0	0.8	0	1.1	4.8	2.1	20	0	0	5	1.4

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	64	71	0	135	10	0	3	13	1	101	34	136	1	1	1	3	287
07:15 AM	51	81	0	132	7	0	4	11	2	93	42	137	0	0	0	0	280
07:30 AM	<b>79</b>	<b>87</b>	0	<b>166</b>	<b>15</b>	0	<b>13</b>	<b>28</b>	0	88	35	123	0	1	0	1	318
07:45 AM	70	83	1	154	11	0	11	22	0	<b>117</b>	32	<b>149</b>	1	1	0	2	<b>327</b>
Total Volume	264	322	1	587	43	0	31	74	3	399	143	545	2	3	1	6	1212
% App. Total	45	54.9	0.2		58.1	0	41.9		0.6	73.2	26.2		33.3	50	16.7		
PHF	.835	.925	.250	.884	.717	.000	.596	.661	.375	.853	.851	.914	.500	.750	.250	.500	.927

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

File Name : 2\_MRV\_Redlands\_60 WB\_AM  
 Site Code : 22519381  
 Start Date : 5/23/2019  
 Page No : 2



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1  
 Peak Hour for Each Approach Begins at:

	07:00 AM				07:00 AM				07:00 AM				08:00 AM			
+0 mins.	64	71	0	135	10	0	3	13	1	101	34	136	1	2	1	4
+15 mins.	51	81	0	132	7	0	4	11	2	93	42	137	0	0	0	0
+30 mins.	<b>79</b>	<b>87</b>	0	<b>166</b>	<b>15</b>	0	<b>13</b>	<b>28</b>	0	88	35	123	1	2	1	4
+45 mins.	70	83	1	154	11	0	11	22	0	<b>117</b>	32	<b>149</b>	1	1	4	<b>6</b>
Total Volume	264	322	1	587	43	0	31	74	3	399	143	545	3	5	6	14
% App. Total	45	54.9	0.2	58.1	58.1	0	41.9	0.6	0.6	73.2	26.2	21.4	21.4	35.7	42.9	
PHF	.835	.925	.250	.884	.717	.000	.596	.661	.375	.853	.851	.914	.750	.625	.375	.583

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

File Name : 2\_MRV\_Redlands\_60 WB\_AM  
 Site Code : 22519381  
 Start Date : 5/23/2019  
 Page No : 1

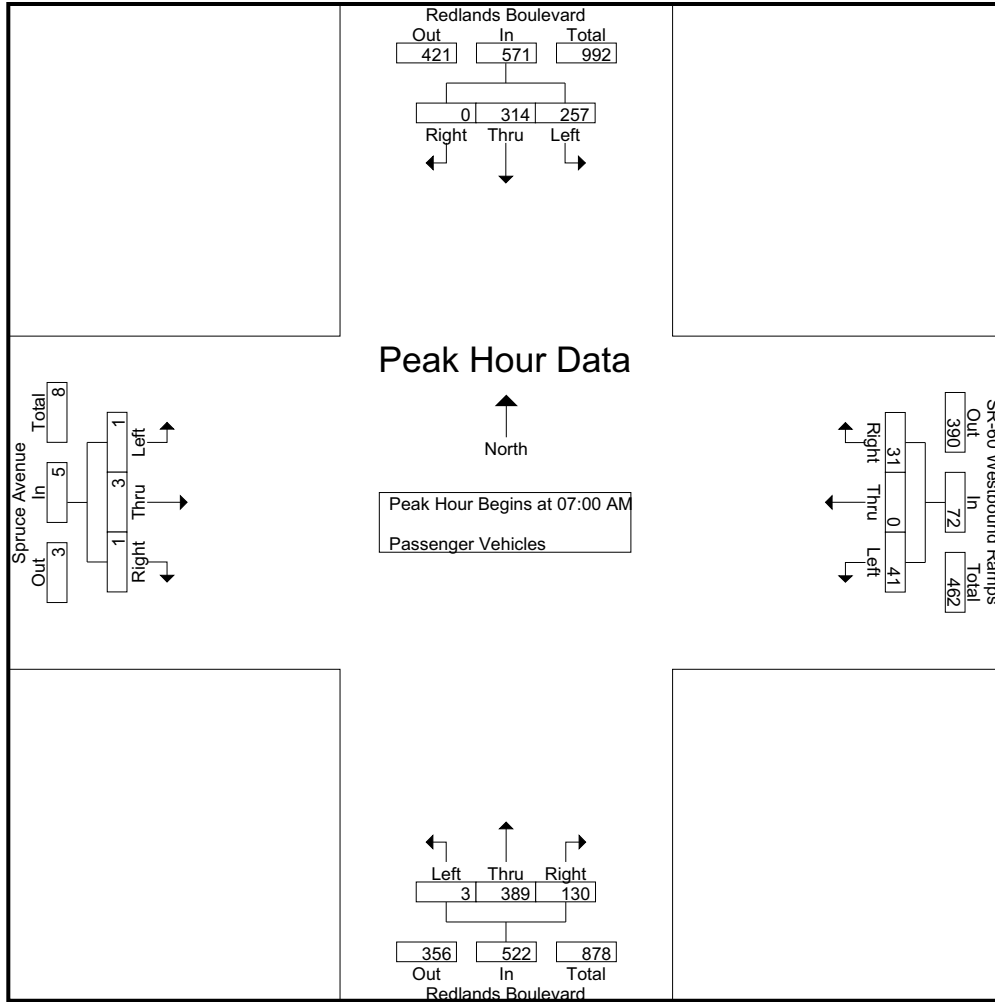
Groups Printed- Passenger Vehicles

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	61	68	0	129	9	0	3	12	1	100	31	132	1	1	1	3	276
07:15 AM	51	79	0	130	7	0	4	11	2	88	39	129	0	0	0	0	270
07:30 AM	79	86	0	165	15	0	13	28	0	86	31	117	0	1	0	1	311
07:45 AM	66	81	0	147	10	0	11	21	0	115	29	144	0	1	0	1	313
Total	257	314	0	571	41	0	31	72	3	389	130	522	1	3	1	5	1170
08:00 AM	54	48	1	103	8	0	4	12	2	86	25	113	1	1	1	3	231
08:15 AM	81	54	0	135	7	0	3	10	0	95	28	123	0	0	0	0	268
08:30 AM	37	43	2	82	7	1	4	12	2	83	33	118	0	2	1	3	215
08:45 AM	47	46	1	94	7	0	7	14	3	77	56	136	1	1	3	5	249
Total	219	191	4	414	29	1	18	48	7	341	142	490	2	4	5	11	963
Grand Total	476	505	4	985	70	1	49	120	10	730	272	1012	3	7	6	16	2133
Apprch %	48.3	51.3	0.4		58.3	0.8	40.8		1	72.1	26.9		18.8	43.8	37.5		
Total %	22.3	23.7	0.2	46.2	3.3	0	2.3	5.6	0.5	34.2	12.8	47.4	0.1	0.3	0.3	0.8	

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	61	68	0	129	9	0	3	12	1	100	31	132	1	1	1	3	276
07:15 AM	51	79	0	130	7	0	4	11	2	88	39	129	0	0	0	0	270
07:30 AM	<b>79</b>	<b>86</b>	0	<b>165</b>	<b>15</b>	0	<b>13</b>	<b>28</b>	0	86	31	117	0	1	0	1	311
07:45 AM	66	81	0	147	10	0	11	21	0	<b>115</b>	29	<b>144</b>	0	1	0	1	<b>313</b>
Total Volume	257	314	0	571	41	0	31	72	3	389	130	522	1	3	1	5	1170
% App. Total	45	55	0		56.9	0	43.1		0.6	74.5	24.9		20	60	20		
PHF	.813	.913	.000	.865	.683	.000	.596	.643	.375	.846	.833	.906	.250	.750	.250	.417	.935

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

File Name : 2\_MRV\_Redlands\_60 WB\_AM  
 Site Code : 22519381  
 Start Date : 5/23/2019  
 Page No : 2



Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1  
 Peak Hour for Each Approach Begins at:

	07:00 AM				07:00 AM				07:00 AM				07:00 AM			
+0 mins.	61	68	0	129	9	0	3	12	1	100	31	132	1	1	1	3
+15 mins.	51	79	0	130	7	0	4	11	2	88	39	129	0	0	0	0
+30 mins.	<b>79</b>	<b>86</b>	0	<b>165</b>	<b>15</b>	0	<b>13</b>	<b>28</b>	0	86	31	117	0	1	0	1
+45 mins.	66	81	0	147	10	0	11	21	0	<b>115</b>	29	<b>144</b>	0	1	0	1
Total Volume	257	314	0	571	41	0	31	72	3	389	130	522	1	3	1	5
% App. Total	45	55	0		56.9	0	43.1		0.6	74.5	24.9		20	60	20	
PHF	.813	.913	.000	.865	.683	.000	.596	.643	.375	.846	.833	.906	.250	.750	.250	.417



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

File Name : 2\_MRV\_Redlands\_60 WB\_AM  
 Site Code : 22519381  
 Start Date : 5/23/2019  
 Page No : 1

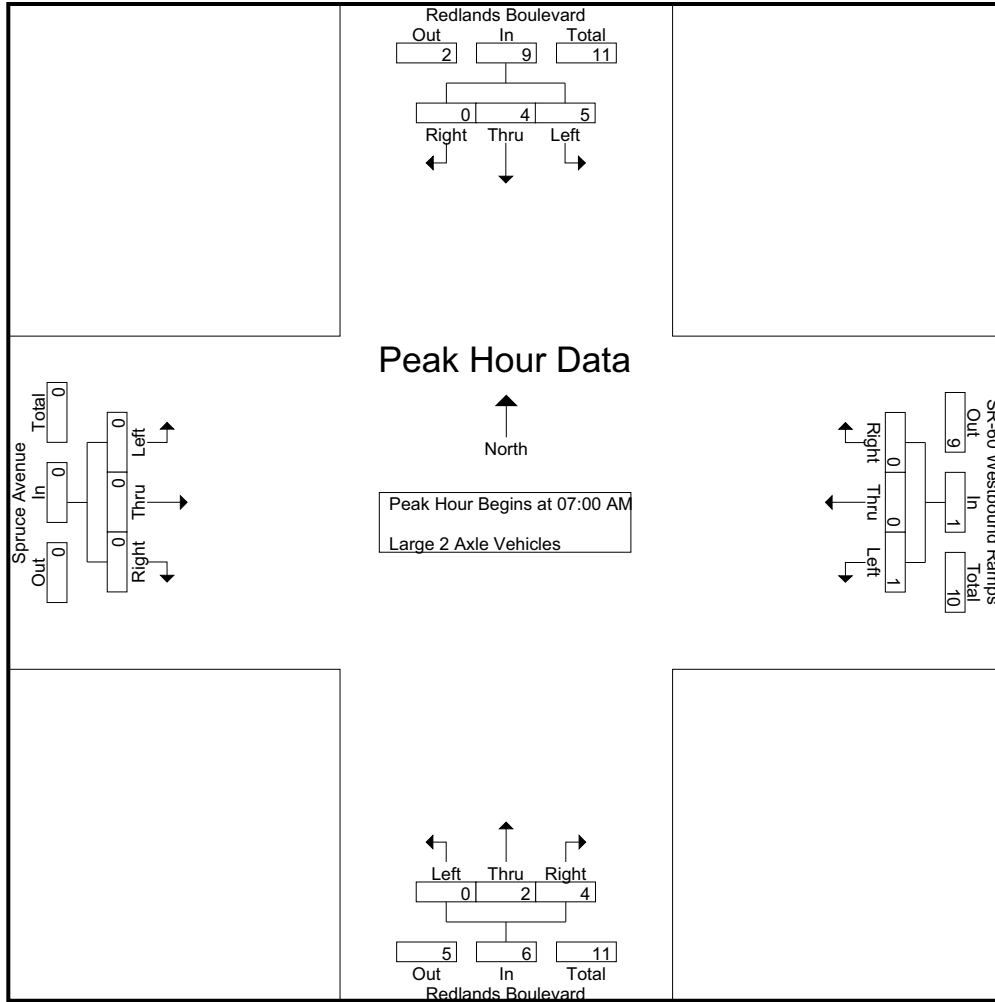
Groups Printed- Large 2 Axle Vehicles

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	2	2	0	4	1	0	0	1	0	1	1	2	0	0	0	0	7
07:15 AM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
07:30 AM	0	1	0	1	0	0	0	0	0	0	2	2	0	0	0	0	3
07:45 AM	3	1	0	4	0	0	0	0	0	0	1	1	0	0	0	0	5
Total	5	4	0	9	1	0	0	1	0	2	4	6	0	0	0	0	16
08:00 AM	3	1	0	4	0	0	0	0	0	1	0	1	0	1	0	1	6
08:15 AM	2	1	0	3	2	0	0	2	0	1	0	1	0	0	0	0	6
08:30 AM	1	1	1	3	0	0	0	0	0	1	0	1	1	0	0	1	5
08:45 AM	1	0	0	1	0	0	0	0	0	1	1	2	0	0	1	1	4
Total	7	3	1	11	2	0	0	2	0	4	1	5	1	1	1	3	21
Grand Total	12	7	1	20	3	0	0	3	0	6	5	11	1	1	1	3	37
Apprch %	60	35	5		100	0	0		0	54.5	45.5		33.3	33.3	33.3		
Total %	32.4	18.9	2.7	54.1	8.1	0	0	8.1	0	16.2	13.5	29.7	2.7	2.7	2.7	8.1	

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	2	2	0	4	1	0	0	1	0	1	1	2	0	0	0	0	7
07:15 AM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
07:30 AM	0	1	0	1	0	0	0	0	0	0	2	2	0	0	0	0	3
07:45 AM	3	1	0	4	0	0	0	0	0	0	1	1	0	0	0	0	5
Total Volume	5	4	0	9	1	0	0	1	0	2	4	6	0	0	0	0	16
% App. Total	55.6	44.4	0		100	0	0		0	33.3	66.7		0	0	0		
PHF	.417	.500	.000	.563	.250	.000	.000	.250	.000	.500	.500	.750	.000	.000	.000	.000	.571

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

File Name : 2\_MRV\_Redlands\_60 WB\_AM  
 Site Code : 22519381  
 Start Date : 5/23/2019  
 Page No : 2



Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1  
 Peak Hour for Each Approach Begins at:

	07:00 AM				07:00 AM				07:00 AM				07:00 AM			
+0 mins.	2	2	0	4	1	0	0	1	0	1	1	2	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0
+30 mins.	0	1	0	1	0	0	0	0	0	0	2	2	0	0	0	0
+45 mins.	3	1	0	4	0	0	0	0	0	0	1	1	0	0	0	0
Total Volume	5	4	0	9	1	0	0	1	0	2	4	6	0	0	0	0
% App. Total	55.6	44.4	0	100	0	0	0	100	0	33.3	66.7	100	0	0	0	0
PHF	.417	.500	.000	.563	.250	.000	.000	.250	.000	.500	.500	.750	.000	.000	.000	.000

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

File Name : 2\_MRV\_Redlands\_60 WB\_AM  
 Site Code : 22519381  
 Start Date : 5/23/2019  
 Page No : 1

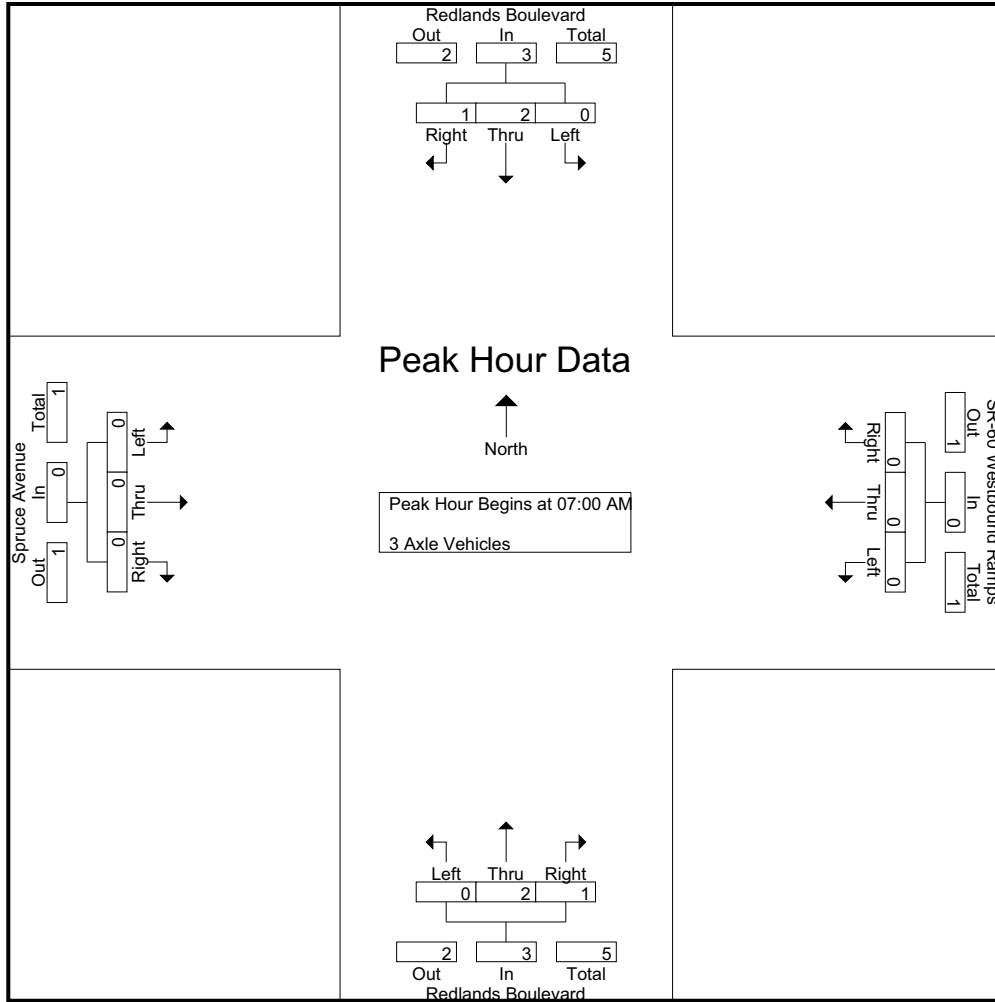
Groups Printed- 3 Axle Vehicles

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	0	1	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	2	1	3	0	0	0	0	3
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	1	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Total	0	2	1	3	0	0	0	0	0	0	2	1	3	0	0	0	0	6
08:00 AM	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
08:15 AM	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
08:30 AM	0	0	1	1	0	0	0	0	0	0	1	0	1	0	0	0	0	2
08:45 AM	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
Total	0	0	3	3	0	0	0	0	0	0	2	0	2	0	0	0	0	5
Grand Total	0	2	4	6	0	0	0	0	0	0	4	1	5	0	0	0	0	11
Apprch %	0	33.3	66.7		0	0	0		0	80	20			0	0	0		
Total %	0	18.2	36.4	54.5	0	0	0	0	0	36.4	9.1	45.5		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	0	0	0	0	0	0	0	1
07:15 AM	0	0	0	0	0	0	0	0	0	0	2	1	3	0	0	0	0	3
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	1	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Total Volume	0	2	1	3	0	0	0	0	0	0	2	1	3	0	0	0	0	6
% App. Total	0	66.7	33.3		0	0	0		0	66.7	33.3			0	0	0		
PHF	.000	.500	.250	.375	.000	.000	.000	.000	.000	.000	.250	.250	.250	.000	.000	.000	.000	.500

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

File Name : 2\_MRV\_Redlands\_60 WB\_AM  
 Site Code : 22519381  
 Start Date : 5/23/2019  
 Page No : 2



Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1  
 Peak Hour for Each Approach Begins at:

	07:00 AM				07:00 AM				07:00 AM				07:00 AM			
+0 mins.	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0	2	1	3	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+45 mins.	0	1	1	2	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	2	1	3	0	0	0	0	0	2	1	3	0	0	0	0
% App. Total	0	66.7	33.3		0	0	0	0	0	66.7	33.3		0	0	0	0
PHF	.000	.500	.250	.375	.000	.000	.000	.000	.000	.250	.250	.250	.000	.000	.000	.000

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

File Name : 2\_MRV\_Redlands\_60 WB\_AM  
 Site Code : 22519381  
 Start Date : 5/23/2019  
 Page No : 1

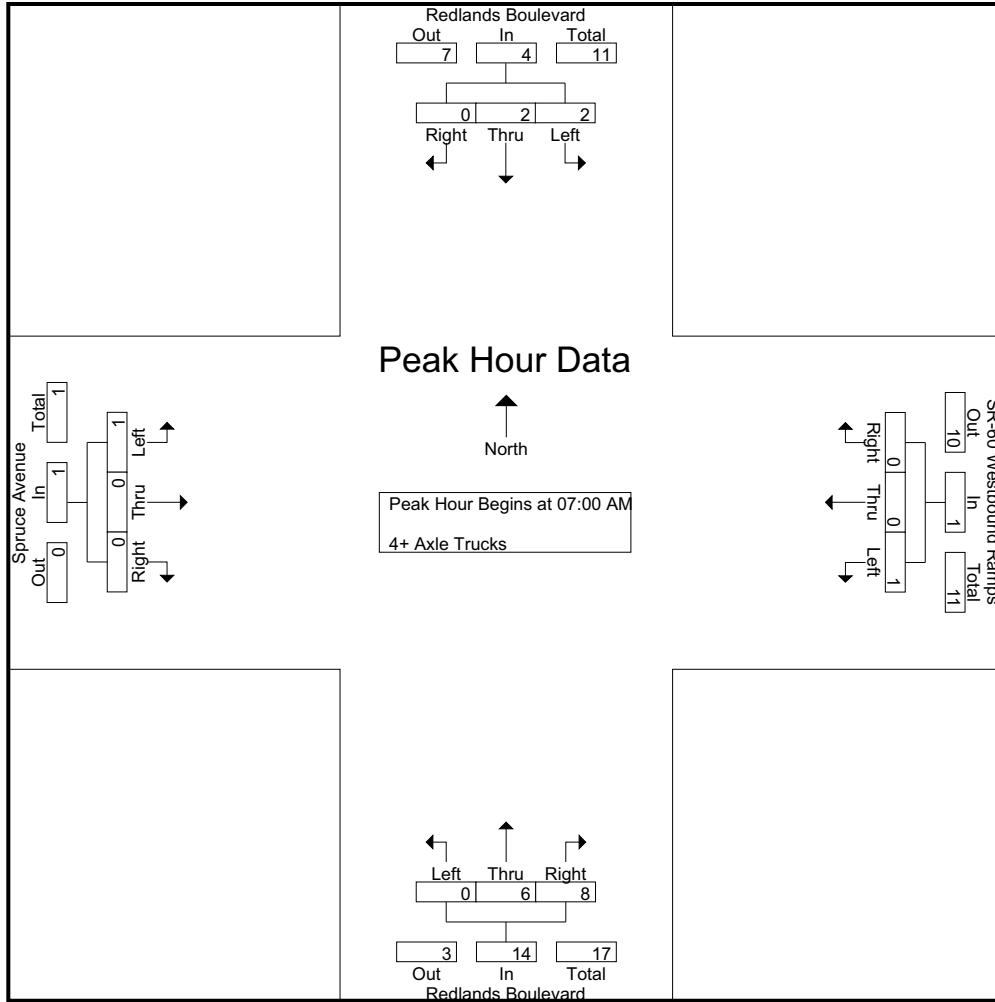
Groups Printed- 4+ Axle Trucks

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	1	0	0	1	0	0	0	0	0	0	2	2	0	0	0	0	3
07:15 AM	0	2	0	2	0	0	0	0	0	2	2	4	0	0	0	0	6
07:30 AM	0	0	0	0	0	0	0	0	0	2	2	4	0	0	0	0	4
07:45 AM	1	0	0	1	1	0	0	1	0	2	2	4	1	0	0	1	7
Total	2	2	0	4	1	0	0	1	0	6	8	14	1	0	0	1	20
08:00 AM	1	0	0	1	0	0	0	0	0	0	3	3	0	0	0	0	4
08:15 AM	0	0	0	0	0	0	0	0	0	1	2	3	0	0	0	0	3
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	0	1	0	0	0	0	0	0	1	1	0	0	0	0	2
Total	2	0	0	2	0	0	0	0	0	2	6	8	0	0	0	0	10
Grand Total	4	2	0	6	1	0	0	1	0	8	14	22	1	0	0	1	30
Apprch %	66.7	33.3	0		100	0	0		0	36.4	63.6		100	0	0		
Total %	13.3	6.7	0	20	3.3	0	0	3.3	0	26.7	46.7	73.3	3.3	0	0	3.3	

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 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	2	2	0	0	0	0	3
07:15 AM	0	2	0	2	0	0	0	0	0	2	2	4	0	0	0	0	6
07:30 AM	0	0	0	0	0	0	0	0	0	2	2	4	0	0	0	0	4
07:45 AM	1	0	0	1	1	0	0	1	0	2	2	4	1	0	0	1	7
Total Volume	2	2	0	4	1	0	0	1	0	6	8	14	1	0	0	1	20
% App. Total	50	50	0		100	0	0		0	42.9	57.1		100	0	0		
PHF	.500	.250	.000	.500	.250	.000	.000	.250	.000	.750	1.00	.875	.250	.000	.000	.250	.714

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

File Name : 2\_MRV\_Redlands\_60 WB\_AM  
 Site Code : 22519381  
 Start Date : 5/23/2019  
 Page No : 2



Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1  
 Peak Hour for Each Approach Begins at:

	07:00 AM				07:00 AM				07:00 AM				07:00 AM			
+0 mins.	1	0	0	1	0	0	0	0	0	0	2	2	0	0	0	0
+15 mins.	0	2	0	2	0	0	0	0	0	2	2	4	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0	2	2	4	0	0	0	0
+45 mins.	1	0	0	1	1	0	0	1	0	2	2	4	1	0	0	1
Total Volume	2	2	0	4	1	0	0	1	0	6	8	14	1	0	0	1
% App. Total	50	50	0	100	100	0	0	100	0	42.9	57.1	100	100	0	0	100
PHF	.500	.250	.000	.500	.250	.000	.000	.250	.000	.750	1.000	.875	.250	.000	.000	.250

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

File Name : 2\_MRV\_Redlands\_60 WB\_PM  
 Site Code : 22519381  
 Start Date : 5/23/2019  
 Page No : 1

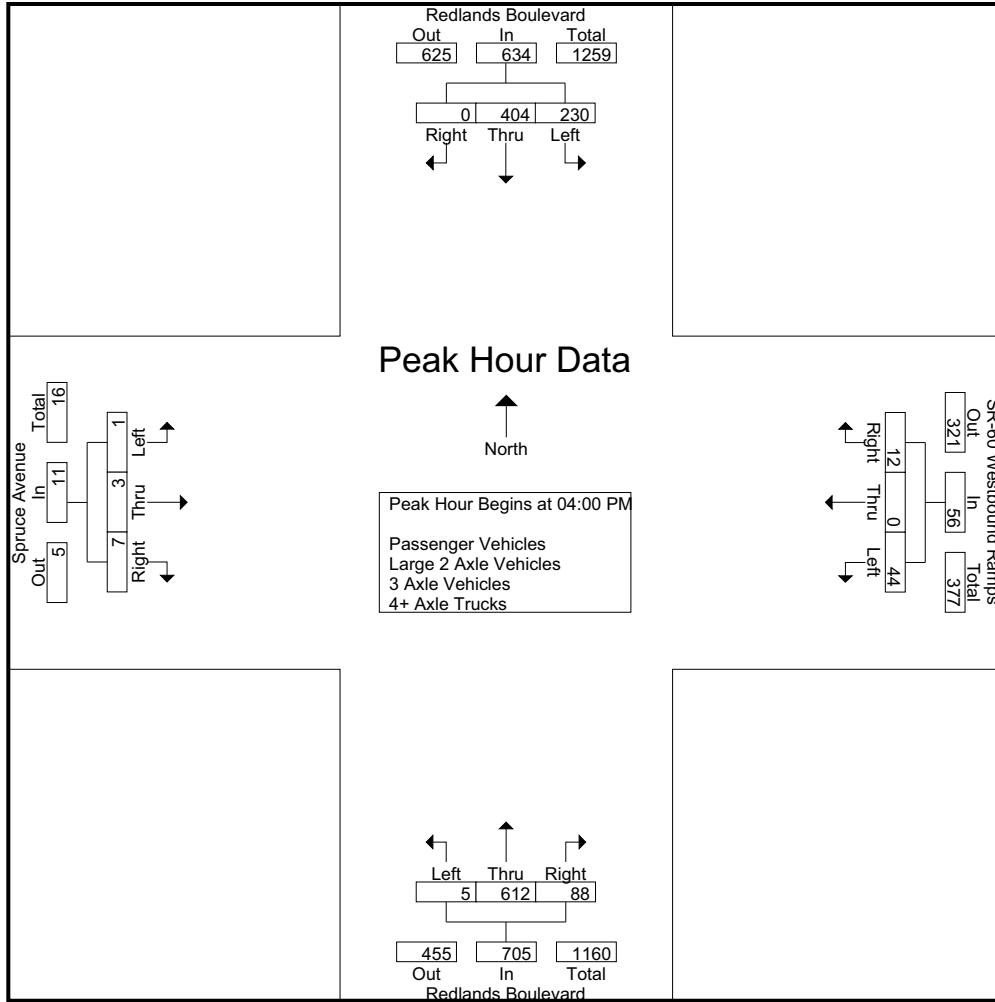
Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

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	60	115	0	175	11	0	3	14	4	132	22	158	1	2	2	5	352
04:15 PM	61	120	0	181	11	0	3	14	0	160	10	170	0	0	3	3	368
04:30 PM	57	89	0	146	13	0	2	15	0	160	37	197	0	0	0	0	358
04:45 PM	52	80	0	132	9	0	4	13	1	160	19	180	0	1	2	3	328
<b>Total</b>	<b>230</b>	<b>404</b>	<b>0</b>	<b>634</b>	<b>44</b>	<b>0</b>	<b>12</b>	<b>56</b>	<b>5</b>	<b>612</b>	<b>88</b>	<b>705</b>	<b>1</b>	<b>3</b>	<b>7</b>	<b>11</b>	<b>1406</b>
05:00 PM	63	107	0	170	7	0	4	11	1	146	18	165	0	0	0	0	346
05:15 PM	56	92	0	148	5	1	2	8	2	163	24	189	0	1	3	4	349
05:30 PM	68	121	0	189	10	1	6	17	1	113	11	125	0	1	1	2	333
05:45 PM	71	108	3	182	7	0	1	8	2	124	18	144	0	1	3	4	338
<b>Total</b>	<b>258</b>	<b>428</b>	<b>3</b>	<b>689</b>	<b>29</b>	<b>2</b>	<b>13</b>	<b>44</b>	<b>6</b>	<b>546</b>	<b>71</b>	<b>623</b>	<b>0</b>	<b>3</b>	<b>7</b>	<b>10</b>	<b>1366</b>
<b>Grand Total</b>	<b>488</b>	<b>832</b>	<b>3</b>	<b>1323</b>	<b>73</b>	<b>2</b>	<b>25</b>	<b>100</b>	<b>11</b>	<b>1158</b>	<b>159</b>	<b>1328</b>	<b>1</b>	<b>6</b>	<b>14</b>	<b>21</b>	<b>2772</b>
Apprch %	36.9	62.9	0.2		73	2	25		0.8	87.2	12		4.8	28.6	66.7		
Total %	17.6	30	0.1	47.7	2.6	0.1	0.9	3.6	0.4	41.8	5.7	47.9	0	0.2	0.5	0.8	
Passenger Vehicles	485	827	3	1315	73	2	24	99	10	1141	152	1303	1	5	14	20	2737
% Passenger Vehicles	99.4	99.4	100	99.4	100	100	96	99	90.9	98.5	95.6	98.1	100	83.3	100	95.2	98.7
Large 2 Axle Vehicles	3	5	0	8	0	0	0	0	0	13	2	15	0	0	0	0	23
% Large 2 Axle Vehicles	0.6	0.6	0	0.6	0	0	0	0	0	1.1	1.3	1.1	0	0	0	0	0.8
3 Axle Vehicles	0	0	0	0	0	0	0	0	0	1	1	2	0	0	0	0	2
% 3 Axle Vehicles	0	0	0	0	0	0	0	0	0	0.1	0.6	0.2	0	0	0	0	0.1
4+ Axle Trucks	0	0	0	0	0	0	1	1	1	3	4	8	0	1	0	1	10
% 4+ Axle Trucks	0	0	0	0	0	0	4	1	9.1	0.3	2.5	0.6	0	16.7	0	4.8	0.4

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 04:00 PM																	
04:00 PM	60	115	0	175	11	0	3	14	4	132	22	158	1	2	2	5	352
04:15 PM	61	120	0	181	11	0	3	14	0	160	10	170	0	0	3	3	368
04:30 PM	57	89	0	146	13	0	2	15	0	160	37	197	0	0	0	0	358
04:45 PM	52	80	0	132	9	0	4	13	1	160	19	180	0	1	2	3	328
<b>Total Volume</b>	<b>230</b>	<b>404</b>	<b>0</b>	<b>634</b>	<b>44</b>	<b>0</b>	<b>12</b>	<b>56</b>	<b>5</b>	<b>612</b>	<b>88</b>	<b>705</b>	<b>1</b>	<b>3</b>	<b>7</b>	<b>11</b>	<b>1406</b>
<b>% App. Total</b>	<b>36.3</b>	<b>63.7</b>	<b>0</b>		<b>78.6</b>	<b>0</b>	<b>21.4</b>		<b>0.7</b>	<b>86.8</b>	<b>12.5</b>		<b>9.1</b>	<b>27.3</b>	<b>63.6</b>		
<b>PHF</b>	<b>.943</b>	<b>.842</b>	<b>.000</b>	<b>.876</b>	<b>.846</b>	<b>.000</b>	<b>.750</b>	<b>.933</b>	<b>.313</b>	<b>.956</b>	<b>.595</b>	<b>.895</b>	<b>.250</b>	<b>.375</b>	<b>.583</b>	<b>.550</b>	<b>.955</b>

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

File Name : 2\_MRV\_Redlands\_60 WB\_PM  
 Site Code : 22519381  
 Start Date : 5/23/2019  
 Page No : 2



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

	05:00 PM				04:00 PM				04:30 PM				04:00 PM			
+0 mins.	63	107	0	170	11	0	3	14	0	160	<b>37</b>	<b>197</b>	<b>1</b>	<b>2</b>	2	<b>5</b>
+15 mins.	56	92	0	148	11	0	3	14	1	160	19	180	0	0	<b>3</b>	3
+30 mins.	68	<b>121</b>	0	<b>189</b>	<b>13</b>	0	2	<b>15</b>	1	146	18	165	0	0	0	0
+45 mins.	<b>71</b>	108	<b>3</b>	182	9	0	<b>4</b>	13	<b>2</b>	<b>163</b>	24	189	0	1	2	3
Total Volume	258	428	3	689	44	0	12	56	4	629	98	731	1	3	7	11
% App. Total	37.4	62.1	0.4		78.6	0	21.4		0.5	86	13.4		9.1	27.3	63.6	
PHF	.908	.884	.250	.911	.846	.000	.750	.933	.500	.965	.662	.928	.250	.375	.583	.550



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

File Name : 2\_MRV\_Redlands\_60 WB\_PM  
 Site Code : 22519381  
 Start Date : 5/23/2019  
 Page No : 1

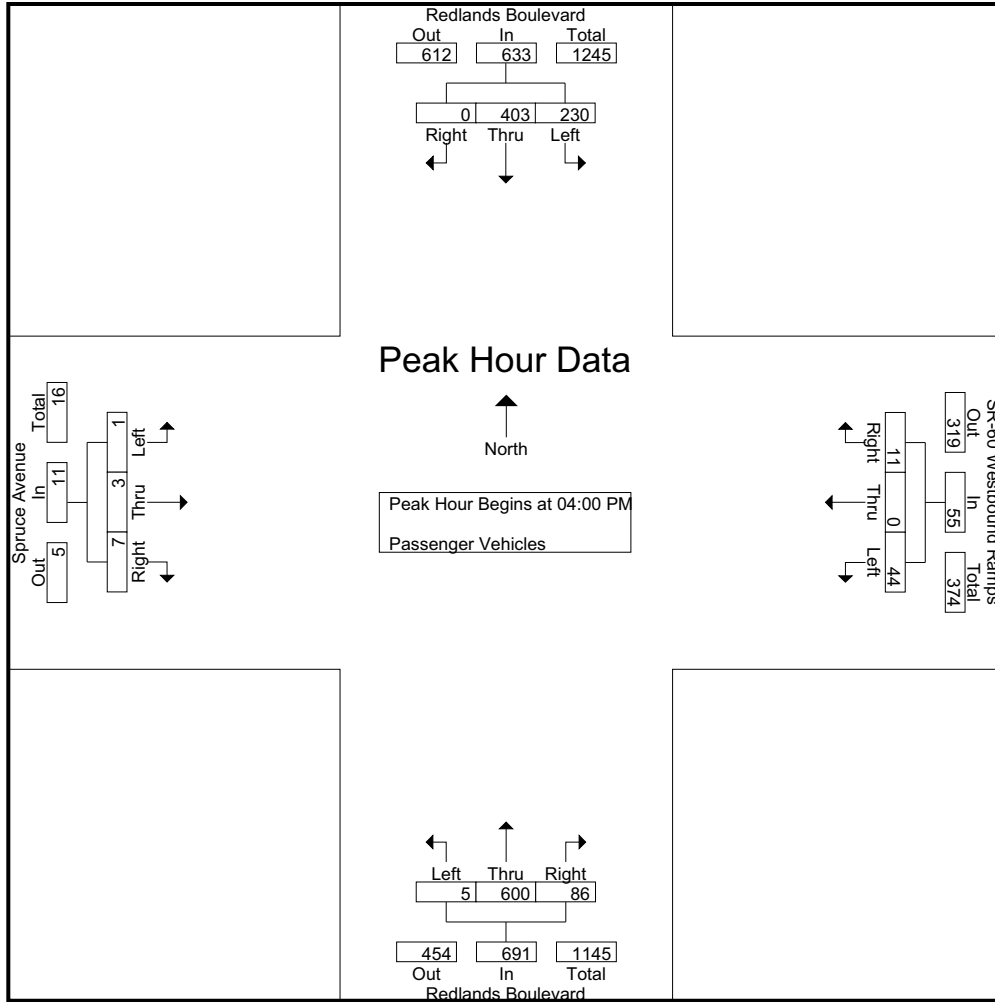
Groups Printed- Passenger Vehicles

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	60	115	0	175	11	0	3	14	4	132	22	158	1	2	2	5	352
04:15 PM	61	120	0	181	11	0	2	13	0	160	10	170	0	0	3	3	367
04:30 PM	57	88	0	145	13	0	2	15	0	150	36	186	0	0	0	0	346
04:45 PM	52	80	0	132	9	0	4	13	1	158	18	177	0	1	2	3	325
Total	230	403	0	633	44	0	11	55	5	600	86	691	1	3	7	11	1390
05:00 PM	61	107	0	168	7	0	4	11	1	146	16	163	0	0	0	0	342
05:15 PM	56	91	0	147	5	1	2	8	2	161	24	187	0	1	3	4	346
05:30 PM	68	120	0	188	10	1	6	17	0	113	10	123	0	0	1	1	329
05:45 PM	70	106	3	179	7	0	1	8	2	121	16	139	0	1	3	4	330
Total	255	424	3	682	29	2	13	44	5	541	66	612	0	2	7	9	1347
Grand Total	485	827	3	1315	73	2	24	99	10	1141	152	1303	1	5	14	20	2737
Apprch %	36.9	62.9	0.2		73.7	2	24.2		0.8	87.6	11.7		5	25	70		
Total %	17.7	30.2	0.1	48	2.7	0.1	0.9	3.6	0.4	41.7	5.6	47.6	0	0.2	0.5	0.7	

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 04:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	60	115	0	175	11	0	3	14	<b>4</b>	132	22	158	<b>1</b>	<b>2</b>	2	<b>5</b>	352
04:15 PM	<b>61</b>	<b>120</b>	0	<b>181</b>	11	0	2	13	0	<b>160</b>	10	170	0	0	<b>3</b>	3	<b>367</b>
04:30 PM	57	88	0	145	<b>13</b>	0	2	<b>15</b>	0	150	<b>36</b>	<b>186</b>	0	0	0	0	346
04:45 PM	52	80	0	132	9	0	<b>4</b>	13	1	158	18	177	0	1	2	3	325
Total Volume	230	403	0	633	44	0	11	55	5	600	86	691	1	3	7	11	1390
% App. Total	36.3	63.7	0		80	0	20		0.7	86.8	12.4		9.1	27.3	63.6		
PHF	.943	.840	.000	.874	.846	.000	.688	.917	.313	.938	.597	.929	.250	.375	.583	.550	.947

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

File Name : 2\_MRV\_Redlands\_60 WB\_PM  
 Site Code : 22519381  
 Start Date : 5/23/2019  
 Page No : 2



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

	04:00 PM				04:00 PM				04:00 PM				04:00 PM			
+0 mins.	60	115	0	175	11	0	3	14	4	132	22	158	1	2	2	5
+15 mins.	61	120	0	181	11	0	2	13	0	160	10	170	0	0	3	3
+30 mins.	57	88	0	145	13	0	2	15	0	150	36	186	0	0	0	0
+45 mins.	52	80	0	132	9	0	4	13	1	158	18	177	0	1	2	3
Total Volume	230	403	0	633	44	0	11	55	5	600	86	691	1	3	7	11
% App. Total	36.3	63.7	0		80	0	20		0.7	86.8	12.4		9.1	27.3	63.6	
PHF	.943	.840	.000	.874	.846	.000	.688	.917	.313	.938	.597	.929	.250	.375	.583	.550

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

File Name : 2\_MRV\_Redlands\_60 WB\_PM  
 Site Code : 22519381  
 Start Date : 5/23/2019  
 Page No : 1

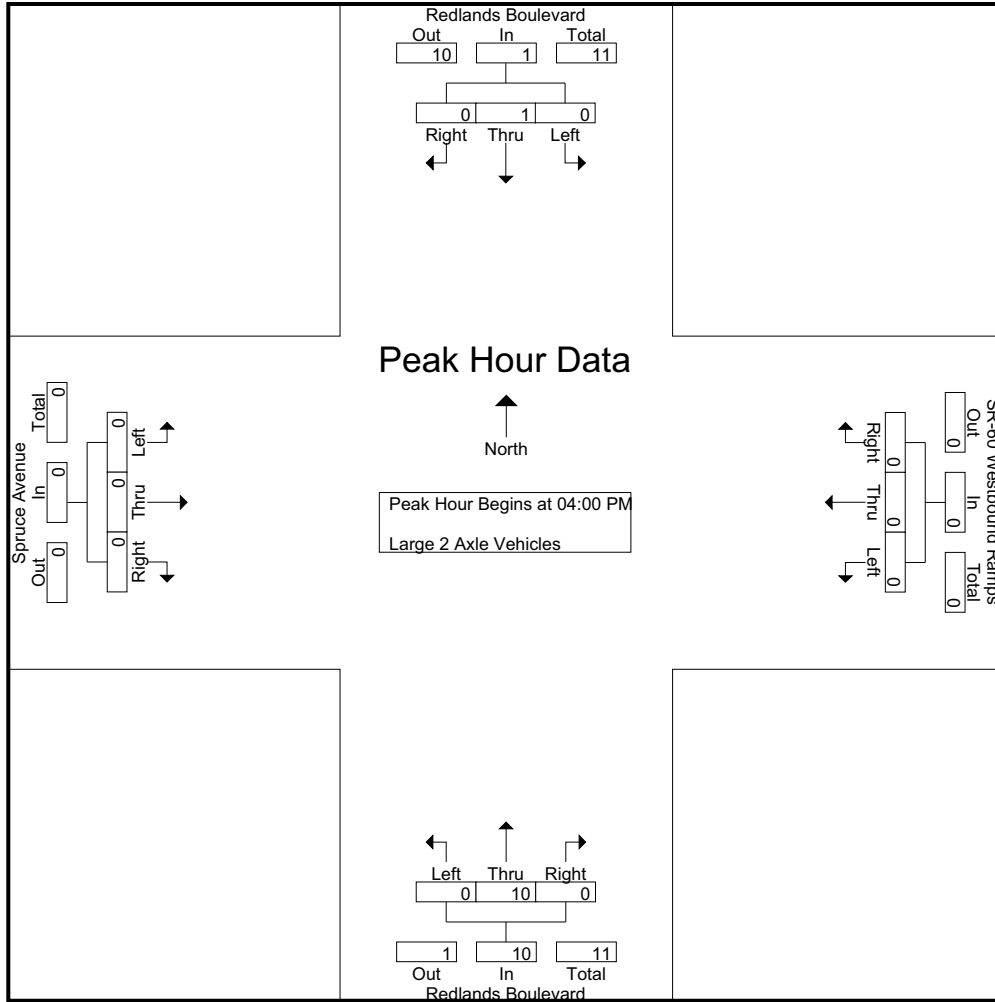
Groups Printed- Large 2 Axle Vehicles

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	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	0
04:30 PM	0	1	0	1	0	0	0	0	0	9	0	9	0	0	0	0	0	10
04:45 PM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	1
Total	0	1	0	1	0	0	0	0	0	10	0	10	0	0	0	0	0	11
05:00 PM	2	0	0	2	0	0	0	0	0	0	1	1	0	0	0	0	0	3
05:15 PM	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	2
05:30 PM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
05:45 PM	1	2	0	3	0	0	0	0	0	2	1	3	0	0	0	0	0	6
Total	3	4	0	7	0	0	0	0	0	3	2	5	0	0	0	0	0	12
Grand Total	3	5	0	8	0	0	0	0	0	13	2	15	0	0	0	0	0	23
Apprch %	37.5	62.5	0		0	0	0		0	86.7	13.3		0	0	0			
Total %	13	21.7	0	34.8	0	0	0	0	0	56.5	8.7	65.2	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 04:00 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	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	0
04:30 PM	0	1	0	1	0	0	0	0	0	9	0	9	0	0	0	0	0	10
04:45 PM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	1
Total Volume	0	1	0	1	0	0	0	0	0	10	0	10	0	0	0	0	0	11
% App. Total	0	100	0		0	0	0		0	100	0		0	0	0			
PHF	.000	.250	.000	.250	.000	.000	.000	.000	.000	.278	.000	.278	.000	.000	.000	.000	.000	.275

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

File Name : 2\_MRV\_Redlands\_60 WB\_PM  
 Site Code : 22519381  
 Start Date : 5/23/2019  
 Page No : 2



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

	04:00 PM				04:00 PM				04:00 PM				04:00 PM			
+0 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+30 mins.	0	1	0	1	0	0	0	0	0	9	0	9	0	0	0	0
+45 mins.	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0
Total Volume	0	1	0	1	0	0	0	0	0	10	0	10	0	0	0	0
% App. Total	0	100	0	0	0	0	0	0	0	100	0	0	0	0	0	0
PHF	.000	.250	.000	.250	.000	.000	.000	.000	.000	.278	.000	.278	.000	.000	.000	.000

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

File Name : 2\_MRV\_Redlands\_60 WB\_PM  
 Site Code : 22519381  
 Start Date : 5/23/2019  
 Page No : 1

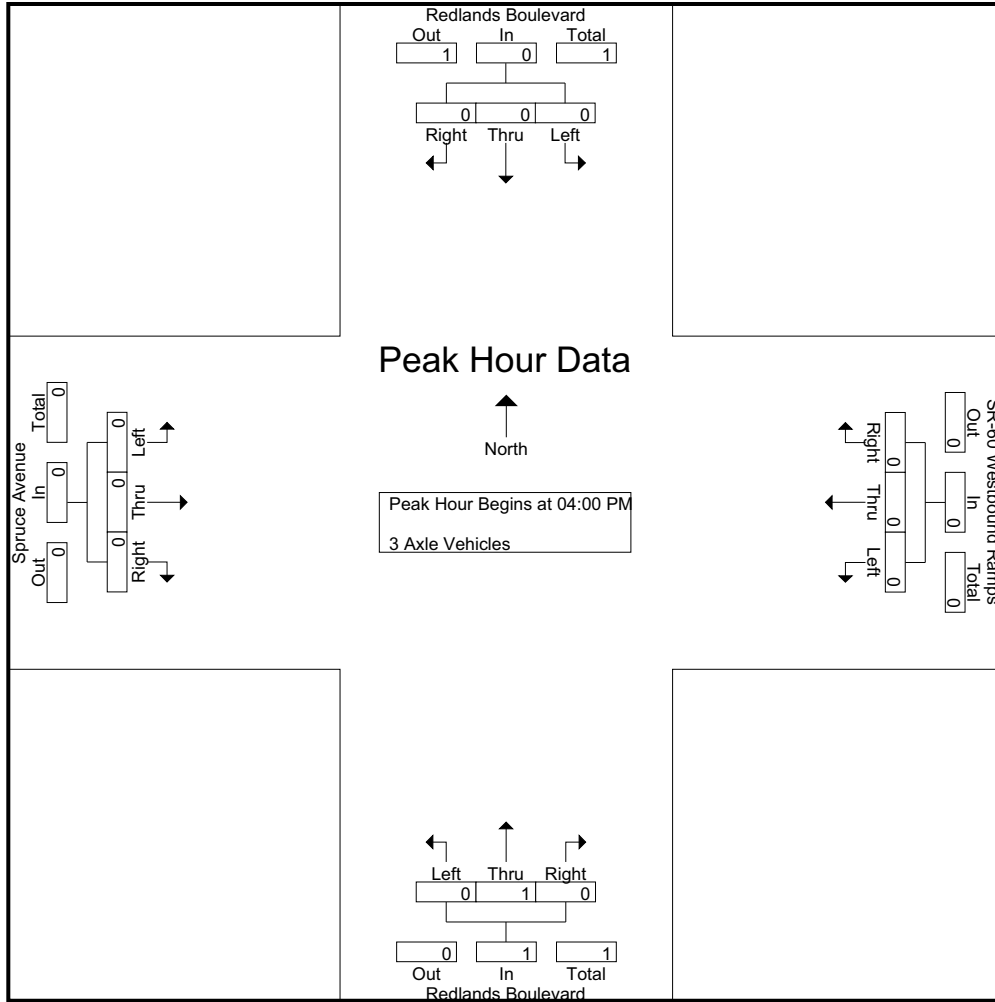
Groups Printed- 3 Axle Vehicles

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	1	0	1	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	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
05:00 PM	0	0	0	0	0	0	0	0	0	0	1	1	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	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	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 04:00 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	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	1	0	1	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 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: SR-60 Westbound Ramps  
 Weather: Clear

File Name : 2\_MRV\_Redlands\_60 WB\_PM  
 Site Code : 22519381  
 Start Date : 5/23/2019  
 Page No : 2



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

	04:00 PM				04:00 PM				04:00 PM				04:00 PM			
+0 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0
+45 mins.	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
% App. Total	0	0	0	0	0	0	0	0	0	100	0	0	0	0	0	0
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.250	.000	.250	.000	.000	.000	.000

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

File Name : 2\_MRV\_Redlands\_60 WB\_PM  
 Site Code : 22519381  
 Start Date : 5/23/2019  
 Page No : 1

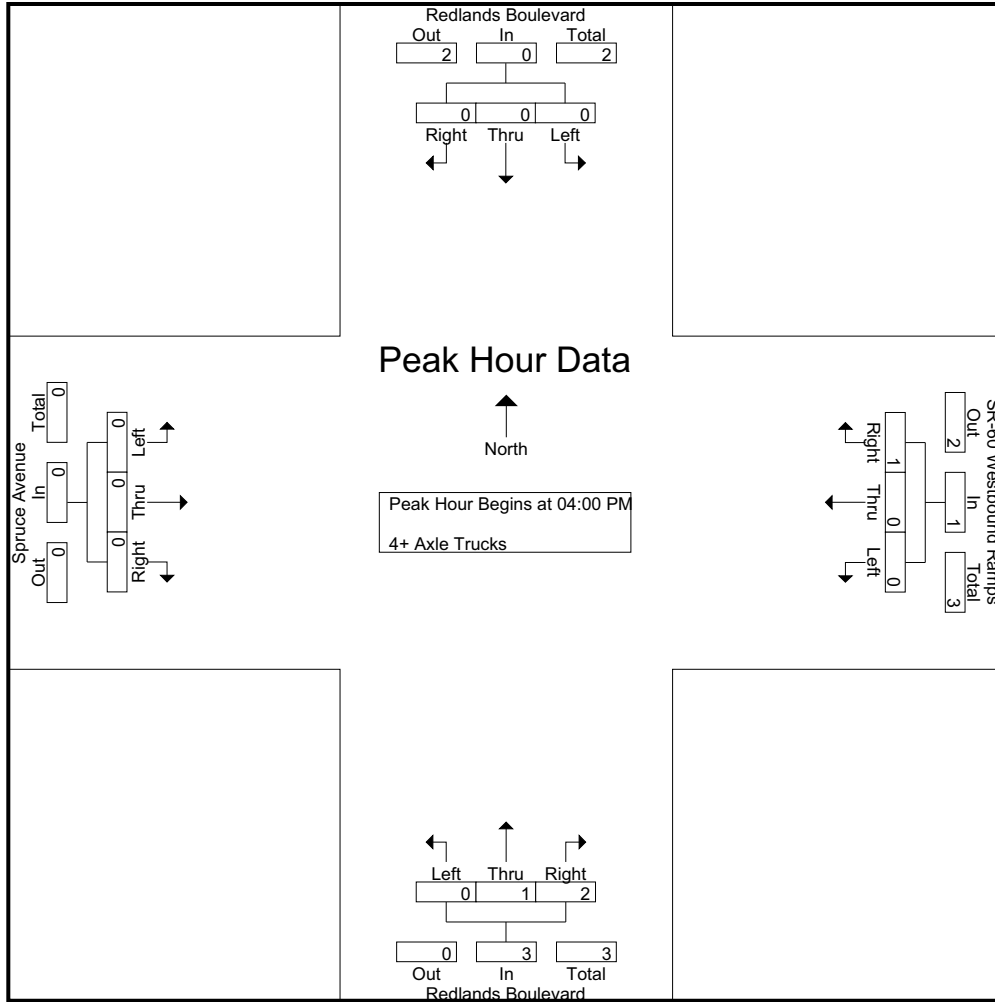
Groups Printed- 4+ Axle Trucks

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	1	1	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	1	1	2	0	0	0	0	0
Total	0	0	0	0	0	0	1	1	0	1	2	3	0	0	0	0	4
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	1	0	1	2	0	1	0	1	3
05:45 PM	0	0	0	0	0	0	0	0	0	1	1	2	0	0	0	0	2
Total	0	0	0	0	0	0	0	0	1	2	2	5	0	1	0	1	6
Grand Total	0	0	0	0	0	0	1	1	1	3	4	8	0	1	0	1	10
Apprch %	0	0	0		0	0	100		12.5	37.5	50		0	100	0		
Total %	0	0	0		0	0	10	10	10	30	40	80	0	10	0	10	

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 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	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	1
04:30 PM	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1
04:45 PM	0	0	0	0	0	0	0	0	0	1	1	2	0	0	0	0	2
Total Volume	0	0	0	0	0	0	1	1	0	1	2	3	0	0	0	0	4
% App. Total	0	0	0		0	0	100		0	33.3	66.7		0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.250	.250	.000	.250	.500	.375	.000	.000	.000	.000	.500

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

File Name : 2\_MRV\_Redlands\_60 WB\_PM  
 Site Code : 22519381  
 Start Date : 5/23/2019  
 Page No : 2



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

	04:00 PM				04:00 PM				04:00 PM				04:00 PM			
+0 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0
+45 mins.	0	0	0	0	0	0	0	0	0	1	1	2	0	0	0	0
Total Volume	0	0	0	0	0	0	1	1	0	1	2	3	0	0	0	0
% App. Total	0	0	0	0	0	0	100		0	33.3	66.7		0	0	0	0
PHF	.000	.000	.000	.000	.000	.000	.250	.250	.000	.250	.500	.375	.000	.000	.000	.000





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

File Name : 3\_MRV\_Redlands\_60\_EB\_AM  
 Site Code : 22519381  
 Start Date : 5/23/2019  
 Page No : 1

Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

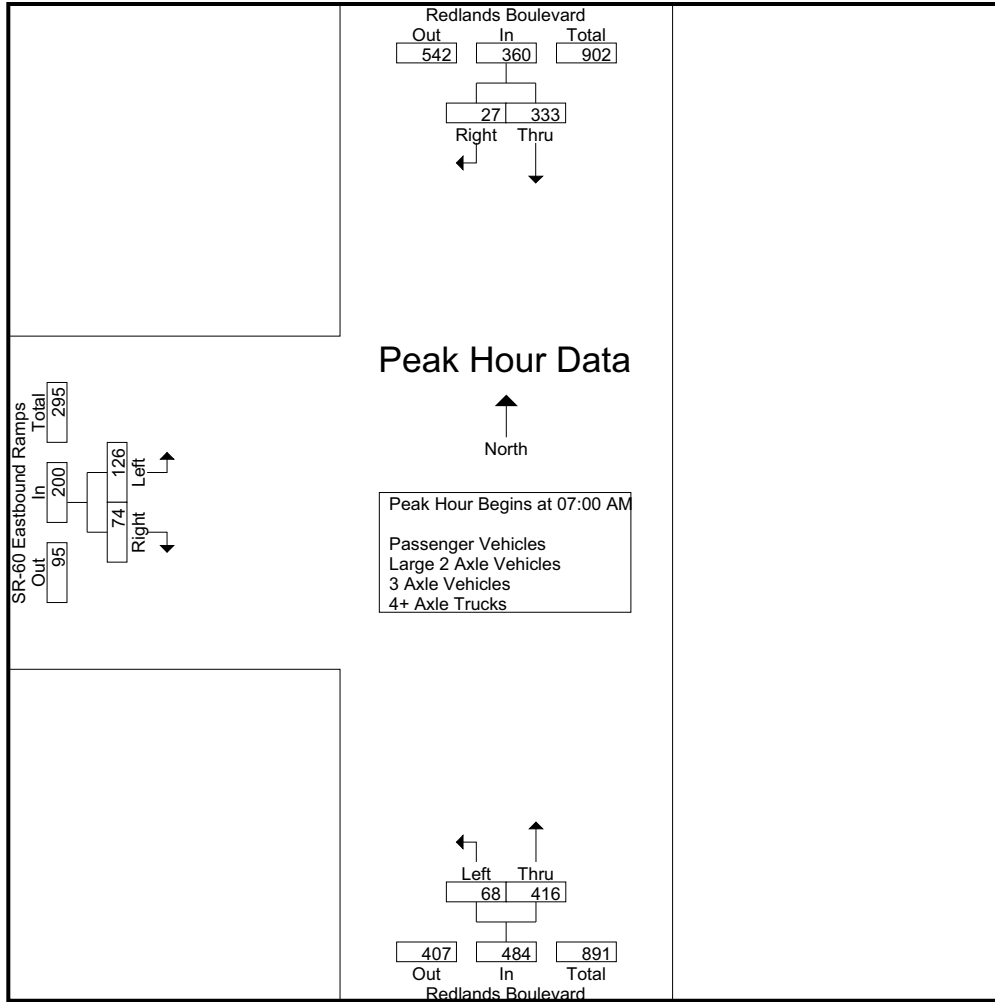
Start Time	Redlands Boulevard Southbound			Redlands Boulevard Northbound			SR-60 Eastbound Ramps Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
07:00 AM	78	1	79	18	111	129	25	16	41	249
07:15 AM	76	10	86	16	108	124	27	17	44	254
07:30 AM	94	9	103	18	92	110	31	14	45	258
07:45 AM	85	7	92	16	105	121	43	27	70	283
Total	333	27	360	68	416	484	126	74	200	1044
08:00 AM	54	6	60	13	83	96	34	11	45	201
08:15 AM	54	6	60	13	73	86	56	17	73	219
08:30 AM	52	4	56	12	83	95	38	22	60	211
08:45 AM	52	5	57	8	100	108	44	15	59	224
Total	212	21	233	46	339	385	172	65	237	855
Grand Total	545	48	593	114	755	869	298	139	437	1899
Apprch %	91.9	8.1		13.1	86.9		68.2	31.8		
Total %	28.7	2.5	31.2	6	39.8	45.8	15.7	7.3	23	
Passenger Vehicles	540	44	584	113	734	847	290	126	416	1847
% Passenger Vehicles	99.1	91.7	98.5	99.1	97.2	97.5	97.3	90.6	95.2	97.3
Large 2 Axle Vehicles	2	2	4	1	1	2	1	1	2	8
% Large 2 Axle Vehicles										
3 Axle Vehicles	2	1	3	0	6	6	0	2	2	11
% 3 Axle Vehicles	0.4	2.1	0.5	0	0.8	0.7	0	1.4	0.5	0.6
4+ Axle Trucks	1	1	2	0	14	14	7	10	17	33
% 4+ Axle Trucks	0.2	2.1	0.3	0	1.9	1.6	2.3	7.2	3.9	1.7

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	78	1	79	<b>18</b>	<b>111</b>	<b>129</b>	25	16	41	249
07:15 AM	76	<b>10</b>	86	16	108	124	27	17	44	254
07:30 AM	<b>94</b>	9	<b>103</b>	18	92	110	31	14	45	258
07:45 AM	85	7	92	16	105	121	<b>43</b>	<b>27</b>	<b>70</b>	<b>283</b>
Total Volume	333	27	360	68	416	484	126	74	200	1044
% App. Total	92.5	7.5		14	86		63	37		
PHF	.886	.675	.874	.944	.937	.938	.733	.685	.714	.922

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

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

File Name : 3\_MR\_V\_Redlands\_60 EB\_AM  
 Site Code : 22519381  
 Start Date : 5/23/2019  
 Page No : 2



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1  
 Peak Hour for Each Approach Begins at:

	07:00 AM			07:00 AM			07:45 AM		
+0 mins.	78	1	79	<b>18</b>	<b>111</b>	<b>129</b>	43	<b>27</b>	70
+15 mins.	76	<b>10</b>	86	16	108	124	34	11	45
+30 mins.	<b>94</b>	9	<b>103</b>	18	92	110	<b>56</b>	17	<b>73</b>
+45 mins.	85	7	92	16	105	121	38	22	60
Total Volume	333	27	360	68	416	484	171	77	248
% App. Total	92.5	7.5		14	86		69	31	
PHF	.886	.675	.874	.944	.937	.938	.763	.713	.849

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

File Name : 3\_MR\_V\_Redlands\_60\_EB\_AM  
 Site Code : 22519381  
 Start Date : 5/23/2019  
 Page No : 1

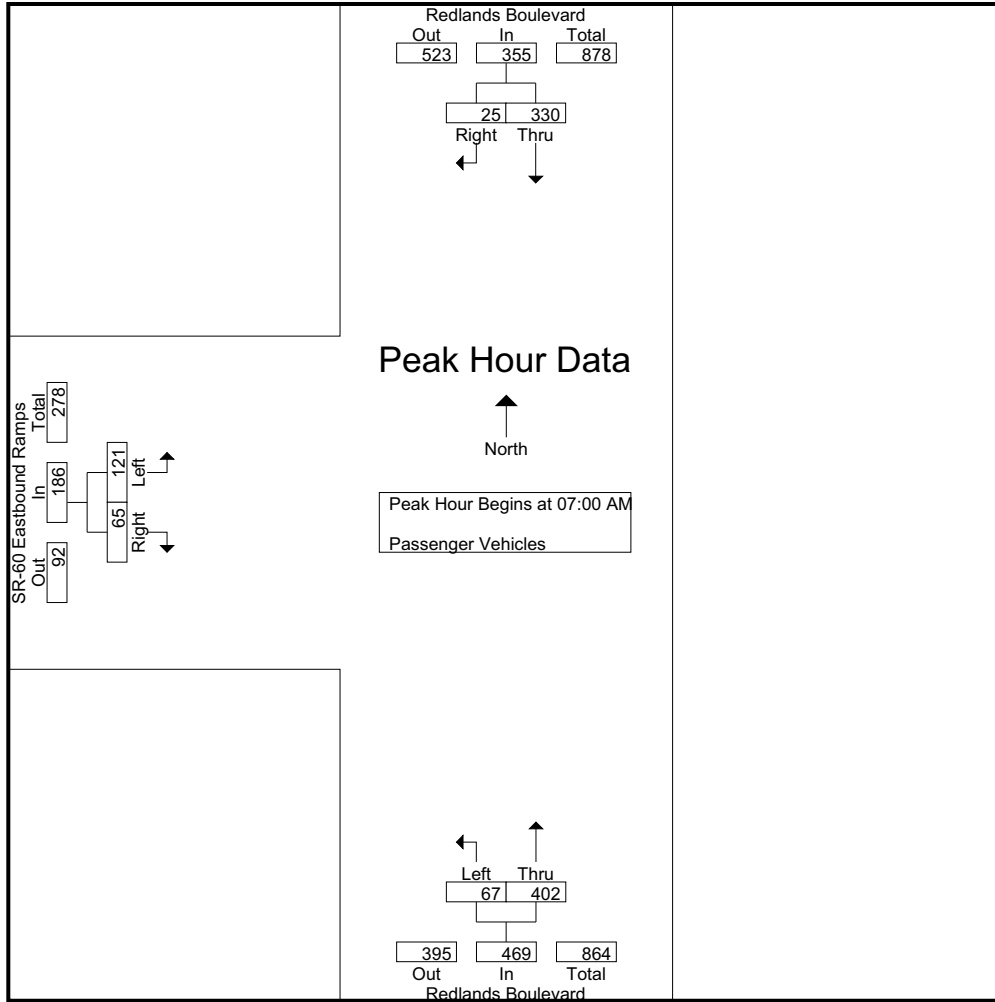
Groups Printed- Passenger Vehicles

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	77	1	78	18	108	126	25	14	39	243
07:15 AM	76	8	84	16	103	119	26	14	40	243
07:30 AM	94	9	103	18	89	107	30	12	42	252
07:45 AM	83	7	90	15	102	117	40	25	65	272
Total	330	25	355	67	402	469	121	65	186	1010
08:00 AM	53	6	59	13	81	94	34	11	45	198
08:15 AM	53	5	58	13	71	84	55	15	70	212
08:30 AM	52	4	56	12	82	94	36	20	56	206
08:45 AM	52	4	56	8	98	106	44	15	59	221
Total	210	19	229	46	332	378	169	61	230	837
Grand Total	540	44	584	113	734	847	290	126	416	1847
Apprch %	92.5	7.5		13.3	86.7		69.7	30.3		
Total %	29.2	2.4	31.6	6.1	39.7	45.9	15.7	6.8	22.5	

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	77	1	78	18	108	126	25	14	39	243
07:15 AM	76	8	84	16	103	119	26	14	40	243
07:30 AM	94	9	103	18	89	107	30	12	42	252
07:45 AM	83	7	90	15	102	117	40	25	65	272
Total Volume	330	25	355	67	402	469	121	65	186	1010
% App. Total	93	7		14.3	85.7		65.1	34.9		
PHF	.878	.694	.862	.931	.931	.931	.756	.650	.715	.928

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

File Name : 3\_MRV\_Redlands\_60 EB\_AM  
 Site Code : 22519381  
 Start Date : 5/23/2019  
 Page No : 2



Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1  
 Peak Hour for Each Approach Begins at:

	07:00 AM			07:00 AM			07:00 AM		
+0 mins.	77	1	78	<b>18</b>	<b>108</b>	<b>126</b>	25	14	39
+15 mins.	76	8	84	16	103	119	26	14	40
+30 mins.	<b>94</b>	<b>9</b>	<b>103</b>	18	89	107	30	12	42
+45 mins.	83	7	90	15	102	117	<b>40</b>	<b>25</b>	<b>65</b>
Total Volume	330	25	355	67	402	469	121	65	186
% App. Total	93	7		14.3	85.7		65.1	34.9	
PHF	.878	.694	.862	.931	.931	.931	.756	.650	.715

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

File Name : 3\_MR\_V\_Redlands\_60 EB\_AM  
 Site Code : 22519381  
 Start Date : 5/23/2019  
 Page No : 1

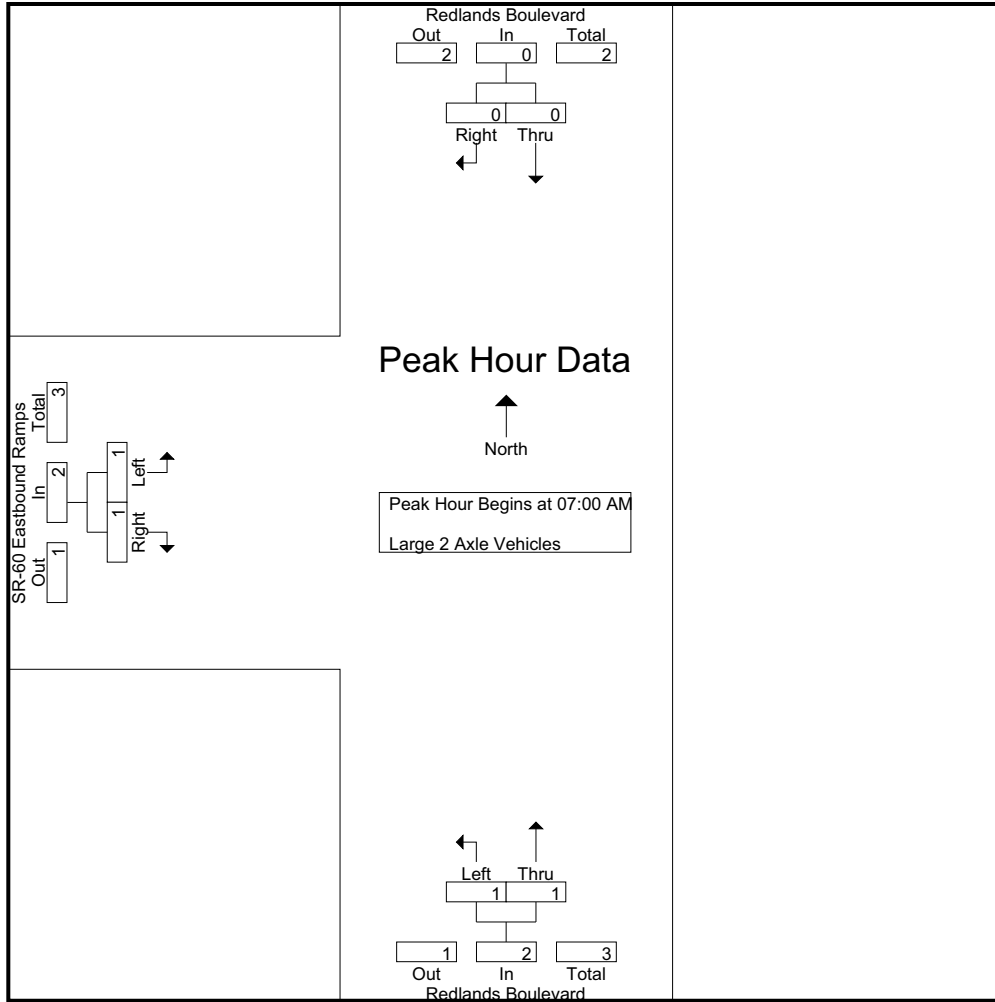
Groups Printed- Large 2 Axle Vehicles

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	0	0	0	0	1	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	1	0	1	1	1	2	3
Total	0	0	0	1	1	2	1	1	2	4
08:00 AM	1	0	1	0	0	0	0	0	0	1
08:15 AM	1	1	2	0	0	0	0	0	0	2
08:30 AM	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	1	1	0	0	0	0	0	0	1
Total	2	2	4	0	0	0	0	0	0	4
Grand Total	2	2	4	1	1	2	1	1	2	8
Apprch %	50	50		50	50		50	50		
Total %	25	25	50	12.5	12.5	25	12.5	12.5	25	

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	1	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	1	0	1	1	1	2	3
Total Volume	0	0	0	1	1	2	1	1	2	4
% App. Total	0	0		50	50		50	50		
PHF	.000	.000	.000	.250	.250	.500	.250	.250	.250	.333

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

File Name : 3\_MR\_V\_Redlands\_60 EB\_AM  
 Site Code : 22519381  
 Start Date : 5/23/2019  
 Page No : 2



Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1  
 Peak Hour for Each Approach Begins at:

	07:00 AM			07:00 AM			07:00 AM		
+0 mins.	0	0	0	0	1	1	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	1	0	1	1	1	2
Total Volume	0	0	0	1	1	2	1	1	2
% App. Total	0	0	0	50	50		50	50	
PHF	.000	.000	.000	.250	.250	.500	.250	.250	.250

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

File Name : 3\_MR\_V\_Redlands\_60\_EB\_AM  
 Site Code : 22519381  
 Start Date : 5/23/2019  
 Page No : 1

Groups Printed- 3 Axle Vehicles

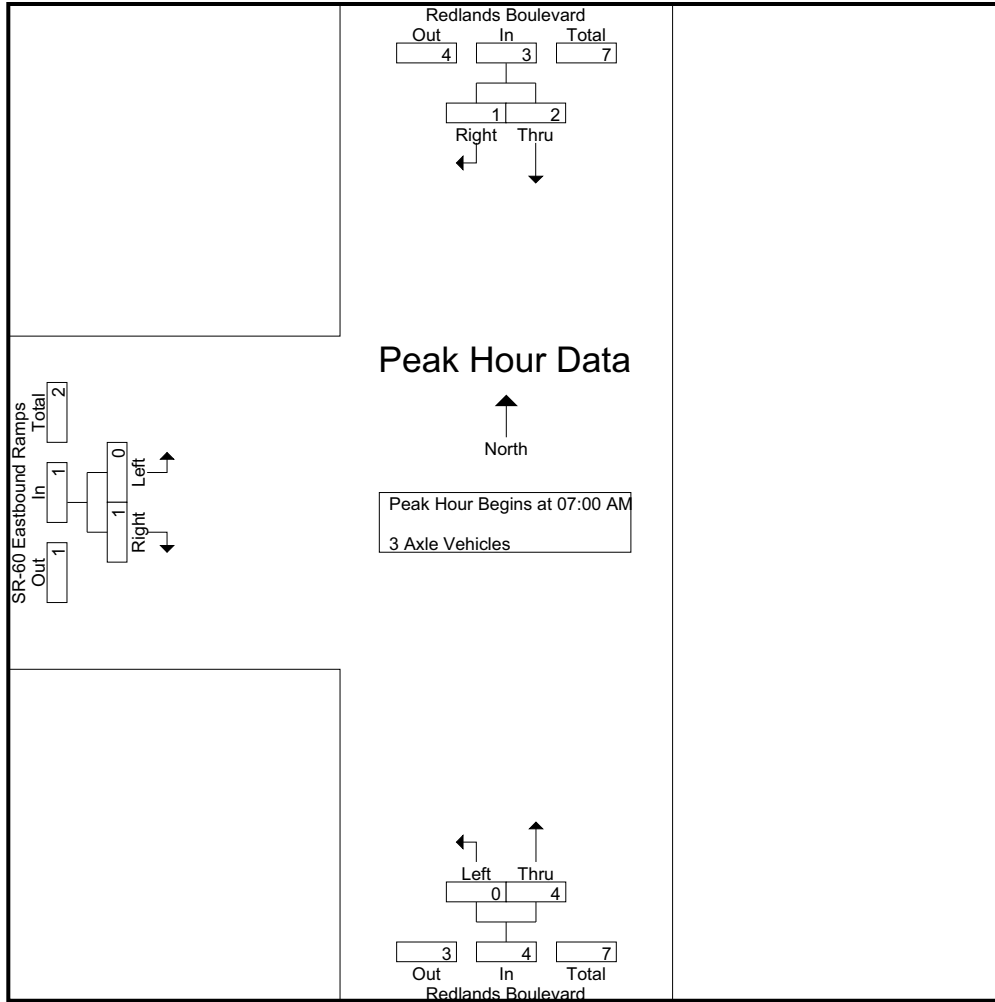
Start Time	Redlands Boulevard Southbound			Redlands Boulevard Northbound			SR-60 Eastbound Ramps Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
07:00 AM	1	0	1	0	0	0	0	0	0	1
07:15 AM	0	1	1	0	2	2	0	1	1	4
07:30 AM	0	0	0	0	1	1	0	0	0	1
07:45 AM	1	0	1	0	1	1	0	0	0	2
Total	2	1	3	0	4	4	0	1	1	8
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	1	1	0	1	1	2
08:45 AM	0	0	0	0	1	1	0	0	0	1
Total	0	0	0	0	2	2	0	1	1	3
Grand Total	2	1	3	0	6	6	0	2	2	11
Apprch %	66.7	33.3		0	100		0	100		
Total %	18.2	9.1	27.3	0	54.5	54.5	0	18.2	18.2	

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	1	1	0	2	2	0	1	1	4
07:30 AM	0	0	0	0	1	1	0	0	0	1
07:45 AM	1	0	1	0	1	1	0	0	0	2
Total Volume	2	1	3	0	4	4	0	1	1	8
% App. Total	66.7	33.3		0	100		0	100		
PHF	.500	.250	.750	.000	.500	.500	.000	.250	.250	.500



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

File Name : 3\_MRV\_Redlands\_60 EB\_AM  
 Site Code : 22519381  
 Start Date : 5/23/2019  
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Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1  
 Peak Hour for Each Approach Begins at:

	07:00 AM			07:00 AM			07:00 AM		
+0 mins.	1	0	1	0	0	0	0	0	0
+15 mins.	0	1	1	0	2	2	0	1	1
+30 mins.	0	0	0	0	1	1	0	0	0
+45 mins.	1	0	1	0	1	1	0	0	0
Total Volume	2	1	3	0	4	4	0	1	1
% App. Total	66.7	33.3		0	100		0	100	
PHF	.500	.250	.750	.000	.500	.500	.000	.250	.250

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

File Name : 3\_MRV\_Redlands\_60 EB\_AM  
 Site Code : 22519381  
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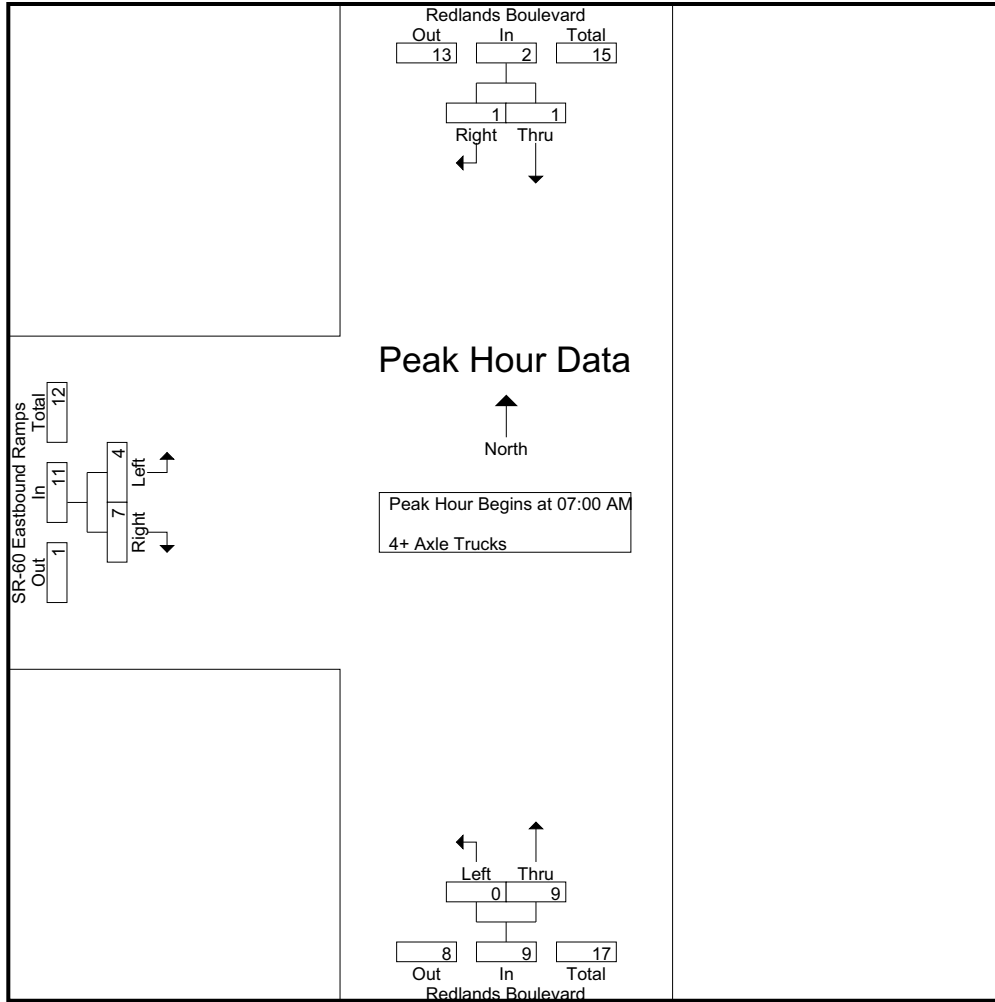
Groups Printed- 4+ Axle Trucks

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	
07:00 AM	0	0	0	0	2	2	0	2	2	4
07:15 AM	0	1	1	0	3	3	1	2	3	7
07:30 AM	0	0	0	0	2	2	1	2	3	5
07:45 AM	1	0	1	0	2	2	2	1	3	6
Total	1	1	2	0	9	9	4	7	11	22
08:00 AM	0	0	0	0	2	2	0	0	0	2
08:15 AM	0	0	0	0	2	2	1	2	3	5
08:30 AM	0	0	0	0	0	0	2	1	3	3
08:45 AM	0	0	0	0	1	1	0	0	0	1
Total	0	0	0	0	5	5	3	3	6	11
Grand Total	1	1	2	0	14	14	7	10	17	33
Apprch %	50	50		0	100		41.2	58.8		
Total %	3	3	6.1	0	42.4	42.4	21.2	30.3	51.5	

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	2	2	0	2	2	4
07:15 AM	0	1	1	0	3	3	1	2	3	7
07:30 AM	0	0	0	0	2	2	1	2	3	5
07:45 AM	1	0	1	0	2	2	2	1	3	6
Total Volume	1	1	2	0	9	9	4	7	11	22
% App. Total	50	50		0	100		36.4	63.6		
PHF	.250	.250	.500	.000	.750	.750	.500	.875	.917	.786

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

File Name : 3\_MRV\_Redlands\_60 EB\_AM  
 Site Code : 22519381  
 Start Date : 5/23/2019  
 Page No : 2



Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1  
 Peak Hour for Each Approach Begins at:

	07:00 AM			07:00 AM			07:00 AM		
+0 mins.	0	0	0	0	2	2	0	2	2
+15 mins.	0	1	1	0	3	3	1	2	3
+30 mins.	0	0	0	0	2	2	1	2	3
+45 mins.	1	0	1	0	2	2	2	1	3
Total Volume	1	1	2	0	9	9	4	7	11
% App. Total	50	50		0	100		36.4	63.6	
PHF	.250	.250	.500	.000	.750	.750	.500	.875	.917

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

File Name : 3\_MRV\_Redlands\_60\_EB\_PM  
 Site Code : 22519381  
 Start Date : 5/23/2019  
 Page No : 1

Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

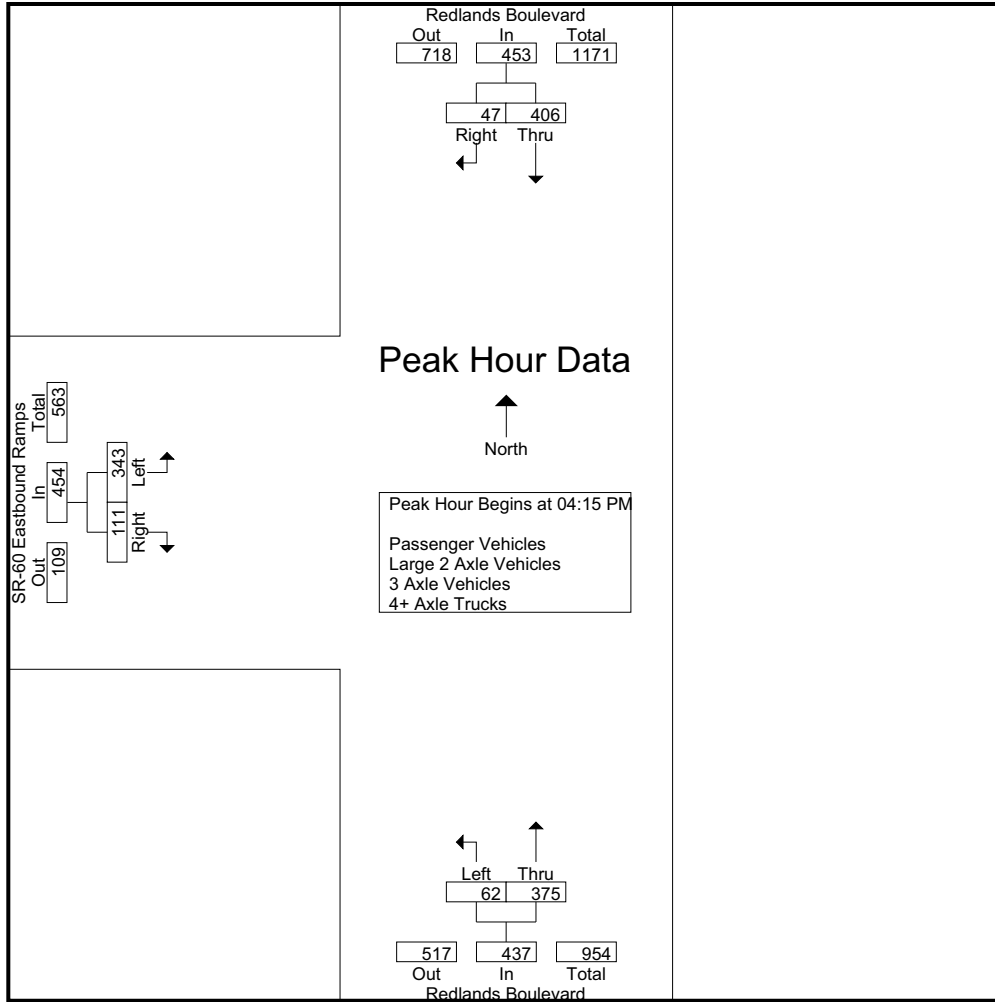
Start Time	Redlands Boulevard Southbound			Redlands Boulevard Northbound			SR-60 Eastbound Ramps Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
04:00 PM	108	13	121	12	84	96	71	28	99	316
04:15 PM	123	15	138	24	101	125	71	37	108	371
04:30 PM	101	11	112	15	103	118	93	21	114	344
04:45 PM	73	10	83	15	92	107	89	27	116	306
Total	405	49	454	66	380	446	324	113	437	1337
05:00 PM	109	11	120	8	79	87	90	26	116	323
05:15 PM	102	6	108	12	79	91	112	26	138	337
05:30 PM	136	6	142	14	70	84	67	36	103	329
05:45 PM	99	8	107	15	73	88	69	27	96	291
Total	446	31	477	49	301	350	338	115	453	1280
Grand Total	851	80	931	115	681	796	662	228	890	2617
Apprch %	91.4	8.6		14.4	85.6		74.4	25.6		
Total %	32.5	3.1	35.6	4.4	26	30.4	25.3	8.7	34	
Passenger Vehicles	846	78	924	112	667	779	654	220	874	2577
% Passenger Vehicles	99.4	97.5	99.2	97.4	97.9	97.9	98.8	96.5	98.2	98.5
Large 2 Axle Vehicles	5	0	5	1	8	9	3	4	7	21
% Large 2 Axle Vehicles										
3 Axle Vehicles	0	0	0	0	1	1	0	2	2	3
% 3 Axle Vehicles	0	0	0	0	0.1	0.1	0	0.9	0.2	0.1
4+ Axle Trucks	0	2	2	2	5	7	5	2	7	16
% 4+ Axle Trucks	0	2.5	0.2	1.7	0.7	0.9	0.8	0.9	0.8	0.6

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	
04:15 PM	<b>123</b>	<b>15</b>	<b>138</b>	<b>24</b>	101	<b>125</b>	71	<b>37</b>	108	<b>371</b>
04:30 PM	101	11	112	15	<b>103</b>	118	<b>93</b>	21	114	344
04:45 PM	73	10	83	15	92	107	89	27	<b>116</b>	306
05:00 PM	109	11	120	8	79	87	90	26	116	323
Total Volume	406	47	453	62	375	437	343	111	454	1344
% App. Total	89.6	10.4		14.2	85.8		75.6	24.4		
PHF	.825	.783	.821	.646	.910	.874	.922	.750	.978	.906

Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1  
 Peak Hour for Entire Intersection Begins at 04:15 PM

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

File Name : 3\_MRV\_Redlands\_60 EB\_PM  
 Site Code : 22519381  
 Start Date : 5/23/2019  
 Page No : 2



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

	05:00 PM			04:00 PM			04:30 PM		
+0 mins.	109	11	120	12	84	96	93	21	114
+15 mins.	102	6	108	24	101	125	89	27	116
+30 mins.	136	6	142	15	103	118	90	26	116
+45 mins.	99	8	107	15	92	107	112	26	138
Total Volume	446	31	477	66	380	446	384	100	484
% App. Total	93.5	6.5		14.8	85.2		79.3	20.7	
PHF	.820	.705	.840	.688	.922	.892	.857	.926	.877

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

File Name : 3\_MRV\_Redlands\_60 EB\_PM  
 Site Code : 22519381  
 Start Date : 5/23/2019  
 Page No : 1

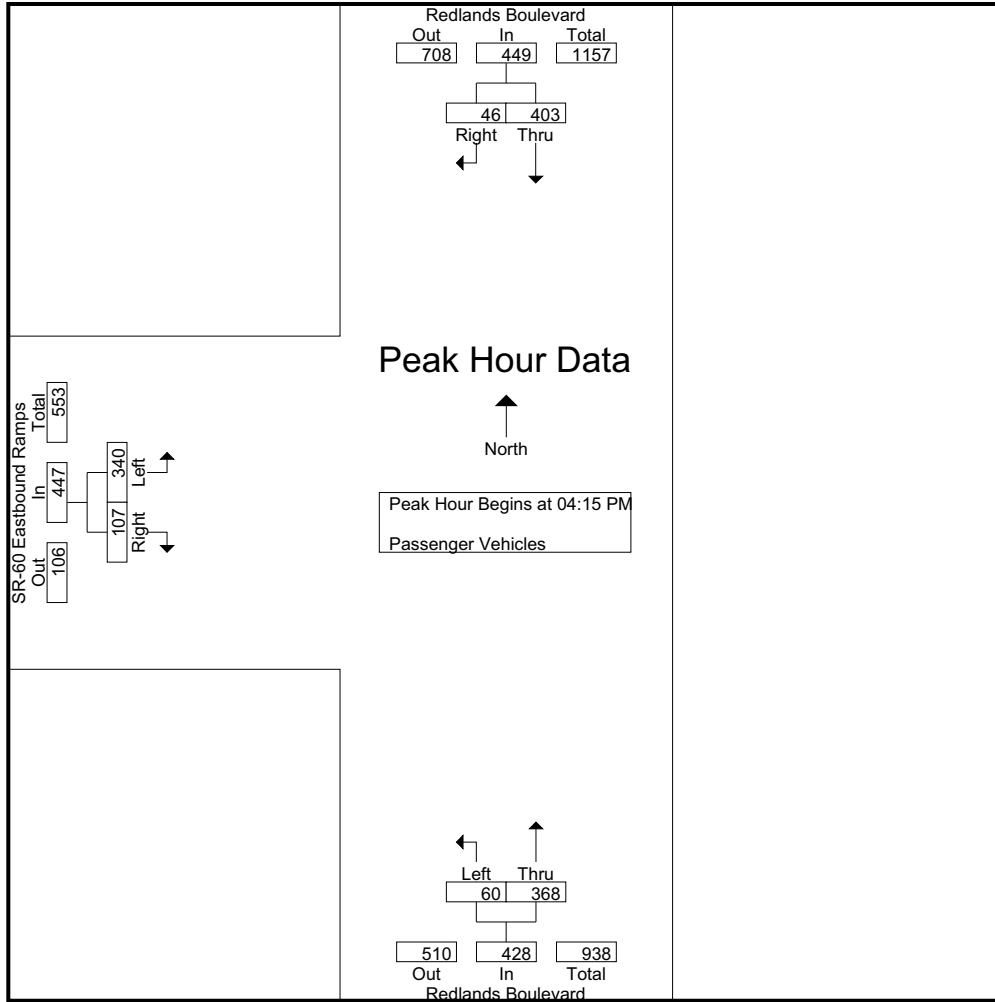
Groups Printed- Passenger Vehicles

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	106	12	118	12	81	93	70	27	97	308
04:15 PM	122	15	137	23	101	124	71	35	106	367
04:30 PM	100	10	110	15	99	114	91	20	111	335
04:45 PM	72	10	82	14	90	104	88	27	115	301
Total	400	47	447	64	371	435	320	109	429	1311
05:00 PM	109	11	120	8	78	86	90	25	115	321
05:15 PM	102	6	108	11	79	90	111	26	137	335
05:30 PM	136	6	142	14	69	83	66	35	101	326
05:45 PM	99	8	107	15	70	85	67	25	92	284
Total	446	31	477	48	296	344	334	111	445	1266
Grand Total	846	78	924	112	667	779	654	220	874	2577
Apprch %	91.6	8.4		14.4	85.6		74.8	25.2		
Total %	32.8	3	35.9	4.3	25.9	30.2	25.4	8.5	33.9	

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 04:15 PM to 05:00 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:15 PM										
04:15 PM	<b>122</b>	<b>15</b>	<b>137</b>	<b>23</b>	<b>101</b>	<b>124</b>	71	<b>35</b>	106	<b>367</b>
04:30 PM	100	10	110	15	99	114	<b>91</b>	20	111	335
04:45 PM	72	10	82	14	90	104	88	27	<b>115</b>	301
05:00 PM	109	11	120	8	78	86	90	25	115	321
Total Volume	403	46	449	60	368	428	340	107	447	1324
% App. Total	89.8	10.2		14	86		76.1	23.9		
PHF	.826	.767	.819	.652	.911	.863	.934	.764	.972	.902

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

File Name : 3\_MRV\_Redlands\_60 EB\_PM  
 Site Code : 22519381  
 Start Date : 5/23/2019  
 Page No : 2



Peak Hour Analysis From 04:15 PM to 05:00 PM - Peak 1 of 1  
 Peak Hour for Each Approach Begins at:

	04:15 PM			04:15 PM			04:15 PM		
+0 mins.	<b>122</b>	<b>15</b>	<b>137</b>	<b>23</b>	<b>101</b>	<b>124</b>	71	35	106
+15 mins.	100	10	110	15	99	114	91	20	111
+30 mins.	72	10	82	14	90	104	88	27	<b>115</b>
+45 mins.	109	11	120	8	78	86	90	25	115
Total Volume	403	46	449	60	368	428	340	107	447
% App. Total	89.8	10.2		14	86		76.1	23.9	
PHF	.826	.767	.819	.652	.911	.863	.934	.764	.972

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

File Name : 3\_MRV\_Redlands\_60 EB\_PM  
 Site Code : 22519381  
 Start Date : 5/23/2019  
 Page No : 1

Groups Printed- Large 2 Axle Vehicles

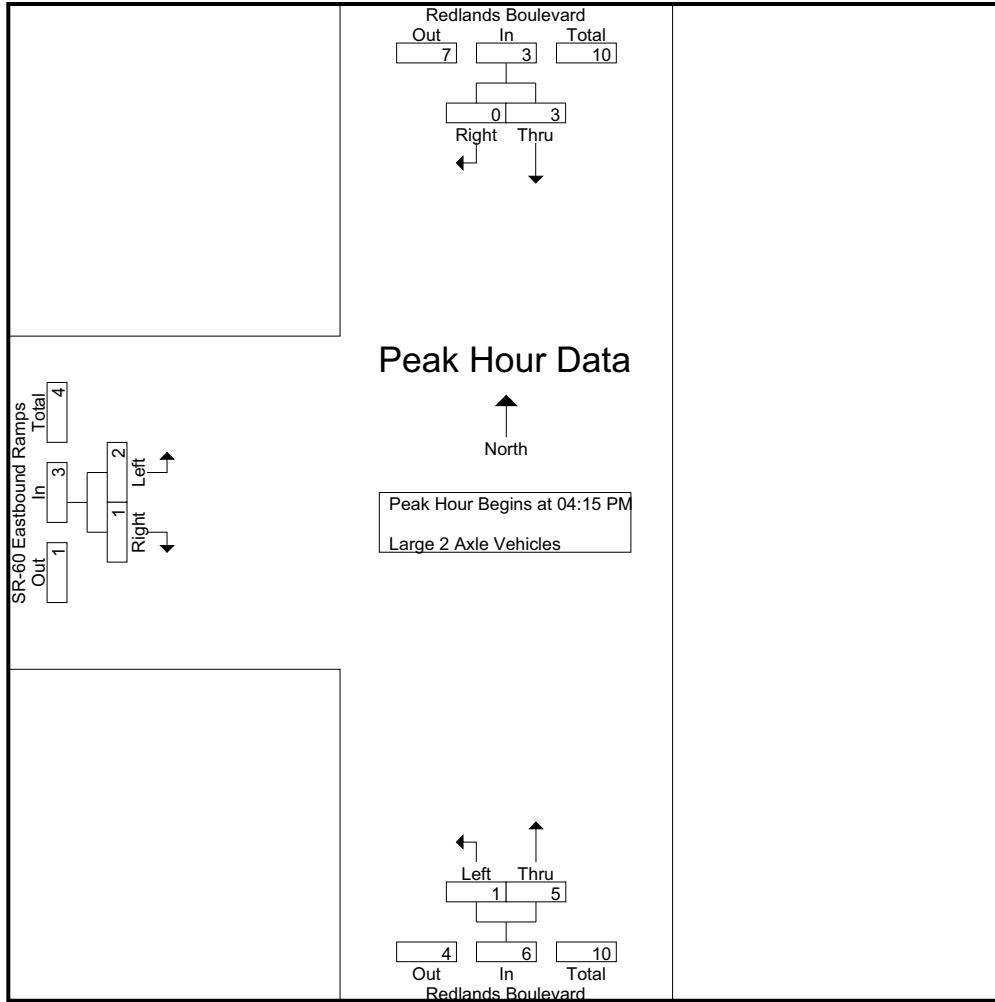
Start Time	Redlands Boulevard Southbound			Redlands Boulevard Northbound			SR-60 Eastbound Ramps Eastbound			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
04:00 PM	2	0	2	0	1	1	0	1	1	4
04:15 PM	1	0	1	1	0	1	0	0	0	2
04:30 PM	1	0	1	0	3	3	2	0	2	6
04:45 PM	1	0	1	0	1	1	0	0	0	2
Total	5	0	5	1	5	6	2	1	3	14
05:00 PM	0	0	0	0	1	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	2	2	1	2	3	5
Total	0	0	0	0	3	3	1	3	4	7
Grand Total	5	0	5	1	8	9	3	4	7	21
Apprch %	100	0		11.1	88.9		42.9	57.1		
Total %	23.8	0	23.8	4.8	38.1	42.9	14.3	19	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	
Peak Hour Analysis From 04:15 PM to 05:00 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:15 PM										
04:15 PM	1	0	1	1	0	1	0	0	0	2
04:30 PM	1	0	1	0	3	3	2	0	2	6
04:45 PM	1	0	1	0	1	1	0	0	0	2
05:00 PM	0	0	0	0	1	1	0	1	1	2
Total Volume	3	0	3	1	5	6	2	1	3	12
% App. Total	100	0		16.7	83.3		66.7	33.3		
PHF	.750	.000	.750	.250	.417	.500	.250	.250	.375	.500



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

File Name : 3\_MRV\_Redlands\_60 EB\_PM  
 Site Code : 22519381  
 Start Date : 5/23/2019  
 Page No : 2



Peak Hour Analysis From 04:15 PM to 05:00 PM - Peak 1 of 1  
 Peak Hour for Each Approach Begins at:

	04:15 PM			04:15 PM			04:15 PM		
+0 mins.	1	0	1	1	0	1	0	0	0
+15 mins.	1	0	1	0	3	3	2	0	2
+30 mins.	1	0	1	0	1	1	0	0	0
+45 mins.	0	0	0	0	1	1	0	1	1
Total Volume	3	0	3	1	5	6	2	1	3
% App. Total	100	0		16.7	83.3		66.7	33.3	
PHF	.750	.000	.750	.250	.417	.500	.250	.250	.375

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

File Name : 3\_MR\_V\_Redlands\_60 EB\_PM  
 Site Code : 22519381  
 Start Date : 5/23/2019  
 Page No : 1

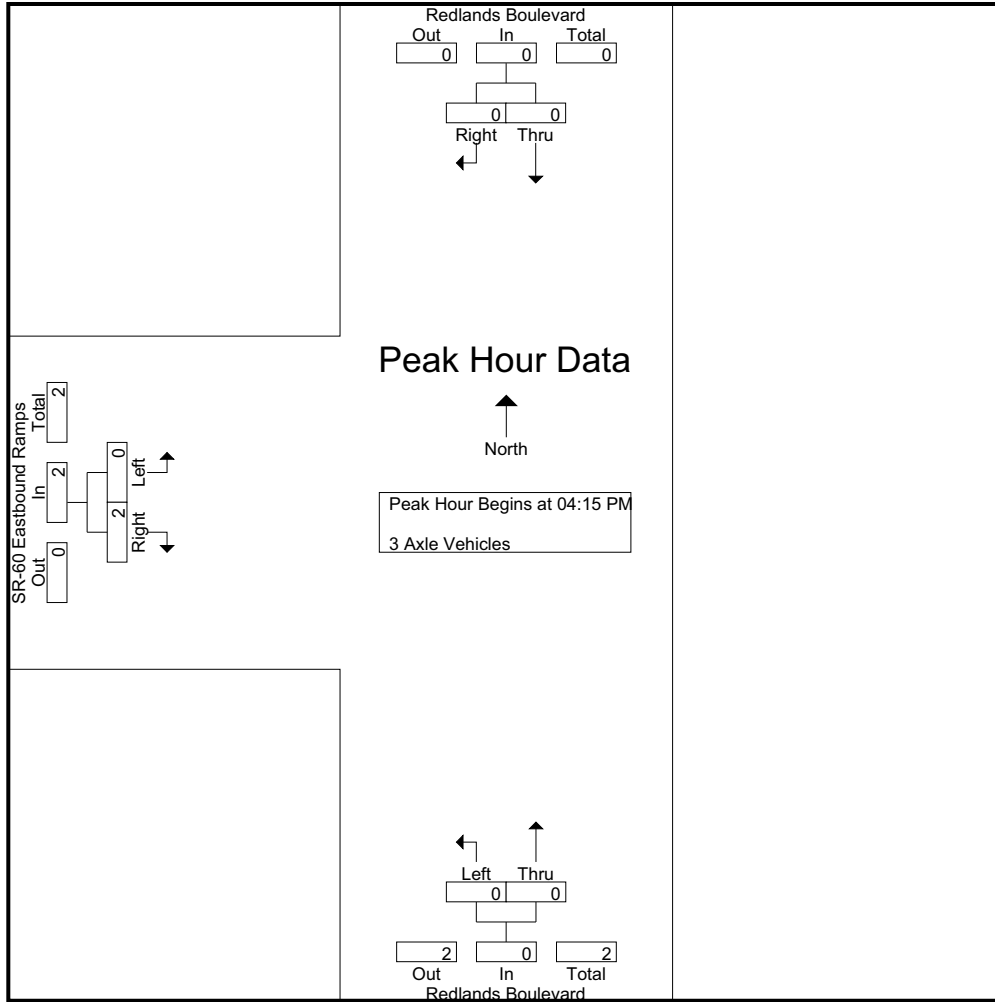
Groups Printed- 3 Axle Vehicles

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	
04:00 PM	0	0	0	0	1	1	0	0	0	1
04:15 PM	0	0	0	0	0	0	0	1	1	1
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	1	1	0	2	2	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	0	0	0	1	1	0	2	2	3
Apprch %	0	0		0	100		0	100		
Total %	0	0		0	33.3	33.3	0	66.7	66.7	

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	
Peak Hour Analysis From 04:15 PM to 05:00 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:15 PM										
04:15 PM	0	0	0	0	0	0	0	1	1	1
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
05:00 PM	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	2	2	2
% App. Total	0	0		0	0		0	100		
PHF	.000	.000	.000	.000	.000	.000	.000	.500	.500	.500

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

File Name : 3\_MRV\_Redlands\_60 EB\_PM  
 Site Code : 22519381  
 Start Date : 5/23/2019  
 Page No : 2



Peak Hour Analysis From 04:15 PM to 05:00 PM - Peak 1 of 1  
 Peak Hour for Each Approach Begins at:

	04:15 PM			04:15 PM			04:15 PM		
+0 mins.	0	0	0	0	0	0	0	1	1
+15 mins.	0	0	0	0	0	0	0	1	1
+30 mins.	0	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	2	2
% App. Total	0	0	0	0	0	0	0	100	100
PHF	.000	.000	.000	.000	.000	.000	.000	.500	.500

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

File Name : 3\_MRV\_Redlands\_60 EB\_PM  
 Site Code : 22519381  
 Start Date : 5/23/2019  
 Page No : 1

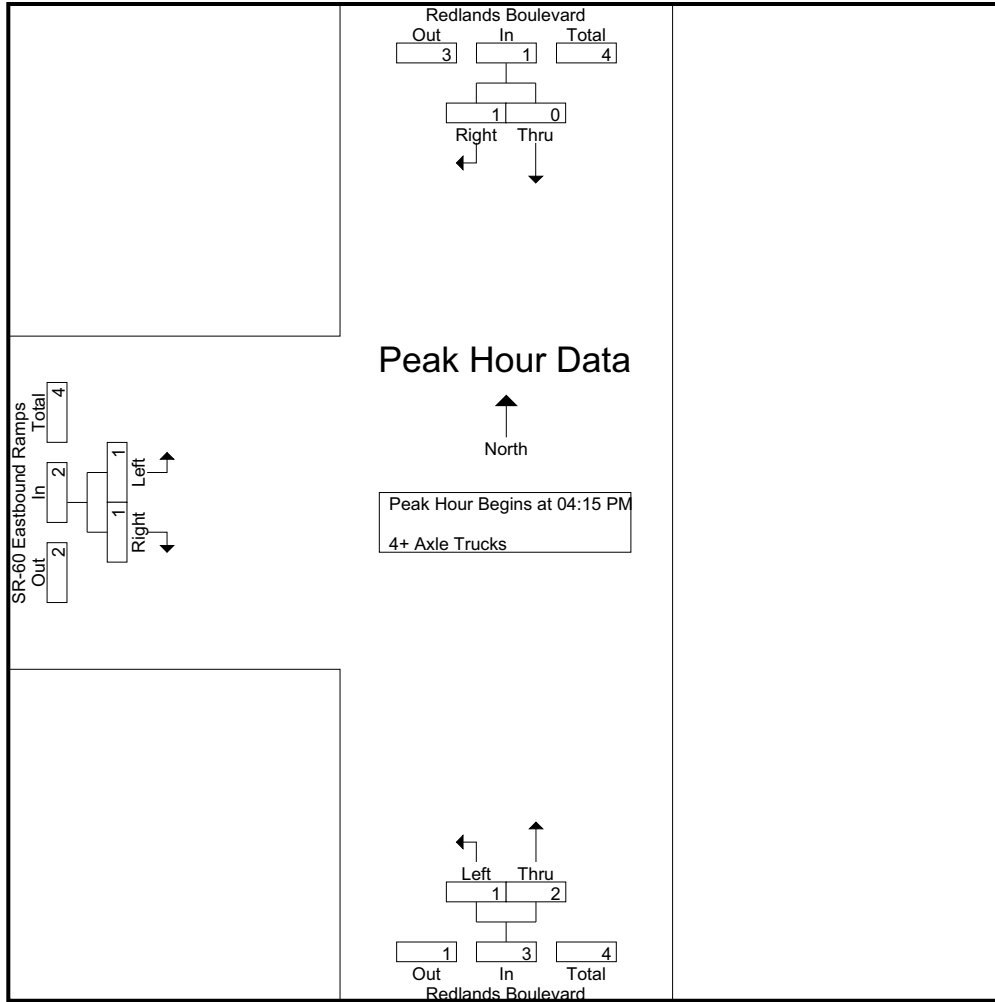
Groups Printed- 4+ Axle Trucks

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	
04:00 PM	0	1	1	0	1	1	1	0	1	3
04:15 PM	0	0	0	0	0	0	0	1	1	1
04:30 PM	0	1	1	0	1	1	0	0	0	2
04:45 PM	0	0	0	1	1	2	1	0	1	3
Total	0	2	2	1	3	4	2	1	3	9
05:00 PM	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	1	0	1	1	0	1	2
05:30 PM	0	0	0	0	1	1	1	1	2	3
05:45 PM	0	0	0	0	1	1	1	0	1	2
Total	0	0	0	1	2	3	3	1	4	7
Grand Total	0	2	2	2	5	7	5	2	7	16
Apprch %	0	100		28.6	71.4		71.4	28.6		
Total %	0	12.5	12.5	12.5	31.2	43.8	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	
Peak Hour Analysis From 04:15 PM to 05:00 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:15 PM										
04:15 PM	0	0	0	0	0	0	0	1	1	1
04:30 PM	0	1	1	0	1	1	0	0	0	2
04:45 PM	0	0	0	1	1	2	1	0	1	3
05:00 PM	0	0	0	0	0	0	0	0	0	0
Total Volume	0	1	1	1	2	3	1	1	2	6
% App. Total	0	100		33.3	66.7		50	50		
PHF	.000	.250	.250	.250	.500	.375	.250	.250	.500	.500

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

File Name : 3\_MRV\_Redlands\_60 EB\_PM  
 Site Code : 22519381  
 Start Date : 5/23/2019  
 Page No : 2



Peak Hour Analysis From 04:15 PM to 05:00 PM - Peak 1 of 1  
 Peak Hour for Each Approach Begins at:

	04:15 PM			04:15 PM			04:15 PM		
+0 mins.	0	0	0	0	0	0	0	1	1
+15 mins.	0	1	1	0	1	1	0	0	0
+30 mins.	0	0	0	1	1	2	1	0	1
+45 mins.	0	0	0	0	0	0	0	0	0
Total Volume	0	1	1	1	2	3	1	1	2
% App. Total	0	100		33.3	66.7		50	50	
PHF	.000	.250	.250	.250	.500	.375	.250	.250	.500



City of Moreno Valley  
 N/S: Redlands Boulevard  
 E/W: Eucalyptus Avenue  
 Weather: Clear

File Name : 4\_MRV\_Redlands\_Eucalyptus\_AM  
 Site Code : 22519381  
 Start Date : 5/23/2019  
 Page No : 1

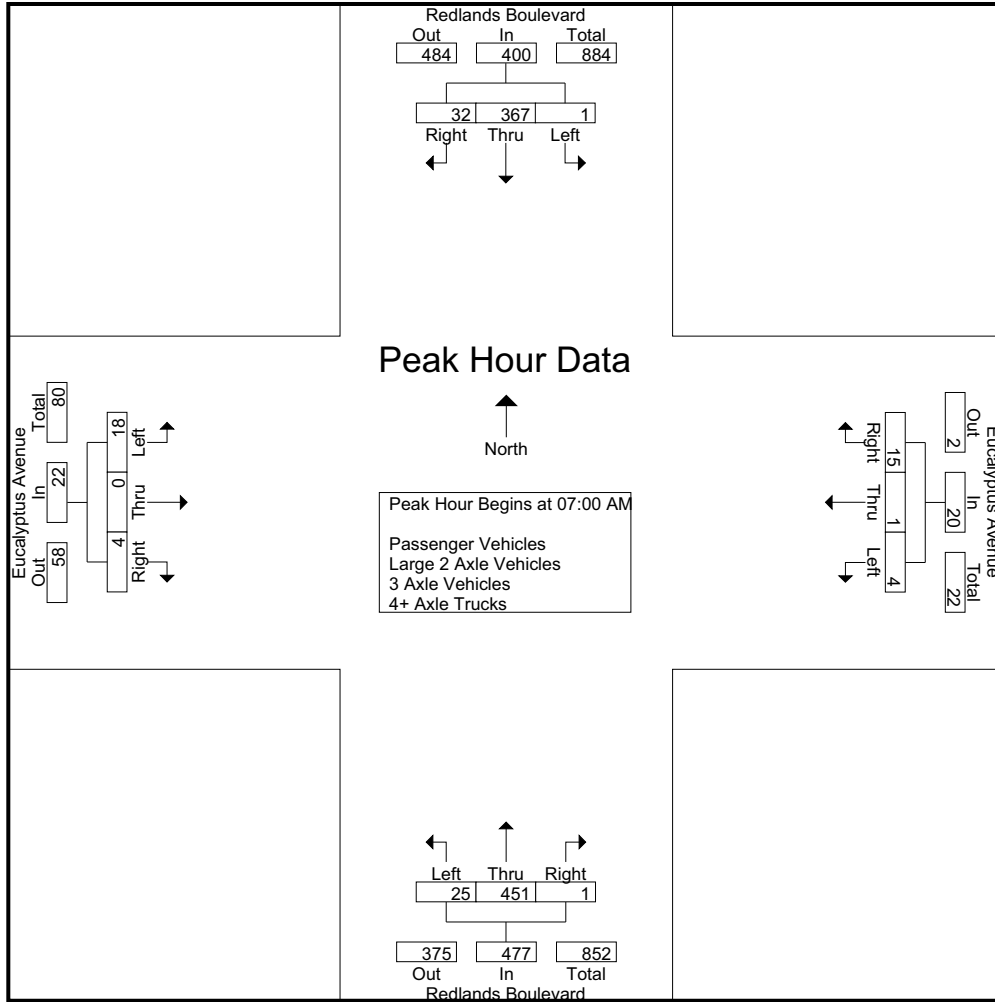
Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

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	81	7	88	1	0	3	4	9	123	0	132	3	0	1	4	228
07:15 AM	0	88	5	93	1	1	4	6	8	120	0	128	5	0	1	6	233
07:30 AM	0	95	11	106	0	0	5	5	3	101	1	105	3	0	0	3	219
07:45 AM	1	103	9	113	2	0	3	5	5	107	0	112	7	0	2	9	239
<b>Total</b>	<b>1</b>	<b>367</b>	<b>32</b>	<b>400</b>	<b>4</b>	<b>1</b>	<b>15</b>	<b>20</b>	<b>25</b>	<b>451</b>	<b>1</b>	<b>477</b>	<b>18</b>	<b>0</b>	<b>4</b>	<b>22</b>	<b>919</b>
08:00 AM	0	62	5	67	1	1	7	9	8	84	1	93	4	0	1	5	174
08:15 AM	1	70	7	78	0	1	5	6	5	75	0	80	10	0	3	13	177
08:30 AM	0	68	3	71	1	0	20	21	3	78	0	81	7	0	1	8	181
08:45 AM	0	58	9	67	0	0	27	27	6	59	0	65	7	0	1	8	167
<b>Total</b>	<b>1</b>	<b>258</b>	<b>24</b>	<b>283</b>	<b>2</b>	<b>2</b>	<b>59</b>	<b>63</b>	<b>22</b>	<b>296</b>	<b>1</b>	<b>319</b>	<b>28</b>	<b>0</b>	<b>6</b>	<b>34</b>	<b>699</b>
<b>Grand Total</b>	<b>2</b>	<b>625</b>	<b>56</b>	<b>683</b>	<b>6</b>	<b>3</b>	<b>74</b>	<b>83</b>	<b>47</b>	<b>747</b>	<b>2</b>	<b>796</b>	<b>46</b>	<b>0</b>	<b>10</b>	<b>56</b>	<b>1618</b>
Apprch %	0.3	91.5	8.2		7.2	3.6	89.2		5.9	93.8	0.3		82.1	0	17.9		
Total %	0.1	38.6	3.5	42.2	0.4	0.2	4.6	5.1	2.9	46.2	0.1	49.2	2.8	0	0.6	3.5	
Passenger Vehicles	2	616	44	662	6	3	70	79	45	742	2	789	33	0	10	43	1573
% Passenger Vehicles	100	98.6	78.6	96.9	100	100	94.6	95.2	95.7	99.3	100	99.1	71.7	0	100	76.8	97.2
Large 2 Axle Vehicles	0	5	0	5	0	0	1	1	1	3	0	4	0	0	0	0	10
% Large 2 Axle Vehicles	0	0.8	0	0.7	0	0	1.4	1.2	2.1	0.4	0	0.5	0	0	0	0	0.6
3 Axle Vehicles	0	1	4	5	0	0	0	0	1	0	0	1	6	0	0	6	12
% 3 Axle Vehicles	0	0.2	7.1	0.7	0	0	0	0	2.1	0	0	0.1	13	0	0	10.7	0.7
4+ Axle Trucks	0	3	8	11	0	0	3	3	0	2	0	2	7	0	0	7	23
% 4+ Axle Trucks	0	0.5	14.3	1.6	0	0	4.1	3.6	0	0.3	0	0.3	15.2	0	0	12.5	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 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	0	81	7	88	1	0	3	4	<b>9</b>	<b>123</b>	0	<b>132</b>	3	0	1	4	228
07:15 AM	0	88	5	93	1	1	4	6	8	120	0	128	5	0	1	6	233
07:30 AM	0	95	11	106	0	0	5	5	3	101	1	105	3	0	0	3	219
07:45 AM	1	<b>103</b>	9	<b>113</b>	2	0	3	5	5	107	0	112	7	0	<b>2</b>	<b>9</b>	<b>239</b>
Total Volume	1	367	32	400	4	1	15	20	25	451	1	477	18	0	4	22	919
% App. Total	0.2	91.8	8		20	5	75		5.2	94.5	0.2		81.8	0	18.2		
PHF	.250	.891	.727	.885	.500	.250	.750	.833	.694	.917	.250	.903	.643	.000	.500	.611	.961

City of Moreno Valley  
 N/S: Redlands Boulevard  
 E/W: Eucalyptus Avenue  
 Weather: Clear

File Name : 4\_MRV\_Redlands\_Eucalyptus\_AM  
 Site Code : 22519381  
 Start Date : 5/23/2019  
 Page No : 2



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1  
 Peak Hour for Each Approach Begins at:

	07:00 AM				08:00 AM				07:00 AM				07:45 AM			
+0 mins.	0	81	7	88	1	1	7	9	9	123	0	132	7	0	2	9
+15 mins.	0	88	5	93	0	1	5	6	8	120	0	128	4	0	1	5
+30 mins.	0	95	11	106	1	0	20	21	3	101	1	105	10	0	3	13
+45 mins.	1	103	9	113	0	0	27	27	5	107	0	112	7	0	1	8
Total Volume	1	367	32	400	2	2	59	63	25	451	1	477	28	0	7	35
% App. Total	0.2	91.8	8		3.2	3.2	93.7		5.2	94.5	0.2		80	0	20	
PHF	.250	.891	.727	.885	.500	.500	.546	.583	.694	.917	.250	.903	.700	.000	.583	.673



City of Moreno Valley  
 N/S: Redlands Boulevard  
 E/W: Eucalyptus Avenue  
 Weather: Clear

File Name : 4\_MRV\_Redlands\_Eucalyptus\_AM  
 Site Code : 22519381  
 Start Date : 5/23/2019  
 Page No : 1

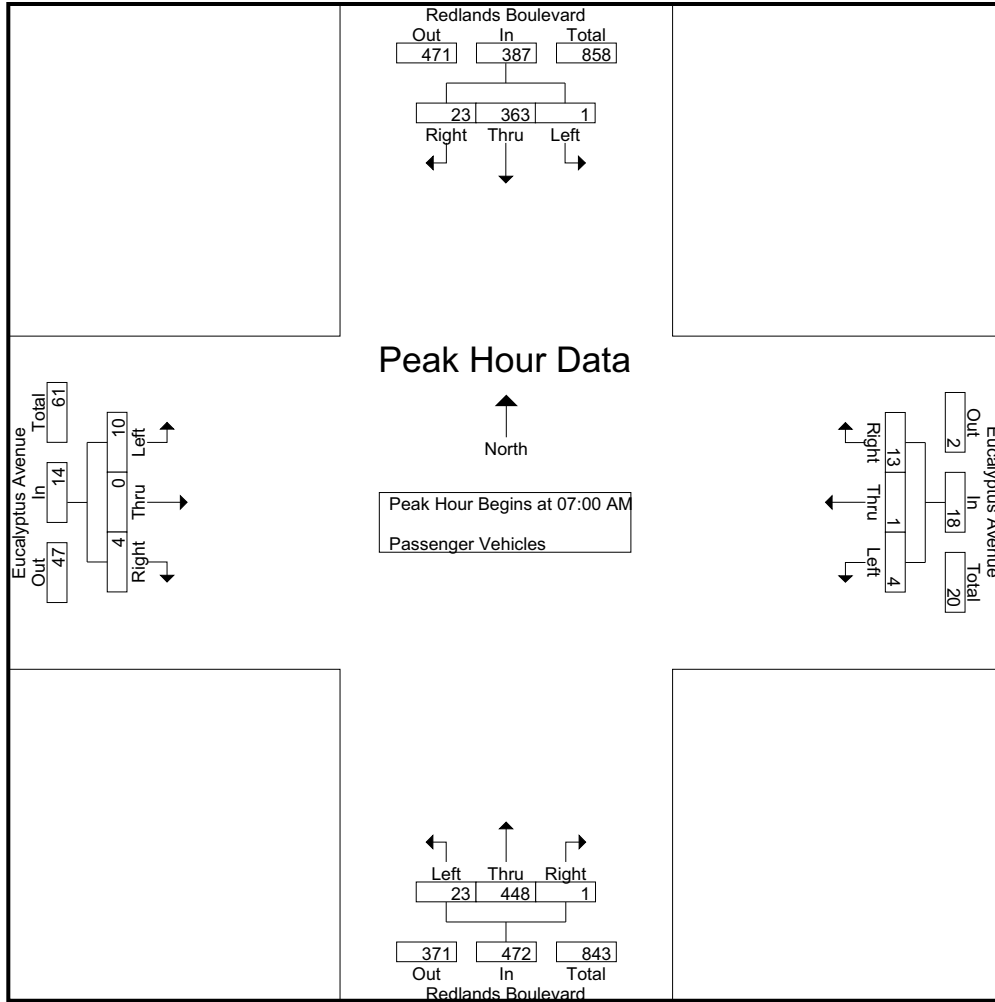
Groups Printed- Passenger Vehicles

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	79	5	84	1	0	3	4	8	122	0	130	2	0	1	3	221
07:15 AM	0	87	3	90	1	1	3	5	7	120	0	127	2	0	1	3	225
07:30 AM	0	95	9	104	0	0	5	5	3	100	1	104	1	0	0	1	214
07:45 AM	1	102	6	109	2	0	2	4	5	106	0	111	5	0	2	7	231
Total	1	363	23	387	4	1	13	18	23	448	1	472	10	0	4	14	891
08:00 AM	0	61	5	66	1	1	6	8	8	83	1	92	3	0	1	4	170
08:15 AM	1	69	5	75	0	1	5	6	5	74	0	79	9	0	3	12	172
08:30 AM	0	65	3	68	1	0	19	20	3	78	0	81	6	0	1	7	176
08:45 AM	0	58	8	66	0	0	27	27	6	59	0	65	5	0	1	6	164
Total	1	253	21	275	2	2	57	61	22	294	1	317	23	0	6	29	682
Grand Total	2	616	44	662	6	3	70	79	45	742	2	789	33	0	10	43	1573
Apprch %	0.3	93.1	6.6		7.6	3.8	88.6		5.7	94	0.3		76.7	0	23.3		
Total %	0.1	39.2	2.8	42.1	0.4	0.2	4.5	5	2.9	47.2	0.1	50.2	2.1	0	0.6	2.7	

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 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	79	5	84	1	0	3	4	8	122	0	130	2	0	1	3	221
07:15 AM	0	87	3	90	1	1	3	5	7	120	0	127	2	0	1	3	225
07:30 AM	0	95	9	104	0	0	5	5	3	100	1	104	1	0	0	1	214
07:45 AM	1	102	6	109	2	0	2	4	5	106	0	111	5	0	2	7	231
Total Volume	1	363	23	387	4	1	13	18	23	448	1	472	10	0	4	14	891
% App. Total	0.3	93.8	5.9		22.2	5.6	72.2		4.9	94.9	0.2		71.4	0	28.6		
PHF	.250	.890	.639	.888	.500	.250	.650	.900	.719	.918	.250	.908	.500	.000	.500	.500	.964

City of Moreno Valley  
 N/S: Redlands Boulevard  
 E/W: Eucalyptus Avenue  
 Weather: Clear

File Name : 4\_MRV\_Redlands\_Eucalyptus\_AM  
 Site Code : 22519381  
 Start Date : 5/23/2019  
 Page No : 2



Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1  
 Peak Hour for Each Approach Begins at:

	07:00 AM				07:00 AM				07:00 AM				07:00 AM			
+0 mins.	0	79	5	84	1	0	3	4	<b>8</b>	<b>122</b>	0	<b>130</b>	2	0	1	3
+15 mins.	0	87	3	90	1	1	3	5	7	120	0	127	2	0	1	3
+30 mins.	0	95	9	104	0	0	5	5	3	100	1	104	1	0	0	1
+45 mins.	1	102	6	109	2	0	2	4	5	106	0	111	5	0	2	7
Total Volume	1	363	23	387	4	1	13	18	23	448	1	472	10	0	4	14
% App. Total	0.3	93.8	5.9		22.2	5.6	72.2		4.9	94.9	0.2		71.4	0	28.6	
PHF	.250	.890	.639	.888	.500	.250	.650	.900	.719	.918	.250	.908	.500	.000	.500	.500

City of Moreno Valley  
 N/S: Redlands Boulevard  
 E/W: Eucalyptus Avenue  
 Weather: Clear

File Name : 4\_MRV\_Redlands\_Eucalyptus\_AM  
 Site Code : 22519381  
 Start Date : 5/23/2019  
 Page No : 1

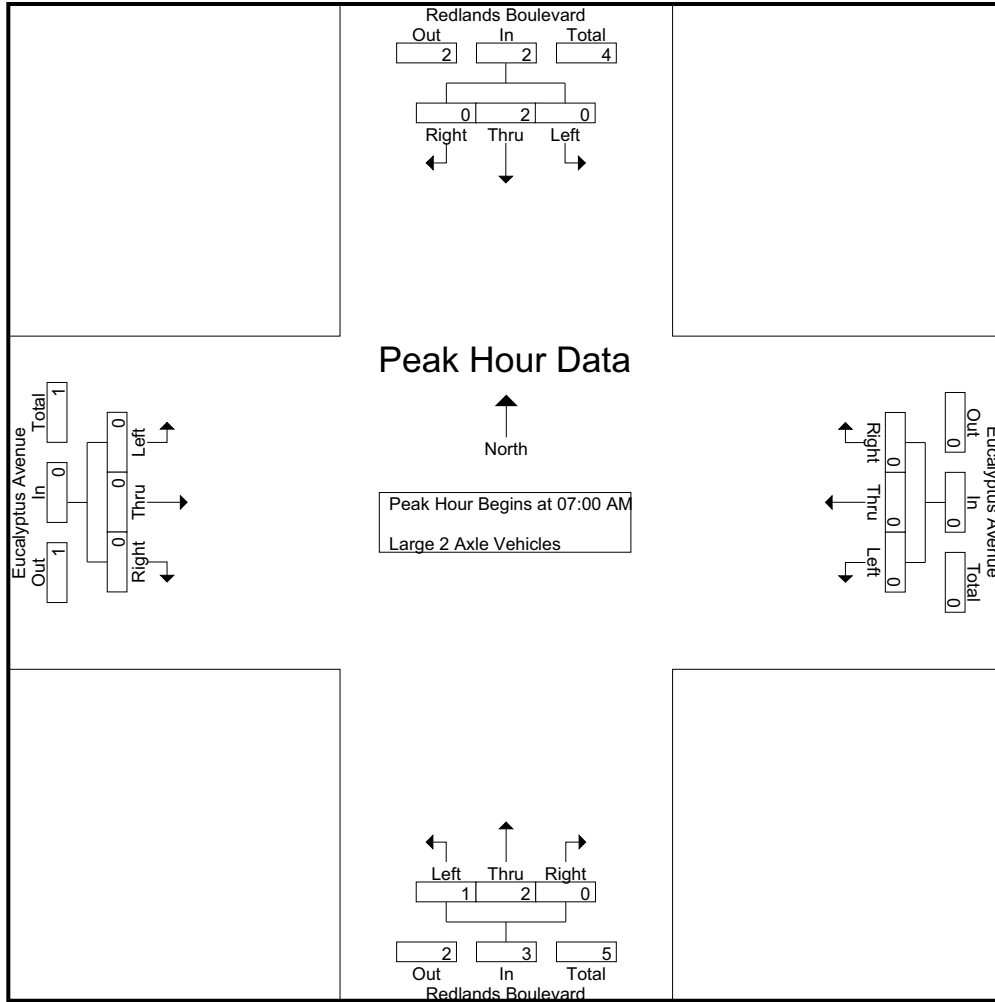
Groups Printed- Large 2 Axle Vehicles

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	1	0	1	0	0	0	0	2
07:15 AM	0	0	0	0	0	0	0	0	0	1	0	0	1	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	1	0	1	0	0	0	0	0	0	1	0	1	0	0	0	2
Total	0	2	0	2	0	0	0	0	0	1	2	0	3	0	0	0	5
08:00 AM	0	1	0	1	0	0	0	0	0	0	1	0	1	0	0	0	2
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	1	1	0	0	0	0	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	3	0	3	0	0	1	1	0	1	0	1	1	0	0	0	5
Grand Total	0	5	0	5	0	0	1	1	1	3	0	4	0	0	0	0	10
Apprch %	0	100	0		0	0	100		25	75	0		0	0	0		
Total %	0	50	0	50	0	0	10	10	10	30	0	40	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	1	0	1	0	0	0	2
07:15 AM	0	0	0	0	0	0	0	0	0	1	0	0	1	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	1	0	1	0	0	0	0	0	0	1	0	1	0	0	0	2
Total Volume	0	2	0	2	0	0	0	0	0	1	2	0	3	0	0	0	5
% App. Total	0	100	0		0	0	0		33.3	66.7	0		0	0	0		
PHF	.000	.500	.000	.500	.000	.000	.000	.000	.000	.250	.500	.000	.750	.000	.000	.000	.625

City of Moreno Valley  
 N/S: Redlands Boulevard  
 E/W: Eucalyptus Avenue  
 Weather: Clear

File Name : 4\_MRV\_Redlands\_Eucalyptus\_AM  
 Site Code : 22519381  
 Start Date : 5/23/2019  
 Page No : 2



Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1  
 Peak Hour for Each Approach Begins at:

	07:00 AM				07:00 AM				07:00 AM				07:00 AM			
+0 mins.	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+45 mins.	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0
Total Volume	0	2	0	2	0	0	0	0	1	2	0	3	0	0	0	0
% App. Total	0	100	0	0	0	0	0	0	33.3	66.7	0	0	0	0	0	0
PHF	.000	.500	.000	.500	.000	.000	.000	.000	.250	.500	.000	.750	.000	.000	.000	.000

City of Moreno Valley  
 N/S: Redlands Boulevard  
 E/W: Eucalyptus Avenue  
 Weather: Clear

File Name : 4\_MRV\_Redlands\_Eucalyptus\_AM  
 Site Code : 22519381  
 Start Date : 5/23/2019  
 Page No : 1

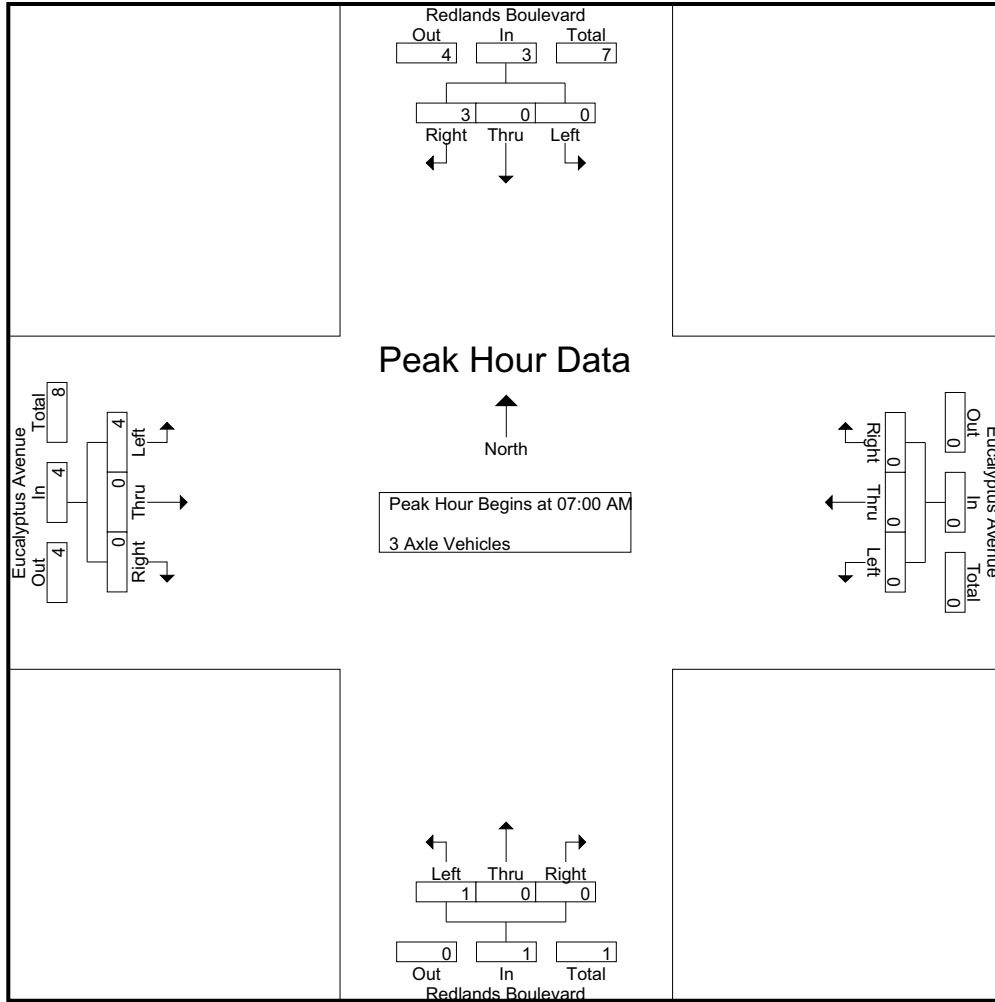
Groups Printed- 3 Axle Vehicles

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	
07:00 AM	0	0	1	1	0	0	0	0	1	0	0	1	0	0	0	0	2
07:15 AM	0	0	1	1	0	0	0	0	0	0	0	0	2	0	0	2	3
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
07:45 AM	0	0	1	1	0	0	0	0	0	0	0	0	1	0	0	1	2
Total	0	0	3	3	0	0	0	0	1	0	0	1	4	0	0	4	8
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	1	0	1	0	0	0	0	0	0	0	0	1	0	0	1	2
08:45 AM	0	0	1	1	0	0	0	0	0	0	0	0	1	0	0	1	2
Total	0	1	1	2	0	0	0	0	0	0	0	0	2	0	0	2	4
Grand Total	0	1	4	5	0	0	0	0	1	0	0	1	6	0	0	6	12
Apprch %	0	20	80		0	0	0		100	0	0		100	0	0		
Total %	0	8.3	33.3	41.7	0	0	0	0	8.3	0	0	8.3	50	0	0	50	

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	1	1	0	0	0	0	1	0	0	1	0	0	0	0	2
07:15 AM	0	0	1	1	0	0	0	0	0	0	0	0	2	0	0	2	3
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
07:45 AM	0	0	1	1	0	0	0	0	0	0	0	0	1	0	0	1	2
Total Volume	0	0	3	3	0	0	0	0	1	0	0	1	4	0	0	4	8
% App. Total	0	0	100		0	0	0		100	0	0		100	0	0		
PHF	.000	.000	.750	.750	.000	.000	.000	.000	.250	.000	.000	.250	.500	.000	.000	.500	.667

City of Moreno Valley  
 N/S: Redlands Boulevard  
 E/W: Eucalyptus Avenue  
 Weather: Clear

File Name : 4\_MRV\_Redlands\_Eucalyptus\_AM  
 Site Code : 22519381  
 Start Date : 5/23/2019  
 Page No : 2



Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1  
 Peak Hour for Each Approach Begins at:

	07:00 AM				07:00 AM				07:00 AM				07:00 AM			
+0 mins.	0	0	1	1	0	0	0	0	1	0	0	1	0	0	0	0
+15 mins.	0	0	1	1	0	0	0	0	0	0	0	0	2	0	0	2
+30 mins.	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
+45 mins.	0	0	1	1	0	0	0	0	0	0	0	0	1	0	0	1
Total Volume	0	0	3	3	0	0	0	0	1	0	0	1	4	0	0	4
% App. Total	0	0	100		0	0	0		100	0	0		100	0	0	
PHF	.000	.000	.750	.750	.000	.000	.000	.000	.250	.000	.000	.250	.500	.000	.000	.500

City of Moreno Valley  
 N/S: Redlands Boulevard  
 E/W: Eucalyptus Avenue  
 Weather: Clear

File Name : 4\_MRV\_Redlands\_Eucalyptus\_AM  
 Site Code : 22519381  
 Start Date : 5/23/2019  
 Page No : 1

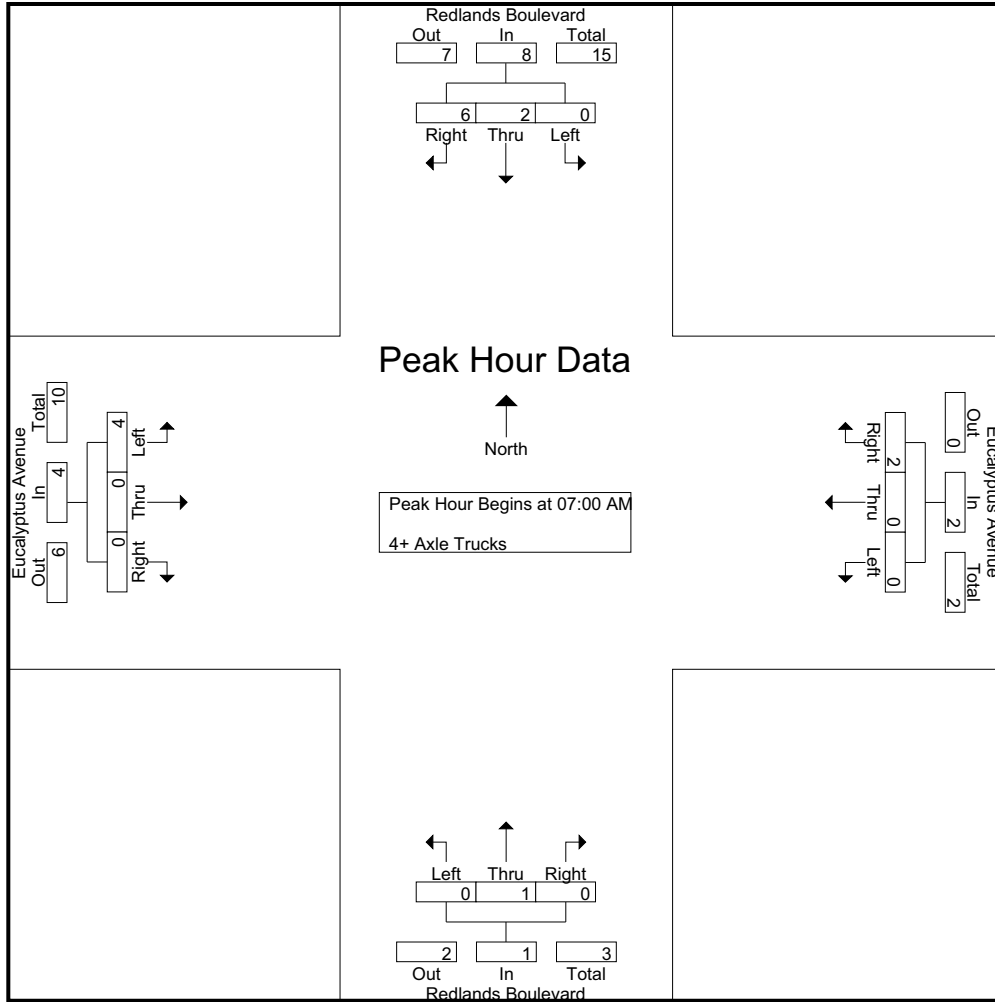
Groups Printed- 4+ Axle Trucks

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	1	1	2	0	0	0	0	0	0	0	0	1	0	0	1	3
07:15 AM	0	1	1	2	0	0	1	1	0	0	0	0	1	0	0	1	4
07:30 AM	0	0	2	2	0	0	0	0	0	1	0	1	1	0	0	1	4
07:45 AM	0	0	2	2	0	0	1	1	0	0	0	0	1	0	0	1	4
Total	0	2	6	8	0	0	2	2	0	1	0	1	4	0	0	4	15
08:00 AM	0	0	0	0	0	0	1	1	0	0	0	0	1	0	0	1	2
08:15 AM	0	0	2	2	0	0	0	0	0	1	0	1	1	0	0	1	4
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	1	0	0	1	1
Total	0	1	2	3	0	0	1	1	0	1	0	1	3	0	0	3	8
Grand Total	0	3	8	11	0	0	3	3	0	2	0	2	7	0	0	7	23
Apprch %	0	27.3	72.7		0	0	100		0	100	0		100	0	0		
Total %	0	13	34.8	47.8	0	0	13	13	0	8.7	0	8.7	30.4	0	0	30.4	

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	1	1	2	0	0	0	0	0	0	0	0	1	0	0	1	3
07:15 AM	0	1	1	2	0	0	1	1	0	0	0	0	1	0	0	1	4
07:30 AM	0	0	2	2	0	0	0	0	0	1	0	1	1	0	0	1	4
07:45 AM	0	0	2	2	0	0	1	1	0	0	0	0	1	0	0	1	4
Total Volume	0	2	6	8	0	0	2	2	0	1	0	1	4	0	0	4	15
% App. Total	0	25	75		0	0	100		0	100	0		100	0	0		
PHF	.000	.500	.750	1.00	.000	.000	.500	.500	.000	.250	.000	.250	1.00	.000	.000	1.00	.938

City of Moreno Valley  
 N/S: Redlands Boulevard  
 E/W: Eucalyptus Avenue  
 Weather: Clear

File Name : 4\_MRV\_Redlands\_Eucalyptus\_AM  
 Site Code : 22519381  
 Start Date : 5/23/2019  
 Page No : 2



Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1  
 Peak Hour for Each Approach Begins at:

	07:00 AM				07:00 AM				07:00 AM				07:00 AM			
+0 mins.	0	1	1	2	0	0	0	0	0	0	0	0	1	0	0	1
+15 mins.	0	1	1	2	0	0	1	1	0	0	0	0	1	0	0	1
+30 mins.	0	0	2	2	0	0	0	0	0	1	0	1	1	0	0	1
+45 mins.	0	0	2	2	0	0	1	1	0	0	0	0	1	0	0	1
Total Volume	0	2	6	8	0	0	2	2	0	1	0	1	4	0	0	4
% App. Total	0	25	75		0	0	100		0	100	0		100	0	0	
PHF	.000	.500	.750	1.000	.000	.000	.500	.500	.000	.250	.000	.250	1.000	.000	.000	1.000



City of Moreno Valley  
 N/S: Redlands Boulevard  
 E/W: Eucalyptus Avenue  
 Weather: Clear

File Name : 4\_MRV\_Redlands\_Eucalyptus\_PM  
 Site Code : 22519381  
 Start Date : 5/23/2019  
 Page No : 1

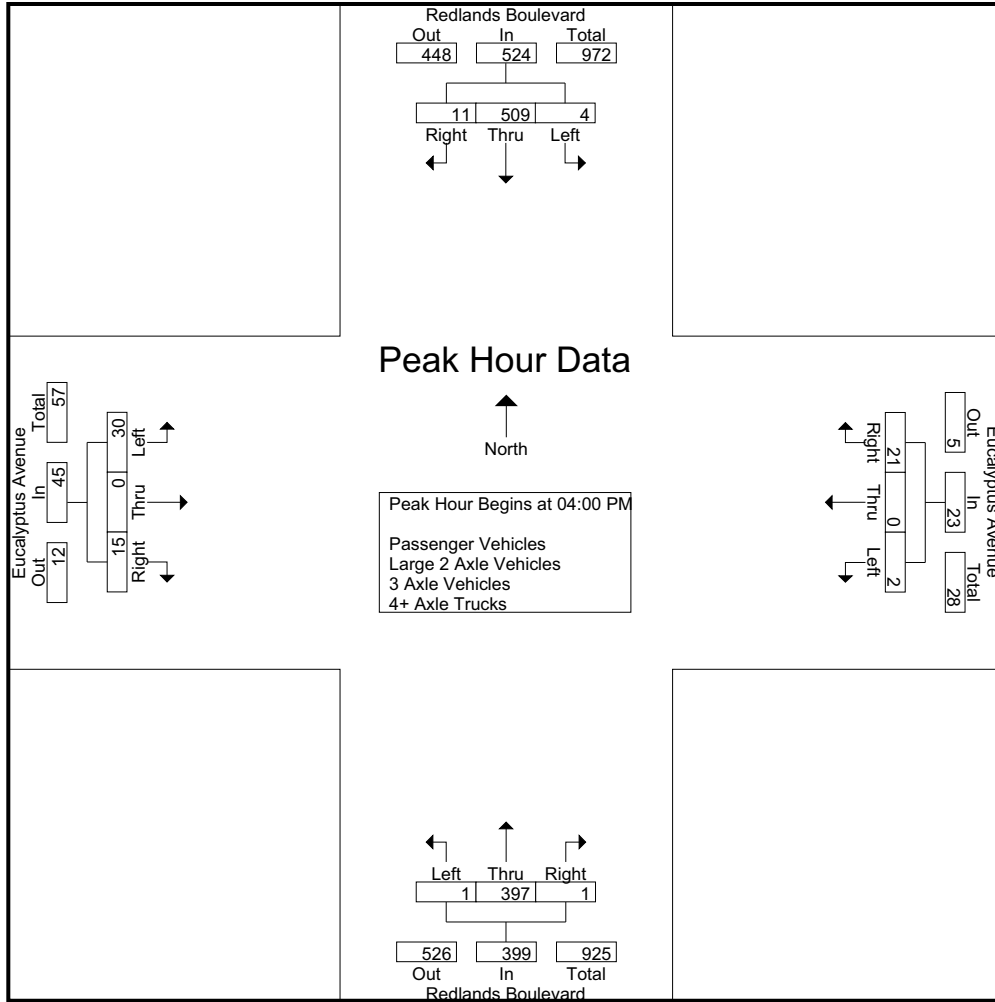
Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

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	1	127	3	131	0	0	4	4	0	88	0	88	8	0	5	13	236
04:15 PM	1	150	1	152	1	0	3	4	1	119	1	121	3	0	5	8	285
04:30 PM	0	122	5	127	1	0	4	5	0	97	0	97	9	0	3	12	241
04:45 PM	2	110	2	114	0	0	10	10	0	93	0	93	10	0	2	12	229
<b>Total</b>	<b>4</b>	<b>509</b>	<b>11</b>	<b>524</b>	<b>2</b>	<b>0</b>	<b>21</b>	<b>23</b>	<b>1</b>	<b>397</b>	<b>1</b>	<b>399</b>	<b>30</b>	<b>0</b>	<b>15</b>	<b>45</b>	<b>991</b>
05:00 PM	1	119	1	121	0	0	8	8	0	77	0	77	9	0	7	16	222
05:15 PM	1	119	1	121	0	0	3	3	1	83	1	85	7	0	2	9	218
05:30 PM	0	166	3	169	1	0	7	8	0	78	0	78	6	0	5	11	266
05:45 PM	1	131	1	133	0	0	8	8	0	69	0	69	8	0	5	13	223
<b>Total</b>	<b>3</b>	<b>535</b>	<b>6</b>	<b>544</b>	<b>1</b>	<b>0</b>	<b>26</b>	<b>27</b>	<b>1</b>	<b>307</b>	<b>1</b>	<b>309</b>	<b>30</b>	<b>0</b>	<b>19</b>	<b>49</b>	<b>929</b>
<b>Grand Total</b>	<b>7</b>	<b>1044</b>	<b>17</b>	<b>1068</b>	<b>3</b>	<b>0</b>	<b>47</b>	<b>50</b>	<b>2</b>	<b>704</b>	<b>2</b>	<b>708</b>	<b>60</b>	<b>0</b>	<b>34</b>	<b>94</b>	<b>1920</b>
Apprch %	0.7	97.8	1.6		6	0	94		0.3	99.4	0.3		63.8	0	36.2		
Total %	0.4	54.4	0.9	55.6	0.2	0	2.4	2.6	0.1	36.7	0.1	36.9	3.1	0	1.8	4.9	
Passenger Vehicles	7	1031	16	1054	3	0	40	43	2	695	2	699	59	0	34	93	1889
% Passenger Vehicles	100	98.8	94.1	98.7	100	0	85.1	86	100	98.7	100	98.7	98.3	0	100	98.9	98.4
Large 2 Axle Vehicles	0	10	0	10	0	0	3	3	0	6	0	6	0	0	0	0	19
% Large 2 Axle Vehicles	0	1	0	0.9	0	0	6.4	6	0	0.9	0	0.8	0	0	0	0	1
3 Axle Vehicles	0	2	0	2	0	0	1	1	0	1	0	1	0	0	0	0	4
% 3 Axle Vehicles	0	0.2	0	0.2	0	0	2.1	2	0	0.1	0	0.1	0	0	0	0	0.2
4+ Axle Trucks	0	1	1	2	0	0	3	3	0	2	0	2	1	0	0	1	8
% 4+ Axle Trucks	0	0.1	5.9	0.2	0	0	6.4	6	0	0.3	0	0.3	1.7	0	0	1.1	0.4

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 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	1	127	3	131	0	0	4	4	0	88	0	88	8	0	5	13	236
04:15 PM	1	150	1	152	1	0	3	4	1	119	1	121	3	0	5	8	285
04:30 PM	0	122	5	127	1	0	4	5	0	97	0	97	9	0	3	12	241
04:45 PM	2	110	2	114	0	0	10	10	0	93	0	93	10	0	2	12	229
<b>Total Volume</b>	<b>4</b>	<b>509</b>	<b>11</b>	<b>524</b>	<b>2</b>	<b>0</b>	<b>21</b>	<b>23</b>	<b>1</b>	<b>397</b>	<b>1</b>	<b>399</b>	<b>30</b>	<b>0</b>	<b>15</b>	<b>45</b>	<b>991</b>
% App. Total	0.8	97.1	2.1		8.7	0	91.3		0.3	99.5	0.3		66.7	0	33.3		
PHF	.500	.848	.550	.862	.500	.000	.525	.575	.250	.834	.250	.824	.750	.000	.750	.865	.869

City of Moreno Valley  
 N/S: Redlands Boulevard  
 E/W: Eucalyptus Avenue  
 Weather: Clear

File Name : 4\_MRV\_Redlands\_Eucalyptus\_PM  
 Site Code : 22519381  
 Start Date : 5/23/2019  
 Page No : 2



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

	05:00 PM				04:45 PM				04:00 PM				04:30 PM			
+0 mins.	1	119	1	121	0	0	10	10	0	88	0	88	9	0	3	12
+15 mins.	1	119	1	121	0	0	8	8	1	119	1	121	10	0	2	12
+30 mins.	0	166	3	169	0	0	3	3	0	97	0	97	9	0	7	16
+45 mins.	1	131	1	133	1	0	7	8	0	93	0	93	7	0	2	9
Total Volume	3	535	6	544	1	0	28	29	1	397	1	399	35	0	14	49
% App. Total	0.6	98.3	1.1		3.4	0	96.6		0.3	99.5	0.3		71.4	0	28.6	
PHF	.750	.806	.500	.805	.250	.000	.700	.725	.250	.834	.250	.824	.875	.000	.500	.766

City of Moreno Valley  
 N/S: Redlands Boulevard  
 E/W: Eucalyptus Avenue  
 Weather: Clear

File Name : 4\_MRV\_Redlands\_Eucalyptus\_PM  
 Site Code : 22519381  
 Start Date : 5/23/2019  
 Page No : 1

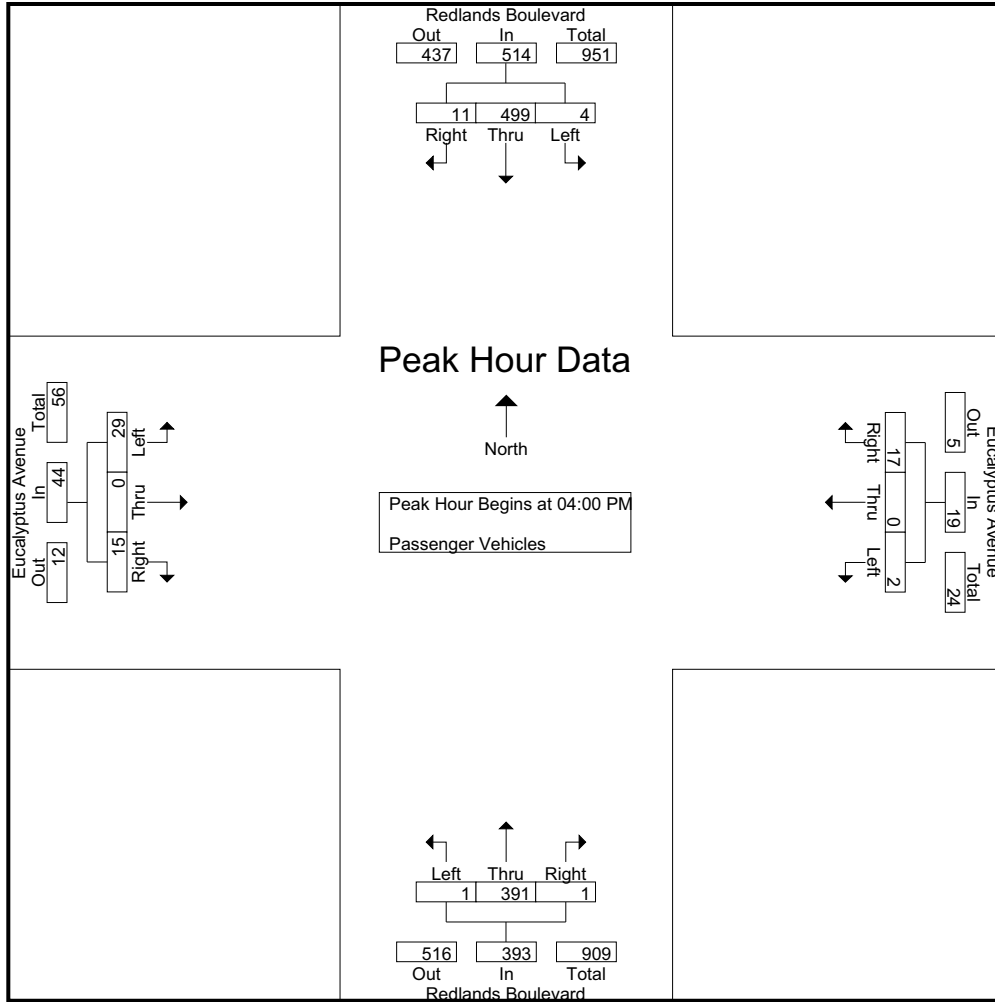
Groups Printed- Passenger Vehicles

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	1	124	3	128	0	0	3	3	0	87	0	87	7	0	5	12	230
04:15 PM	1	147	1	149	1	0	2	3	1	119	1	121	3	0	5	8	281
04:30 PM	0	119	5	124	1	0	3	4	0	94	0	94	9	0	3	12	234
04:45 PM	2	109	2	113	0	0	9	9	0	91	0	91	10	0	2	12	225
Total	4	499	11	514	2	0	17	19	1	391	1	393	29	0	15	44	970
05:00 PM	1	118	1	120	0	0	7	7	0	77	0	77	9	0	7	16	220
05:15 PM	1	119	1	121	0	0	2	2	1	83	1	85	7	0	2	9	217
05:30 PM	0	166	2	168	1	0	6	7	0	77	0	77	6	0	5	11	263
05:45 PM	1	129	1	131	0	0	8	8	0	67	0	67	8	0	5	13	219
Total	3	532	5	540	1	0	23	24	1	304	1	306	30	0	19	49	919
Grand Total	7	1031	16	1054	3	0	40	43	2	695	2	699	59	0	34	93	1889
Apprch %	0.7	97.8	1.5		7	0	93		0.3	99.4	0.3		63.4	0	36.6		
Total %	0.4	54.6	0.8	55.8	0.2	0	2.1	2.3	0.1	36.8	0.1	37	3.1	0	1.8	4.9	

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 04:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	1	124	3	128	0	0	3	3	0	87	0	87	7	0	5	12	230
04:15 PM	1	<b>147</b>	1	<b>149</b>	1	0	2	3	1	<b>119</b>	1	<b>121</b>	3	0	5	8	<b>281</b>
04:30 PM	0	119	5	124	1	0	3	4	0	94	0	94	9	0	3	12	234
04:45 PM	2	109	2	113	0	0	9	9	0	91	0	91	10	0	2	12	225
Total Volume	4	499	11	514	2	0	17	19	1	391	1	393	29	0	15	44	970
% App. Total	0.8	97.1	2.1		10.5	0	89.5		0.3	99.5	0.3		65.9	0	34.1		
PHF	.500	.849	.550	.862	.500	.000	.472	.528	.250	.821	.250	.812	.725	.000	.750	.917	.863

City of Moreno Valley  
 N/S: Redlands Boulevard  
 E/W: Eucalyptus Avenue  
 Weather: Clear

File Name : 4\_MRV\_Redlands\_Eucalyptus\_PM  
 Site Code : 22519381  
 Start Date : 5/23/2019  
 Page No : 2



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

	04:00 PM				04:00 PM				04:00 PM				04:00 PM			
+0 mins.	1	124	3	128	0	0	3	3	0	87	0	87	7	0	5	12
+15 mins.	1	147	1	149	1	0	2	3	1	119	1	121	3	0	5	8
+30 mins.	0	119	5	124	1	0	3	4	0	94	0	94	9	0	3	12
+45 mins.	2	109	2	113	0	0	9	9	0	91	0	91	10	0	2	12
Total Volume	4	499	11	514	2	0	17	19	1	391	1	393	29	0	15	44
% App. Total	0.8	97.1	2.1		10.5	0	89.5		0.3	99.5	0.3		65.9	0	34.1	
PHF	.500	.849	.550	.862	.500	.000	.472	.528	.250	.821	.250	.812	.725	.000	.750	.917

City of Moreno Valley  
 N/S: Redlands Boulevard  
 E/W: Eucalyptus Avenue  
 Weather: Clear

File Name : 4\_MRV\_Redlands\_Eucalyptus\_PM  
 Site Code : 22519381  
 Start Date : 5/23/2019  
 Page No : 1

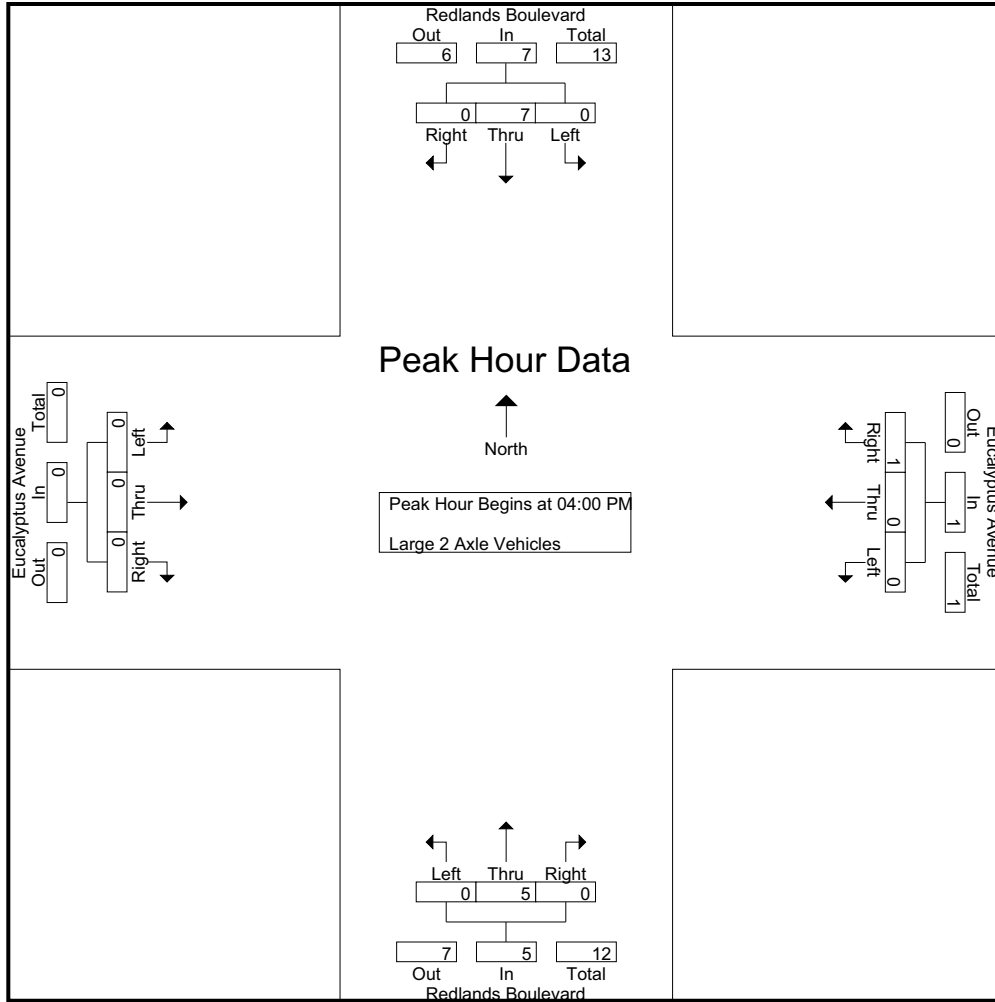
Groups Printed- Large 2 Axle Vehicles

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	3	0	3	0	0	0	0	0	1	0	1	0	0	0	0	4
04:15 PM	0	1	0	1	0	0	1	1	0	0	0	0	0	0	0	0	2
04:30 PM	0	2	0	2	0	0	0	0	0	3	0	3	0	0	0	0	5
04:45 PM	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	2
Total	0	7	0	7	0	0	1	1	0	5	0	5	0	0	0	0	13
05:00 PM	0	1	0	1	0	0	1	1	0	0	0	0	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	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	1
05:45 PM	0	2	0	2	0	0	0	0	0	1	0	1	0	0	0	0	3
Total	0	3	0	3	0	0	2	2	0	1	0	1	0	0	0	0	6
Grand Total	0	10	0	10	0	0	3	3	0	6	0	6	0	0	0	0	19
Apprch %	0	100	0		0	0	100		0	100	0		0	0	0		
Total %	0	52.6	0	52.6	0	0	15.8	15.8	0	31.6	0	31.6	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 04:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	0	3	0	3	0	0	0	0	0	1	0	1	0	0	0	0	4
04:15 PM	0	1	0	1	0	0	1	1	0	0	0	0	0	0	0	0	2
04:30 PM	0	2	0	2	0	0	0	0	0	3	0	3	0	0	0	0	5
04:45 PM	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	2
Total Volume	0	7	0	7	0	0	1	1	0	5	0	5	0	0	0	0	13
% App. Total	0	100	0		0	0	100		0	100	0		0	0	0		
PHF	.000	.583	.000	.583	.000	.000	.250	.250	.000	.417	.000	.417	.000	.000	.000	.000	.650

City of Moreno Valley  
 N/S: Redlands Boulevard  
 E/W: Eucalyptus Avenue  
 Weather: Clear

File Name : 4\_MRV\_Redlands\_Eucalyptus\_PM  
 Site Code : 22519381  
 Start Date : 5/23/2019  
 Page No : 2



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

	04:00 PM				04:00 PM				04:00 PM				04:00 PM			
+0 mins.	0	3	0	3	0	0	0	0	0	1	0	1	0	0	0	0
+15 mins.	0	1	0	1	0	0	1	1	0	0	0	0	0	0	0	0
+30 mins.	0	2	0	2	0	0	0	0	0	3	0	3	0	0	0	0
+45 mins.	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0
Total Volume	0	7	0	7	0	0	1	1	0	5	0	5	0	0	0	0
% App. Total	0	100	0	100	0	0	100	100	0	100	0	100	0	0	0	0
PHF	.000	.583	.000	.583	.000	.000	.250	.250	.000	.417	.000	.417	.000	.000	.000	.000

City of Moreno Valley  
 N/S: Redlands Boulevard  
 E/W: Eucalyptus Avenue  
 Weather: Clear

File Name : 4\_MRV\_Redlands\_Eucalyptus\_PM  
 Site Code : 22519381  
 Start Date : 5/23/2019  
 Page No : 1

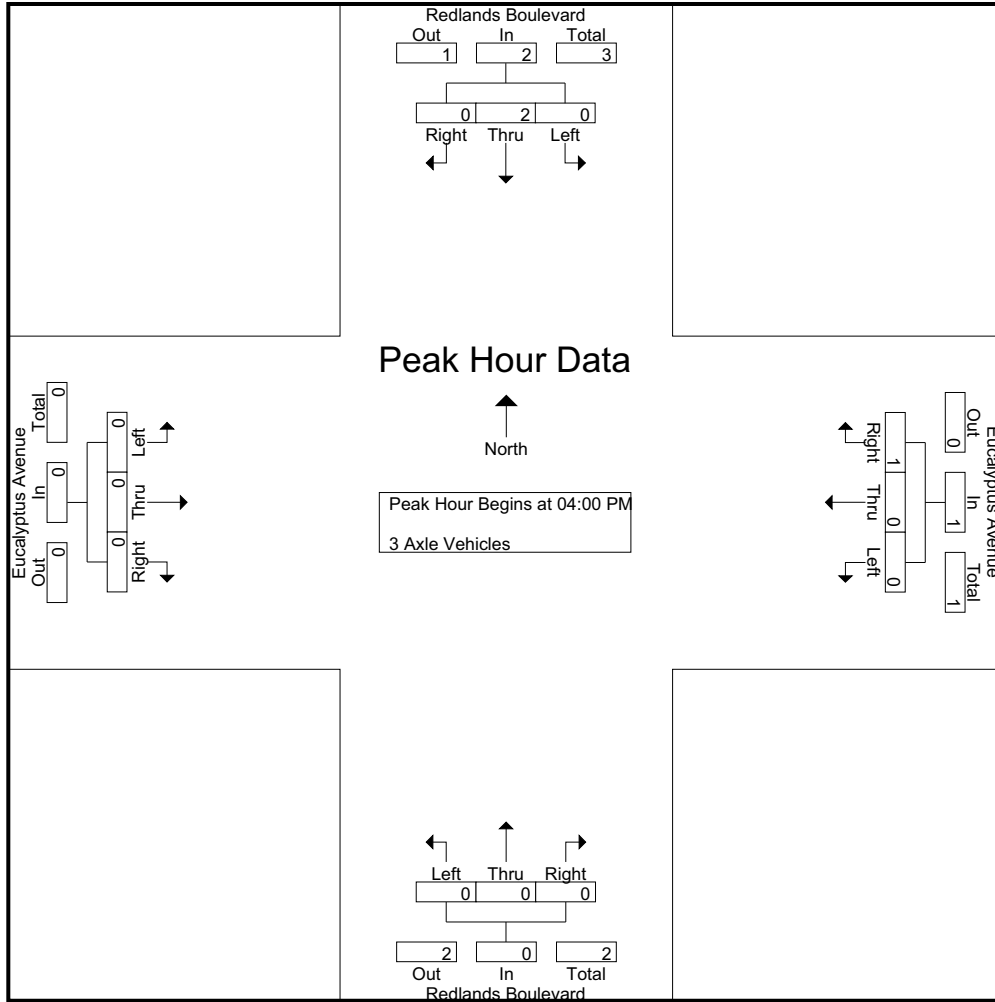
Groups Printed- 3 Axle Vehicles

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	1	1	0	0	0	0	0	0	0	0	0	1
04:15 PM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
04:30 PM	0	1	0	1	0	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	0
Total	0	2	0	2	0	0	1	1	0	0	0	0	0	0	0	0	0	3
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	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	0	1
Total	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	1
Grand Total	0	2	0	2	0	0	1	1	0	1	0	1	0	0	0	0	0	4
Apprch %	0	100	0		0	0	100		0	100	0		0	0	0			
Total %	0	50	0	50	0	0	25	25	0	25	0	25	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 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	1	0	0	0	0	0	0	0	0	0	1
04:15 PM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
04:30 PM	0	1	0	1	0	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	0
Total Volume	0	2	0	2	0	0	1	1	0	0	0	0	0	0	0	0	0	3
% App. Total	0	100	0		0	0	100		0	0	0		0	0	0			
PHF	.000	.500	.000	.500	.000	.000	.250	.250	.000	.000	.000	.000	.000	.000	.000	.000	.000	.750

City of Moreno Valley  
 N/S: Redlands Boulevard  
 E/W: Eucalyptus Avenue  
 Weather: Clear

File Name : 4\_MRV\_Redlands\_Eucalyptus\_PM  
 Site Code : 22519381  
 Start Date : 5/23/2019  
 Page No : 2



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

	04:00 PM				04:00 PM				04:00 PM				04:00 PM			
+0 mins.	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0
+15 mins.	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0
+30 mins.	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	2	0	2	0	0	1	1	0	0	0	0	0	0	0	0
% App. Total	0	100	0	0	0	0	100	0	0	0	0	0	0	0	0	0
PHF	.000	.500	.000	.500	.000	.000	.250	.250	.000	.000	.000	.000	.000	.000	.000	.000



City of Moreno Valley  
 N/S: Redlands Boulevard  
 E/W: Eucalyptus Avenue  
 Weather: Clear

File Name : 4\_MRV\_Redlands\_Eucalyptus\_PM  
 Site Code : 22519381  
 Start Date : 5/23/2019  
 Page No : 1

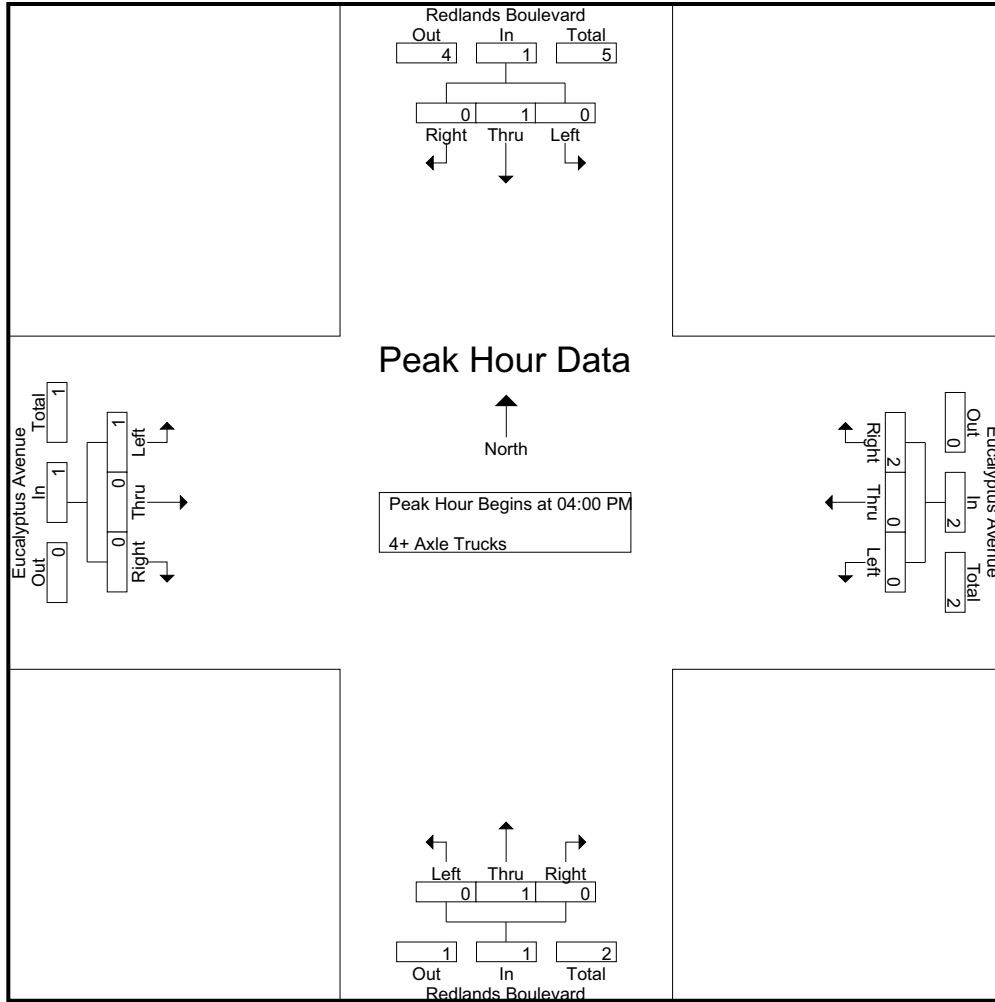
Groups Printed- 4+ Axle Trucks

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	1	0	0	1	1
04:15 PM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	1	1	0	1	0	1	0	0	0	0	0
Total	0	1	0	1	0	0	2	2	0	1	0	1	1	0	0	1	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	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	1	1	0	0	0	0	0	1	0	1	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	1	1	0	0	1	1	0	1	0	1	0	0	0	0	3
Grand Total	0	1	1	2	0	0	3	3	0	2	0	2	1	0	0	1	8
Apprch %	0	50	50		0	0	100		0	100	0		100	0	0		
Total %	0	12.5	12.5	25	0	0	37.5	37.5	0	25	0	25	12.5	0	0	12.5	

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 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	0	0	1	0	0	1	1
04:15 PM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	1	1	0	1	0	1	0	0	0	0	0
Total Volume	0	1	0	1	0	0	2	2	0	1	0	1	1	0	0	1	5
% App. Total	0	100	0		0	0	100		0	100	0		100	0	0		
PHF	.000	.250	.000	.250	.000	.000	.500	.500	.000	.250	.000	.250	.250	.000	.000	.250	.625

City of Moreno Valley  
 N/S: Redlands Boulevard  
 E/W: Eucalyptus Avenue  
 Weather: Clear

File Name : 4\_MRV\_Redlands\_Eucalyptus\_PM  
 Site Code : 22519381  
 Start Date : 5/23/2019  
 Page No : 2



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

	04:00 PM				04:00 PM				04:00 PM				04:00 PM			
+0 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+15 mins.	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	0	0	0	1	1	0	1	0	1	0	0	0	0
Total Volume	0	1	0	1	0	0	2	2	0	1	0	1	1	0	0	1
% App. Total	0	100	0	0	0	0	100	100	0	100	0	0	100	0	0	0
PHF	.000	.250	.000	.250	.000	.000	.500	.500	.000	.250	.000	.250	.250	.000	.000	.250



# Counts Unlimited, Inc.

City of Moreno Valley  
 Redlands Boulevard  
 N/ State Route 60 Westbound Ramps  
 24 Hour Directional Volume Count

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

MRV001  
 Site Code: 225-19381

Start Time	5/22/2019 Wed	Northbound		Hour Totals		Southbound		Hour Totals		Combined Totals	
		Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00		3	86			23	77				
12:15		3	91			17	84				
12:30		5	92			18	76				
12:45		8	94	19	363	20	100	78	337	97	700
01:00		7	89			24	93				
01:15		6	121			16	94				
01:30		5	98			10	96				
01:45		4	110	22	418	11	109	61	392	83	810
02:00		6	142			15	81				
02:15		6	139			17	113				
02:30		8	144			3	86				
02:45		15	140	35	565	7	173	42	453	77	1018
03:00		6	149			8	129				
03:15		14	158			13	164				
03:30		10	141			10	<b>178</b>				
03:45		15	159	45	607	15	<b>174</b>	46	645	91	1252
04:00		13	136			30	<b>175</b>				
04:15		20	163			28	<b>181</b>				
04:30		35	<b>162</b>			22	146				
04:45		31	<b>164</b>	99	625	42	132	122	634	221	1259
05:00		42	<b>150</b>			35	170				
05:15		73	<b>165</b>			53	148				
05:30		85	119			65	189				
05:45		109	125	309	559	58	182	211	689	520	1248
06:00		<b>114</b>	128			63	151				
06:15		<b>202</b>	88			95	121				
06:30		<b>179</b>	107			126	94				
06:45		<b>158</b>	84	653	407	139	85	423	451	1076	858
07:00		105	87			<b>135</b>	79				
07:15		97	61			<b>132</b>	60				
07:30		101	38			<b>166</b>	64				
07:45		129	31	432	217	<b>154</b>	59	587	262	1019	479
08:00		92	33			109	47				
08:15		100	35			139	55				
08:30		91	45			86	59				
08:45		87	42	370	155	96	53	430	214	800	369
09:00		100	37			74	49				
09:15		90	39			64	40				
09:30		85	40			82	41				
09:45		77	35	352	151	72	35	292	165	644	316
10:00		69	31			59	33				
10:15		83	28			73	39				
10:30		62	27			82	27				
10:45		71	22	285	108	72	25	286	124	571	232
11:00		59	19			68	22				
11:15		75	20			71	19				
11:30		78	23			75	13				
11:45		87	17	299	79	71	16	285	70	584	149
<b>Total</b>		2920	4254	2920	4254	2863	4436	2863	4436	5783	8690
<b>Combined Total</b>			7174		7174		7299		7299		14473
AM Peak	-	06:00	-	-	-	07:00	-	-	-	-	-
Vol.	-	653	-	-	-	587	-	-	-	-	-
P.H.F.		0.808				0.884					
PM Peak	-	-	04:30	-	-	-	03:30	-	-	-	-
Vol.	-	-	641	-	-	-	708	-	-	-	-
P.H.F.			0.971				0.978				
Percentage		40.7%	59.3%			39.2%	60.8%				
ADT/AADT		ADT 14,473	AADT 14,473								

# Counts Unlimited, Inc.

City of Moreno Valley  
 Redlands Boulevard  
 S/ State Route 60 Eastbound Ramps  
 24 Hour Directional Volume Count

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

MRV002  
 Site Code: 225-19381

Start Time	5/22/2019 Wed	Northbound		Hour Totals		Southbound		Hour Totals		Combined Totals	
		Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00		10	71			23	55				
12:15		10	68			24	77				
12:30		7	66			9	64				
12:45		11	79	38	284	12	74	68	270	106	554
01:00		8	83			12	55				
01:15		12	102			6	73				
01:30		1	77			14	81				
01:45		9	68	30	330	24	81	56	290	86	620
02:00		8	94			17	76				
02:15		6	103			13	81				
02:30		12	98			6	79				
02:45		17	79	43	374	8	103	44	339	87	713
03:00		10	105			8	112				
03:15		19	112			11	113				
03:30		20	108			9	132				
03:45		28	93	77	418	4	132	32	489	109	907
04:00		20	<b>96</b>			10	136				
04:15		30	<b>125</b>			13	160				
04:30		53	<b>128</b>			13	122				
04:45		35	<b>107</b>	138	456	20	100	56	518	194	974
05:00		45	87			13	135				
05:15		69	91			28	<b>128</b>				
05:30		69	84			59	<b>172</b>				
05:45		92	88	275	350	53	<b>126</b>	153	561	428	911
06:00		100	75			42	<b>155</b>				
06:15		<b>156</b>	73			53	117				
06:30		<b>157</b>	72			75	87				
06:45		<b>171</b>	51	584	271	96	91	266	450	850	721
07:00		<b>129</b>	79			<b>94</b>	75				
07:15		124	36			<b>93</b>	68				
07:30		110	43			<b>108</b>	72				
07:45		121	28	484	186	<b>112</b>	61	407	276	891	462
08:00		96	36			65	43				
08:15		86	39			71	60				
08:30		95	41			74	56				
08:45		108	40	385	156	67	48	277	207	662	363
09:00		88	42			47	54				
09:15		76	35			35	39				
09:30		79	45			48	46				
09:45		64	29	307	151	50	37	180	176	487	327
10:00		69	36			53	31				
10:15		79	35			50	43				
10:30		53	21			46	31				
10:45		70	20	271	112	53	22	202	127	473	239
11:00		53	15			54	29				
11:15		58	23			51	25				
11:30		64	21			47	21				
11:45		58	12	233	71	68	18	220	93	453	164
<b>Total</b>		<b>2865</b>	<b>3159</b>	<b>2865</b>	<b>3159</b>	<b>1961</b>	<b>3796</b>	<b>1961</b>	<b>3796</b>	<b>4826</b>	<b>6955</b>
<b>Combined Total</b>		<b>6024</b>		<b>6024</b>		<b>5757</b>		<b>5757</b>		<b>11781</b>	
AM Peak	-	06:15	-	-	-	07:00	-	-	-	-	-
Vol.	-	613	-	-	-	407	-	-	-	-	-
P.H.F.	-	0.896	-	-	-	0.908	-	-	-	-	-
PM Peak	-	-	04:00	-	-	-	05:15	-	-	-	-
Vol.	-	-	456	-	-	-	581	-	-	-	-
P.H.F.	-	-	0.891	-	-	-	0.844	-	-	-	-
Percentage		47.6%	52.4%			34.1%	65.9%				
ADT/AADT		ADT 11,781	AADT 11,781								

## **APPENDIX D**

### **FUTURE GENERAL PLAN BUILDOUT TRAFFIC VOLUMES**

# **SR-60/THEODORE INTERCHANGE PA/ED TRAFFIC IMPACT ANALYSIS**

Caltrans No.:0813000109

Caltrans EA: 0M590

*Prepared Under:* **RBF**

*Prepared by:*

**Parsons Brinckerhoff, Inc.**

451 East Vanderbilt Way, Suite 200

San Bernardino, CA 92408

For the City of Moreno Valley

**January 28, 2015**

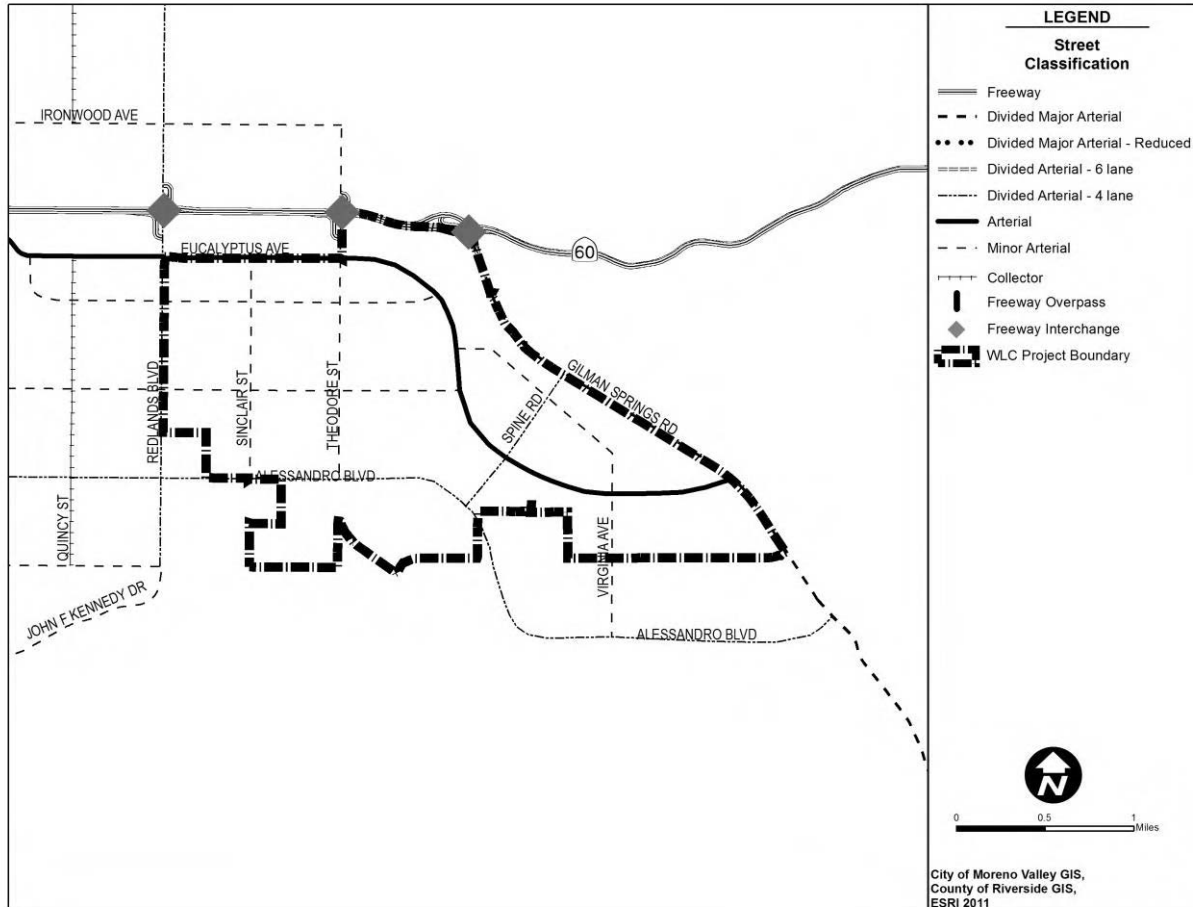


Exhibit 4: MHSP Road Network

Exhibit 5: The World Logistics Center Specific Plan Land Use Summary

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



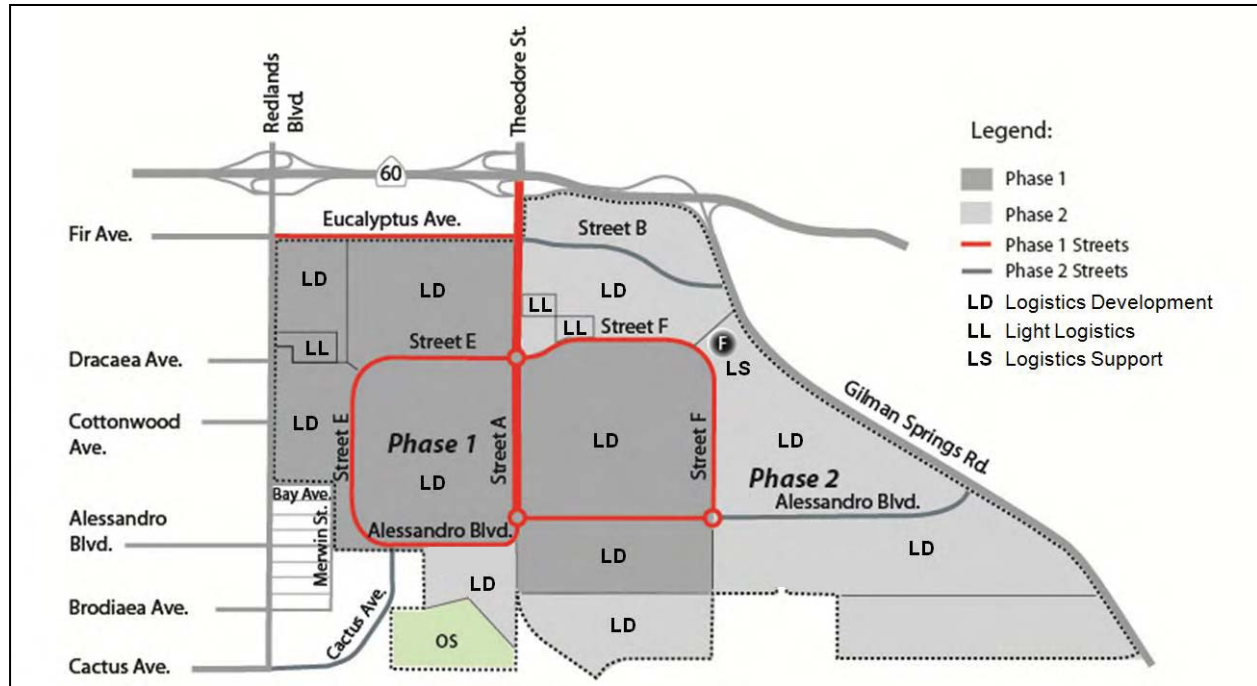


Exhibit 6: WLC Proposed Land Uses and Road Network

Vehicle Type	Surface Street PCEs	Freeway PCEs	AM Peak Hour						PM Peak Hour						Daily		
			Vehicles			PCEs			Vehicles			PCEs			Veh	Surface Street PCEs	Freeway PCEs
			In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total			
<b>MHSP</b>																	
Autos	1.0	1.0	5,970	5,116	11,086	5,970	5,116	11,086	6,968	7,721	14,689	6,968	7,721	14,689	158,021	158,021	158,021
Light Trucks	1.5	1.5	42	42	83	62	62	125	39	39	78	59	59	117	1,451	2,177	2,177
Medium Trucks	2.0	1.5	31	31	61	61	61	122	42	42	84	84	84	169	1,284	2,567	1,925
Heavy Trucks	3.0	1.5	24	24	48	72	72	144	30	30	60	90	90	180	1,238	3,715	1,858
<b>Total</b>			<b>6,066</b>	<b>5,212</b>	<b>11,278</b>	<b>6,165</b>	<b>5,311</b>	<b>11,476</b>	<b>7,080</b>	<b>7,832</b>	<b>14,911</b>	<b>7,201</b>	<b>7,954</b>	<b>15,155</b>	<b>161,995</b>	<b>166,481</b>	<b>163,981</b>
<b>WLC</b>																	
Autos	1.0	1.0	2,120	821	2,941	2,120	821	2,941	726	2,471	3,195	726	2,471	3,195	54,714	54,714	54,714
Light Trucks	1.5	1.5	172	98	271	259	147	406	137	160	297	205	241	446	2,385	3,578	3,578
Medium Trucks	2.0	1.5	230	131	361	460	262	722	182	214	396	365	428	792	3,181	6,363	4,772
Heavy Trucks	3.0	1.5	611	348	959	1,834	1,044	2,878	484	568	1,052	1,453	1,704	3,157	8,440	25,319	12,660
<b>Total</b>			<b>3,134</b>	<b>1,398</b>	<b>4,532</b>	<b>4,673</b>	<b>2,274</b>	<b>6,947</b>	<b>1,529</b>	<b>3,413</b>	<b>4,941</b>	<b>2,748</b>	<b>4,843</b>	<b>7,590</b>	<b>68,721</b>	<b>89,975</b>	<b>75,724</b>

Exhibit 7: Trip Generation for MHSP and for WLC

Under both the MHSP and the **WLC**, the area north of SR-60 would be developed as a mix of office buildings and single-family dwellings.

As the current adopted plan, the MHSP is the assumed long-range land use plan for this study. However, since there is some possibility that the City will adopt the WLC instead, a decision was made to analyze potential improvements to the Theodore IC using both sets of land use plans.

**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

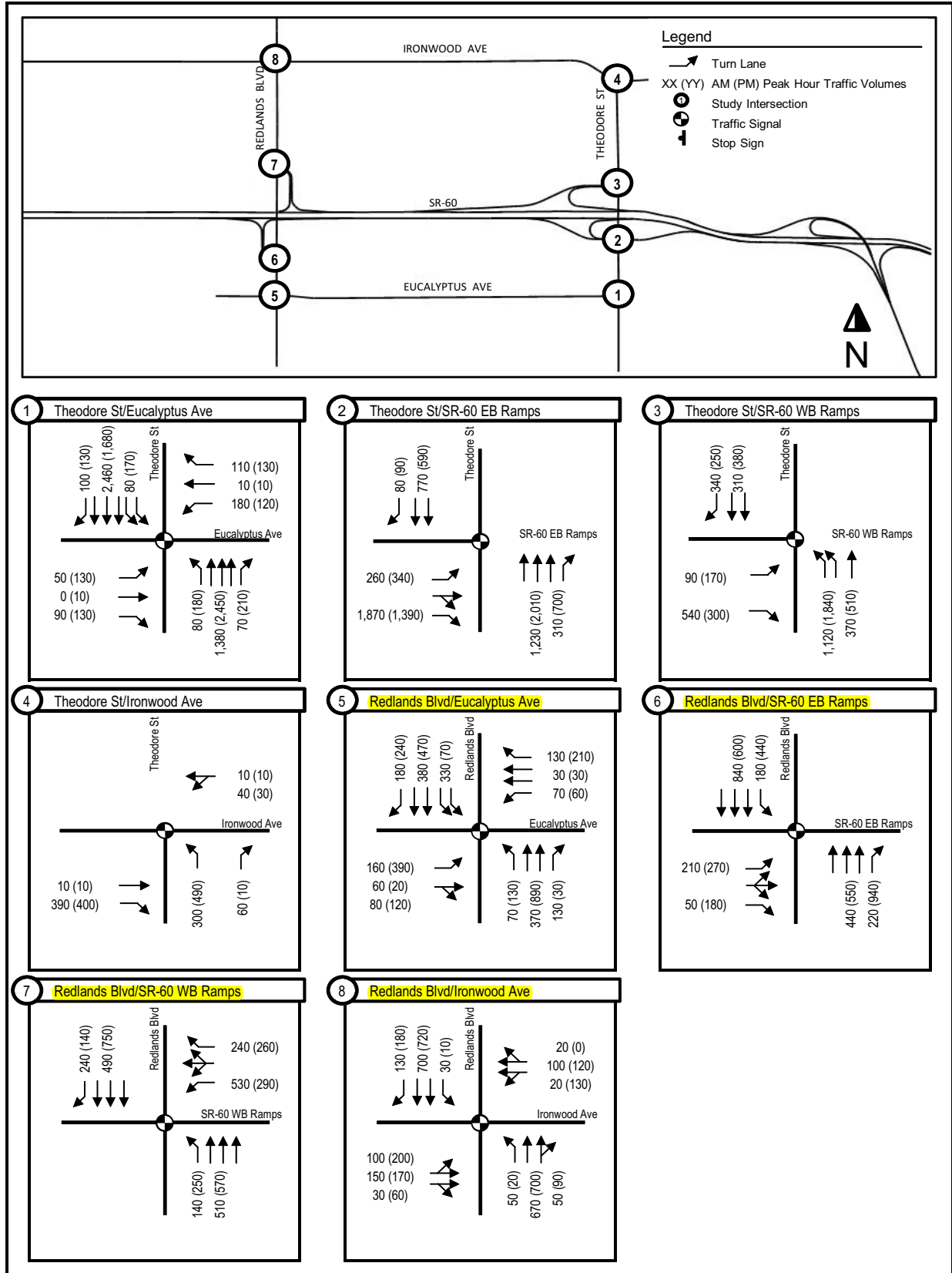


Exhibit 37: Turning Movement Volumes (PCE) under Alternative 2, 2040 WLC

Exhibit 43 and Exhibit 44 describe the conditions on SR-60 freeway mainline and weaving sections under MHSP 2040 and WLC 2040 assumptions. As shown in the tables, the section of SR-60 east of Redlands Blvd which has two general-purpose lanes and one HOV lane per direction cannot accommodate the expected long-term demand. The finding that two mixed-flow lanes and one HOV lane would not provide sufficient capacity is consistent with previous reports, such as the SR-60 Route Concept Report which concluded that three general purpose lanes were needed per direction east of Redlands Boulevard and the MHSP EIR which concluded that four lanes were needed west of Theodore Street.

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

Since all six build alternatives have the same westbound on-ramps and eastbound off-ramps the freeway mainline problems shown in Exhibit 43 and Exhibit 44 would occur for all Project build alternatives. Thus it is not a criterion for selecting the Preferred Alternative.

**Exhibit 43: Freeway Mainline and Weaving LOS under Alternative 2, MHSP 2040**

	ID	SR-60 Freeway Segment	Type	No. of Lanes	AM Peak Hour				PM Peak Hour			
					Volume	Truck %	Density (pc/mi/ln)	LOS	Volume	Truck %	Density (pc/mi/ln)	LOS
Westbound	1	Gilman Springs Rd to Theodore St	W	3+Aux	5,430	6	28.3	D	4,850	6	24.6	C
	2	Theodore St to Redlands Blvd	ML	3+Aux	5,740	6	22.7	C	5,410	6	21.2	C
	3	Redlands Blvd to Moreno Beach Dr	ML	2	4,630	7	50.7	F	4,530	7	48.1	F
Eastbound	4	Moreno Beach Dr to Redlands Blvd	ML	2	3,440	9	29.4	D	4,480	6	46.3	F
	5	Redlands Blvd to Theodore St	ML	3+Aux	4,300	7	16.7	B	6,310	4	25.2	C
	6	Theodore St to Gilman Springs Rd	W	3+Aux	3,710	7	15.8	B	6,110	4	27.6	C
Notes: "ML" means "Basic Mainline Segment" "W" means "Weaving Segment" "Aux" means "Auxiliary Lane"												

**Exhibit 44: Freeway Mainline and Weaving LOS under Alternative 2, WLC 2040**

	ID	SR-60 Freeway Segment	Type	No. of Lanes	AM Peak Hour				PM Peak Hour			
					Volume	Truck %	Density (pc/mi/ln)	LOS	Volume	Truck %	Density (pc/mi/ln)	LOS
Westbound	1	Gilman Springs Rd to Theodore St	W	3+Aux	5,470	8	29.5	D	4,640	10	24.2	C
	2	Theodore St to Redlands Blvd	ML	3+Aux	5,920	11	24.3	C	5,580	15	23.1	C
	3	Redlands Blvd to Moreno Beach Dr	ML	2	4,710	14	58.2	F	4,610	18	57.8	F
Eastbound	4	Moreno Beach Dr to Redlands Blvd	ML	2	3,690	24	36.9	E	4,820	15	63.5	F
	5	Redlands Blvd to Theodore St	ML	3+Aux	4,420	20	18.3	C	6,550	11	27.7	D
	6	Theodore St to Gilman Springs Rd	W	3+Aux	3,540	12	15.9	B	6,250	6	28.8	D
Notes: "ML" means "Basic Mainline Segment" "W" means "Weaving Segment" "Aux" means "Auxiliary Lane"												

The conditions on study ramps for Alternative 2 in 2040 are shown in Exhibit 45 and Exhibit 46 for the MHSP and the WLC scenarios respectively. The Redlands Boulevard Interchange ramps are the same

for all Project alternatives so the unacceptable LOS for the merge section at the Redlands eastbound on-ramp in the WLC cannot serve as a criterion for selecting a Preferred Alternative.

**Exhibit 45: Freeway Ramp LOS under Alternative 2, MHSP 2040**

	ID	SR-60 Merge/Diverge Section	Ramp No. of Lanes	AM Peak Hour					PM Peak Hour				
				Mainline Volume	Ramp Volume	Ramp Truck %	Density (pc/mi/ln)	LOS	Mainline Volume	Ramp Volume	Ramp Truck %	Density (pc/mi/ln)	LOS
Westbound	1	On-Ramp from Gilman Springs Rd	1	3,814	1,616	2	29.3	D	3,341	1,509	2	25.9	C
	2	Off-Ramp to Theodore St	1	5,430	361	1	22.2	C	4,850	351	2	19.6	B
	3	Loop On-Ramp from Theodore St	1	Does not Exist under this Scenario									
	4	On-Ramp from Collector/Distributor Rd	1	Does not Exist under this Scenario									
	5	Direct On-Ramp from Theodore St	1	5,069	667	4	26.6	C	4,499	915	4	26.6	C
	6	Off-Ramp to Redlands Blvd	2	5,740	689	2	27.4	C	5,410	448	3	25.8	C
	7	On-Ramp from Redlands Blvd	1	5,051	555	3	29.4	D	4,962	483	5	28.4	D
Eastbound	8	Off-Ramp to Redlands Blvd	2	3,440	219	9	22.2	C	4,480	445	5	28.5	D
	9	On-Ramp from Redlands Blvd	1	3,947	353	5	20.4	C	4,957	1,353	2	31.4	D
	10	Off-Ramp to Theodore St	2	4,300	843	5	20.6	C	6,310	818	4	29.8	D
	11	Loop On-Ramp from Theodore St	1	3,457	101	3	21.1	C	5,492	139	1	31.1	D
	12	Direct On-Ramp from Theodore St	1	3,558	152	3	16.0	B	5,631	480	1	29.0	D
	13	Off-Ramp to Gilman Springs Rd	2	3,710	1,176	2	17.8	B	6,110	1,639	1	28.8	D
	14	Off-Ramp to Collector/Distributor Rd	1	Does not Exist under this Scenario									

**Exhibit 46: Freeway Ramp LOS under Alternative 2, WLC 2040**

	ID	SR-60 Merge/Diverge Section	Ramp No. of Lanes	AM Peak Hour					PM Peak Hour				
				Mainline Volume	Ramp Volume	Ramp Truck %	Density (pc/mi/ln)	LOS	Mainline Volume	Ramp Volume	Ramp Truck %	Density (pc/mi/ln)	LOS
Westbound	1	On-Ramp from Gilman Springs Rd	1	3,891	1,579	6	31.2	D	3,220	1,420	10	25.5	C
	2	Off-Ramp to Theodore St	1	5,470	474	20	22.8	C	4,640	347	24	19.1	B
	3	Loop On-Ramp from Theodore St	1	Does not Exist under this Scenario									
	4	On-Ramp from Collector/Distributor Rd	1	Does not Exist under this Scenario									
	5	Direct On-Ramp from Theodore St	1	4,996	920	57	30.4	D	4,293	1,287	16	29.8	D
	6	Off-Ramp to Redlands Blvd	2	5,920	719	6	28.9	D	5,580	469	7	27.8	C
	7	On-Ramp from Redlands Blvd	1	5,201	352	6	29.3	D	5,111	377	6	29.5	D
Eastbound	8	Off-Ramp to Redlands Blvd	2	3,690	219	9	25.5	C	4,820	445	5	32.0	D
	9	On-Ramp from Redlands Blvd	1	4,043	377	7	21.8	C	5,319	1,231	3	32.3	D
	10	Off-Ramp to Theodore St	2	4,420	1,183	45	22.5	C	6,550	938	47	32.0	D
	11	Loop On-Ramp from Theodore St	1	3,237	80	1	20.8	C	5,612	89	1	32.3	D
	12	Direct On-Ramp from Theodore St	1	3,317	219	38	16.6	B	5,701	550	7	31.1	D
	13	Off-Ramp to Gilman Springs Rd	2	3,540	1,079	15	17.4	B	6,250	1,757	4	29.8	D
	14	Off-Ramp to Collector/Distributor Rd	1	Does not Exist under this Scenario									

## **APPENDIX E**

### **SR-60 FREEWAY/REDLANDS INTERCHANGE ALTERNATIVE BUILDOUT CONFIGURATIONS**

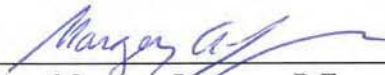
# Project Study Report-Project Development Support (PSR-PDS)

To

## Request Approval of a Locally Funded Project to Proceed to Project Approval and Environmental Document Phase

On SR – 60 at Redlands Boulevard Interchange  
Between Moreno Beach Drive  
And Theodore Street

APPROVAL RECOMMENDED:

  
\_\_\_\_\_  
*Margery Lazarus, P.E.*  
CITY OF MORENO VALLEY  
*Accepts Risks Identified in this PSR-PDS and  
Attached Risk Register*

APPROVAL RECOMMENDED:

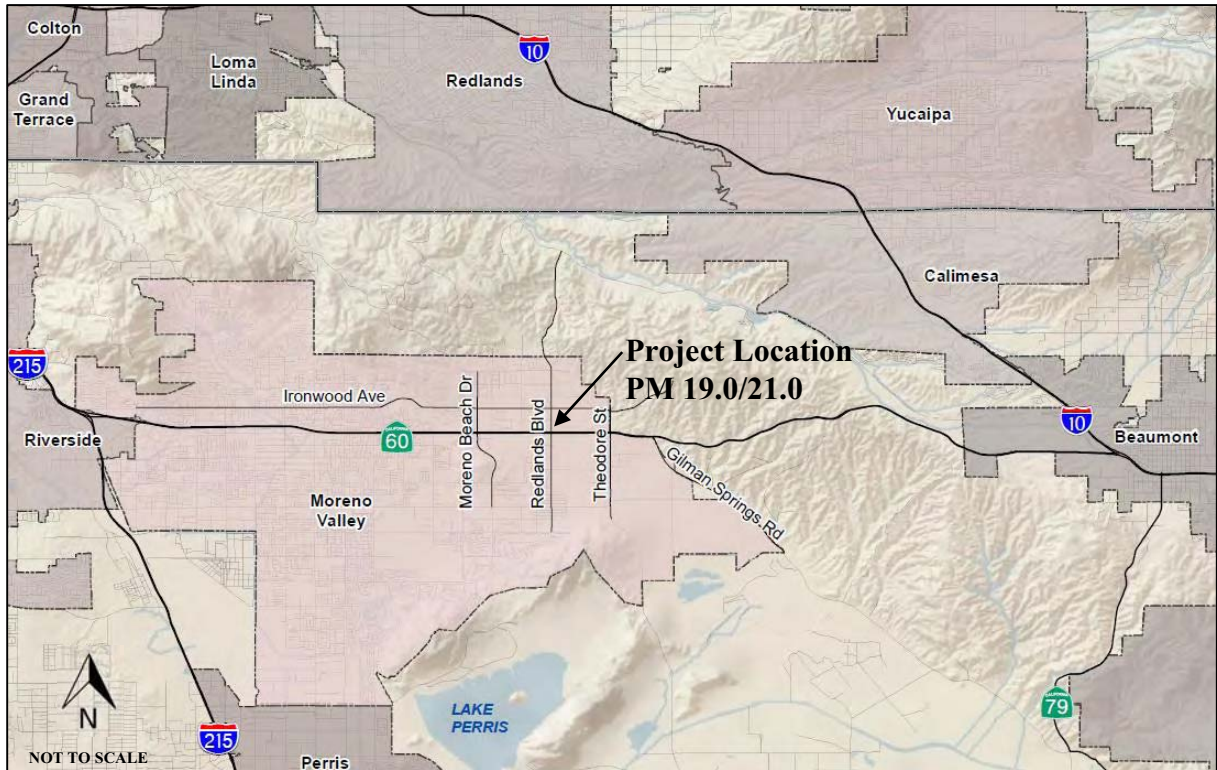
  
\_\_\_\_\_  
*Awais Sheikh, P.E.*  
CALTRANS PROJECT MANAGER

APPROVED:

  
\_\_\_\_\_  
*John Bulinski*  
DISTRICT DIRECTOR

6/20/16  
DATE

## Vicinity Map



On Route SR - 60

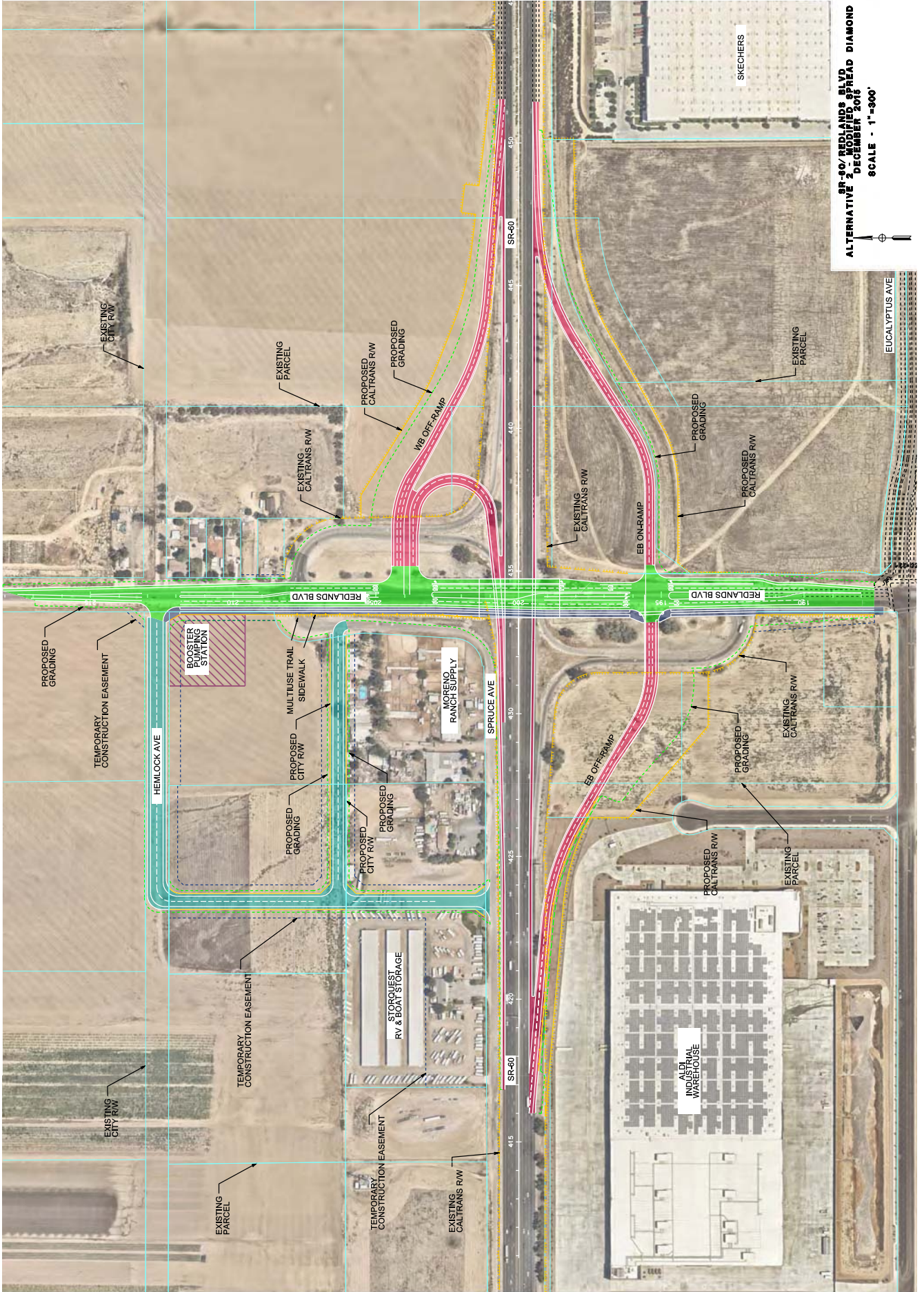
Between Moreno Beach Drive

And Theodore Street



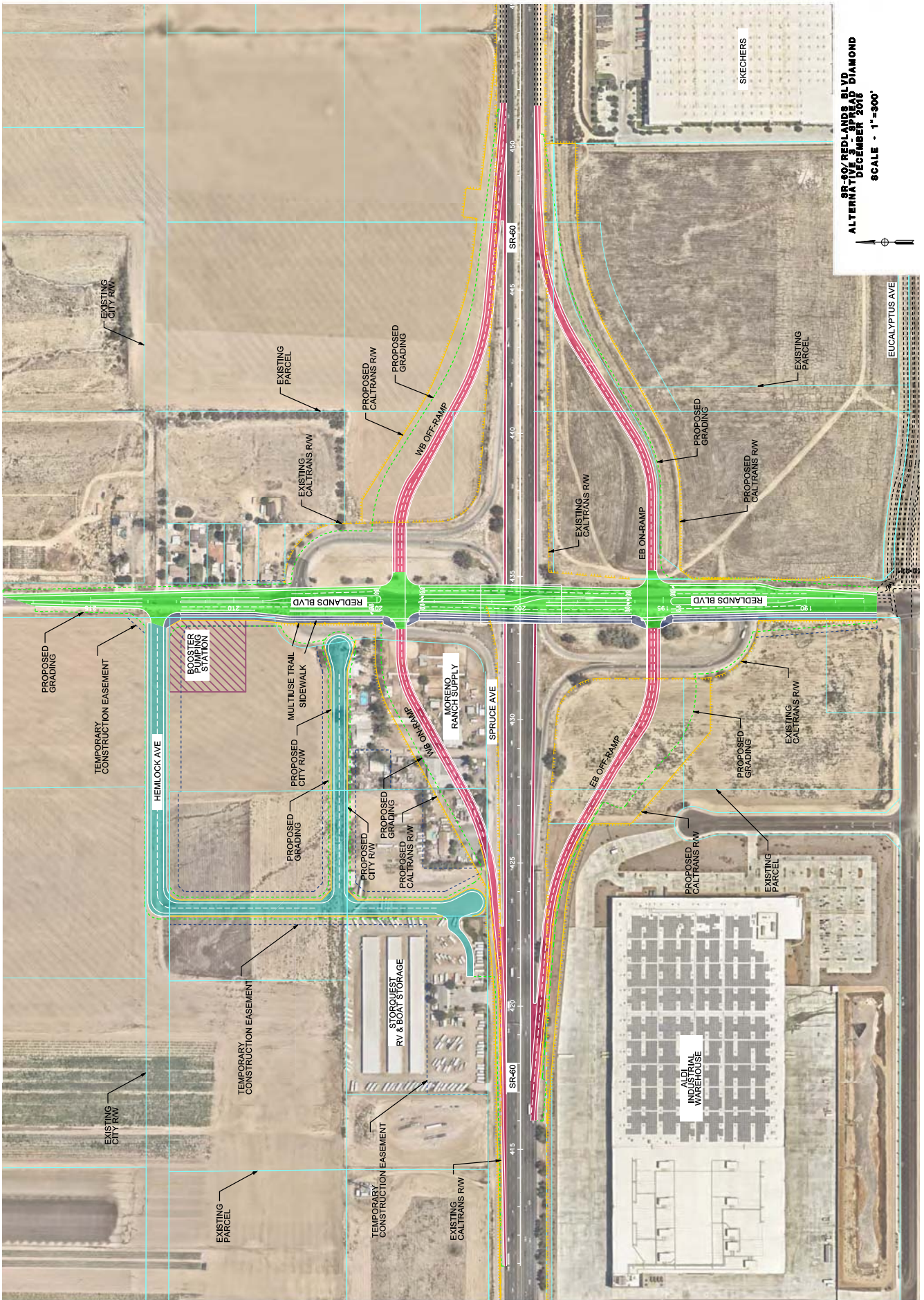






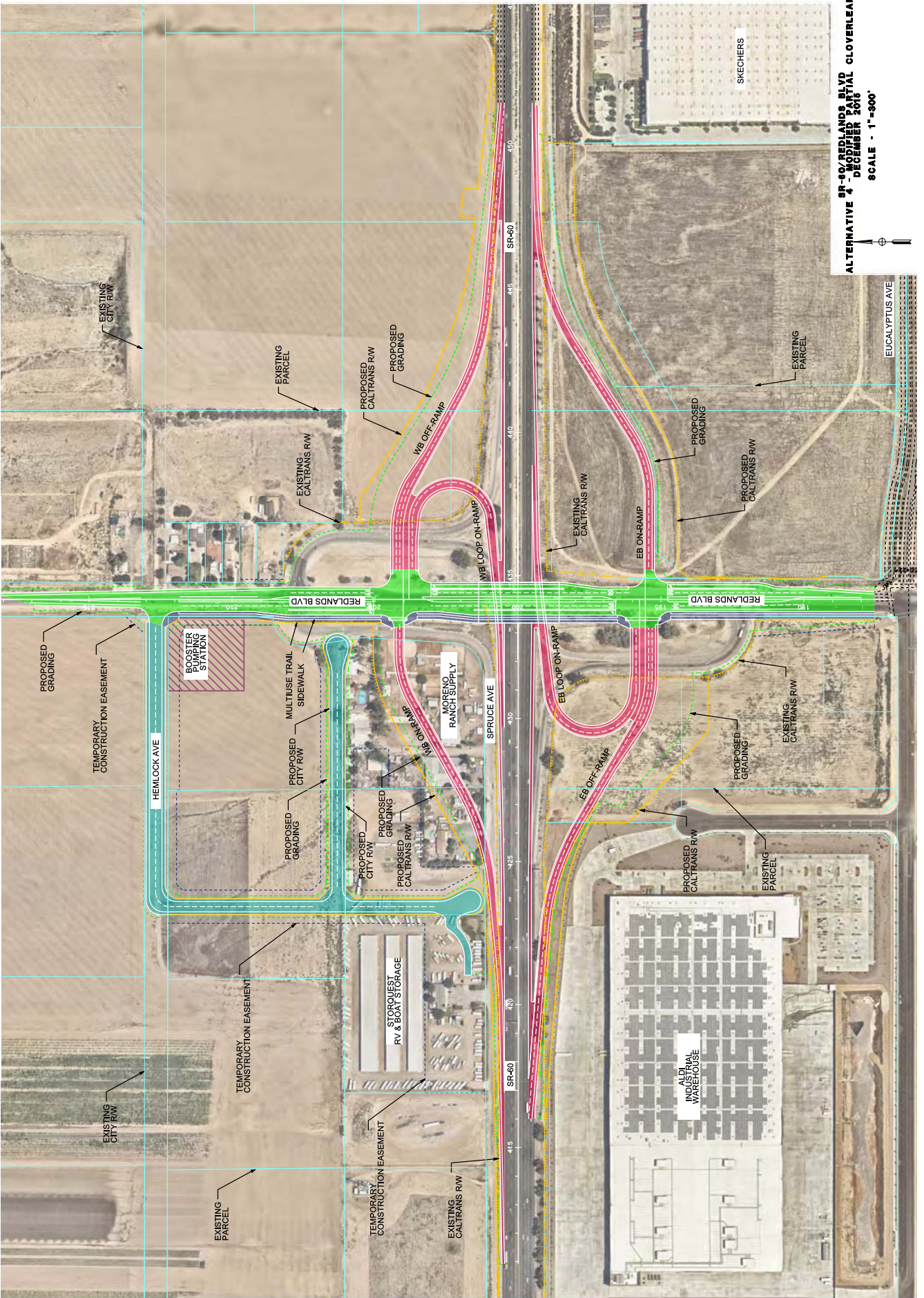
SR-60/ REDLANDS BLVD  
 ALTERNATIVE 2, MODIFIED SPREAD DIAMOND  
 DECEMBER 2016  
 SCALE - 1"=300'





**SR-60/REDLANDS BLVD  
ALTERNATIVE 3 SPREAD DIAMOND  
DECEMBER 2018  
SCALE - 1"=300'**





SR-60/REDLANDS BLVD  
 ALTERNATIVE 4 - MODIFIED PARTIAL CLOVERLEAF  
 DECEMBER 2018  
 SCALE - 1"=300'

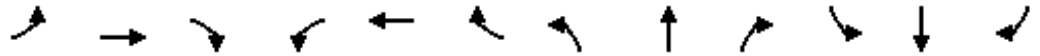
## **APPENDIX F**

### **LEVEL OF SERVICE WORKSHEETS -INTERIM CONDITIONS**

**EXISTING**

Arco AM/PM Service Station  
1: Redlands Boulevard & Ironwood Avenue

Existing without Project (AM Peak Hour)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔		↔	↔		↔	↔	↔
Traffic Volume (veh/h)	108	5	20	5	8	3	30	400	8	2	553	106
Future Volume (veh/h)	108	5	20	5	8	3	30	400	8	2	553	106
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	112	5	21	5	8	3	31	417	8	2	576	110
Peak Hour Factor	0.96	0.96	0.96	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	0	0	0
Cap, veh/h	148	7	28	15	24	9	83	1043	20	7	986	836
Arrive On Green	0.10	0.10	0.10	0.03	0.03	0.03	0.05	0.56	0.56	0.00	0.52	0.52
Sat Flow, veh/h	1444	64	271	566	905	339	1810	1858	36	1810	1900	1610
Grp Volume(v), veh/h	138	0	0	16	0	0	31	0	425	2	576	110
Grp Sat Flow(s),veh/h/ln	1779	0	0	1811	0	0	1810	0	1894	1810	1900	1610
Q Serve(g_s), s	4.9	0.0	0.0	0.6	0.0	0.0	1.1	0.0	8.3	0.1	13.7	2.3
Cycle Q Clear(g_c), s	4.9	0.0	0.0	0.6	0.0	0.0	1.1	0.0	8.3	0.1	13.7	2.3
Prop In Lane	0.81		0.15	0.31		0.19	1.00		0.02	1.00		1.00
Lane Grp Cap(c), veh/h	183	0	0	49	0	0	83	0	1063	7	986	836
V/C Ratio(X)	0.76	0.00	0.00	0.33	0.00	0.00	0.37	0.00	0.40	0.29	0.58	0.13
Avail Cap(c_a), veh/h	462	0	0	470	0	0	331	0	1063	331	986	836
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	28.6	0.0	0.0	31.3	0.0	0.0	30.3	0.0	8.1	32.5	10.9	8.1
Incr Delay (d2), s/veh	6.2	0.0	0.0	3.8	0.0	0.0	2.7	0.0	1.1	21.5	2.5	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	2.2	0.0	0.0	0.3	0.0	0.0	0.5	0.0	2.6	0.1	4.8	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	34.8	0.0	0.0	35.1	0.0	0.0	33.1	0.0	9.3	54.0	13.4	8.5
LnGrp LOS	C	A	A	D	A	A	C	A	A	D	B	A
Approach Vol, veh/h		138			16			456			688	
Approach Delay, s/veh		34.8			35.1			10.9			12.7	
Approach LOS		C			D			B			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.3	41.8		6.8	8.0	39.0		11.7				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0				
Max Green Setting (Gmax), s	12.0	34.0		17.0	12.0	34.0		17.0				
Max Q Clear Time (g_c+I1), s	2.1	10.3		2.6	3.1	15.7		6.9				
Green Ext Time (p_c), s	0.0	2.3		0.0	0.0	3.4		0.4				

Intersection Summary

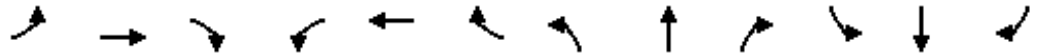
HCM 6th Ctrl Delay	14.7
HCM 6th LOS	B

Notes

User approved pedestrian interval to be less than phase max green.

Arco AM/PM Service Station  
 3: Redlands Boulevard & Spruce Avenue/SR-60 WB

Existing without Project (AM Peak Hour)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↑	↗	↖	↓	↘
Traffic Volume (veh/h)	2	3	1	43	0	31	3	399	143	264	322	1
Future Volume (veh/h)	2	3	1	43	0	31	3	399	143	264	322	1
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	2	3	1	46	0	33	3	429	154	284	346	1
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	7	10	3	65	0	46	905	491	520	825	405	1
Arrive On Green	0.01	0.01	0.01	0.06	0.00	0.06	0.50	0.26	0.26	0.46	0.21	0.21
Sat Flow, veh/h	605	908	303	1002	0	719	1810	1900	1610	1810	1894	5
Grp Volume(v), veh/h	6	0	0	79	0	0	3	429	154	284	0	347
Grp Sat Flow(s),veh/h/ln	1815	0	0	1721	0	0	1810	1900	1610	1810	0	1899
Q Serve(g_s), s	0.3	0.0	0.0	4.3	0.0	0.0	0.1	20.6	6.8	9.6	0.0	16.7
Cycle Q Clear(g_c), s	0.3	0.0	0.0	4.3	0.0	0.0	0.1	20.6	6.8	9.6	0.0	16.7
Prop In Lane	0.33		0.17	0.58		0.42	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	20	0	0	111	0	0	905	491	520	825	0	406
V/C Ratio(X)	0.31	0.00	0.00	0.71	0.00	0.00	0.00	0.87	0.30	0.34	0.00	0.85
Avail Cap(c_a), veh/h	191	0	0	181	0	0	905	640	646	825	0	740
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	46.6	0.0	0.0	43.6	0.0	0.0	11.9	33.8	24.1	16.7	0.0	35.9
Incr Delay (d2), s/veh	8.5	0.0	0.0	8.1	0.0	0.0	0.0	19.1	1.5	0.2	0.0	19.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	0.0	2.0	0.0	0.0	0.0	11.4	2.9	3.6	0.0	9.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	55.2	0.0	0.0	51.7	0.0	0.0	11.9	52.9	25.5	16.9	0.0	55.8
LnGrp LOS	E	A	A	D	A	A	B	D	C	B	A	E
Approach Vol, veh/h		6			79			586				631
Approach Delay, s/veh		55.2			51.7			45.5				38.3
Approach LOS		E			D			D				D
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	48.3	29.5		6.0	52.5	25.3		11.1				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0				
Max Green Setting (Gmax), s	23.0	32.0		10.0	18.0	37.0		10.0				
Max Q Clear Time (g_c+I1), s	11.6	22.6		2.3	2.1	18.7		6.3				
Green Ext Time (p_c), s	0.6	2.0		0.0	0.0	1.6		0.1				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				42.4								
HCM 6th LOS				D								



Arco AM/PM Service Station  
4: Redlands Boulevard & SR-60 EB

Existing without Project (AM Peak Hour)



Movement	EBL	EBR	NBL	NBT	SBT	SBR	
Lane Configurations							
Traffic Volume (veh/h)	126	74	68	416	333	27	
Future Volume (veh/h)	126	74	68	416	333	27	
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	137	80	74	452	362	29	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	
Percent Heavy Veh, %	0	0	0	0	0	0	
Cap, veh/h	166	97	758	1357	435	614	
Arrive On Green	0.15	0.15	0.42	0.71	0.23	0.23	
Sat Flow, veh/h	1088	635	1810	1900	1900	1610	
Grp Volume(v), veh/h	218	0	74	452	362	29	
Grp Sat Flow(s),veh/h/ln	1731	0	1810	1900	1900	1610	
Q Serve(g_s), s	9.2	0.0	1.9	6.7	13.6	0.0	
Cycle Q Clear(g_c), s	9.2	0.0	1.9	6.7	13.6	0.0	
Prop In Lane	0.63	0.37	1.00			1.00	
Lane Grp Cap(c), veh/h	264	0	758	1357	435	614	
V/C Ratio(X)	0.83	0.00	0.10	0.33	0.83	0.05	
Avail Cap(c_a), veh/h	462	0	758	1357	709	846	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	
Upstream Filter(I)	1.00	0.00	0.96	0.96	1.00	1.00	
Uniform Delay (d), s/veh	30.8	0.0	13.2	4.0	27.6	9.0	
Incr Delay (d2), s/veh	6.5	0.0	0.1	0.6	16.9	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	4.0	0.0	0.7	1.5	7.5	0.2	
Unsig. Movement Delay, s/veh							
LnGrp Delay(d),s/veh	37.3	0.0	13.3	4.7	44.4	9.1	
LnGrp LOS	D	A	B	A	D	A	
Approach Vol, veh/h	218			526	391		
Approach Delay, s/veh	37.3			5.9	41.8		
Approach LOS	D			A	D		
Timer - Assigned Phs		2			5	6	8
Phs Duration (G+Y+Rc), s		58.6			36.4	22.2	16.4
Change Period (Y+Rc), s		5.0			5.0	5.0	5.0
Max Green Setting (Gmax), s		45.0			12.0	28.0	20.0
Max Q Clear Time (g_c+I1), s		8.7			3.9	15.6	11.2
Green Ext Time (p_c), s		2.6			0.1	1.5	0.4
<b>Intersection Summary</b>							
HCM 6th Ctrl Delay			24.3				
HCM 6th LOS			C				
<b>Notes</b>							
User approved volume balancing among the lanes for turning movement.							



Arco AM/PM Service Station  
5: Redlands Boulevard & Eucalyptus Avenue

Existing without Project (AM Peak Hour)

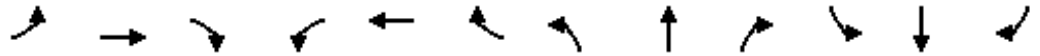


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	18	0	4	4	1	15	25	451	1	1	367	32
Future Volume (veh/h)	18	0	4	4	1	15	25	451	1	1	367	32
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		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	19	0	4	4	1	16	26	470	1	1	382	33
Peak Hour Factor	0.96	0.96	0.96	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	0	0	0
Cap, veh/h	50	0	164	43	5	40	61	1461	3	3	1404	1234
Arrive On Green	0.03	0.00	0.10	0.03	0.03	0.03	0.03	0.77	0.77	0.00	0.74	0.74
Sat Flow, veh/h	1810	0	1610	217	166	1226	1810	1895	4	1810	1900	1610
Grp Volume(v), veh/h	19	0	4	21	0	0	26	0	471	1	382	33
Grp Sat Flow(s),veh/h/ln	1810	0	1610	1609	0	0	1810	0	1899	1810	1900	1610
Q Serve(g_s), s	1.2	0.0	0.3	0.4	0.0	0.0	1.7	0.0	9.1	0.1	7.9	0.6
Cycle Q Clear(g_c), s	1.2	0.0	0.3	1.5	0.0	0.0	1.7	0.0	9.1	0.1	7.9	0.6
Prop In Lane	1.00		1.00	0.19		0.76	1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	50	0	164	89	0	0	61	0	1464	3	1404	1234
V/C Ratio(X)	0.38	0.00	0.02	0.24	0.00	0.00	0.42	0.00	0.32	0.29	0.27	0.03
Avail Cap(c_a), veh/h	287	0	416	446	0	0	256	0	1464	181	1404	1234
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	0.00	1.00	0.94	0.94	0.94
Uniform Delay (d), s/veh	57.4	0.0	48.5	56.8	0.0	0.0	56.8	0.0	4.2	59.8	5.1	3.3
Incr Delay (d2), s/veh	4.8	0.0	0.1	1.4	0.0	0.0	4.6	0.0	0.6	38.3	0.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.0	0.1	0.6	0.0	0.0	0.8	0.0	2.6	0.1	2.5	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	62.2	0.0	48.6	58.2	0.0	0.0	61.4	0.0	4.8	98.1	5.6	3.4
LnGrp LOS	E	A	D	E	A	A	E	A	A	F	A	A
Approach Vol, veh/h		23			21			497				416
Approach Delay, s/veh		59.8			58.2			7.7				5.6
Approach LOS		E			E			A				A
Timer - Assigned Phs	1	2	3	4	5	6		8				
Phs Duration (G+Y+Rc), s	5.2	97.5	8.3	9.0	9.1	93.7		17.2				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0		5.0				
Max Green Setting (Gmax), s	12.0	38.0	19.0	31.0	17.0	33.0		31.0				
Max Q Clear Time (g_c+I1), s	2.1	11.1	3.2	3.5	3.7	9.9		2.3				
Green Ext Time (p_c), s	0.0	2.6	0.0	0.1	0.0	2.1		0.0				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay			9.2									
HCM 6th LOS			A									
<b>Notes</b>												
User approved pedestrian interval to be less than phase max green.												



Arco AM/PM Service Station  
1: Redlands Boulevard & Ironwood Avenue

Existing without Project (PM Peak Hour)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕		↕	↕	↕
Traffic Volume (veh/h)	107	21	18	5	19	5	14	625	5	7	609	195
Future Volume (veh/h)	107	21	18	5	19	5	14	625	5	7	609	195
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	111	22	19	5	19	5	15	651	5	7	634	203
Peak Hour Factor	0.96	0.96	0.96	0.96	0.98	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	0	0	0
Cap, veh/h	146	29	25	14	52	14	46	995	8	23	980	831
Arrive On Green	0.11	0.11	0.11	0.04	0.04	0.04	0.03	0.53	0.53	0.01	0.52	0.52
Sat Flow, veh/h	1310	260	224	315	1197	315	1810	1883	14	1810	1900	1610
Grp Volume(v), veh/h	152	0	0	29	0	0	15	0	656	7	634	203
Grp Sat Flow(s),veh/h/ln	1794	0	0	1828	0	0	1810	0	1897	1810	1900	1610
Q Serve(g_s), s	5.4	0.0	0.0	1.0	0.0	0.0	0.5	0.0	16.4	0.3	16.0	4.6
Cycle Q Clear(g_c), s	5.4	0.0	0.0	1.0	0.0	0.0	0.5	0.0	16.4	0.3	16.0	4.6
Prop In Lane	0.73		0.12	0.17		0.17	1.00		0.01	1.00		1.00
Lane Grp Cap(c), veh/h	200	0	0	80	0	0	46	0	1003	23	980	831
V/C Ratio(X)	0.76	0.00	0.00	0.36	0.00	0.00	0.33	0.00	0.65	0.30	0.65	0.24
Avail Cap(c_a), veh/h	463	0	0	471	0	0	329	0	1003	329	980	831
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	28.4	0.0	0.0	30.6	0.0	0.0	31.6	0.0	11.2	32.2	11.6	8.8
Incr Delay (d2), s/veh	5.9	0.0	0.0	2.7	0.0	0.0	4.0	0.0	3.3	7.1	3.3	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.4	0.0	0.0	0.5	0.0	0.0	0.3	0.0	5.8	0.1	5.7	1.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	34.3	0.0	0.0	33.4	0.0	0.0	35.6	0.0	14.5	39.4	14.9	9.5
LnGrp LOS	C	A	A	C	A	A	D	A	B	D	B	A
Approach Vol, veh/h		152			29			671				844
Approach Delay, s/veh		34.3			33.4			15.0				13.8
Approach LOS		C			C			B				B
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.8	39.8		7.9	6.7	39.0		12.3				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0				
Max Green Setting (Gmax), s	12.0	34.0		17.0	12.0	34.0		17.0				
Max Q Clear Time (g_c+I1), s	2.3	18.4		3.0	2.5	18.0		7.4				
Green Ext Time (p_c), s	0.0	3.5		0.0	0.0	4.0		0.4				

Intersection Summary





















HCM 6th Ctrl Delay	16.4
HCM 6th LOS	B

Notes

User approved pedestrian interval to be less than phase max green.

Arco AM/PM Service Station  
3: Redlands Boulevard & Spruce Avenue/SR-60 WB

Existing without Project (PM Peak Hour)

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	3	7	44	0	12	5	612	88	230	404	0
Future Volume (veh/h)	1	3	7	44	0	12	5	612	88	230	404	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	1	3	7	46	0	12	5	638	92	240	421	0
Peak Hour Factor	0.96	0.96	0.96	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	0	0	0
Cap, veh/h	3	9	20	86	0	22	17	1006	951	281	1283	0
Arrive On Green	0.02	0.02	0.02	0.06	0.00	0.06	0.01	0.53	0.53	0.16	0.68	0.00
Sat Flow, veh/h	154	463	1080	1399	0	365	1810	1900	1610	1810	1900	0
Grp Volume(v), veh/h	11	0	0	58	0	0	5	638	92	240	421	0
Grp Sat Flow(s),veh/h/ln	1698	0	0	1764	0	0	1810	1900	1610	1810	1900	0
Q Serve(g_s), s	0.5	0.0	0.0	2.7	0.0	0.0	0.2	20.2	2.1	11.0	7.9	0.0
Cycle Q Clear(g_c), s	0.5	0.0	0.0	2.7	0.0	0.0	0.2	20.2	2.1	11.0	7.9	0.0
Prop In Lane	0.09		0.64	0.79		0.21	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	32	0	0	108	0	0	17	1006	951	281	1283	0
V/C Ratio(X)	0.34	0.00	0.00	0.54	0.00	0.00	0.30	0.63	0.10	0.86	0.33	0.00
Avail Cap(c_a), veh/h	140	0	0	145	0	0	341	1006	951	362	1283	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	41.2	0.0	0.0	38.7	0.0	0.0	41.8	14.2	7.5	35.0	5.8	0.0
Incr Delay (d2), s/veh	6.2	0.0	0.0	4.1	0.0	0.0	9.8	3.0	0.2	14.6	0.7	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	0.3	0.0	0.0	1.2	0.0	0.0	0.1	7.9	0.8	5.6	2.4	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	47.4	0.0	0.0	42.8	0.0	0.0	51.6	17.2	7.7	49.6	6.4	0.0
LnGrp LOS	D	A	A	D	A	A	D	B	A	D	A	A
Approach Vol, veh/h		11			58			735			661	
Approach Delay, s/veh		47.4			42.8			16.3			22.1	
Approach LOS		D			D			B			C	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	18.2	50.0		6.6	5.8	62.4		10.2				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0				
Max Green Setting (Gmax), s	17.0	34.0		7.0	16.0	35.0		7.0				
Max Q Clear Time (g_c+I1), s	13.0	22.2		2.5	2.2	9.9		4.7				
Green Ext Time (p_c), s	0.2	3.2		0.0	0.0	2.3		0.0				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				20.2								
HCM 6th LOS				C								

Arco AM/PM Service Station  
4: Redlands Boulevard & SR-60 EB

Existing without Project (PM Peak Hour)



Movement	EBL	EBR	NBL	NBT	SBT	SBR	
Lane Configurations							
Traffic Volume (veh/h)	343	111	62	375	406	47	
Future Volume (veh/h)	343	111	62	375	406	47	
Initial Q (Qb), veh	0	0	0	0	0	0	
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	
Work Zone On Approach	No			No	No		
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	
Adj Flow Rate, veh/h	377	122	68	412	446	52	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	
Percent Heavy Veh, %	0	0	0	0	0	0	
Cap, veh/h	408	132	452	1091	505	428	
Arrive On Green	0.31	0.31	0.25	0.57	0.27	0.27	
Sat Flow, veh/h	1324	429	1810	1900	1900	1610	
Grp Volume(v), veh/h	500	0	68	412	446	52	
Grp Sat Flow(s),veh/h/ln	1757	0	1810	1900	1900	1610	
Q Serve(g_s), s	23.4	0.0	2.5	10.0	19.1	2.1	
Cycle Q Clear(g_c), s	23.4	0.0	2.5	10.0	19.1	2.1	
Prop In Lane	0.75	0.24	1.00			1.00	
Lane Grp Cap(c), veh/h	541	0	452	1091	505	428	
V/C Ratio(X)	0.92	0.00	0.15	0.38	0.88	0.12	
Avail Cap(c_a), veh/h	620	0	452	1091	626	530	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	
Upstream Filter(I)	1.00	0.00	0.97	0.97	1.00	1.00	
Uniform Delay (d), s/veh	28.5	0.0	24.9	9.8	29.9	23.7	
Incr Delay (d2), s/veh	18.4	0.0	0.1	1.0	19.6	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	11.7	0.0	1.0	3.6	10.7	0.8	
Unsig. Movement Delay, s/veh							
LnGrp Delay(d),s/veh	46.9	0.0	25.0	10.8	49.5	24.3	
LnGrp LOS	D	A	C	B	D	C	
Approach Vol, veh/h	500			480	498		
Approach Delay, s/veh	46.9			12.8	46.9		
Approach LOS	D			B	D		
Timer - Assigned Phs		2			5	6	8
Phs Duration (G+Y+Rc), s		53.8			26.2	27.6	31.2
Change Period (Y+Rc), s		5.0			5.0	5.0	5.0
Max Green Setting (Gmax), s		45.0			12.0	28.0	30.0
Max Q Clear Time (g_c+I1), s		12.0			4.5	21.1	25.4
Green Ext Time (p_c), s		2.3			0.1	1.5	0.8
<b>Intersection Summary</b>							
HCM 6th Ctrl Delay			35.8				
HCM 6th LOS			D				
<b>Notes</b>							
User approved volume balancing among the lanes for turning movement.							

Arco AM/PM Service Station  
5: Redlands Boulevard & Eucalyptus Avenue

Existing without Project (PM Peak Hour)



















Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↶	↷			↔		↶	↷		↶	↷	↶
Traffic Volume (veh/h)	30	0	15	2	0	21	1	397	1	0	509	11
Future Volume (veh/h)	30	0	15	2	0	21	1	397	1	0	509	11
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	34	0	17	2	0	24	1	456	1	0	585	13
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
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	72	0	202	35	3	66	3	1499	3	2	1420	1267
Arrive On Green	0.04	0.00	0.13	0.04	0.00	0.04	0.00	0.79	0.79	0.00	0.75	0.75
Sat Flow, veh/h	1810	0	1610	64	60	1487	1810	1895	4	1810	1900	1610
Grp Volume(v), veh/h	34	0	17	26	0	0	1	0	457	0	585	13
Grp Sat Flow(s),veh/h/ln	1810	0	1610	1611	0	0	1810	0	1899	1810	1900	1610
Q Serve(g_s), s	2.2	0.0	1.1	0.0	0.0	0.0	0.1	0.0	7.9	0.0	13.5	0.2
Cycle Q Clear(g_c), s	2.2	0.0	1.1	1.9	0.0	0.0	0.1	0.0	7.9	0.0	13.5	0.2
Prop In Lane	1.00		1.00	0.08		0.92	1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	72	0	202	104	0	0	3	0	1502	2	1420	1267
V/C Ratio(X)	0.48	0.00	0.08	0.25	0.00	0.00	0.29	0.00	0.30	0.00	0.41	0.01
Avail Cap(c_a), veh/h	287	0	416	445	0	0	256	0	1502	181	1420	1267
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	0.00	1.00	0.00	0.82	0.82
Uniform Delay (d), s/veh	56.4	0.0	46.4	55.7	0.0	0.0	59.8	0.0	3.5	0.0	5.5	2.7
Incr Delay (d2), s/veh	4.8	0.0	0.2	1.2	0.0	0.0	40.5	0.0	0.5	0.0	0.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	0.0	0.5	0.8	0.0	0.0	0.1	0.0	2.1	0.0	4.2	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	61.2	0.0	46.5	56.9	0.0	0.0	100.3	0.0	4.0	0.0	6.3	2.8
LnGrp LOS	E	A	D	E	A	A	F	A	A	A	A	A
Approach Vol, veh/h		51			26			458			598	
Approach Delay, s/veh		56.3			56.9			4.2			6.2	
Approach LOS		E			E			A			A	
Timer - Assigned Phs	1	2	3	4	5	6		8				
Phs Duration (G+Y+Rc), s	0.0	99.9	9.7	10.3	5.2	94.7		20.1				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0		5.0				
Max Green Setting (Gmax), s	12.0	38.0	19.0	31.0	17.0	33.0		31.0				
Max Q Clear Time (g_c+I1), s	0.0	9.9	4.2	3.9	2.1	15.5		3.1				
Green Ext Time (p_c), s	0.0	2.6	0.0	0.1	0.0	3.1		0.0				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay			8.8									
HCM 6th LOS			A									

**EXISTING PLUS PROJECT**

Arco AM/PM Service Station  
1: Redlands Boulevard & Ironwood Avenue

Existing with Project (AM Peak Hour)

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	108	5	22	7	8	3	32	404	10	2	557	106
Future Volume (veh/h)	108	5	22	7	8	3	32	404	10	2	557	106
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	112	5	23	7	8	3	33	421	10	2	580	110
Peak Hour Factor	0.96	0.96	0.96	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	0	0	0
Cap, veh/h	148	7	30	21	24	9	87	1034	25	7	979	829
Arrive On Green	0.10	0.10	0.10	0.03	0.03	0.03	0.05	0.56	0.56	0.00	0.52	0.52
Sat Flow, veh/h	1421	63	292	704	805	302	1810	1848	44	1810	1900	1610
Grp Volume(v), veh/h	140	0	0	18	0	0	33	0	431	2	580	110
Grp Sat Flow(s),veh/h/ln	1776	0	0	1810	0	0	1810	0	1892	1810	1900	1610
Q Serve(g_s), s	5.1	0.0	0.0	0.6	0.0	0.0	1.2	0.0	8.6	0.1	14.1	2.3
Cycle Q Clear(g_c), s	5.1	0.0	0.0	0.6	0.0	0.0	1.2	0.0	8.6	0.1	14.1	2.3
Prop In Lane	0.80		0.16	0.39		0.17	1.00		0.02	1.00		1.00
Lane Grp Cap(c), veh/h	185	0	0	54	0	0	87	0	1058	7	979	829
V/C Ratio(X)	0.76	0.00	0.00	0.33	0.00	0.00	0.38	0.00	0.41	0.29	0.59	0.13
Avail Cap(c_a), veh/h	457	0	0	466	0	0	329	0	1058	329	979	829
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	28.8	0.0	0.0	31.4	0.0	0.0	30.5	0.0	8.3	32.8	11.2	8.3
Incr Delay (d2), s/veh	6.2	0.0	0.0	3.6	0.0	0.0	2.7	0.0	1.2	21.5	2.6	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	2.2	0.0	0.0	0.3	0.0	0.0	0.5	0.0	2.7	0.1	5.0	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	35.0	0.0	0.0	34.9	0.0	0.0	33.2	0.0	9.5	54.3	13.8	8.7
LnGrp LOS	C	A	A	C	A	A	C	A	A	D	B	A
Approach Vol, veh/h		140			18			464			692	
Approach Delay, s/veh		35.0			34.9			11.1			13.1	
Approach LOS		C			C			B			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.3	41.9		7.0	8.2	39.0		11.9				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0				
Max Green Setting (Gmax), s	12.0	34.0		17.0	12.0	34.0		17.0				
Max Q Clear Time (g_c+I1), s	2.1	10.6		2.6	3.2	16.1		7.1				
Green Ext Time (p_c), s	0.0	2.3		0.0	0.0	3.4		0.4				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				15.0								
HCM 6th LOS				B								
<b>Notes</b>												
User approved pedestrian interval to be less than phase max green.												



Intersection						
Int Delay, s/veh	0.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↗		↑	↘	
Traffic Vol, veh/h	0	15	0	458	664	20
Future Vol, veh/h	0	15	0	458	664	20
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	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	16	0	498	722	22

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	-	733	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.2	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.3	-	-	-	-
Pot Cap-1 Maneuver	0	424	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	424	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	13.8	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT EBLn1	SBT	SBR
Capacity (veh/h)	- 424	-	-
HCM Lane V/C Ratio	- 0.038	-	-
HCM Control Delay (s)	- 13.8	-	-
HCM Lane LOS	- B	-	-
HCM 95th %tile Q(veh)	- 0.1	-	-

Arco AM/PM Service Station  
3: Redlands Boulevard & Spruce Avenue/SR-60 WB

Existing with Project (AM Peak Hour)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↑	↗	↖	↘	↙
Traffic Volume (veh/h)	22	27	40	43	26	31	59	399	143	264	337	1
Future Volume (veh/h)	22	27	40	43	26	31	59	399	143	264	337	1
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	29	43	46	28	33	63	429	154	284	362	1
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	31	37	55	58	35	42	760	491	539	695	422	1
Arrive On Green	0.07	0.07	0.07	0.08	0.08	0.08	0.42	0.26	0.26	0.38	0.22	0.22
Sat Flow, veh/h	435	525	779	758	462	544	1810	1900	1610	1810	1894	5
Grp Volume(v), veh/h	96	0	0	107	0	0	63	429	154	284	0	363
Grp Sat Flow(s),veh/h/ln	1738	0	0	1764	0	0	1810	1900	1610	1810	0	1899
Q Serve(g_s), s	5.2	0.0	0.0	5.7	0.0	0.0	2.0	20.6	6.7	10.9	0.0	17.5
Cycle Q Clear(g_c), s	5.2	0.0	0.0	5.7	0.0	0.0	2.0	20.6	6.7	10.9	0.0	17.5
Prop In Lane	0.25		0.45	0.43		0.31	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	122	0	0	135	0	0	760	491	539	695	0	423
V/C Ratio(X)	0.79	0.00	0.00	0.79	0.00	0.00	0.08	0.87	0.29	0.41	0.00	0.86
Avail Cap(c_a), veh/h	183	0	0	186	0	0	760	640	666	695	0	740
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	43.5	0.0	0.0	43.1	0.0	0.0	16.6	33.8	23.2	21.4	0.0	35.5
Incr Delay (d2), s/veh	12.2	0.0	0.0	14.6	0.0	0.0	0.0	19.1	1.3	0.4	0.0	19.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.6	0.0	0.0	2.9	0.0	0.0	0.8	11.4	2.9	4.3	0.0	9.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	55.6	0.0	0.0	57.7	0.0	0.0	16.6	52.9	24.6	21.7	0.0	55.2
LnGrp LOS	E	A	A	E	A	A	B	D	C	C	A	E
Approach Vol, veh/h		96			107			646				647
Approach Delay, s/veh		55.6			57.7			42.6				40.5
Approach LOS		E			E			D				D
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	41.5	29.5		11.7	44.9	26.2		12.3				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0				
Max Green Setting (Gmax), s	23.0	32.0		10.0	18.0	37.0		10.0				
Max Q Clear Time (g_c+I1), s	12.9	22.6		7.2	4.0	19.5		7.7				
Green Ext Time (p_c), s	0.6	2.0		0.1	0.1	1.7		0.1				

Intersection Summary

HCM 6th Ctrl Delay	43.6
HCM 6th LOS	D

Arco AM/PM Service Station  
4: Redlands Boulevard & SR-60 EB

Existing with Project (AM Peak Hour)



Movement	EBL	EBR	NBL	NBT	SBT	SBR	
Lane Configurations							
Traffic Volume (veh/h)	136	74	68	428	341	39	
Future Volume (veh/h)	136	74	68	428	341	39	
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	148	80	74	465	371	42	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	
Percent Heavy Veh, %	0	0	0	0	0	0	
Cap, veh/h	178	96	737	1345	445	632	
Arrive On Green	0.16	0.16	0.41	0.71	0.23	0.23	
Sat Flow, veh/h	1121	606	1810	1900	1900	1610	
Grp Volume(v), veh/h	229	0	74	465	371	42	
Grp Sat Flow(s),veh/h/ln	1735	0	1810	1900	1900	1610	
Q Serve(g_s), s	9.6	0.0	1.9	7.1	13.9	0.0	
Cycle Q Clear(g_c), s	9.6	0.0	1.9	7.1	13.9	0.0	
Prop In Lane	0.65	0.35	1.00			1.00	
Lane Grp Cap(c), veh/h	275	0	737	1345	445	632	
V/C Ratio(X)	0.83	0.00	0.10	0.35	0.83	0.07	
Avail Cap(c_a), veh/h	463	0	737	1345	709	857	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	
Upstream Filter(I)	1.00	0.00	0.97	0.97	1.00	1.00	
Uniform Delay (d), s/veh	30.6	0.0	13.7	4.2	27.3	8.7	
Incr Delay (d2), s/veh	6.4	0.0	0.1	0.7	16.7	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	4.2	0.0	0.7	1.7	7.7	0.3	
Unsig. Movement Delay, s/veh							
LnGrp Delay(d),s/veh	37.0	0.0	13.8	4.9	44.0	8.9	
LnGrp LOS	D	A	B	A	D	A	
Approach Vol, veh/h	229			539	413		
Approach Delay, s/veh	37.0			6.1	40.5		
Approach LOS	D			A	D		
Timer - Assigned Phs		2			5	6	8
Phs Duration (G+Y+Rc), s		58.1			35.6	22.5	16.9
Change Period (Y+Rc), s		5.0			5.0	5.0	5.0
Max Green Setting (Gmax), s		45.0			12.0	28.0	20.0
Max Q Clear Time (g_c+I1), s		9.1			3.9	15.9	11.6
Green Ext Time (p_c), s		2.7			0.1	1.6	0.4

Intersection Summary

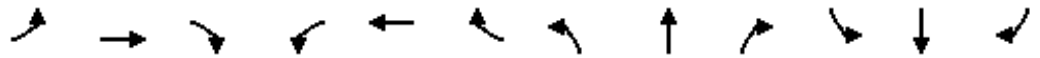
HCM 6th Ctrl Delay	24.1
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

Arco AM/PM Service Station  
5: Redlands Boulevard & Eucalyptus Avenue

Existing with Project (AM Peak Hour)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	22	0	4	4	1	15	25	455	1	0	371	36
Future Volume (veh/h)	22	0	4	4	1	15	25	455	1	0	371	36
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	23	0	4	4	1	16	26	474	1	0	386	38
Peak Hour Factor	0.96	0.96	0.96	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	0	0	0
Cap, veh/h	57	0	170	43	5	40	61	1537	3	2	1397	1234
Arrive On Green	0.03	0.00	0.11	0.03	0.03	0.03	0.03	0.81	0.81	0.00	0.74	0.74
Sat Flow, veh/h	1810	0	1610	217	166	1226	1810	1895	4	1810	1900	1610
Grp Volume(v), veh/h	23	0	4	21	0	0	26	0	475	0	386	38
Grp Sat Flow(s),veh/h/ln	1810	0	1610	1609	0	0	1810	0	1899	1810	1900	1610
Q Serve(g_s), s	1.5	0.0	0.3	0.4	0.0	0.0	1.7	0.0	7.6	0.0	8.1	0.7
Cycle Q Clear(g_c), s	1.5	0.0	0.3	1.5	0.0	0.0	1.7	0.0	7.6	0.0	8.1	0.7
Prop In Lane	1.00		1.00	0.19		0.76	1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	57	0	170	89	0	0	61	0	1540	2	1397	1234
V/C Ratio(X)	0.41	0.00	0.02	0.24	0.00	0.00	0.42	0.00	0.31	0.00	0.28	0.03
Avail Cap(c_a), veh/h	287	0	416	446	0	0	256	0	1540	181	1397	1234
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	0.00	1.00	0.00	0.94	0.94
Uniform Delay (d), s/veh	57.0	0.0	48.1	56.8	0.0	0.0	56.8	0.0	2.9	0.0	5.3	3.3
Incr Delay (d2), s/veh	4.6	0.0	0.1	1.4	0.0	0.0	4.6	0.0	0.5	0.0	0.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.0	0.1	0.6	0.0	0.0	0.8	0.0	1.8	0.0	2.6	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	61.7	0.0	48.1	58.2	0.0	0.0	61.4	0.0	3.4	0.0	5.7	3.4
LnGrp LOS	E	A	D	E	A	A	E	A	A	A	A	A
Approach Vol, veh/h		27			21			501			424	
Approach Delay, s/veh		59.7			58.2			6.4			5.5	
Approach LOS		E			E			A			A	
Timer - Assigned Phs	1	2	3	4	5	6		8				
Phs Duration (G+Y+Rc), s	0.0	102.3	8.7	9.0	9.1	93.2		17.7				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0		5.0				
Max Green Setting (Gmax), s	12.0	38.0	19.0	31.0	17.0	33.0		31.0				
Max Q Clear Time (g_c+I1), s	0.0	9.6	3.5	3.5	3.7	10.1		2.3				
Green Ext Time (p_c), s	0.0	2.7	0.0	0.1	0.0	2.1		0.0				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay			8.6									
HCM 6th LOS			A									
<b>Notes</b>												
User approved pedestrian interval to be less than phase max green.												

Arco AM/PM Service Station  
6: Project West Driveway & Hemlock Avenue

Existing with Project (AM Peak Hour)

Intersection						
Int Delay, s/veh	7.5					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	0	0	20	0	0	15
Future Vol, veh/h	0	0	20	0	0	15
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	0	22	0	0	16

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	1	0	45
Stage 1	-	-	-	-	1
Stage 2	-	-	-	-	44
Critical Hdwy	-	-	4.1	-	6.4
Critical Hdwy Stg 1	-	-	-	-	5.4
Critical Hdwy Stg 2	-	-	-	-	5.4
Follow-up Hdwy	-	-	2.2	-	3.5
Pot Cap-1 Maneuver	-	-	1635	-	970
Stage 1	-	-	-	-	1028
Stage 2	-	-	-	-	984
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1635	-	957
Mov Cap-2 Maneuver	-	-	-	-	957
Stage 1	-	-	-	-	1015
Stage 2	-	-	-	-	984

Approach	EB	WB	NB
HCM Control Delay, s	0	7.2	8.4
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	1090	-	-	1635	-
HCM Lane V/C Ratio	0.015	-	-	0.013	-
HCM Control Delay (s)	8.4	-	-	7.2	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection						
Int Delay, s/veh	0.4					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	83	0	4	82	0	6
Future Vol, veh/h	83	0	4	82	0	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	90	0	4	89	0	7

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	90	0	187
Stage 1	-	-	-	-	90
Stage 2	-	-	-	-	97
Critical Hdwy	-	-	4.1	-	6.4
Critical Hdwy Stg 1	-	-	-	-	5.4
Critical Hdwy Stg 2	-	-	-	-	5.4
Follow-up Hdwy	-	-	2.2	-	3.5
Pot Cap-1 Maneuver	-	-	1518	-	807
Stage 1	-	-	-	-	939
Stage 2	-	-	-	-	932
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1518	-	805
Mov Cap-2 Maneuver	-	-	-	-	805
Stage 1	-	-	-	-	936
Stage 2	-	-	-	-	932

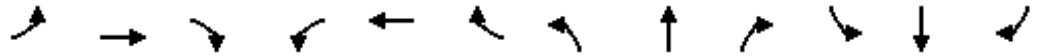
Approach	EB	WB	NB
HCM Control Delay, s	0	0.3	8.7
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	973	-	-	1518	-
HCM Lane V/C Ratio	0.007	-	-	0.003	-
HCM Control Delay (s)	8.7	-	-	7.4	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0	-



Arco AM/PM Service Station  
1: Redlands Boulevard & Ironwood Avenue

Existing with Project (PM Peak Hour)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕		↕	↕	↕
Traffic Volume (veh/h)	107	21	21	8	19	5	16	630	7	7	614	195
Future Volume (veh/h)	107	21	21	8	19	5	16	630	7	7	614	195
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	111	22	22	8	19	5	17	656	7	7	640	203
Peak Hour Factor	0.96	0.96	0.96	0.96	0.98	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	0	0	0
Cap, veh/h	145	29	29	21	51	13	51	988	11	23	970	822
Arrive On Green	0.11	0.11	0.11	0.05	0.05	0.05	0.03	0.53	0.53	0.01	0.51	0.51
Sat Flow, veh/h	1282	254	254	456	1084	285	1810	1876	20	1810	1900	1610
Grp Volume(v), veh/h	155	0	0	32	0	0	17	0	663	7	640	203
Grp Sat Flow(s),veh/h/ln	1790	0	0	1826	0	0	1810	0	1896	1810	1900	1610
Q Serve(g_s), s	5.6	0.0	0.0	1.1	0.0	0.0	0.6	0.0	16.9	0.3	16.5	4.7
Cycle Q Clear(g_c), s	5.6	0.0	0.0	1.1	0.0	0.0	0.6	0.0	16.9	0.3	16.5	4.7
Prop In Lane	0.72		0.14	0.25		0.16	1.00		0.01	1.00		1.00
Lane Grp Cap(c), veh/h	203	0	0	86	0	0	51	0	998	23	970	822
V/C Ratio(X)	0.76	0.00	0.00	0.37	0.00	0.00	0.33	0.00	0.66	0.30	0.66	0.25
Avail Cap(c_a), veh/h	457	0	0	466	0	0	326	0	998	326	970	822
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	28.6	0.0	0.0	30.8	0.0	0.0	31.7	0.0	11.5	32.6	12.0	9.1
Incr Delay (d2), s/veh	5.8	0.0	0.0	2.7	0.0	0.0	3.7	0.0	3.5	7.2	3.5	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.4	0.0	0.0	0.5	0.0	0.0	0.3	0.0	6.0	0.1	6.0	1.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	34.5	0.0	0.0	33.4	0.0	0.0	35.4	0.0	15.0	39.7	15.5	9.8
LnGrp LOS	C	A	A	C	A	A	D	A	B	D	B	A
Approach Vol, veh/h		155			32			680				850
Approach Delay, s/veh		34.5			33.4			15.5				14.4
Approach LOS		C			C			B				B
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.8	40.0		8.1	6.9	39.0		12.6				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0				
Max Green Setting (Gmax), s	12.0	34.0		17.0	12.0	34.0		17.0				
Max Q Clear Time (g_c+I1), s	2.3	18.9		3.1	2.6	18.5		7.6				
Green Ext Time (p_c), s	0.0	3.5		0.1	0.0	4.0		0.4				

Intersection Summary

HCM 6th Ctrl Delay	17.0
HCM 6th LOS	B

Notes

User approved pedestrian interval to be less than phase max green.



Intersection						
Int Delay, s/veh	0.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↗		↑	↘	
Traffic Vol, veh/h	0	17	0	665	721	23
Future Vol, veh/h	0	17	0	665	721	23
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	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	18	0	723	784	25

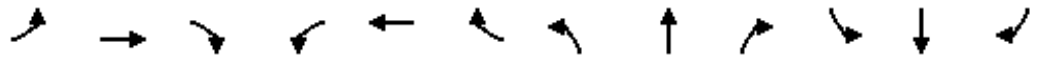
Major/Minor	Minor2	Major1	Major2		
Conflicting Flow All	-	797	-	0	0
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-
Critical Hdwy	-	6.2	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-
Follow-up Hdwy	-	3.3	-	-	-
Pot Cap-1 Maneuver	0	390	0	-	-
Stage 1	0	-	0	-	-
Stage 2	0	-	0	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	-	390	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	14.7	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT EBLn1	SBT	SBR
Capacity (veh/h)	- 390	-	-
HCM Lane V/C Ratio	- 0.047	-	-
HCM Control Delay (s)	- 14.7	-	-
HCM Lane LOS	- B	-	-
HCM 95th %tile Q(veh)	- 0.1	-	-

Arco AM/PM Service Station  
3: Redlands Boulevard & Spruce Avenue/SR-60 WB

Existing with Project (PM Peak Hour)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↑	↕	↕	↕	↕
Traffic Volume (veh/h)	22	30	53	44	29	12	67	612	88	230	421	0
Future Volume (veh/h)	22	30	53	44	29	12	67	612	88	230	421	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	23	31	55	46	30	12	70	638	92	240	439	0
Peak Hour Factor	0.96	0.96	0.96	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	0	0	0
Cap, veh/h	29	39	69	68	44	18	120	871	854	281	1039	0
Arrive On Green	0.08	0.08	0.08	0.07	0.07	0.07	0.07	0.46	0.46	0.16	0.55	0.00
Sat Flow, veh/h	364	491	870	945	616	247	1810	1900	1610	1810	1900	0
Grp Volume(v), veh/h	109	0	0	88	0	0	70	638	92	240	439	0
Grp Sat Flow(s),veh/h/ln	1725	0	0	1808	0	0	1810	1900	1610	1810	1900	0
Q Serve(g_s), s	5.3	0.0	0.0	4.0	0.0	0.0	3.2	23.3	2.4	11.0	11.6	0.0
Cycle Q Clear(g_c), s	5.3	0.0	0.0	4.0	0.0	0.0	3.2	23.3	2.4	11.0	11.6	0.0
Prop In Lane	0.21		0.50	0.52		0.14	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	136	0	0	130	0	0	120	871	854	281	1039	0
V/C Ratio(X)	0.80	0.00	0.00	0.68	0.00	0.00	0.58	0.73	0.11	0.86	0.42	0.00
Avail Cap(c_a), veh/h	142	0	0	149	0	0	341	871	854	362	1039	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	38.5	0.0	0.0	38.5	0.0	0.0	38.5	18.8	9.9	35.0	11.3	0.0
Incr Delay (d2), s/veh	25.9	0.0	0.0	9.7	0.0	0.0	4.4	5.4	0.3	14.6	1.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.2	0.0	0.0	2.0	0.0	0.0	1.5	10.0	0.9	5.6	4.3	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	64.3	0.0	0.0	48.1	0.0	0.0	42.9	24.2	10.2	49.6	12.6	0.0
LnGrp LOS	E	A	A	D	A	A	D	C	B	D	B	A
Approach Vol, veh/h		109			88			800			679	
Approach Delay, s/veh		64.3			48.1			24.2			25.7	
Approach LOS		E			D			C			C	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	18.2	44.0		11.7	10.7	51.5		11.1				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0				
Max Green Setting (Gmax), s	17.0	34.0		7.0	16.0	35.0		7.0				
Max Q Clear Time (g_c+I1), s	13.0	25.3		7.3	5.2	13.6		6.0				
Green Ext Time (p_c), s	0.2	2.7		0.0	0.1	2.3		0.0				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				28.7								
HCM 6th LOS				C								

Arco AM/PM Service Station  
4: Redlands Boulevard & SR-60 EB

Existing with Project (PM Peak Hour)



Movement	EBL	EBR	NBL	NBT	SBT	SBR	
Lane Configurations							
Traffic Volume (veh/h)	356	111	62	390	416	65	
Future Volume (veh/h)	356	111	62	390	416	65	
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	391	122	68	429	457	71	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	
Percent Heavy Veh, %	0	0	0	0	0	0	
Cap, veh/h	421	131	429	1078	516	437	
Arrive On Green	0.31	0.31	0.24	0.57	0.27	0.27	
Sat Flow, veh/h	1337	417	1810	1900	1900	1610	
Grp Volume(v), veh/h	514	0	68	429	457	71	
Grp Sat Flow(s),veh/h/ln	1758	0	1810	1900	1900	1610	
Q Serve(g_s), s	24.1	0.0	2.5	10.7	19.6	2.9	
Cycle Q Clear(g_c), s	24.1	0.0	2.5	10.7	19.6	2.9	
Prop In Lane	0.76	0.24	1.00			1.00	
Lane Grp Cap(c), veh/h	554	0	429	1078	516	437	
V/C Ratio(X)	0.93	0.00	0.16	0.40	0.89	0.16	
Avail Cap(c_a), veh/h	620	0	429	1078	626	530	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	
Upstream Filter(I)	1.00	0.00	0.96	0.96	1.00	1.00	
Uniform Delay (d), s/veh	28.2	0.0	25.7	10.3	29.7	23.6	
Incr Delay (d2), s/veh	19.3	0.0	0.2	1.1	19.6	0.8	
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	
%ile BackOfQ(50%),veh/ln	12.1	0.0	1.0	3.9	10.9	1.1	
Unsig. Movement Delay, s/veh							
LnGrp Delay(d),s/veh	47.5	0.0	25.9	11.3	49.3	24.4	
LnGrp LOS	D	A	C	B	D	C	
Approach Vol, veh/h	514			497	528		
Approach Delay, s/veh	47.5			13.3	46.0		
Approach LOS	D			B	D		
Timer - Assigned Phs		2			5	6	8
Phs Duration (G+Y+Rc), s		53.2			25.2	28.1	31.8
Change Period (Y+Rc), s		5.0			5.0	5.0	5.0
Max Green Setting (Gmax), s		45.0			12.0	28.0	30.0
Max Q Clear Time (g_c+I1), s		12.7			4.5	21.6	26.1
Green Ext Time (p_c), s		2.4			0.1	1.5	0.7
<b>Intersection Summary</b>							
HCM 6th Ctrl Delay			35.9				
HCM 6th LOS			D				
<b>Notes</b>							
User approved volume balancing among the lanes for turning movement.							

Arco AM/PM Service Station  
5: Redlands Boulevard & Eucalyptus Avenue

Existing with Project (PM Peak Hour)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	35	0	15	0	0	26	1	402	1	0	514	16
Future Volume (veh/h)	35	0	15	0	0	26	1	402	1	0	514	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	40	0	17	0	0	30	1	462	1	0	591	18
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
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	78	0	211	0	0	74	3	1489	3	2	1410	1264
Arrive On Green	0.04	0.00	0.13	0.00	0.00	0.05	0.00	0.79	0.79	0.00	0.74	0.74
Sat Flow, veh/h	1810	0	1610	0	0	1610	1810	1895	4	1810	1900	1610
Grp Volume(v), veh/h	40	0	17	0	0	30	1	0	463	0	591	18
Grp Sat Flow(s),veh/h/ln	1810	0	1610	0	0	1610	1810	0	1899	1810	1900	1610
Q Serve(g_s), s	2.6	0.0	1.1	0.0	0.0	2.2	0.1	0.0	8.3	0.0	14.0	0.3
Cycle Q Clear(g_c), s	2.6	0.0	1.1	0.0	0.0	2.2	0.1	0.0	8.3	0.0	14.0	0.3
Prop In Lane	1.00		1.00	0.00		1.00	1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	78	0	211	0	0	74	3	0	1493	2	1410	1264
V/C Ratio(X)	0.51	0.00	0.08	0.00	0.00	0.40	0.29	0.00	0.31	0.00	0.42	0.01
Avail Cap(c_a), veh/h	287	0	416	0	0	416	256	0	1493	181	1410	1264
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	0.00	0.00	1.00	1.00	0.00	1.00	0.00	0.80	0.80
Uniform Delay (d), s/veh	56.2	0.0	45.8	0.0	0.0	55.6	59.8	0.0	3.6	0.0	5.8	2.8
Incr Delay (d2), s/veh	5.2	0.0	0.2	0.0	0.0	3.5	40.5	0.0	0.5	0.0	0.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	0.0	0.4	0.0	0.0	0.9	0.1	0.0	2.3	0.0	4.4	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	61.4	0.0	46.0	0.0	0.0	59.1	100.3	0.0	4.2	0.0	6.5	2.8
LnGrp LOS	E	A	D	A	A	E	F	A	A	A	A	A
Approach Vol, veh/h		57			30			464			609	
Approach Delay, s/veh		56.8			59.1			4.4			6.4	
Approach LOS		E			E			A			A	
Timer - Assigned Phs	1	2	3	4	5	6		8				
Phs Duration (G+Y+Rc), s	0.0	99.3	10.2	10.5	5.2	94.1		20.7				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0		5.0				
Max Green Setting (Gmax), s	12.0	38.0	19.0	31.0	17.0	33.0		31.0				
Max Q Clear Time (g_c+I1), s	0.0	10.3	4.6	4.2	2.1	16.0		3.1				
Green Ext Time (p_c), s	0.0	2.6	0.0	0.1	0.0	3.2		0.0				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay			9.4									
HCM 6th LOS			A									

Intersection						
Int Delay, s/veh	7.5					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	0	0	23	0	0	17
Future Vol, veh/h	0	0	23	0	0	17
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	0	25	0	0	18

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	1	0	51
Stage 1	-	-	-	-	1
Stage 2	-	-	-	-	50
Critical Hdwy	-	-	4.1	-	6.4
Critical Hdwy Stg 1	-	-	-	-	5.4
Critical Hdwy Stg 2	-	-	-	-	5.4
Follow-up Hdwy	-	-	2.2	-	3.5
Pot Cap-1 Maneuver	-	-	1635	-	963
Stage 1	-	-	-	-	1028
Stage 2	-	-	-	-	978
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1635	-	949
Mov Cap-2 Maneuver	-	-	-	-	949
Stage 1	-	-	-	-	1013
Stage 2	-	-	-	-	978

Approach	EB	WB	NB
HCM Control Delay, s	0	7.2	8.4
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	1090	-	-	1635	-
HCM Lane V/C Ratio	0.017	-	-	0.015	-
HCM Control Delay (s)	8.4	-	-	7.2	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Intersection						
Int Delay, s/veh	0.7					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	94	0	5	91	0	11
Future Vol, veh/h	94	0	5	91	0	11
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	102	0	5	99	0	12

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	102	0	211
Stage 1	-	-	-	-	102
Stage 2	-	-	-	-	109
Critical Hdwy	-	-	4.1	-	6.4
Critical Hdwy Stg 1	-	-	-	-	5.4
Critical Hdwy Stg 2	-	-	-	-	5.4
Follow-up Hdwy	-	-	2.2	-	3.5
Pot Cap-1 Maneuver	-	-	1503	-	782
Stage 1	-	-	-	-	927
Stage 2	-	-	-	-	921
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1503	-	779
Mov Cap-2 Maneuver	-	-	-	-	779
Stage 1	-	-	-	-	923
Stage 2	-	-	-	-	921

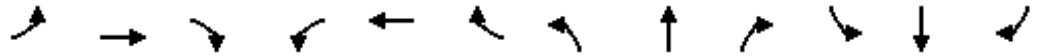
Approach	EB	WB	NB
HCM Control Delay, s	0	0.4	8.8
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	959	-	-	1503	-
HCM Lane V/C Ratio	0.012	-	-	0.004	-
HCM Control Delay (s)	8.8	-	-	7.4	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0	-

**OPENING YEAR (2024) WITHOUT PROJECT**

Arco AM/PM Service Station  
1: Redlands Boulevard & Ironwood Avenue

Opening Year without Project (AM Peak Hour)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕		↕	↕	↕
Traffic Volume (veh/h)	119	11	77	6	13	5	57	455	9	6	634	117
Future Volume (veh/h)	119	11	77	6	13	5	57	455	9	6	634	117
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	124	11	80	6	14	5	59	474	9	6	660	122
Peak Hour Factor	0.96	0.96	0.96	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	0	0	0
Cap, veh/h	152	14	98	17	39	14	121	973	18	20	888	753
Arrive On Green	0.15	0.15	0.15	0.04	0.04	0.04	0.07	0.52	0.52	0.01	0.47	0.47
Sat Flow, veh/h	1000	89	645	435	1015	363	1810	1858	35	1810	1900	1610
Grp Volume(v), veh/h	215	0	0	25	0	0	59	0	483	6	660	122
Grp Sat Flow(s),veh/h/ln	1734	0	0	1813	0	0	1810	0	1894	1810	1900	1610
Q Serve(g_s), s	8.7	0.0	0.0	1.0	0.0	0.0	2.3	0.0	11.9	0.2	20.6	3.2
Cycle Q Clear(g_c), s	8.7	0.0	0.0	1.0	0.0	0.0	2.3	0.0	11.9	0.2	20.6	3.2
Prop In Lane	0.58		0.37	0.24		0.20	1.00		0.02	1.00		1.00
Lane Grp Cap(c), veh/h	264	0	0	69	0	0	121	0	991	20	888	753
V/C Ratio(X)	0.81	0.00	0.00	0.36	0.00	0.00	0.49	0.00	0.49	0.30	0.74	0.16
Avail Cap(c_a), veh/h	405	0	0	424	0	0	299	0	991	299	888	753
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	29.8	0.0	0.0	34.1	0.0	0.0	32.7	0.0	11.1	35.7	15.8	11.2
Incr Delay (d2), s/veh	7.2	0.0	0.0	3.1	0.0	0.0	3.0	0.0	1.7	8.2	5.6	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	3.7	0.0	0.0	0.5	0.0	0.0	1.0	0.0	4.3	0.1	8.4	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	37.1	0.0	0.0	37.3	0.0	0.0	35.7	0.0	12.8	43.9	21.4	11.6
LnGrp LOS	D	A	A	D	A	A	D	A	B	D	C	B
Approach Vol, veh/h		215			25			542			788	
Approach Delay, s/veh		37.1			37.3			15.3			20.1	
Approach LOS		D			D			B			C	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.8	43.1		7.8	9.9	39.0		16.1				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0				
Max Green Setting (Gmax), s	12.0	34.0		17.0	12.0	34.0		17.0				
Max Q Clear Time (g_c+I1), s	2.2	13.9		3.0	4.3	22.6		10.7				
Green Ext Time (p_c), s	0.0	2.5		0.0	0.0	3.3		0.5				

Intersection Summary

HCM 6th Ctrl Delay	21.0
HCM 6th LOS	C

Notes

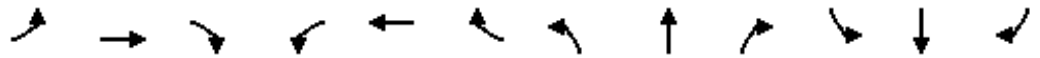
User approved pedestrian interval to be less than phase max green.



Arco AM/PM Service Station

Opening Year without Project (AM Peak Hour)

3: Redlands Boulevard & Spruce Avenue/SR-60 WB



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↑	↗	↖	↘	↙
Traffic Volume (veh/h)	2	3	1	72	0	38	3	474	193	310	415	1
Future Volume (veh/h)	2	3	1	72	0	38	3	474	193	310	415	1
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	2	3	1	77	0	41	3	510	208	333	446	1
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	7	10	3	96	0	51	772	565	615	718	507	1
Arrive On Green	0.01	0.01	0.01	0.08	0.00	0.08	0.43	0.30	0.30	0.40	0.27	0.27
Sat Flow, veh/h	605	908	303	1132	0	603	1810	1900	1610	1810	1895	4
Grp Volume(v), veh/h	6	0	0	118	0	0	3	510	208	333	0	447
Grp Sat Flow(s),veh/h/ln	1815	0	0	1735	0	0	1810	1900	1610	1810	0	1899
Q Serve(g_s), s	0.3	0.0	0.0	6.3	0.0	0.0	0.1	24.5	8.7	12.9	0.0	21.4
Cycle Q Clear(g_c), s	0.3	0.0	0.0	6.3	0.0	0.0	0.1	24.5	8.7	12.9	0.0	21.4
Prop In Lane	0.33		0.17	0.65		0.35	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	20	0	0	147	0	0	772	565	615	718	0	508
V/C Ratio(X)	0.31	0.00	0.00	0.80	0.00	0.00	0.00	0.90	0.34	0.46	0.00	0.88
Avail Cap(c_a), veh/h	191	0	0	183	0	0	772	640	679	718	0	740
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	46.6	0.0	0.0	42.7	0.0	0.0	15.6	32.1	20.8	21.2	0.0	33.3
Incr Delay (d2), s/veh	8.5	0.0	0.0	18.5	0.0	0.0	0.0	20.2	1.5	0.5	0.0	19.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	0.0	3.4	0.0	0.0	0.0	13.5	3.8	5.1	0.0	11.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	55.2	0.0	0.0	61.2	0.0	0.0	15.6	52.3	22.3	21.7	0.0	52.5
LnGrp LOS	E	A	A	E	A	A	B	D	C	C	A	D
Approach Vol, veh/h		6			118			721				780
Approach Delay, s/veh		55.2			61.2			43.5				39.3
Approach LOS		E			E			D				D
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	42.7	33.2		6.0	45.5	30.4		13.0				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0				
Max Green Setting (Gmax), s	23.0	32.0		10.0	18.0	37.0		10.0				
Max Q Clear Time (g_c+I1), s	14.9	26.5		2.3	2.1	23.4		8.3				
Green Ext Time (p_c), s	0.6	1.8		0.0	0.0	2.0		0.1				

Intersection Summary

HCM 6th Ctrl Delay	42.8
HCM 6th LOS	D

Arco AM/PM Service Station  
4: Redlands Boulevard & SR-60 EB

Opening Year without Project (AM Peak Hour)



Movement	EBL	EBR	NBL	NBT	SBT	SBR	
Lane Configurations							
Traffic Volume (veh/h)	146	149	89	522	440	42	
Future Volume (veh/h)	146	149	89	522	440	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	159	162	97	567	478	46	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	
Percent Heavy Veh, %	0	0	0	0	0	0	
Cap, veh/h	181	184	536	1238	549	811	
Arrive On Green	0.21	0.21	0.30	0.65	0.29	0.29	
Sat Flow, veh/h	841	857	1810	1900	1900	1610	
Grp Volume(v), veh/h	322	0	97	567	478	46	
Grp Sat Flow(s),veh/h/ln	1704	0	1810	1900	1900	1610	
Q Serve(g_s), s	13.7	0.0	3.0	11.1	17.9	0.0	
Cycle Q Clear(g_c), s	13.7	0.0	3.0	11.1	17.9	0.0	
Prop In Lane	0.49	0.50	1.00			1.00	
Lane Grp Cap(c), veh/h	366	0	536	1238	549	811	
V/C Ratio(X)	0.88	0.00	0.18	0.46	0.87	0.06	
Avail Cap(c_a), veh/h	454	0	536	1238	709	947	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	
Upstream Filter(I)	1.00	0.00	0.88	0.88	1.00	1.00	
Uniform Delay (d), s/veh	28.5	0.0	19.6	6.5	25.3	5.1	
Incr Delay (d2), s/veh	15.2	0.0	0.1	1.1	17.1	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	6.6	0.0	1.1	3.2	9.7	0.2	
Unsig. Movement Delay, s/veh							
LnGrp Delay(d),s/veh	43.7	0.0	19.8	7.6	42.4	5.2	
LnGrp LOS	D	A	B	A	D	A	
Approach Vol, veh/h	322			664	524		
Approach Delay, s/veh	43.7			9.3	39.2		
Approach LOS	D			A	D		
Timer - Assigned Phs		2			5	6	8
Phs Duration (G+Y+Rc), s		53.9			27.2	26.7	21.1
Change Period (Y+Rc), s		5.0			5.0	5.0	5.0
Max Green Setting (Gmax), s		45.0			12.0	28.0	20.0
Max Q Clear Time (g_c+I1), s		13.1			5.0	19.9	15.7
Green Ext Time (p_c), s		3.4			0.1	1.7	0.4
<b>Intersection Summary</b>							
HCM 6th Ctrl Delay			27.0				
HCM 6th LOS			C				
<b>Notes</b>							
User approved volume balancing among the lanes for turning movement.							

Arco AM/PM Service Station  
5: Redlands Boulevard & Eucalyptus Avenue

Opening Year without Project (AM Peak Hour)

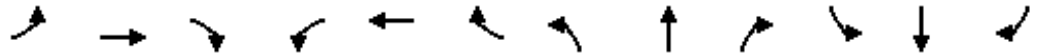


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	0	4	35	1	82	28	509	57	115	432	35
Future Volume (veh/h)	20	0	4	35	1	82	28	509	57	115	432	35
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	21	0	4	36	1	85	29	530	59	120	450	36
Peak Hour Factor	0.96	0.96	0.96	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	0	0	0
Cap, veh/h	53	0	93	74	132	111	65	1098	122	146	1327	1172
Arrive On Green	0.03	0.00	0.06	0.04	0.07	0.07	0.04	0.65	0.65	0.08	0.70	0.70
Sat Flow, veh/h	1810	0	1610	1810	1900	1610	1810	1679	187	1810	1900	1610
Grp Volume(v), veh/h	21	0	4	36	1	85	29	0	589	120	450	36
Grp Sat Flow(s),veh/h/ln	1810	0	1610	1810	1900	1610	1810	0	1866	1810	1900	1610
Q Serve(g_s), s	1.4	0.0	0.3	2.3	0.1	6.2	1.9	0.0	19.2	7.8	11.2	0.7
Cycle Q Clear(g_c), s	1.4	0.0	0.3	2.3	0.1	6.2	1.9	0.0	19.2	7.8	11.2	0.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.10	1.00		1.00
Lane Grp Cap(c), veh/h	53	0	93	74	132	111	65	0	1220	146	1327	1172
V/C Ratio(X)	0.40	0.00	0.04	0.49	0.01	0.76	0.44	0.00	0.48	0.82	0.34	0.03
Avail Cap(c_a), veh/h	287	0	416	287	491	416	256	0	1220	181	1327	1172
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	0.00	1.00	0.85	0.85	0.85
Uniform Delay (d), s/veh	57.2	0.0	53.4	56.3	52.0	54.9	56.6	0.0	10.5	54.3	7.1	4.5
Incr Delay (d2), s/veh	4.7	0.0	0.2	4.9	0.0	10.2	4.6	0.0	1.4	18.3	0.6	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	0.7	0.0	0.1	1.2	0.0	2.8	0.9	0.0	7.2	4.2	3.9	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	61.9	0.0	53.6	61.2	52.0	65.1	61.3	0.0	11.9	72.6	7.7	4.6
LnGrp LOS	E	A	D	E	D	E	E	A	B	E	A	A
Approach Vol, veh/h		25			122			618			606	
Approach Delay, s/veh		60.6			63.9			14.2			20.4	
Approach LOS		E			E			B			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	14.7	83.5	8.5	13.3	9.3	88.8	9.9	11.9				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	12.0	38.0	19.0	31.0	17.0	33.0	19.0	31.0				
Max Q Clear Time (g_c+I1), s	9.8	21.2	3.4	8.2	3.9	13.2	4.3	2.3				
Green Ext Time (p_c), s	0.0	3.1	0.0	0.2	0.0	2.4	0.0	0.0				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay			22.2									
HCM 6th LOS			C									
<b>Notes</b>												
User approved pedestrian interval to be less than phase max green.												



Arco AM/PM Service Station  
1: Redlands Boulevard & Ironwood Avenue

Opening Year without Project (PM Peak Hour)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕		↕	↕	↕
Traffic Volume (veh/h)	118	29	76	6	28	11	91	721	6	11	697	215
Future Volume (veh/h)	118	29	76	6	28	11	91	721	6	11	697	215
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	123	30	79	6	29	11	95	751	6	11	726	224
Peak Hour Factor	0.96	0.96	0.96	0.96	0.98	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	0	0	0
Cap, veh/h	148	36	95	13	65	25	143	948	8	35	842	714
Arrive On Green	0.16	0.16	0.16	0.06	0.06	0.06	0.08	0.50	0.50	0.02	0.44	0.44
Sat Flow, veh/h	926	226	595	236	1141	433	1810	1882	15	1810	1900	1610
Grp Volume(v), veh/h	232	0	0	46	0	0	95	0	757	11	726	224
Grp Sat Flow(s),veh/h/ln	1747	0	0	1810	0	0	1810	0	1897	1810	1900	1610
Q Serve(g_s), s	9.9	0.0	0.0	1.9	0.0	0.0	3.9	0.0	25.3	0.5	26.4	6.9
Cycle Q Clear(g_c), s	9.9	0.0	0.0	1.9	0.0	0.0	3.9	0.0	25.3	0.5	26.4	6.9
Prop In Lane	0.53		0.34	0.13		0.24	1.00		0.01	1.00		1.00
Lane Grp Cap(c), veh/h	279	0	0	103	0	0	143	0	955	35	842	714
V/C Ratio(X)	0.83	0.00	0.00	0.45	0.00	0.00	0.66	0.00	0.79	0.32	0.86	0.31
Avail Cap(c_a), veh/h	387	0	0	401	0	0	283	0	955	283	842	714
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	31.2	0.0	0.0	35.0	0.0	0.0	34.3	0.0	15.7	37.1	19.2	13.8
Incr Delay (d2), s/veh	10.4	0.0	0.0	3.0	0.0	0.0	5.2	0.0	6.7	5.2	11.3	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.5	0.0	0.0	0.8	0.0	0.0	1.8	0.0	10.3	0.2	12.1	2.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	41.6	0.0	0.0	38.0	0.0	0.0	39.5	0.0	22.5	42.3	30.5	15.0
LnGrp LOS	D	A	A	D	A	A	D	A	C	D	C	B
Approach Vol, veh/h		232			46			852				961
Approach Delay, s/veh		41.6			38.0			24.4				27.0
Approach LOS		D			D			C				C
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.5	43.6		9.4	11.1	39.0		17.3				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0				
Max Green Setting (Gmax), s	12.0	34.0		17.0	12.0	34.0		17.0				
Max Q Clear Time (g_c+I1), s	2.5	27.3		3.9	5.9	28.4		11.9				
Green Ext Time (p_c), s	0.0	2.6		0.1	0.1	2.5		0.5				

Intersection Summary

HCM 6th Ctrl Delay	27.8
HCM 6th LOS	C

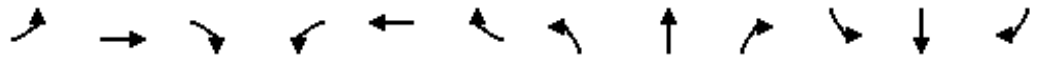
Notes

User approved pedestrian interval to be less than phase max green.

Arco AM/PM Service Station

Opening Year without Project (PM Peak Hour)

3: Redlands Boulevard & Spruce Avenue/SR-60 WB



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↑	↗	↖	↓	↘
Traffic Volume (veh/h)	1	3	8	84	0	27	6	768	208	267	513	0
Future Volume (veh/h)	1	3	8	84	0	27	6	768	208	267	513	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	1	3	8	88	0	28	6	800	217	278	534	0
Peak Hour Factor	0.96	0.96	0.96	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	0	0	0
Cap, veh/h	3	9	23	110	0	35	20	925	917	317	1237	0
Arrive On Green	0.02	0.02	0.02	0.08	0.00	0.08	0.01	0.49	0.49	0.18	0.65	0.00
Sat Flow, veh/h	141	423	1127	1333	0	424	1810	1900	1610	1810	1900	0
Grp Volume(v), veh/h	12	0	0	116	0	0	6	800	217	278	534	0
Grp Sat Flow(s),veh/h/ln	1690	0	0	1757	0	0	1810	1900	1610	1810	1900	0
Q Serve(g_s), s	0.6	0.0	0.0	5.5	0.0	0.0	0.3	31.7	5.7	12.7	11.6	0.0
Cycle Q Clear(g_c), s	0.6	0.0	0.0	5.5	0.0	0.0	0.3	31.7	5.7	12.7	11.6	0.0
Prop In Lane	0.08		0.67	0.76		0.24	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	34	0	0	145	0	0	20	925	917	317	1237	0
V/C Ratio(X)	0.35	0.00	0.00	0.80	0.00	0.00	0.30	0.86	0.24	0.88	0.43	0.00
Avail Cap(c_a), veh/h	139	0	0	145	0	0	341	925	917	362	1237	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	41.1	0.0	0.0	38.3	0.0	0.0	41.7	19.3	9.1	34.2	7.2	0.0
Incr Delay (d2), s/veh	6.0	0.0	0.0	26.7	0.0	0.0	8.4	10.6	0.6	19.1	1.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.0	0.0	3.3	0.0	0.0	0.2	14.3	2.2	6.8	3.7	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	47.0	0.0	0.0	65.0	0.0	0.0	50.2	29.9	9.7	53.3	8.3	0.0
LnGrp LOS	D	A	A	E	A	A	D	C	A	D	A	A
Approach Vol, veh/h		12			116			1023				812
Approach Delay, s/veh		47.0			65.0			25.8				23.7
Approach LOS		D			E			C				C
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	19.9	46.4		6.7	5.9	60.3		12.0				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0				
Max Green Setting (Gmax), s	17.0	34.0		7.0	16.0	35.0		7.0				
Max Q Clear Time (g_c+I1), s	14.7	33.7		2.6	2.3	13.6		7.5				
Green Ext Time (p_c), s	0.2	0.2		0.0	0.0	2.9		0.0				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				27.4								
HCM 6th LOS				C								

Arco AM/PM Service Station  
4: Redlands Boulevard & SR-60 EB

Opening Year without Project (PM Peak Hour)



Movement	EBL	EBR	NBL	NBT	SBT	SBR	
Lane Configurations							
Traffic Volume (veh/h)	400	215	109	596	544	60	
Future Volume (veh/h)	400	215	109	596	544	60	
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	440	236	120	655	598	66	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	
Percent Heavy Veh, %	0	0	0	0	0	0	
Cap, veh/h	398	213	277	1006	604	511	
Arrive On Green	0.35	0.35	0.15	0.53	0.32	0.32	
Sat Flow, veh/h	1127	605	1810	1900	1900	1610	
Grp Volume(v), veh/h	677	0	120	655	598	66	
Grp Sat Flow(s),veh/h/ln	1735	0	1810	1900	1900	1610	
Q Serve(g_s), s	30.0	0.0	5.1	21.0	26.6	2.5	
Cycle Q Clear(g_c), s	30.0	0.0	5.1	21.0	26.6	2.5	
Prop In Lane	0.65	0.35	1.00			1.00	
Lane Grp Cap(c), veh/h	612	0	277	1006	604	511	
V/C Ratio(X)	1.11	0.00	0.43	0.65	0.99	0.13	
Avail Cap(c_a), veh/h	612	0	277	1006	604	511	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	
Upstream Filter(I)	1.00	0.00	0.81	0.81	1.00	1.00	
Uniform Delay (d), s/veh	27.5	0.0	32.7	14.4	28.9	20.6	
Incr Delay (d2), s/veh	68.8	0.0	0.9	2.7	34.5	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	22.8	0.0	2.1	8.0	16.5	0.9	
Unsig. Movement Delay, s/veh							
LnGrp Delay(d),s/veh	96.3	0.0	33.5	17.0	63.3	21.2	
LnGrp LOS	F	A	C	B	E	C	
Approach Vol, veh/h	677			775	664		
Approach Delay, s/veh	96.3			19.6	59.1		
Approach LOS	F			B	E		
Timer - Assigned Phs		2			5	6	8
Phs Duration (G+Y+Rc), s		50.0			18.0	32.0	35.0
Change Period (Y+Rc), s		5.0			5.0	5.0	5.0
Max Green Setting (Gmax), s		45.0			13.0	27.0	30.0
Max Q Clear Time (g_c+I1), s		23.0			7.1	28.6	32.0
Green Ext Time (p_c), s		3.9			0.1	0.0	0.0

Intersection Summary

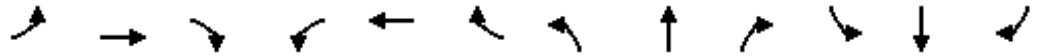
HCM 6th Ctrl Delay	56.6
HCM 6th LOS	E

Notes

User approved volume balancing among the lanes for turning movement.

Arco AM/PM Service Station  
5: Redlands Boulevard & Eucalyptus Avenue

Opening Year without Project (PM Peak Hour)



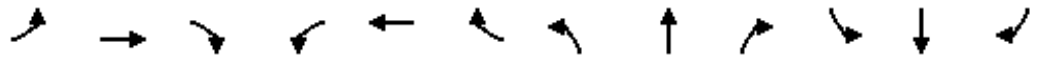
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	33	0	17	99	0	229	1	455	83	161	593	12
Future Volume (veh/h)	33	0	17	99	0	229	1	455	83	161	593	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	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	38	0	20	114	0	263	1	523	95	185	682	14
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
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	76	0	234	142	345	292	3	798	145	181	1155	1047
Arrive On Green	0.04	0.00	0.15	0.08	0.00	0.18	0.00	0.51	0.51	0.10	0.61	0.61
Sat Flow, veh/h	1810	0	1610	1810	1900	1610	1810	1565	284	1810	1900	1610
Grp Volume(v), veh/h	38	0	20	114	0	263	1	0	618	185	682	14
Grp Sat Flow(s),veh/h/ln	1810	0	1610	1810	1900	1610	1810	0	1849	1810	1900	1610
Q Serve(g_s), s	2.5	0.0	1.3	7.4	0.0	19.2	0.1	0.0	29.5	12.0	26.3	0.4
Cycle Q Clear(g_c), s	2.5	0.0	1.3	7.4	0.0	19.2	0.1	0.0	29.5	12.0	26.3	0.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.15	1.00		1.00
Lane Grp Cap(c), veh/h	76	0	234	142	345	292	3	0	943	181	1155	1047
V/C Ratio(X)	0.50	0.00	0.09	0.81	0.00	0.90	0.29	0.00	0.66	1.02	0.59	0.01
Avail Cap(c_a), veh/h	287	0	416	287	491	416	256	0	943	181	1155	1047
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	0.00	1.00	0.21	0.21	0.21
Uniform Delay (d), s/veh	56.3	0.0	44.4	54.4	0.0	48.1	59.8	0.0	21.6	54.0	14.4	7.4
Incr Delay (d2), s/veh	5.0	0.0	0.2	10.2	0.0	17.1	40.5	0.0	3.5	36.4	0.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	0.0	0.5	3.7	0.0	8.9	0.1	0.0	12.6	7.1	10.0	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	61.3	0.0	44.6	64.6	0.0	65.1	100.3	0.0	25.2	90.4	14.8	7.4
LnGrp LOS	E	A	D	E	A	E	F	A	C	F	B	A
Approach Vol, veh/h		58			377			619				881
Approach Delay, s/veh		55.5			65.0			25.3				30.6
Approach LOS		E			E			C				C
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	17.0	66.2	10.0	26.8	5.2	78.0	14.4	22.4				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	12.0	38.0	19.0	31.0	17.0	33.0	19.0	31.0				
Max Q Clear Time (g_c+I1), s	14.0	31.5	4.5	21.2	2.1	28.3	9.4	3.3				
Green Ext Time (p_c), s	0.0	2.0	0.0	0.6	0.0	1.7	0.2	0.1				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay			36.4									
HCM 6th LOS			D									



**OPENING YEAR (2024) WITH PROJECT**

Arco AM/PM Service Station  
1: Redlands Boulevard & Ironwood Avenue

Opening Year with Project (AM Peak Hour)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕		↕	↕	↕
Traffic Volume (veh/h)	119	11	79	8	13	5	59	459	11	6	638	117
Future Volume (veh/h)	119	11	79	8	13	5	59	459	11	6	638	117
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	124	11	82	8	14	5	61	478	11	6	665	122
Peak Hour Factor	0.96	0.96	0.96	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	0	0	0
Cap, veh/h	152	13	100	22	38	14	123	965	22	20	883	748
Arrive On Green	0.15	0.15	0.15	0.04	0.04	0.04	0.07	0.52	0.52	0.01	0.46	0.46
Sat Flow, veh/h	990	88	655	537	940	336	1810	1850	43	1810	1900	1610
Grp Volume(v), veh/h	217	0	0	27	0	0	61	0	489	6	665	122
Grp Sat Flow(s),veh/h/ln	1733	0	0	1813	0	0	1810	0	1892	1810	1900	1610
Q Serve(g_s), s	8.9	0.0	0.0	1.1	0.0	0.0	2.4	0.0	12.2	0.2	21.1	3.2
Cycle Q Clear(g_c), s	8.9	0.0	0.0	1.1	0.0	0.0	2.4	0.0	12.2	0.2	21.1	3.2
Prop In Lane	0.57		0.38	0.30		0.19	1.00		0.02	1.00		1.00
Lane Grp Cap(c), veh/h	266	0	0	73	0	0	123	0	987	20	883	748
V/C Ratio(X)	0.82	0.00	0.00	0.37	0.00	0.00	0.50	0.00	0.50	0.30	0.75	0.16
Avail Cap(c_a), veh/h	403	0	0	421	0	0	297	0	987	297	883	748
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	30.0	0.0	0.0	34.2	0.0	0.0	32.9	0.0	11.3	35.9	16.1	11.3
Incr Delay (d2), s/veh	7.6	0.0	0.0	3.1	0.0	0.0	3.1	0.0	1.8	8.2	5.9	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	3.8	0.0	0.0	0.5	0.0	0.0	1.1	0.0	4.4	0.1	8.7	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	37.6	0.0	0.0	37.3	0.0	0.0	35.9	0.0	13.1	44.1	22.0	11.8
LnGrp LOS	D	A	A	D	A	A	D	A	B	D	C	B
Approach Vol, veh/h		217			27			550				793
Approach Delay, s/veh		37.6			37.3			15.6				20.6
Approach LOS		D			D			B				C
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.8	43.2		8.0	10.0	39.0		16.2				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0				
Max Green Setting (Gmax), s	12.0	34.0		17.0	12.0	34.0		17.0				
Max Q Clear Time (g_c+I1), s	2.2	14.2		3.1	4.4	23.1		10.9				
Green Ext Time (p_c), s	0.0	2.6		0.0	0.1	3.3		0.5				

Intersection Summary

HCM 6th Ctrl Delay	21.5
HCM 6th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

Arco AM/PM Service Station  
2: Redlands Boulevard & Hemlock Avenue

Opening Year with Project (AM Peak Hour)

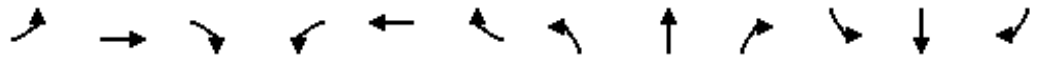
Intersection						
Int Delay, s/veh	0.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↗		↑	↘	
Traffic Vol, veh/h	0	15	0	541	811	20
Future Vol, veh/h	0	15	0	541	811	20
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	16	0	588	882	22

Major/Minor	Minor2	Major1	Major2		
Conflicting Flow All	-	893	-	0	0
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-
Critical Hdwy	-	6.2	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-
Follow-up Hdwy	-	3.3	-	-	-
Pot Cap-1 Maneuver	0	343	0	-	-
Stage 1	0	-	0	-	-
Stage 2	0	-	0	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	-	343	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	16	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	343	-	-
HCM Lane V/C Ratio	-	0.048	-	-
HCM Control Delay (s)	-	16	-	-
HCM Lane LOS	-	C	-	-
HCM 95th %tile Q(veh)	-	0.1	-	-

3: Redlands Boulevard & Spruce Avenue/SR-60 WB



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↑	↗	↖	↘	↙
Traffic Volume (veh/h)	22	27	40	72	26	38	59	474	193	310	430	1
Future Volume (veh/h)	22	27	40	72	26	38	59	474	193	310	430	1
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	29	43	77	28	41	63	510	208	333	462	1
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	31	37	55	93	34	50	621	565	640	582	523	1
Arrive On Green	0.07	0.07	0.07	0.10	0.10	0.10	0.34	0.30	0.30	0.32	0.28	0.28
Sat Flow, veh/h	435	525	779	930	338	495	1810	1900	1610	1810	1895	4
Grp Volume(v), veh/h	96	0	0	146	0	0	63	510	208	333	0	463
Grp Sat Flow(s),veh/h/ln	1738	0	0	1764	0	0	1810	1900	1610	1810	0	1899
Q Serve(g_s), s	5.2	0.0	0.0	7.7	0.0	0.0	2.3	24.5	8.5	14.5	0.0	22.2
Cycle Q Clear(g_c), s	5.2	0.0	0.0	7.7	0.0	0.0	2.3	24.5	8.5	14.5	0.0	22.2
Prop In Lane	0.25		0.45	0.53		0.28	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	122	0	0	177	0	0	621	565	640	582	0	524
V/C Ratio(X)	0.79	0.00	0.00	0.83	0.00	0.00	0.10	0.90	0.32	0.57	0.00	0.88
Avail Cap(c_a), veh/h	183	0	0	186	0	0	621	640	704	582	0	740
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	43.5	0.0	0.0	41.9	0.0	0.0	21.2	32.1	19.8	26.8	0.0	32.9
Incr Delay (d2), s/veh	12.2	0.0	0.0	24.4	0.0	0.0	0.1	20.2	1.3	1.4	0.0	19.1
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	2.6	0.0	0.0	4.4	0.0	0.0	0.9	13.5	3.8	6.0	0.0	12.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	55.6	0.0	0.0	66.3	0.0	0.0	21.3	52.3	21.1	28.1	0.0	52.1
LnGrp LOS	E	A	A	E	A	A	C	D	C	C	A	D
Approach Vol, veh/h		96			146			781				796
Approach Delay, s/veh		55.6			66.3			41.5				42.1
Approach LOS		E			E			D				D
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	35.5	33.2		11.7	37.6	31.2		14.5				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0				
Max Green Setting (Gmax), s	23.0	32.0		10.0	18.0	37.0		10.0				
Max Q Clear Time (g_c+I1), s	16.5	26.5		7.2	4.3	24.2		9.7				
Green Ext Time (p_c), s	0.5	1.8		0.1	0.1	2.0		0.0				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				44.5								
HCM 6th LOS				D								

Arco AM/PM Service Station  
4: Redlands Boulevard & SR-60 EB

Opening Year with Project (AM Peak Hour)



Movement	EBL	EBR	NBL	NBT	SBT	SBR	
Lane Configurations							
Traffic Volume (veh/h)	156	149	89	534	452	50	
Future Volume (veh/h)	156	149	89	534	452	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	170	162	97	580	491	54	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	
Percent Heavy Veh, %	0	0	0	0	0	0	
Cap, veh/h	192	183	514	1227	561	831	
Arrive On Green	0.22	0.22	0.28	0.65	0.30	0.30	
Sat Flow, veh/h	871	830	1810	1900	1900	1610	
Grp Volume(v), veh/h	333	0	97	580	491	54	
Grp Sat Flow(s),veh/h/ln	1707	0	1810	1900	1900	1610	
Q Serve(g_s), s	14.2	0.0	3.0	11.7	18.4	0.0	
Cycle Q Clear(g_c), s	14.2	0.0	3.0	11.7	18.4	0.0	
Prop In Lane	0.51	0.49	1.00			1.00	
Lane Grp Cap(c), veh/h	377	0	514	1227	561	831	
V/C Ratio(X)	0.88	0.00	0.19	0.47	0.87	0.06	
Avail Cap(c_a), veh/h	455	0	514	1227	709	956	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	
Upstream Filter(I)	1.00	0.00	0.86	0.86	1.00	1.00	
Uniform Delay (d), s/veh	28.3	0.0	20.3	6.8	25.1	4.8	
Incr Delay (d2), s/veh	16.1	0.0	0.2	1.1	17.2	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	6.9	0.0	1.2	3.4	9.9	0.2	
Unsig. Movement Delay, s/veh							
LnGrp Delay(d),s/veh	44.4	0.0	20.5	7.9	42.3	4.9	
LnGrp LOS	D	A	C	A	D	A	
Approach Vol, veh/h	333			677	545		
Approach Delay, s/veh	44.4			9.7	38.6		
Approach LOS	D			A	D		
Timer - Assigned Phs		2			5	6	8
Phs Duration (G+Y+Rc), s		53.5			26.3	27.2	21.5
Change Period (Y+Rc), s		5.0			5.0	5.0	5.0
Max Green Setting (Gmax), s		45.0			12.0	28.0	20.0
Max Q Clear Time (g_c+I1), s		13.7			5.0	20.4	16.2
Green Ext Time (p_c), s		3.5			0.1	1.7	0.4

Intersection Summary

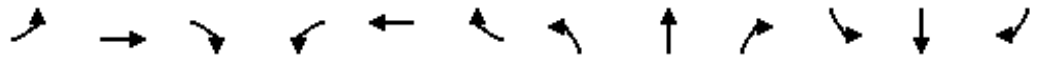
HCM 6th Ctrl Delay	27.3
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

Arco AM/PM Service Station  
5: Redlands Boulevard & Eucalyptus Avenue

Opening Year with Project (AM Peak Hour)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	24	0	4	35	1	86	28	513	57	119	436	39
Future Volume (veh/h)	24	0	4	35	1	86	28	513	57	119	436	39
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	25	0	4	36	1	90	29	534	59	124	454	41
Peak Hour Factor	0.96	0.96	0.96	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	0	0	0
Cap, veh/h	60	0	104	74	138	117	65	1084	120	150	1314	1167
Arrive On Green	0.03	0.00	0.06	0.04	0.07	0.07	0.04	0.64	0.64	0.08	0.69	0.69
Sat Flow, veh/h	1810	0	1610	1810	1900	1610	1810	1681	186	1810	1900	1610
Grp Volume(v), veh/h	25	0	4	36	1	90	29	0	593	124	454	41
Grp Sat Flow(s),veh/h/ln	1810	0	1610	1810	1900	1610	1810	0	1867	1810	1900	1610
Q Serve(g_s), s	1.6	0.0	0.3	2.3	0.1	6.6	1.9	0.0	19.9	8.1	11.6	0.9
Cycle Q Clear(g_c), s	1.6	0.0	0.3	2.3	0.1	6.6	1.9	0.0	19.9	8.1	11.6	0.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.10	1.00		1.00
Lane Grp Cap(c), veh/h	60	0	104	74	138	117	65	0	1203	150	1314	1167
V/C Ratio(X)	0.42	0.00	0.04	0.49	0.01	0.77	0.44	0.00	0.49	0.82	0.35	0.04
Avail Cap(c_a), veh/h	287	0	416	287	491	416	256	0	1203	181	1314	1167
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	0.00	1.00	0.83	0.83	0.83
Uniform Delay (d), s/veh	56.9	0.0	52.6	56.3	51.6	54.7	56.6	0.0	11.1	54.1	7.5	4.7
Incr Delay (d2), s/veh	4.6	0.0	0.1	4.9	0.0	10.2	4.6	0.0	1.4	19.0	0.6	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	0.8	0.0	0.1	1.2	0.0	3.0	0.9	0.0	7.5	4.4	4.1	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	61.5	0.0	52.8	61.2	51.7	64.9	61.3	0.0	12.5	73.2	8.1	4.7
LnGrp LOS	E	A	D	E	D	E	E	A	B	E	A	A
Approach Vol, veh/h		29			127			622			619	
Approach Delay, s/veh		60.3			63.7			14.8			20.9	
Approach LOS		E			E			B			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	15.0	82.4	9.0	13.7	9.3	88.0	9.9	12.8				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	12.0	38.0	19.0	31.0	17.0	33.0	19.0	31.0				
Max Q Clear Time (g_c+I1), s	10.1	21.9	3.6	8.6	3.9	13.6	4.3	2.3				
Green Ext Time (p_c), s	0.0	3.1	0.0	0.2	0.0	2.4	0.0	0.0				

Intersection Summary

HCM 6th Ctrl Delay	22.9
HCM 6th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

Arco AM/PM Service Station  
6: Project West Driveway & Hemlock Avenue

Opening Year with Project (AM Peak Hour)

Intersection						
Int Delay, s/veh	7.5					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	0	0	20	0	0	15
Future Vol, veh/h	0	0	20	0	0	15
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	0	22	0	0	16

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	1	0	45
Stage 1	-	-	-	-	1
Stage 2	-	-	-	-	44
Critical Hdwy	-	-	4.1	-	6.4
Critical Hdwy Stg 1	-	-	-	-	5.4
Critical Hdwy Stg 2	-	-	-	-	5.4
Follow-up Hdwy	-	-	2.2	-	3.5
Pot Cap-1 Maneuver	-	-	1635	-	970
Stage 1	-	-	-	-	1028
Stage 2	-	-	-	-	984
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1635	-	957
Mov Cap-2 Maneuver	-	-	-	-	957
Stage 1	-	-	-	-	1015
Stage 2	-	-	-	-	984

Approach	EB	WB	NB
HCM Control Delay, s	0	7.2	8.4
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	1090	-	-	1635	-
HCM Lane V/C Ratio	0.015	-	-	0.013	-
HCM Control Delay (s)	8.4	-	-	7.2	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0	-

Arco AM/PM Service Station  
7: Spruce Avenue & Project Driveway

Opening Year with Project (AM Peak Hour)

Intersection						
Int Delay, s/veh	0.5					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	83	0	4	82	0	7
Future Vol, veh/h	83	0	4	82	0	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	90	0	4	89	0	8

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	90	0	187
Stage 1	-	-	-	-	90
Stage 2	-	-	-	-	97
Critical Hdwy	-	-	4.1	-	6.4
Critical Hdwy Stg 1	-	-	-	-	5.4
Critical Hdwy Stg 2	-	-	-	-	5.4
Follow-up Hdwy	-	-	2.2	-	3.5
Pot Cap-1 Maneuver	-	-	1518	-	807
Stage 1	-	-	-	-	939
Stage 2	-	-	-	-	932
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1518	-	805
Mov Cap-2 Maneuver	-	-	-	-	805
Stage 1	-	-	-	-	936
Stage 2	-	-	-	-	932

Approach	EB	WB	NB
HCM Control Delay, s	0	0.3	8.7
HCM LOS			A

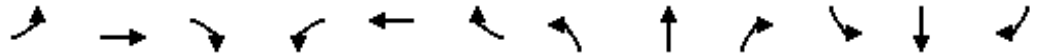
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	973	-	-	1518	-
HCM Lane V/C Ratio	0.008	-	-	0.003	-
HCM Control Delay (s)	8.7	-	-	7.4	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0	-





Arco AM/PM Service Station  
1: Redlands Boulevard & Ironwood Avenue

Opening Year with Project (PM Peak Hour)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕		↕	↕	↕
Traffic Volume (veh/h)	118	29	79	9	28	11	93	726	8	11	702	215
Future Volume (veh/h)	118	29	79	9	28	11	93	726	8	11	702	215
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	123	30	82	9	29	11	97	756	8	11	731	224
Peak Hour Factor	0.96	0.96	0.96	0.96	0.98	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	0	0	0
Cap, veh/h	147	36	98	20	63	24	144	941	10	34	838	710
Arrive On Green	0.16	0.16	0.16	0.06	0.06	0.06	0.08	0.50	0.50	0.02	0.44	0.44
Sat Flow, veh/h	913	223	609	332	1071	406	1810	1877	20	1810	1900	1610
Grp Volume(v), veh/h	235	0	0	49	0	0	97	0	764	11	731	224
Grp Sat Flow(s),veh/h/ln	1745	0	0	1810	0	0	1810	0	1896	1810	1900	1610
Q Serve(g_s), s	10.1	0.0	0.0	2.0	0.0	0.0	4.0	0.0	26.0	0.5	27.0	7.0
Cycle Q Clear(g_c), s	10.1	0.0	0.0	2.0	0.0	0.0	4.0	0.0	26.0	0.5	27.0	7.0
Prop In Lane	0.52		0.35	0.18		0.22	1.00		0.01	1.00		1.00
Lane Grp Cap(c), veh/h	282	0	0	107	0	0	144	0	950	34	838	710
V/C Ratio(X)	0.83	0.00	0.00	0.46	0.00	0.00	0.68	0.00	0.80	0.32	0.87	0.32
Avail Cap(c_a), veh/h	385	0	0	399	0	0	282	0	950	282	838	710
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	31.3	0.0	0.0	35.1	0.0	0.0	34.5	0.0	16.1	37.3	19.6	14.0
Incr Delay (d2), s/veh	10.9	0.0	0.0	3.0	0.0	0.0	5.4	0.0	7.2	5.2	12.2	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	4.6	0.0	0.0	0.9	0.0	0.0	1.8	0.0	10.7	0.2	12.6	2.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	42.3	0.0	0.0	38.1	0.0	0.0	40.0	0.0	23.2	42.5	31.8	15.2
LnGrp LOS	D	A	A	D	A	A	D	A	C	D	C	B
Approach Vol, veh/h		235		49				861			966	
Approach Delay, s/veh		42.3		38.1				25.1			28.0	
Approach LOS		D		D				C			C	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.5	43.7		9.5	11.1	39.0		17.5				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0				
Max Green Setting (Gmax), s	12.0	34.0		17.0	12.0	34.0		17.0				
Max Q Clear Time (g_c+I1), s	2.5	28.0		4.0	6.0	29.0		12.1				
Green Ext Time (p_c), s	0.0	2.4		0.1	0.1	2.3		0.5				

Intersection Summary

HCM 6th Ctrl Delay	28.7
HCM 6th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

Arco AM/PM Service Station  
 2: Redlands Boulevard & Hemlock Avenue

Opening Year with Project (PM Peak Hour)

Intersection						
Int Delay, s/veh	0.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↗		↑	↘	
Traffic Vol, veh/h	0	17	0	838	876	23
Future Vol, veh/h	0	17	0	838	876	23
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	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	18	0	911	952	25

Major/Minor	Minor2	Major1	Major2		
Conflicting Flow All	-	965	-	0	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-
Critical Hdwy	-	6.2	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-
Follow-up Hdwy	-	3.3	-	-	-
Pot Cap-1 Maneuver	0	312	0	-	-
Stage 1	0	-	0	-	-
Stage 2	0	-	0	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	-	312	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	17.3	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	312	-	-
HCM Lane V/C Ratio	-	0.059	-	-
HCM Control Delay (s)	-	17.3	-	-
HCM Lane LOS	-	C	-	-
HCM 95th %tile Q(veh)	-	0.2	-	-

3: Redlands Boulevard & Spruce Avenue/SR-60 WB



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↑	↗	↖	↘	↙
Traffic Volume (veh/h)	22	30	54	84	29	27	68	768	208	267	530	0
Future Volume (veh/h)	22	30	54	84	29	27	68	768	208	267	530	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	23	31	56	88	30	28	71	800	217	278	552	0
Peak Hour Factor	0.96	0.96	0.96	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	0	0	0
Cap, veh/h	29	39	70	89	30	28	121	812	821	317	1018	0
Arrive On Green	0.08	0.08	0.08	0.08	0.08	0.08	0.07	0.43	0.43	0.18	0.54	0.00
Sat Flow, veh/h	360	486	878	1076	367	342	1810	1900	1610	1810	1900	0
Grp Volume(v), veh/h	110	0	0	146	0	0	71	800	217	278	552	0
Grp Sat Flow(s),veh/h/ln	1724	0	0	1785	0	0	1810	1900	1610	1810	1900	0
Q Serve(g_s), s	5.3	0.0	0.0	6.9	0.0	0.0	3.2	35.4	6.5	12.7	16.2	0.0
Cycle Q Clear(g_c), s	5.3	0.0	0.0	6.9	0.0	0.0	3.2	35.4	6.5	12.7	16.2	0.0
Prop In Lane	0.21		0.51	0.60		0.19	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	138	0	0	147	0	0	121	812	821	317	1018	0
V/C Ratio(X)	0.80	0.00	0.00	0.99	0.00	0.00	0.59	0.99	0.26	0.88	0.54	0.00
Avail Cap(c_a), veh/h	142	0	0	147	0	0	341	812	821	362	1018	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	38.4	0.0	0.0	39.0	0.0	0.0	38.5	24.1	11.8	34.2	12.9	0.0
Incr Delay (d2), s/veh	26.1	0.0	0.0	72.1	0.0	0.0	4.4	28.2	0.8	19.1	2.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.2	0.0	0.0	5.8	0.0	0.0	1.5	19.8	2.6	6.8	6.2	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	64.6	0.0	0.0	111.1	0.0	0.0	43.0	52.3	12.6	53.3	15.0	0.0
LnGrp LOS	E	A	A	F	A	A	D	D	B	D	B	A
Approach Vol, veh/h		110			146			1088				830
Approach Delay, s/veh		64.6			111.1			43.8				27.8
Approach LOS		E			F			D				C
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	19.9	41.3		11.8	10.7	50.5		12.0				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0				
Max Green Setting (Gmax), s	17.0	34.0		7.0	16.0	35.0		7.0				
Max Q Clear Time (g_c+I1), s	14.7	37.4		7.3	5.2	18.2		8.9				
Green Ext Time (p_c), s	0.2	0.0		0.0	0.1	2.8		0.0				

Intersection Summary

HCM 6th Ctrl Delay	43.3
HCM 6th LOS	D

Arco AM/PM Service Station  
4: Redlands Boulevard & SR-60 EB

Opening Year with Project (PM Peak Hour)



Movement	EBL	EBR	NBL	NBT	SBT	SBR	
Lane Configurations							
Traffic Volume (veh/h)	413	215	109	611	559	73	
Future Volume (veh/h)	413	215	109	611	559	73	
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	454	236	120	671	614	80	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	
Percent Heavy Veh, %	0	0	0	0	0	0	
Cap, veh/h	403	209	255	1006	626	530	
Arrive On Green	0.35	0.35	0.14	0.53	0.33	0.33	
Sat Flow, veh/h	1141	593	1810	1900	1900	1610	
Grp Volume(v), veh/h	691	0	120	671	614	80	
Grp Sat Flow(s),veh/h/ln	1736	0	1810	1900	1900	1610	
Q Serve(g_s), s	30.0	0.0	5.2	21.8	27.2	3.0	
Cycle Q Clear(g_c), s	30.0	0.0	5.2	21.8	27.2	3.0	
Prop In Lane	0.66	0.34	1.00			1.00	
Lane Grp Cap(c), veh/h	613	0	255	1006	626	530	
V/C Ratio(X)	1.13	0.00	0.47	0.67	0.98	0.15	
Avail Cap(c_a), veh/h	613	0	255	1006	626	530	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	
Upstream Filter(I)	1.00	0.00	0.79	0.79	1.00	1.00	
Uniform Delay (d), s/veh	27.5	0.0	33.6	14.6	28.2	20.1	
Incr Delay (d2), s/veh	76.8	0.0	1.1	2.8	31.6	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	24.2	0.0	2.2	8.4	16.4	1.1	
Unsig. Movement Delay, s/veh							
LnGrp Delay(d),s/veh	104.3	0.0	34.6	17.3	59.9	20.7	
LnGrp LOS	F	A	C	B	E	C	
Approach Vol, veh/h	691			791	694		
Approach Delay, s/veh	104.3			20.0	55.3		
Approach LOS	F			B	E		
Timer - Assigned Phs		2			5	6	8
Phs Duration (G+Y+Rc), s		50.0			17.0	33.0	35.0
Change Period (Y+Rc), s		5.0			5.0	5.0	5.0
Max Green Setting (Gmax), s		45.0			12.0	28.0	30.0
Max Q Clear Time (g_c+I1), s		23.8			7.2	29.2	32.0
Green Ext Time (p_c), s		4.0			0.1	0.0	0.0

Intersection Summary

HCM 6th Ctrl Delay	58.0
HCM 6th LOS	E

Notes

User approved volume balancing among the lanes for turning movement.

Arco AM/PM Service Station  
5: Redlands Boulevard & Eucalyptus Avenue

Opening Year with Project (PM Peak Hour)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	38	0	17	99	0	234	1	460	83	166	598	17
Future Volume (veh/h)	38	0	17	99	0	234	1	460	83	166	598	17
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	44	0	20	114	0	269	1	529	95	191	687	20
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
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	81	0	244	142	352	298	3	789	142	181	1143	1041
Arrive On Green	0.04	0.00	0.15	0.08	0.00	0.19	0.00	0.50	0.50	0.10	0.60	0.60
Sat Flow, veh/h	1810	0	1610	1810	1900	1610	1810	1568	282	1810	1900	1610
Grp Volume(v), veh/h	44	0	20	114	0	269	1	0	624	191	687	20
Grp Sat Flow(s),veh/h/ln	1810	0	1610	1810	1900	1610	1810	0	1849	1810	1900	1610
Q Serve(g_s), s	2.9	0.0	1.3	7.4	0.0	19.6	0.1	0.0	30.3	12.0	27.1	0.5
Cycle Q Clear(g_c), s	2.9	0.0	1.3	7.4	0.0	19.6	0.1	0.0	30.3	12.0	27.1	0.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.15	1.00		1.00
Lane Grp Cap(c), veh/h	81	0	244	142	352	298	3	0	931	181	1143	1041
V/C Ratio(X)	0.54	0.00	0.08	0.81	0.00	0.90	0.29	0.00	0.67	1.06	0.60	0.02
Avail Cap(c_a), veh/h	287	0	416	287	491	416	256	0	931	181	1143	1041
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	0.00	1.00	0.14	0.14	0.14
Uniform Delay (d), s/veh	56.1	0.0	43.7	54.4	0.0	47.8	59.8	0.0	22.3	54.0	14.9	7.6
Incr Delay (d2), s/veh	5.5	0.0	0.1	10.2	0.0	17.8	40.5	0.0	3.8	41.1	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	0.0	0.5	3.7	0.0	9.2	0.1	0.0	13.0	7.3	10.3	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	61.6	0.0	43.9	64.6	0.0	65.6	100.3	0.0	26.2	95.1	15.3	7.6
LnGrp LOS	E	A	D	E	A	E	F	A	C	F	B	A
Approach Vol, veh/h		64			383			625			898	
Approach Delay, s/veh		56.1			65.3			26.3			32.1	
Approach LOS		E			E			C			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	17.0	65.4	10.4	27.2	5.2	77.2	14.4	23.2				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	12.0	38.0	19.0	31.0	17.0	33.0	19.0	31.0				
Max Q Clear Time (g_c+I1), s	14.0	32.3	4.9	21.6	2.1	29.1	9.4	3.3				
Green Ext Time (p_c), s	0.0	1.8	0.1	0.6	0.0	1.5	0.2	0.1				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay			37.5									
HCM 6th LOS			D									

Arco AM/PM Service Station  
6: Project West Driveway & Hemlock Avenue

Opening Year with Project (PM Peak Hour)

Intersection						
Int Delay, s/veh	7.5					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	0	0	23	0	0	17
Future Vol, veh/h	0	0	23	0	0	17
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	0	25	0	0	18

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	1	0	51
Stage 1	-	-	-	-	1
Stage 2	-	-	-	-	50
Critical Hdwy	-	-	4.1	-	6.4
Critical Hdwy Stg 1	-	-	-	-	5.4
Critical Hdwy Stg 2	-	-	-	-	5.4
Follow-up Hdwy	-	-	2.2	-	3.5
Pot Cap-1 Maneuver	-	-	1635	-	963
Stage 1	-	-	-	-	1028
Stage 2	-	-	-	-	978
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1635	-	949
Mov Cap-2 Maneuver	-	-	-	-	949
Stage 1	-	-	-	-	1013
Stage 2	-	-	-	-	978

Approach	EB	WB	NB
HCM Control Delay, s	0	7.2	8.4
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	1090	-	-	1635	-
HCM Lane V/C Ratio	0.017	-	-	0.015	-
HCM Control Delay (s)	8.4	-	-	7.2	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Arco AM/PM Service Station  
7: Spruce Avenue & Project Driveway

Opening Year with Project (PM Peak Hour)

Intersection						
Int Delay, s/veh	0.8					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	94	0	6	91	0	12
Future Vol, veh/h	94	0	6	91	0	12
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	102	0	7	99	0	13

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	102	0	215
Stage 1	-	-	-	-	102
Stage 2	-	-	-	-	113
Critical Hdwy	-	-	4.1	-	6.4
Critical Hdwy Stg 1	-	-	-	-	5.4
Critical Hdwy Stg 2	-	-	-	-	5.4
Follow-up Hdwy	-	-	2.2	-	3.5
Pot Cap-1 Maneuver	-	-	1503	-	778
Stage 1	-	-	-	-	927
Stage 2	-	-	-	-	917
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1503	-	774
Mov Cap-2 Maneuver	-	-	-	-	774
Stage 1	-	-	-	-	922
Stage 2	-	-	-	-	917

Approach	EB	WB	NB
HCM Control Delay, s	0	0.5	8.8
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	959	-	-	1503	-
HCM Lane V/C Ratio	0.014	-	-	0.004	-
HCM Control Delay (s)	8.8	-	-	7.4	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0	-



**OPENING YEAR (2024) WITHOUT PROJECT**

**WITH IMPROVEMENTS**

Arco AM/PM Service Station  
4: Redlands Boulevard & SR-60 EB

Opening Year without Project (AM Peak Hour)  
With Improvements



Movement	EBL	EBR	NBL	NBT	SBT	SBR	
Lane Configurations							
Traffic Volume (veh/h)	146	149	89	522	440	42	
Future Volume (veh/h)	146	149	89	522	440	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	159	162	97	567	478	46	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	
Percent Heavy Veh, %	0	0	0	0	0	0	
Cap, veh/h	241	214	684	1394	549	679	
Arrive On Green	0.13	0.13	0.38	0.73	0.29	0.29	
Sat Flow, veh/h	1810	1610	1810	1900	1900	1610	
Grp Volume(v), veh/h	159	162	97	567	478	46	
Grp Sat Flow(s),veh/h/ln	1810	1610	1810	1900	1900	1610	
Q Serve(g_s), s	6.3	7.3	2.6	8.5	17.9	0.0	
Cycle Q Clear(g_c), s	6.3	7.3	2.6	8.5	17.9	0.0	
Prop In Lane	1.00	1.00	1.00			1.00	
Lane Grp Cap(c), veh/h	241	214	684	1394	549	679	
V/C Ratio(X)	0.66	0.76	0.14	0.41	0.87	0.07	
Avail Cap(c_a), veh/h	483	429	684	1394	709	815	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	
Upstream Filter(I)	1.00	1.00	0.88	0.88	1.00	1.00	
Uniform Delay (d), s/veh	30.9	31.3	15.3	3.8	25.3	7.6	
Incr Delay (d2), s/veh	3.1	5.4	0.1	0.8	17.1	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	2.7	2.9	1.0	1.7	9.7	0.3	
Unsig. Movement Delay, s/veh							
LnGrp Delay(d),s/veh	34.0	36.7	15.4	4.6	42.4	7.8	
LnGrp LOS	C	D	B	A	D	A	
Approach Vol, veh/h	321			664	524		
Approach Delay, s/veh	35.4			6.1	39.4		
Approach LOS	D			A	D		
Timer - Assigned Phs		2			5	6	8
Phs Duration (G+Y+Rc), s		60.0			33.4	26.7	15.0
Change Period (Y+Rc), s		5.0			5.0	5.0	5.0
Max Green Setting (Gmax), s		45.0			12.0	28.0	20.0
Max Q Clear Time (g_c+I1), s		10.5			4.6	19.9	9.3
Green Ext Time (p_c), s		3.5			0.1	1.7	0.7
<b>Intersection Summary</b>							
HCM 6th Ctrl Delay			23.9				
HCM 6th LOS			C				



Arco AM/PM Service Station  
4: Redlands Boulevard & SR-60 EB

Opening Year without Project (PM Peak Hour)  
With Improvements



Movement	EBL	EBR	NBL	NBT	SBT	SBR	
Lane Configurations							
Traffic Volume (veh/h)	400	215	109	596	544	60	
Future Volume (veh/h)	400	215	109	596	544	60	
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	440	236	120	655	598	66	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	
Percent Heavy Veh, %	0	0	0	0	0	0	
Cap, veh/h	497	442	398	1155	626	530	
Arrive On Green	0.27	0.27	0.22	0.61	0.33	0.33	
Sat Flow, veh/h	1810	1610	1810	1900	1900	1610	
Grp Volume(v), veh/h	440	236	120	655	598	66	
Grp Sat Flow(s),veh/h/ln	1810	1610	1810	1900	1900	1610	
Q Serve(g_s), s	19.8	10.6	4.7	17.5	26.2	2.4	
Cycle Q Clear(g_c), s	19.8	10.6	4.7	17.5	26.2	2.4	
Prop In Lane	1.00	1.00	1.00			1.00	
Lane Grp Cap(c), veh/h	497	442	398	1155	626	530	
V/C Ratio(X)	0.89	0.53	0.30	0.57	0.96	0.12	
Avail Cap(c_a), veh/h	639	568	398	1155	626	530	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	
Upstream Filter(I)	1.00	1.00	0.81	0.81	1.00	1.00	
Uniform Delay (d), s/veh	29.6	26.2	27.7	10.0	27.9	19.9	
Incr Delay (d2), s/veh	11.8	1.0	0.3	1.6	26.5	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	9.5	3.9	1.9	6.0	15.1	0.9	
Unsig. Movement Delay, s/veh							
LnGrp Delay(d),s/veh	41.3	27.2	28.1	11.6	54.4	20.4	
LnGrp LOS	D	C	C	B	D	C	
Approach Vol, veh/h	676			775	664		
Approach Delay, s/veh	36.4			14.2	51.0		
Approach LOS	D			B	D		
Timer - Assigned Phs		2			5	6	8
Phs Duration (G+Y+Rc), s		56.7			23.7	33.0	28.3
Change Period (Y+Rc), s		5.0			5.0	5.0	5.0
Max Green Setting (Gmax), s		45.0			12.0	28.0	30.0
Max Q Clear Time (g_c+I1), s		19.5			6.7	28.2	21.8
Green Ext Time (p_c), s		4.0			0.1	0.0	1.5
<b>Intersection Summary</b>							
HCM 6th Ctrl Delay			32.8				
HCM 6th LOS			C				

**OPENING YEAR (2024) WITH PROJECT**

**WITH IMPROVEMENTS**

Arco AM/PM Service Station  
4: Redlands Boulevard & SR-60 EB

Opening Year with Project (AM Peak Hour)  
With Improvements



Movement	EBL	EBR	NBL	NBT	SBT	SBR	
Lane Configurations							
Traffic Volume (veh/h)	156	149	89	534	452	50	
Future Volume (veh/h)	156	149	89	534	452	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	170	162	97	580	491	54	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	
Percent Heavy Veh, %	0	0	0	0	0	0	
Cap, veh/h	241	215	672	1393	561	690	
Arrive On Green	0.13	0.13	0.37	0.73	0.30	0.30	
Sat Flow, veh/h	1810	1610	1810	1900	1900	1610	
Grp Volume(v), veh/h	170	162	97	580	491	54	
Grp Sat Flow(s),veh/h/ln	1810	1610	1810	1900	1900	1610	
Q Serve(g_s), s	6.7	7.3	2.7	8.8	18.4	0.0	
Cycle Q Clear(g_c), s	6.7	7.3	2.7	8.8	18.4	0.0	
Prop In Lane	1.00	1.00	1.00			1.00	
Lane Grp Cap(c), veh/h	241	215	672	1393	561	690	
V/C Ratio(X)	0.70	0.75	0.14	0.42	0.87	0.08	
Avail Cap(c_a), veh/h	483	429	672	1393	709	816	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	
Upstream Filter(I)	1.00	1.00	0.86	0.86	1.00	1.00	
Uniform Delay (d), s/veh	31.1	31.3	15.7	3.8	25.1	7.4	
Incr Delay (d2), s/veh	3.7	5.3	0.1	0.8	17.2	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	3.0	2.9	1.0	1.8	9.9	0.4	
Unsig. Movement Delay, s/veh							
LnGrp Delay(d),s/veh	34.8	36.6	15.7	4.6	42.3	7.7	
LnGrp LOS	C	D	B	A	D	A	
Approach Vol, veh/h	332			677	545		
Approach Delay, s/veh	35.7			6.2	38.8		
Approach LOS	D			A	D		
Timer - Assigned Phs		2			5	6	8
Phs Duration (G+Y+Rc), s		60.0			32.8	27.2	15.0
Change Period (Y+Rc), s		5.0			5.0	5.0	5.0
Max Green Setting (Gmax), s		45.0			12.0	28.0	20.0
Max Q Clear Time (g_c+I1), s		10.8			4.7	20.4	9.3
Green Ext Time (p_c), s		3.6			0.1	1.7	0.7
<b>Intersection Summary</b>							
HCM 6th Ctrl Delay			24.0				
HCM 6th LOS			C				



Arco AM/PM Service Station  
4: Redlands Boulevard & SR-60 EB

Opening Year with Project (PM Peak Hour)  
With Improvements



Movement	EBL	EBR	NBL	NBT	SBT	SBR	
Lane Configurations							
Traffic Volume (veh/h)	413	215	109	611	559	73	
Future Volume (veh/h)	413	215	109	611	559	73	
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	454	236	120	671	614	80	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	
Percent Heavy Veh, %	0	0	0	0	0	0	
Cap, veh/h	509	453	385	1142	626	530	
Arrive On Green	0.28	0.28	0.21	0.60	0.33	0.33	
Sat Flow, veh/h	1810	1610	1810	1900	1900	1610	
Grp Volume(v), veh/h	454	236	120	671	614	80	
Grp Sat Flow(s),veh/h/ln	1810	1610	1810	1900	1900	1610	
Q Serve(g_s), s	20.5	10.5	4.8	18.5	27.2	3.0	
Cycle Q Clear(g_c), s	20.5	10.5	4.8	18.5	27.2	3.0	
Prop In Lane	1.00	1.00	1.00			1.00	
Lane Grp Cap(c), veh/h	509	453	385	1142	626	530	
V/C Ratio(X)	0.89	0.52	0.31	0.59	0.98	0.15	
Avail Cap(c_a), veh/h	639	568	385	1142	626	530	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	
Upstream Filter(I)	1.00	1.00	0.79	0.79	1.00	1.00	
Uniform Delay (d), s/veh	29.3	25.7	28.2	10.5	28.2	20.1	
Incr Delay (d2), s/veh	12.6	0.9	0.4	1.8	31.6	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	9.9	3.8	1.9	6.4	16.4	1.1	
Unsig. Movement Delay, s/veh							
LnGrp Delay(d),s/veh	41.9	26.6	28.6	12.2	59.9	20.7	
LnGrp LOS	D	C	C	B	E	C	
Approach Vol, veh/h	690			791	694		
Approach Delay, s/veh	36.7			14.7	55.3		
Approach LOS	D			B	E		
Timer - Assigned Phs		2			5	6	8
Phs Duration (G+Y+Rc), s		56.1			23.1	33.0	28.9
Change Period (Y+Rc), s		5.0			5.0	5.0	5.0
Max Green Setting (Gmax), s		45.0			12.0	28.0	30.0
Max Q Clear Time (g_c+I1), s		20.5			6.8	29.2	22.5
Green Ext Time (p_c), s		4.1			0.1	0.0	1.5
<b>Intersection Summary</b>							
HCM 6th Ctrl Delay			34.6				
HCM 6th LOS			C				



## **APPENDIX G**

### **OTHER DEVELOPMENT STUDY AREA INTERSECTION INFORMATION**

**DRAFT**  
**TRAFFIC STUDY**

**EUCALYPTUS INDUSTRIAL PARK**  
**CITY OF MORENO VALLEY**  
**RIVERSIDE COUNTY, CALIFORNIA**

**LSA**

*April 24, 2012*

**Table D - Project Trip Generation**

Land Uses	Units	A.M. Peak Hour			P.M. Peak Hour			Daily
		In	Out	Total	In	Out	Total	
<b>Total Project Trips</b>								
Trip Generation (Cars)		131	45	176	43	156	199	2,420
Trip Generation (2-Axle Trucks)		8	9	17	12	8	20	238
Trip Generation (3-Axle Trucks)		15	18	33	25	15	40	505
Trip Generation (4+ Axle Trucks)		41	42	83	61	36	97	1,246
Trip Generation (Total)		195	114	309	141	215	356	4,409
Trip Generation (Cars)		131	45	176	43	156	199	2,420
PCE Trip Generation (2-Axle Trucks)		15	16	31	19	15	34	359
PCE Trip Generation (3-Axle Trucks)		30	36	66	50	30	80	1,010
PCE Trip Generation (4+ Axle Trucks)		123	126	249	183	108	291	3,738
PCE Trip Generation (Total)		299	223	522	295	309	604	7,527

TSF thousand square feet

- 1 Total A.M. peak hour, P.M. peak and daily rates from Institute of Transportation Engineers (ITE) "Trip Generation (7th Edition) rates for Land Use 150 - "Warehousing". All trip generation rates converted to car and truck trips using vehicle mix and enter/exit splits from Fontana Truck Trip Generation Study. Truck trips converted to PCEs based on the SANBAG PCE values.
- 2 Total A.M. peak hour, P.M. peak and daily rates from modified NAIOP rates for High-Cube Warehousing as approved by the City of Moreno Valley. All trip generation rates converted to car and truck trips using vehicle mix and enter/exit splits from Fontana Truck Trip Generation Study. Truck trips were converted to PCEs based on the SANBAG PCE values.

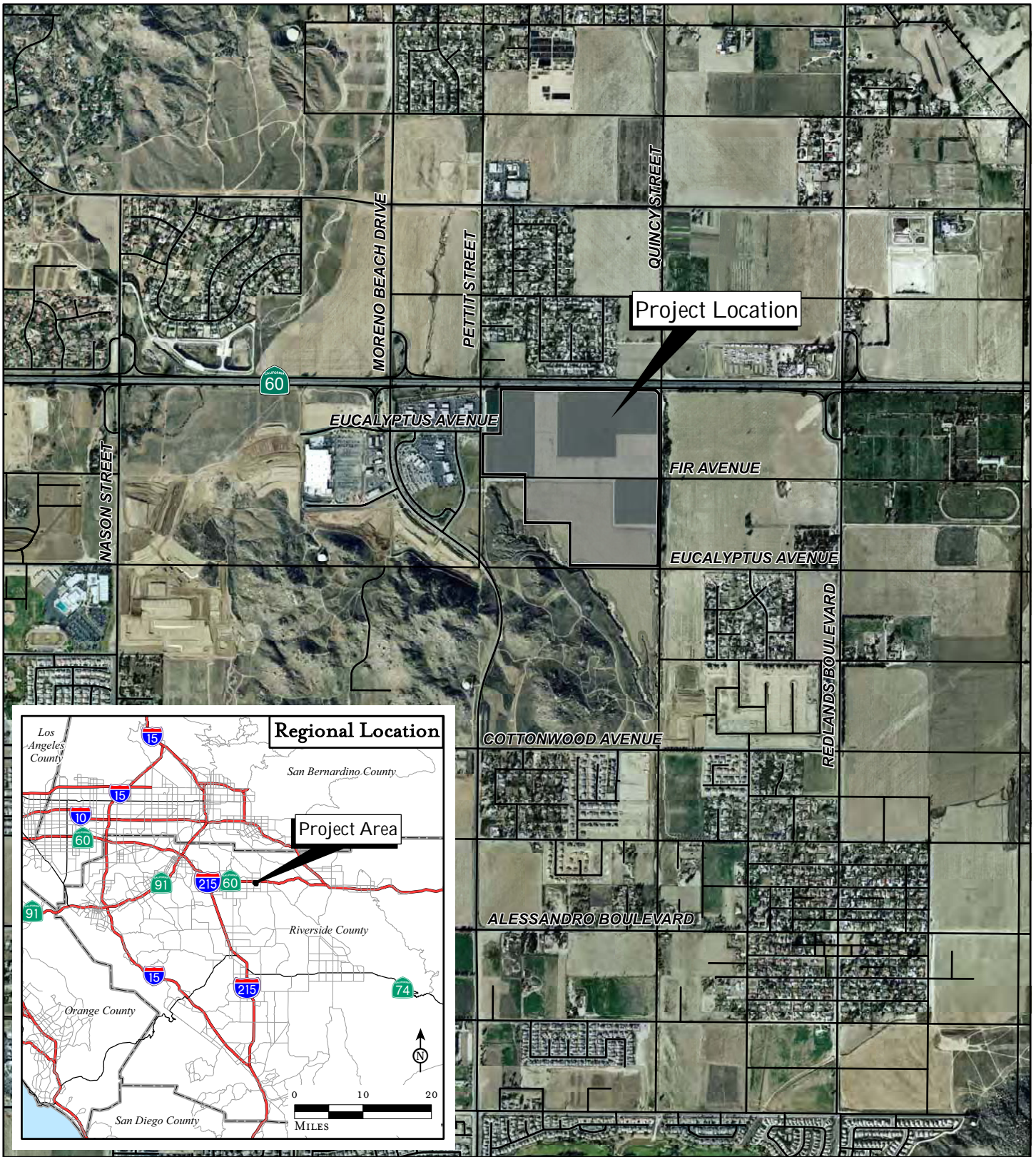
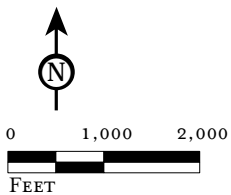


FIGURE 1

LSA



SOURCE: AirPhotoUSA, 2006 County of Riverside, 2006





FIGURE 2

ProLogis Park  
Site Plan

LSA

R:\PLOT101\_ProLogis\_EIP\_MoValTrafficScope\45\_02\_site plan.xls 7/14/2011



LSA (XX%) YY% (Inbound) Outbound Distribution

ProLegis Park Future Year Passenger Vehicle Distribution

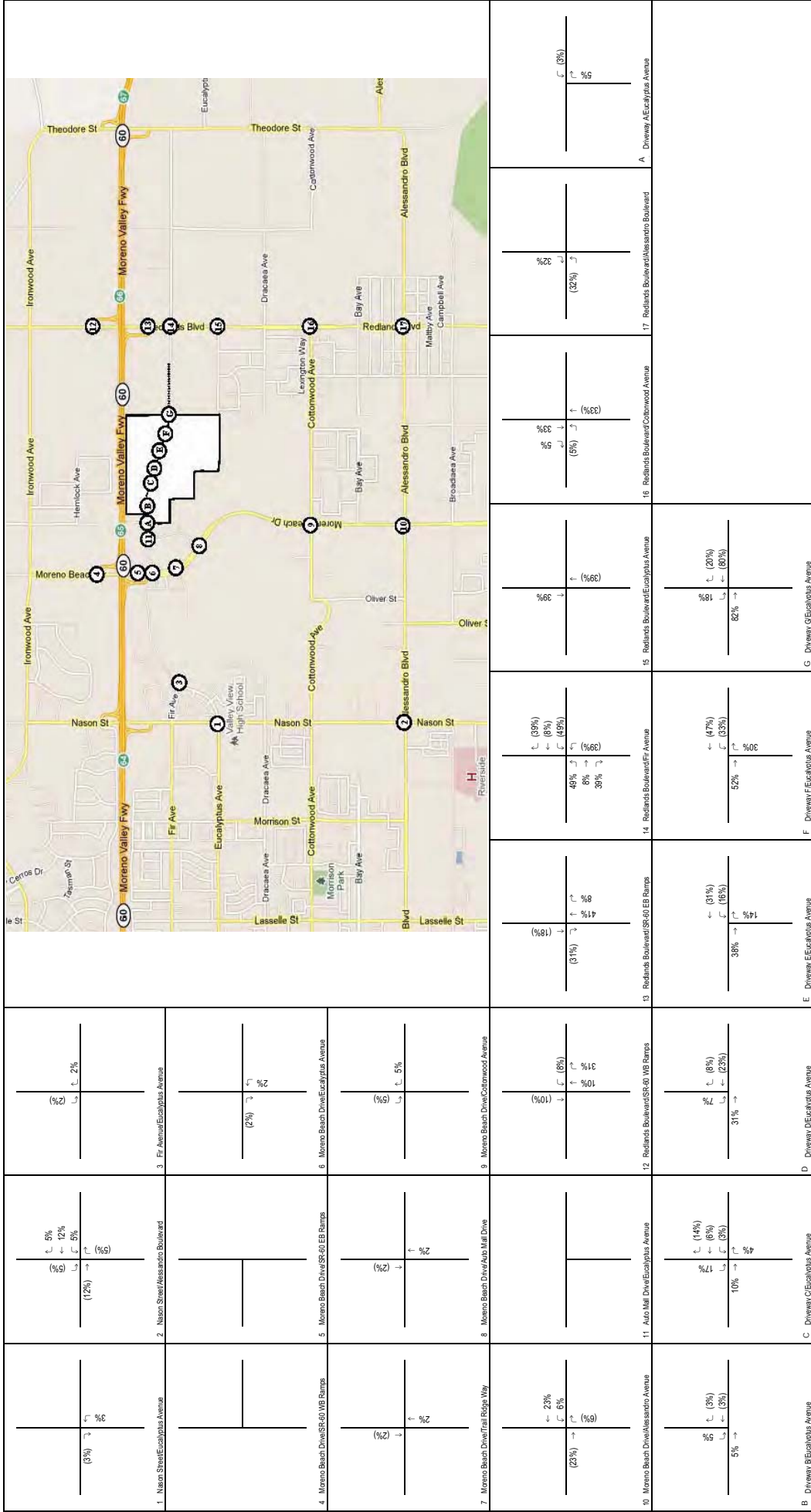


FIGURE 4

LSA

(XX%) YY% (Inbound) Outbound Distribution  
 ProLogis Park  
 Future Year Truck Distribution



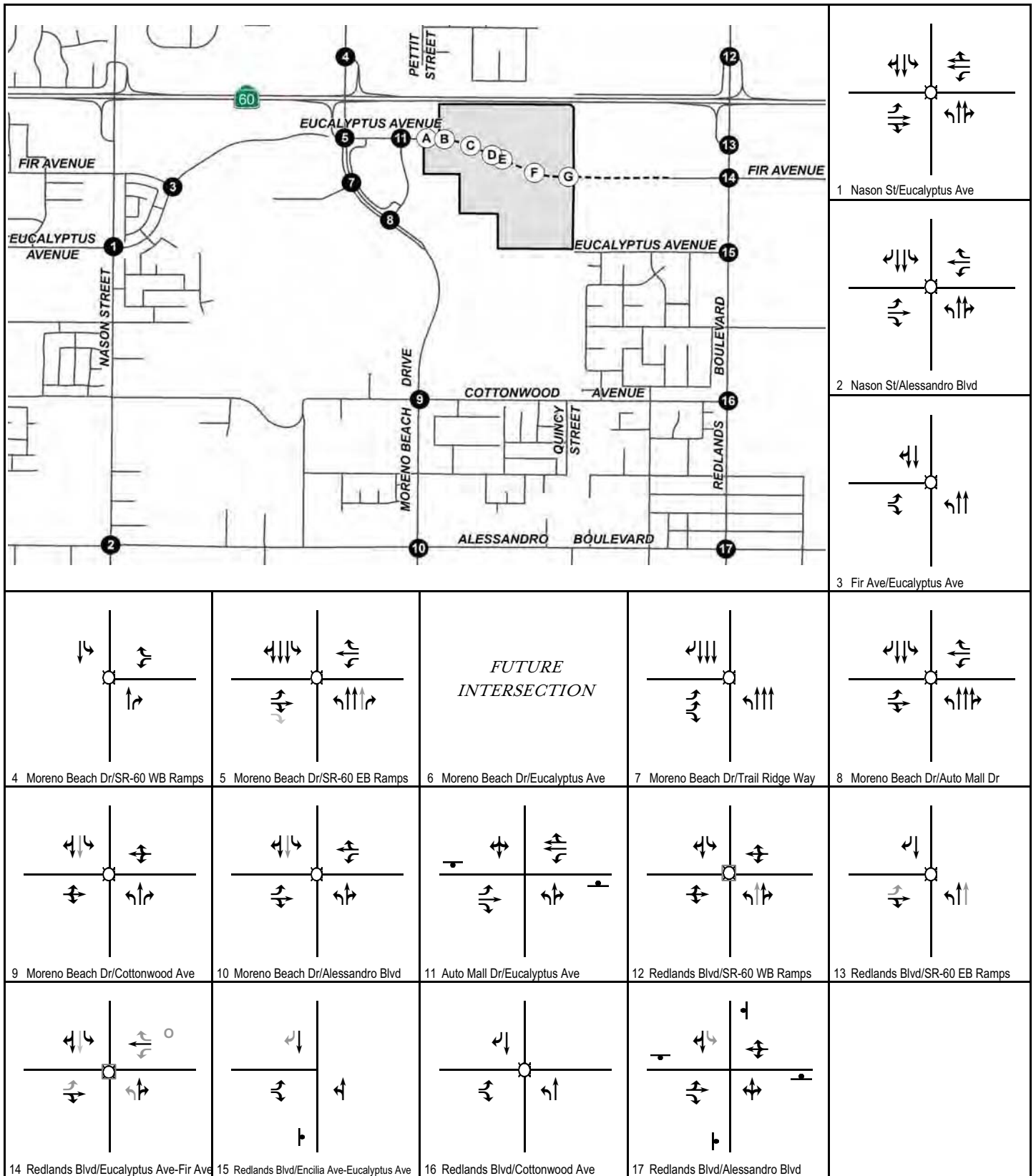


FIGURE 32

LSA

- Legend
- Signal
- ↔ Recommended Improvement
- ⊥ Stop Sign

Eucalyptus Industrial Park Traffic Study  
 Cumulative (2016) with Project Intersection Geometrics and Stop Control with Improvements



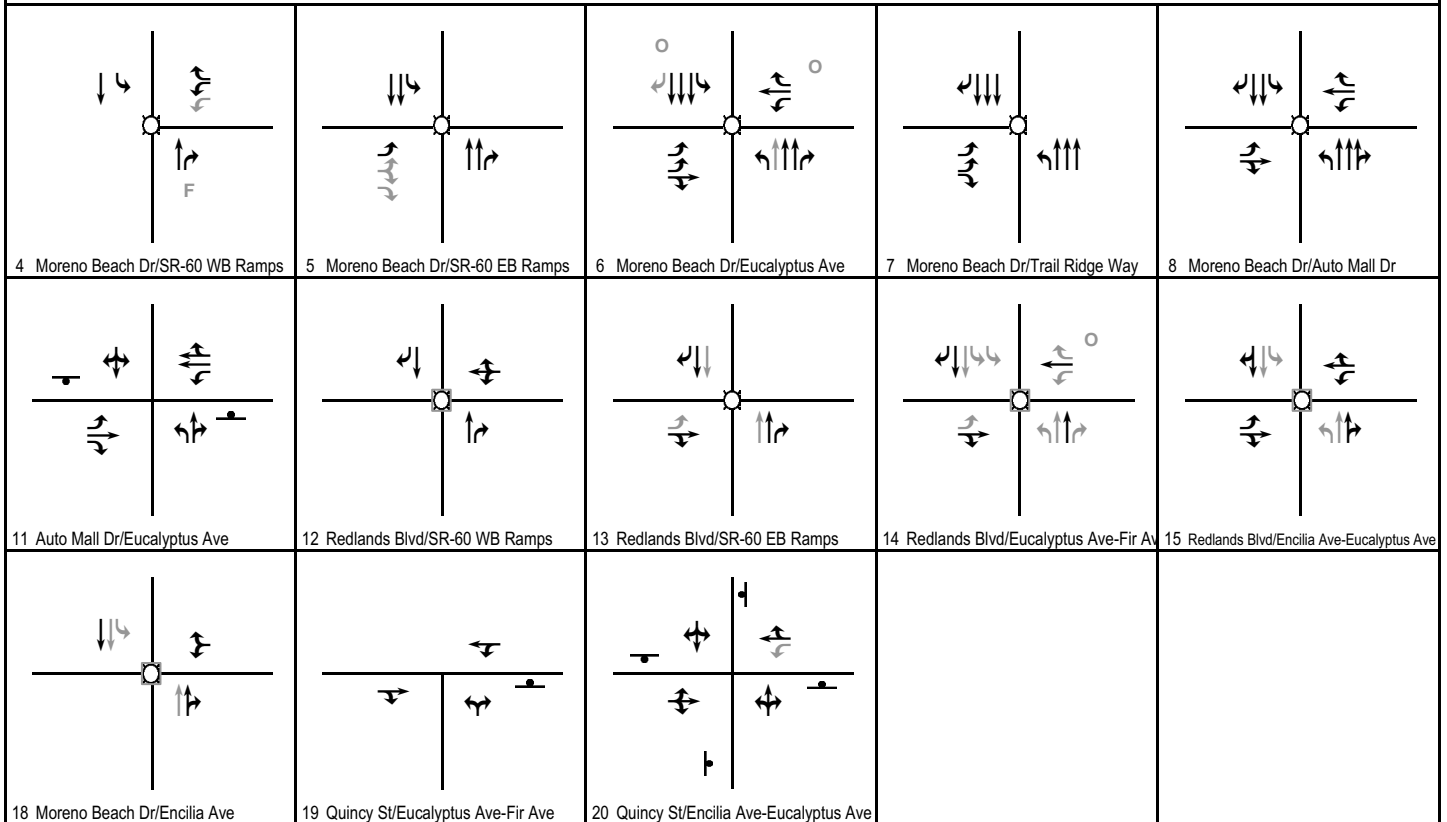
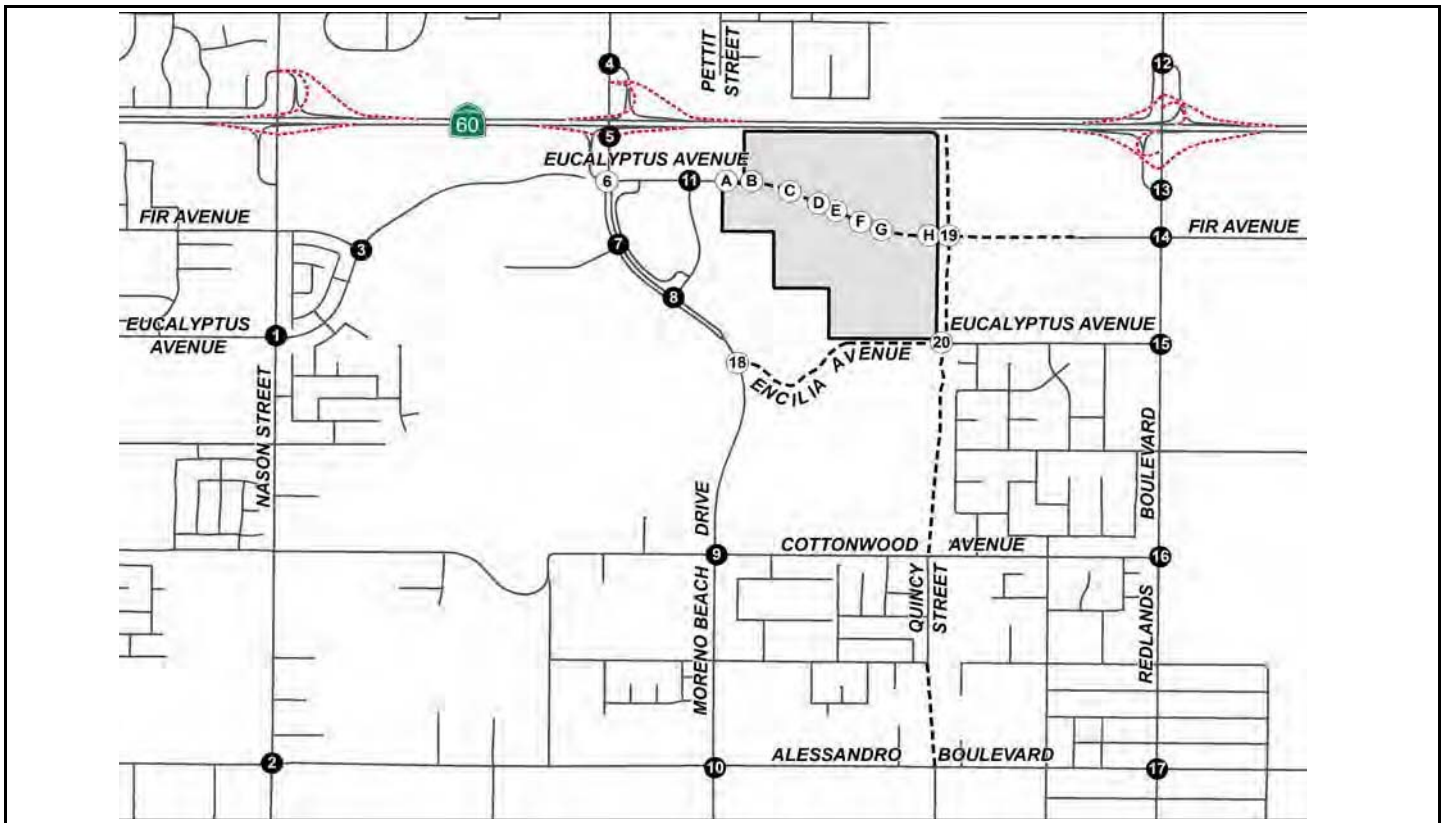


FIGURE 43

LSA

- Legend
- Signal
  - ◻ Stop Sign
  - Right-Turn Overlap Phasing
  - ↶ Recommended Improvement
  - F Free Right Turn

Eucalyptus Industrial Park Traffic Study

Buildout With Project Intersection Geometrics and Stop Control  
With Improvements With Quincy St & Encilia Avenue Connections

# Draft Environmental Impact Report Highland Fairview Corporate Park PA07-0088 (CZ), PA07-0089 (GPA), PA07-0090 (TPM 35629), and PA07-0091 (PP)

State Clearinghouse Number 2007101132

Prepared for:

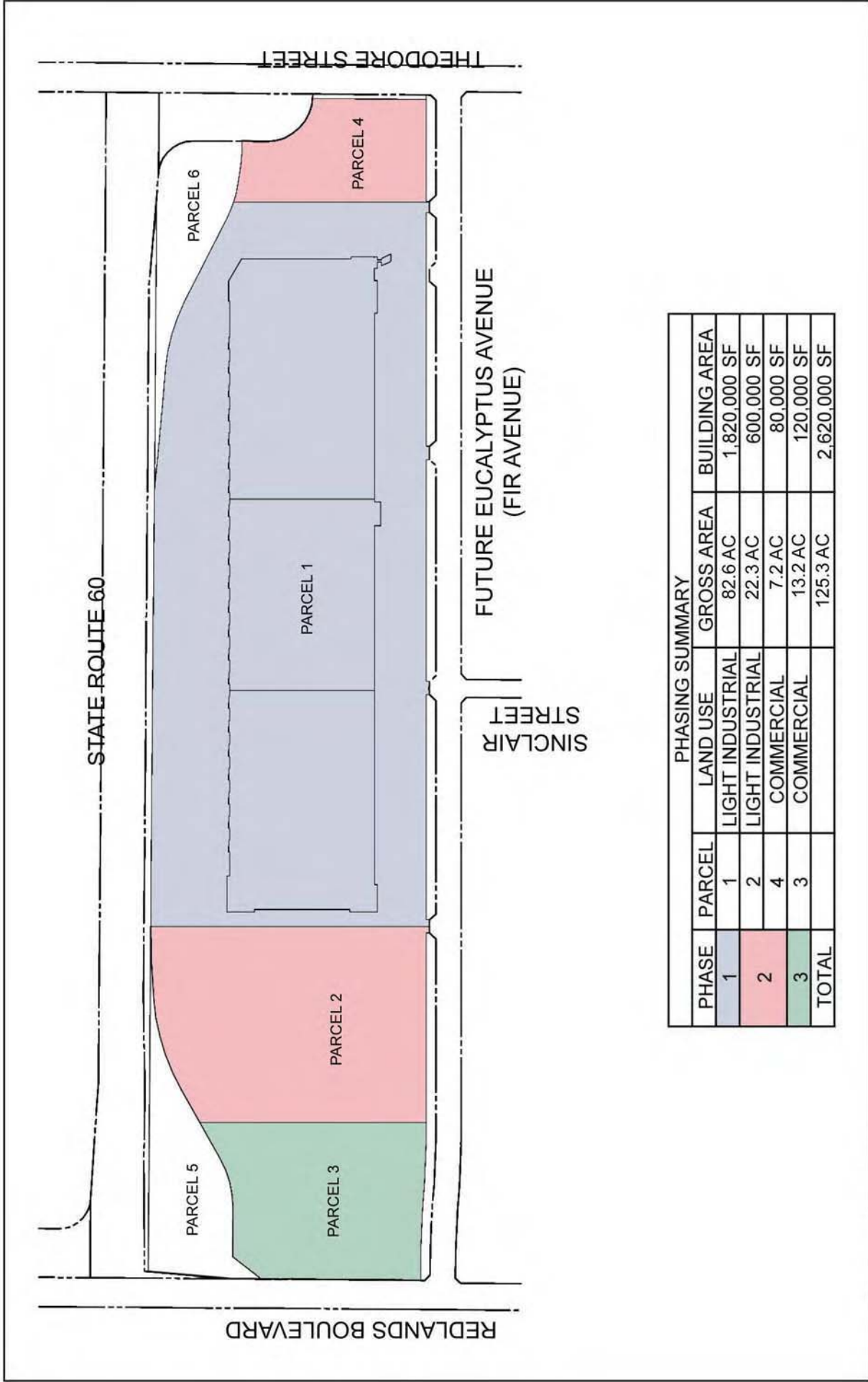
**City of Moreno Valley**  
Community Development Department  
14177 Frederick Street  
Moreno Valley, CA 92552

Prepared by:



**Michael Brandman Associates**  
220 Commerce, Suite 200  
Irvine, CA 92602

August 4, 2008



PHASING SUMMARY				
PHASE	PARCEL	LAND USE	GROSS AREA	BUILDING AREA
1	1	LIGHT INDUSTRIAL	82.6 AC	1,820,000 SF
2	2	LIGHT INDUSTRIAL	22.3 AC	600,000 SF
	4	COMMERCIAL	7.2 AC	80,000 SF
3	3	COMMERCIAL	13.2 AC	120,000 SF
TOTAL			125.3 AC	2,620,000 SF

Source: RBF Consulting, January 2008.

Michael Brandman Associates  
NOT TO SCALE

## Exhibit 3-8 Development Phasing

Table 5.14-8: Trip Generation Summary

Parcel	Land Use	Building Area (sq ft)	AM Peak Hour			PM Peak Hour			ADT
			In	Out	Total	In	Out	Total	
<b>Phase 1</b>									
1	Logistics	1,810,000	109	91	200	91	145	236	3,059
1	Outlet Center	10,000	5	2	7	11	12	23	266
	<b>Total</b>	<b>1,820,000</b>	<b>114</b>	<b>93</b>	<b>207</b>	<b>102</b>	<b>157</b>	<b>259</b>	<b>3,325</b>
	<b>Percent Trucks</b>		<b>48%</b>	<b>57%</b>	<b>52%</b>	<b>57%</b>	<b>44%</b>	<b>49%</b>	<b>50%</b>
<b>Phase 2</b>									
1	Logistics	1,810,000	109	91	200	91	145	236	3,059
2	Logistics	600,000	36	30	66	30	48	78	1,014
	<b>Sub-Total Logistics</b>	<b>2,410,000</b>	<b>145</b>	<b>121</b>	<b>266</b>	<b>121</b>	<b>193</b>	<b>314</b>	<b>4,073</b>
1	Outlet Center	10,000	5	2	7	11	12	23	266
4	Community Commercial	80,000	133	66	199	142	186	328	4,400
	<b>Sub-Total Commercial</b>	<b>90,000</b>	<b>138</b>	<b>68</b>	<b>206</b>	<b>153</b>	<b>198</b>	<b>351</b>	<b>4,666</b>
	<b>Total</b>	<b>2,500,000</b>	<b>283</b>	<b>189</b>	<b>472</b>	<b>274</b>	<b>391</b>	<b>665</b>	<b>8,739</b>
	<b>Percent Trucks</b>		<b>26%</b>	<b>38%</b>	<b>31%</b>	<b>29%</b>	<b>24%</b>	<b>26%</b>	<b>25%</b>
<b>Phase 3 (Project Buildout)</b>									
1	Logistics	1,810,000	109	91	200	91	145	236	3,059
2	Logistics	600,000	36	30	66	30	48	78	1,014
	<b>Sub-Total Logistics</b>	<b>2,410,000</b>	<b>145</b>	<b>121</b>	<b>266</b>	<b>121</b>	<b>193</b>	<b>314</b>	<b>4,073</b>
1	Outlet Center	10,000	5	2	7	11	12	23	266
4	Community Commercial	80,000	133	66	199	142	186	328	4,400
3	Community Commercial	120,000	199	98	297	212	280	492	6,600
	<b>Sub-Total Commercial</b>	<b>210,000</b>	<b>337</b>	<b>166</b>	<b>503</b>	<b>365</b>	<b>478</b>	<b>843</b>	<b>11,266</b>
	<b>Total</b>	<b>2,620,000</b>	<b>482</b>	<b>287</b>	<b>769</b>	<b>486</b>	<b>671</b>	<b>1,157</b>	<b>15,339</b>
	<b>Percent Trucks</b>		<b>15%</b>	<b>25%</b>	<b>19%</b>	<b>16%</b>	<b>14%</b>	<b>15%</b>	<b>14%</b>
Source: Austin-Foust Associates, Inc., 2008.									

The Trip Generation Rates for High-Cube Warehouse land use utilized in the project traffic study and EIR Table 5.14-6 have been developed by the City of Moreno Valley staff. A standard deviation was applied by the City staff to the rates derived in the NAIOP Western Riverside County Warehouse / Distribution Center Trip Generation study dated March 2007. The Western Riverside County Study

and the San Bernardino / Riverside County Warehouse / Distribution Center Vehicle Trip Generation Study (Inland Empire) January 2005 were consistent in their findings of High-Cube trip generation rates. The Western Riverside County of Governments (WRCOG) and their TUMF consultant agreed with the methodology and trip rate conclusions of the NAIOP-SANBAG-San Bernardino Generation Study. SANBAG issued a technical memorandum stating that this new trip generation number was appropriate to use by local agencies for Traffic Studies.

It should be noted the use of these trip rates would reduce total trip generation for the proposed project shown as average daily trips (ADT) in Table 5.14-8 by approximately 10 percent.

**Project Trip Distribution**

Separate project trip distribution percentages were derived for logistics and commercial uses in this analysis. These distribution patterns are summarized in Table 5.14-9 and are illustrated in Exhibits 5.14-5 through 5.14-8 which display ADT and peak hour volumes for all study intersections for each of the three phases of construction.

Table 5.14-9: Project Trip Distribution

	Phases 1 & 2			
SR-60 West of Redlands Boulevard	70	50	70	40
SR-60 East of Theodore Street	15	15	15	15
Redlands Boulevard North of SR-60	0	0	0	8
Redlands Boulevard South of Eucalyptus Avenue	0	0	0	20
Theodore Street North of SR-60	0	10	0	2
Theodore Street South of Eucalyptus Avenue	1	25	1	5
Eucalyptus Avenue West of Redlands Boulevard	14	0	14	10
<b>Total</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>
Source: Austin-Foust Associates, Inc., 2008.				

Table 5.14-16: (Cont.) Consistency with Existing General Plan Policies Related to Alternative Transportation

Reference	Description	Consistency Determination
Policy 5.4.6	Cooperatively participate with SCAG, RCTC, and WRCOG in the planning for a transportation system that anticipates regional needs for the safe and efficient movement of goods and people.	The proposed project provides land for future expansion of SR-60 and CalTrans is being consulted regarding ramp improvements. The project is consistent with this Policy.
Circulation Element 5-11	Work with RCTC, Caltrans, County of Riverside, adjacent jurisdictions and other affected agencies to plan and develop a multi-modal transportation system.	The proposed project does not address this Element, but the project site is not near any proposed transit facility.
Circulation Element 5-13	Implement Transportation demand management (TDM) strategies that reduce congestion in the peak travel hours. Examples include carpooling, telecommuting, and flexible work hours.	The proposed project provides for off peak shifts and peak hour traffic is not significant. The project is consistent with this Element.
Circulation Element 5-14	Implement programs in support of the efforts of Riverside Transit Agency toward the expansion of the existing bus system within the City and the provision of future public transportation consistent with the Riverside County Transit Plan.	Street improvements are included in the project would lend themselves to future bus service. The project is consistent with this policy.
Source: City of Moreno Valley General Plan, 2006.		

#### 5.14.5 - Mitigation Measures

The mitigation measure for the roadway impacts to the Redlands Boulevard interchange ramps with SR-60 during Phase 3 of the proposed project are listed below and in the cumulative section.

##### Traffic Increase

MM TT-1 Turn lanes shall be provided along Theodore Street at SR-60 and at Eucalyptus Avenue. These proposed improvements should enhance safety and improve mobility between the freeway and Eucalyptus Avenue.

MM TT-2 At the time of the submittal of the plot plan for Phase 3 of the proposed project, the applicant shall submit a supplemental traffic study assessing the project's contribution to the impacts at the Redlands Boulevard intersection with SR-60 ramps, as well as Theodore Street at SR-60. The developer shall contribute to the costs on a fair share basis of the intersection improvements required to provide adequate capacity for all phases of the project and buildout of the adjacent areas. If the timing of Phase 3 of the project precedes the planned improvements, the project shall be

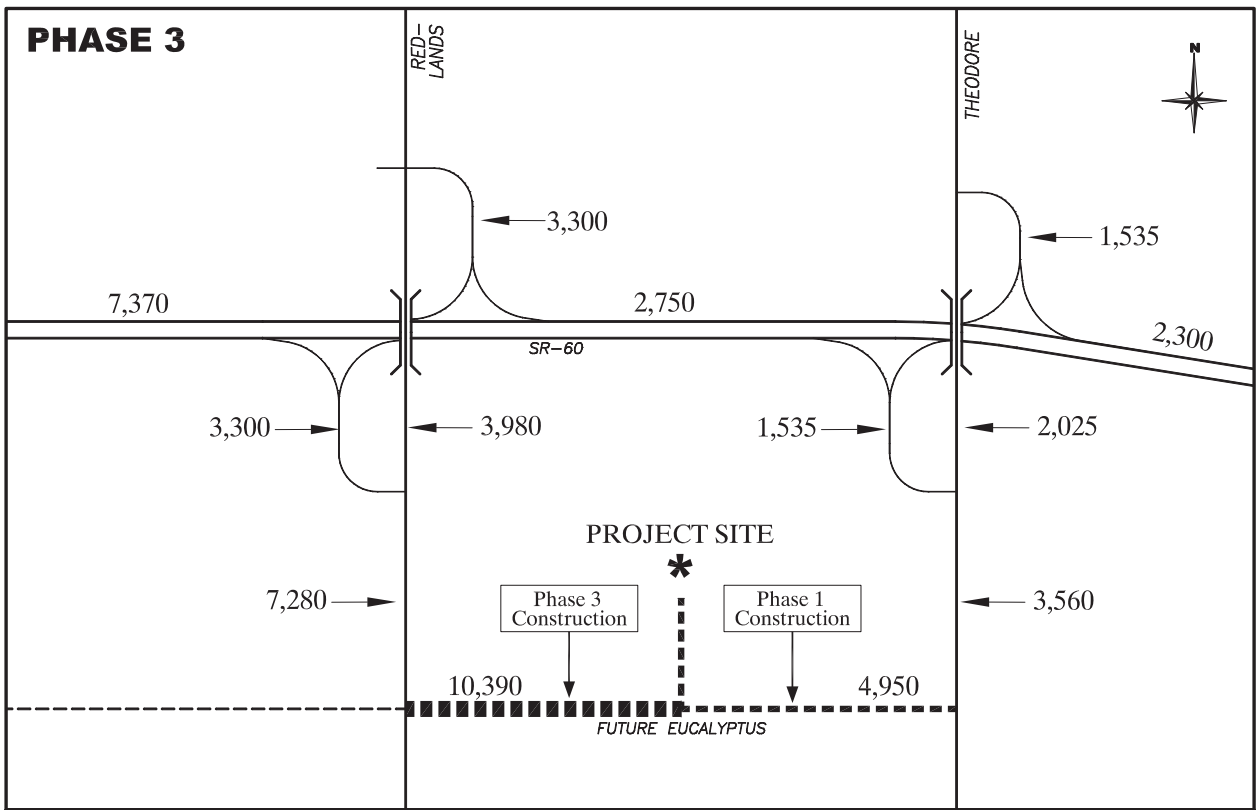
required to construct interim improvements to provide adequate capacity until the ultimate improvements are completed.

MM TT-3

The project proponent shall construct the fourth leg of the intersection located at Redlands Boulevard and Eucalyptus Avenue at the ultimate design required to provide adequate capacity for all phases of the project and buildout of the adjacent areas. The design tentatively consists of a separate westbound left turn lane, two westbound through lanes and a dedicated westbound right turn lane. Final geometrics shall be determined after receiving the supplemental traffic study identified in MM TT-2.

#### 5.14.6 - Level of Significance After Mitigation

Transportation and traffic impacts of Phases 1 and 2 of the proposed project are less than significant. Implementation of needed improvements during Phase 3 of the proposed project will reduce impacts of the entire project to a level that is less than significant.



Legend

----- Future Roadway

Source: Austin-Foust Associates, Inc.



NOT TO SCALE

Michael Brandman Associates

Exhibit 5.14-8  
ADT Volumes  
Project Only (Phase 3 Total)



# Traffic Impact Analysis Report

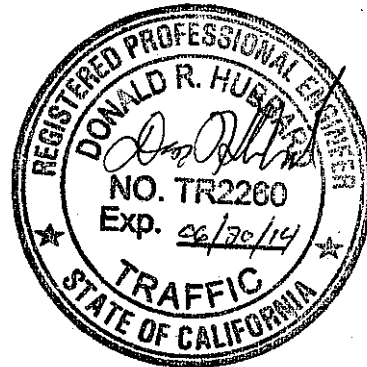
*for*

## The World Logistics Center

Moreno Valley Case #P12-016

*Prepared for*

The City of Moreno Valley  
14177 Frederick Street  
Moreno Valley, CA 92552



*Prepared by*

Parsons Brinckerhoff, Inc.  
421 East Vanderbilt Way, Suite 200  
San Bernardino, CA 92408

**January 2013**

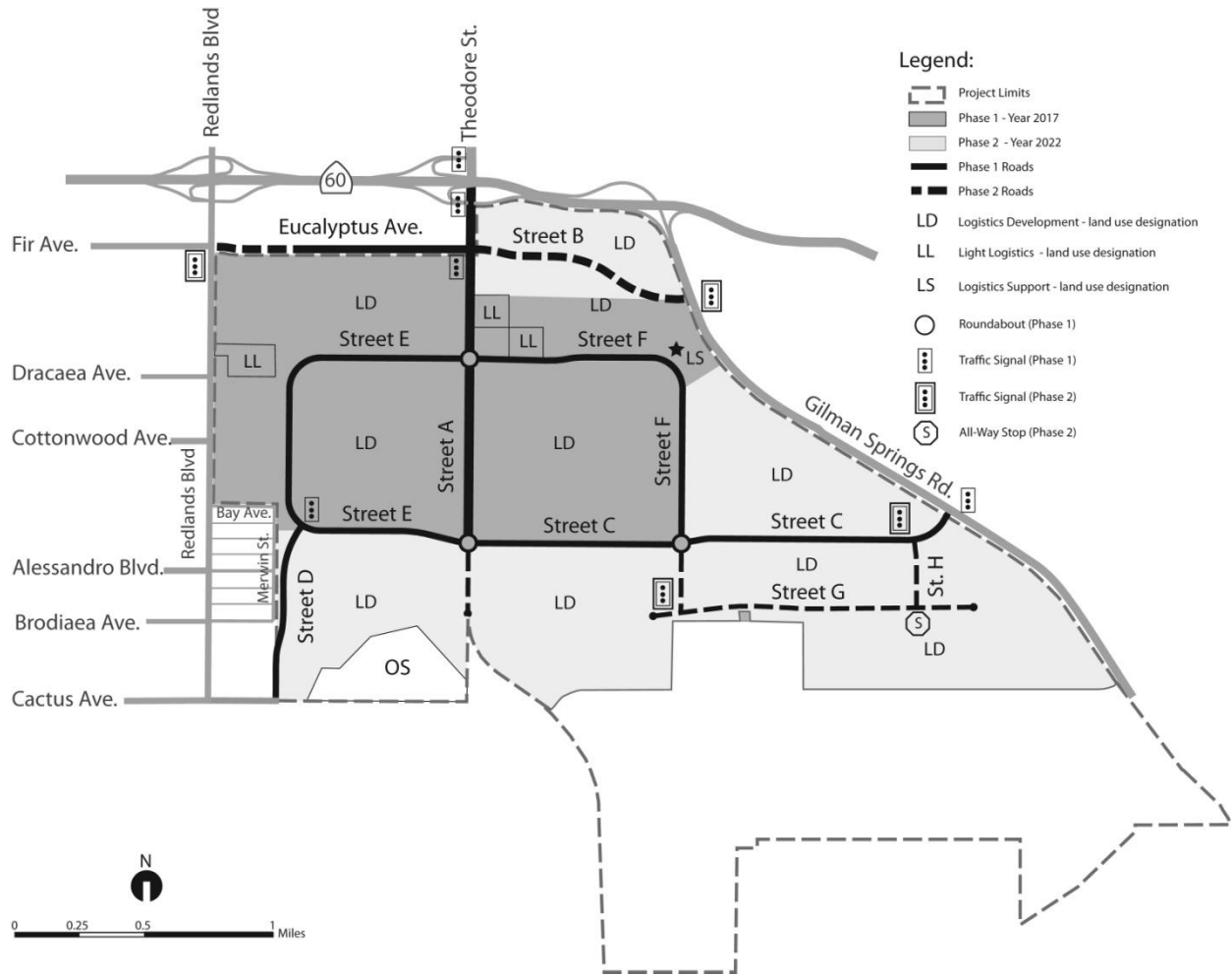


Figure 12: Proposed Roadways and Phasing

The WLC's internal streets would be as follows:

Street A C ( F ) 6 60

E A

Table 24: WLC Trips by Vehicle Type <sup>23</sup>

		0				0				0					
A	0													0	6
	0								6						
	0			6	6	6			6	06	6			0	60
		6									6		60	0	0
A	0			0				0						6	0
		0	0			6				66	0		0	6	
	0		6								0				6
	0	6	6			0	0			0		00		6	6
				6						0		0	6	000	
											0		6	0	

C. PROJECT TRIP DISTRIBUTION

A E 0%

**WLC Auto Traffic**

A / C

000

•

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C G C

C

those with four or more axles. Pickup trucks with four wheels are included in the "auto" category.

Truck Trip Generation Study C F A 00

B 0 6 000 DTA Public Works Database; confirmed by "Employment Density Study," SCAG (2001), and "Logistics Trends and Specific Industries," NAIOP Research Foundation (March 2010). San Bernardino Planning Department.

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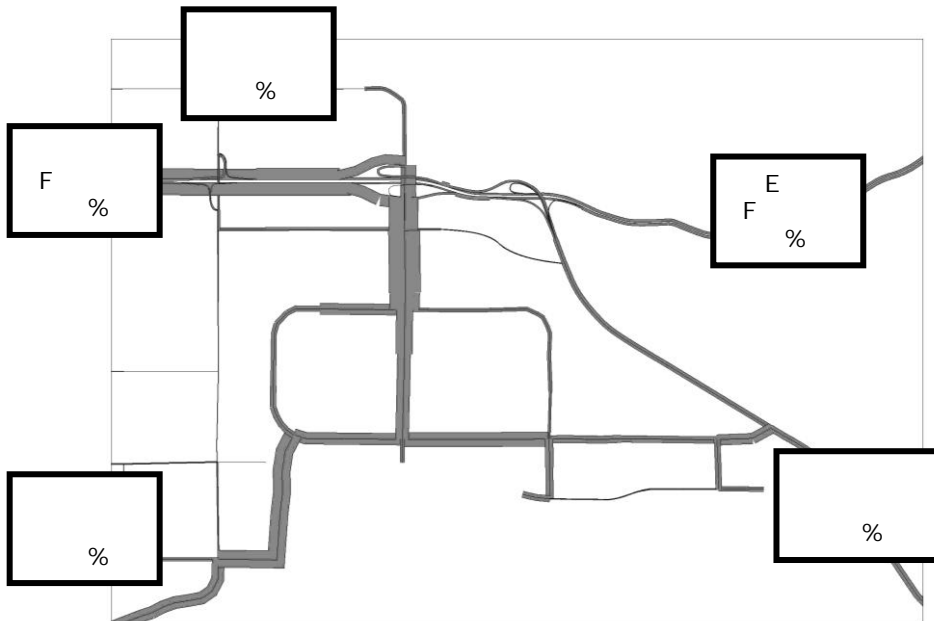
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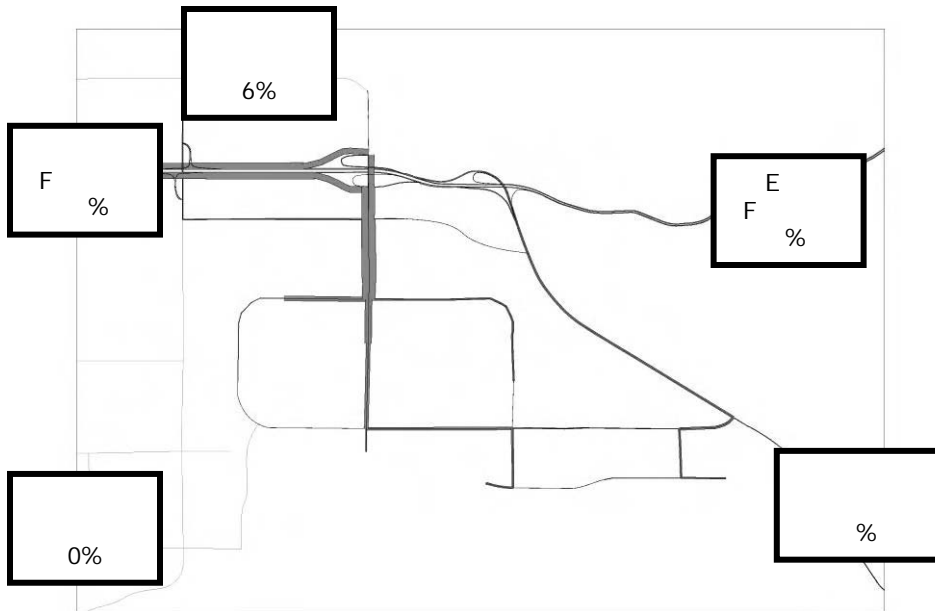
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<sup>6</sup> Moreno Highlands SP 212-1 Traffic Impact Study Addendum E

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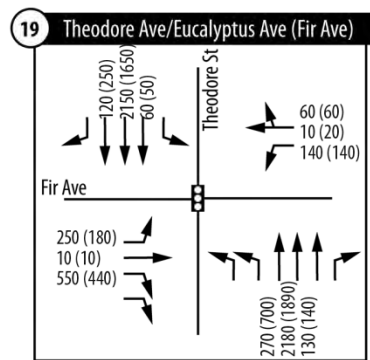
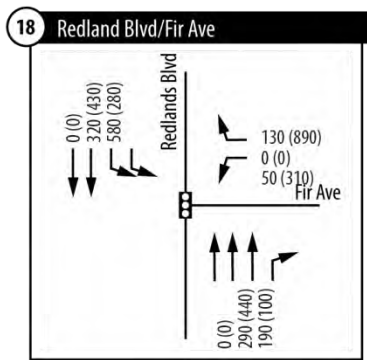
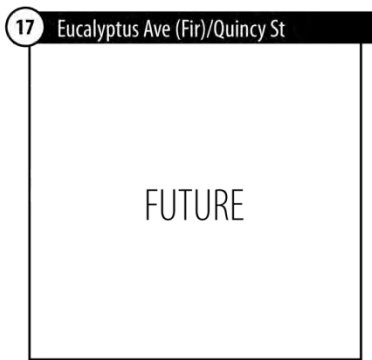
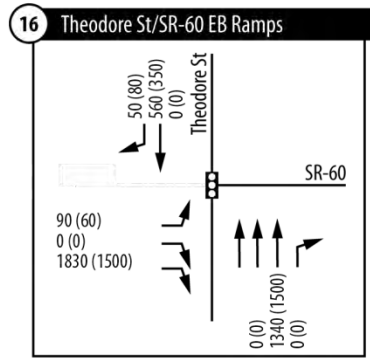
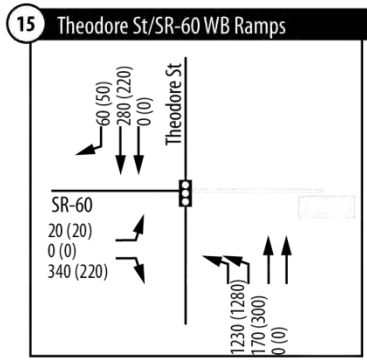
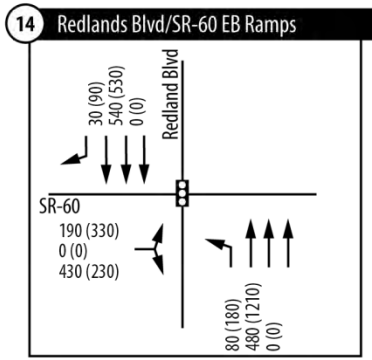
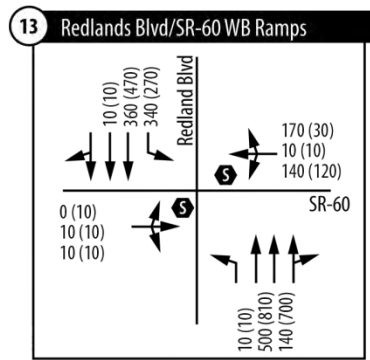
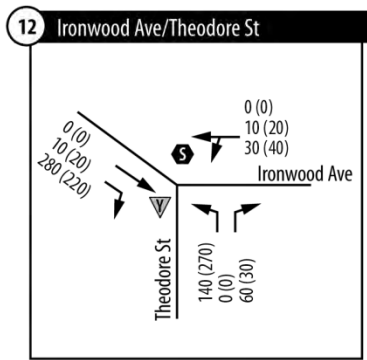
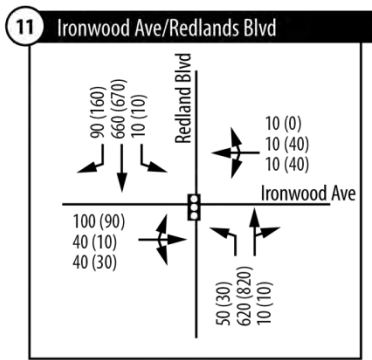
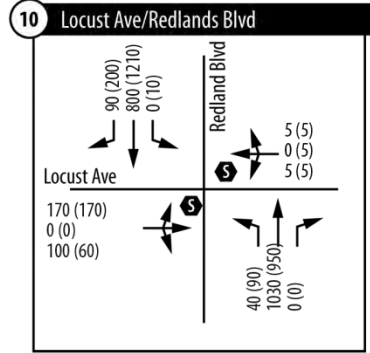
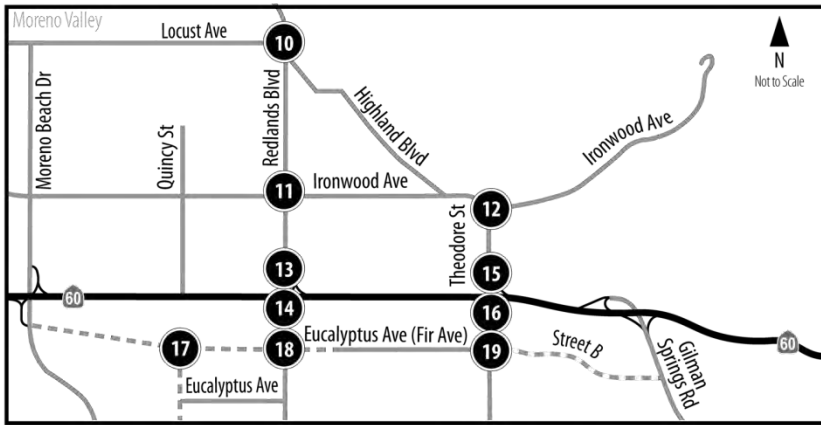


Figure 34: Turning Movement Volumes under 2022 Plus Project Conditions (B)

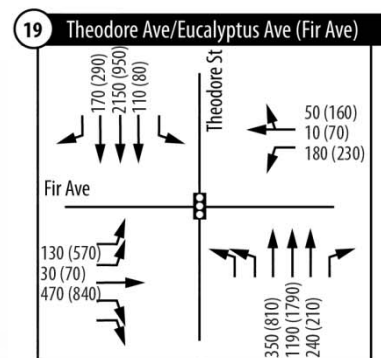
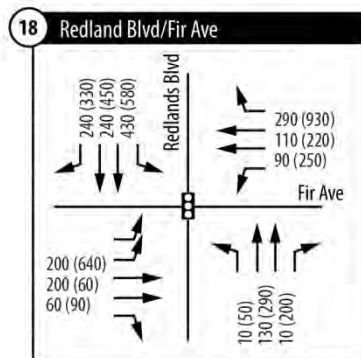
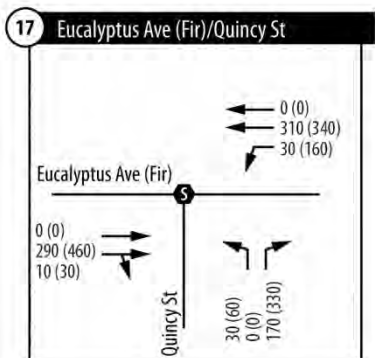
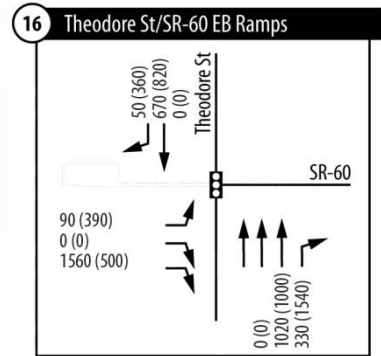
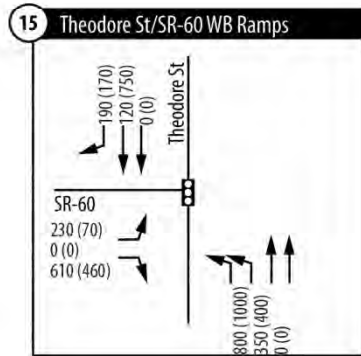
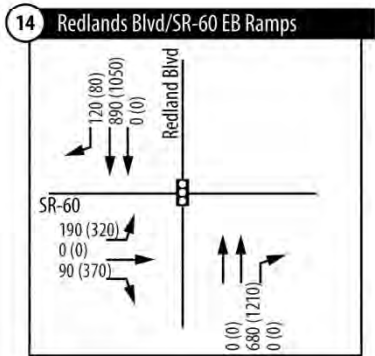
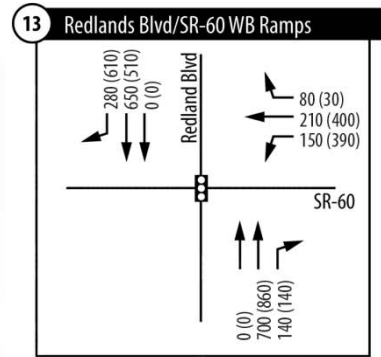
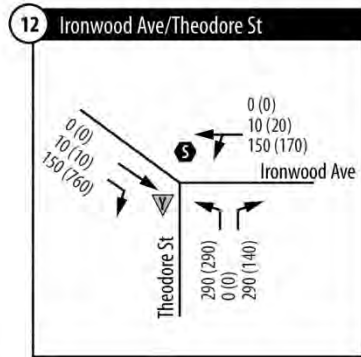
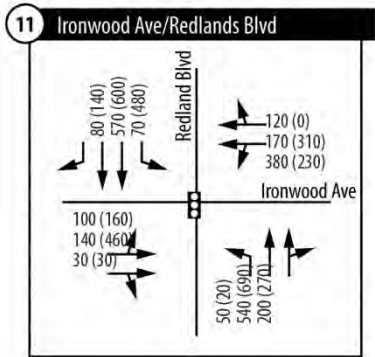
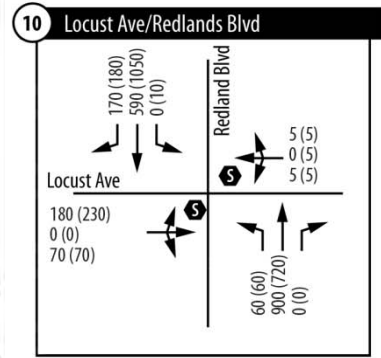
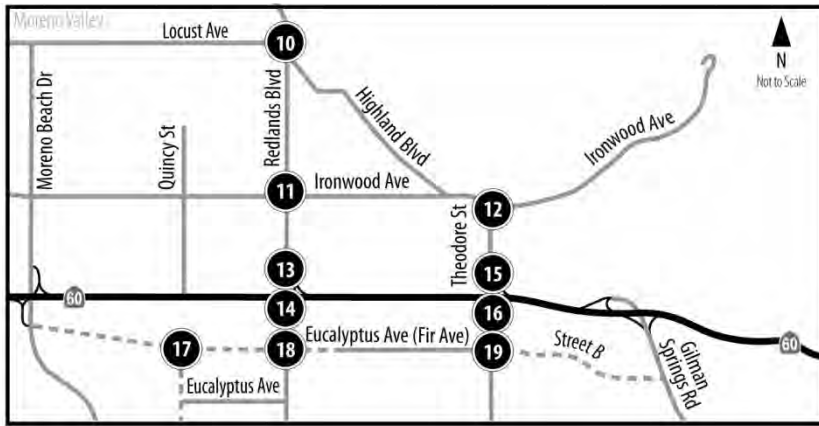


Figure 36: Turning Movement Volumes under 2035 Plus Project Conditions (B)

## **APPENDIX H**

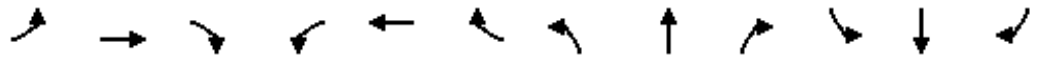
### **STACKING/QUEUE REQUIREMENTS -INTERIM CONDITIONS**



**OPENING YEAR (2024) WITHOUT PROJECT**

Arco AM/PM Service Station  
1: Redlands Boulevard & Ironwood Avenue

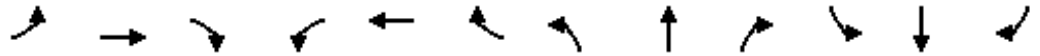
Opening Year without Project (AM Peak Hour)



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕		↕	↕	↕
Traffic Volume (vph)	119	11	77	6	13	5	57	455	9	6	634	117
Future Volume (vph)	119	11	77	6	13	5	57	455	9	6	634	117
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	400		0	435		115
Storage Lanes	0		0	0		0	1		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.950			0.973			0.997				0.850
Flt Protected		0.972			0.988		0.950			0.950		
Satd. Flow (prot)	0	1754	0	0	1827	0	1805	1894	0	1805	1900	1615
Flt Permitted		0.972			0.988		0.950			0.950		
Satd. Flow (perm)	0	1754	0	0	1827	0	1805	1894	0	1805	1900	1615
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		26			5			1				131
Link Speed (mph)		55			55			50				50
Link Distance (ft)		3945			2657			1313				1108
Travel Time (s)		48.9			32.9			17.9				15.1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	124	11	80	6	14	5	59	474	9	6	660	122
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	215	0	0	25	0	59	483	0	6	660	122
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		8			8			8				8
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	20		10	20		10	20		10	20		10
Turn Type	Split	NA		Split	NA		Prot	NA		Prot	NA	Perm
Protected Phases	8	8		4	4		5	2		1	6	
Permitted Phases												6
Detector Phase	8	8		4	4		5	2		1	6	6
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	7.0
Minimum Split (s)	12.0	12.0		12.0	12.0		12.0	12.0		12.0	12.0	12.0
Total Split (s)	22.0	22.0		22.0	22.0		17.0	39.0		17.0	39.0	39.0
Total Split (%)	22.0%	22.0%		22.0%	22.0%		17.0%	39.0%		17.0%	39.0%	39.0%
Maximum Green (s)	17.0	17.0		17.0	17.0		12.0	34.0		12.0	34.0	34.0
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)		5.0			5.0		5.0	5.0		5.0	5.0	5.0
Lead/Lag							Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None		None	None		None	Max		None	Max	Max
Walk Time (s)	7.0	7.0		7.0	7.0			7.0			7.0	7.0

Arco AM/PM Service Station  
 1: Redlands Boulevard & Ironwood Avenue

Opening Year without Project (AM Peak Hour)



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Flash Dont Walk (s)	18.0	18.0		18.0	18.0			16.0			16.0	16.0
Pedestrian Calls (#/hr)	0	0		0	0			0			0	0
Act Effct Green (s)		13.1			7.5		8.5	43.6		7.3	37.8	37.8
Actuated g/C Ratio		0.18			0.10		0.12	0.60		0.10	0.52	0.52
v/c Ratio		0.64			0.13		0.28	0.43		0.03	0.67	0.14
Control Delay		35.5			32.8		37.2	12.8		37.5	23.2	3.7
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	0.0
Total Delay		35.5			32.8		37.2	12.8		37.5	23.2	3.7
LOS		D			C		D	B		D	C	A
Approach Delay		35.5			32.8			15.4			20.3	
Approach LOS		D			C			B			C	
Queue Length 50th (ft)		75			8		24	77		2	209	0
Queue Length 95th (ft)		174			35		68	311		15	#574	30
Internal Link Dist (ft)		3865			2577			1233			1028	
Turn Bay Length (ft)							400			435		115
Base Capacity (vph)		442			444		306	1128		306	981	898
Starvation Cap Reductn		0			0		0	0		0	0	0
Spillback Cap Reductn		0			0		0	0		0	0	0
Storage Cap Reductn		0			0		0	0		0	0	0
Reduced v/c Ratio		0.49			0.06		0.19	0.43		0.02	0.67	0.14

Intersection Summary

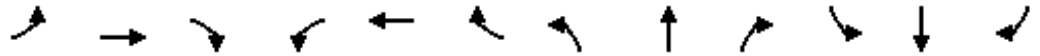
Area Type: Other  
 Cycle Length: 100  
 Actuated Cycle Length: 73.2  
 Natural Cycle: 70  
 Control Type: Actuated-Uncoordinated  
 Maximum v/c Ratio: 0.67  
 Intersection Signal Delay: 20.9      Intersection LOS: C  
 Intersection Capacity Utilization 69.4%      ICU Level of Service C  
 Analysis Period (min) 15  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

Splits and Phases: 1: Redlands Boulevard & Ironwood Avenue

Ø1	Ø2	Ø4	Ø8
17 s	39 s	22 s	22 s
Ø5	Ø6		
17 s	39 s		

Arco AM/PM Service Station  
1: Redlands Boulevard & Ironwood Avenue

Opening Year without Project (AM Peak Hour)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕		↕	↕	↕
Traffic Volume (veh/h)	119	11	77	6	13	5	57	455	9	6	634	117
Future Volume (veh/h)	119	11	77	6	13	5	57	455	9	6	634	117
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	124	11	80	6	14	5	59	474	9	6	660	122
Peak Hour Factor	0.96	0.96	0.96	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	0	0	0
Cap, veh/h	152	14	98	17	39	14	121	973	18	20	888	753
Arrive On Green	0.15	0.15	0.15	0.04	0.04	0.04	0.07	0.52	0.52	0.01	0.47	0.47
Sat Flow, veh/h	1000	89	645	435	1015	363	1810	1858	35	1810	1900	1610
Grp Volume(v), veh/h	215	0	0	25	0	0	59	0	483	6	660	122
Grp Sat Flow(s),veh/h/ln	1734	0	0	1813	0	0	1810	0	1894	1810	1900	1610
Q Serve(g_s), s	8.7	0.0	0.0	1.0	0.0	0.0	2.3	0.0	11.9	0.2	20.6	3.2
Cycle Q Clear(g_c), s	8.7	0.0	0.0	1.0	0.0	0.0	2.3	0.0	11.9	0.2	20.6	3.2
Prop In Lane	0.58		0.37	0.24		0.20	1.00		0.02	1.00		1.00
Lane Grp Cap(c), veh/h	264	0	0	69	0	0	121	0	991	20	888	753
V/C Ratio(X)	0.81	0.00	0.00	0.36	0.00	0.00	0.49	0.00	0.49	0.30	0.74	0.16
Avail Cap(c_a), veh/h	405	0	0	424	0	0	299	0	991	299	888	753
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	29.8	0.0	0.0	34.1	0.0	0.0	32.7	0.0	11.1	35.7	15.8	11.2
Incr Delay (d2), s/veh	7.2	0.0	0.0	3.1	0.0	0.0	3.0	0.0	1.7	8.2	5.6	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	3.7	0.0	0.0	0.5	0.0	0.0	1.0	0.0	4.3	0.1	8.4	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	37.1	0.0	0.0	37.3	0.0	0.0	35.7	0.0	12.8	43.9	21.4	11.6
LnGrp LOS	D	A	A	D	A	A	D	A	B	D	C	B
Approach Vol, veh/h		215			25			542			788	
Approach Delay, s/veh		37.1			37.3			15.3			20.1	
Approach LOS		D			D			B			C	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.8	43.1		7.8	9.9	39.0		16.1				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0				
Max Green Setting (Gmax), s	12.0	34.0		17.0	12.0	34.0		17.0				
Max Q Clear Time (g_c+I1), s	2.2	13.9		3.0	4.3	22.6		10.7				
Green Ext Time (p_c), s	0.0	2.5		0.0	0.0	3.3		0.5				

Intersection Summary

HCM 6th Ctrl Delay	21.0
HCM 6th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

Arco AM/PM Service Station  
2: Redlands Boulevard & Hemlock Avenue

Opening Year without Project (AM Peak Hour)



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↗		↑	↓	↘
Traffic Volume (vph)	0	0	0	521	811	0
Future Volume (vph)	0	0	0	521	811	0
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
<b>Fr</b>						
Flt Protected						
Satd. Flow (prot)	0	1900	0	1900	1900	0
Flt Permitted						
Satd. Flow (perm)	0	1900	0	1900	1900	0
Link Speed (mph)	30			50	50	
Link Distance (ft)	453			483	1313	
Travel Time (s)	10.3			6.6	17.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	566	882	0
<b>Shared Lane Traffic (%)</b>						
Lane Group Flow (vph)	0	0	0	566	882	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	8			8	8	
<b>Two way Left Turn Lane</b>						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	20	10	20			10
Sign Control	Stop			Free	Free	
<b>Intersection Summary</b>						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	46.7%			ICU Level of Service A		
Analysis Period (min)	15					

Arco AM/PM Service Station  
2: Redlands Boulevard & Hemlock Avenue

Opening Year without Project (AM Peak Hour)

Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↗		↑	↘	
Traffic Vol, veh/h	0	0	0	521	811	0
Future Vol, veh/h	0	0	0	521	811	0
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	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	0	0	566	882	0

Major/Minor	Minor2	Major1	Major2		
Conflicting Flow All	-	882	-	0	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-
Critical Hdwy	-	6.2	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-
Follow-up Hdwy	-	3.3	-	-	-
Pot Cap-1 Maneuver	0	348	0	-	-
Stage 1	0	-	0	-	-
Stage 2	0	-	0	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	-	348	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-

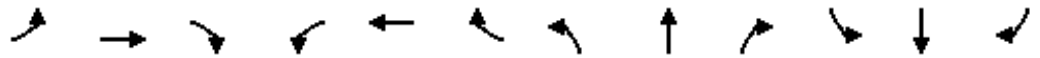
Approach	EB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-
HCM Control Delay (s)	-	0	-	-
HCM Lane LOS	-	A	-	-
HCM 95th %tile Q(veh)	-	-	-	-

Arco AM/PM Service Station

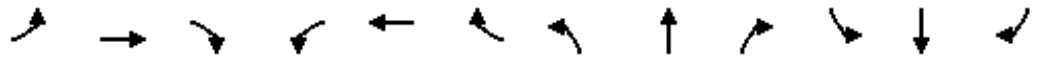
Opening Year without Project (AM Peak Hour)

3: Redlands Boulevard & Spruce Avenue/SR-60 WB



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↗	↖	↗	↖	↖	↗
Traffic Volume (vph)	2	3	1	72	0	38	3	474	193	310	415	1
Future Volume (vph)	2	3	1	72	0	38	3	474	193	310	415	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	115		250	340		0
Storage Lanes	0		0	0		0	1		1	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.977			0.953				0.850			
Flt Protected		0.984			0.968		0.950			0.950		
Satd. Flow (prot)	0	1827	0	0	1753	0	1805	1900	1615	1805	1900	0
Flt Permitted					0.968		0.950			0.950		
Satd. Flow (perm)	0	1856	0	0	1753	0	1805	1900	1615	1805	1900	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1			138				208			
Link Speed (mph)		30			45			50			50	
Link Distance (ft)		97			1350			791			483	
Travel Time (s)		2.2			20.5			10.8			6.6	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	2	3	1	77	0	41	3	510	208	333	446	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	6	0	0	118	0	3	510	208	333	447	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		8			8			8			8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	20		10	20		10	20		10	20		10
Turn Type	Perm	NA		Split	NA		Prot	NA	pt+ov	Prot	NA	
Protected Phases		4		8	8		5	2	2 8	1	6	
Permitted Phases	4											
Detector Phase	4	4		8	8		5	2	2 8	1	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	12.0	12.0		12.0	12.0		12.0	12.0		12.0	12.0	
Total Split (s)	15.0	15.0		15.0	15.0		23.0	37.0		28.0	42.0	
Total Split (%)	15.8%	15.8%		15.8%	15.8%		24.2%	38.9%		29.5%	44.2%	
Maximum Green (s)	10.0	10.0		10.0	10.0		18.0	32.0		23.0	37.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		5.0			5.0		5.0	5.0		5.0	5.0	
Lead/Lag							Lag	Lead		Lag	Lead	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	C-Min		None	C-Min	
Act Effect Green (s)		7.0			7.5		9.7	48.6	61.1	21.5	70.0	

3: Redlands Boulevard & Spruce Avenue/SR-60 WB



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio		0.07			0.08		0.10	0.51	0.64	0.23	0.74	
v/c Ratio		0.04			0.45		0.02	0.52	0.19	0.82	0.32	
Control Delay		39.0			10.9		34.3	20.0	2.0	51.5	9.0	
Queue Delay		0.0			0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay		39.0			10.9		34.3	20.0	2.0	51.5	9.0	
LOS		D			B		C	B	A	D	A	
Approach Delay		39.0			10.9			14.8			27.1	
Approach LOS		D			B			B			C	
Queue Length 50th (ft)		3			0		2	189	0	187	45	
Queue Length 95th (ft)		16			39		9	379	32	#313	307	
Internal Link Dist (ft)		17			1270			711			403	
Turn Bay Length (ft)							115		250	340		
Base Capacity (vph)		196			308		352	973	1076	447	1400	
Starvation Cap Reductn		0			0		0	0	0	0	0	
Spillback Cap Reductn		0			0		0	0	0	0	0	
Storage Cap Reductn		0			0		0	0	0	0	0	
Reduced v/c Ratio		0.03			0.38		0.01	0.52	0.19	0.74	0.32	

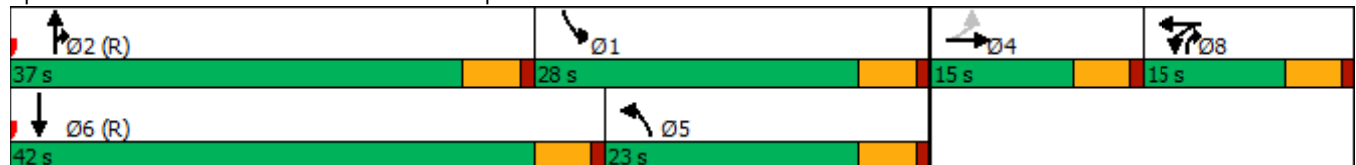
Intersection Summary

Area Type: Other  
 Cycle Length: 95  
 Actuated Cycle Length: 95  
 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green  
 Natural Cycle: 70  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.82  
 Intersection Signal Delay: 20.5  
 Intersection LOS: C  
 Intersection Capacity Utilization 68.6%  
 ICU Level of Service C  
 Analysis Period (min) 15

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 3: Redlands Boulevard & Spruce Avenue/SR-60 WB

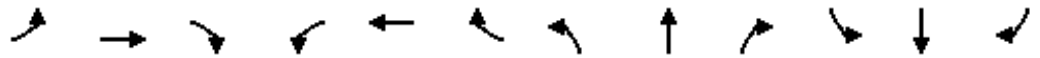




Arco AM/PM Service Station

Opening Year without Project (AM Peak Hour)

3: Redlands Boulevard & Spruce Avenue/SR-60 WB



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↑	↗	↖	↘	↙
Traffic Volume (veh/h)	2	3	1	72	0	38	3	474	193	310	415	1
Future Volume (veh/h)	2	3	1	72	0	38	3	474	193	310	415	1
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	2	3	1	77	0	41	3	510	208	333	446	1
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	7	10	3	96	0	51	772	565	615	718	507	1
Arrive On Green	0.01	0.01	0.01	0.08	0.00	0.08	0.43	0.30	0.30	0.40	0.27	0.27
Sat Flow, veh/h	605	908	303	1132	0	603	1810	1900	1610	1810	1895	4
Grp Volume(v), veh/h	6	0	0	118	0	0	3	510	208	333	0	447
Grp Sat Flow(s),veh/h/ln	1815	0	0	1735	0	0	1810	1900	1610	1810	0	1899
Q Serve(g_s), s	0.3	0.0	0.0	6.3	0.0	0.0	0.1	24.5	8.7	12.9	0.0	21.4
Cycle Q Clear(g_c), s	0.3	0.0	0.0	6.3	0.0	0.0	0.1	24.5	8.7	12.9	0.0	21.4
Prop In Lane	0.33		0.17	0.65		0.35	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	20	0	0	147	0	0	772	565	615	718	0	508
V/C Ratio(X)	0.31	0.00	0.00	0.80	0.00	0.00	0.00	0.90	0.34	0.46	0.00	0.88
Avail Cap(c_a), veh/h	191	0	0	183	0	0	772	640	679	718	0	740
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	46.6	0.0	0.0	42.7	0.0	0.0	15.6	32.1	20.8	21.2	0.0	33.3
Incr Delay (d2), s/veh	8.5	0.0	0.0	18.5	0.0	0.0	0.0	20.2	1.5	0.5	0.0	19.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	0.0	3.4	0.0	0.0	0.0	13.5	3.8	5.1	0.0	11.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	55.2	0.0	0.0	61.2	0.0	0.0	15.6	52.3	22.3	21.7	0.0	52.5
LnGrp LOS	E	A	A	E	A	A	B	D	C	C	A	D
Approach Vol, veh/h		6			118			721				780
Approach Delay, s/veh		55.2			61.2			43.5				39.3
Approach LOS		E			E			D				D
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	42.7	33.2		6.0	45.5	30.4		13.0				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0				
Max Green Setting (Gmax), s	23.0	32.0		10.0	18.0	37.0		10.0				
Max Q Clear Time (g_c+I1), s	14.9	26.5		2.3	2.1	23.4		8.3				
Green Ext Time (p_c), s	0.6	1.8		0.0	0.0	2.0		0.1				

Intersection Summary

HCM 6th Ctrl Delay	42.8
HCM 6th LOS	D

Arco AM/PM Service Station  
4: Redlands Boulevard & SR-60 EB

Opening Year without Project (AM Peak Hour)



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	146	149	89	522	440	42
Future Volume (vph)	146	149	89	522	440	42
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	350			120
Storage Lanes	1	0	1			1
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.932					0.850
Flt Protected	0.976		0.950			
Satd. Flow (prot)	1728	0	1805	1900	1900	1615
Flt Permitted	0.976		0.950			
Satd. Flow (perm)	1728	0	1805	1900	1900	1615
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	67					46
Link Speed (mph)	45			50	50	
Link Distance (ft)	1470			546	788	
Travel Time (s)	22.3			7.4	10.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	159	162	97	567	478	46
Shared Lane Traffic (%)						
Lane Group Flow (vph)	321	0	97	567	478	46
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	8			8	8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	20	10	20			10
Turn Type	Prot		Prot	NA	NA	pm+ov
Protected Phases	3		5	2	6	3
Permitted Phases						6
Detector Phase	3		5	2	6	3
Switch Phase						
Minimum Initial (s)	7.0		7.0	7.0	7.0	7.0
Minimum Split (s)	12.0		12.0	12.0	12.0	12.0
Total Split (s)	25.0		17.0	50.0	33.0	25.0
Total Split (%)	33.3%		22.7%	66.7%	44.0%	33.3%
Maximum Green (s)	20.0		12.0	45.0	28.0	20.0
Yellow Time (s)	4.0		4.0	4.0	4.0	4.0
All-Red Time (s)	1.0		1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0		5.0	5.0	5.0	5.0
Lead/Lag			Lag		Lead	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Recall Mode	None		None	C-Min	C-Min	None
Act Effect Green (s)	15.9		9.4	49.1	37.1	59.0

Arco AM/PM Service Station  
4: Redlands Boulevard & SR-60 EB

Opening Year without Project (AM Peak Hour)

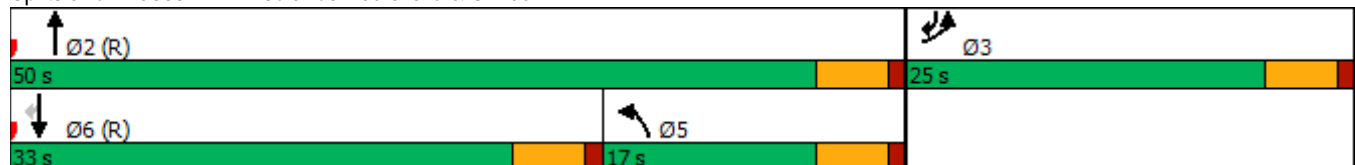


Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Actuated g/C Ratio	0.21		0.13	0.65	0.49	0.79
v/c Ratio	0.77		0.43	0.46	0.51	0.04
Control Delay	34.1		35.8	8.6	18.1	1.2
Queue Delay	0.0		0.0	0.0	0.0	0.0
Total Delay	34.1		35.8	8.6	18.1	1.2
LOS	C		D	A	B	A
Approach Delay	34.1			12.6	16.6	
Approach LOS	C			B	B	
Queue Length 50th (ft)	110		43	116	155	0
Queue Length 95th (ft)	186		83	209	284	8
Internal Link Dist (ft)	1390			466	708	
Turn Bay Length (ft)			350			120
Base Capacity (vph)	509		288	1245	940	1255
Starvation Cap Reductn	0		0	0	0	0
Spillback Cap Reductn	0		0	0	0	0
Storage Cap Reductn	0		0	0	0	0
Reduced v/c Ratio	0.63		0.34	0.46	0.51	0.04

Intersection Summary

Area Type:	Other
Cycle Length:	75
Actuated Cycle Length:	75
Offset:	0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle:	55
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.77
Intersection Signal Delay:	18.5
Intersection LOS:	B
Intersection Capacity Utilization	62.4%
ICU Level of Service	B
Analysis Period (min)	15

Splits and Phases: 4: Redlands Boulevard & SR-60 EB



Arco AM/PM Service Station  
4: Redlands Boulevard & SR-60 EB

Opening Year without Project (AM Peak Hour)



Movement	EBL	EBR	NBL	NBT	SBT	SBR	
Lane Configurations							
Traffic Volume (veh/h)	146	149	89	522	440	42	
Future Volume (veh/h)	146	149	89	522	440	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	159	162	97	567	478	46	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	
Percent Heavy Veh, %	0	0	0	0	0	0	
Cap, veh/h	181	184	536	1238	549	811	
Arrive On Green	0.21	0.21	0.30	0.65	0.29	0.29	
Sat Flow, veh/h	841	857	1810	1900	1900	1610	
Grp Volume(v), veh/h	322	0	97	567	478	46	
Grp Sat Flow(s),veh/h/ln	1704	0	1810	1900	1900	1610	
Q Serve(g_s), s	13.7	0.0	3.0	11.1	17.9	0.0	
Cycle Q Clear(g_c), s	13.7	0.0	3.0	11.1	17.9	0.0	
Prop In Lane	0.49	0.50	1.00			1.00	
Lane Grp Cap(c), veh/h	366	0	536	1238	549	811	
V/C Ratio(X)	0.88	0.00	0.18	0.46	0.87	0.06	
Avail Cap(c_a), veh/h	454	0	536	1238	709	947	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	
Upstream Filter(I)	1.00	0.00	0.88	0.88	1.00	1.00	
Uniform Delay (d), s/veh	28.5	0.0	19.6	6.5	25.3	5.1	
Incr Delay (d2), s/veh	15.2	0.0	0.1	1.1	17.1	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	6.6	0.0	1.1	3.2	9.7	0.2	
Unsig. Movement Delay, s/veh							
LnGrp Delay(d),s/veh	43.7	0.0	19.8	7.6	42.4	5.2	
LnGrp LOS	D	A	B	A	D	A	
Approach Vol, veh/h	322			664	524		
Approach Delay, s/veh	43.7			9.3	39.2		
Approach LOS	D			A	D		
Timer - Assigned Phs		2			5	6	8
Phs Duration (G+Y+Rc), s		53.9			27.2	26.7	21.1
Change Period (Y+Rc), s		5.0			5.0	5.0	5.0
Max Green Setting (Gmax), s		45.0			12.0	28.0	20.0
Max Q Clear Time (g_c+I1), s		13.1			5.0	19.9	15.7
Green Ext Time (p_c), s		3.4			0.1	1.7	0.4
<b>Intersection Summary</b>							
HCM 6th Ctrl Delay			27.0				
HCM 6th LOS			C				
<b>Notes</b>							
User approved volume balancing among the lanes for turning movement.							

Arco AM/PM Service Station  
5: Redlands Boulevard & Eucalyptus Avenue

Opening Year without Project (AM Peak Hour)



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	20	0	4	35	1	82	28	509	57	115	432	35
Future Volume (vph)	20	0	4	35	1	82	28	509	57	115	432	35
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	275		0	150		0	150		0	320		200
Storage Lanes	1		0	1		1	1		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850				0.850		0.985				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	1615	0	1805	1900	1615	1805	1872	0	1805	1900	1615
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1805	1615	0	1805	1900	1615	1805	1872	0	1805	1900	1615
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		512				109		5				64
Link Speed (mph)		40			40			50				50
Link Distance (ft)		2576			1616			680				546
Travel Time (s)		43.9			27.5			9.3				7.4
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	21	0	4	36	1	85	29	530	59	120	450	36
Shared Lane Traffic (%)												
Lane Group Flow (vph)	21	4	0	36	1	85	29	589	0	120	450	36
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		8			8			8				8
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	20		10	20		10	20		10	20		10
Turn Type	Prot	NA		Prot	NA	Perm	Prot	NA		Prot	NA	pt+ov
Protected Phases	3	8		7	4		5	2		1	6	63
Permitted Phases						4						
Detector Phase	3	8		7	4	4	5	2		1	6	63
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0	7.0	7.0	7.0		7.0	7.0	
Minimum Split (s)	12.0	30.0		12.0	30.0	30.0	12.0	12.0		12.0	12.0	
Total Split (s)	24.0	36.0		24.0	36.0	36.0	22.0	43.0		17.0	38.0	
Total Split (%)	20.0%	30.0%		20.0%	30.0%	30.0%	18.3%	35.8%		14.2%	31.7%	
Maximum Green (s)	19.0	31.0		19.0	31.0	31.0	17.0	38.0		12.0	33.0	
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None	None	None	C-Min		None	C-Min	
Walk Time (s)		7.0			7.0	7.0		7.0				

Arco AM/PM Service Station  
5: Redlands Boulevard & Eucalyptus Avenue

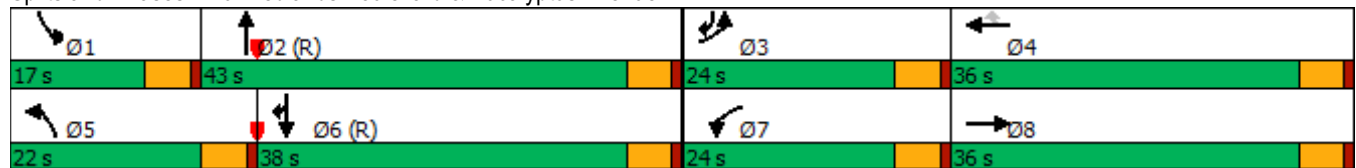
Opening Year without Project (AM Peak Hour)

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Flash Dont Walk (s)		18.0			18.0	18.0		16.0				
Pedestrian Calls (#/hr)		0			0	0		0				
Act Effct Green (s)	7.5	9.4		12.6	7.3	7.3	7.9	76.5		13.4	87.9	98.0
Actuated g/C Ratio	0.06	0.08		0.10	0.06	0.06	0.07	0.64		0.11	0.73	0.82
v/c Ratio	0.19	0.01		0.19	0.01	0.42	0.25	0.49		0.60	0.32	0.03
Control Delay	57.0	0.0		50.3	53.0	12.0	58.0	15.6		62.3	9.3	0.4
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.4	0.0
Total Delay	57.0	0.0		50.3	53.0	12.0	58.0	15.6		62.3	9.7	0.4
LOS	E	A		D	D	B	E	B		E	A	A
Approach Delay		47.8			23.6			17.6			19.6	
Approach LOS		D			C			B			B	
Queue Length 50th (ft)	16	0		24	1	0	22	246		90	145	0
Queue Length 95th (ft)	42	0		61	7	32	53	406		147	238	3
Internal Link Dist (ft)		2496			1536			600			466	
Turn Bay Length (ft)	275			150			150			320		200
Base Capacity (vph)	285	796		287	490	498	255	1195		214	1391	1461
Starvation Cap Reductn	0	0		0	0	0	0	0		0	499	0
Spillback Cap Reductn	0	0		0	0	0	0	0		0	0	0
Storage Cap Reductn	0	0		0	0	0	0	0		0	0	0
Reduced v/c Ratio	0.07	0.01		0.13	0.00	0.17	0.11	0.49		0.56	0.50	0.02

Intersection Summary

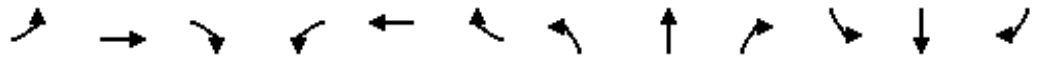
Area Type:	Other
Cycle Length:	120
Actuated Cycle Length:	120
Offset:	25 (21%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle:	90
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.60
Intersection Signal Delay:	19.6
Intersection LOS:	B
Intersection Capacity Utilization:	62.2%
ICU Level of Service:	B
Analysis Period (min):	15

Splits and Phases: 5: Redlands Boulevard & Eucalyptus Avenue



Arco AM/PM Service Station  
5: Redlands Boulevard & Eucalyptus Avenue

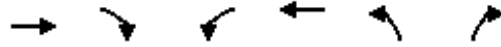
Opening Year without Project (AM Peak Hour)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	0	4	35	1	82	28	509	57	115	432	35
Future Volume (veh/h)	20	0	4	35	1	82	28	509	57	115	432	35
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	21	0	4	36	1	85	29	530	59	120	450	36
Peak Hour Factor	0.96	0.96	0.96	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	0	0	0
Cap, veh/h	53	0	93	74	132	111	65	1098	122	146	1327	1172
Arrive On Green	0.03	0.00	0.06	0.04	0.07	0.07	0.04	0.65	0.65	0.08	0.70	0.70
Sat Flow, veh/h	1810	0	1610	1810	1900	1610	1810	1679	187	1810	1900	1610
Grp Volume(v), veh/h	21	0	4	36	1	85	29	0	589	120	450	36
Grp Sat Flow(s),veh/h/ln	1810	0	1610	1810	1900	1610	1810	0	1866	1810	1900	1610
Q Serve(g_s), s	1.4	0.0	0.3	2.3	0.1	6.2	1.9	0.0	19.2	7.8	11.2	0.7
Cycle Q Clear(g_c), s	1.4	0.0	0.3	2.3	0.1	6.2	1.9	0.0	19.2	7.8	11.2	0.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.10	1.00		1.00
Lane Grp Cap(c), veh/h	53	0	93	74	132	111	65	0	1220	146	1327	1172
V/C Ratio(X)	0.40	0.00	0.04	0.49	0.01	0.76	0.44	0.00	0.48	0.82	0.34	0.03
Avail Cap(c_a), veh/h	287	0	416	287	491	416	256	0	1220	181	1327	1172
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	0.00	1.00	0.85	0.85	0.85
Uniform Delay (d), s/veh	57.2	0.0	53.4	56.3	52.0	54.9	56.6	0.0	10.5	54.3	7.1	4.5
Incr Delay (d2), s/veh	4.7	0.0	0.2	4.9	0.0	10.2	4.6	0.0	1.4	18.3	0.6	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	0.7	0.0	0.1	1.2	0.0	2.8	0.9	0.0	7.2	4.2	3.9	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	61.9	0.0	53.6	61.2	52.0	65.1	61.3	0.0	11.9	72.6	7.7	4.6
LnGrp LOS	E	A	D	E	D	E	E	A	B	E	A	A
Approach Vol, veh/h		25			122			618			606	
Approach Delay, s/veh		60.6			63.9			14.2			20.4	
Approach LOS		E			E			B			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	14.7	83.5	8.5	13.3	9.3	88.8	9.9	11.9				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	12.0	38.0	19.0	31.0	17.0	33.0	19.0	31.0				
Max Q Clear Time (g_c+I1), s	9.8	21.2	3.4	8.2	3.9	13.2	4.3	2.3				
Green Ext Time (p_c), s	0.0	3.1	0.0	0.2	0.0	2.4	0.0	0.0				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				22.2								
HCM 6th LOS				C								
<b>Notes</b>												
User approved pedestrian interval to be less than phase max green.												

Arco AM/PM Service Station  
6: Project West Driveway & Hemlock Avenue

Opening Year without Project (AM Peak Hour)



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	0	0	0	0	0	0
Future Volume (vph)	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
<b>Fr</b>						
Flt Protected						
Satd. Flow (prot)	1900	0	0	1900	1900	0
Flt Permitted						
Satd. Flow (perm)	1900	0	0	1900	1900	0
Link Speed (mph)	30			30	25	
Link Distance (ft)	2851			453	334	
Travel Time (s)	64.8			10.3	9.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	0	0
<b>Shared Lane Traffic (%)</b>						
Lane Group Flow (vph)	0	0	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	8			8	8	
<b>Two way Left Turn Lane</b>						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	10		20	20		10
Sign Control	Free			Free	Stop	
<b>Intersection Summary</b>						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	0.0%			ICU Level of Service A		
Analysis Period (min)	15					



Arco AM/PM Service Station  
6: Project West Driveway & Hemlock Avenue

Opening Year without Project (AM Peak Hour)

Intersection						
Int Delay, s/veh	0					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	0	0	0
Future Vol, veh/h	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	0	0	0	0	0

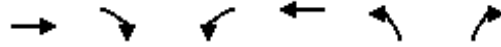
Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	1	0	2
Stage 1	-	-	-	-	1
Stage 2	-	-	-	-	1
Critical Hdwy	-	-	4.1	-	6.4
Critical Hdwy Stg 1	-	-	-	-	5.4
Critical Hdwy Stg 2	-	-	-	-	5.4
Follow-up Hdwy	-	-	2.2	-	3.5
Pot Cap-1 Maneuver	-	-	1635	-	1026
Stage 1	-	-	-	-	1028
Stage 2	-	-	-	-	1028
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1635	-	1026
Mov Cap-2 Maneuver	-	-	-	-	1026
Stage 1	-	-	-	-	1028
Stage 2	-	-	-	-	1028

Approach	EB	WB	NB
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	1635	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-

Arco AM/PM Service Station  
7: Spruce Avenue & Project Driveway

Opening Year without Project (AM Peak Hour)



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	0	0	4	0	0	7
Future Volume (vph)	0	0	4	0	0	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>						0.865
Fl <sub>t</sub> Protected						0.950
Satd. Flow (prot)	1900	0	0	1805	1644	0
Fl <sub>t</sub> Permitted						0.950
Satd. Flow (perm)	1900	0	0	1805	1644	0
Link Speed (mph)	25			30		30
Link Distance (ft)	310			97		807
Travel Time (s)	8.5			2.2		18.3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	4	0	0	8
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	4	8	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0		12
Link Offset(ft)	0			0		0
Crosswalk Width(ft)	8			8		8
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	10		20		20	
Sign Control	Free		Free		Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	16.0%
Analysis Period (min)	15
	ICU Level of Service A

Intersection						
Int Delay, s/veh	7.2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	0	0	4	0	0	7
Future Vol, veh/h	0	0	4	0	0	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	0	4	0	0	8

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	1	0	9
Stage 1	-	-	-	-	1
Stage 2	-	-	-	-	8
Critical Hdwy	-	-	4.1	-	6.4
Critical Hdwy Stg 1	-	-	-	-	5.4
Critical Hdwy Stg 2	-	-	-	-	5.4
Follow-up Hdwy	-	-	2.2	-	3.5
Pot Cap-1 Maneuver	-	-	1635	-	1017
Stage 1	-	-	-	-	1028
Stage 2	-	-	-	-	1020
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1635	-	1015
Mov Cap-2 Maneuver	-	-	-	-	1015
Stage 1	-	-	-	-	1026
Stage 2	-	-	-	-	1020

Approach	EB	WB	NB
HCM Control Delay, s	0	7.2	8.3
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	1090	-	-	1635	-
HCM Lane V/C Ratio	0.007	-	-	0.003	-
HCM Control Delay (s)	8.3	-	-	7.2	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0	-



Arco AM/PM Service Station  
1: Redlands Boulevard & Ironwood Avenue

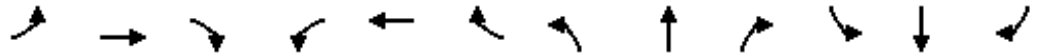
Opening Year without Project (PM Peak Hour)



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕		↕	↕	↕
Traffic Volume (vph)	118	29	76	6	28	11	91	721	6	11	697	215
Future Volume (vph)	118	29	76	6	28	11	91	721	6	11	697	215
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	400		0	435		115
Storage Lanes	0		0	0		0	1		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.954			0.968			0.999				0.850
Flt Protected		0.974			0.994		0.950			0.950		
Satd. Flow (prot)	0	1765	0	0	1828	0	1805	1898	0	1805	1900	1615
Flt Permitted		0.974			0.994		0.950			0.950		
Satd. Flow (perm)	0	1765	0	0	1828	0	1805	1898	0	1805	1900	1615
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		22			11							131
Link Speed (mph)		55			55			50				50
Link Distance (ft)		3945			2657			1313				1108
Travel Time (s)		48.9			32.9			17.9				15.1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.98	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	123	30	79	6	29	11	95	751	6	11	726	224
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	232	0	0	46	0	95	757	0	11	726	224
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		8			8			8				8
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	20		10	20		10	20		10	20		10
Turn Type	Split	NA		Split	NA		Prot	NA		Prot	NA	Perm
Protected Phases	8	8		4	4		5	2		1	6	
Permitted Phases												6
Detector Phase	8	8		4	4		5	2		1	6	6
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	7.0
Minimum Split (s)	12.0	12.0		12.0	12.0		16.2	12.0		16.2	12.0	12.0
Total Split (s)	22.0	22.0		22.0	22.0		17.0	39.0		17.0	39.0	39.0
Total Split (%)	22.0%	22.0%		22.0%	22.0%		17.0%	39.0%		17.0%	39.0%	39.0%
Maximum Green (s)	17.0	17.0		17.0	17.0		12.0	34.0		12.0	34.0	34.0
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)		5.0			5.0		5.0	5.0		5.0	5.0	5.0
Lead/Lag							Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None		None	None		None	Max		None	Max	Max
Walk Time (s)	7.0	7.0		7.0	7.0			7.0			7.0	7.0

Arco AM/PM Service Station  
 1: Redlands Boulevard & Ironwood Avenue

Opening Year without Project (PM Peak Hour)



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Flash Dont Walk (s)	18.0	18.0		18.0	18.0			16.0			16.0	16.0
Pedestrian Calls (#/hr)	0	0		0	0			0			0	0
Act Effct Green (s)		14.1			7.9		9.6	46.1		7.3	36.7	36.7
Actuated g/C Ratio		0.18			0.10		0.12	0.58		0.09	0.46	0.46
v/c Ratio		0.71			0.24		0.44	0.69		0.07	0.83	0.28
Control Delay		42.4			33.9		42.6	20.3		40.1	34.4	9.5
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	0.0
Total Delay		42.4			33.9		42.6	20.3		40.1	34.4	9.5
LOS		D			C		D	C		D	C	A
Approach Delay		42.4			33.9			22.7			28.7	
Approach LOS		D			C			C			C	
Queue Length 50th (ft)		108			18		50	282		6	384	32
Queue Length 95th (ft)		#202			52		101	#664		23	#682	89
Internal Link Dist (ft)		3865			2577			1233			1028	
Turn Bay Length (ft)							400			435		115
Base Capacity (vph)		405			411		280	1098		280	875	814
Starvation Cap Reductn		0			0		0	0		0	0	0
Spillback Cap Reductn		0			0		0	0		0	0	0
Storage Cap Reductn		0			0		0	0		0	0	0
Reduced v/c Ratio		0.57			0.11		0.34	0.69		0.04	0.83	0.28

Intersection Summary

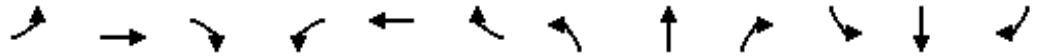
Area Type: Other  
 Cycle Length: 100  
 Actuated Cycle Length: 79.7  
 Natural Cycle: 90  
 Control Type: Actuated-Uncoordinated  
 Maximum v/c Ratio: 0.83  
 Intersection Signal Delay: 27.9  
 Intersection LOS: C  
 Intersection Capacity Utilization 81.0%  
 ICU Level of Service D  
 Analysis Period (min) 15  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

Splits and Phases: 1: Redlands Boulevard & Ironwood Avenue

Ø1	Ø2	Ø4	Ø8
17 s	39 s	22 s	22 s
Ø5	Ø6		
17 s	39 s		

Arco AM/PM Service Station  
1: Redlands Boulevard & Ironwood Avenue

Opening Year without Project (PM Peak Hour)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕		↕	↕	↕
Traffic Volume (veh/h)	118	29	76	6	28	11	91	721	6	11	697	215
Future Volume (veh/h)	118	29	76	6	28	11	91	721	6	11	697	215
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	123	30	79	6	29	11	95	751	6	11	726	224
Peak Hour Factor	0.96	0.96	0.96	0.96	0.98	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	0	0	0
Cap, veh/h	148	36	95	13	65	25	143	948	8	35	842	714
Arrive On Green	0.16	0.16	0.16	0.06	0.06	0.06	0.08	0.50	0.50	0.02	0.44	0.44
Sat Flow, veh/h	926	226	595	236	1141	433	1810	1882	15	1810	1900	1610
Grp Volume(v), veh/h	232	0	0	46	0	0	95	0	757	11	726	224
Grp Sat Flow(s),veh/h/ln	1747	0	0	1810	0	0	1810	0	1897	1810	1900	1610
Q Serve(g_s), s	9.9	0.0	0.0	1.9	0.0	0.0	3.9	0.0	25.3	0.5	26.4	6.9
Cycle Q Clear(g_c), s	9.9	0.0	0.0	1.9	0.0	0.0	3.9	0.0	25.3	0.5	26.4	6.9
Prop In Lane	0.53		0.34	0.13		0.24	1.00		0.01	1.00		1.00
Lane Grp Cap(c), veh/h	279	0	0	103	0	0	143	0	955	35	842	714
V/C Ratio(X)	0.83	0.00	0.00	0.45	0.00	0.00	0.66	0.00	0.79	0.32	0.86	0.31
Avail Cap(c_a), veh/h	387	0	0	401	0	0	283	0	955	283	842	714
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	31.2	0.0	0.0	35.0	0.0	0.0	34.3	0.0	15.7	37.1	19.2	13.8
Incr Delay (d2), s/veh	10.4	0.0	0.0	3.0	0.0	0.0	5.2	0.0	6.7	5.2	11.3	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.5	0.0	0.0	0.8	0.0	0.0	1.8	0.0	10.3	0.2	12.1	2.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	41.6	0.0	0.0	38.0	0.0	0.0	39.5	0.0	22.5	42.3	30.5	15.0
LnGrp LOS	D	A	A	D	A	A	D	A	C	D	C	B
Approach Vol, veh/h		232			46			852				961
Approach Delay, s/veh		41.6			38.0			24.4				27.0
Approach LOS		D			D			C				C
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.5	43.6		9.4	11.1	39.0		17.3				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0				
Max Green Setting (Gmax), s	12.0	34.0		17.0	12.0	34.0		17.0				
Max Q Clear Time (g_c+I1), s	2.5	27.3		3.9	5.9	28.4		11.9				
Green Ext Time (p_c), s	0.0	2.6		0.1	0.1	2.5		0.5				

Intersection Summary

HCM 6th Ctrl Delay	27.8
HCM 6th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

Arco AM/PM Service Station  
 2: Redlands Boulevard & Hemlock Avenue

Opening Year without Project (PM Peak Hour)



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	0	0	817	876	0
Future Volume (vph)	0	0	0	817	876	0
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
<b>Fr</b>						
Flt Protected						
Satd. Flow (prot)	0	1900	0	1900	1900	0
Flt Permitted						
Satd. Flow (perm)	0	1900	0	1900	1900	0
Link Speed (mph)	30			50	50	
Link Distance (ft)	453			483	1313	
Travel Time (s)	10.3			6.6	17.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	888	952	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	888	952	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	8			8	8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	20	10	20			10
Sign Control	Stop			Free	Free	
<b>Intersection Summary</b>						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	50.1%			ICU Level of Service A		
Analysis Period (min)	15					



Arco AM/PM Service Station  
2: Redlands Boulevard & Hemlock Avenue

Opening Year without Project (PM Peak Hour)

Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↗		↑	↘	
Traffic Vol, veh/h	0	0	0	817	876	0
Future Vol, veh/h	0	0	0	817	876	0
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	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	0	0	888	952	0

Major/Minor	Minor2	Major1	Major2		
Conflicting Flow All	-	952	-	0	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-
Critical Hdwy	-	6.2	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-
Follow-up Hdwy	-	3.3	-	-	-
Pot Cap-1 Maneuver	0	317	0	-	-
Stage 1	0	-	0	-	-
Stage 2	0	-	0	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	-	317	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

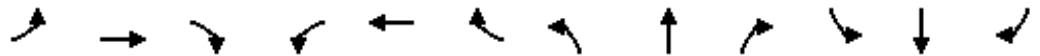
Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-
HCM Control Delay (s)	-	0	-	-
HCM Lane LOS	-	A	-	-
HCM 95th %tile Q(veh)	-	-	-	-

3: Redlands Boulevard & Spruce Avenue/SR-60 WB



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↗	↖	↗	↖	↖	↗
Traffic Volume (vph)	1	3	8	84	0	27	6	768	208	267	513	0
Future Volume (vph)	1	3	8	84	0	27	6	768	208	267	513	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	115		250	340		0
Storage Lanes	0		0	0		0	1		1	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.910			0.967				0.850			
Flt Protected		0.996			0.963		0.950			0.950		
Satd. Flow (prot)	0	1722	0	0	1769	0	1805	1900	1615	1805	1900	0
Flt Permitted					0.963		0.950			0.950		
Satd. Flow (perm)	0	1729	0	0	1769	0	1805	1900	1615	1805	1900	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		8			154				217			
Link Speed (mph)		30			45			50			50	
Link Distance (ft)		97			1350			791			483	
Travel Time (s)		2.2			20.5			10.8			6.6	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	1	3	8	88	0	28	6	800	217	278	534	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	12	0	0	116	0	6	800	217	278	534	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		8			8			8			8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	20		10	20		10	20		10	20		10
Turn Type	Perm	NA		Split	NA		Prot	NA	pm+ov	Prot	NA	
Protected Phases		4		8	8		5	2	8	1	6	
Permitted Phases	4								2			
Detector Phase	4	4		8	8		5	2	8	1	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		7.0	7.0	7.0	7.0	7.0	
Minimum Split (s)	12.0	12.0		12.0	12.0		16.2	12.0	12.0	16.2	12.0	
Total Split (s)	12.0	12.0		12.0	12.0		21.0	39.0	12.0	22.0	40.0	
Total Split (%)	14.1%	14.1%		14.1%	14.1%		24.7%	45.9%	14.1%	25.9%	47.1%	
Maximum Green (s)	7.0	7.0		7.0	7.0		16.0	34.0	7.0	17.0	35.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)		5.0			5.0		5.0	5.0	5.0	5.0	5.0	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None		None	None		None	C-Min	None	None	C-Min	
Act Effect Green (s)		7.0			7.0		7.0	43.5	54.5	17.1	63.2	

3: Redlands Boulevard & Spruce Avenue/SR-60 WB



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio		0.08			0.08		0.08	0.51	0.64	0.20	0.74	
v/c Ratio		0.08			0.40		0.04	0.82	0.19	0.77	0.38	
Control Delay		26.1			7.5		41.3	27.8	2.2	47.1	6.8	
Queue Delay		0.0			0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay		26.1			7.5		41.3	27.8	2.2	47.1	6.8	
LOS		C			A		D	C	A	D	A	
Approach Delay		26.1			7.5			22.4				20.6
Approach LOS		C			A			C				C
Queue Length 50th (ft)		2			0		3	394	11	138	57	
Queue Length 95th (ft)		18			28		m4	m#627	m24	#258	271	
Internal Link Dist (ft)		17			1270			711			403	
Turn Bay Length (ft)							115		250	340		
Base Capacity (vph)		149			287		339	972	1113	386	1413	
Starvation Cap Reductn		0			0		0	0	0	0	0	
Spillback Cap Reductn		0			0		0	0	0	0	0	
Storage Cap Reductn		0			0		0	0	0	0	0	
Reduced v/c Ratio		0.08			0.40		0.02	0.82	0.19	0.72	0.38	

Intersection Summary

Area Type: Other  
 Cycle Length: 85  
 Actuated Cycle Length: 85  
 Offset: 46 (54%), Referenced to phase 2:NBT and 6:SBT, Start of Green  
 Natural Cycle: 90  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.82  
 Intersection Signal Delay: 20.8 Intersection LOS: C  
 Intersection Capacity Utilization 84.5% ICU Level of Service E  
 Analysis Period (min) 15  
 # 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.

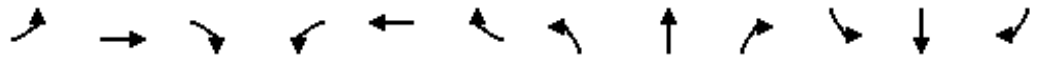
Splits and Phases: 3: Redlands Boulevard & Spruce Avenue/SR-60 WB



Arco AM/PM Service Station

Opening Year without Project (PM Peak Hour)

3: Redlands Boulevard & Spruce Avenue/SR-60 WB



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↑	↗	↖	↓	↘
Traffic Volume (veh/h)	1	3	8	84	0	27	6	768	208	267	513	0
Future Volume (veh/h)	1	3	8	84	0	27	6	768	208	267	513	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	1	3	8	88	0	28	6	800	217	278	534	0
Peak Hour Factor	0.96	0.96	0.96	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	0	0	0
Cap, veh/h	3	9	23	110	0	35	20	925	917	317	1237	0
Arrive On Green	0.02	0.02	0.02	0.08	0.00	0.08	0.01	0.49	0.49	0.18	0.65	0.00
Sat Flow, veh/h	141	423	1127	1333	0	424	1810	1900	1610	1810	1900	0
Grp Volume(v), veh/h	12	0	0	116	0	0	6	800	217	278	534	0
Grp Sat Flow(s),veh/h/ln	1690	0	0	1757	0	0	1810	1900	1610	1810	1900	0
Q Serve(g_s), s	0.6	0.0	0.0	5.5	0.0	0.0	0.3	31.7	5.7	12.7	11.6	0.0
Cycle Q Clear(g_c), s	0.6	0.0	0.0	5.5	0.0	0.0	0.3	31.7	5.7	12.7	11.6	0.0
Prop In Lane	0.08		0.67	0.76		0.24	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	34	0	0	145	0	0	20	925	917	317	1237	0
V/C Ratio(X)	0.35	0.00	0.00	0.80	0.00	0.00	0.30	0.86	0.24	0.88	0.43	0.00
Avail Cap(c_a), veh/h	139	0	0	145	0	0	341	925	917	362	1237	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	41.1	0.0	0.0	38.3	0.0	0.0	41.7	19.3	9.1	34.2	7.2	0.0
Incr Delay (d2), s/veh	6.0	0.0	0.0	26.7	0.0	0.0	8.4	10.6	0.6	19.1	1.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.0	0.0	3.3	0.0	0.0	0.2	14.3	2.2	6.8	3.7	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	47.0	0.0	0.0	65.0	0.0	0.0	50.2	29.9	9.7	53.3	8.3	0.0
LnGrp LOS	D	A	A	E	A	A	D	C	A	D	A	A
Approach Vol, veh/h		12			116			1023				812
Approach Delay, s/veh		47.0			65.0			25.8				23.7
Approach LOS		D			E			C				C
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	19.9	46.4		6.7	5.9	60.3		12.0				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0				
Max Green Setting (Gmax), s	17.0	34.0		7.0	16.0	35.0		7.0				
Max Q Clear Time (g_c+I1), s	14.7	33.7		2.6	2.3	13.6		7.5				
Green Ext Time (p_c), s	0.2	0.2		0.0	0.0	2.9		0.0				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				27.4								
HCM 6th LOS				C								

Arco AM/PM Service Station  
4: Redlands Boulevard & SR-60 EB

Opening Year without Project (PM Peak Hour)



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	400	215	109	596	544	60
Future Volume (vph)	400	215	109	596	544	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	350			120
Storage Lanes	1	0	1			1
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.953					0.850
Flt Protected	0.968		0.950			
Satd. Flow (prot)	1753	0	1805	1900	1900	1615
Flt Permitted	0.968		0.950			
Satd. Flow (perm)	1753	0	1805	1900	1900	1615
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	35					40
Link Speed (mph)	45			50	50	
Link Distance (ft)	1470			546	788	
Travel Time (s)	22.3			7.4	10.7	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	440	236	120	655	598	66
Shared Lane Traffic (%)						
Lane Group Flow (vph)	676	0	120	655	598	66
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	8			8	8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	20	10	20			10
Turn Type	Prot		Prot	NA	NA	Perm
Protected Phases	3		5	2	6	
Permitted Phases						6
Detector Phase	3		5	2	6	6
Switch Phase						
Minimum Initial (s)	7.0		7.0	7.0	7.0	7.0
Minimum Split (s)	15.0		16.2	12.0	12.0	12.0
Total Split (s)	35.0		18.0	50.0	32.0	32.0
Total Split (%)	41.2%		21.2%	58.8%	37.6%	37.6%
Maximum Green (s)	30.0		13.0	45.0	27.0	27.0
Yellow Time (s)	4.0		4.0	4.0	4.0	4.0
All-Red Time (s)	1.0		1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0		5.0	5.0	5.0	5.0
Lead/Lag			Lag		Lead	Lead
Lead-Lag Optimize?			Yes		Yes	Yes
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Recall Mode	None		None	C-Min	C-Min	C-Min
Act Effect Green (s)	33.6		10.5	41.4	28.2	28.2



Arco AM/PM Service Station  
4: Redlands Boulevard & SR-60 EB























Opening Year without Project (PM Peak Hour)



Movement	EBL	EBR	NBL	NBT	SBT	SBR	
Lane Configurations							
Traffic Volume (veh/h)	400	215	109	596	544	60	
Future Volume (veh/h)	400	215	109	596	544	60	
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	440	236	120	655	598	66	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	
Percent Heavy Veh, %	0	0	0	0	0	0	
Cap, veh/h	398	213	277	1006	604	511	
Arrive On Green	0.35	0.35	0.15	0.53	0.32	0.32	
Sat Flow, veh/h	1127	605	1810	1900	1900	1610	
Grp Volume(v), veh/h	677	0	120	655	598	66	
Grp Sat Flow(s),veh/h/ln	1735	0	1810	1900	1900	1610	
Q Serve(g_s), s	30.0	0.0	5.1	21.0	26.6	2.5	
Cycle Q Clear(g_c), s	30.0	0.0	5.1	21.0	26.6	2.5	
Prop In Lane	0.65	0.35	1.00			1.00	
Lane Grp Cap(c), veh/h	612	0	277	1006	604	511	
V/C Ratio(X)	1.11	0.00	0.43	0.65	0.99	0.13	
Avail Cap(c_a), veh/h	612	0	277	1006	604	511	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	
Upstream Filter(I)	1.00	0.00	0.81	0.81	1.00	1.00	
Uniform Delay (d), s/veh	27.5	0.0	32.7	14.4	28.9	20.6	
Incr Delay (d2), s/veh	68.8	0.0	0.9	2.7	34.5	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	22.8	0.0	2.1	8.0	16.5	0.9	
Unsig. Movement Delay, s/veh							
LnGrp Delay(d),s/veh	96.3	0.0	33.5	17.0	63.3	21.2	
LnGrp LOS	F	A	C	B	E	C	
Approach Vol, veh/h	677			775	664		
Approach Delay, s/veh	96.3			19.6	59.1		
Approach LOS	F			B	E		
Timer - Assigned Phs		2			5	6	8
Phs Duration (G+Y+Rc), s		50.0			18.0	32.0	35.0
Change Period (Y+Rc), s		5.0			5.0	5.0	5.0
Max Green Setting (Gmax), s		45.0			13.0	27.0	30.0
Max Q Clear Time (g_c+I1), s		23.0			7.1	28.6	32.0
Green Ext Time (p_c), s		3.9			0.1	0.0	0.0
<b>Intersection Summary</b>							
HCM 6th Ctrl Delay			56.6				
HCM 6th LOS			E				
<b>Notes</b>							
User approved volume balancing among the lanes for turning movement.							

Arco AM/PM Service Station  
5: Redlands Boulevard & Eucalyptus Avenue

Opening Year without Project (PM Peak Hour)

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	33	0	17	99	0	229	1	455	83	161	593	12
Future Volume (vph)	33	0	17	99	0	229	1	455	83	161	593	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	275		0	150		0	150		0	320		200
Storage Lanes	1		0	1		1	1		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850				0.850		0.977				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	1615	0	1805	1900	1615	1805	1856	0	1805	1900	1615
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1805	1615	0	1805	1900	1615	1805	1856	0	1805	1900	1615
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		352				506		8				64
Link Speed (mph)		40			40			50			50	
Link Distance (ft)		2576			1616			680			546	
Travel Time (s)		43.9			27.5			9.3			7.4	
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
Adj. Flow (vph)	38	0	20	114	0	263	1	523	95	185	682	14
Shared Lane Traffic (%)												
Lane Group Flow (vph)	38	20	0	114	0	263	1	618	0	185	682	14
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		8			8			8			8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	20		10	20		10	20		10	20		10
Turn Type	Prot	NA		Prot		Perm	Prot	NA		Prot	NA	pm+ov
Protected Phases	3	8		7	4		5	2		1	6	3
Permitted Phases						4						6
Detector Phase	3	8		7	4	4	5	2		1	6	3
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0	7.0	7.0	7.0		7.0	7.0	7.0
Minimum Split (s)	16.7	30.0		36.0	30.0	30.0	13.7	12.0		16.7	12.0	16.7
Total Split (s)	24.0	36.0		24.0	36.0	36.0	22.0	43.0		17.0	38.0	24.0
Total Split (%)	20.0%	30.0%		20.0%	30.0%	30.0%	18.3%	35.8%		14.2%	31.7%	20.0%
Maximum Green (s)	19.0	31.0		19.0	31.0	31.0	17.0	38.0		12.0	33.0	19.0
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None		None	None	None	None	C-Min		None	C-Min	None
Walk Time (s)		7.0			7.0	7.0		7.0				



Arco AM/PM Service Station  
5: Redlands Boulevard & Eucalyptus Avenue

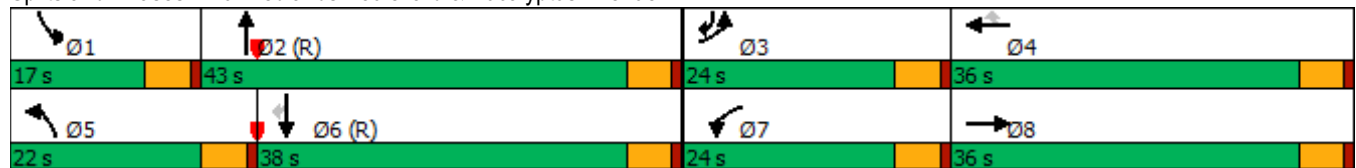
Opening Year without Project (PM Peak Hour)

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Flash Dont Walk (s)		18.0			18.0	18.0		16.0				
Pedestrian Calls (#/hr)		0			0	0		0				
Act Effct Green (s)	8.3	7.0		15.9		9.8	7.0	63.5		20.8	86.9	100.2
Actuated g/C Ratio	0.07	0.06		0.13		0.08	0.06	0.53		0.17	0.72	0.84
v/c Ratio	0.30	0.05		0.48		0.44	0.01	0.63		0.59	0.50	0.01
Control Delay	58.9	0.2		54.6		2.4	54.0	25.5		53.8	10.9	0.0
Queue Delay	0.0	0.0		0.0		0.0	0.0	0.0		0.0	1.5	0.0
Total Delay	58.9	0.2		54.6		2.4	54.0	25.5		53.8	12.4	0.0
LOS	E	A		D		A	D	C		D	B	A
Approach Delay		38.7			18.2			25.5			20.9	
Approach LOS		D			B			C			C	
Queue Length 50th (ft)	29	0		80		0	1	314		134	177	0
Queue Length 95th (ft)	62	0		136		0	7	516		198	437	0
Internal Link Dist (ft)		2496			1536			600			466	
Turn Bay Length (ft)	275			150			150			320		200
Base Capacity (vph)	285	678		288		792	255	985		313	1375	1494
Starvation Cap Reductn	0	0		0		0	0	0		0	477	0
Spillback Cap Reductn	0	0		0		0	0	0		0	0	0
Storage Cap Reductn	0	0		0		0	0	0		0	0	0
Reduced v/c Ratio	0.13	0.03		0.40		0.33	0.00	0.63		0.59	0.76	0.01

Intersection Summary

Area Type:	Other
Cycle Length:	120
Actuated Cycle Length:	120
Offset:	0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle:	115
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.63
Intersection Signal Delay:	22.4
Intersection LOS:	C
Intersection Capacity Utilization:	66.7%
ICU Level of Service:	C
Analysis Period (min):	15

Splits and Phases: 5: Redlands Boulevard & Eucalyptus Avenue



Arco AM/PM Service Station  
5: Redlands Boulevard & Eucalyptus Avenue











Opening Year without Project (PM Peak Hour)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	33	0	17	99	0	229	1	455	83	161	593	12
Future Volume (veh/h)	33	0	17	99	0	229	1	455	83	161	593	12
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	38	0	20	114	0	263	1	523	95	185	682	14
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
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	76	0	234	142	345	292	3	798	145	181	1155	1047
Arrive On Green	0.04	0.00	0.15	0.08	0.00	0.18	0.00	0.51	0.51	0.10	0.61	0.61
Sat Flow, veh/h	1810	0	1610	1810	1900	1610	1810	1565	284	1810	1900	1610
Grp Volume(v), veh/h	38	0	20	114	0	263	1	0	618	185	682	14
Grp Sat Flow(s),veh/h/ln	1810	0	1610	1810	1900	1610	1810	0	1849	1810	1900	1610
Q Serve(g_s), s	2.5	0.0	1.3	7.4	0.0	19.2	0.1	0.0	29.5	12.0	26.3	0.4
Cycle Q Clear(g_c), s	2.5	0.0	1.3	7.4	0.0	19.2	0.1	0.0	29.5	12.0	26.3	0.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.15	1.00		1.00
Lane Grp Cap(c), veh/h	76	0	234	142	345	292	3	0	943	181	1155	1047
V/C Ratio(X)	0.50	0.00	0.09	0.81	0.00	0.90	0.29	0.00	0.66	1.02	0.59	0.01
Avail Cap(c_a), veh/h	287	0	416	287	491	416	256	0	943	181	1155	1047
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	0.00	1.00	0.21	0.21	0.21
Uniform Delay (d), s/veh	56.3	0.0	44.4	54.4	0.0	48.1	59.8	0.0	21.6	54.0	14.4	7.4
Incr Delay (d2), s/veh	5.0	0.0	0.2	10.2	0.0	17.1	40.5	0.0	3.5	36.4	0.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	0.0	0.5	3.7	0.0	8.9	0.1	0.0	12.6	7.1	10.0	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	61.3	0.0	44.6	64.6	0.0	65.1	100.3	0.0	25.2	90.4	14.8	7.4
LnGrp LOS	E	A	D	E	A	E	F	A	C	F	B	A
Approach Vol, veh/h		58			377			619				881
Approach Delay, s/veh		55.5			65.0			25.3				30.6
Approach LOS		E			E			C				C
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	17.0	66.2	10.0	26.8	5.2	78.0	14.4	22.4				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	12.0	38.0	19.0	31.0	17.0	33.0	19.0	31.0				
Max Q Clear Time (g_c+I1), s	14.0	31.5	4.5	21.2	2.1	28.3	9.4	3.3				
Green Ext Time (p_c), s	0.0	2.0	0.0	0.6	0.0	1.7	0.2	0.1				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay			36.4									
HCM 6th LOS			D									

Arco AM/PM Service Station  
6: Project West Driveway & Hemlock Avenue

Opening Year without Project (PM Peak Hour)

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	0	0	0	0	0	0
Future Volume (vph)	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
<b>Fr</b>						
Flt Protected						
Satd. Flow (prot)	1900	0	0	1900	1900	0
Flt Permitted						
Satd. Flow (perm)	1900	0	0	1900	1900	0
Link Speed (mph)	30			30	25	
Link Distance (ft)	2851			453	334	
Travel Time (s)	64.8			10.3	9.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	0	0
<b>Shared Lane Traffic (%)</b>						
Lane Group Flow (vph)	0	0	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	8			8	8	
<b>Two way Left Turn Lane</b>						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		10	20		20	10
Sign Control	Free			Free	Stop	
<b>Intersection Summary</b>						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	0.0%			ICU Level of Service A		
Analysis Period (min)	15					

Arco AM/PM Service Station  
6: Project West Driveway & Hemlock Avenue

Opening Year without Project (PM Peak Hour)

Intersection						
Int Delay, s/veh	0					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	0	0	0
Future Vol, veh/h	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	0	0	0	0	0

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	1	0	2
Stage 1	-	-	-	-	1
Stage 2	-	-	-	-	1
Critical Hdwy	-	-	4.1	-	6.4
Critical Hdwy Stg 1	-	-	-	-	5.4
Critical Hdwy Stg 2	-	-	-	-	5.4
Follow-up Hdwy	-	-	2.2	-	3.5
Pot Cap-1 Maneuver	-	-	1635	-	1026
Stage 1	-	-	-	-	1028
Stage 2	-	-	-	-	1028
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1635	-	1026
Mov Cap-2 Maneuver	-	-	-	-	1026
Stage 1	-	-	-	-	1028
Stage 2	-	-	-	-	1028

Approach	EB	WB	NB
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	1635	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-

Arco AM/PM Service Station  
7: Spruce Avenue & Project Driveway

Opening Year without Project (PM Peak Hour)



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	0	0	6	0	0	12
Future Volume (vph)	0	0	6	0	0	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>						0.865
Fl <sub>t</sub> Protected						0.950
Satd. Flow (prot)	1900	0	0	1805	1644	0
Fl <sub>t</sub> Permitted						0.950
Satd. Flow (perm)	1900	0	0	1805	1644	0
Link Speed (mph)	25			30		30
Link Distance (ft)	310			97		807
Travel Time (s)	8.5			2.2		18.3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	7	0	0	13
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	7	13	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0		12
Link Offset(ft)	0			0		0
Crosswalk Width(ft)	8			8		8
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	10		20		20	
Sign Control	Free			Free		Stop

Intersection Summary

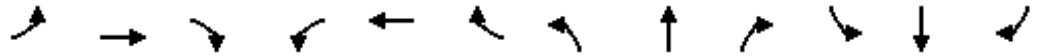
Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	16.0%
Analysis Period (min)	15
	ICU Level of Service A

Intersection						
Int Delay, s/veh	7.5					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	0	0	6	0	0	12
Future Vol, veh/h	0	0	6	0	0	12
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	0	7	0	0	13
Major/Minor	Major1	Major2	Minor1			
Conflicting Flow All	0	0	1	0	15	1
Stage 1	-	-	-	-	1	-
Stage 2	-	-	-	-	14	-
Critical Hdwy	-	-	4.1	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1635	-	1009	1090
Stage 1	-	-	-	-	1028	-
Stage 2	-	-	-	-	1014	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1635	-	1005	1090
Mov Cap-2 Maneuver	-	-	-	-	1005	-
Stage 1	-	-	-	-	1024	-
Stage 2	-	-	-	-	1014	-
Approach	EB	WB	NB			
HCM Control Delay, s	0	7.2	8.3			
HCM LOS				A		
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	1090	-	-	1635	-	
HCM Lane V/C Ratio	0.012	-	-	0.004	-	
HCM Control Delay (s)	8.3	-	-	7.2	0	
HCM Lane LOS	A	-	-	A	A	
HCM 95th %tile Q(veh)	0	-	-	0	-	

## **OPENING YEAR (2024) WITH PROJECT**

Arco AM/PM Service Station  
1: Redlands Boulevard & Ironwood Avenue

Opening Year with Project (AM Peak Hour)

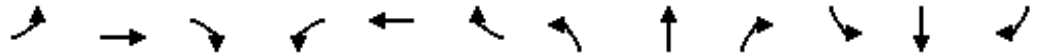


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕		↕	↕	↕
Traffic Volume (vph)	119	11	79	8	13	5	59	459	11	6	638	117
Future Volume (vph)	119	11	79	8	13	5	59	459	11	6	638	117
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	400		0	435		115
Storage Lanes	0		0	0		0	1		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.949			0.975			0.997				0.850
Flt Protected		0.972			0.985		0.950			0.950		
Satd. Flow (prot)	0	1753	0	0	1825	0	1805	1894	0	1805	1900	1615
Flt Permitted		0.972			0.985		0.950			0.950		
Satd. Flow (perm)	0	1753	0	0	1825	0	1805	1894	0	1805	1900	1615
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		26			5			1				131
Link Speed (mph)		55			55			50				50
Link Distance (ft)		3945			2657			1313				1108
Travel Time (s)		48.9			32.9			17.9				15.1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	124	11	82	8	14	5	61	478	11	6	665	122
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	217	0	0	27	0	61	489	0	6	665	122
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		8			8			8				8
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	20		10	20		10	20		10	20		10
Turn Type	Split	NA		Split	NA		Prot	NA		Prot	NA	Perm
Protected Phases	8	8		4	4		5	2		1	6	
Permitted Phases												6
Detector Phase	8	8		4	4		5	2		1	6	6
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	7.0
Minimum Split (s)	12.0	12.0		12.0	12.0		12.0	12.0		12.0	12.0	12.0
Total Split (s)	22.0	22.0		22.0	22.0		17.0	39.0		17.0	39.0	39.0
Total Split (%)	22.0%	22.0%		22.0%	22.0%		17.0%	39.0%		17.0%	39.0%	39.0%
Maximum Green (s)	17.0	17.0		17.0	17.0		12.0	34.0		12.0	34.0	34.0
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)		5.0			5.0		5.0	5.0		5.0	5.0	5.0
Lead/Lag							Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None		None	None		None	Max		None	Max	Max
Walk Time (s)	7.0	7.0		7.0	7.0			7.0			7.0	7.0



Arco AM/PM Service Station  
1: Redlands Boulevard & Ironwood Avenue

Opening Year with Project (AM Peak Hour)



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Flash Dont Walk (s)	18.0	18.0		18.0	18.0			16.0			16.0	16.0
Pedestrian Calls (#/hr)	0	0		0	0			0			0	0
Act Effct Green (s)		13.2			7.5		8.5	43.5		7.3	37.7	37.7
Actuated g/C Ratio		0.18			0.10		0.12	0.59		0.10	0.52	0.52
v/c Ratio		0.64			0.14		0.29	0.43		0.03	0.68	0.14
Control Delay		35.8			33.1		37.3	12.9		37.7	23.6	3.7
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	0.0
Total Delay		35.8			33.1		37.3	12.9		37.7	23.6	3.7
LOS		D			C		D	B		D	C	A
Approach Delay		35.8			33.1			15.6			20.7	
Approach LOS		D			C			B			C	
Queue Length 50th (ft)		76			9		25	78		2	213	0
Queue Length 95th (ft)		177			37		70	316		15	#583	30
Internal Link Dist (ft)		3865			2577			1233			1028	
Turn Bay Length (ft)							400			435		115
Base Capacity (vph)		441			443		306	1125		306	978	895
Starvation Cap Reductn		0			0		0	0		0	0	0
Spillback Cap Reductn		0			0		0	0		0	0	0
Storage Cap Reductn		0			0		0	0		0	0	0
Reduced v/c Ratio		0.49			0.06		0.20	0.43		0.02	0.68	0.14

Intersection Summary

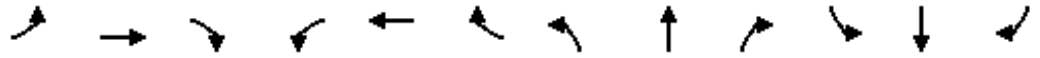
Area Type: Other  
 Cycle Length: 100  
 Actuated Cycle Length: 73.2  
 Natural Cycle: 70  
 Control Type: Actuated-Uncoordinated  
 Maximum v/c Ratio: 0.68  
 Intersection Signal Delay: 21.2      Intersection LOS: C  
 Intersection Capacity Utilization 70.9%      ICU Level of Service C  
 Analysis Period (min) 15  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

Splits and Phases: 1: Redlands Boulevard & Ironwood Avenue

17 s	39 s	22 s	22 s
17 s	39 s		

Arco AM/PM Service Station  
1: Redlands Boulevard & Ironwood Avenue

Opening Year with Project (AM Peak Hour)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕		↕	↕	↕
Traffic Volume (veh/h)	119	11	79	8	13	5	59	459	11	6	638	117
Future Volume (veh/h)	119	11	79	8	13	5	59	459	11	6	638	117
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	124	11	82	8	14	5	61	478	11	6	665	122
Peak Hour Factor	0.96	0.96	0.96	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	0	0	0
Cap, veh/h	152	13	100	22	38	14	123	965	22	20	883	748
Arrive On Green	0.15	0.15	0.15	0.04	0.04	0.04	0.07	0.52	0.52	0.01	0.46	0.46
Sat Flow, veh/h	990	88	655	537	940	336	1810	1850	43	1810	1900	1610
Grp Volume(v), veh/h	217	0	0	27	0	0	61	0	489	6	665	122
Grp Sat Flow(s),veh/h/ln	1733	0	0	1813	0	0	1810	0	1892	1810	1900	1610
Q Serve(g_s), s	8.9	0.0	0.0	1.1	0.0	0.0	2.4	0.0	12.2	0.2	21.1	3.2
Cycle Q Clear(g_c), s	8.9	0.0	0.0	1.1	0.0	0.0	2.4	0.0	12.2	0.2	21.1	3.2
Prop In Lane	0.57		0.38	0.30		0.19	1.00		0.02	1.00		1.00
Lane Grp Cap(c), veh/h	266	0	0	73	0	0	123	0	987	20	883	748
V/C Ratio(X)	0.82	0.00	0.00	0.37	0.00	0.00	0.50	0.00	0.50	0.30	0.75	0.16
Avail Cap(c_a), veh/h	403	0	0	421	0	0	297	0	987	297	883	748
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	30.0	0.0	0.0	34.2	0.0	0.0	32.9	0.0	11.3	35.9	16.1	11.3
Incr Delay (d2), s/veh	7.6	0.0	0.0	3.1	0.0	0.0	3.1	0.0	1.8	8.2	5.9	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	3.8	0.0	0.0	0.5	0.0	0.0	1.1	0.0	4.4	0.1	8.7	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	37.6	0.0	0.0	37.3	0.0	0.0	35.9	0.0	13.1	44.1	22.0	11.8
LnGrp LOS	D	A	A	D	A	A	D	A	B	D	C	B
Approach Vol, veh/h		217			27			550				793
Approach Delay, s/veh		37.6			37.3			15.6				20.6
Approach LOS		D			D			B				C
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.8	43.2		8.0	10.0	39.0		16.2				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0				
Max Green Setting (Gmax), s	12.0	34.0		17.0	12.0	34.0		17.0				
Max Q Clear Time (g_c+I1), s	2.2	14.2		3.1	4.4	23.1		10.9				
Green Ext Time (p_c), s	0.0	2.6		0.0	0.1	3.3		0.5				

Intersection Summary

HCM 6th Ctrl Delay	21.5
HCM 6th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

Arco AM/PM Service Station  
2: Redlands Boulevard & Hemlock Avenue

Opening Year with Project (AM Peak Hour)



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↑		↑	↑	
Traffic Volume (vph)	0	15	0	541	811	20
Future Volume (vph)	0	15	0	541	811	20
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>		0.865			0.997	
Fl <sub>t</sub> Protected						
Satd. Flow (prot)	0	1644	0	1900	1894	0
Fl <sub>t</sub> Permitted						
Satd. Flow (perm)	0	1644	0	1900	1894	0
Link Speed (mph)	30			50	50	
Link Distance (ft)	453			483	1313	
Travel Time (s)	10.3			6.6	17.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	16	0	588	882	22
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	16	0	588	904	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	8			8	8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	20	10	20			10
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	55.9%
Analysis Period (min)	15
	ICU Level of Service B

Arco AM/PM Service Station  
2: Redlands Boulevard & Hemlock Avenue

Opening Year with Project (AM Peak Hour)

Intersection						
Int Delay, s/veh	0.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↗		↑	↘	
Traffic Vol, veh/h	0	15	0	541	811	20
Future Vol, veh/h	0	15	0	541	811	20
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	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	16	0	588	882	22

Major/Minor	Minor2	Major1	Major2		
Conflicting Flow All	-	893	-	0	0
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-
Critical Hdwy	-	6.2	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-
Follow-up Hdwy	-	3.3	-	-	-
Pot Cap-1 Maneuver	0	343	0	-	-
Stage 1	0	-	0	-	-
Stage 2	0	-	0	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	-	343	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	16	0	0
HCM LOS	C		

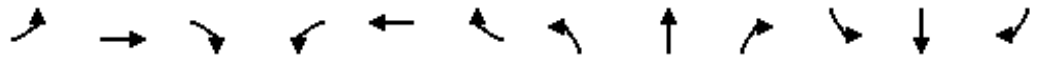
Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	343	-	-
HCM Lane V/C Ratio	-	0.048	-	-
HCM Control Delay (s)	-	16	-	-
HCM Lane LOS	-	C	-	-
HCM 95th %tile Q(veh)	-	0.1	-	-

3: Redlands Boulevard & Spruce Avenue/SR-60 WB



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↗	↖	↗	↖	↖	↗
Traffic Volume (vph)	22	27	40	72	26	38	59	474	193	310	430	1
Future Volume (vph)	22	27	40	72	26	38	59	474	193	310	430	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	115		250	340		0
Storage Lanes	0		0	0		0	1		1	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.940			0.962				0.850			
Flt Protected		0.988			0.974		0.950			0.950		
Satd. Flow (prot)	0	1765	0	0	1780	0	1805	1900	1615	1805	1900	0
Flt Permitted		0.837			0.974		0.950			0.950		
Satd. Flow (perm)	0	1495	0	0	1780	0	1805	1900	1615	1805	1900	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		34			17				208			
Link Speed (mph)		30			45			50				50
Link Distance (ft)		97			1350			791				483
Travel Time (s)		2.2			20.5			10.8				6.6
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	24	29	43	77	28	41	63	510	208	333	462	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	96	0	0	146	0	63	510	208	333	463	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		8			8			8				8
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	20		10	20		10	20		10	20		10
Turn Type	Perm	NA		Split	NA		Prot	NA	pt+ov	Prot	NA	
Protected Phases		4		8	8		5	2	2 8	1	6	
Permitted Phases	4											
Detector Phase	4	4		8	8		5	2	2 8	1	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	12.0	12.0		12.0	12.0		12.0	12.0		12.0	12.0	
Total Split (s)	15.0	15.0		15.0	15.0		23.0	37.0		28.0	42.0	
Total Split (%)	15.8%	15.8%		15.8%	15.8%		24.2%	38.9%		29.5%	44.2%	
Maximum Green (s)	10.0	10.0		10.0	10.0		18.0	32.0		23.0	37.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		5.0			5.0		5.0	5.0		5.0	5.0	
Lead/Lag							Lag	Lead		Lag	Lead	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	C-Min		None	C-Min	
Act Effect Green (s)		8.8			9.9		19.3	37.8	52.7	20.9	41.9	

3: Redlands Boulevard & Spruce Avenue/SR-60 WB



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio		0.09			0.10		0.20	0.40	0.55	0.22	0.44	
v/c Ratio		0.57			0.73		0.17	0.67	0.21	0.84	0.55	
Control Delay		41.2			58.2		31.0	31.7	2.5	54.3	27.1	
Queue Delay		0.0			0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay		41.2			58.2		31.0	31.7	2.5	54.3	27.1	
LOS		D			E		C	C	A	D	C	
Approach Delay		41.2			58.2			23.8				38.4
Approach LOS		D			E			C				D
Queue Length 50th (ft)		36			75		29	278	0	187	256	
Queue Length 95th (ft)		87			#168		68	#436	35	#313	328	
Internal Link Dist (ft)		17			1270			711			403	
Turn Bay Length (ft)							115		250	340		
Base Capacity (vph)		187			208		408	758	981	437	901	
Starvation Cap Reductn		0			0		0	0	0	0	0	
Spillback Cap Reductn		0			0		0	0	0	0	0	
Storage Cap Reductn		0			0		0	0	0	0	0	
Reduced v/c Ratio		0.51			0.70		0.15	0.67	0.21	0.76	0.51	

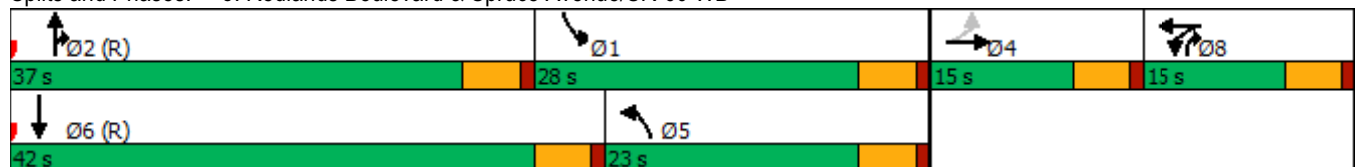
Intersection Summary

Area Type: Other  
 Cycle Length: 95  
 Actuated Cycle Length: 95  
 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green  
 Natural Cycle: 70  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.84  
 Intersection Signal Delay: 33.9 Intersection LOS: C  
 Intersection Capacity Utilization 71.8% ICU Level of Service C  
 Analysis Period (min) 15

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

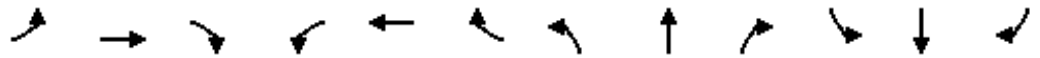
Splits and Phases: 3: Redlands Boulevard & Spruce Avenue/SR-60 WB



Arco AM/PM Service Station

Opening Year with Project (AM Peak Hour)

3: Redlands Boulevard & Spruce Avenue/SR-60 WB



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↗	↖	↗	↖	↖	↗
Traffic Volume (veh/h)	22	27	40	72	26	38	59	474	193	310	430	1
Future Volume (veh/h)	22	27	40	72	26	38	59	474	193	310	430	1
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	29	43	77	28	41	63	510	208	333	462	1
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	31	37	55	93	34	50	621	565	640	582	523	1
Arrive On Green	0.07	0.07	0.07	0.10	0.10	0.10	0.34	0.30	0.30	0.32	0.28	0.28
Sat Flow, veh/h	435	525	779	930	338	495	1810	1900	1610	1810	1895	4
Grp Volume(v), veh/h	96	0	0	146	0	0	63	510	208	333	0	463
Grp Sat Flow(s),veh/h/ln	1738	0	0	1764	0	0	1810	1900	1610	1810	0	1899
Q Serve(g_s), s	5.2	0.0	0.0	7.7	0.0	0.0	2.3	24.5	8.5	14.5	0.0	22.2
Cycle Q Clear(g_c), s	5.2	0.0	0.0	7.7	0.0	0.0	2.3	24.5	8.5	14.5	0.0	22.2
Prop In Lane	0.25		0.45	0.53		0.28	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	122	0	0	177	0	0	621	565	640	582	0	524
V/C Ratio(X)	0.79	0.00	0.00	0.83	0.00	0.00	0.10	0.90	0.32	0.57	0.00	0.88
Avail Cap(c_a), veh/h	183	0	0	186	0	0	621	640	704	582	0	740
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	43.5	0.0	0.0	41.9	0.0	0.0	21.2	32.1	19.8	26.8	0.0	32.9
Incr Delay (d2), s/veh	12.2	0.0	0.0	24.4	0.0	0.0	0.1	20.2	1.3	1.4	0.0	19.1
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	2.6	0.0	0.0	4.4	0.0	0.0	0.9	13.5	3.8	6.0	0.0	12.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	55.6	0.0	0.0	66.3	0.0	0.0	21.3	52.3	21.1	28.1	0.0	52.1
LnGrp LOS	E	A	A	E	A	A	C	D	C	C	A	D
Approach Vol, veh/h		96			146			781				796
Approach Delay, s/veh		55.6			66.3			41.5				42.1
Approach LOS		E			E			D				D
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	35.5	33.2		11.7	37.6	31.2		14.5				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0				
Max Green Setting (Gmax), s	23.0	32.0		10.0	18.0	37.0		10.0				
Max Q Clear Time (g_c+I1), s	16.5	26.5		7.2	4.3	24.2		9.7				
Green Ext Time (p_c), s	0.5	1.8		0.1	0.1	2.0		0.0				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				44.5								
HCM 6th LOS				D								

Arco AM/PM Service Station  
4: Redlands Boulevard & SR-60 EB

Opening Year with Project (AM Peak Hour)



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	156	149	89	534	452	50
Future Volume (vph)	156	149	89	534	452	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	350			120
Storage Lanes	1	0	1			1
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.934					0.850
Flt Protected	0.975		0.950			
Satd. Flow (prot)	1730	0	1805	1900	1900	1615
Flt Permitted	0.975		0.950			
Satd. Flow (perm)	1730	0	1805	1900	1900	1615
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	62					54
Link Speed (mph)	45			50	50	
Link Distance (ft)	1470			546	788	
Travel Time (s)	22.3			7.4	10.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	170	162	97	580	491	54
Shared Lane Traffic (%)						
Lane Group Flow (vph)	332	0	97	580	491	54
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	8			8	8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	20	10	20			10
Turn Type	Prot		Prot	NA	NA	pm+ov
Protected Phases	3		5	2	6	3
Permitted Phases						6
Detector Phase	3		5	2	6	3
Switch Phase						
Minimum Initial (s)	7.0		7.0	7.0	7.0	7.0
Minimum Split (s)	12.0		12.0	12.0	12.0	12.0
Total Split (s)	25.0		17.0	50.0	33.0	25.0
Total Split (%)	33.3%		22.7%	66.7%	44.0%	33.3%
Maximum Green (s)	20.0		12.0	45.0	28.0	20.0
Yellow Time (s)	4.0		4.0	4.0	4.0	4.0
All-Red Time (s)	1.0		1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0		5.0	5.0	5.0	5.0
Lead/Lag			Lag		Lead	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Recall Mode	None		None	C-Min	C-Min	None
Act Effect Green (s)	16.4		9.4	48.6	36.6	59.0



Arco AM/PM Service Station  
 4: Redlands Boulevard & SR-60 EB

Opening Year with Project (AM Peak Hour)

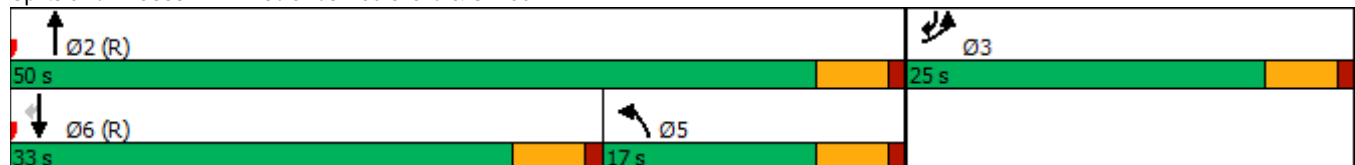


Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Actuated g/C Ratio	0.22		0.13	0.65	0.49	0.79
v/c Ratio	0.78		0.43	0.47	0.53	0.04
Control Delay	35.2		35.8	9.0	18.7	1.1
Queue Delay	0.0		0.0	0.0	0.0	0.0
Total Delay	35.2		35.8	9.0	18.7	1.1
LOS	D		D	A	B	A
Approach Delay	35.2			12.8	17.0	
Approach LOS	D			B	B	
Queue Length 50th (ft)	117		43	123	163	0
Queue Length 95th (ft)	197		83	215	295	8
Internal Link Dist (ft)	1390			466	708	
Turn Bay Length (ft)			350			120
Base Capacity (vph)	506		288	1232	928	1273
Starvation Cap Reductn	0		0	0	0	0
Spillback Cap Reductn	0		0	0	0	0
Storage Cap Reductn	0		0	0	0	0
Reduced v/c Ratio	0.66		0.34	0.47	0.53	0.04

Intersection Summary

Area Type: Other  
 Cycle Length: 75  
 Actuated Cycle Length: 75  
 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green  
 Natural Cycle: 55  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.78  
 Intersection Signal Delay: 19.1  
 Intersection LOS: B  
 Intersection Capacity Utilization 63.6%  
 ICU Level of Service B  
 Analysis Period (min) 15

Splits and Phases: 4: Redlands Boulevard & SR-60 EB



Arco AM/PM Service Station  
4: Redlands Boulevard & SR-60 EB

Opening Year with Project (AM Peak Hour)



Movement	EBL	EBR	NBL	NBT	SBT	SBR	
Lane Configurations							
Traffic Volume (veh/h)	156	149	89	534	452	50	
Future Volume (veh/h)	156	149	89	534	452	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	170	162	97	580	491	54	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	
Percent Heavy Veh, %	0	0	0	0	0	0	
Cap, veh/h	192	183	514	1227	561	831	
Arrive On Green	0.22	0.22	0.28	0.65	0.30	0.30	
Sat Flow, veh/h	871	830	1810	1900	1900	1610	
Grp Volume(v), veh/h	333	0	97	580	491	54	
Grp Sat Flow(s),veh/h/ln	1707	0	1810	1900	1900	1610	
Q Serve(g_s), s	14.2	0.0	3.0	11.7	18.4	0.0	
Cycle Q Clear(g_c), s	14.2	0.0	3.0	11.7	18.4	0.0	
Prop In Lane	0.51	0.49	1.00			1.00	
Lane Grp Cap(c), veh/h	377	0	514	1227	561	831	
V/C Ratio(X)	0.88	0.00	0.19	0.47	0.87	0.06	
Avail Cap(c_a), veh/h	455	0	514	1227	709	956	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	
Upstream Filter(I)	1.00	0.00	0.86	0.86	1.00	1.00	
Uniform Delay (d), s/veh	28.3	0.0	20.3	6.8	25.1	4.8	
Incr Delay (d2), s/veh	16.1	0.0	0.2	1.1	17.2	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	6.9	0.0	1.2	3.4	9.9	0.2	
Unsig. Movement Delay, s/veh							
LnGrp Delay(d),s/veh	44.4	0.0	20.5	7.9	42.3	4.9	
LnGrp LOS	D	A	C	A	D	A	
Approach Vol, veh/h	333			677	545		
Approach Delay, s/veh	44.4			9.7	38.6		
Approach LOS	D			A	D		
Timer - Assigned Phs		2			5	6	8
Phs Duration (G+Y+Rc), s		53.5			26.3	27.2	21.5
Change Period (Y+Rc), s		5.0			5.0	5.0	5.0
Max Green Setting (Gmax), s		45.0			12.0	28.0	20.0
Max Q Clear Time (g_c+I1), s		13.7			5.0	20.4	16.2
Green Ext Time (p_c), s		3.5			0.1	1.7	0.4

Intersection Summary

HCM 6th Ctrl Delay	27.3
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

Arco AM/PM Service Station  
5: Redlands Boulevard & Eucalyptus Avenue


Opening Year with Project (AM Peak Hour)



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	24	0	4	35	1	86	28	513	57	119	436	39
Future Volume (vph)	24	0	4	35	1	86	28	513	57	119	436	39
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	275		0	150		0	150		0	320		200
Storage Lanes	1		0	1		1	1		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850				0.850		0.985				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	1615	0	1805	1900	1615	1805	1872	0	1805	1900	1615
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1805	1615	0	1805	1900	1615	1805	1872	0	1805	1900	1615
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		510				109		5				64
Link Speed (mph)		40			40			50				50
Link Distance (ft)		2576			1616			680				546
Travel Time (s)		43.9			27.5			9.3				7.4
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	25	0	4	36	1	90	29	534	59	124	454	41
Shared Lane Traffic (%)												
Lane Group Flow (vph)	25	4	0	36	1	90	29	593	0	124	454	41
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		8			8			8				8
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	20		10	20		10	20		10	20		10
Turn Type	Prot	NA		Prot	NA	Perm	Prot	NA		Prot	NA	pt+ov
Protected Phases	3	8		7	4		5	2		1	6	63
Permitted Phases						4						
Detector Phase	3	8		7	4	4	5	2		1	6	63
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0	7.0	7.0	7.0		7.0	7.0	
Minimum Split (s)	12.0	30.0		12.0	30.0	30.0	12.0	12.0		12.0	12.0	
Total Split (s)	24.0	36.0		24.0	36.0	36.0	22.0	43.0		17.0	38.0	
Total Split (%)	20.0%	30.0%		20.0%	30.0%	30.0%	18.3%	35.8%		14.2%	31.7%	
Maximum Green (s)	19.0	31.0		19.0	31.0	31.0	17.0	38.0		12.0	33.0	
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None	None	None	C-Min		None	C-Min	
Walk Time (s)		7.0			7.0	7.0		7.0				

Arco AM/PM Service Station  
5: Redlands Boulevard & Eucalyptus Avenue

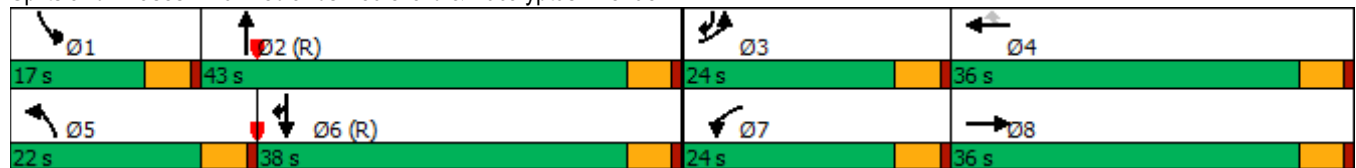
Opening Year with Project (AM Peak Hour)

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Flash Dont Walk (s)		18.0			18.0	18.0		16.0				
Pedestrian Calls (#/hr)		0			0	0		0				
Act Effct Green (s)	7.7	9.6		12.7	7.4	7.4	7.9	73.5		13.7	84.2	97.9
Actuated g/C Ratio	0.06	0.08		0.11	0.06	0.06	0.07	0.61		0.11	0.70	0.82
v/c Ratio	0.22	0.01		0.19	0.01	0.45	0.25	0.52		0.60	0.34	0.03
Control Delay	57.4	0.0		50.2	52.0	13.6	58.0	16.8		62.2	9.8	0.6
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.5	0.0
Total Delay	57.4	0.0		50.2	52.0	13.6	58.0	16.8		62.2	10.3	0.6
LOS	E	A		D	D	B	E	B		E	B	A
Approach Delay		49.5			24.3			18.7			20.0	
Approach LOS		D			C			B			C	
Queue Length 50th (ft)	19	0		24	1	0	22	251		93	146	0
Queue Length 95th (ft)	47	0		61	7	37	53	422		151	247	5
Internal Link Dist (ft)		2496			1536			600			466	
Turn Bay Length (ft)	275			150			150			320		200
Base Capacity (vph)	285	795		288	490	498	255	1148		216	1332	1457
Starvation Cap Reductn	0	0		0	0	0	0	0		0	492	0
Spillback Cap Reductn	0	0		0	0	0	0	0		0	0	0
Storage Cap Reductn	0	0		0	0	0	0	0		0	0	0
Reduced v/c Ratio	0.09	0.01		0.13	0.00	0.18	0.11	0.52		0.57	0.54	0.03

Intersection Summary

Area Type:	Other
Cycle Length:	120
Actuated Cycle Length:	120
Offset:	25 (21%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle:	90
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.60
Intersection Signal Delay:	20.4
Intersection LOS:	C
Intersection Capacity Utilization:	62.4%
ICU Level of Service:	B
Analysis Period (min):	15

Splits and Phases: 5: Redlands Boulevard & Eucalyptus Avenue



Arco AM/PM Service Station  
5: Redlands Boulevard & Eucalyptus Avenue

Opening Year with Project (AM Peak Hour)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	24	0	4	35	1	86	28	513	57	119	436	39
Future Volume (veh/h)	24	0	4	35	1	86	28	513	57	119	436	39
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	25	0	4	36	1	90	29	534	59	124	454	41
Peak Hour Factor	0.96	0.96	0.96	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	0	0	0
Cap, veh/h	60	0	104	74	138	117	65	1084	120	150	1314	1167
Arrive On Green	0.03	0.00	0.06	0.04	0.07	0.07	0.04	0.64	0.64	0.08	0.69	0.69
Sat Flow, veh/h	1810	0	1610	1810	1900	1610	1810	1681	186	1810	1900	1610
Grp Volume(v), veh/h	25	0	4	36	1	90	29	0	593	124	454	41
Grp Sat Flow(s),veh/h/ln	1810	0	1610	1810	1900	1610	1810	0	1867	1810	1900	1610
Q Serve(g_s), s	1.6	0.0	0.3	2.3	0.1	6.6	1.9	0.0	19.9	8.1	11.6	0.9
Cycle Q Clear(g_c), s	1.6	0.0	0.3	2.3	0.1	6.6	1.9	0.0	19.9	8.1	11.6	0.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.10	1.00		1.00
Lane Grp Cap(c), veh/h	60	0	104	74	138	117	65	0	1203	150	1314	1167
V/C Ratio(X)	0.42	0.00	0.04	0.49	0.01	0.77	0.44	0.00	0.49	0.82	0.35	0.04
Avail Cap(c_a), veh/h	287	0	416	287	491	416	256	0	1203	181	1314	1167
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	0.00	1.00	0.83	0.83	0.83
Uniform Delay (d), s/veh	56.9	0.0	52.6	56.3	51.6	54.7	56.6	0.0	11.1	54.1	7.5	4.7
Incr Delay (d2), s/veh	4.6	0.0	0.1	4.9	0.0	10.2	4.6	0.0	1.4	19.0	0.6	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	0.8	0.0	0.1	1.2	0.0	3.0	0.9	0.0	7.5	4.4	4.1	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	61.5	0.0	52.8	61.2	51.7	64.9	61.3	0.0	12.5	73.2	8.1	4.7
LnGrp LOS	E	A	D	E	D	E	E	A	B	E	A	A
Approach Vol, veh/h		29			127			622			619	
Approach Delay, s/veh		60.3			63.7			14.8			20.9	
Approach LOS		E			E			B			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	15.0	82.4	9.0	13.7	9.3	88.0	9.9	12.8				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	12.0	38.0	19.0	31.0	17.0	33.0	19.0	31.0				
Max Q Clear Time (g_c+I1), s	10.1	21.9	3.6	8.6	3.9	13.6	4.3	2.3				
Green Ext Time (p_c), s	0.0	3.1	0.0	0.2	0.0	2.4	0.0	0.0				

Intersection Summary

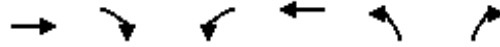
HCM 6th Ctrl Delay	22.9
HCM 6th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

Arco AM/PM Service Station  
6: Project West Driveway & Hemlock Avenue

Opening Year with Project (AM Peak Hour)



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	0	0	20	0	0	15
Future Volume (vph)	0	0	20	0	0	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>						0.865
Fl <sub>t</sub> Protected						0.950
Satd. Flow (prot)	1900	0	0	1805	1644	0
Fl <sub>t</sub> Permitted						0.950
Satd. Flow (perm)	1900	0	0	1805	1644	0
Link Speed (mph)	30			30	25	
Link Distance (ft)	2851			453	334	
Travel Time (s)	64.8			10.3	9.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	22	0	0	16
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	22	16	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	8			8	8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	10		20	20		10
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	16.0%
Analysis Period (min)	15
	ICU Level of Service A

Arco AM/PM Service Station  
6: Project West Driveway & Hemlock Avenue

Opening Year with Project (AM Peak Hour)

Intersection						
Int Delay, s/veh	7.5					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	0	0	20	0	0	15
Future Vol, veh/h	0	0	20	0	0	15
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	0	22	0	0	16

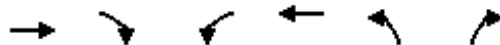
Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	1	0	45
Stage 1	-	-	-	-	1
Stage 2	-	-	-	-	44
Critical Hdwy	-	-	4.1	-	6.4
Critical Hdwy Stg 1	-	-	-	-	5.4
Critical Hdwy Stg 2	-	-	-	-	5.4
Follow-up Hdwy	-	-	2.2	-	3.5
Pot Cap-1 Maneuver	-	-	1635	-	970
Stage 1	-	-	-	-	1028
Stage 2	-	-	-	-	984
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1635	-	957
Mov Cap-2 Maneuver	-	-	-	-	957
Stage 1	-	-	-	-	1015
Stage 2	-	-	-	-	984

Approach	EB	WB	NB
HCM Control Delay, s	0	7.2	8.4
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	1090	-	-	1635	-
HCM Lane V/C Ratio	0.015	-	-	0.013	-
HCM Control Delay (s)	8.4	-	-	7.2	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0	-

Arco AM/PM Service Station  
7: Spruce Avenue & Project Driveway

Opening Year with Project (AM Peak Hour)



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	83	0	4	82	0	7
Future Volume (vph)	83	0	4	82	0	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>						0.865
Fl <sub>t</sub> Protected						0.998
Satd. Flow (prot)	1900	0	0	1896	1644	0
Fl <sub>t</sub> Permitted						0.998
Satd. Flow (perm)	1900	0	0	1896	1644	0
Link Speed (mph)	25			30		30
Link Distance (ft)	310			97		807
Travel Time (s)	8.5			2.2		18.3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	90	0	4	89	0	8
Shared Lane Traffic (%)						
Lane Group Flow (vph)	90	0	0	93	8	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0		12
Link Offset(ft)	0			0		0
Crosswalk Width(ft)	8			8		8
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	10		20		20	
Sign Control	Free			Free		Stop

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	19.0% ICU Level of Service A
Analysis Period (min)	15



Intersection						
Int Delay, s/veh	0.5					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	83	0	4	82	0	7
Future Vol, veh/h	83	0	4	82	0	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	90	0	4	89	0	8

Major/Minor	Major1	Major2	Minor1	Minor2
Conflicting Flow All	0	0	90	187
Stage 1	-	-	-	90
Stage 2	-	-	-	97
Critical Hdwy	-	-	4.1	6.4
Critical Hdwy Stg 1	-	-	-	5.4
Critical Hdwy Stg 2	-	-	-	5.4
Follow-up Hdwy	-	-	2.2	3.5
Pot Cap-1 Maneuver	-	-	1518	807
Stage 1	-	-	-	939
Stage 2	-	-	-	932
Platoon blocked, %	-	-	-	-
Mov Cap-1 Maneuver	-	-	1518	805
Mov Cap-2 Maneuver	-	-	-	805
Stage 1	-	-	-	936
Stage 2	-	-	-	932

Approach	EB	WB	NB
HCM Control Delay, s	0	0.3	8.7
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	973	-	-	1518	-
HCM Lane V/C Ratio	0.008	-	-	0.003	-
HCM Control Delay (s)	8.7	-	-	7.4	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0	-



Arco AM/PM Service Station  
1: Redlands Boulevard & Ironwood Avenue

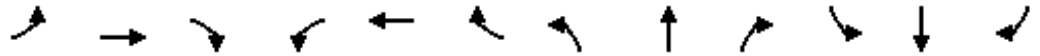
Opening Year with Project (PM Peak Hour)



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕		↕	↕	↕
Traffic Volume (vph)	118	29	79	9	28	11	93	726	8	11	702	215
Future Volume (vph)	118	29	79	9	28	11	93	726	8	11	702	215
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	400		0	435		115
Storage Lanes	0		0	0		0	1		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.953			0.970			0.998				0.850
Flt Protected		0.974			0.991		0.950			0.950		
Satd. Flow (prot)	0	1764	0	0	1826	0	1805	1896	0	1805	1900	1615
Flt Permitted		0.974			0.991		0.950			0.950		
Satd. Flow (perm)	0	1764	0	0	1826	0	1805	1896	0	1805	1900	1615
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		23			11			1				131
Link Speed (mph)		55			55			50				50
Link Distance (ft)		3945			2657			1313				1108
Travel Time (s)		48.9			32.9			17.9				15.1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.98	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	123	30	82	9	29	11	97	756	8	11	731	224
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	235	0	0	49	0	97	764	0	11	731	224
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		8			8			8				8
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	20		10	20		10	20		10	20		10
Turn Type	Split	NA		Split	NA		Prot	NA		Prot	NA	Perm
Protected Phases	8	8		4	4		5	2		1	6	
Permitted Phases												6
Detector Phase	8	8		4	4		5	2		1	6	6
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	7.0
Minimum Split (s)	12.0	12.0		12.0	12.0		16.2	12.0		16.2	12.0	12.0
Total Split (s)	22.0	22.0		22.0	22.0		17.0	39.0		17.0	39.0	39.0
Total Split (%)	22.0%	22.0%		22.0%	22.0%		17.0%	39.0%		17.0%	39.0%	39.0%
Maximum Green (s)	17.0	17.0		17.0	17.0		12.0	34.0		12.0	34.0	34.0
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)		5.0			5.0		5.0	5.0		5.0	5.0	5.0
Lead/Lag							Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None		None	None		None	Max		None	Max	Max
Walk Time (s)	7.0	7.0		7.0	7.0			7.0			7.0	7.0

Arco AM/PM Service Station  
 1: Redlands Boulevard & Ironwood Avenue

Opening Year with Project (PM Peak Hour)



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Flash Dont Walk (s)	18.0	18.0		18.0	18.0			16.0			16.0	16.0
Pedestrian Calls (#/hr)	0	0		0	0			0			0	0
Act Effct Green (s)		14.2			8.0		9.7	46.1		7.3	36.7	36.7
Actuated g/C Ratio		0.18			0.10		0.12	0.58		0.09	0.46	0.46
v/c Ratio		0.71			0.25		0.44	0.70		0.07	0.84	0.28
Control Delay		42.5			34.5		43.0	20.6		40.3	35.2	9.5
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	0.0
Total Delay		42.5			34.5		43.0	20.6		40.3	35.2	9.5
LOS		D			C		D	C		D	D	A
Approach Delay		42.5			34.5			23.1			29.3	
Approach LOS		D			C			C			C	
Queue Length 50th (ft)		110			20		51	289		6	392	33
Queue Length 95th (ft)		#214			55		103	#681		23	#692	90
Internal Link Dist (ft)		3865			2577			1233			1028	
Turn Bay Length (ft)							400			435		115
Base Capacity (vph)		405			409		279	1095		279	871	811
Starvation Cap Reductn		0			0		0	0		0	0	0
Spillback Cap Reductn		0			0		0	0		0	0	0
Storage Cap Reductn		0			0		0	0		0	0	0
Reduced v/c Ratio		0.58			0.12		0.35	0.70		0.04	0.84	0.28

Intersection Summary

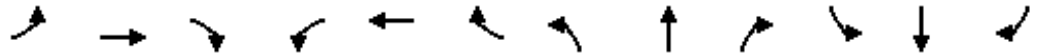
Area Type: Other  
 Cycle Length: 100  
 Actuated Cycle Length: 79.9  
 Natural Cycle: 90  
 Control Type: Actuated-Uncoordinated  
 Maximum v/c Ratio: 0.84  
 Intersection Signal Delay: 28.4      Intersection LOS: C  
 Intersection Capacity Utilization 81.6%      ICU Level of Service D  
 Analysis Period (min) 15  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

Splits and Phases: 1: Redlands Boulevard & Ironwood Avenue

17 s	39 s	22 s	22 s
17 s	39 s		

Arco AM/PM Service Station  
1: Redlands Boulevard & Ironwood Avenue

Opening Year with Project (PM Peak Hour)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕		↕	↕	↕
Traffic Volume (veh/h)	118	29	79	9	28	11	93	726	8	11	702	215
Future Volume (veh/h)	118	29	79	9	28	11	93	726	8	11	702	215
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	123	30	82	9	29	11	97	756	8	11	731	224
Peak Hour Factor	0.96	0.96	0.96	0.96	0.98	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	0	0	0
Cap, veh/h	147	36	98	20	63	24	144	941	10	34	838	710
Arrive On Green	0.16	0.16	0.16	0.06	0.06	0.06	0.08	0.50	0.50	0.02	0.44	0.44
Sat Flow, veh/h	913	223	609	332	1071	406	1810	1877	20	1810	1900	1610
Grp Volume(v), veh/h	235	0	0	49	0	0	97	0	764	11	731	224
Grp Sat Flow(s),veh/h/ln	1745	0	0	1810	0	0	1810	0	1896	1810	1900	1610
Q Serve(g_s), s	10.1	0.0	0.0	2.0	0.0	0.0	4.0	0.0	26.0	0.5	27.0	7.0
Cycle Q Clear(g_c), s	10.1	0.0	0.0	2.0	0.0	0.0	4.0	0.0	26.0	0.5	27.0	7.0
Prop In Lane	0.52		0.35	0.18		0.22	1.00		0.01	1.00		1.00
Lane Grp Cap(c), veh/h	282	0	0	107	0	0	144	0	950	34	838	710
V/C Ratio(X)	0.83	0.00	0.00	0.46	0.00	0.00	0.68	0.00	0.80	0.32	0.87	0.32
Avail Cap(c_a), veh/h	385	0	0	399	0	0	282	0	950	282	838	710
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	31.3	0.0	0.0	35.1	0.0	0.0	34.5	0.0	16.1	37.3	19.6	14.0
Incr Delay (d2), s/veh	10.9	0.0	0.0	3.0	0.0	0.0	5.4	0.0	7.2	5.2	12.2	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	4.6	0.0	0.0	0.9	0.0	0.0	1.8	0.0	10.7	0.2	12.6	2.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	42.3	0.0	0.0	38.1	0.0	0.0	40.0	0.0	23.2	42.5	31.8	15.2
LnGrp LOS	D	A	A	D	A	A	D	A	C	D	C	B
Approach Vol, veh/h		235		49				861			966	
Approach Delay, s/veh		42.3		38.1				25.1			28.0	
Approach LOS		D		D				C			C	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.5	43.7		9.5	11.1	39.0		17.5				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0				
Max Green Setting (Gmax), s	12.0	34.0		17.0	12.0	34.0		17.0				
Max Q Clear Time (g_c+I1), s	2.5	28.0		4.0	6.0	29.0		12.1				
Green Ext Time (p_c), s	0.0	2.4		0.1	0.1	2.3		0.5				

Intersection Summary

HCM 6th Ctrl Delay	28.7
HCM 6th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

Arco AM/PM Service Station  
2: Redlands Boulevard & Hemlock Avenue

Opening Year with Project (PM Peak Hour)



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	17	0	838	876	23
Future Volume (vph)	0	17	0	838	876	23
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>		0.865			0.997	
Fl <sub>t</sub> Protected						
Satd. Flow (prot)	0	1644	0	1900	1894	0
Fl <sub>t</sub> Permitted						
Satd. Flow (perm)	0	1644	0	1900	1894	0
Link Speed (mph)	30			50	50	
Link Distance (ft)	453			483	1313	
Travel Time (s)	10.3			6.6	17.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	18	0	911	952	25
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	18	0	911	977	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	8			8	8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	20	10	20			10
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	59.5%
Analysis Period (min)	15
	ICU Level of Service B

Arco AM/PM Service Station  
2: Redlands Boulevard & Hemlock Avenue

Opening Year with Project (PM Peak Hour)

Intersection						
Int Delay, s/veh	0.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↗		↑	↘	
Traffic Vol, veh/h	0	17	0	838	876	23
Future Vol, veh/h	0	17	0	838	876	23
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	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	18	0	911	952	25

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	-	965	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.2	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.3	-	-	-	-
Pot Cap-1 Maneuver	0	312	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	312	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	17.3	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	312	-	-
HCM Lane V/C Ratio	-	0.059	-	-
HCM Control Delay (s)	-	17.3	-	-
HCM Lane LOS	-	C	-	-
HCM 95th %tile Q(veh)	-	0.2	-	-

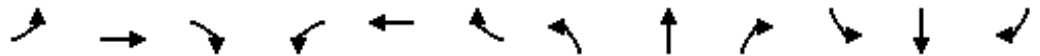
3: Redlands Boulevard & Spruce Avenue/SR-60 WB



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↗	↖	↗	↖	↖	↗
Traffic Volume (vph)	22	30	54	84	29	27	68	768	208	267	530	0
Future Volume (vph)	22	30	54	84	29	27	68	768	208	267	530	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	115		250	340		0
Storage Lanes	0		0	0		0	1		1	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.931			0.974				0.850			
Flt Protected		0.990			0.971		0.950			0.950		
Satd. Flow (prot)	0	1751	0	0	1797	0	1805	1900	1615	1805	1900	0
Flt Permitted		0.900			0.971		0.950			0.950		
Satd. Flow (perm)	0	1592	0	0	1797	0	1805	1900	1615	1805	1900	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		48			11				217			
Link Speed (mph)		30			45			50			50	
Link Distance (ft)		97			1350			791			483	
Travel Time (s)		2.2			20.5			10.8			6.6	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	23	31	56	88	30	28	71	800	217	278	552	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	110	0	0	146	0	71	800	217	278	552	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		8			8			8			8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	20		10	20		10	20		10	20		10
Turn Type	Perm	NA		Split	NA		Prot	NA	pm+ov	Prot	NA	
Protected Phases		4		8	8		5	2	8	1	6	
Permitted Phases	4								2			
Detector Phase	4	4		8	8		5	2	8	1	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		7.0	7.0	7.0	7.0	7.0	
Minimum Split (s)	12.0	12.0		12.0	12.0		16.2	12.0	12.0	16.2	12.0	
Total Split (s)	12.0	12.0		12.0	12.0		21.0	39.0	12.0	22.0	40.0	
Total Split (%)	14.1%	14.1%		14.1%	14.1%		24.7%	45.9%	14.1%	25.9%	47.1%	
Maximum Green (s)	7.0	7.0		7.0	7.0		16.0	34.0	7.0	17.0	35.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)		5.0			5.0		5.0	5.0	5.0	5.0	5.0	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None		None	None		None	C-Min	None	None	C-Min	
Act Effect Green (s)		7.0			7.5		9.0	37.0	45.5	15.9	46.3	



3: Redlands Boulevard & Spruce Avenue/SR-60 WB



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio		0.08			0.09		0.11	0.44	0.54	0.19	0.54	
v/c Ratio		0.63			0.87		0.37	0.97	0.23	0.82	0.53	
Control Delay		40.1			80.2		38.4	46.7	3.2	53.8	17.1	
Queue Delay		0.0			0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay		40.1			80.2		38.4	46.7	3.2	53.8	17.1	
LOS		D			F		D	D	A	D	B	
Approach Delay		40.1			80.2			37.5			29.4	
Approach LOS		D			F			D			C	
Queue Length 50th (ft)		32			73		32	~474	19	141	198	
Queue Length 95th (ft)		#101			#187		m43	m#623	m22	#258	324	
Internal Link Dist (ft)		17			1270			711			403	
Turn Bay Length (ft)							115		250	340		
Base Capacity (vph)		175			168		339	826	964	361	1035	
Starvation Cap Reductn		0			0		0	0	0	0	0	
Spillback Cap Reductn		0			0		0	0	0	0	0	
Storage Cap Reductn		0			0		0	0	0	0	0	
Reduced v/c Ratio		0.63			0.87		0.21	0.97	0.23	0.77	0.53	

Intersection Summary

Area Type: Other  
 Cycle Length: 85  
 Actuated Cycle Length: 85  
 Offset: 46 (54%), Referenced to phase 2:NBT and 6:SBT, Start of Green  
 Natural Cycle: 90  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.97  
 Intersection Signal Delay: 37.4  
 Intersection LOS: D  
 Intersection Capacity Utilization 86.0%  
 ICU Level of Service E  
 Analysis Period (min) 15  
 ~ 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.

Splits and Phases: 3: Redlands Boulevard & Spruce Avenue/SR-60 WB



3: Redlands Boulevard & Spruce Avenue/SR-60 WB



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↑	↗	↖	↘	↙
Traffic Volume (veh/h)	22	30	54	84	29	27	68	768	208	267	530	0
Future Volume (veh/h)	22	30	54	84	29	27	68	768	208	267	530	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	23	31	56	88	30	28	71	800	217	278	552	0
Peak Hour Factor	0.96	0.96	0.96	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	0	0	0
Cap, veh/h	29	39	70	89	30	28	121	812	821	317	1018	0
Arrive On Green	0.08	0.08	0.08	0.08	0.08	0.08	0.07	0.43	0.43	0.18	0.54	0.00
Sat Flow, veh/h	360	486	878	1076	367	342	1810	1900	1610	1810	1900	0
Grp Volume(v), veh/h	110	0	0	146	0	0	71	800	217	278	552	0
Grp Sat Flow(s),veh/h/ln	1724	0	0	1785	0	0	1810	1900	1610	1810	1900	0
Q Serve(g_s), s	5.3	0.0	0.0	6.9	0.0	0.0	3.2	35.4	6.5	12.7	16.2	0.0
Cycle Q Clear(g_c), s	5.3	0.0	0.0	6.9	0.0	0.0	3.2	35.4	6.5	12.7	16.2	0.0
Prop In Lane	0.21		0.51	0.60		0.19	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	138	0	0	147	0	0	121	812	821	317	1018	0
V/C Ratio(X)	0.80	0.00	0.00	0.99	0.00	0.00	0.59	0.99	0.26	0.88	0.54	0.00
Avail Cap(c_a), veh/h	142	0	0	147	0	0	341	812	821	362	1018	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	38.4	0.0	0.0	39.0	0.0	0.0	38.5	24.1	11.8	34.2	12.9	0.0
Incr Delay (d2), s/veh	26.1	0.0	0.0	72.1	0.0	0.0	4.4	28.2	0.8	19.1	2.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.2	0.0	0.0	5.8	0.0	0.0	1.5	19.8	2.6	6.8	6.2	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	64.6	0.0	0.0	111.1	0.0	0.0	43.0	52.3	12.6	53.3	15.0	0.0
LnGrp LOS	E	A	A	F	A	A	D	D	B	D	B	A
Approach Vol, veh/h		110			146			1088				830
Approach Delay, s/veh		64.6			111.1			43.8				27.8
Approach LOS		E			F			D				C
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	19.9	41.3		11.8	10.7	50.5		12.0				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0				
Max Green Setting (Gmax), s	17.0	34.0		7.0	16.0	35.0		7.0				
Max Q Clear Time (g_c+I1), s	14.7	37.4		7.3	5.2	18.2		8.9				
Green Ext Time (p_c), s	0.2	0.0		0.0	0.1	2.8		0.0				

Intersection Summary

HCM 6th Ctrl Delay	43.3
HCM 6th LOS	D

Arco AM/PM Service Station  
4: Redlands Boulevard & SR-60 EB

Opening Year with Project (PM Peak Hour)



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	413	215	109	611	559	73
Future Volume (vph)	413	215	109	611	559	73
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	350			120
Storage Lanes	1	0	1			1
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.954					0.850
Flt Protected	0.968		0.950			
Satd. Flow (prot)	1755	0	1805	1900	1900	1615
Flt Permitted	0.968		0.950			
Satd. Flow (perm)	1755	0	1805	1900	1900	1615
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	34					48
Link Speed (mph)	45			50	50	
Link Distance (ft)	1470			546	788	
Travel Time (s)	22.3			7.4	10.7	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	454	236	120	671	614	80
Shared Lane Traffic (%)						
Lane Group Flow (vph)	690	0	120	671	614	80
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	8			8	8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	20	10	20			10
Turn Type	Prot		Prot	NA	NA	Perm
Protected Phases	3		5	2	6	
Permitted Phases						6
Detector Phase	3		5	2	6	6
Switch Phase						
Minimum Initial (s)	7.0		7.0	7.0	7.0	7.0
Minimum Split (s)	15.0		16.2	12.0	12.0	12.0
Total Split (s)	35.0		17.0	50.0	33.0	33.0
Total Split (%)	41.2%		20.0%	58.8%	38.8%	38.8%
Maximum Green (s)	30.0		12.0	45.0	28.0	28.0
Yellow Time (s)	4.0		4.0	4.0	4.0	4.0
All-Red Time (s)	1.0		1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0		5.0	5.0	5.0	5.0
Lead/Lag			Lag		Lead	Lead
Lead-Lag Optimize?			Yes		Yes	Yes
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Recall Mode	None		None	C-Min	C-Min	C-Min
Act Effect Green (s)	34.1		10.2	40.9	28.1	28.1

Arco AM/PM Service Station  
4: Redlands Boulevard & SR-60 EB

Opening Year with Project (PM Peak Hour)

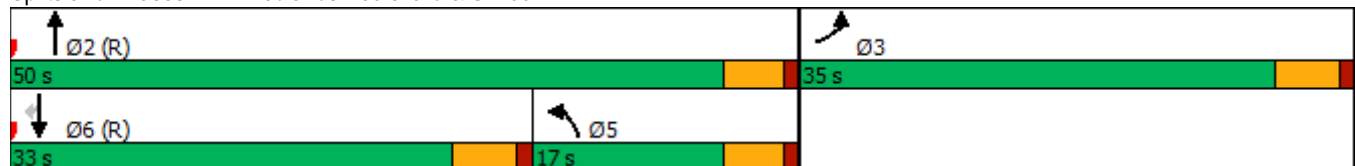


Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Actuated g/C Ratio	0.40		0.12	0.48	0.33	0.33
v/c Ratio	0.95		0.56	0.73	0.98	0.14
Control Delay	51.2		44.9	22.6	57.3	9.0
Queue Delay	0.0		0.0	1.0	0.0	0.0
Total Delay	51.2		44.9	23.6	57.3	9.0
LOS	D		D	C	E	A
Approach Delay	51.2			26.8	51.8	
Approach LOS	D			C	D	
Queue Length 50th (ft)	~391		61	253	345	22
Queue Length 95th (ft)	#616		112	366	m#537	m33
Internal Link Dist (ft)	1390			466	708	
Turn Bay Length (ft)			350			120
Base Capacity (vph)	724		254	1005	626	565
Starvation Cap Reductn	0		0	138	0	0
Spillback Cap Reductn	0		0	0	0	0
Storage Cap Reductn	0		0	0	0	0
Reduced v/c Ratio	0.95		0.47	0.77	0.98	0.14

Intersection Summary

Area Type: Other  
 Cycle Length: 85  
 Actuated Cycle Length: 85  
 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green  
 Natural Cycle: 90  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.98  
 Intersection Signal Delay: 42.5  
 Intersection LOS: D  
 Intersection Capacity Utilization 87.4%  
 ICU Level of Service E  
 Analysis Period (min) 15  
 ~ 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.

Splits and Phases: 4: Redlands Boulevard & SR-60 EB



Arco AM/PM Service Station  
4: Redlands Boulevard & SR-60 EB

Opening Year with Project (PM Peak Hour)



Movement	EBL	EBR	NBL	NBT	SBT	SBR	
Lane Configurations							
Traffic Volume (veh/h)	413	215	109	611	559	73	
Future Volume (veh/h)	413	215	109	611	559	73	
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	454	236	120	671	614	80	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	
Percent Heavy Veh, %	0	0	0	0	0	0	
Cap, veh/h	403	209	255	1006	626	530	
Arrive On Green	0.35	0.35	0.14	0.53	0.33	0.33	
Sat Flow, veh/h	1141	593	1810	1900	1900	1610	
Grp Volume(v), veh/h	691	0	120	671	614	80	
Grp Sat Flow(s),veh/h/ln	1736	0	1810	1900	1900	1610	
Q Serve(g_s), s	30.0	0.0	5.2	21.8	27.2	3.0	
Cycle Q Clear(g_c), s	30.0	0.0	5.2	21.8	27.2	3.0	
Prop In Lane	0.66	0.34	1.00			1.00	
Lane Grp Cap(c), veh/h	613	0	255	1006	626	530	
V/C Ratio(X)	1.13	0.00	0.47	0.67	0.98	0.15	
Avail Cap(c_a), veh/h	613	0	255	1006	626	530	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	
Upstream Filter(I)	1.00	0.00	0.79	0.79	1.00	1.00	
Uniform Delay (d), s/veh	27.5	0.0	33.6	14.6	28.2	20.1	
Incr Delay (d2), s/veh	76.8	0.0	1.1	2.8	31.6	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	24.2	0.0	2.2	8.4	16.4	1.1	
Unsig. Movement Delay, s/veh							
LnGrp Delay(d),s/veh	104.3	0.0	34.6	17.3	59.9	20.7	
LnGrp LOS	F	A	C	B	E	C	
Approach Vol, veh/h	691			791	694		
Approach Delay, s/veh	104.3			20.0	55.3		
Approach LOS	F			B	E		
Timer - Assigned Phs		2			5	6	8
Phs Duration (G+Y+Rc), s		50.0			17.0	33.0	35.0
Change Period (Y+Rc), s		5.0			5.0	5.0	5.0
Max Green Setting (Gmax), s		45.0			12.0	28.0	30.0
Max Q Clear Time (g_c+11), s		23.8			7.2	29.2	32.0
Green Ext Time (p_c), s		4.0			0.1	0.0	0.0

Intersection Summary

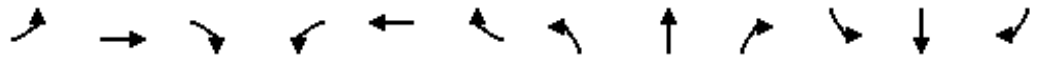
HCM 6th Ctrl Delay	58.0
HCM 6th LOS	E

Notes

User approved volume balancing among the lanes for turning movement.

Arco AM/PM Service Station  
5: Redlands Boulevard & Eucalyptus Avenue

Opening Year with Project (PM Peak Hour)



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	38	0	17	99	0	234	1	460	83	166	598	17
Future Volume (vph)	38	0	17	99	0	234	1	460	83	166	598	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	275		0	150		0	150		0	320		200
Storage Lanes	1		0	1		1	1		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850				0.850		0.977				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	1615	0	1805	1900	1615	1805	1856	0	1805	1900	1615
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1805	1615	0	1805	1900	1615	1805	1856	0	1805	1900	1615
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		352				493		8				64
Link Speed (mph)		40			40			50				50
Link Distance (ft)		2576			1616			680				546
Travel Time (s)		43.9			27.5			9.3				7.4
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
Adj. Flow (vph)	44	0	20	114	0	269	1	529	95	191	687	20
Shared Lane Traffic (%)												
Lane Group Flow (vph)	44	20	0	114	0	269	1	624	0	191	687	20
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		8			8			8				8
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	20		10	20		10	20		10	20		10
Turn Type	Prot	NA		Prot		Perm	Prot	NA		Prot	NA	pm+ov
Protected Phases	3	8		7	4		5	2		1	6	3
Permitted Phases						4						6
Detector Phase	3	8		7	4	4	5	2		1	6	3
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0	7.0	7.0	7.0		7.0	7.0	7.0
Minimum Split (s)	16.7	30.0		36.0	30.0	30.0	13.7	12.0		16.7	12.0	16.7
Total Split (s)	24.0	36.0		24.0	36.0	36.0	22.0	43.0		17.0	38.0	24.0
Total Split (%)	20.0%	30.0%		20.0%	30.0%	30.0%	18.3%	35.8%		14.2%	31.7%	20.0%
Maximum Green (s)	19.0	31.0		19.0	31.0	31.0	17.0	38.0		12.0	33.0	19.0
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None		None	None	None	None	C-Min		None	C-Min	None
Walk Time (s)		7.0			7.0	7.0		7.0				

Arco AM/PM Service Station  
5: Redlands Boulevard & Eucalyptus Avenue

Opening Year with Project (PM Peak Hour)

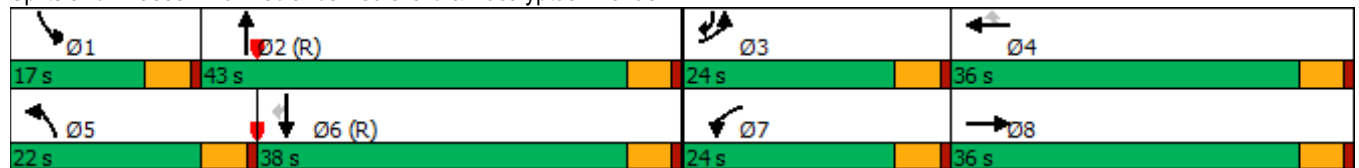


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Flash Dont Walk (s)		18.0			18.0	18.0		16.0				
Pedestrian Calls (#/hr)		0			0	0		0				
Act Effct Green (s)	8.7	7.0		16.0		9.5	7.0	62.5		21.7	86.8	100.5
Actuated g/C Ratio	0.07	0.06		0.13		0.08	0.06	0.52		0.18	0.72	0.84
v/c Ratio	0.34	0.05		0.47		0.46	0.01	0.64		0.59	0.50	0.01
Control Delay	59.5	0.2		54.4		2.6	54.0	26.4		52.9	11.0	0.0
Queue Delay	0.0	0.0		0.0		0.0	0.0	0.0		0.0	1.5	0.0
Total Delay	59.5	0.2		54.4		2.6	54.0	26.4		52.9	12.5	0.0
LOS	E	A		D		A	D	C		D	B	A
Approach Delay		41.0			18.0			26.5			20.8	
Approach LOS		D			B			C			C	
Queue Length 50th (ft)	33	0		79		0	1	325		138	182	0
Queue Length 95th (ft)	67	0		136		0	7	526		204	442	0
Internal Link Dist (ft)		2496			1536			600			466	
Turn Bay Length (ft)	275			150			150			320		200
Base Capacity (vph)	285	678		289		782	255	969		326	1374	1480
Starvation Cap Reductn	0	0		0		0	0	0		0	472	0
Spillback Cap Reductn	0	0		0		0	0	0		0	0	0
Storage Cap Reductn	0	0		0		0	0	0		0	0	0
Reduced v/c Ratio	0.15	0.03		0.39		0.34	0.00	0.64		0.59	0.76	0.01

Intersection Summary

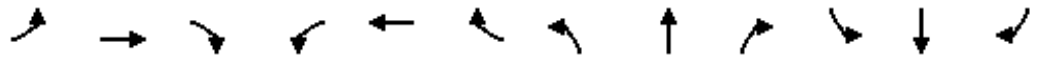
Area Type:	Other
Cycle Length:	120
Actuated Cycle Length:	120
Offset:	0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle:	115
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.64
Intersection Signal Delay:	22.7
Intersection LOS:	C
Intersection Capacity Utilization:	67.0%
ICU Level of Service:	C
Analysis Period (min):	15

Splits and Phases: 5: Redlands Boulevard & Eucalyptus Avenue



Arco AM/PM Service Station  
5: Redlands Boulevard & Eucalyptus Avenue

Opening Year with Project (PM Peak Hour)

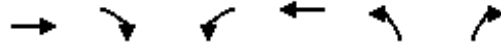


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	38	0	17	99	0	234	1	460	83	166	598	17
Future Volume (veh/h)	38	0	17	99	0	234	1	460	83	166	598	17
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	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	44	0	20	114	0	269	1	529	95	191	687	20
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
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	81	0	244	142	352	298	3	789	142	181	1143	1041
Arrive On Green	0.04	0.00	0.15	0.08	0.00	0.19	0.00	0.50	0.50	0.10	0.60	0.60
Sat Flow, veh/h	1810	0	1610	1810	1900	1610	1810	1568	282	1810	1900	1610
Grp Volume(v), veh/h	44	0	20	114	0	269	1	0	624	191	687	20
Grp Sat Flow(s),veh/h/ln	1810	0	1610	1810	1900	1610	1810	0	1849	1810	1900	1610
Q Serve(g_s), s	2.9	0.0	1.3	7.4	0.0	19.6	0.1	0.0	30.3	12.0	27.1	0.5
Cycle Q Clear(g_c), s	2.9	0.0	1.3	7.4	0.0	19.6	0.1	0.0	30.3	12.0	27.1	0.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.15	1.00		1.00
Lane Grp Cap(c), veh/h	81	0	244	142	352	298	3	0	931	181	1143	1041
V/C Ratio(X)	0.54	0.00	0.08	0.81	0.00	0.90	0.29	0.00	0.67	1.06	0.60	0.02
Avail Cap(c_a), veh/h	287	0	416	287	491	416	256	0	931	181	1143	1041
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	0.00	1.00	0.14	0.14	0.14
Uniform Delay (d), s/veh	56.1	0.0	43.7	54.4	0.0	47.8	59.8	0.0	22.3	54.0	14.9	7.6
Incr Delay (d2), s/veh	5.5	0.0	0.1	10.2	0.0	17.8	40.5	0.0	3.8	41.1	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	0.0	0.5	3.7	0.0	9.2	0.1	0.0	13.0	7.3	10.3	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	61.6	0.0	43.9	64.6	0.0	65.6	100.3	0.0	26.2	95.1	15.3	7.6
LnGrp LOS	E	A	D	E	A	E	F	A	C	F	B	A
Approach Vol, veh/h		64			383			625			898	
Approach Delay, s/veh		56.1			65.3			26.3			32.1	
Approach LOS		E			E			C			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	17.0	65.4	10.4	27.2	5.2	77.2	14.4	23.2				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	12.0	38.0	19.0	31.0	17.0	33.0	19.0	31.0				
Max Q Clear Time (g_c+I1), s	14.0	32.3	4.9	21.6	2.1	29.1	9.4	3.3				
Green Ext Time (p_c), s	0.0	1.8	0.1	0.6	0.0	1.5	0.2	0.1				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay			37.5									
HCM 6th LOS			D									



Arco AM/PM Service Station  
6: Project West Driveway & Hemlock Avenue

Opening Year with Project (PM Peak Hour)



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	0	0	23	0	0	17
Future Volume (vph)	0	0	23	0	0	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>						0.865
Fl <sub>t</sub> Protected						0.950
Satd. Flow (prot)	1900	0	0	1805	1644	0
Fl <sub>t</sub> Permitted						0.950
Satd. Flow (perm)	1900	0	0	1805	1644	0
Link Speed (mph)	30			30	25	
Link Distance (ft)	2851			453	334	
Travel Time (s)	64.8			10.3	9.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	25	0	0	18
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	25	18	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	8			8	8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	10		20	20		10
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	16.0%
Analysis Period (min)	15
	ICU Level of Service A

Arco AM/PM Service Station  
6: Project West Driveway & Hemlock Avenue

Opening Year with Project (PM Peak Hour)

Intersection						
Int Delay, s/veh	7.5					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	0	0	23	0	0	17
Future Vol, veh/h	0	0	23	0	0	17
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	0	25	0	0	18

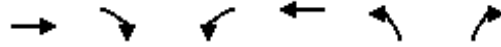
Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	1	0	51
Stage 1	-	-	-	-	1
Stage 2	-	-	-	-	50
Critical Hdwy	-	-	4.1	-	6.4
Critical Hdwy Stg 1	-	-	-	-	5.4
Critical Hdwy Stg 2	-	-	-	-	5.4
Follow-up Hdwy	-	-	2.2	-	3.5
Pot Cap-1 Maneuver	-	-	1635	-	963
Stage 1	-	-	-	-	1028
Stage 2	-	-	-	-	978
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1635	-	949
Mov Cap-2 Maneuver	-	-	-	-	949
Stage 1	-	-	-	-	1013
Stage 2	-	-	-	-	978

Approach	EB	WB	NB
HCM Control Delay, s	0	7.2	8.4
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	1090	-	-	1635	-
HCM Lane V/C Ratio	0.017	-	-	0.015	-
HCM Control Delay (s)	8.4	-	-	7.2	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Arco AM/PM Service Station  
7: Spruce Avenue & Project Driveway

Opening Year with Project (PM Peak Hour)



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	94	0	6	91	0	12
Future Volume (vph)	94	0	6	91	0	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>						0.865
Fl <sub>t</sub> Protected						0.997
Satd. Flow (prot)	1900	0	0	1894	1644	0
Fl <sub>t</sub> Permitted						0.997
Satd. Flow (perm)	1900	0	0	1894	1644	0
Link Speed (mph)	25			30		30
Link Distance (ft)	310			97		807
Travel Time (s)	8.5			2.2		18.3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	102	0	7	99	0	13
Shared Lane Traffic (%)						
Lane Group Flow (vph)	102	0	0	106	13	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0		12
Link Offset(ft)	0			0		0
Crosswalk Width(ft)	8			8		8
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	10		20		20	
Sign Control	Free			Free		Stop

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	20.9%
Analysis Period (min)	15
	ICU Level of Service A

Arco AM/PM Service Station  
7: Spruce Avenue & Project Driveway

Opening Year with Project (PM Peak Hour)

Intersection						
Int Delay, s/veh	0.8					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	94	0	6	91	0	12
Future Vol, veh/h	94	0	6	91	0	12
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	102	0	7	99	0	13

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	102	0	215
Stage 1	-	-	-	-	102
Stage 2	-	-	-	-	113
Critical Hdwy	-	-	4.1	-	6.4
Critical Hdwy Stg 1	-	-	-	-	5.4
Critical Hdwy Stg 2	-	-	-	-	5.4
Follow-up Hdwy	-	-	2.2	-	3.5
Pot Cap-1 Maneuver	-	-	1503	-	778
Stage 1	-	-	-	-	927
Stage 2	-	-	-	-	917
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1503	-	774
Mov Cap-2 Maneuver	-	-	-	-	774
Stage 1	-	-	-	-	922
Stage 2	-	-	-	-	917

Approach	EB	WB	NB
HCM Control Delay, s	0	0.5	8.8
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	959	-	-	1503	-
HCM Lane V/C Ratio	0.014	-	-	0.004	-
HCM Control Delay (s)	8.8	-	-	7.4	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0	-

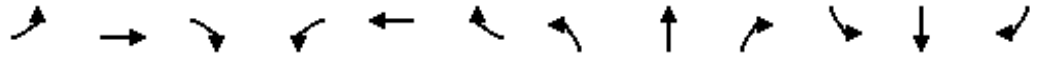
## **APPENDIX I**

### **LEVEL OF SERVICE WORKSHEETS –GENERAL PLAN BUILDOUT- ALTERNATIVES**

**GENERAL PLAN BUILDOUT WITHOUT PROJECT - ALTERNATIVE 1**

Arco AM/PM Service Station  
1: Redlands Boulevard & Ironwood Avenue

GPBO (2040) Without Project (AM Peak Hour)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↕			↕↕		↕	↕↕		↕	↕↕	↕
Traffic Volume (veh/h)	133	150	116	20	100	20	90	730	50	30	770	130
Future Volume (veh/h)	133	150	116	20	100	20	90	730	50	30	770	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	139	156	121	21	104	21	94	760	52	31	802	135
Peak Hour Factor	0.96	0.96	0.96	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	0	0	0
Cap, veh/h	193	224	181	68	346	72	214	1218	83	116	1087	485
Arrive On Green	0.17	0.17	0.17	0.13	0.13	0.13	0.12	0.36	0.36	0.06	0.30	0.30
Sat Flow, veh/h	1147	1331	1072	512	2617	547	1810	3428	234	1810	3610	1610
Grp Volume(v), veh/h	223	0	193	77	0	69	94	400	412	31	802	135
Grp Sat Flow(s),veh/h/ln	1843	0	1707	1874	0	1802	1810	1805	1858	1810	1805	1610
Q Serve(g_s), s	8.2	0.0	7.6	2.7	0.0	2.5	3.5	13.1	13.1	1.2	14.3	4.6
Cycle Q Clear(g_c), s	8.2	0.0	7.6	2.7	0.0	2.5	3.5	13.1	13.1	1.2	14.3	4.6
Prop In Lane	0.62		0.63	0.27		0.30	1.00		0.13	1.00		1.00
Lane Grp Cap(c), veh/h	310	0	288	248	0	238	214	641	660	116	1087	485
V/C Ratio(X)	0.72	0.00	0.67	0.31	0.00	0.29	0.44	0.62	0.62	0.27	0.74	0.28
Avail Cap(c_a), veh/h	670	0	621	682	0	655	304	934	962	279	1818	811
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	28.1	0.0	27.9	28.1	0.0	28.0	29.3	19.1	19.1	31.8	22.4	19.0
Incr Delay (d2), s/veh	3.1	0.0	2.7	0.7	0.0	0.7	1.4	1.0	1.0	1.2	1.0	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	3.4	0.0	2.9	1.1	0.0	1.0	1.4	4.8	4.9	0.5	5.3	1.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	31.2	0.0	30.6	28.8	0.0	28.7	30.7	20.1	20.1	33.0	23.4	19.4
LnGrp LOS	C	A	C	C	A	C	C	C	C	C	C	B
Approach Vol, veh/h		416			146			906			968	
Approach Delay, s/veh		30.9			28.7			21.2			23.2	
Approach LOS		C			C			C			C	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.6	30.4		14.4	13.5	26.5		17.0				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0				
Max Green Setting (Gmax), s	11.0	37.0		26.0	12.0	36.0		26.0				
Max Q Clear Time (g_c+I1), s	3.2	15.1		4.7	5.5	16.3		10.2				
Green Ext Time (p_c), s	0.0	4.5		0.6	0.1	5.3		1.9				

Intersection Summary

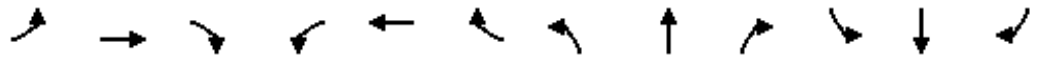
HCM 6th Ctrl Delay	24.1
HCM 6th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

Arco AM/PM Service Station  
2: Redlands Boulevard & Hemlock Avenue

GPBO (2040) Without Project (AM Peak Hour)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	36	50	50	36	30	153	770	100	150	758	100
Future Volume (veh/h)	30	36	50	50	36	30	153	770	100	150	758	100
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	33	39	54	54	39	33	166	837	109	163	824	109
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	206	89	124	187	118	100	219	937	122	219	934	124
Arrive On Green	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.57	0.57	0.12	0.57	0.57
Sat Flow, veh/h	1349	721	999	1324	951	804	1810	1647	214	1810	1643	217
Grp Volume(v), veh/h	33	0	93	54	0	72	166	0	946	163	0	933
Grp Sat Flow(s),veh/h/ln	1349	0	1720	1324	0	1755	1810	0	1861	1810	0	1861
Q Serve(g_s), s	1.8	0.0	4.0	3.2	0.0	3.0	7.1	0.0	35.9	7.0	0.0	34.9
Cycle Q Clear(g_c), s	4.9	0.0	4.0	7.2	0.0	3.0	7.1	0.0	35.9	7.0	0.0	34.9
Prop In Lane	1.00		0.58	1.00		0.46	1.00		0.12	1.00		0.12
Lane Grp Cap(c), veh/h	206	0	213	187	0	217	219	0	1059	219	0	1058
V/C Ratio(X)	0.16	0.00	0.44	0.29	0.00	0.33	0.76	0.00	0.89	0.74	0.00	0.88
Avail Cap(c_a), veh/h	324	0	363	303	0	371	360	0	1689	337	0	1665
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	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	34.4	0.0	32.7	36.0	0.0	32.2	34.2	0.0	15.2	34.2	0.0	15.0
Incr Delay (d2), s/veh	0.4	0.0	1.4	0.8	0.0	0.9	5.3	0.0	4.1	5.0	0.0	3.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.0	1.7	1.0	0.0	1.3	3.2	0.0	12.5	3.1	0.0	12.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	34.8	0.0	34.1	36.8	0.0	33.1	39.5	0.0	19.3	39.1	0.0	18.7
LnGrp LOS	C	A	C	D	A	C	D	A	B	D	A	B
Approach Vol, veh/h		126			126			1112			1096	
Approach Delay, s/veh		34.3			34.7			22.3			21.7	
Approach LOS		C			C			C			C	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	14.7	50.8		15.0	14.8	50.8		15.0				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0				
Max Green Setting (Gmax), s	15.0	73.0		17.0	16.0	72.0		17.0				
Max Q Clear Time (g_c+I1), s	9.0	37.9		6.9	9.1	36.9		9.2				
Green Ext Time (p_c), s	0.2	7.9		0.3	0.2	7.7		0.3				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				23.3								
HCM 6th LOS				C								



Arco AM/PM Service Station  
3: Redlands Boulevard & SR-60 WB

GPBO (2040) Without Project (AM Peak Hour)



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↙↙	↙	↕↕	↙	↙	↕↕
Traffic Volume (veh/h)	530	240	751	286	334	490
Future Volume (veh/h)	530	240	751	286	334	490
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	570	258	808	308	359	527
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	603	268	1014	721	547	2407
Arrive On Green	0.17	0.17	0.28	0.28	0.30	0.67
Sat Flow, veh/h	3619	1610	3705	1610	1810	3705
Grp Volume(v), veh/h	570	258	808	308	359	527
Grp Sat Flow(s),veh/h/ln	1810	1610	1805	1610	1810	1805
Q Serve(g_s), s	9.3	9.5	12.4	7.8	10.4	3.4
Cycle Q Clear(g_c), s	9.3	9.5	12.4	7.8	10.4	3.4
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	603	268	1014	721	547	2407
V/C Ratio(X)	0.94	0.96	0.80	0.43	0.66	0.22
Avail Cap(c_a), veh/h	603	268	1143	778	547	2407
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.84	0.84	1.00	1.00
Uniform Delay (d), s/veh	24.7	24.8	20.0	11.3	18.2	3.9
Incr Delay (d2), s/veh	23.9	44.2	5.5	1.6	2.8	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	5.5	11.2	5.1	3.4	3.9	0.6
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	48.6	69.1	25.5	12.9	21.1	4.1
LnGrp LOS	D	E	C	B	C	A
Approach Vol, veh/h	828		1116			886
Approach Delay, s/veh	55.0		22.0			11.0
Approach LOS	D		C			B
Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	23.1	21.9		15.0		45.0
Change Period (Y+Rc), s	5.0	5.0		5.0		5.0
Max Green Setting (Gmax), s	16.0	19.0		10.0		40.0
Max Q Clear Time (g_c+I1), s	12.4	14.4		11.5		5.4
Green Ext Time (p_c), s	0.4	2.4		0.0		3.3

Intersection Summary





















HCM 6th Ctrl Delay	28.2
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

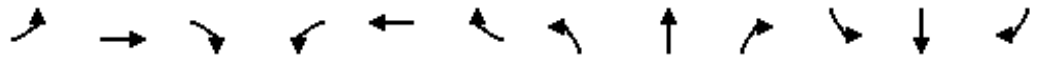
Arco AM/PM Service Station  
4: Redlands Boulevard & SR-60 EB

GPBO (2040) Without Project (AM Peak Hour)

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	285	0	269	0	0	0	0	779	220	180	840	0
Future Volume (veh/h)	285	0	269	0	0	0	0	779	220	180	840	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900				0	1900	1900	1900	1900	0
Adj Flow Rate, veh/h	401	0	195				0	847	239	196	913	0
Peak Hour Factor	0.92	0.92	0.92				0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0				0	0	0	0	0	0
Cap, veh/h	582	0	259				0	1903	849	343	2514	0
Arrive On Green	0.16	0.00	0.16				0.00	0.53	0.53	0.10	0.70	0.00
Sat Flow, veh/h	3619	0	1610				0	3705	1610	3510	3705	0
Grp Volume(v), veh/h	401	0	195				0	847	239	196	913	0
Grp Sat Flow(s),veh/h/ln	1810	0	1610				0	1805	1610	1755	1805	0
Q Serve(g_s), s	7.3	0.0	8.1				0.0	10.1	5.8	3.7	7.2	0.0
Cycle Q Clear(g_c), s	7.3	0.0	8.1				0.0	10.1	5.8	3.7	7.2	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	582	0	259				0	1903	849	343	2514	0
V/C Ratio(X)	0.69	0.00	0.75				0.00	0.45	0.28	0.57	0.36	0.00
Avail Cap(c_a), veh/h	827	0	368				0	1903	849	451	2514	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	0.90	0.90	0.79	0.79	0.00
Uniform Delay (d), s/veh	27.7	0.0	28.1				0.0	10.2	9.2	30.2	4.3	0.0
Incr Delay (d2), s/veh	1.5	0.0	5.3				0.0	0.7	0.7	1.2	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.0	0.0	3.2				0.0	3.2	1.7	1.5	1.4	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	29.2	0.0	33.4				0.0	10.9	9.9	31.4	4.6	0.0
LnGrp LOS	C	A	C				A	B	A	C	A	A
Approach Vol, veh/h		596						1086			1109	
Approach Delay, s/veh		30.6						10.7			9.4	
Approach LOS		C						B			A	
Timer - Assigned Phs	1	2				6		8				
Phs Duration (G+Y+Rc), s	11.8	41.9				53.8		16.2				
Change Period (Y+Rc), s	5.0	5.0				5.0		5.0				
Max Green Setting (Gmax), s	9.0	30.0				44.0		16.0				
Max Q Clear Time (g_c+I1), s	5.7	12.1				9.2		10.1				
Green Ext Time (p_c), s	0.2	5.8				6.5		1.2				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay			14.4									
HCM 6th LOS			B									
<b>Notes</b>												
User approved volume balancing among the lanes for turning movement.												

Arco AM/PM Service Station  
5: Redlands Boulevard & Eucalyptus Avenue

GPBO (2040) Without Project (AM Peak Hour)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖↗	↑↑	↖	↖	↑↑	↖	↖	↑↑	↖	↖↗	↑↑	↖
Traffic Volume (veh/h)	167	60	96	70	60	180	134	648	180	330	503	247
Future Volume (veh/h)	167	60	96	70	60	180	134	648	180	330	503	247
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	174	62	100	73	62	188	140	675	188	344	524	257
Peak Hour Factor	0.96	0.96	0.96	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	0	0	0
Cap, veh/h	239	456	203	147	503	224	170	1791	799	403	1865	941
Arrive On Green	0.07	0.13	0.13	0.08	0.14	0.14	0.09	0.50	0.50	0.11	0.52	0.52
Sat Flow, veh/h	3510	3610	1610	1810	3610	1610	1810	3610	1610	3510	3610	1610
Grp Volume(v), veh/h	174	62	100	73	62	188	140	675	188	344	524	257
Grp Sat Flow(s),veh/h/ln	1755	1805	1610	1810	1805	1610	1810	1805	1610	1755	1805	1610
Q Serve(g_s), s	5.3	1.7	6.4	4.2	1.7	12.5	8.4	12.8	7.3	10.6	9.0	8.7
Cycle Q Clear(g_c), s	5.3	1.7	6.4	4.2	1.7	12.5	8.4	12.8	7.3	10.6	9.0	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	239	456	203	147	503	224	170	1791	799	403	1865	941
V/C Ratio(X)	0.73	0.14	0.49	0.50	0.12	0.84	0.82	0.38	0.24	0.85	0.28	0.27
Avail Cap(c_a), veh/h	351	1017	454	181	1017	454	263	1791	799	415	1865	941
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	0.93	0.93	0.93
Uniform Delay (d), s/veh	50.3	42.7	44.8	48.4	41.5	46.1	48.9	17.2	15.8	47.8	15.0	11.3
Incr Delay (d2), s/veh	4.2	0.1	1.8	2.6	0.1	8.1	11.4	0.6	0.7	14.5	0.4	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.4	0.7	2.6	2.0	0.7	5.4	4.2	5.0	2.7	5.2	3.5	3.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	54.5	42.9	46.6	51.0	41.6	54.2	60.3	17.8	16.5	62.2	15.4	12.0
LnGrp LOS	D	D	D	D	D	D	E	B	B	E	B	B
Approach Vol, veh/h		336			323			1003			1125	
Approach Delay, s/veh		50.0			51.0			23.5			28.9	
Approach LOS		D			D			C			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	17.6	59.6	12.5	20.3	15.4	61.8	13.9	18.9				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	13.0	35.0	11.0	31.0	16.0	32.0	11.0	31.0				
Max Q Clear Time (g_c+I1), s	12.6	14.8	7.3	14.5	10.4	11.0	6.2	8.4				
Green Ext Time (p_c), s	0.1	4.6	0.2	0.8	0.1	3.9	0.0	0.6				

Intersection Summary

HCM 6th Ctrl Delay	32.1
HCM 6th LOS	C

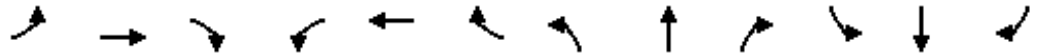
Notes

User approved pedestrian interval to be less than phase max green.



Arco AM/PM Service Station  
1: Redlands Boulevard & Ironwood Avenue

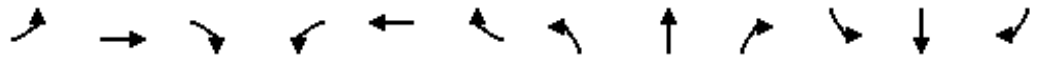
GPBO (2040) Without Project (PM Peak Hour)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↕			↕↕		↕	↕↕		↕	↕↕	↕
Traffic Volume (veh/h)	200	170	132	130	120	6	149	936	90	10	891	224
Future Volume (veh/h)	200	170	132	130	120	6	149	936	90	10	891	224
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	208	177	138	135	125	6	155	975	94	10	928	233
Peak Hour Factor	0.96	0.96	0.96	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	0	0	0
Cap, veh/h	265	237	191	213	221	11	212	1393	134	45	1178	525
Arrive On Green	0.20	0.20	0.20	0.12	0.12	0.12	0.12	0.42	0.42	0.02	0.33	0.33
Sat Flow, veh/h	1360	1216	979	1772	1835	88	1810	3327	321	1810	3610	1610
Grp Volume(v), veh/h	280	0	243	138	0	128	155	529	540	10	928	233
Grp Sat Flow(s),veh/h/ln	1832	0	1724	1811	0	1884	1810	1805	1842	1810	1805	1610
Q Serve(g_s), s	12.1	0.0	10.9	6.0	0.0	5.3	6.9	20.0	20.0	0.4	19.3	9.5
Cycle Q Clear(g_c), s	12.1	0.0	10.9	6.0	0.0	5.3	6.9	20.0	20.0	0.4	19.3	9.5
Prop In Lane	0.74		0.57	0.98		0.05	1.00		0.17	1.00		1.00
Lane Grp Cap(c), veh/h	358	0	336	218	0	227	212	756	771	45	1178	525
V/C Ratio(X)	0.78	0.00	0.72	0.63	0.00	0.56	0.73	0.70	0.70	0.22	0.79	0.44
Avail Cap(c_a), veh/h	574	0	540	568	0	591	262	805	822	240	1567	699
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	31.7	0.0	31.3	34.7	0.0	34.4	35.4	19.8	19.8	39.7	25.3	22.0
Incr Delay (d2), s/veh	3.8	0.0	2.9	3.0	0.0	2.2	7.8	2.5	2.5	2.5	2.0	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/ln	5.2	0.0	4.4	2.6	0.0	2.4	3.3	7.7	7.9	0.2	7.6	3.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	35.5	0.0	34.2	37.8	0.0	36.6	43.2	22.4	22.3	42.1	27.3	22.6
LnGrp LOS	D	A	C	D	A	D	D	C	C	D	C	C
Approach Vol, veh/h		523			266			1224			1171	
Approach Delay, s/veh		34.9			37.2			25.0			26.5	
Approach LOS		C			D			C			C	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.1	39.7		15.0	14.7	32.1		21.2				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0				
Max Green Setting (Gmax), s	11.0	37.0		26.0	12.0	36.0		26.0				
Max Q Clear Time (g_c+I1), s	2.4	22.0		8.0	8.9	21.3		14.1				
Green Ext Time (p_c), s	0.0	5.4		1.1	0.1	5.7		2.1				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				28.2								
HCM 6th LOS				C								
<b>Notes</b>												
User approved pedestrian interval to be less than phase max green.												

Arco AM/PM Service Station  
2: Redlands Boulevard & Hemlock Avenue

GPBO (2040) Without Project (PM Peak Hour)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	110	87	160	160	87	110	96	965	50	80	977	54
Future Volume (veh/h)	110	87	160	160	87	110	96	965	50	80	977	54
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	120	95	174	174	95	120	104	1049	54	87	1062	59
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	208	141	258	162	178	225	146	1006	52	143	998	55
Arrive On Green	0.23	0.23	0.23	0.23	0.23	0.23	0.08	0.56	0.56	0.08	0.56	0.56
Sat Flow, veh/h	1185	601	1101	1128	763	964	1810	1791	92	1810	1783	99
Grp Volume(v), veh/h	120	0	269	174	0	215	104	0	1103	87	0	1121
Grp Sat Flow(s),veh/h/ln	1185	0	1702	1128	0	1727	1810	0	1883	1810	0	1882
Q Serve(g_s), s	11.8	0.0	17.2	10.8	0.0	13.0	6.7	0.0	67.2	5.6	0.0	67.0
Cycle Q Clear(g_c), s	24.8	0.0	17.2	28.0	0.0	13.0	6.7	0.0	67.2	5.6	0.0	67.0
Prop In Lane	1.00		0.65	1.00		0.56	1.00		0.05	1.00		0.05
Lane Grp Cap(c), veh/h	208	0	398	162	0	404	146	0	1058	143	0	1054
V/C Ratio(X)	0.58	0.00	0.68	1.08	0.00	0.53	0.71	0.00	1.04	0.61	0.00	1.06
Avail Cap(c_a), veh/h	208	0	398	162	0	404	151	0	1058	151	0	1054
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	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	51.0	0.0	41.7	56.5	0.0	40.1	53.6	0.0	26.2	53.3	0.0	26.3
Incr Delay (d2), s/veh	3.9	0.0	4.5	92.2	0.0	1.3	13.9	0.0	39.4	6.3	0.0	46.4
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	3.7	0.0	7.7	9.1	0.0	5.7	3.5	0.0	37.6	2.7	0.0	39.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	54.8	0.0	46.2	148.7	0.0	41.5	67.5	0.0	65.6	59.7	0.0	72.7
LnGrp LOS	D	A	D	F	A	D	E	A	F	E	A	F
Approach Vol, veh/h		389			389			1207			1208	
Approach Delay, s/veh		48.9			89.4			65.8			71.8	
Approach LOS		D			F			E			E	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	14.4	72.2		33.0	14.7	72.0		33.0				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0				
Max Green Setting (Gmax), s	10.0	67.0		28.0	10.0	67.0		28.0				
Max Q Clear Time (g_c+I1), s	7.6	69.2		26.8	8.7	69.0		30.0				
Green Ext Time (p_c), s	0.0	0.0		0.3	0.0	0.0		0.0				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				68.9								
HCM 6th LOS				E								

Arco AM/PM Service Station  
3: Redlands Boulevard & SR-60 WB

GPBO (2040) Without Project (PM Peak Hour)



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	290	267	1037	462	355	750
Future Volume (veh/h)	290	267	1037	462	355	750
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	381	193	1080	481	370	781
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	517	230	1209	769	557	2579
Arrive On Green	0.14	0.14	0.34	0.34	0.31	0.71
Sat Flow, veh/h	3619	1610	3705	1610	1810	3705
Grp Volume(v), veh/h	381	193	1080	481	370	781
Grp Sat Flow(s),veh/h/ln	1810	1610	1805	1610	1810	1805
Q Serve(g_s), s	7.1	8.2	19.9	15.6	12.5	5.5
Cycle Q Clear(g_c), s	7.1	8.2	19.9	15.6	12.5	5.5
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	517	230	1209	769	557	2579
V/C Ratio(X)	0.74	0.84	0.89	0.63	0.66	0.30
Avail Cap(c_a), veh/h	517	230	1238	782	557	2579
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.60	0.60	1.00	1.00
Uniform Delay (d), s/veh	28.7	29.2	22.1	13.6	21.1	3.6
Incr Delay (d2), s/veh	5.5	23.1	6.6	2.3	3.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.2	8.4	8.2	6.8	5.0	1.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	34.2	52.3	28.6	15.9	24.0	3.9
LnGrp LOS	C	D	C	B	C	A
Approach Vol, veh/h	574		1561			1151
Approach Delay, s/veh	40.3		24.7			10.4
Approach LOS	D		C			B
Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	26.5	28.5		15.0		55.0
Change Period (Y+Rc), s	5.0	5.0		5.0		5.0
Max Green Setting (Gmax), s	21.0	24.0		10.0		50.0
Max Q Clear Time (g_c+I1), s	14.5	21.9		10.2		7.5
Green Ext Time (p_c), s	0.6	1.6		0.0		5.4

Intersection Summary





















HCM 6th Ctrl Delay		22.4
HCM 6th LOS		C

Notes

User approved volume balancing among the lanes for turning movement.

Arco AM/PM Service Station  
4: Redlands Boulevard & SR-60 EB

GPBO (2040) Without Project (PM Peak Hour)

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	557	0	454	0	0	0	0	903	940	440	707	0
Future Volume (veh/h)	557	0	454	0	0	0	0	903	940	440	707	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900				0	1900	1900	1900	1900	0
Adj Flow Rate, veh/h	767	0	333				0	992	1033	484	777	0
Peak Hour Factor	0.91	0.91	0.91				0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	0	0				0	0	0	0	0	0
Cap, veh/h	867	0	386				0	1527	681	527	2294	0
Arrive On Green	0.24	0.00	0.24				0.00	0.42	0.42	0.15	0.64	0.00
Sat Flow, veh/h	3619	0	1610				0	3705	1610	3510	3705	0
Grp Volume(v), veh/h	767	0	333				0	992	1033	484	777	0
Grp Sat Flow(s),veh/h/ln	1810	0	1610				0	1805	1610	1755	1805	0
Q Serve(g_s), s	16.4	0.0	15.9				0.0	17.5	33.8	10.9	8.0	0.0
Cycle Q Clear(g_c), s	16.4	0.0	15.9				0.0	17.5	33.8	10.9	8.0	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	867	0	386				0	1527	681	527	2294	0
V/C Ratio(X)	0.88	0.00	0.86				0.00	0.65	1.52	0.92	0.34	0.00
Avail Cap(c_a), veh/h	905	0	403				0	1527	681	527	2294	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	0.67	0.67	0.90	0.90	0.00
Uniform Delay (d), s/veh	29.4	0.0	29.2				0.0	18.4	23.1	33.5	6.8	0.0
Incr Delay (d2), s/veh	10.1	0.0	16.9				0.0	1.5	237.7	19.8	0.4	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	7.7	0.0	7.4				0.0	6.5	55.6	5.7	2.3	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	39.5	0.0	46.0				0.0	19.8	260.7	53.3	7.1	0.0
LnGrp LOS	D	A	D				A	B	F	D	A	A
Approach Vol, veh/h		1100						2025			1261	
Approach Delay, s/veh		41.5						142.7			24.9	
Approach LOS		D						F			C	
Timer - Assigned Phs	1	2				6		8				
Phs Duration (G+Y+Rc), s	17.0	38.8				55.8		24.2				
Change Period (Y+Rc), s	5.0	5.0				5.0		5.0				
Max Green Setting (Gmax), s	12.0	33.0				50.0		20.0				
Max Q Clear Time (g_c+I1), s	12.9	35.8				10.0		18.4				
Green Ext Time (p_c), s	0.0	0.0				5.4		0.8				

Intersection Summary

HCM 6th Ctrl Delay	83.4
HCM 6th LOS	F

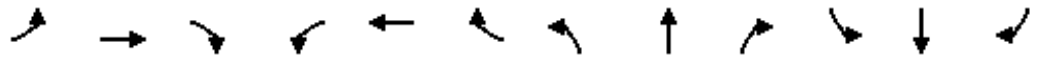
Notes

User approved volume balancing among the lanes for turning movement.



Arco AM/PM Service Station  
5: Redlands Boulevard & Eucalyptus Avenue

GPBO (2040) Without Project (PM Peak Hour)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖↗	↑↑	↖	↗	↑↑	↖	↖	↑↑	↖	↖↗	↑↑	↖
Traffic Volume (veh/h)	390	72	155	101	61	255	160	890	82	157	727	278
Future Volume (veh/h)	390	72	155	101	61	255	160	890	82	157	727	278
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	448	83	178	116	70	293	184	1023	94	180	836	320
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
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	508	955	426	148	727	324	212	1512	674	240	1335	828
Arrive On Green	0.14	0.26	0.26	0.08	0.20	0.20	0.12	0.42	0.42	0.07	0.37	0.37
Sat Flow, veh/h	3510	3610	1610	1810	3610	1610	1810	3610	1610	3510	3610	1610
Grp Volume(v), veh/h	448	83	178	116	70	293	184	1023	94	180	836	320
Grp Sat Flow(s),veh/h/ln	1755	1805	1610	1810	1805	1610	1810	1805	1610	1755	1805	1610
Q Serve(g_s), s	15.0	2.1	11.0	7.5	1.9	21.3	12.0	27.6	4.3	6.0	22.8	14.4
Cycle Q Clear(g_c), s	15.0	2.1	11.0	7.5	1.9	21.3	12.0	27.6	4.3	6.0	22.8	14.4
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	508	955	426	148	727	324	212	1512	674	240	1335	828
V/C Ratio(X)	0.88	0.09	0.42	0.79	0.10	0.90	0.87	0.68	0.14	0.75	0.63	0.39
Avail Cap(c_a), veh/h	556	955	426	287	933	416	256	1512	674	351	1335	828
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	0.90	0.90	0.90
Uniform Delay (d), s/veh	50.3	33.2	36.5	54.1	39.0	46.8	52.0	28.3	21.5	54.9	31.0	17.6
Incr Delay (d2), s/veh	14.4	0.0	0.7	8.8	0.1	19.3	22.3	2.5	0.4	4.6	2.0	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	7.5	0.9	4.3	3.7	0.8	10.1	6.6	11.7	1.7	2.7	9.7	5.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	64.7	33.2	37.1	62.9	39.1	66.1	74.3	30.7	22.0	59.5	33.0	18.9
LnGrp LOS	E	C	D	E	D	E	E	C	C	E	C	B
Approach Vol, veh/h		709			479			1301			1336	
Approach Delay, s/veh		54.1			61.4			36.3			33.2	
Approach LOS		D			E			D			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	13.2	55.3	22.4	29.2	19.1	49.4	14.8	36.8				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	12.0	38.0	19.0	31.0	17.0	33.0	19.0	31.0				
Max Q Clear Time (g_c+I1), s	8.0	29.6	17.0	23.3	14.0	24.8	9.5	13.0				
Green Ext Time (p_c), s	0.2	4.2	0.4	0.9	0.1	3.9	0.2	0.9				

Intersection Summary

HCM 6th Ctrl Delay	41.6
HCM 6th LOS	D

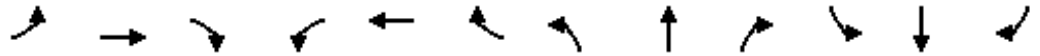
Notes

User approved pedestrian interval to be less than phase max green.

**GENERAL PLAN BUILDOUT WITH PROJECT - ALTERNATIVE 1**

Arco AM/PM Service Station  
1: Redlands Boulevard & Ironwood Avenue

GPBO (2040) With Project (AM Peak Hour)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↕			↕↕		↕	↕↕		↕	↕↕	↕
Traffic Volume (veh/h)	133	150	118	22	100	20	92	734	52	30	774	130
Future Volume (veh/h)	133	150	118	22	100	20	92	734	52	30	774	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	139	156	123	23	104	21	96	765	54	31	806	135
Peak Hour Factor	0.96	0.96	0.96	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	0	0	0
Cap, veh/h	193	223	183	73	341	71	215	1219	86	116	1090	486
Arrive On Green	0.17	0.17	0.17	0.13	0.13	0.13	0.12	0.36	0.36	0.06	0.30	0.30
Sat Flow, veh/h	1141	1323	1083	553	2582	540	1810	3420	241	1810	3610	1610
Grp Volume(v), veh/h	224	0	194	78	0	70	96	404	415	31	806	135
Grp Sat Flow(s),veh/h/ln	1843	0	1705	1872	0	1803	1810	1805	1857	1810	1805	1610
Q Serve(g_s), s	8.3	0.0	7.6	2.7	0.0	2.5	3.5	13.3	13.3	1.2	14.4	4.6
Cycle Q Clear(g_c), s	8.3	0.0	7.6	2.7	0.0	2.5	3.5	13.3	13.3	1.2	14.4	4.6
Prop In Lane	0.62		0.64	0.30		0.30	1.00		0.13	1.00		1.00
Lane Grp Cap(c), veh/h	311	0	288	247	0	238	215	643	662	116	1090	486
V/C Ratio(X)	0.72	0.00	0.67	0.32	0.00	0.29	0.45	0.63	0.63	0.27	0.74	0.28
Avail Cap(c_a), veh/h	667	0	617	678	0	653	302	930	956	277	1809	807
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	28.2	0.0	28.0	28.2	0.0	28.2	29.5	19.2	19.2	32.0	22.5	19.1
Incr Delay (d2), s/veh	3.1	0.0	2.7	0.7	0.0	0.7	1.5	1.0	1.0	1.2	1.0	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	3.5	0.0	3.0	1.1	0.0	1.0	1.5	4.9	5.0	0.5	5.4	1.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	31.4	0.0	30.7	29.0	0.0	28.8	30.9	20.2	20.1	33.2	23.5	19.4
LnGrp LOS	C	A	C	C	A	C	C	C	C	C	C	B
Approach Vol, veh/h		418			148			915			972	
Approach Delay, s/veh		31.1			28.9			21.3			23.3	
Approach LOS		C			C			C			C	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.6	30.6		14.5	13.5	26.7		17.1				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0				
Max Green Setting (Gmax), s	11.0	37.0		26.0	12.0	36.0		26.0				
Max Q Clear Time (g_c+I1), s	3.2	15.3		4.7	5.5	16.4		10.3				
Green Ext Time (p_c), s	0.0	4.5		0.6	0.1	5.3		1.9				

Intersection Summary

HCM 6th Ctrl Delay	24.2
HCM 6th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

Arco AM/PM Service Station  
2: Redlands Boulevard & Hemlock Avenue

GPBO (2040) With Project (AM Peak Hour)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	50	36	70	50	36	30	235	770	100	150	778	100
Future Volume (veh/h)	50	36	70	50	36	30	235	770	100	150	778	100
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	54	39	76	54	39	33	255	837	109	163	846	109
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	195	73	142	156	120	102	292	1004	131	197	918	118
Arrive On Green	0.13	0.13	0.13	0.13	0.13	0.13	0.16	0.61	0.61	0.11	0.56	0.56
Sat Flow, veh/h	1349	576	1122	1298	951	804	1810	1647	214	1810	1649	212
Grp Volume(v), veh/h	54	0	115	54	0	72	255	0	946	163	0	955
Grp Sat Flow(s),veh/h/ln	1349	0	1698	1298	0	1755	1810	0	1861	1810	0	1862
Q Serve(g_s), s	3.7	0.0	6.1	3.9	0.0	3.6	13.3	0.0	39.0	8.5	0.0	45.2
Cycle Q Clear(g_c), s	7.3	0.0	6.1	10.1	0.0	3.6	13.3	0.0	39.0	8.5	0.0	45.2
Prop In Lane	1.00		0.66	1.00		0.46	1.00		0.12	1.00		0.11
Lane Grp Cap(c), veh/h	195	0	215	156	0	222	292	0	1135	197	0	1037
V/C Ratio(X)	0.28	0.00	0.53	0.35	0.00	0.32	0.87	0.00	0.83	0.83	0.00	0.92
Avail Cap(c_a), veh/h	261	0	298	220	0	308	393	0	1423	262	0	1289
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	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	41.8	0.0	39.6	44.3	0.0	38.5	39.6	0.0	15.0	42.2	0.0	19.5
Incr Delay (d2), s/veh	0.8	0.0	2.1	1.3	0.0	0.8	15.0	0.0	3.6	15.1	0.0	9.5
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	1.3	0.0	2.7	1.3	0.0	1.6	6.8	0.0	14.0	4.4	0.0	18.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	42.6	0.0	41.7	45.6	0.0	39.3	54.6	0.0	18.6	57.3	0.0	29.0
LnGrp LOS	D	A	D	D	A	D	D	A	B	E	A	C
Approach Vol, veh/h		169			126			1201				1118
Approach Delay, s/veh		41.9			42.0			26.2				33.1
Approach LOS		D			D			C				C
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	15.5	64.0		17.3	20.6	58.9		17.3				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0				
Max Green Setting (Gmax), s	14.0	74.0		17.0	21.0	67.0		17.0				
Max Q Clear Time (g_c+I1), s	10.5	41.0		9.3	15.3	47.2		12.1				
Green Ext Time (p_c), s	0.1	7.8		0.4	0.3	6.7		0.2				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				31.0								
HCM 6th LOS				C								

Arco AM/PM Service Station  
3: Redlands Boulevard & SR-60 WB

GPBO (2040) With Project (AM Peak Hour)



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↙↙	↗	↕↕	↗	↙	↕↕
Traffic Volume (veh/h)	530	250	773	286	343	510
Future Volume (veh/h)	530	250	773	286	343	510
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	570	269	831	308	369	548
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	603	268	1030	728	539	2407
Arrive On Green	0.17	0.17	0.29	0.29	0.30	0.67
Sat Flow, veh/h	3619	1610	3705	1610	1810	3705
Grp Volume(v), veh/h	570	269	831	308	369	548
Grp Sat Flow(s),veh/h/ln	1810	1610	1805	1610	1810	1805
Q Serve(g_s), s	9.3	10.0	12.8	7.8	10.8	3.6
Cycle Q Clear(g_c), s	9.3	10.0	12.8	7.8	10.8	3.6
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	603	268	1030	728	539	2407
V/C Ratio(X)	0.94	1.00	0.81	0.42	0.68	0.23
Avail Cap(c_a), veh/h	603	268	1143	778	539	2407
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.83	0.83	1.00	1.00
Uniform Delay (d), s/veh	24.7	25.0	19.9	11.1	18.6	3.9
Incr Delay (d2), s/veh	23.9	55.5	5.7	1.5	3.6	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.5	12.3	5.2	3.4	4.2	0.6
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	48.6	80.5	25.6	12.6	22.1	4.2
LnGrp LOS	D	F	C	B	C	A
Approach Vol, veh/h	839		1139			917
Approach Delay, s/veh	58.8		22.1			11.4
Approach LOS	E		C			B
Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	22.9	22.1		15.0		45.0
Change Period (Y+Rc), s	5.0	5.0		5.0		5.0
Max Green Setting (Gmax), s	16.0	19.0		10.0		40.0
Max Q Clear Time (g_c+I1), s	12.8	14.8		12.0		5.6
Green Ext Time (p_c), s	0.4	2.3		0.0		3.5

Intersection Summary





















HCM 6th Ctrl Delay	29.3
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

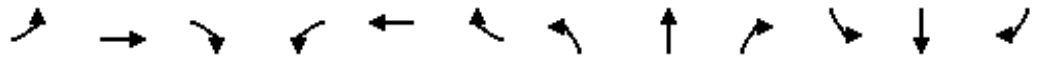
Arco AM/PM Service Station  
4: Redlands Boulevard & SR-60 EB

GPBO (2040) With Project (AM Peak Hour)

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	295	0	269	0	0	0	0	791	220	188	852	0
Future Volume (veh/h)	295	0	269	0	0	0	0	791	220	188	852	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900				0	1900	1900	1900	1900	0
Adj Flow Rate, veh/h	412	0	195				0	860	239	204	926	0
Peak Hour Factor	0.92	0.92	0.92				0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0				0	0	0	0	0	0
Cap, veh/h	583	0	259				0	1901	848	344	2513	0
Arrive On Green	0.16	0.00	0.16				0.00	0.53	0.53	0.10	0.70	0.00
Sat Flow, veh/h	3619	0	1610				0	3705	1610	3510	3705	0
Grp Volume(v), veh/h	412	0	195				0	860	239	204	926	0
Grp Sat Flow(s),veh/h/ln	1810	0	1610				0	1805	1610	1755	1805	0
Q Serve(g_s), s	7.5	0.0	8.1				0.0	10.4	5.8	3.9	7.3	0.0
Cycle Q Clear(g_c), s	7.5	0.0	8.1				0.0	10.4	5.8	3.9	7.3	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	583	0	259				0	1901	848	344	2513	0
V/C Ratio(X)	0.71	0.00	0.75				0.00	0.45	0.28	0.59	0.37	0.00
Avail Cap(c_a), veh/h	827	0	368				0	1901	848	451	2513	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	0.89	0.89	0.79	0.79	0.00
Uniform Delay (d), s/veh	27.8	0.0	28.0				0.0	10.3	9.2	30.2	4.3	0.0
Incr Delay (d2), s/veh	1.6	0.0	5.3				0.0	0.7	0.7	1.3	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.1	0.0	3.2				0.0	3.2	1.7	1.6	1.4	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	29.4	0.0	33.3				0.0	11.0	10.0	31.5	4.7	0.0
LnGrp LOS	C	A	C				A	B	A	C	A	A
Approach Vol, veh/h		607						1099			1130	
Approach Delay, s/veh		30.7						10.8			9.5	
Approach LOS		C						B			A	
Timer - Assigned Phs	1	2				6		8				
Phs Duration (G+Y+Rc), s	11.9	41.9				53.7		16.3				
Change Period (Y+Rc), s	5.0	5.0				5.0		5.0				
Max Green Setting (Gmax), s	9.0	30.0				44.0		16.0				
Max Q Clear Time (g_c+I1), s	5.9	12.4				9.3		10.1				
Green Ext Time (p_c), s	0.2	5.8				6.6		1.2				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay			14.5									
HCM 6th LOS			B									
<b>Notes</b>												
User approved volume balancing among the lanes for turning movement.												

Arco AM/PM Service Station  
5: Redlands Boulevard & Eucalyptus Avenue

GPBO (2040) With Project (AM Peak Hour)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖↗	↑↑	↖	↗	↑↑	↖	↖	↑↑	↖	↖↗	↑↑	↖
Traffic Volume (veh/h)	171	60	96	70	60	184	134	652	180	334	507	251
Future Volume (veh/h)	171	60	96	70	60	184	134	652	180	334	507	251
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	178	62	100	73	62	192	140	679	188	348	528	261
Peak Hour Factor	0.96	0.96	0.96	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	0	0	0
Cap, veh/h	243	469	209	147	512	228	170	1774	791	407	1852	937
Arrive On Green	0.07	0.13	0.13	0.08	0.14	0.14	0.09	0.49	0.49	0.12	0.51	0.51
Sat Flow, veh/h	3510	3610	1610	1810	3610	1610	1810	3610	1610	3510	3610	1610
Grp Volume(v), veh/h	178	62	100	73	62	192	140	679	188	348	528	261
Grp Sat Flow(s),veh/h/ln	1755	1805	1610	1810	1805	1610	1810	1805	1610	1755	1805	1610
Q Serve(g_s), s	5.5	1.7	6.3	4.2	1.6	12.8	8.4	13.0	7.4	10.7	9.2	8.9
Cycle Q Clear(g_c), s	5.5	1.7	6.3	4.2	1.6	12.8	8.4	13.0	7.4	10.7	9.2	8.9
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	243	469	209	147	512	228	170	1774	791	407	1852	937
V/C Ratio(X)	0.73	0.13	0.48	0.50	0.12	0.84	0.82	0.38	0.24	0.86	0.29	0.28
Avail Cap(c_a), veh/h	351	1017	454	181	1017	454	263	1774	791	415	1852	937
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	0.92	0.92	0.92
Uniform Delay (d), s/veh	50.2	42.4	44.4	48.4	41.2	46.0	48.9	17.5	16.1	47.7	15.3	11.5
Incr Delay (d2), s/veh	4.5	0.1	1.7	2.6	0.1	8.1	11.4	0.6	0.7	14.7	0.4	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.5	0.7	2.6	2.0	0.7	5.5	4.2	5.1	2.8	5.3	3.5	3.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	54.7	42.5	46.1	51.0	41.3	54.1	60.3	18.2	16.8	62.4	15.6	12.1
LnGrp LOS	D	D	D	D	D	D	E	B	B	E	B	B
Approach Vol, veh/h		340			327			1007			1137	
Approach Delay, s/veh		49.9			51.0			23.8			29.2	
Approach LOS		D			D			C			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	17.7	59.1	12.6	20.6	15.4	61.4	13.9	19.3				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	13.0	35.0	11.0	31.0	16.0	32.0	11.0	31.0				
Max Q Clear Time (g_c+I1), s	12.7	15.0	7.5	14.8	10.4	11.2	6.2	8.3				
Green Ext Time (p_c), s	0.0	4.6	0.2	0.8	0.1	3.9	0.0	0.6				

Intersection Summary

HCM 6th Ctrl Delay	32.3
HCM 6th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

Intersection						
Int Delay, s/veh	1.9					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	116	0	82	289	0	40
Future Vol, veh/h	116	0	82	289	0	40
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	126	0	89	314	0	43

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	126	0	618
Stage 1	-	-	-	-	126
Stage 2	-	-	-	-	492
Critical Hdwy	-	-	4.1	-	6.4
Critical Hdwy Stg 1	-	-	-	-	5.4
Critical Hdwy Stg 2	-	-	-	-	5.4
Follow-up Hdwy	-	-	2.2	-	3.5
Pot Cap-1 Maneuver	-	-	1473	-	456
Stage 1	-	-	-	-	905
Stage 2	-	-	-	-	619
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1473	-	423
Mov Cap-2 Maneuver	-	-	-	-	423
Stage 1	-	-	-	-	839
Stage 2	-	-	-	-	619

Approach	EB	WB	NB
HCM Control Delay, s	0	1.7	9.1
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	930	-	-	1473	-
HCM Lane V/C Ratio	0.047	-	-	0.061	-
HCM Control Delay (s)	9.1	-	-	7.6	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0.2	-



Intersection						
Int Delay, s/veh	0.4					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↗		↑↑	↑↑	
Traffic Vol, veh/h	0	58	0	904	831	20
Future Vol, veh/h	0	58	0	904	831	20
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	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	63	0	983	903	22

Major/Minor	Minor2	Major1	Major2		
Conflicting Flow All	-	463	-	0	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-
Critical Hdwy	-	6.9	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-
Follow-up Hdwy	-	3.3	-	-	-
Pot Cap-1 Maneuver	0	551	0	-	-
Stage 1	0	-	0	-	-
Stage 2	0	-	0	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	-	551	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-

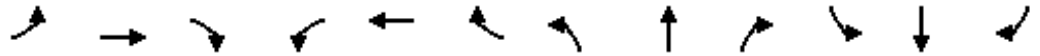
Approach	EB	NB	SB
HCM Control Delay, s	12.4	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	551	-	-
HCM Lane V/C Ratio	-	0.114	-	-
HCM Control Delay (s)	-	12.4	-	-
HCM Lane LOS	-	B	-	-
HCM 95th %tile Q(veh)	-	0.4	-	-



Arco AM/PM Service Station  
1: Redlands Boulevard & Ironwood Avenue

GPBO (2040) With Project (PM Peak Hour)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↕			↕↕		↕	↕↕		↕	↕↕	↕
Traffic Volume (veh/h)	200	170	135	133	120	6	151	941	92	10	896	224
Future Volume (veh/h)	200	170	135	133	120	6	151	941	92	10	896	224
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	208	177	141	139	125	6	157	980	96	10	933	233
Peak Hour Factor	0.96	0.96	0.96	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	0	0	0
Cap, veh/h	265	237	195	215	217	10	212	1393	136	45	1181	527
Arrive On Green	0.20	0.20	0.20	0.12	0.12	0.12	0.12	0.42	0.42	0.02	0.33	0.33
Sat Flow, veh/h	1352	1207	994	1797	1811	87	1810	3321	325	1810	3610	1610
Grp Volume(v), veh/h	282	0	244	140	0	130	157	533	543	10	933	233
Grp Sat Flow(s),veh/h/ln	1832	0	1721	1810	0	1884	1810	1805	1841	1810	1805	1610
Q Serve(g_s), s	12.2	0.0	11.1	6.1	0.0	5.4	7.0	20.2	20.3	0.5	19.5	9.5
Cycle Q Clear(g_c), s	12.2	0.0	11.1	6.1	0.0	5.4	7.0	20.2	20.3	0.5	19.5	9.5
Prop In Lane	0.74		0.58	0.99		0.05	1.00		0.18	1.00		1.00
Lane Grp Cap(c), veh/h	359	0	337	217	0	226	212	757	772	45	1181	527
V/C Ratio(X)	0.79	0.00	0.72	0.65	0.00	0.58	0.74	0.70	0.70	0.22	0.79	0.44
Avail Cap(c_a), veh/h	572	0	537	565	0	588	261	802	818	239	1560	696
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	31.8	0.0	31.4	35.0	0.0	34.7	35.6	19.9	19.9	39.8	25.4	22.0
Incr Delay (d2), s/veh	3.8	0.0	3.0	3.2	0.0	2.3	8.6	2.6	2.6	2.5	2.1	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/ln	5.2	0.0	4.4	2.7	0.0	2.4	3.4	7.8	8.0	0.2	7.8	3.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	35.6	0.0	34.3	38.2	0.0	37.0	44.1	22.5	22.5	42.3	27.5	22.6
LnGrp LOS	D	A	C	D	A	D	D	C	C	D	C	C
Approach Vol, veh/h		526			270			1233			1176	
Approach Delay, s/veh		35.0			37.6			25.3			26.7	
Approach LOS		D			D			C			C	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.1	39.9		15.0	14.7	32.3		21.3				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0				
Max Green Setting (Gmax), s	11.0	37.0		26.0	12.0	36.0		26.0				
Max Q Clear Time (g_c+I1), s	2.5	22.3		8.1	9.0	21.5		14.2				
Green Ext Time (p_c), s	0.0	5.4		1.1	0.1	5.7		2.1				

Intersection Summary

HCM 6th Ctrl Delay	28.4
HCM 6th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

Arco AM/PM Service Station  
2: Redlands Boulevard & Hemlock Avenue

GPBO (2040) With Project (PM Peak Hour)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	131	87	182	160	87	110	187	965	50	80	1000	54
Future Volume (veh/h)	131	87	182	160	87	110	187	965	50	80	1000	54
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	142	95	198	174	95	120	203	1049	54	87	1087	59
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	219	133	277	152	184	233	181	993	51	142	952	52
Arrive On Green	0.24	0.24	0.24	0.24	0.24	0.24	0.10	0.55	0.55	0.08	0.53	0.53
Sat Flow, veh/h	1185	549	1145	1103	763	964	1810	1791	92	1810	1786	97
Grp Volume(v), veh/h	142	0	293	174	0	215	203	0	1103	87	0	1146
Grp Sat Flow(s),veh/h/ln	1185	0	1694	1103	0	1727	1810	0	1883	1810	0	1883
Q Serve(g_s), s	14.2	0.0	19.0	10.0	0.0	12.9	12.0	0.0	66.6	5.6	0.0	64.0
Cycle Q Clear(g_c), s	27.1	0.0	19.0	29.0	0.0	12.9	12.0	0.0	66.6	5.6	0.0	64.0
Prop In Lane	1.00		0.68	1.00		0.56	1.00		0.05	1.00		0.05
Lane Grp Cap(c), veh/h	219	0	409	152	0	417	181	0	1045	142	0	1004
V/C Ratio(X)	0.65	0.00	0.72	1.15	0.00	0.52	1.12	0.00	1.06	0.61	0.00	1.14
Avail Cap(c_a), veh/h	219	0	409	152	0	417	181	0	1045	151	0	1004
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	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	51.1	0.0	41.7	57.0	0.0	39.4	54.0	0.0	26.7	53.5	0.0	28.0
Incr Delay (d2), s/veh	6.6	0.0	5.9	118.2	0.0	1.1	103.4	0.0	43.9	6.4	0.0	75.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.6	0.0	8.6	9.6	0.0	5.6	10.5	0.0	38.7	2.7	0.0	46.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	57.8	0.0	47.6	175.1	0.0	40.5	157.4	0.0	70.6	59.9	0.0	103.8
LnGrp LOS	E	A	D	F	A	D	F	A	F	E	A	F
Approach Vol, veh/h		435			389			1306			1233	
Approach Delay, s/veh		50.9			100.7			84.1			100.7	
Approach LOS		D			F			F			F	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	14.4	71.6		34.0	17.0	69.0		34.0				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0				
Max Green Setting (Gmax), s	10.0	66.0		29.0	12.0	64.0		29.0				
Max Q Clear Time (g_c+I1), s	7.6	68.6		29.1	14.0	66.0		31.0				
Green Ext Time (p_c), s	0.0	0.0		0.0	0.0	0.0		0.0				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				87.8								
HCM 6th LOS				F								

Arco AM/PM Service Station  
3: Redlands Boulevard & SR-60 WB

GPBO (2040) With Project (PM Peak Hour)



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↙↙	↙	↕↕	↘	↘	↕↕
Traffic Volume (veh/h)	290	280	1065	462	367	778
Future Volume (veh/h)	290	280	1065	462	367	778
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	390	198	1109	481	382	810
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	517	230	1220	774	552	2579
Arrive On Green	0.14	0.14	0.34	0.34	0.30	0.71
Sat Flow, veh/h	3619	1610	3705	1610	1810	3705
Grp Volume(v), veh/h	390	198	1109	481	382	810
Grp Sat Flow(s),veh/h/ln	1810	1610	1805	1610	1810	1805
Q Serve(g_s), s	7.2	8.4	20.5	15.5	13.0	5.8
Cycle Q Clear(g_c), s	7.2	8.4	20.5	15.5	13.0	5.8
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	517	230	1220	774	552	2579
V/C Ratio(X)	0.75	0.86	0.91	0.62	0.69	0.31
Avail Cap(c_a), veh/h	517	230	1238	782	552	2579
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.58	0.58	1.00	1.00
Uniform Delay (d), s/veh	28.8	29.3	22.1	13.4	21.4	3.7
Incr Delay (d2), s/veh	6.2	26.6	7.2	2.2	3.7	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.3	8.8	8.5	6.7	5.3	1.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	35.0	55.9	29.4	15.6	25.2	4.0
LnGrp LOS	D	E	C	B	C	A
Approach Vol, veh/h	588		1590			1192
Approach Delay, s/veh	42.1		25.2			10.8
Approach LOS	D		C			B
Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	26.3	28.7		15.0		55.0
Change Period (Y+Rc), s	5.0	5.0		5.0		5.0
Max Green Setting (Gmax), s	21.0	24.0		10.0		50.0
Max Q Clear Time (g_c+I1), s	15.0	22.5		10.4		7.8
Green Ext Time (p_c), s	0.6	1.1		0.0		5.7

Intersection Summary





















HCM 6th Ctrl Delay	23.1
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

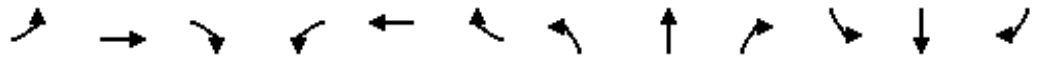
Arco AM/PM Service Station  
4: Redlands Boulevard & SR-60 EB

GPBO (2040) With Project (PM Peak Hour)

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	570	0	454	0	0	0	0	918	940	453	722	0
Future Volume (veh/h)	570	0	454	0	0	0	0	918	940	453	722	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900				0	1900	1900	1900	1900	0
Adj Flow Rate, veh/h	781	0	333				0	1009	1033	498	793	0
Peak Hour Factor	0.91	0.91	0.91				0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	0	0				0	0	0	0	0	0
Cap, veh/h	875	0	390				0	1518	677	527	2285	0
Arrive On Green	0.24	0.00	0.24				0.00	0.42	0.42	0.15	0.63	0.00
Sat Flow, veh/h	3619	0	1610				0	3705	1610	3510	3705	0
Grp Volume(v), veh/h	781	0	333				0	1009	1033	498	793	0
Grp Sat Flow(s),veh/h/ln	1810	0	1610				0	1805	1610	1755	1805	0
Q Serve(g_s), s	16.7	0.0	15.8				0.0	18.0	33.6	11.2	8.3	0.0
Cycle Q Clear(g_c), s	16.7	0.0	15.8				0.0	18.0	33.6	11.2	8.3	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	875	0	390				0	1518	677	527	2285	0
V/C Ratio(X)	0.89	0.00	0.85				0.00	0.66	1.53	0.95	0.35	0.00
Avail Cap(c_a), veh/h	905	0	403				0	1518	677	527	2285	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	0.65	0.65	0.89	0.89	0.00
Uniform Delay (d), s/veh	29.3	0.0	29.0				0.0	18.6	23.2	33.7	6.9	0.0
Incr Delay (d2), s/veh	10.9	0.0	16.0				0.0	1.5	241.3	24.3	0.4	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	7.9	0.0	7.3				0.0	6.7	56.0	6.1	2.3	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	40.2	0.0	44.9				0.0	20.1	264.5	58.0	7.3	0.0
LnGrp LOS	D	A	D				A	C	F	E	A	A
Approach Vol, veh/h		1114						2042			1291	
Approach Delay, s/veh		41.6						143.8			26.8	
Approach LOS		D						F			C	
Timer - Assigned Phs	1	2				6		8				
Phs Duration (G+Y+Rc), s	17.0	38.6				55.6		24.4				
Change Period (Y+Rc), s	5.0	5.0				5.0		5.0				
Max Green Setting (Gmax), s	12.0	33.0				50.0		20.0				
Max Q Clear Time (g_c+I1), s	13.2	35.6				10.3		18.7				
Green Ext Time (p_c), s	0.0	0.0				5.5		0.7				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay			84.2									
HCM 6th LOS			F									
<b>Notes</b>												
User approved volume balancing among the lanes for turning movement.												

Arco AM/PM Service Station  
5: Redlands Boulevard & Eucalyptus Avenue

GPBO (2040) With Project (PM Peak Hour)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖↗	↑↑	↖	↗	↑↑	↖	↖	↑↑	↖	↖↗	↑↑	↖
Traffic Volume (veh/h)	395	72	155	101	61	260	160	895	82	162	732	283
Future Volume (veh/h)	395	72	155	101	61	260	160	895	82	162	732	283
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	454	83	178	116	70	299	184	1029	94	186	841	325
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
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	513	973	434	148	740	330	212	1487	663	246	1317	823
Arrive On Green	0.15	0.27	0.27	0.08	0.20	0.20	0.12	0.41	0.41	0.07	0.36	0.36
Sat Flow, veh/h	3510	3610	1610	1810	3610	1610	1810	3610	1610	3510	3610	1610
Grp Volume(v), veh/h	454	83	178	116	70	299	184	1029	94	186	841	325
Grp Sat Flow(s),veh/h/ln	1755	1805	1610	1810	1805	1610	1810	1805	1610	1755	1805	1610
Q Serve(g_s), s	15.2	2.1	10.9	7.5	1.9	21.8	12.0	28.1	4.4	6.2	23.2	14.8
Cycle Q Clear(g_c), s	15.2	2.1	10.9	7.5	1.9	21.8	12.0	28.1	4.4	6.2	23.2	14.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	513	973	434	148	740	330	212	1487	663	246	1317	823
V/C Ratio(X)	0.88	0.09	0.41	0.79	0.09	0.91	0.87	0.69	0.14	0.76	0.64	0.39
Avail Cap(c_a), veh/h	556	973	434	287	933	416	256	1487	663	351	1317	823
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	0.90	0.90	0.90
Uniform Delay (d), s/veh	50.2	32.8	36.0	54.1	38.7	46.6	52.0	29.0	22.0	54.8	31.6	18.0
Incr Delay (d2), s/veh	14.8	0.0	0.6	8.8	0.1	20.0	22.3	2.7	0.4	5.1	2.1	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	7.6	0.9	4.3	3.7	0.8	10.3	6.6	11.9	1.7	2.8	9.9	5.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	65.1	32.8	36.6	62.9	38.7	66.6	74.3	31.7	22.5	59.9	33.7	19.3
LnGrp LOS	E	C	D	E	D	E	E	C	C	E	C	B
Approach Vol, veh/h		715			485			1307			1352	
Approach Delay, s/veh		54.2			61.7			37.0			33.8	
Approach LOS		D			E			D			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	13.4	54.4	22.6	29.6	19.1	48.8	14.8	37.4				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	12.0	38.0	19.0	31.0	17.0	33.0	19.0	31.0				
Max Q Clear Time (g_c+I1), s	8.2	30.1	17.2	23.8	14.0	25.2	9.5	12.9				
Green Ext Time (p_c), s	0.2	4.0	0.3	0.8	0.1	3.8	0.2	0.9				

Intersection Summary

HCM 6th Ctrl Delay	42.2
HCM 6th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.

Intersection						
Int Delay, s/veh	1.7					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	357	0	91	237	0	43
Future Vol, veh/h	357	0	91	237	0	43
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	388	0	99	258	0	47

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	388	0	844
Stage 1	-	-	-	-	388
Stage 2	-	-	-	-	456
Critical Hdwy	-	-	4.1	-	6.4
Critical Hdwy Stg 1	-	-	-	-	5.4
Critical Hdwy Stg 2	-	-	-	-	5.4
Follow-up Hdwy	-	-	2.2	-	3.5
Pot Cap-1 Maneuver	-	-	1182	-	336
Stage 1	-	-	-	-	690
Stage 2	-	-	-	-	643
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1182	-	303
Mov Cap-2 Maneuver	-	-	-	-	303
Stage 1	-	-	-	-	622
Stage 2	-	-	-	-	643

Approach	EB	WB	NB
HCM Control Delay, s	0	2.3	10.8
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	665	-	-	1182	-
HCM Lane V/C Ratio	0.07	-	-	0.084	-
HCM Control Delay (s)	10.8	-	-	8.3	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.2	-	-	0.3	-



Intersection						
Int Delay, s/veh	0.4					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↗		↑↑	↑↑	
Traffic Vol, veh/h	0	67	0	1157	988	23
Future Vol, veh/h	0	67	0	1157	988	23
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	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	73	0	1258	1074	25

Major/Minor	Minor2	Major1	Major2		
Conflicting Flow All	-	550	-	0	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-
Critical Hdwy	-	6.9	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-
Follow-up Hdwy	-	3.3	-	-	-
Pot Cap-1 Maneuver	0	484	0	-	-
Stage 1	0	-	0	-	-
Stage 2	0	-	0	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	-	484	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	13.8	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	484	-	-
HCM Lane V/C Ratio	-	0.15	-	-
HCM Control Delay (s)	-	13.8	-	-
HCM Lane LOS	-	B	-	-
HCM 95th %tile Q(veh)	-	0.5	-	-

**GENERAL PLAN BUILDOUT WITHOUT PROJECT - ALTERNATIVE 2**

Arco AM/PM Service Station  
3: Redlands Boulevard & SR-60 WB

GPBO (2040) without Project (AM Peak Hour)  
Alternative 2



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↖	↔	↗	↖↗	↕			↕	↗
Traffic Volume (veh/h)	0	0	0	530	0	240	286	751	0	0	490	334
Future Volume (veh/h)	0	0	0	530	0	240	286	751	0	0	490	334
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	1900	1900	0	0	1900	1900
Adj Flow Rate, veh/h				650	0	172	308	808	0	0	527	359
Peak Hour Factor				0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %				0	0	0	0	0	0	0	0	0
Cap, veh/h				815	0	362	404	2282	0	0	1609	718
Arrive On Green				0.23	0.00	0.23	0.23	1.00	0.00	0.00	0.45	0.45
Sat Flow, veh/h				3619	0	1610	3510	3705	0	0	3705	1610
Grp Volume(v), veh/h				650	0	172	308	808	0	0	527	359
Grp Sat Flow(s),veh/h/ln				1810	0	1610	1755	1805	0	0	1805	1610
Q Serve(g_s), s				11.9	0.0	6.5	5.7	0.0	0.0	0.0	6.6	11.1
Cycle Q Clear(g_c), s				11.9	0.0	6.5	5.7	0.0	0.0	0.0	6.6	11.1
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				815	0	362	404	2282	0	0	1609	718
V/C Ratio(X)				0.80	0.00	0.47	0.76	0.35	0.00	0.00	0.33	0.50
Avail Cap(c_a), veh/h				1086	0	483	552	2282	0	0	1609	718
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.85	0.85	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				25.6	0.0	23.5	26.1	0.0	0.0	0.0	12.6	13.8
Incr Delay (d2), s/veh				3.1	0.0	1.0	3.6	0.4	0.0	0.0	0.5	2.5
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				4.9	0.0	6.0	2.2	0.1	0.0	0.0	2.3	3.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				28.7	0.0	24.5	29.7	0.4	0.0	0.0	13.1	16.3
LnGrp LOS				C	A	C	C	A	A	A	B	B
Approach Vol, veh/h					822			1116			886	
Approach Delay, s/veh					27.9			8.5			14.4	
Approach LOS					C			A			B	
Timer - Assigned Phs		2		4	5	6						
Phs Duration (G+Y+Rc), s		49.2		20.8	13.0	36.2						
Change Period (Y+Rc), s		5.0		5.0	5.0	5.0						
Max Green Setting (Gmax), s		39.0		21.0	11.0	23.0						
Max Q Clear Time (g_c+I1), s		2.0		13.9	7.7	13.1						
Green Ext Time (p_c), s		5.6		1.9	0.3	3.1						
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				16.0								
HCM 6th LOS				B								
<b>Notes</b>												
User approved volume balancing among the lanes for turning movement.												

Arco AM/PM Service Station  
4: Redlands Boulevard & SR-60 EB

GPBO (2040) without Project (AM Peak Hour)  
Alternative 2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	285	0	269	0	0	0	0	779	220	180	840	0
Future Volume (veh/h)	285	0	269	0	0	0	0	779	220	180	840	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900				0	1900	1900	1900	1900	0
Adj Flow Rate, veh/h	401	0	195				0	847	239	196	913	0
Peak Hour Factor	0.92	0.92	0.92				0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0				0	0	0	0	0	0
Cap, veh/h	582	0	259				0	1903	849	343	2514	0
Arrive On Green	0.16	0.00	0.16				0.00	0.53	0.53	0.10	0.70	0.00
Sat Flow, veh/h	3619	0	1610				0	3705	1610	3510	3705	0
Grp Volume(v), veh/h	401	0	195				0	847	239	196	913	0
Grp Sat Flow(s),veh/h/ln	1810	0	1610				0	1805	1610	1755	1805	0
Q Serve(g_s), s	7.3	0.0	8.1				0.0	10.1	5.8	3.7	7.2	0.0
Cycle Q Clear(g_c), s	7.3	0.0	8.1				0.0	10.1	5.8	3.7	7.2	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	582	0	259				0	1903	849	343	2514	0
V/C Ratio(X)	0.69	0.00	0.75				0.00	0.45	0.28	0.57	0.36	0.00
Avail Cap(c_a), veh/h	827	0	368				0	1903	849	451	2514	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	0.71	0.71	0.85	0.85	0.00
Uniform Delay (d), s/veh	27.7	0.0	28.1				0.0	10.2	9.2	30.2	4.3	0.0
Incr Delay (d2), s/veh	1.5	0.0	5.3				0.0	0.5	0.6	1.3	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.0	0.0	3.2				0.0	3.1	1.7	1.5	1.4	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	29.2	0.0	33.4				0.0	10.8	9.8	31.4	4.7	0.0
LnGrp LOS	C	A	C				A	B	A	C	A	A
Approach Vol, veh/h		596						1086			1109	
Approach Delay, s/veh		30.6						10.5			9.4	
Approach LOS		C						B			A	
Timer - Assigned Phs	1	2				6		8				
Phs Duration (G+Y+Rc), s	11.8	41.9				53.8		16.2				
Change Period (Y+Rc), s	5.0	5.0				5.0		5.0				
Max Green Setting (Gmax), s	9.0	30.0				44.0		16.0				
Max Q Clear Time (g_c+I1), s	5.7	12.1				9.2		10.1				
Green Ext Time (p_c), s	0.2	5.8				6.5		1.2				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay			14.4									
HCM 6th LOS			B									
<b>Notes</b>												
User approved volume balancing among the lanes for turning movement.												



Arco AM/PM Service Station  
3: Redlands Boulevard & SR-60 WB

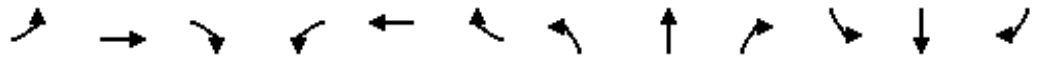
GPBO (2040) without Project (PM Peak Hour)  
Alternative 2



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↙	↔	↗	↙↗	↕			↕	↗
Traffic Volume (veh/h)	0	0	0	290	0	267	462	1037	0	0	750	355
Future Volume (veh/h)	0	0	0	290	0	267	462	1037	0	0	750	355
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach				No			No			No		
Adj Sat Flow, veh/h/ln				1900	1900	1900	1900	1900	0	0	1900	1900
Adj Flow Rate, veh/h				388	0	185	481	1080	0	0	781	370
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				572	0	254	1267	2558	0	0	1015	453
Arrive On Green				0.16	0.00	0.16	0.36	0.71	0.00	0.00	0.28	0.28
Sat Flow, veh/h				3619	0	1610	3510	3705	0	0	3705	1610
Grp Volume(v), veh/h				388	0	185	481	1080	0	0	781	370
Grp Sat Flow(s),veh/h/ln				1810	0	1610	1755	1805	0	0	1805	1610
Q Serve(g_s), s				7.6	0.0	8.2	7.6	9.3	0.0	0.0	14.9	16.1
Cycle Q Clear(g_c), s				7.6	0.0	8.2	7.6	9.3	0.0	0.0	14.9	16.1
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				572	0	254	1267	2558	0	0	1015	453
V/C Ratio(X)				0.68	0.00	0.73	0.38	0.42	0.00	0.00	0.77	0.82
Avail Cap(c_a), veh/h				1110	0	494	1267	2558	0	0	1155	515
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	0.60	0.60	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				29.8	0.0	30.0	17.7	4.5	0.0	0.0	24.7	25.2
Incr Delay (d2), s/veh				1.4	0.0	4.0	0.1	0.3	0.0	0.0	5.6	15.0
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				3.2	0.0	7.4	2.7	1.9	0.0	0.0	6.4	7.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				31.2	0.0	34.0	17.9	4.8	0.0	0.0	30.3	40.2
LnGrp LOS				C	A	C	B	A	A	A	C	D
Approach Vol, veh/h					573			1561			1151	
Approach Delay, s/veh					32.1			8.9			33.5	
Approach LOS					C			A			C	
Timer - Assigned Phs		2		4	5	6						
Phs Duration (G+Y+Rc), s		58.2		16.8	32.1	26.1						
Change Period (Y+Rc), s		5.0		5.0	5.0	5.0						
Max Green Setting (Gmax), s		42.0		23.0	13.0	24.0						
Max Q Clear Time (g_c+I1), s		11.3		10.2	9.6	18.1						
Green Ext Time (p_c), s		8.0		1.6	0.6	3.0						
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				21.6								
HCM 6th LOS				C								
<b>Notes</b>												
User approved volume balancing among the lanes for turning movement.												

Arco AM/PM Service Station  
4: Redlands Boulevard & SR-60 EB

GPBO (2040) without Project (PM Peak Hour)  
Alternative 2



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	557	0	454	0	0	0	0	903	940	440	707	0
Future Volume (veh/h)	557	0	454	0	0	0	0	903	940	440	707	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900				0	1900	1900	1900	1900	0
Adj Flow Rate, veh/h	767	0	333				0	992	1033	484	777	0
Peak Hour Factor	0.91	0.91	0.91				0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	0	0				0	0	0	0	0	0
Cap, veh/h	867	0	386				0	1527	681	527	2294	0
Arrive On Green	0.24	0.00	0.24				0.00	0.42	0.42	0.15	0.64	0.00
Sat Flow, veh/h	3619	0	1610				0	3705	1610	3510	3705	0
Grp Volume(v), veh/h	767	0	333				0	992	1033	484	777	0
Grp Sat Flow(s),veh/h/ln	1810	0	1610				0	1805	1610	1755	1805	0
Q Serve(g_s), s	16.4	0.0	15.9				0.0	17.5	33.8	10.9	8.0	0.0
Cycle Q Clear(g_c), s	16.4	0.0	15.9				0.0	17.5	33.8	10.9	8.0	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	867	0	386				0	1527	681	527	2294	0
V/C Ratio(X)	0.88	0.00	0.86				0.00	0.65	1.52	0.92	0.34	0.00
Avail Cap(c_a), veh/h	905	0	403				0	1527	681	527	2294	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	0.50	0.50	0.86	0.86	0.00
Uniform Delay (d), s/veh	29.4	0.0	29.2				0.0	18.4	23.1	33.5	6.8	0.0
Incr Delay (d2), s/veh	10.1	0.0	16.9				0.0	1.1	236.4	19.1	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.7	0.0	7.4				0.0	6.4	55.4	5.6	2.2	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	39.5	0.0	46.0				0.0	19.5	259.5	52.7	7.1	0.0
LnGrp LOS	D	A	D				A	B	F	D	A	A
Approach Vol, veh/h		1100						2025			1261	
Approach Delay, s/veh		41.5						141.9			24.6	
Approach LOS		D						F			C	
Timer - Assigned Phs	1	2				6		8				
Phs Duration (G+Y+Rc), s	17.0	38.8				55.8		24.2				
Change Period (Y+Rc), s	5.0	5.0				5.0		5.0				
Max Green Setting (Gmax), s	12.0	33.0				50.0		20.0				
Max Q Clear Time (g_c+I1), s	12.9	35.8				10.0		18.4				
Green Ext Time (p_c), s	0.0	0.0				5.4		0.8				

Intersection Summary

HCM 6th Ctrl Delay	83.0
HCM 6th LOS	F

Notes

User approved volume balancing among the lanes for turning movement.

**GENERAL PLAN BUILDOUT WITH PROJECT - ALTERNATIVE 2**



Arco AM/PM Service Station  
3: Redlands Boulevard & SR-60 WB

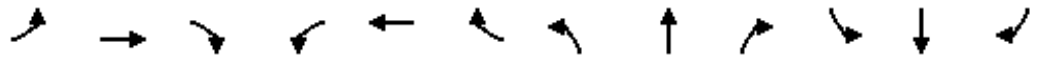
GPBO (2040) With Project (AM Peak Hour)  
Alternative 2



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↙	↔	↗	↙↗	↕			↕	↗
Traffic Volume (veh/h)	0	0	0	530	0	250	286	773	0	0	510	343
Future Volume (veh/h)	0	0	0	530	0	250	286	773	0	0	510	343
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	1900	1900	0	0	1900	1900
Adj Flow Rate, veh/h				654	0	179	308	831	0	0	548	369
Peak Hour Factor				0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %				0	0	0	0	0	0	0	0	0
Cap, veh/h				819	0	364	404	2277	0	0	1604	716
Arrive On Green				0.23	0.00	0.23	0.23	1.00	0.00	0.00	0.44	0.44
Sat Flow, veh/h				3619	0	1610	3510	3705	0	0	3705	1610
Grp Volume(v), veh/h				654	0	179	308	831	0	0	548	369
Grp Sat Flow(s),veh/h/ln				1810	0	1610	1755	1805	0	0	1805	1610
Q Serve(g_s), s				11.9	0.0	6.8	5.7	0.0	0.0	0.0	7.0	11.6
Cycle Q Clear(g_c), s				11.9	0.0	6.8	5.7	0.0	0.0	0.0	7.0	11.6
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				819	0	364	404	2277	0	0	1604	716
V/C Ratio(X)				0.80	0.00	0.49	0.76	0.36	0.00	0.00	0.34	0.52
Avail Cap(c_a), veh/h				1086	0	483	552	2277	0	0	1604	716
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.83	0.83	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				25.6	0.0	23.6	26.1	0.0	0.0	0.0	12.7	14.0
Incr Delay (d2), s/veh				3.2	0.0	1.0	3.6	0.4	0.0	0.0	0.6	2.6
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				4.9	0.0	6.3	2.1	0.1	0.0	0.0	2.4	3.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				28.7	0.0	24.6	29.6	0.4	0.0	0.0	13.3	16.7
LnGrp LOS				C	A	C	C	A	A	A	B	B
Approach Vol, veh/h					833			1139			917	
Approach Delay, s/veh					27.8			8.3			14.7	
Approach LOS					C			A			B	
Timer - Assigned Phs		2		4	5	6						
Phs Duration (G+Y+Rc), s		49.2		20.8	13.0	36.1						
Change Period (Y+Rc), s		5.0		5.0	5.0	5.0						
Max Green Setting (Gmax), s		39.0		21.0	11.0	23.0						
Max Q Clear Time (g_c+I1), s		2.0		13.9	7.7	13.6						
Green Ext Time (p_c), s		5.8		1.9	0.3	3.2						
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				15.9								
HCM 6th LOS				B								
<b>Notes</b>												
User approved volume balancing among the lanes for turning movement.												

Arco AM/PM Service Station  
4: Redlands Boulevard & SR-60 EB

GPBO (2040) With Project (AM Peak Hour)  
Alternative 2



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	295	0	269	0	0	0	0	791	220	188	852	0
Future Volume (veh/h)	295	0	269	0	0	0	0	791	220	188	852	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900				0	1900	1900	1900	1900	0
Adj Flow Rate, veh/h	412	0	195				0	860	239	204	926	0
Peak Hour Factor	0.92	0.92	0.92				0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0				0	0	0	0	0	0
Cap, veh/h	583	0	259				0	1901	848	344	2513	0
Arrive On Green	0.16	0.00	0.16				0.00	0.53	0.53	0.10	0.70	0.00
Sat Flow, veh/h	3619	0	1610				0	3705	1610	3510	3705	0
Grp Volume(v), veh/h	412	0	195				0	860	239	204	926	0
Grp Sat Flow(s),veh/h/ln	1810	0	1610				0	1805	1610	1755	1805	0
Q Serve(g_s), s	7.5	0.0	8.1				0.0	10.4	5.8	3.9	7.3	0.0
Cycle Q Clear(g_c), s	7.5	0.0	8.1				0.0	10.4	5.8	3.9	7.3	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	583	0	259				0	1901	848	344	2513	0
V/C Ratio(X)	0.71	0.00	0.75				0.00	0.45	0.28	0.59	0.37	0.00
Avail Cap(c_a), veh/h	827	0	368				0	1901	848	451	2513	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	0.71	0.71	0.84	0.84	0.00
Uniform Delay (d), s/veh	27.8	0.0	28.0				0.0	10.3	9.2	30.2	4.3	0.0
Incr Delay (d2), s/veh	1.6	0.0	5.3				0.0	0.6	0.6	1.4	0.4	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	3.1	0.0	3.2				0.0	3.2	1.7	1.6	1.4	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	29.4	0.0	33.3				0.0	10.9	9.8	31.6	4.7	0.0
LnGrp LOS	C	A	C				A	B	A	C	A	A
Approach Vol, veh/h		607						1099			1130	
Approach Delay, s/veh		30.7						10.6			9.6	
Approach LOS		C						B			A	
Timer - Assigned Phs	1	2				6		8				
Phs Duration (G+Y+Rc), s	11.9	41.9				53.7		16.3				
Change Period (Y+Rc), s	5.0	5.0				5.0		5.0				
Max Green Setting (Gmax), s	9.0	30.0				44.0		16.0				
Max Q Clear Time (g_c+I1), s	5.9	12.4				9.3		10.1				
Green Ext Time (p_c), s	0.2	5.8				6.6		1.2				

Intersection Summary

HCM 6th Ctrl Delay	14.5
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.



Arco AM/PM Service Station  
3: Redlands Boulevard & SR-60 WB

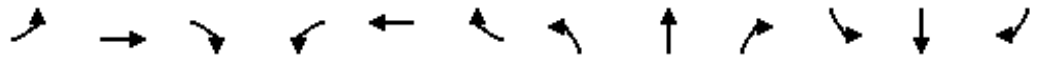
GPBO (2040) with Project (PM Peak Hour)  
Alternative 2



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↙	↔	↗	↙↗	↕			↕	↗
Traffic Volume (veh/h)	0	0	0	290	0	280	462	1065	0	0	778	367
Future Volume (veh/h)	0	0	0	290	0	280	462	1065	0	0	778	367
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	1900	1900	0	0	1900	1900
Adj Flow Rate, veh/h				393	0	195	481	1109	0	0	810	382
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				594	0	264	1225	2536	0	0	1035	462
Arrive On Green				0.16	0.00	0.16	0.35	0.70	0.00	0.00	0.29	0.29
Sat Flow, veh/h				3619	0	1610	3510	3705	0	0	3705	1610
Grp Volume(v), veh/h				393	0	195	481	1109	0	0	810	382
Grp Sat Flow(s),veh/h/ln				1810	0	1610	1755	1805	0	0	1805	1610
Q Serve(g_s), s				7.6	0.0	8.6	7.8	9.9	0.0	0.0	15.5	16.6
Cycle Q Clear(g_c), s				7.6	0.0	8.6	7.8	9.9	0.0	0.0	15.5	16.6
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				594	0	264	1225	2536	0	0	1035	462
V/C Ratio(X)				0.66	0.00	0.74	0.39	0.44	0.00	0.00	0.78	0.83
Avail Cap(c_a), veh/h				1110	0	494	1225	2536	0	0	1155	515
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	0.58	0.58	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				29.4	0.0	29.8	18.4	4.8	0.0	0.0	24.6	25.0
Incr Delay (d2), s/veh				1.3	0.0	4.0	0.1	0.3	0.0	0.0	5.9	15.6
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				3.2	0.0	7.7	2.7	2.1	0.0	0.0	6.6	7.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				30.7	0.0	33.8	18.5	5.1	0.0	0.0	30.5	40.6
LnGrp LOS				C	A	C	B	A	A	A	C	D
Approach Vol, veh/h					588			1590			1192	
Approach Delay, s/veh					31.7			9.2			33.7	
Approach LOS					C			A			C	
Timer - Assigned Phs		2		4	5	6						
Phs Duration (G+Y+Rc), s		57.7		17.3	31.2	26.5						
Change Period (Y+Rc), s		5.0		5.0	5.0	5.0						
Max Green Setting (Gmax), s		42.0		23.0	13.0	24.0						
Max Q Clear Time (g_c+I1), s		11.9		10.6	9.8	18.6						
Green Ext Time (p_c), s		8.2		1.7	0.6	2.9						
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				21.8								
HCM 6th LOS				C								
<b>Notes</b>												
User approved volume balancing among the lanes for turning movement.												

Arco AM/PM Service Station  
4: Redlands Boulevard & SR-60 EB

GPBO (2040) with Project (PM Peak Hour)  
Alternative 2



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	570	0	454	0	0	0	0	918	940	453	722	0
Future Volume (veh/h)	570	0	454	0	0	0	0	918	940	453	722	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900				0	1900	1900	1900	1900	0
Adj Flow Rate, veh/h	781	0	333				0	1009	1033	498	793	0
Peak Hour Factor	0.91	0.91	0.91				0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	0	0				0	0	0	0	0	0
Cap, veh/h	875	0	390				0	1518	677	527	2285	0
Arrive On Green	0.24	0.00	0.24				0.00	0.42	0.42	0.15	0.63	0.00
Sat Flow, veh/h	3619	0	1610				0	3705	1610	3510	3705	0
Grp Volume(v), veh/h	781	0	333				0	1009	1033	498	793	0
Grp Sat Flow(s),veh/h/ln	1810	0	1610				0	1805	1610	1755	1805	0
Q Serve(g_s), s	16.7	0.0	15.8				0.0	18.0	33.6	11.2	8.3	0.0
Cycle Q Clear(g_c), s	16.7	0.0	15.8				0.0	18.0	33.6	11.2	8.3	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	875	0	390				0	1518	677	527	2285	0
V/C Ratio(X)	0.89	0.00	0.85				0.00	0.66	1.53	0.95	0.35	0.00
Avail Cap(c_a), veh/h	905	0	403				0	1518	677	527	2285	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	0.48	0.48	0.84	0.84	0.00
Uniform Delay (d), s/veh	29.3	0.0	29.0				0.0	18.6	23.2	33.7	6.9	0.0
Incr Delay (d2), s/veh	10.9	0.0	16.0				0.0	1.1	240.0	23.4	0.4	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	7.9	0.0	7.3				0.0	6.6	55.8	6.1	2.3	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	40.2	0.0	44.9				0.0	19.8	263.2	57.1	7.3	0.0
LnGrp LOS	D	A	D				A	B	F	E	A	A
Approach Vol, veh/h		1114						2042			1291	
Approach Delay, s/veh		41.6						142.9			26.5	
Approach LOS		D						F			C	
Timer - Assigned Phs	1	2				6		8				
Phs Duration (G+Y+Rc), s	17.0	38.6				55.6		24.4				
Change Period (Y+Rc), s	5.0	5.0				5.0		5.0				
Max Green Setting (Gmax), s	12.0	33.0				50.0		20.0				
Max Q Clear Time (g_c+I1), s	13.2	35.6				10.3		18.7				
Green Ext Time (p_c), s	0.0	0.0				5.5		0.7				

Intersection Summary

HCM 6th Ctrl Delay	83.7
HCM 6th LOS	F

Notes

User approved volume balancing among the lanes for turning movement.

**GENERAL PLAN BUILDOUT WITHOUT PROJECT - ALTERNATIVE 3**

Arco AM/PM Service Station  
3: Redlands Boulevard & SR-60 WB

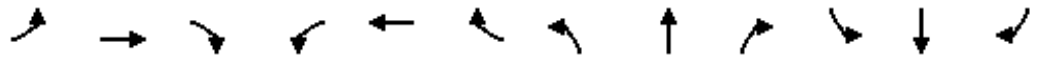
GPBO (2040) Without Project (AM Peak Hour)  
Alternative 3



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↰	↔	↱		↕	↱		↕	↱
Traffic Volume (veh/h)	0	0	0	530	0	240	0	751	286	0	490	334
Future Volume (veh/h)	0	0	0	530	0	240	0	751	286	0	490	334
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				650	0	172	0	808	308	0	527	359
Peak Hour Factor				0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %				0	0	0	0	0	0	0	0	0
Cap, veh/h				874	0	389	0	2136	1342	0	2136	953
Arrive On Green				0.24	0.00	0.24	0.00	1.00	1.00	0.00	0.59	0.59
Sat Flow, veh/h				3619	0	1610	0	3705	1610	0	3705	1610
Grp Volume(v), veh/h				650	0	172	0	808	308	0	527	359
Grp Sat Flow(s),veh/h/ln				1810	0	1610	0	1805	1610	0	1805	1610
Q Serve(g_s), s				10.0	0.0	5.4	0.0	0.0	0.0	0.0	4.2	7.0
Cycle Q Clear(g_c), s				10.0	0.0	5.4	0.0	0.0	0.0	0.0	4.2	7.0
Prop In Lane				1.00		1.00	0.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h				874	0	389	0	2136	1342	0	2136	953
V/C Ratio(X)				0.74	0.00	0.44	0.00	0.38	0.23	0.00	0.25	0.38
Avail Cap(c_a), veh/h				1508	0	671	0	2136	1342	0	2136	953
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	0.91	0.91	0.00	1.00	1.00
Uniform Delay (d), s/veh				21.0	0.0	19.3	0.0	0.0	0.0	0.0	5.9	6.4
Incr Delay (d2), s/veh				1.3	0.0	0.8	0.0	0.5	0.4	0.0	0.3	1.1
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				3.8	0.0	1.8	0.0	0.1	0.1	0.0	1.0	1.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				22.3	0.0	20.1	0.0	0.5	0.4	0.0	6.1	7.6
LnGrp LOS				C	A	C	A	A	A	A	A	A
Approach Vol, veh/h					822			1116			886	
Approach Delay, s/veh					21.8			0.4			6.7	
Approach LOS					C			A			A	
Timer - Assigned Phs		2		4		6						
Phs Duration (G+Y+Rc), s		40.5		19.5		40.5						
Change Period (Y+Rc), s		5.0		5.0		5.0						
Max Green Setting (Gmax), s		25.0		25.0		25.0						
Max Q Clear Time (g_c+I1), s		2.0		12.0		9.0						
Green Ext Time (p_c), s		6.3		2.5		3.9						
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				8.6								
HCM 6th LOS				A								
<b>Notes</b>												
User approved volume balancing among the lanes for turning movement.												

Arco AM/PM Service Station  
4: Redlands Boulevard & SR-60 EB

GPBO (2040) Without Project (AM Peak Hour)  
Alternative 3



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	285	0	269	0	0	0	0	779	220	0	840	180
Future Volume (veh/h)	285	0	269	0	0	0	0	779	220	0	840	180
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	401	0	195				0	847	239	0	913	196
Peak Hour Factor	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
Cap, veh/h	631	0	281				0	2379	1061	0	2379	1342
Arrive On Green	0.17	0.00	0.17				0.00	0.66	0.66	0.00	1.00	1.00
Sat Flow, veh/h	3619	0	1610				0	3705	1610	0	3705	1610
Grp Volume(v), veh/h	401	0	195				0	847	239	0	913	196
Grp Sat Flow(s),veh/h/ln	1810	0	1610				0	1805	1610	0	1805	1610
Q Serve(g_s), s	6.2	0.0	6.8				0.0	6.3	3.6	0.0	0.0	0.0
Cycle Q Clear(g_c), s	6.2	0.0	6.8				0.0	6.3	3.6	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	631	0	281				0	2379	1061	0	2379	1342
V/C Ratio(X)	0.64	0.00	0.69				0.00	0.36	0.23	0.00	0.38	0.15
Avail Cap(c_a), veh/h	1206	0	537				0	2379	1061	0	2379	1342
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	0.93	0.93
Uniform Delay (d), s/veh	23.0	0.0	23.3				0.0	4.6	4.1	0.0	0.0	0.0
Incr Delay (d2), s/veh	1.1	0.0	3.1				0.0	0.4	0.4	0.0	0.4	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	2.4	0.0	2.5				0.0	1.2	0.7	0.0	0.1	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	24.1	0.0	26.4				0.0	4.9	4.5	0.0	0.4	0.2
LnGrp LOS	C	A	C				A	A	A	A	A	A
Approach Vol, veh/h		596						1086			1109	
Approach Delay, s/veh		24.8						4.8			0.4	
Approach LOS		C						A			A	
Timer - Assigned Phs		2				6		8				
Phs Duration (G+Y+Rc), s		44.5				44.5		15.5				
Change Period (Y+Rc), s		5.0				5.0		5.0				
Max Green Setting (Gmax), s		30.0				30.0		20.0				
Max Q Clear Time (g_c+I1), s		8.3				2.0		8.8				
Green Ext Time (p_c), s		6.2				7.0		1.6				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay			7.3									
HCM 6th LOS			A									
<b>Notes</b>												
User approved volume balancing among the lanes for turning movement.												





Arco AM/PM Service Station  
3: Redlands Boulevard & SR-60 WB

GPBO (2040) Without Project (PM Peak Hour)  
Alternative 3



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↖	↔	↗		↑↑	↗		↑↑	↗
Traffic Volume (veh/h)	0	0	0	290	0	267	0	1037	462	0	750	355
Future Volume (veh/h)	0	0	0	290	0	267	0	1037	462	0	750	355
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach				No			No			No		
Adj Sat Flow, veh/h/ln				1900	1900	1900	0	1900	1900	0	1900	1900
Adj Flow Rate, veh/h				388	0	185	0	1080	481	0	781	370
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				523	0	233	0	2760	1464	0	2760	1231
Arrive On Green				0.14	0.00	0.14	0.00	0.76	0.76	0.00	0.76	0.76
Sat Flow, veh/h				3619	0	1610	0	3705	1610	0	3705	1610
Grp Volume(v), veh/h				388	0	185	0	1080	481	0	781	370
Grp Sat Flow(s),veh/h/ln				1810	0	1610	0	1805	1610	0	1805	1610
Q Serve(g_s), s				11.3	0.0	12.2	0.0	11.1	4.3	0.0	7.2	7.7
Cycle Q Clear(g_c), s				11.3	0.0	12.2	0.0	11.1	4.3	0.0	7.2	7.7
Prop In Lane				1.00		1.00	0.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h				523	0	233	0	2760	1464	0	2760	1231
V/C Ratio(X)				0.74	0.00	0.79	0.00	0.39	0.33	0.00	0.28	0.30
Avail Cap(c_a), veh/h				921	0	410	0	2760	1464	0	2760	1231
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	0.83	0.83	0.00	1.00	1.00
Uniform Delay (d), s/veh				45.1	0.0	45.5	0.0	4.4	0.6	0.0	3.9	4.0
Incr Delay (d2), s/veh				2.1	0.0	6.1	0.0	0.3	0.5	0.0	0.3	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
%ile BackOfQ(50%),veh/ln				5.1	0.0	5.1	0.0	2.8	2.5	0.0	1.8	1.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				47.2	0.0	51.5	0.0	4.7	1.1	0.0	4.1	4.6
LnGrp LOS				D	A	D	A	A	A	A	A	A
Approach Vol, veh/h					573			1561			1151	
Approach Delay, s/veh					48.6			3.6			4.3	
Approach LOS					D			A			A	
Timer - Assigned Phs		2		4		6						
Phs Duration (G+Y+Rc), s		89.1		20.9		89.1						
Change Period (Y+Rc), s		5.0		5.0		5.0						
Max Green Setting (Gmax), s		72.0		28.0		72.0						
Max Q Clear Time (g_c+I1), s		13.1		14.2		9.7						
Green Ext Time (p_c), s		11.9		1.7		7.2						

Intersection Summary

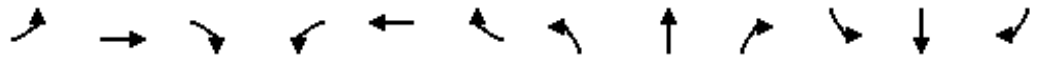
HCM 6th Ctrl Delay	11.7
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

Arco AM/PM Service Station  
4: Redlands Boulevard & SR-60 EB

GPBO (2040) Without Project (PM Peak Hour)  
Alternative 3



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	557	0	454	0	0	0	0	903	940	0	707	440
Future Volume (veh/h)	557	0	454	0	0	0	0	903	940	0	707	440
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	767	0	333				0	992	1033	0	777	484
Peak Hour Factor	0.91	0.91	0.91				0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	0	0				0	0	0	0	0	0
Cap, veh/h	908	0	404				0	2391	1066	0	2391	1470
Arrive On Green	0.25	0.00	0.25				0.00	0.66	0.66	0.00	0.66	0.66
Sat Flow, veh/h	3619	0	1610				0	3705	1610	0	3705	1610
Grp Volume(v), veh/h	767	0	333				0	992	1033	0	777	484
Grp Sat Flow(s),veh/h/ln	1810	0	1610				0	1805	1610	0	1805	1610
Q Serve(g_s), s	23.2	0.0	22.5				0.0	14.7	69.5	0.0	10.7	4.3
Cycle Q Clear(g_c), s	23.2	0.0	22.5				0.0	14.7	69.5	0.0	10.7	4.3
Prop In Lane	1.00		1.00				0.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h	908	0	404				0	2391	1066	0	2391	1470
V/C Ratio(X)	0.84	0.00	0.82				0.00	0.41	0.97	0.00	0.33	0.33
Avail Cap(c_a), veh/h	1259	0	560				0	2391	1066	0	2391	1470
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	0.62	0.62	0.00	0.94	0.94
Uniform Delay (d), s/veh	41.0	0.0	40.7				0.0	9.0	18.3	0.0	8.4	0.6
Incr Delay (d2), s/veh	4.0	0.0	7.0				0.0	0.3	15.5	0.0	0.3	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
%ile BackOfQ(50%),veh/ln	10.4	0.0	9.3				0.0	4.9	24.8	0.0	3.6	5.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	44.9	0.0	47.7				0.0	9.4	33.8	0.0	8.7	1.2
LnGrp LOS	D	A	D				A	A	C	A	A	A
Approach Vol, veh/h		1100						2025			1261	
Approach Delay, s/veh		45.8						21.8			5.8	
Approach LOS		D						C			A	
Timer - Assigned Phs		2				6		8				
Phs Duration (G+Y+Rc), s		81.2				81.2		33.8				
Change Period (Y+Rc), s		5.0				5.0		5.0				
Max Green Setting (Gmax), s		65.0				65.0		40.0				
Max Q Clear Time (g_c+I1), s		71.5				12.7		25.2				
Green Ext Time (p_c), s		0.0				7.9		3.7				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay			23.2									
HCM 6th LOS			C									
<b>Notes</b>												
User approved volume balancing among the lanes for turning movement.												

**GENERAL PLAN BUILDOUT WITH PROJECT - ALTERNATIVE 3**

Arco AM/PM Service Station  
3: Redlands Boulevard & SR-60 WB

GPBO (2040) With Project (AM Peak Hour)  
Alternative 3



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↖	↔	↗		↑↑	↗		↑↑	↗
Traffic Volume (veh/h)	0	0	0	530	0	250	0	773	286	0	510	343
Future Volume (veh/h)	0	0	0	530	0	250	0	773	286	0	510	343
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				654	0	179	0	831	308	0	548	369
Peak Hour Factor				0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %				0	0	0	0	0	0	0	0	0
Cap, veh/h				880	0	391	0	2131	1342	0	2131	950
Arrive On Green				0.24	0.00	0.24	0.00	1.00	1.00	0.00	0.59	0.59
Sat Flow, veh/h				3619	0	1610	0	3705	1610	0	3705	1610
Grp Volume(v), veh/h				654	0	179	0	831	308	0	548	369
Grp Sat Flow(s),veh/h/ln				1810	0	1610	0	1805	1610	0	1805	1610
Q Serve(g_s), s				10.0	0.0	5.7	0.0	0.0	0.0	0.0	4.4	7.3
Cycle Q Clear(g_c), s				10.0	0.0	5.7	0.0	0.0	0.0	0.0	4.4	7.3
Prop In Lane				1.00		1.00	0.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h				880	0	391	0	2131	1342	0	2131	950
V/C Ratio(X)				0.74	0.00	0.46	0.00	0.39	0.23	0.00	0.26	0.39
Avail Cap(c_a), veh/h				1508	0	671	0	2131	1342	0	2131	950
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	0.91	0.91	0.00	1.00	1.00
Uniform Delay (d), s/veh				21.0	0.0	19.3	0.0	0.0	0.0	0.0	5.9	6.5
Incr Delay (d2), s/veh				1.3	0.0	0.8	0.0	0.5	0.4	0.0	0.3	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
%ile BackOfQ(50%),veh/ln				3.8	0.0	1.9	0.0	0.1	0.1	0.0	1.1	1.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				22.2	0.0	20.2	0.0	0.5	0.4	0.0	6.2	7.7
LnGrp LOS				C	A	C	A	A	A	A	A	A
Approach Vol, veh/h					833			1139			917	
Approach Delay, s/veh					21.8			0.5			6.8	
Approach LOS					C			A			A	
Timer - Assigned Phs		2		4		6						
Phs Duration (G+Y+Rc), s		40.4		19.6		40.4						
Change Period (Y+Rc), s		5.0		5.0		5.0						
Max Green Setting (Gmax), s		25.0		25.0		25.0						
Max Q Clear Time (g_c+I1), s		2.0		12.0		9.3						
Green Ext Time (p_c), s		6.5		2.6		4.1						
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				8.6								
HCM 6th LOS				A								
<b>Notes</b>												
User approved volume balancing among the lanes for turning movement.												

Arco AM/PM Service Station  
4: Redlands Boulevard & SR-60 EB

GPBO (2040) With Project (AM Peak Hour)  
Alternative 3



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	295	0	269	0	0	0	0	791	220	0	852	188
Future Volume (veh/h)	295	0	269	0	0	0	0	791	220	0	852	188
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	412	0	195				0	860	239	0	926	204
Peak Hour Factor	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
Cap, veh/h	633	0	281				0	2377	1060	0	2377	1342
Arrive On Green	0.17	0.00	0.17				0.00	0.66	0.66	0.00	1.00	1.00
Sat Flow, veh/h	3619	0	1610				0	3705	1610	0	3705	1610
Grp Volume(v), veh/h	412	0	195				0	860	239	0	926	204
Grp Sat Flow(s),veh/h/ln	1810	0	1610				0	1805	1610	0	1805	1610
Q Serve(g_s), s	6.4	0.0	6.8				0.0	6.4	3.6	0.0	0.0	0.0
Cycle Q Clear(g_c), s	6.4	0.0	6.8				0.0	6.4	3.6	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	633	0	281				0	2377	1060	0	2377	1342
V/C Ratio(X)	0.65	0.00	0.69				0.00	0.36	0.23	0.00	0.39	0.15
Avail Cap(c_a), veh/h	1206	0	537				0	2377	1060	0	2377	1342
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	0.93	0.93
Uniform Delay (d), s/veh	23.1	0.0	23.2				0.0	4.6	4.1	0.0	0.0	0.0
Incr Delay (d2), s/veh	1.1	0.0	3.0				0.0	0.4	0.4	0.0	0.4	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	2.5	0.0	2.5				0.0	1.2	0.7	0.0	0.1	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	24.2	0.0	26.3				0.0	5.0	4.5	0.0	0.4	0.2
LnGrp LOS	C	A	C				A	A	A	A	A	A
Approach Vol, veh/h		607						1099			1130	
Approach Delay, s/veh		24.9						4.9			0.4	
Approach LOS		C						A			A	
Timer - Assigned Phs		2				6		8				
Phs Duration (G+Y+Rc), s		44.5				44.5		15.5				
Change Period (Y+Rc), s		5.0				5.0		5.0				
Max Green Setting (Gmax), s		30.0				30.0		20.0				
Max Q Clear Time (g_c+I1), s		8.4				2.0		8.8				
Green Ext Time (p_c), s		6.3				7.2		1.7				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay			7.4									
HCM 6th LOS			A									
<b>Notes</b>												
User approved volume balancing among the lanes for turning movement.												



Arco AM/PM Service Station  
3: Redlands Boulevard & SR-60 WB

GPBO (2040) With Project (PM Peak Hour)  
Alternative 3



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↖	↔	↗		↑↑	↗		↑↑	↗
Traffic Volume (veh/h)	0	0	0	290	0	280	0	1065	462	0	778	367
Future Volume (veh/h)	0	0	0	290	0	280	0	1065	462	0	778	367
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				393	0	195	0	1109	481	0	810	382
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				546	0	243	0	2738	1464	0	2738	1221
Arrive On Green				0.15	0.00	0.15	0.00	0.76	0.76	0.00	0.76	0.76
Sat Flow, veh/h				3619	0	1610	0	3705	1610	0	3705	1610
Grp Volume(v), veh/h				393	0	195	0	1109	481	0	810	382
Grp Sat Flow(s),veh/h/ln				1810	0	1610	0	1805	1610	0	1805	1610
Q Serve(g_s), s				11.4	0.0	12.9	0.0	11.8	4.3	0.0	7.7	8.3
Cycle Q Clear(g_c), s				11.4	0.0	12.9	0.0	11.8	4.3	0.0	7.7	8.3
Prop In Lane				1.00		1.00	0.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h				546	0	243	0	2738	1464	0	2738	1221
V/C Ratio(X)				0.72	0.00	0.80	0.00	0.41	0.33	0.00	0.30	0.31
Avail Cap(c_a), veh/h				921	0	410	0	2738	1464	0	2738	1221
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	0.82	0.82	0.00	1.00	1.00
Uniform Delay (d), s/veh				44.5	0.0	45.1	0.0	4.6	0.6	0.0	4.1	4.2
Incr Delay (d2), s/veh				1.8	0.0	6.1	0.0	0.4	0.5	0.0	0.3	0.7
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				5.1	0.0	5.4	0.0	3.0	2.7	0.0	2.0	2.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				46.3	0.0	51.3	0.0	5.0	1.1	0.0	4.4	4.9
LnGrp LOS				D	A	D	A	A	A	A	A	A
Approach Vol, veh/h					588			1590			1192	
Approach Delay, s/veh					47.9			3.8			4.6	
Approach LOS					D			A			A	
Timer - Assigned Phs		2		4		6						
Phs Duration (G+Y+Rc), s		88.4		21.6		88.4						
Change Period (Y+Rc), s		5.0		5.0		5.0						
Max Green Setting (Gmax), s		72.0		28.0		72.0						
Max Q Clear Time (g_c+I1), s		13.8		14.9		10.3						
Green Ext Time (p_c), s		12.3		1.7		7.6						

Intersection Summary

HCM 6th Ctrl Delay	11.8
HCM 6th LOS	B

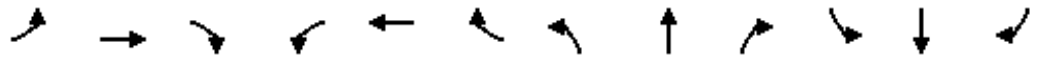
Notes

User approved volume balancing among the lanes for turning movement.



Arco AM/PM Service Station  
4: Redlands Boulevard & SR-60 EB

GPBO (2040) With Project (PM Peak Hour)  
Alternative 3



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	570	0	454	0	0	0	0	918	940	0	722	453
Future Volume (veh/h)	570	0	454	0	0	0	0	918	940	0	722	453
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	781	0	333				0	1009	1033	0	793	498
Peak Hour Factor	0.91	0.91	0.91				0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	0	0				0	0	0	0	0	0
Cap, veh/h	922	0	410				0	2377	1060	0	2377	1470
Arrive On Green	0.25	0.00	0.25				0.00	0.66	0.66	0.00	0.66	0.66
Sat Flow, veh/h	3619	0	1610				0	3705	1610	0	3705	1610
Grp Volume(v), veh/h	781	0	333				0	1009	1033	0	793	498
Grp Sat Flow(s),veh/h/ln	1810	0	1610				0	1805	1610	0	1805	1610
Q Serve(g_s), s	23.6	0.0	22.3				0.0	15.2	70.3	0.0	11.1	4.5
Cycle Q Clear(g_c), s	23.6	0.0	22.3				0.0	15.2	70.3	0.0	11.1	4.5
Prop In Lane	1.00		1.00				0.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h	922	0	410				0	2377	1060	0	2377	1470
V/C Ratio(X)	0.85	0.00	0.81				0.00	0.42	0.97	0.00	0.33	0.34
Avail Cap(c_a), veh/h	1259	0	560				0	2377	1060	0	2377	1470
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	0.09	0.09	0.00	0.93	0.93
Uniform Delay (d), s/veh	40.7	0.0	40.3				0.0	9.3	18.7	0.0	8.6	0.6
Incr Delay (d2), s/veh	4.1	0.0	6.4				0.0	0.1	4.2	0.0	0.4	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	10.6	0.0	9.2				0.0	5.0	21.8	0.0	3.7	5.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	44.9	0.0	46.7				0.0	9.4	23.0	0.0	9.0	1.2
LnGrp LOS	D	A	D				A	A	C	A	A	A
Approach Vol, veh/h		1114						2042			1291	
Approach Delay, s/veh		45.4						16.2			6.0	
Approach LOS		D						B			A	
Timer - Assigned Phs		2				6		8				
Phs Duration (G+Y+Rc), s		80.7				80.7		34.3				
Change Period (Y+Rc), s		5.0				5.0		5.0				
Max Green Setting (Gmax), s		65.0				65.0		40.0				
Max Q Clear Time (g_c+I1), s		72.3				13.1		25.6				
Green Ext Time (p_c), s		0.0				8.2		3.7				

Intersection Summary

HCM 6th Ctrl Delay	20.6
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

**GENERAL PLAN BUILDOUT WITHOUT PROJECT – ALTERNATIVE 1**

**WITH IMPROVEMENTS**

Arco AM/PM Service Station  
2: Redlands Boulevard & Hemlock Avenue





















GPBO (2040) Without Project (AM Peak Hour)  
With Improvements



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↕	↗	↖	↕	↗
Traffic Volume (veh/h)	30	36	50	50	36	30	153	770	100	150	758	100
Future Volume (veh/h)	30	36	50	50	36	30	153	770	100	150	758	100
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	33	39	54	54	39	33	166	837	109	163	824	109
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	329	130	180	310	172	145	307	1199	156	306	1194	158
Arrive On Green	0.18	0.18	0.18	0.18	0.18	0.18	0.17	0.37	0.37	0.17	0.37	0.37
Sat Flow, veh/h	1349	721	999	1324	951	804	1810	3212	418	1810	3205	424
Grp Volume(v), veh/h	33	0	93	54	0	72	166	470	476	163	464	469
Grp Sat Flow(s),veh/h/ln	1349	0	1720	1324	0	1755	1810	1805	1825	1810	1805	1824
Q Serve(g_s), s	1.2	0.0	2.5	2.0	0.0	1.9	4.5	12.0	12.0	4.5	11.7	11.8
Cycle Q Clear(g_c), s	3.1	0.0	2.5	4.5	0.0	1.9	4.5	12.0	12.0	4.5	11.7	11.8
Prop In Lane	1.00		0.58	1.00		0.46	1.00		0.23	1.00		0.23
Lane Grp Cap(c), veh/h	329	0	311	310	0	317	307	674	681	306	673	680
V/C Ratio(X)	0.10	0.00	0.30	0.17	0.00	0.23	0.54	0.70	0.70	0.53	0.69	0.69
Avail Cap(c_a), veh/h	510	0	540	487	0	551	535	2435	2462	502	2402	2427
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	20.2	0.0	19.2	21.2	0.0	18.9	20.5	14.4	14.4	20.5	14.3	14.3
Incr Delay (d2), s/veh	0.1	0.0	0.5	0.3	0.0	0.4	1.5	1.3	1.3	1.4	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	0.3	0.0	1.0	0.6	0.0	0.7	1.7	3.8	3.9	1.7	3.8	3.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	20.4	0.0	19.7	21.4	0.0	19.3	22.0	15.7	15.7	22.0	15.6	15.6
LnGrp LOS	C	A	B	C	A	B	C	B	B	C	B	B
Approach Vol, veh/h		126			126			1112			1096	
Approach Delay, s/veh		19.9			20.2			16.6			16.6	
Approach LOS		B			C			B			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	14.1	25.2		14.8	14.2	25.2		14.8				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0				
Max Green Setting (Gmax), s	15.0	73.0		17.0	16.0	72.0		17.0				
Max Q Clear Time (g_c+I1), s	6.5	14.0		5.1	6.5	13.8		6.5				
Green Ext Time (p_c), s	0.2	6.2		0.4	0.3	6.1		0.3				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				16.9								
HCM 6th LOS				B								

Arco AM/PM Service Station  
4: Redlands Boulevard & SR-60 EB

GPBO (2040) Without Project (AM Peak Hour)  
Alternative 1 With Improvements

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	285	0	269	0	0	0	0	779	220	180	840	0
Future Volume (veh/h)	285	0	269	0	0	0	0	779	220	180	840	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900				0	1900	1900	1900	1900	0
Adj Flow Rate, veh/h	401	0	195				0	847	239	196	913	0
Peak Hour Factor	0.92	0.92	0.92				0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0				0	0	0	0	0	0
Cap, veh/h	582	0	259				0	1903	1494	343	2514	0
Arrive On Green	0.16	0.00	0.16				0.00	0.53	0.53	0.10	0.70	0.00
Sat Flow, veh/h	3619	0	1610				0	3705	2834	3510	3705	0
Grp Volume(v), veh/h	401	0	195				0	847	239	196	913	0
Grp Sat Flow(s),veh/h/ln	1810	0	1610				0	1805	1417	1755	1805	0
Q Serve(g_s), s	7.3	0.0	8.1				0.0	10.1	3.0	3.7	7.2	0.0
Cycle Q Clear(g_c), s	7.3	0.0	8.1				0.0	10.1	3.0	3.7	7.2	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	582	0	259				0	1903	1494	343	2514	0
V/C Ratio(X)	0.69	0.00	0.75				0.00	0.45	0.16	0.57	0.36	0.00
Avail Cap(c_a), veh/h	827	0	368				0	1903	1494	451	2514	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	0.91	0.91	0.79	0.79	0.00
Uniform Delay (d), s/veh	27.7	0.0	28.1				0.0	10.2	8.5	30.2	4.3	0.0
Incr Delay (d2), s/veh	1.5	0.0	5.3				0.0	0.7	0.2	1.2	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.0	0.0	3.2				0.0	3.2	0.7	1.5	1.4	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	29.2	0.0	33.4				0.0	10.9	8.8	31.4	4.6	0.0
LnGrp LOS	C	A	C				A	B	A	C	A	A
Approach Vol, veh/h		596						1086			1109	
Approach Delay, s/veh		30.6						10.4			9.4	
Approach LOS		C						B			A	
Timer - Assigned Phs	1	2				6		8				
Phs Duration (G+Y+Rc), s	11.8	41.9				53.8		16.2				
Change Period (Y+Rc), s	5.0	5.0				5.0		5.0				
Max Green Setting (Gmax), s	9.0	30.0				44.0		16.0				
Max Q Clear Time (g_c+I1), s	5.7	12.1				9.2		10.1				
Green Ext Time (p_c), s	0.2	5.9				6.5		1.2				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay			14.3									
HCM 6th LOS			B									
<b>Notes</b>												
User approved volume balancing among the lanes for turning movement.												



Arco AM/PM Service Station  
2: Redlands Boulevard & Hemlock Avenue





















GPBO (2040) Without Project (PM Peak Hour)  
With Improvements



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	110	87	160	160	87	110	96	965	50	80	977	54
Future Volume (veh/h)	110	87	160	160	87	110	96	965	50	80	977	54
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	120	95	174	174	95	120	104	1049	54	87	1062	59
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	343	187	343	295	238	300	203	1383	71	192	1357	75
Arrive On Green	0.31	0.31	0.31	0.31	0.31	0.31	0.11	0.40	0.40	0.11	0.39	0.39
Sat Flow, veh/h	1185	601	1101	1128	763	964	1810	3493	180	1810	3477	193
Grp Volume(v), veh/h	120	0	269	174	0	215	104	542	561	87	551	570
Grp Sat Flow(s),veh/h/ln	1185	0	1702	1128	0	1727	1810	1805	1868	1810	1805	1865
Q Serve(g_s), s	7.1	0.0	10.4	12.0	0.0	7.9	4.4	20.9	20.9	3.6	21.6	21.6
Cycle Q Clear(g_c), s	15.0	0.0	10.4	22.4	0.0	7.9	4.4	20.9	20.9	3.6	21.6	21.6
Prop In Lane	1.00		0.65	1.00		0.56	1.00		0.10	1.00		0.10
Lane Grp Cap(c), veh/h	343	0	530	295	0	538	203	715	739	192	705	728
V/C Ratio(X)	0.35	0.00	0.51	0.59	0.00	0.40	0.51	0.76	0.76	0.45	0.78	0.78
Avail Cap(c_a), veh/h	385	0	591	335	0	600	224	1500	1552	224	1500	1550
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	27.7	0.0	22.7	31.9	0.0	21.8	33.7	21.0	21.0	33.8	21.6	21.6
Incr Delay (d2), s/veh	0.6	0.0	0.8	2.1	0.0	0.5	2.0	1.7	1.6	1.7	1.9	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	2.0	0.0	4.1	3.4	0.0	3.1	1.9	7.9	8.2	1.6	8.2	8.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	28.3	0.0	23.4	34.0	0.0	22.3	35.7	22.7	22.7	35.5	23.5	23.5
LnGrp LOS	C	A	C	C	A	C	D	C	C	D	C	C
Approach Vol, veh/h		389			389			1207			1208	
Approach Delay, s/veh		25.0			27.5			23.8			24.4	
Approach LOS		C			C			C			C	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	13.6	36.9		30.1	14.0	36.5		30.1				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0				
Max Green Setting (Gmax), s	10.0	67.0		28.0	10.0	67.0		28.0				
Max Q Clear Time (g_c+I1), s	5.6	22.9		17.0	6.4	23.6		24.4				
Green Ext Time (p_c), s	0.1	7.7		1.6	0.1	7.9		0.7				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				24.6								
HCM 6th LOS				C								

Arco AM/PM Service Station  
4: Redlands Boulevard & SR-60 EB

GPBO (2040) Without Project (PM Peak Hour)  
With Improvements

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	557	0	454	0	0	0	0	903	940	440	707	0
Future Volume (veh/h)	557	0	454	0	0	0	0	903	940	440	707	0
Initial Q (Qb), veh	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
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900				0	1900	1900	1900	1900	0
Adj Flow Rate, veh/h	767	0	333				0	992	1033	484	777	0
Peak Hour Factor	0.91	0.91	0.91				0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	0	0				0	0	0	0	0	0
Cap, veh/h	929	0	413				0	1508	1184	558	2282	0
Arrive On Green	0.26	0.00	0.26				0.00	0.42	0.42	0.16	0.63	0.00
Sat Flow, veh/h	3619	0	1610				0	3705	2834	3510	3705	0
Grp Volume(v), veh/h	767	0	333				0	992	1033	484	777	0
Grp Sat Flow(s),veh/h/ln	1810	0	1610				0	1805	1417	1755	1805	0
Q Serve(g_s), s	18.0	0.0	17.4				0.0	19.9	30.1	12.1	9.1	0.0
Cycle Q Clear(g_c), s	18.0	0.0	17.4				0.0	19.9	30.1	12.1	9.1	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	929	0	413				0	1508	1184	558	2282	0
V/C Ratio(X)	0.83	0.00	0.81				0.00	0.66	0.87	0.87	0.34	0.00
Avail Cap(c_a), veh/h	1206	0	537				0	1508	1184	585	2282	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	0.67	0.67	0.90	0.90	0.00
Uniform Delay (d), s/veh	31.6	0.0	31.3				0.0	21.0	24.0	36.9	7.8	0.0
Incr Delay (d2), s/veh	3.8	0.0	6.8				0.0	1.5	6.3	11.6	0.4	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	7.8	0.0	7.1				0.0	7.7	9.8	5.7	2.8	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	35.3	0.0	38.1				0.0	22.5	30.3	48.6	8.1	0.0
LnGrp LOS	D	A	D				A	C	C	D	A	A
Approach Vol, veh/h		1100						2025			1261	
Approach Delay, s/veh		36.2						26.5			23.7	
Approach LOS		D						C			C	
Timer - Assigned Phs	1	2				6		8				
Phs Duration (G+Y+Rc), s	19.3	42.6				61.9		28.1				
Change Period (Y+Rc), s	5.0	5.0				5.0		5.0				
Max Green Setting (Gmax), s	15.0	30.0				50.0		30.0				
Max Q Clear Time (g_c+I1), s	14.1	32.1				11.1		20.0				
Green Ext Time (p_c), s	0.2	0.0				5.3		3.1				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay			28.1									
HCM 6th LOS			C									
<b>Notes</b>												
User approved volume balancing among the lanes for turning movement.												

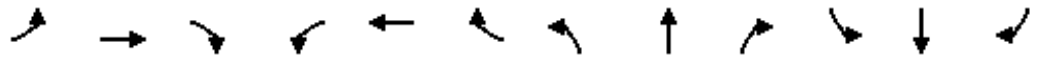
**GENERAL PLAN BUILDOUT WITH PROJECT – ALTERNATIVE 1**

**WITH IMPROVEMENTS**



Arco AM/PM Service Station  
2: Redlands Boulevard & Hemlock Avenue





















GPBO (2040) With Project (AM Peak Hour)  
With Improvements



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↕	↗	↖	↕	↗
Traffic Volume (veh/h)	50	36	70	50	36	30	235	770	100	150	778	100
Future Volume (veh/h)	50	36	70	50	36	30	235	770	100	150	778	100
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	54	39	76	54	39	33	255	837	109	163	846	109
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	324	103	200	284	170	144	320	1236	161	300	1202	155
Arrive On Green	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.38	0.38	0.17	0.37	0.37
Sat Flow, veh/h	1349	576	1122	1298	951	804	1810	3212	418	1810	3216	414
Grp Volume(v), veh/h	54	0	115	54	0	72	255	470	476	163	475	480
Grp Sat Flow(s),veh/h/ln	1349	0	1698	1298	0	1755	1810	1805	1825	1810	1805	1825
Q Serve(g_s), s	2.0	0.0	3.3	2.1	0.0	1.9	7.5	12.0	12.0	4.6	12.4	12.4
Cycle Q Clear(g_c), s	3.9	0.0	3.3	5.4	0.0	1.9	7.5	12.0	12.0	4.6	12.4	12.4
Prop In Lane	1.00		0.66	1.00		0.46	1.00		0.23	1.00		0.23
Lane Grp Cap(c), veh/h	324	0	303	284	0	313	320	695	702	300	674	682
V/C Ratio(X)	0.17	0.00	0.38	0.19	0.00	0.23	0.80	0.68	0.68	0.54	0.70	0.70
Avail Cap(c_a), veh/h	497	0	521	451	0	539	686	2411	2438	457	2183	2208
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	21.2	0.0	20.0	22.4	0.0	19.5	21.8	14.2	14.2	21.2	14.7	14.7
Incr Delay (d2), s/veh	0.2	0.0	0.8	0.3	0.0	0.4	4.5	1.2	1.2	1.5	1.4	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	0.6	0.0	1.3	0.6	0.0	0.8	3.0	3.8	3.9	1.8	4.0	4.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	21.4	0.0	20.8	22.8	0.0	19.9	26.4	15.3	15.3	22.7	16.1	16.1
LnGrp LOS	C	A	C	C	A	B	C	B	B	C	B	B
Approach Vol, veh/h		169			126			1201			1118	
Approach Delay, s/veh		21.0			21.1			17.7			17.1	
Approach LOS		C			C			B			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	14.2	26.3		14.9	14.8	25.7		14.9				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0				
Max Green Setting (Gmax), s	14.0	74.0		17.0	21.0	67.0		17.0				
Max Q Clear Time (g_c+I1), s	6.6	14.0		5.9	9.5	14.4		7.4				
Green Ext Time (p_c), s	0.2	6.3		0.5	0.5	6.3		0.3				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				17.8								
HCM 6th LOS				B								

Arco AM/PM Service Station  
4: Redlands Boulevard & SR-60 EB

GPBO (2040) With Project (AM Peak Hour)  
Alternative 1 With Improvements

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	295	0	269	0	0	0	0	791	220	188	852	0
Future Volume (veh/h)	295	0	269	0	0	0	0	791	220	188	852	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900				0	1900	1900	1900	1900	0
Adj Flow Rate, veh/h	412	0	195				0	860	239	204	926	0
Peak Hour Factor	0.92	0.92	0.92				0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0				0	0	0	0	0	0
Cap, veh/h	583	0	259				0	1901	1492	344	2513	0
Arrive On Green	0.16	0.00	0.16				0.00	0.53	0.53	0.10	0.70	0.00
Sat Flow, veh/h	3619	0	1610				0	3705	2834	3510	3705	0
Grp Volume(v), veh/h	412	0	195				0	860	239	204	926	0
Grp Sat Flow(s),veh/h/ln	1810	0	1610				0	1805	1417	1755	1805	0
Q Serve(g_s), s	7.5	0.0	8.1				0.0	10.4	3.1	3.9	7.3	0.0
Cycle Q Clear(g_c), s	7.5	0.0	8.1				0.0	10.4	3.1	3.9	7.3	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	583	0	259				0	1901	1492	344	2513	0
V/C Ratio(X)	0.71	0.00	0.75				0.00	0.45	0.16	0.59	0.37	0.00
Avail Cap(c_a), veh/h	827	0	368				0	1901	1492	451	2513	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	0.91	0.91	0.79	0.79	0.00
Uniform Delay (d), s/veh	27.8	0.0	28.0				0.0	10.3	8.6	30.2	4.3	0.0
Incr Delay (d2), s/veh	1.6	0.0	5.3				0.0	0.7	0.2	1.3	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.1	0.0	3.2				0.0	3.2	0.8	1.6	1.4	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	29.4	0.0	33.3				0.0	11.0	8.8	31.5	4.7	0.0
LnGrp LOS	C	A	C				A	B	A	C	A	A
Approach Vol, veh/h		607						1099			1130	
Approach Delay, s/veh		30.7						10.5			9.5	
Approach LOS		C						B			A	
Timer - Assigned Phs	1	2				6		8				
Phs Duration (G+Y+Rc), s	11.9	41.9				53.7		16.3				
Change Period (Y+Rc), s	5.0	5.0				5.0		5.0				
Max Green Setting (Gmax), s	9.0	30.0				44.0		16.0				
Max Q Clear Time (g_c+I1), s	5.9	12.4				9.3		10.1				
Green Ext Time (p_c), s	0.2	5.9				6.6		1.2				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay			14.4									
HCM 6th LOS			B									
<b>Notes</b>												
User approved volume balancing among the lanes for turning movement.												



Arco AM/PM Service Station  
2: Redlands Boulevard & Hemlock Avenue





















GPBO (2040) With Project (PM Peak Hour)  
With Improvements



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	131	87	182	160	87	110	187	965	50	80	1000	54
Future Volume (veh/h)	131	87	182	160	87	110	187	965	50	80	1000	54
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	142	95	198	174	95	120	203	1049	54	87	1087	59
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	340	174	364	272	242	306	237	1469	76	176	1348	73
Arrive On Green	0.32	0.32	0.32	0.32	0.32	0.32	0.13	0.42	0.42	0.10	0.39	0.39
Sat Flow, veh/h	1185	549	1145	1103	763	964	1810	3493	180	1810	3482	189
Grp Volume(v), veh/h	142	0	293	174	0	215	203	542	561	87	563	583
Grp Sat Flow(s),veh/h/ln	1185	0	1694	1103	0	1727	1810	1805	1868	1810	1805	1866
Q Serve(g_s), s	9.7	0.0	13.0	14.1	0.0	8.9	10.0	22.7	22.7	4.2	25.4	25.4
Cycle Q Clear(g_c), s	18.6	0.0	13.0	27.1	0.0	8.9	10.0	22.7	22.7	4.2	25.4	25.4
Prop In Lane	1.00		0.68	1.00		0.56	1.00		0.10	1.00		0.10
Lane Grp Cap(c), veh/h	340	0	538	272	0	548	237	759	786	176	699	722
V/C Ratio(X)	0.42	0.00	0.54	0.64	0.00	0.39	0.86	0.71	0.71	0.49	0.81	0.81
Avail Cap(c_a), veh/h	340	0	538	272	0	548	238	1305	1350	198	1265	1308
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	31.5	0.0	25.7	36.9	0.0	24.3	38.8	21.9	21.9	39.1	24.9	24.9
Incr Delay (d2), s/veh	0.8	0.0	1.1	5.0	0.0	0.5	25.2	1.3	1.2	2.1	2.3	2.2
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	2.8	0.0	5.3	4.1	0.0	3.6	5.8	8.7	9.0	1.8	10.1	10.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	32.3	0.0	26.8	41.9	0.0	24.7	64.0	23.2	23.1	41.2	27.2	27.1
LnGrp LOS	C	A	C	D	A	C	E	C	C	D	C	C
Approach Vol, veh/h		435			389			1306			1233	
Approach Delay, s/veh		28.6			32.4			29.5			28.1	
Approach LOS		C			C			C			C	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	13.9	43.4		34.0	17.0	40.4		34.0				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0				
Max Green Setting (Gmax), s	10.0	66.0		29.0	12.0	64.0		29.0				
Max Q Clear Time (g_c+I1), s	6.2	24.7		20.6	12.0	27.4		29.1				
Green Ext Time (p_c), s	0.1	7.6		1.5	0.0	7.9		0.0				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				29.2								
HCM 6th LOS				C								

Arco AM/PM Service Station  
4: Redlands Boulevard & SR-60 EB

GPBO (2040) With Project (PM Peak Hour)  
With Improvements

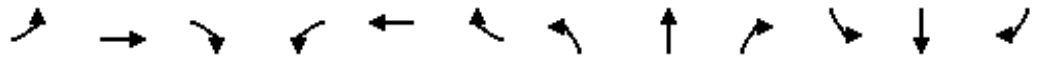
												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	570	0	454	0	0	0	0	918	940	453	722	0
Future Volume (veh/h)	570	0	454	0	0	0	0	918	940	453	722	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900				0	1900	1900	1900	1900	0
Adj Flow Rate, veh/h	781	0	333				0	1009	1033	498	793	0
Peak Hour Factor	0.91	0.91	0.91				0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	0	0				0	0	0	0	0	0
Cap, veh/h	942	0	419				0	1484	1165	569	2270	0
Arrive On Green	0.26	0.00	0.26				0.00	0.41	0.41	0.16	0.63	0.00
Sat Flow, veh/h	3619	0	1610				0	3705	2834	3510	3705	0
Grp Volume(v), veh/h	781	0	333				0	1009	1033	498	793	0
Grp Sat Flow(s),veh/h/ln	1810	0	1610				0	1805	1417	1755	1805	0
Q Serve(g_s), s	18.3	0.0	17.4				0.0	20.6	30.4	12.5	9.4	0.0
Cycle Q Clear(g_c), s	18.3	0.0	17.4				0.0	20.6	30.4	12.5	9.4	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	942	0	419				0	1484	1165	569	2270	0
V/C Ratio(X)	0.83	0.00	0.79				0.00	0.68	0.89	0.88	0.35	0.00
Avail Cap(c_a), veh/h	1206	0	537				0	1484	1165	585	2270	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	0.65	0.65	0.89	0.89	0.00
Uniform Delay (d), s/veh	31.4	0.0	31.0				0.0	21.7	24.6	36.8	8.0	0.0
Incr Delay (d2), s/veh	4.0	0.0	6.3				0.0	1.7	6.9	12.4	0.4	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	7.9	0.0	7.0				0.0	8.0	10.0	6.0	2.9	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	35.4	0.0	37.4				0.0	23.3	31.5	49.2	8.3	0.0
LnGrp LOS	D	A	D				A	C	C	D	A	A
Approach Vol, veh/h		1114						2042			1291	
Approach Delay, s/veh		36.0						27.5			24.1	
Approach LOS		D						C			C	
Timer - Assigned Phs	1	2				6		8				
Phs Duration (G+Y+Rc), s	19.6	42.0				61.6		28.4				
Change Period (Y+Rc), s	5.0	5.0				5.0		5.0				
Max Green Setting (Gmax), s	15.0	30.0				50.0		30.0				
Max Q Clear Time (g_c+I1), s	14.5	32.4				11.4		20.3				
Green Ext Time (p_c), s	0.1	0.0				5.5		3.1				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay			28.6									
HCM 6th LOS			C									
<b>Notes</b>												
User approved volume balancing among the lanes for turning movement.												

**GENERAL PLAN BUILDOUT WITHOUT PROJECT – ALTERNATIVE 2**

**WITH IMPROVEMENTS**

Arco AM/PM Service Station  
2: Redlands Boulevard & Hemlock Avenue





















GPBO (2040) without Project (AM Peak Hour)  
Alternative 2 With Improvements



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↕		↖	↕	
Traffic Volume (veh/h)	30	36	50	50	36	30	153	770	100	150	758	100
Future Volume (veh/h)	30	36	50	50	36	30	153	770	100	150	758	100
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	33	39	54	54	39	33	166	837	109	163	824	109
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	329	130	180	310	172	145	307	1199	156	306	1194	158
Arrive On Green	0.18	0.18	0.18	0.18	0.18	0.18	0.17	0.37	0.37	0.17	0.37	0.37
Sat Flow, veh/h	1349	721	999	1324	951	804	1810	3212	418	1810	3205	424
Grp Volume(v), veh/h	33	0	93	54	0	72	166	470	476	163	464	469
Grp Sat Flow(s),veh/h/ln	1349	0	1720	1324	0	1755	1810	1805	1825	1810	1805	1824
Q Serve(g_s), s	1.2	0.0	2.5	2.0	0.0	1.9	4.5	12.0	12.0	4.5	11.7	11.8
Cycle Q Clear(g_c), s	3.1	0.0	2.5	4.5	0.0	1.9	4.5	12.0	12.0	4.5	11.7	11.8
Prop In Lane	1.00		0.58	1.00		0.46	1.00		0.23	1.00		0.23
Lane Grp Cap(c), veh/h	329	0	311	310	0	317	307	674	681	306	673	680
V/C Ratio(X)	0.10	0.00	0.30	0.17	0.00	0.23	0.54	0.70	0.70	0.53	0.69	0.69
Avail Cap(c_a), veh/h	510	0	540	487	0	551	535	2435	2462	502	2402	2427
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	20.2	0.0	19.2	21.2	0.0	18.9	20.5	14.4	14.4	20.5	14.3	14.3
Incr Delay (d2), s/veh	0.1	0.0	0.5	0.3	0.0	0.4	1.5	1.3	1.3	1.4	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	0.3	0.0	1.0	0.6	0.0	0.7	1.7	3.8	3.9	1.7	3.8	3.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	20.4	0.0	19.7	21.4	0.0	19.3	22.0	15.7	15.7	22.0	15.6	15.6
LnGrp LOS	C	A	B	C	A	B	C	B	B	C	B	B
Approach Vol, veh/h		126			126			1112			1096	
Approach Delay, s/veh		19.9			20.2			16.6			16.6	
Approach LOS		B			C			B			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	14.1	25.2		14.8	14.2	25.2		14.8				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0				
Max Green Setting (Gmax), s	15.0	73.0		17.0	16.0	72.0		17.0				
Max Q Clear Time (g_c+I1), s	6.5	14.0		5.1	6.5	13.8		6.5				
Green Ext Time (p_c), s	0.2	6.2		0.4	0.3	6.1		0.3				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				16.9								
HCM 6th LOS				B								

Arco AM/PM Service Station  
4: Redlands Boulevard & SR-60 EB

GPBO (2040) without Project (AM Peak Hour)  
Alternative 2 With Improvements

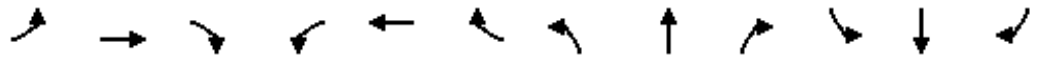
												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	285	0	269	0	0	0	0	779	220	180	840	0
Future Volume (veh/h)	285	0	269	0	0	0	0	779	220	180	840	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900				0	1900	1900	1900	1900	0
Adj Flow Rate, veh/h	401	0	195				0	847	239	196	913	0
Peak Hour Factor	0.92	0.92	0.92				0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0				0	0	0	0	0	0
Cap, veh/h	582	0	259				0	1903	1494	343	2514	0
Arrive On Green	0.16	0.00	0.16				0.00	0.53	0.53	0.10	0.70	0.00
Sat Flow, veh/h	3619	0	1610				0	3705	2834	3510	3705	0
Grp Volume(v), veh/h	401	0	195				0	847	239	196	913	0
Grp Sat Flow(s),veh/h/ln	1810	0	1610				0	1805	1417	1755	1805	0
Q Serve(g_s), s	7.3	0.0	8.1				0.0	10.1	3.0	3.7	7.2	0.0
Cycle Q Clear(g_c), s	7.3	0.0	8.1				0.0	10.1	3.0	3.7	7.2	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	582	0	259				0	1903	1494	343	2514	0
V/C Ratio(X)	0.69	0.00	0.75				0.00	0.45	0.16	0.57	0.36	0.00
Avail Cap(c_a), veh/h	827	0	368				0	1903	1494	451	2514	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	0.72	0.72	0.85	0.85	0.00
Uniform Delay (d), s/veh	27.7	0.0	28.1				0.0	10.2	8.5	30.2	4.3	0.0
Incr Delay (d2), s/veh	1.5	0.0	5.3				0.0	0.5	0.2	1.3	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.0	0.0	3.2				0.0	3.1	0.7	1.5	1.4	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	29.2	0.0	33.4				0.0	10.8	8.7	31.4	4.7	0.0
LnGrp LOS	C	A	C				A	B	A	C	A	A
Approach Vol, veh/h		596						1086			1109	
Approach Delay, s/veh		30.6						10.3			9.4	
Approach LOS		C						B			A	
Timer - Assigned Phs	1	2				6		8				
Phs Duration (G+Y+Rc), s	11.8	41.9				53.8		16.2				
Change Period (Y+Rc), s	5.0	5.0				5.0		5.0				
Max Green Setting (Gmax), s	9.0	30.0				44.0		16.0				
Max Q Clear Time (g_c+I1), s	5.7	12.1				9.2		10.1				
Green Ext Time (p_c), s	0.2	5.9				6.5		1.2				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay			14.3									
HCM 6th LOS			B									
<b>Notes</b>												
User approved volume balancing among the lanes for turning movement.												





Arco AM/PM Service Station  
2: Redlands Boulevard & Hemlock Avenue





















GPBO (2040) without Project (PM Peak Hour)  
Alternative 2 With Improvements



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	110	87	160	160	87	110	96	965	50	80	977	54
Future Volume (veh/h)	110	87	160	160	87	110	96	965	50	80	977	54
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	120	95	174	174	95	120	104	1049	54	87	1062	59
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	343	187	343	295	238	300	203	1383	71	192	1357	75
Arrive On Green	0.31	0.31	0.31	0.31	0.31	0.31	0.11	0.40	0.40	0.11	0.39	0.39
Sat Flow, veh/h	1185	601	1101	1128	763	964	1810	3493	180	1810	3477	193
Grp Volume(v), veh/h	120	0	269	174	0	215	104	542	561	87	551	570
Grp Sat Flow(s),veh/h/ln	1185	0	1702	1128	0	1727	1810	1805	1868	1810	1805	1865
Q Serve(g_s), s	7.1	0.0	10.4	12.0	0.0	7.9	4.4	20.9	20.9	3.6	21.6	21.6
Cycle Q Clear(g_c), s	15.0	0.0	10.4	22.4	0.0	7.9	4.4	20.9	20.9	3.6	21.6	21.6
Prop In Lane	1.00		0.65	1.00		0.56	1.00		0.10	1.00		0.10
Lane Grp Cap(c), veh/h	343	0	530	295	0	538	203	715	739	192	705	728
V/C Ratio(X)	0.35	0.00	0.51	0.59	0.00	0.40	0.51	0.76	0.76	0.45	0.78	0.78
Avail Cap(c_a), veh/h	385	0	591	335	0	600	224	1500	1552	224	1500	1550
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	27.7	0.0	22.7	31.9	0.0	21.8	33.7	21.0	21.0	33.8	21.6	21.6
Incr Delay (d2), s/veh	0.6	0.0	0.8	2.1	0.0	0.5	2.0	1.7	1.6	1.7	1.9	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	2.0	0.0	4.1	3.4	0.0	3.1	1.9	7.9	8.2	1.6	8.2	8.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	28.3	0.0	23.4	34.0	0.0	22.3	35.7	22.7	22.7	35.5	23.5	23.5
LnGrp LOS	C	A	C	C	A	C	D	C	C	D	C	C
Approach Vol, veh/h		389			389			1207			1208	
Approach Delay, s/veh		25.0			27.5			23.8			24.4	
Approach LOS		C			C			C			C	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	13.6	36.9		30.1	14.0	36.5		30.1				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0				
Max Green Setting (Gmax), s	10.0	67.0		28.0	10.0	67.0		28.0				
Max Q Clear Time (g_c+I1), s	5.6	22.9		17.0	6.4	23.6		24.4				
Green Ext Time (p_c), s	0.1	7.7		1.6	0.1	7.9		0.7				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				24.6								
HCM 6th LOS				C								

Arco AM/PM Service Station  
4: Redlands Boulevard & SR-60 EB

GPBO (2040) without Project (PM Peak Hour)  
Alternative 2 With Improvements

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	557	0	454	0	0	0	0	903	940	440	707	0
Future Volume (veh/h)	557	0	454	0	0	0	0	903	940	440	707	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900				0	1900	1900	1900	1900	0
Adj Flow Rate, veh/h	767	0	333				0	992	1033	484	777	0
Peak Hour Factor	0.91	0.91	0.91				0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	0	0				0	0	0	0	0	0
Cap, veh/h	929	0	413				0	1508	1184	558	2282	0
Arrive On Green	0.26	0.00	0.26				0.00	0.42	0.42	0.16	0.63	0.00
Sat Flow, veh/h	3619	0	1610				0	3705	2834	3510	3705	0
Grp Volume(v), veh/h	767	0	333				0	992	1033	484	777	0
Grp Sat Flow(s),veh/h/ln	1810	0	1610				0	1805	1417	1755	1805	0
Q Serve(g_s), s	18.0	0.0	17.4				0.0	19.9	30.1	12.1	9.1	0.0
Cycle Q Clear(g_c), s	18.0	0.0	17.4				0.0	19.9	30.1	12.1	9.1	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	929	0	413				0	1508	1184	558	2282	0
V/C Ratio(X)	0.83	0.00	0.81				0.00	0.66	0.87	0.87	0.34	0.00
Avail Cap(c_a), veh/h	1206	0	537				0	1508	1184	585	2282	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	0.50	0.50	0.86	0.86	0.00
Uniform Delay (d), s/veh	31.6	0.0	31.3				0.0	21.0	24.0	36.9	7.8	0.0
Incr Delay (d2), s/veh	3.8	0.0	6.8				0.0	1.1	4.8	11.2	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.8	0.0	7.1				0.0	7.6	9.5	5.7	2.8	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	35.3	0.0	38.1				0.0	22.2	28.8	48.1	8.1	0.0
LnGrp LOS	D	A	D				A	C	C	D	A	A
Approach Vol, veh/h		1100						2025			1261	
Approach Delay, s/veh		36.2						25.5			23.5	
Approach LOS		D						C			C	
Timer - Assigned Phs	1	2				6		8				
Phs Duration (G+Y+Rc), s	19.3	42.6				61.9		28.1				
Change Period (Y+Rc), s	5.0	5.0				5.0		5.0				
Max Green Setting (Gmax), s	15.0	30.0				50.0		30.0				
Max Q Clear Time (g_c+I1), s	14.1	32.1				11.1		20.0				
Green Ext Time (p_c), s	0.2	0.0				5.3		3.1				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay			27.6									
HCM 6th LOS			C									
<b>Notes</b>												
User approved volume balancing among the lanes for turning movement.												

**GENERAL PLAN BUILDOUT WITH PROJECT - ALTERNATIVE 2**

**WITH IMPROVEMENTS**

Arco AM/PM Service Station  
2: Redlands Boulevard & Hemlock Avenue





















GPBO (2040) With Project (AM Peak Hour)  
Alternative 2 With Improvements



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	50	36	70	50	36	30	235	770	100	150	778	100
Future Volume (veh/h)	50	36	70	50	36	30	235	770	100	150	778	100
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	54	39	76	54	39	33	255	837	109	163	846	109
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	324	103	200	284	170	144	320	1236	161	300	1202	155
Arrive On Green	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.38	0.38	0.17	0.37	0.37
Sat Flow, veh/h	1349	576	1122	1298	951	804	1810	3212	418	1810	3216	414
Grp Volume(v), veh/h	54	0	115	54	0	72	255	470	476	163	475	480
Grp Sat Flow(s),veh/h/ln	1349	0	1698	1298	0	1755	1810	1805	1825	1810	1805	1825
Q Serve(g_s), s	2.0	0.0	3.3	2.1	0.0	1.9	7.5	12.0	12.0	4.6	12.4	12.4
Cycle Q Clear(g_c), s	3.9	0.0	3.3	5.4	0.0	1.9	7.5	12.0	12.0	4.6	12.4	12.4
Prop In Lane	1.00		0.66	1.00		0.46	1.00		0.23	1.00		0.23
Lane Grp Cap(c), veh/h	324	0	303	284	0	313	320	695	702	300	674	682
V/C Ratio(X)	0.17	0.00	0.38	0.19	0.00	0.23	0.80	0.68	0.68	0.54	0.70	0.70
Avail Cap(c_a), veh/h	497	0	521	451	0	539	686	2411	2438	457	2183	2208
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	21.2	0.0	20.0	22.4	0.0	19.5	21.8	14.2	14.2	21.2	14.7	14.7
Incr Delay (d2), s/veh	0.2	0.0	0.8	0.3	0.0	0.4	4.5	1.2	1.2	1.5	1.4	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	0.6	0.0	1.3	0.6	0.0	0.8	3.0	3.8	3.9	1.8	4.0	4.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	21.4	0.0	20.8	22.8	0.0	19.9	26.4	15.3	15.3	22.7	16.1	16.1
LnGrp LOS	C	A	C	C	A	B	C	B	B	C	B	B
Approach Vol, veh/h		169			126			1201			1118	
Approach Delay, s/veh		21.0			21.1			17.7			17.1	
Approach LOS		C			C			B			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	14.2	26.3		14.9	14.8	25.7		14.9				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0				
Max Green Setting (Gmax), s	14.0	74.0		17.0	21.0	67.0		17.0				
Max Q Clear Time (g_c+I1), s	6.6	14.0		5.9	9.5	14.4		7.4				
Green Ext Time (p_c), s	0.2	6.3		0.5	0.5	6.3		0.3				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				17.8								
HCM 6th LOS				B								

Arco AM/PM Service Station  
4: Redlands Boulevard & SR-60 EB

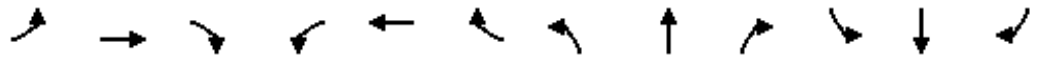
GPBO (2040) with Project (AM Peak Hour)  
Alternative 2 With Improvements

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	295	0	269	0	0	0	0	791	220	188	852	0
Future Volume (veh/h)	295	0	269	0	0	0	0	791	220	188	852	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900				0	1900	1900	1900	1900	0
Adj Flow Rate, veh/h	412	0	195				0	860	239	204	926	0
Peak Hour Factor	0.92	0.92	0.92				0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0				0	0	0	0	0	0
Cap, veh/h	583	0	259				0	1901	1492	344	2513	0
Arrive On Green	0.16	0.00	0.16				0.00	0.53	0.53	0.10	0.70	0.00
Sat Flow, veh/h	3619	0	1610				0	3705	2834	3510	3705	0
Grp Volume(v), veh/h	412	0	195				0	860	239	204	926	0
Grp Sat Flow(s),veh/h/ln	1810	0	1610				0	1805	1417	1755	1805	0
Q Serve(g_s), s	7.5	0.0	8.1				0.0	10.4	3.1	3.9	7.3	0.0
Cycle Q Clear(g_c), s	7.5	0.0	8.1				0.0	10.4	3.1	3.9	7.3	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	583	0	259				0	1901	1492	344	2513	0
V/C Ratio(X)	0.71	0.00	0.75				0.00	0.45	0.16	0.59	0.37	0.00
Avail Cap(c_a), veh/h	827	0	368				0	1901	1492	451	2513	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	0.72	0.72	0.84	0.84	0.00
Uniform Delay (d), s/veh	27.8	0.0	28.0				0.0	10.3	8.6	30.2	4.3	0.0
Incr Delay (d2), s/veh	1.6	0.0	5.3				0.0	0.6	0.2	1.4	0.4	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	3.1	0.0	3.2				0.0	3.2	0.7	1.6	1.4	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	29.4	0.0	33.3				0.0	10.9	8.7	31.6	4.7	0.0
LnGrp LOS	C	A	C				A	B	A	C	A	A
Approach Vol, veh/h		607						1099			1130	
Approach Delay, s/veh		30.7						10.4			9.6	
Approach LOS		C						B			A	
Timer - Assigned Phs	1	2				6		8				
Phs Duration (G+Y+Rc), s	11.9	41.9				53.7		16.3				
Change Period (Y+Rc), s	5.0	5.0				5.0		5.0				
Max Green Setting (Gmax), s	9.0	30.0				44.0		16.0				
Max Q Clear Time (g_c+I1), s	5.9	12.4				9.3		10.1				
Green Ext Time (p_c), s	0.2	5.9				6.6		1.2				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay			14.4									
HCM 6th LOS			B									
<b>Notes</b>												
User approved volume balancing among the lanes for turning movement.												



Arco AM/PM Service Station  
2: Redlands Boulevard & Hemlock Avenue

GPBO (2040) with Project (PM Peak Hour)  
Alternative 2 With Improvements



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	131	87	182	160	87	110	187	965	50	80	1000	54
Future Volume (veh/h)	131	87	182	160	87	110	187	965	50	80	1000	54
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	142	95	198	174	95	120	203	1049	54	87	1087	59
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	340	174	364	272	242	306	237	1469	76	176	1348	73
Arrive On Green	0.32	0.32	0.32	0.32	0.32	0.32	0.13	0.42	0.42	0.10	0.39	0.39
Sat Flow, veh/h	1185	549	1145	1103	763	964	1810	3493	180	1810	3482	189
Grp Volume(v), veh/h	142	0	293	174	0	215	203	542	561	87	563	583
Grp Sat Flow(s),veh/h/ln	1185	0	1694	1103	0	1727	1810	1805	1868	1810	1805	1866
Q Serve(g_s), s	9.7	0.0	13.0	14.1	0.0	8.9	10.0	22.7	22.7	4.2	25.4	25.4
Cycle Q Clear(g_c), s	18.6	0.0	13.0	27.1	0.0	8.9	10.0	22.7	22.7	4.2	25.4	25.4
Prop In Lane	1.00		0.68	1.00		0.56	1.00		0.10	1.00		0.10
Lane Grp Cap(c), veh/h	340	0	538	272	0	548	237	759	786	176	699	722
V/C Ratio(X)	0.42	0.00	0.54	0.64	0.00	0.39	0.86	0.71	0.71	0.49	0.81	0.81
Avail Cap(c_a), veh/h	340	0	538	272	0	548	238	1305	1350	198	1265	1308
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	31.5	0.0	25.7	36.9	0.0	24.3	38.8	21.9	21.9	39.1	24.9	24.9
Incr Delay (d2), s/veh	0.8	0.0	1.1	5.0	0.0	0.5	25.2	1.3	1.2	2.1	2.3	2.2
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	2.8	0.0	5.3	4.1	0.0	3.6	5.8	8.7	9.0	1.8	10.1	10.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	32.3	0.0	26.8	41.9	0.0	24.7	64.0	23.2	23.1	41.2	27.2	27.1
LnGrp LOS	C	A	C	D	A	C	E	C	C	D	C	C
Approach Vol, veh/h		435			389			1306			1233	
Approach Delay, s/veh		28.6			32.4			29.5			28.1	
Approach LOS		C			C			C			C	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	13.9	43.4		34.0	17.0	40.4		34.0				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0				
Max Green Setting (Gmax), s	10.0	66.0		29.0	12.0	64.0		29.0				
Max Q Clear Time (g_c+I1), s	6.2	24.7		20.6	12.0	27.4		29.1				
Green Ext Time (p_c), s	0.1	7.6		1.5	0.0	7.9		0.0				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				29.2								
HCM 6th LOS				C								



Arco AM/PM Service Station  
4: Redlands Boulevard & SR-60 EB

GPBO (2040) with Project (PM Peak Hour)  
Alternative 2 With Improvements

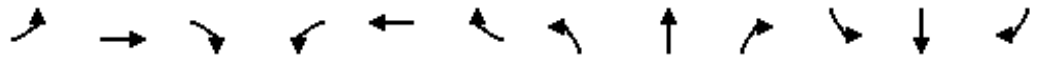
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	570	0	454	0	0	0	0	918	940	453	722	0
Future Volume (veh/h)	570	0	454	0	0	0	0	918	940	453	722	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900				0	1900	1900	1900	1900	0
Adj Flow Rate, veh/h	781	0	333				0	1009	1033	498	793	0
Peak Hour Factor	0.91	0.91	0.91				0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	0	0				0	0	0	0	0	0
Cap, veh/h	942	0	419				0	1484	1165	569	2270	0
Arrive On Green	0.26	0.00	0.26				0.00	0.41	0.41	0.16	0.63	0.00
Sat Flow, veh/h	3619	0	1610				0	3705	2834	3510	3705	0
Grp Volume(v), veh/h	781	0	333				0	1009	1033	498	793	0
Grp Sat Flow(s),veh/h/ln	1810	0	1610				0	1805	1417	1755	1805	0
Q Serve(g_s), s	18.3	0.0	17.4				0.0	20.6	30.4	12.5	9.4	0.0
Cycle Q Clear(g_c), s	18.3	0.0	17.4				0.0	20.6	30.4	12.5	9.4	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	942	0	419				0	1484	1165	569	2270	0
V/C Ratio(X)	0.83	0.00	0.79				0.00	0.68	0.89	0.88	0.35	0.00
Avail Cap(c_a), veh/h	1206	0	537				0	1484	1165	585	2270	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	0.48	0.48	0.84	0.84	0.00
Uniform Delay (d), s/veh	31.4	0.0	31.0				0.0	21.7	24.6	36.8	8.0	0.0
Incr Delay (d2), s/veh	4.0	0.0	6.3				0.0	1.2	5.3	11.8	0.4	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	7.9	0.0	7.0				0.0	7.9	9.7	5.9	2.9	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	35.4	0.0	37.4				0.0	22.9	29.8	48.6	8.3	0.0
LnGrp LOS	D	A	D				A	C	C	D	A	A
Approach Vol, veh/h		1114						2042			1291	
Approach Delay, s/veh		36.0						26.4			23.9	
Approach LOS		D						C			C	
Timer - Assigned Phs	1	2				6		8				
Phs Duration (G+Y+Rc), s	19.6	42.0				61.6		28.4				
Change Period (Y+Rc), s	5.0	5.0				5.0		5.0				
Max Green Setting (Gmax), s	15.0	30.0				50.0		30.0				
Max Q Clear Time (g_c+I1), s	14.5	32.4				11.4		20.3				
Green Ext Time (p_c), s	0.1	0.0				5.5		3.1				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay			28.1									
HCM 6th LOS			C									
<b>Notes</b>												
User approved volume balancing among the lanes for turning movement.												

**GENERAL PLAN BUILDOUT WITHOUT PROJECT – ALTERNATIVE 3**

**WITH IMPROVEMENTS**

Arco AM/PM Service Station  
2: Redlands Boulevard & Hemlock Avenue

GPBO (2040) Without Project (AM Peak Hour)  
Alternative 3 With Improvements

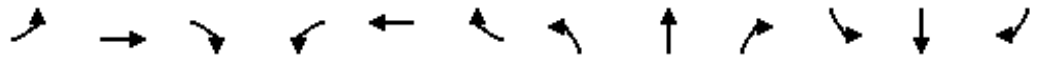


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↕	↗	↖	↕	↗
Traffic Volume (veh/h)	30	36	50	50	36	30	153	770	100	150	758	100
Future Volume (veh/h)	30	36	50	50	36	30	153	770	100	150	758	100
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	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	33	39	54	54	39	33	166	837	109	163	824	109
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	329	130	180	310	172	145	307	1199	156	306	1194	158
Arrive On Green	0.18	0.18	0.18	0.18	0.18	0.18	0.17	0.37	0.37	0.17	0.37	0.37
Sat Flow, veh/h	1349	721	999	1324	951	804	1810	3212	418	1810	3205	424
Grp Volume(v), veh/h	33	0	93	54	0	72	166	470	476	163	464	469
Grp Sat Flow(s),veh/h/ln	1349	0	1720	1324	0	1755	1810	1805	1825	1810	1805	1824
Q Serve(g_s), s	1.2	0.0	2.5	2.0	0.0	1.9	4.5	12.0	12.0	4.5	11.7	11.8
Cycle Q Clear(g_c), s	3.1	0.0	2.5	4.5	0.0	1.9	4.5	12.0	12.0	4.5	11.7	11.8
Prop In Lane	1.00		0.58	1.00		0.46	1.00		0.23	1.00		0.23
Lane Grp Cap(c), veh/h	329	0	311	310	0	317	307	674	681	306	673	680
V/C Ratio(X)	0.10	0.00	0.30	0.17	0.00	0.23	0.54	0.70	0.70	0.53	0.69	0.69
Avail Cap(c_a), veh/h	510	0	540	487	0	551	535	2435	2462	502	2402	2427
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	20.2	0.0	19.2	21.2	0.0	18.9	20.5	14.4	14.4	20.5	14.3	14.3
Incr Delay (d2), s/veh	0.1	0.0	0.5	0.3	0.0	0.4	1.5	1.3	1.3	1.4	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	0.3	0.0	1.0	0.6	0.0	0.7	1.7	3.8	3.9	1.7	3.8	3.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	20.4	0.0	19.7	21.4	0.0	19.3	22.0	15.7	15.7	22.0	15.6	15.6
LnGrp LOS	C	A	B	C	A	B	C	B	B	C	B	B
Approach Vol, veh/h		126			126			1112			1096	
Approach Delay, s/veh		19.9			20.2			16.6			16.6	
Approach LOS		B			C			B			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	14.1	25.2		14.8	14.2	25.2		14.8				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0				
Max Green Setting (Gmax), s	15.0	73.0		17.0	16.0	72.0		17.0				
Max Q Clear Time (g_c+I1), s	6.5	14.0		5.1	6.5	13.8		6.5				
Green Ext Time (p_c), s	0.2	6.2		0.4	0.3	6.1		0.3				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				16.9								
HCM 6th LOS				B								



Arco AM/PM Service Station  
2: Redlands Boulevard & Hemlock Avenue

GPBO (2040) Without Project (PM Peak Hour)  
Alternative 3 With Improvements



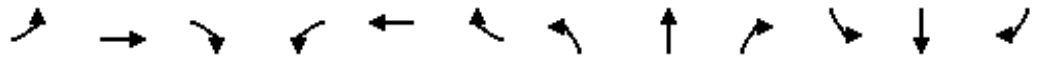
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	110	87	160	160	87	110	96	965	50	80	977	54
Future Volume (veh/h)	110	87	160	160	87	110	96	965	50	80	977	54
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	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	120	95	174	174	95	120	104	1049	54	87	1062	59
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	343	187	343	295	238	300	203	1383	71	192	1357	75
Arrive On Green	0.31	0.31	0.31	0.31	0.31	0.31	0.11	0.40	0.40	0.11	0.39	0.39
Sat Flow, veh/h	1185	601	1101	1128	763	964	1810	3493	180	1810	3477	193
Grp Volume(v), veh/h	120	0	269	174	0	215	104	542	561	87	551	570
Grp Sat Flow(s),veh/h/ln	1185	0	1702	1128	0	1727	1810	1805	1868	1810	1805	1865
Q Serve(g_s), s	7.1	0.0	10.4	12.0	0.0	7.9	4.4	20.9	20.9	3.6	21.6	21.6
Cycle Q Clear(g_c), s	15.0	0.0	10.4	22.4	0.0	7.9	4.4	20.9	20.9	3.6	21.6	21.6
Prop In Lane	1.00		0.65	1.00		0.56	1.00		0.10	1.00		0.10
Lane Grp Cap(c), veh/h	343	0	530	295	0	538	203	715	739	192	705	728
V/C Ratio(X)	0.35	0.00	0.51	0.59	0.00	0.40	0.51	0.76	0.76	0.45	0.78	0.78
Avail Cap(c_a), veh/h	385	0	591	335	0	600	224	1500	1552	224	1500	1550
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	27.7	0.0	22.7	31.9	0.0	21.8	33.7	21.0	21.0	33.8	21.6	21.6
Incr Delay (d2), s/veh	0.6	0.0	0.8	2.1	0.0	0.5	2.0	1.7	1.6	1.7	1.9	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	2.0	0.0	4.1	3.4	0.0	3.1	1.9	7.9	8.2	1.6	8.2	8.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	28.3	0.0	23.4	34.0	0.0	22.3	35.7	22.7	22.7	35.5	23.5	23.5
LnGrp LOS	C	A	C	C	A	C	D	C	C	D	C	C
Approach Vol, veh/h		389			389			1207			1208	
Approach Delay, s/veh		25.0			27.5			23.8			24.4	
Approach LOS		C			C			C			C	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	13.6	36.9		30.1	14.0	36.5		30.1				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0				
Max Green Setting (Gmax), s	10.0	67.0		28.0	10.0	67.0		28.0				
Max Q Clear Time (g_c+I1), s	5.6	22.9		17.0	6.4	23.6		24.4				
Green Ext Time (p_c), s	0.1	7.7		1.6	0.1	7.9		0.7				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				24.6								
HCM 6th LOS				C								

**GENERAL PLAN BUILDOUT WITH PROJECT - ALTERNATIVE 3**

**WITH IMPROVEMENTS**

Arco AM/PM Service Station  
2: Redlands Boulevard & Hemlock Avenue

GPBO (2040) With Project (AM Peak Hour)  
Alternative 3 With Improvements



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↕		↖	↗	
Traffic Volume (veh/h)	50	36	70	50	36	30	235	770	100	150	778	100
Future Volume (veh/h)	50	36	70	50	36	30	235	770	100	150	778	100
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	54	39	76	54	39	33	255	837	109	163	846	109
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	324	103	200	284	170	144	320	1236	161	300	1202	155
Arrive On Green	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.38	0.38	0.17	0.37	0.37
Sat Flow, veh/h	1349	576	1122	1298	951	804	1810	3212	418	1810	3216	414
Grp Volume(v), veh/h	54	0	115	54	0	72	255	470	476	163	475	480
Grp Sat Flow(s),veh/h/ln	1349	0	1698	1298	0	1755	1810	1805	1825	1810	1805	1825
Q Serve(g_s), s	2.0	0.0	3.3	2.1	0.0	1.9	7.5	12.0	12.0	4.6	12.4	12.4
Cycle Q Clear(g_c), s	3.9	0.0	3.3	5.4	0.0	1.9	7.5	12.0	12.0	4.6	12.4	12.4
Prop In Lane	1.00		0.66	1.00		0.46	1.00		0.23	1.00		0.23
Lane Grp Cap(c), veh/h	324	0	303	284	0	313	320	695	702	300	674	682
V/C Ratio(X)	0.17	0.00	0.38	0.19	0.00	0.23	0.80	0.68	0.68	0.54	0.70	0.70
Avail Cap(c_a), veh/h	497	0	521	451	0	539	686	2411	2438	457	2183	2208
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	21.2	0.0	20.0	22.4	0.0	19.5	21.8	14.2	14.2	21.2	14.7	14.7
Incr Delay (d2), s/veh	0.2	0.0	0.8	0.3	0.0	0.4	4.5	1.2	1.2	1.5	1.4	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	0.6	0.0	1.3	0.6	0.0	0.8	3.0	3.8	3.9	1.8	4.0	4.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	21.4	0.0	20.8	22.8	0.0	19.9	26.4	15.3	15.3	22.7	16.1	16.1
LnGrp LOS	C	A	C	C	A	B	C	B	B	C	B	B
Approach Vol, veh/h		169			126			1201			1118	
Approach Delay, s/veh		21.0			21.1			17.7			17.1	
Approach LOS		C			C			B			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	14.2	26.3		14.9	14.8	25.7		14.9				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0				
Max Green Setting (Gmax), s	14.0	74.0		17.0	21.0	67.0		17.0				
Max Q Clear Time (g_c+I1), s	6.6	14.0		5.9	9.5	14.4		7.4				
Green Ext Time (p_c), s	0.2	6.3		0.5	0.5	6.3		0.3				

Intersection Summary

HCM 6th Ctrl Delay	17.8
HCM 6th LOS	B





Arco AM/PM Service Station  
2: Redlands Boulevard & Hemlock Avenue

GPBO (2040) With Project (PM Peak Hour)  
Alternative 3 With Improvements



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	131	87	182	160	87	110	187	965	50	80	1000	54
Future Volume (veh/h)	131	87	182	160	87	110	187	965	50	80	1000	54
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	142	95	198	174	95	120	203	1049	54	87	1087	59
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	340	174	364	272	242	306	237	1469	76	176	1348	73
Arrive On Green	0.32	0.32	0.32	0.32	0.32	0.32	0.13	0.42	0.42	0.10	0.39	0.39
Sat Flow, veh/h	1185	549	1145	1103	763	964	1810	3493	180	1810	3482	189
Grp Volume(v), veh/h	142	0	293	174	0	215	203	542	561	87	563	583
Grp Sat Flow(s),veh/h/ln	1185	0	1694	1103	0	1727	1810	1805	1868	1810	1805	1866
Q Serve(g_s), s	9.7	0.0	13.0	14.1	0.0	8.9	10.0	22.7	22.7	4.2	25.4	25.4
Cycle Q Clear(g_c), s	18.6	0.0	13.0	27.1	0.0	8.9	10.0	22.7	22.7	4.2	25.4	25.4
Prop In Lane	1.00		0.68	1.00		0.56	1.00		0.10	1.00		0.10
Lane Grp Cap(c), veh/h	340	0	538	272	0	548	237	759	786	176	699	722
V/C Ratio(X)	0.42	0.00	0.54	0.64	0.00	0.39	0.86	0.71	0.71	0.49	0.81	0.81
Avail Cap(c_a), veh/h	340	0	538	272	0	548	238	1305	1350	198	1265	1308
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	31.5	0.0	25.7	36.9	0.0	24.3	38.8	21.9	21.9	39.1	24.9	24.9
Incr Delay (d2), s/veh	0.8	0.0	1.1	5.0	0.0	0.5	25.2	1.3	1.2	2.1	2.3	2.2
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	2.8	0.0	5.3	4.1	0.0	3.6	5.8	8.7	9.0	1.8	10.1	10.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	32.3	0.0	26.8	41.9	0.0	24.7	64.0	23.2	23.1	41.2	27.2	27.1
LnGrp LOS	C	A	C	D	A	C	E	C	C	D	C	C
Approach Vol, veh/h		435			389			1306			1233	
Approach Delay, s/veh		28.6			32.4			29.5			28.1	
Approach LOS		C			C			C			C	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	13.9	43.4		34.0	17.0	40.4		34.0				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0				
Max Green Setting (Gmax), s	10.0	66.0		29.0	12.0	64.0		29.0				
Max Q Clear Time (g_c+I1), s	6.2	24.7		20.6	12.0	27.4		29.1				
Green Ext Time (p_c), s	0.1	7.6		1.5	0.0	7.9		0.0				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				29.2								
HCM 6th LOS				C								

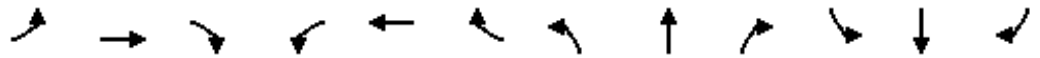
**APPENDIX J**

**STACKING/QUEUE REQUIREMENTS - GENERAL PLAN BUILDOUT-  
ALTERNATIVES**

**GENERAL PLAN BUILDOUT WITHOUT PROJECT - ALTERNATIVE 1**

Arco AM/PM Service Station  
1: Redlands Boulevard & Ironwood Avenue

GPBO (2040) Without Project (AM Peak Hour)



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↕			↕↕		↕	↕↕		↕	↕↕	↕
Traffic Volume (vph)	133	150	116	20	100	20	90	730	50	30	770	130
Future Volume (vph)	133	150	116	20	100	20	90	730	50	30	770	130
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	400		0	435		115
Storage Lanes	0		0	0		0	1		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	0.95	0.95	1.00	0.95	1.00
Frt		0.956			0.978			0.990				0.850
Flt Protected		0.984			0.993		0.950			0.950		
Satd. Flow (prot)	0	3396	0	0	3506	0	1805	3574	0	1805	3610	1615
Flt Permitted		0.984			0.993		0.950			0.950		
Satd. Flow (perm)	0	3396	0	0	3506	0	1805	3574	0	1805	3610	1615
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		47			14			6				109
Link Speed (mph)		55			55			50				50
Link Distance (ft)		1467			1500			765				1354
Travel Time (s)		18.2			18.6			10.4				18.5
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	139	156	121	21	104	21	94	760	52	31	802	135
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	416	0	0	146	0	94	812	0	31	802	135
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		8			8			8				8
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	20		10	20		10	20		10	20		10
Turn Type	Split	NA		Split	NA		Prot	NA		Prot	NA	Perm
Protected Phases	8	8		4	4		5	2		1	6	
Permitted Phases												6
Detector Phase	8	8		4	4		5	2		1	6	6
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	10.0
Minimum Split (s)	31.0	31.0		31.0	31.0		15.7	28.7		15.7	28.7	28.7
Total Split (s)	31.0	31.0		31.0	31.0		17.0	42.0		16.0	41.0	41.0
Total Split (%)	25.8%	25.8%		25.8%	25.8%		14.2%	35.0%		13.3%	34.2%	34.2%
Maximum Green (s)	26.0	26.0		26.0	26.0		12.0	37.0		11.0	36.0	36.0
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)		5.0			5.0		5.0	5.0		5.0	5.0	5.0
Lead/Lag							Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None		None	None		None	Min		None	Min	Min
Walk Time (s)	7.0	7.0		7.0	7.0			7.0			7.0	7.0

Arco AM/PM Service Station  
1: Redlands Boulevard & Ironwood Avenue

GPBO (2040) Without Project (AM Peak Hour)



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Flash Dont Walk (s)	18.0	18.0		18.0	18.0			16.0			16.0	16.0
Pedestrian Calls (#/hr)	0	0		0	0			0			0	0
Act Effct Green (s)		15.0			10.7		11.1	29.6		10.5	25.8	25.8
Actuated g/C Ratio		0.19			0.14		0.14	0.37		0.13	0.33	0.33
v/c Ratio		0.61			0.30		0.37	0.61		0.13	0.68	0.23
Control Delay		31.9			34.1		40.8	23.4		38.4	27.5	7.7
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	0.0
Total Delay		31.9			34.1		40.8	23.4		38.4	27.5	7.7
LOS		C			C		D	C		D	C	A
Approach Delay		31.9			34.1			25.2			25.1	
Approach LOS		C			C			C			C	
Queue Length 50th (ft)		89			32		44	186		14	184	9
Queue Length 95th (ft)		162			72		107	275		47	282	50
Internal Link Dist (ft)		1387			1420			685			1274	
Turn Bay Length (ft)							400			435		115
Base Capacity (vph)		1199			1216		286	1761		262	1720	826
Starvation Cap Reductn		0			0		0	0		0	0	0
Spillback Cap Reductn		0			0		0	0		0	0	0
Storage Cap Reductn		0			0		0	0		0	0	0
Reduced v/c Ratio		0.35			0.12		0.33	0.46		0.12	0.47	0.16

Intersection Summary

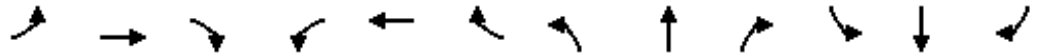
Area Type:	Other
Cycle Length:	120
Actuated Cycle Length:	79.1
Natural Cycle:	110
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.68
Intersection Signal Delay:	26.8
Intersection LOS:	C
Intersection Capacity Utilization:	62.7%
ICU Level of Service:	B
Analysis Period (min):	15

Splits and Phases: 1: Redlands Boulevard & Ironwood Avenue

Ø1 16 s	Ø2 42 s	Ø4 31 s	Ø8 31 s
Ø5 17 s	Ø6 41 s		

Arco AM/PM Service Station  
1: Redlands Boulevard & Ironwood Avenue

GPBO (2040) Without Project (AM Peak Hour)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↕			↕↕		↕	↕↕		↕	↕↕	↕
Traffic Volume (veh/h)	133	150	116	20	100	20	90	730	50	30	770	130
Future Volume (veh/h)	133	150	116	20	100	20	90	730	50	30	770	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	139	156	121	21	104	21	94	760	52	31	802	135
Peak Hour Factor	0.96	0.96	0.96	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	0	0	0
Cap, veh/h	193	224	181	68	346	72	214	1218	83	116	1087	485
Arrive On Green	0.17	0.17	0.17	0.13	0.13	0.13	0.12	0.36	0.36	0.06	0.30	0.30
Sat Flow, veh/h	1147	1331	1072	512	2617	547	1810	3428	234	1810	3610	1610
Grp Volume(v), veh/h	223	0	193	77	0	69	94	400	412	31	802	135
Grp Sat Flow(s),veh/h/ln	1843	0	1707	1874	0	1802	1810	1805	1858	1810	1805	1610
Q Serve(g_s), s	8.2	0.0	7.6	2.7	0.0	2.5	3.5	13.1	13.1	1.2	14.3	4.6
Cycle Q Clear(g_c), s	8.2	0.0	7.6	2.7	0.0	2.5	3.5	13.1	13.1	1.2	14.3	4.6
Prop In Lane	0.62		0.63	0.27		0.30	1.00		0.13	1.00		1.00
Lane Grp Cap(c), veh/h	310	0	288	248	0	238	214	641	660	116	1087	485
V/C Ratio(X)	0.72	0.00	0.67	0.31	0.00	0.29	0.44	0.62	0.62	0.27	0.74	0.28
Avail Cap(c_a), veh/h	670	0	621	682	0	655	304	934	962	279	1818	811
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	28.1	0.0	27.9	28.1	0.0	28.0	29.3	19.1	19.1	31.8	22.4	19.0
Incr Delay (d2), s/veh	3.1	0.0	2.7	0.7	0.0	0.7	1.4	1.0	1.0	1.2	1.0	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	3.4	0.0	2.9	1.1	0.0	1.0	1.4	4.8	4.9	0.5	5.3	1.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	31.2	0.0	30.6	28.8	0.0	28.7	30.7	20.1	20.1	33.0	23.4	19.4
LnGrp LOS	C	A	C	C	A	C	C	C	C	C	C	B
Approach Vol, veh/h		416			146			906			968	
Approach Delay, s/veh		30.9			28.7			21.2			23.2	
Approach LOS		C			C			C			C	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.6	30.4		14.4	13.5	26.5		17.0				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0				
Max Green Setting (Gmax), s	11.0	37.0		26.0	12.0	36.0		26.0				
Max Q Clear Time (g_c+I1), s	3.2	15.1		4.7	5.5	16.3		10.2				
Green Ext Time (p_c), s	0.0	4.5		0.6	0.1	5.3		1.9				

Intersection Summary

HCM 6th Ctrl Delay	24.1
HCM 6th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

Arco AM/PM Service Station  
2: Redlands Boulevard & Hemlock Avenue

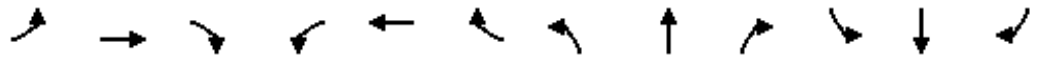
GPBO (2040) Without Project (AM Peak Hour)



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	30	36	50	50	36	30	153	770	100	150	758	100
Future Volume (vph)	30	36	50	50	36	30	153	770	100	150	758	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>		0.913			0.931			0.983			0.982	
Fl <sub>t</sub> Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	1735	0	1805	1769	0	1805	1868	0	1805	1866	0
Fl <sub>t</sub> Permitted	0.710			0.697			0.950			0.950		
Satd. Flow (perm)	1349	1735	0	1324	1769	0	1805	1868	0	1805	1866	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		48			30			10			10	
Link Speed (mph)		30			30			50			50	
Link Distance (ft)		503			200			294			546	
Travel Time (s)		11.4			4.5			4.0			7.4	
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
Adj. Flow (vph)	33	39	54	54	39	33	166	837	109	163	824	109
Shared Lane Traffic (%)												
Lane Group Flow (vph)	33	93	0	54	72	0	166	946	0	163	933	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		8			8			8			8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	20		10	20		10	20		10	20		10
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Detector Phase	4	4		8	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	22.0	22.0		22.0	22.0		15.7	22.7		15.0	30.0	
Total Split (s)	22.0	22.0		22.0	22.0		21.0	78.0		20.0	77.0	
Total Split (%)	18.3%	18.3%		18.3%	18.3%		17.5%	65.0%		16.7%	64.2%	
Maximum Green (s)	17.0	17.0		17.0	17.0		16.0	73.0		15.0	72.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	Min		None	Min	
Walk Time (s)	7.0	7.0		7.0	7.0						7.0	
Flash Dont Walk (s)	10.0	10.0		10.0	10.0						18.0	
Pedestrian Calls (#/hr)	0	0		0	0						0	
Act Effect Green (s)	12.0	12.0		12.0	12.0		14.1	52.7		13.8	52.4	

Arco AM/PM Service Station  
2: Redlands Boulevard & Hemlock Avenue

GPBO (2040) Without Project (AM Peak Hour)



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio	0.13	0.13		0.13	0.13		0.16	0.59		0.15	0.59	
v/c Ratio	0.18	0.34		0.31	0.27		0.59	0.86		0.59	0.85	
Control Delay	45.4	28.0		48.0	31.0		50.2	25.5		51.0	25.3	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.3		0.0	0.0	
Total Delay	45.4	28.0		48.0	31.0		50.2	25.7		51.0	25.3	
LOS	D	C		D	C		D	C		D	C	
Approach Delay		32.6			38.3			29.4			29.2	
Approach LOS		C			D			C			C	
Queue Length 50th (ft)	18	24		30	23		91	442		89	429	
Queue Length 95th (ft)	55	83		80	74		#210	722		#216	721	
Internal Link Dist (ft)		423			120			214			466	
Turn Bay Length (ft)												
Base Capacity (vph)	279	397		273	389		351	1501		329	1484	
Starvation Cap Reductn	0	0		0	0		0	127		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.12	0.23		0.20	0.19		0.47	0.69		0.50	0.63	

Intersection Summary

Area Type:	Other
Cycle Length:	120
Actuated Cycle Length:	89.5
Natural Cycle:	90
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.86
Intersection Signal Delay:	29.9
Intersection LOS:	C
Intersection Capacity Utilization:	82.4%
ICU Level of Service:	E
Analysis Period (min):	15
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

Splits and Phases: 2: Redlands Boulevard & Hemlock Avenue

Ø1	Ø2	Ø4
20 s	78 s	22 s
Ø5	Ø6	Ø8
21 s	77 s	22 s



Arco AM/PM Service Station  
2: Redlands Boulevard & Hemlock Avenue
















GPBO (2040) Without Project (AM Peak Hour)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↗		↖	↗	
Traffic Volume (veh/h)	30	36	50	50	36	30	153	770	100	150	758	100
Future Volume (veh/h)	30	36	50	50	36	30	153	770	100	150	758	100
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	33	39	54	54	39	33	166	837	109	163	824	109
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	206	89	124	187	118	100	219	937	122	219	934	124
Arrive On Green	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.57	0.57	0.12	0.57	0.57
Sat Flow, veh/h	1349	721	999	1324	951	804	1810	1647	214	1810	1643	217
Grp Volume(v), veh/h	33	0	93	54	0	72	166	0	946	163	0	933
Grp Sat Flow(s),veh/h/ln	1349	0	1720	1324	0	1755	1810	0	1861	1810	0	1861
Q Serve(g_s), s	1.8	0.0	4.0	3.2	0.0	3.0	7.1	0.0	35.9	7.0	0.0	34.9
Cycle Q Clear(g_c), s	4.9	0.0	4.0	7.2	0.0	3.0	7.1	0.0	35.9	7.0	0.0	34.9
Prop In Lane	1.00		0.58	1.00		0.46	1.00		0.12	1.00		0.12
Lane Grp Cap(c), veh/h	206	0	213	187	0	217	219	0	1059	219	0	1058
V/C Ratio(X)	0.16	0.00	0.44	0.29	0.00	0.33	0.76	0.00	0.89	0.74	0.00	0.88
Avail Cap(c_a), veh/h	324	0	363	303	0	371	360	0	1689	337	0	1665
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	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	34.4	0.0	32.7	36.0	0.0	32.2	34.2	0.0	15.2	34.2	0.0	15.0
Incr Delay (d2), s/veh	0.4	0.0	1.4	0.8	0.0	0.9	5.3	0.0	4.1	5.0	0.0	3.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.0	1.7	1.0	0.0	1.3	3.2	0.0	12.5	3.1	0.0	12.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	34.8	0.0	34.1	36.8	0.0	33.1	39.5	0.0	19.3	39.1	0.0	18.7
LnGrp LOS	C	A	C	D	A	C	D	A	B	D	A	B
Approach Vol, veh/h		126			126			1112			1096	
Approach Delay, s/veh		34.3			34.7			22.3			21.7	
Approach LOS		C			C			C			C	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	14.7	50.8		15.0	14.8	50.8		15.0				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0				
Max Green Setting (Gmax), s	15.0	73.0		17.0	16.0	72.0		17.0				
Max Q Clear Time (g_c+I1), s	9.0	37.9		6.9	9.1	36.9		9.2				
Green Ext Time (p_c), s	0.2	7.9		0.3	0.2	7.7		0.3				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				23.3								
HCM 6th LOS				C								

Arco AM/PM Service Station  
3: Redlands Boulevard & SR-60 WB

GPBO (2040) Without Project (AM Peak Hour)

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	 		 			 
Traffic Volume (vph)	530	240	751	286	334	490
Future Volume (vph)	530	240	751	286	334	490
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0		250	0	
Storage Lanes	2	1		1	1	
Taper Length (ft)	25				25	
Lane Util. Factor	0.97	0.91	0.95	1.00	1.00	0.95
Frt	0.993	0.850		0.850		
Flt Protected	0.954				0.950	
Satd. Flow (prot)	3492	1470	3610	1615	1805	3610
Flt Permitted	0.954				0.950	
Satd. Flow (perm)	3492	1470	3610	1615	1805	3610
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)	7	232		187		
Link Speed (mph)	45		50			50
Link Distance (ft)	1692		1145			350
Travel Time (s)	25.6		15.6			4.8
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	570	258	808	308	359	527
Shared Lane Traffic (%)		10%				
Lane Group Flow (vph)	596	232	808	308	359	527
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	24		12			12
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	8		8			8
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	20	10		10	20	
Turn Type	Prot	Prot	NA	pt+ov	Prot	NA
Protected Phases	7	7	2	2 7	1	6
Permitted Phases						
Detector Phase	7	7	2	2 7	1	6
Switch Phase						
Minimum Initial (s)	7.0	7.0	7.0		7.0	7.0
Minimum Split (s)	13.2	13.2	23.2		13.2	23.2
Total Split (s)	15.0	15.0	24.0		21.0	45.0
Total Split (%)	25.0%	25.0%	40.0%		35.0%	75.0%
Maximum Green (s)	10.0	10.0	19.0		16.0	40.0
Yellow Time (s)	4.0	4.0	4.0		4.0	4.0
All-Red Time (s)	1.0	1.0	1.0		1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0		5.0	5.0
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Recall Mode	None	None	C-Min		None	C-Min
Act Effct Green (s)	11.5	11.5	18.6	35.1	14.9	38.5

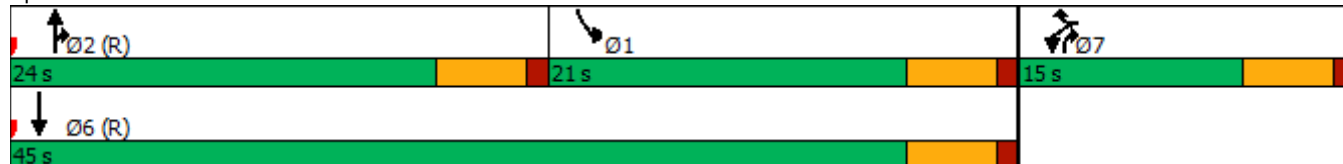


Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Actuated g/C Ratio	0.19	0.19	0.31	0.58	0.25	0.64
v/c Ratio	0.88	0.49	0.72	0.30	0.80	0.23
Control Delay	43.1	7.9	22.8	3.6	36.5	4.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	43.1	7.9	22.8	3.6	36.5	4.6
LOS	D	A	C	A	D	A
Approach Delay	33.2		17.5			17.5
Approach LOS	C		B			B
Queue Length 50th (ft)	~113	0	133	18	118	31
Queue Length 95th (ft)	#211	56	190	50	#233	47
Internal Link Dist (ft)	1612		1065			270
Turn Bay Length (ft)				250		
Base Capacity (vph)	677	470	1143	1033	481	2406
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	0.88	0.49	0.71	0.30	0.75	0.22

Intersection Summary

Area Type: Other  
 Cycle Length: 60  
 Actuated Cycle Length: 60  
 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green  
 Natural Cycle: 60  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.88  
 Intersection Signal Delay: 22.1 Intersection LOS: C  
 Intersection Capacity Utilization 71.9% ICU Level of Service C  
 Analysis Period (min) 15  
 Description: Alternative 1  
 ~ 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.

Splits and Phases: 3: Redlands Boulevard & SR-60 WB



Arco AM/PM Service Station  
3: Redlands Boulevard & SR-60 WB

GPBO (2040) Without Project (AM Peak Hour)



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↙↙	↙	↕↕	↘	↘	↕↕
Traffic Volume (veh/h)	530	240	751	286	334	490
Future Volume (veh/h)	530	240	751	286	334	490
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	570	258	808	308	359	527
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	603	268	1014	721	547	2407
Arrive On Green	0.17	0.17	0.28	0.28	0.30	0.67
Sat Flow, veh/h	3619	1610	3705	1610	1810	3705
Grp Volume(v), veh/h	570	258	808	308	359	527
Grp Sat Flow(s),veh/h/ln	1810	1610	1805	1610	1810	1805
Q Serve(g_s), s	9.3	9.5	12.4	7.8	10.4	3.4
Cycle Q Clear(g_c), s	9.3	9.5	12.4	7.8	10.4	3.4
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	603	268	1014	721	547	2407
V/C Ratio(X)	0.94	0.96	0.80	0.43	0.66	0.22
Avail Cap(c_a), veh/h	603	268	1143	778	547	2407
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.84	0.84	1.00	1.00
Uniform Delay (d), s/veh	24.7	24.8	20.0	11.3	18.2	3.9
Incr Delay (d2), s/veh	23.9	44.2	5.5	1.6	2.8	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	5.5	11.2	5.1	3.4	3.9	0.6
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	48.6	69.1	25.5	12.9	21.1	4.1
LnGrp LOS	D	E	C	B	C	A
Approach Vol, veh/h	828		1116			886
Approach Delay, s/veh	55.0		22.0			11.0
Approach LOS	D		C			B
Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	23.1	21.9		15.0		45.0
Change Period (Y+Rc), s	5.0	5.0		5.0		5.0
Max Green Setting (Gmax), s	16.0	19.0		10.0		40.0
Max Q Clear Time (g_c+I1), s	12.4	14.4		11.5		5.4
Green Ext Time (p_c), s	0.4	2.4		0.0		3.3

Intersection Summary





















HCM 6th Ctrl Delay	28.2
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

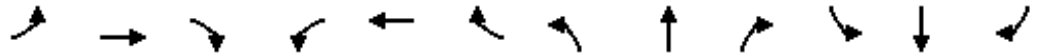
Arco AM/PM Service Station  
4: Redlands Boulevard & SR-60 EB

GPBO (2040) Without Project (AM Peak Hour)

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	285	0	269	0	0	0	0	779	220	180	840	0
Future Volume (vph)	285	0	269	0	0	0	0	779	220	180	840	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.91	0.95	1.00	1.00	1.00	1.00	0.95	1.00	0.97	0.95	1.00
Fr <sub>t</sub>		0.926	0.850						0.850			
Fl <sub>t</sub> Protected	0.950	0.975								0.950		
Satd. Flow (prot)	1715	1561	1534	0	0	0	0	3610	1615	3502	3610	0
Fl <sub>t</sub> Permitted	0.950	0.975								0.950		
Satd. Flow (perm)	1715	1561	1534	0	0	0	0	3610	1615	3502	3610	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		109	162						239			
Link Speed (mph)		45			45			50			50	
Link Distance (ft)		1655			1667			819			1145	
Travel Time (s)		25.1			25.3			11.2			15.6	
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
Adj. Flow (vph)	310	0	292	0	0	0	0	847	239	196	913	0
Shared Lane Traffic (%)	33%		34%									
Lane Group Flow (vph)	208	201	193	0	0	0	0	847	239	196	913	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		8			8			8			8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	20		10	20		10	20		10	20		10
Turn Type	Perm	NA	Perm					NA	Perm	Prot	NA	
Protected Phases		8						2		1	6	
Permitted Phases	8		8						2			
Detector Phase	8	8	8					2	2	1	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0					7.0	7.0	7.0	7.0	
Minimum Split (s)	12.0	12.0	12.0					23.2	23.2	13.2	23.2	
Total Split (s)	21.0	21.0	21.0					35.0	35.0	14.0	49.0	
Total Split (%)	30.0%	30.0%	30.0%					50.0%	50.0%	20.0%	70.0%	
Maximum Green (s)	16.0	16.0	16.0					30.0	30.0	9.0	44.0	
Yellow Time (s)	4.0	4.0	4.0					4.0	4.0	4.0	4.0	
All-Red Time (s)	1.0	1.0	1.0					1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0					0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0					5.0	5.0	5.0	5.0	
Lead/Lag								Lag	Lag	Lead		
Lead-Lag Optimize?								Yes	Yes	Yes		
Vehicle Extension (s)	3.0	3.0	3.0					3.0	3.0	3.0	3.0	
Recall Mode	None	None	None					C-Min	C-Min	None	C-Min	
Act Effct Green (s)	13.5	13.5	13.5					32.7	32.7	8.7	46.5	
Actuated g/C Ratio	0.19	0.19	0.19					0.47	0.47	0.12	0.66	
v/c Ratio	0.63	0.52	0.45					0.50	0.27	0.45	0.38	
Control Delay	34.2	16.6	9.8					15.1	2.9	31.7	6.3	

Arco AM/PM Service Station  
4: Redlands Boulevard & SR-60 EB

GPBO (2040) Without Project (AM Peak Hour)



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Delay	0.0	0.0	0.0					0.0	0.0	0.0	0.0	
Total Delay	34.2	16.6	9.8					15.1	2.9	31.7	6.3	
LOS	C	B	A					B	A	C	A	
Approach Delay		20.5						12.4			10.8	
Approach LOS		C						B			B	
Queue Length 50th (ft)	85	37	11					132	0	40	82	
Queue Length 95th (ft)	148	96	62					189	36	70	122	
Internal Link Dist (ft)		1575			1587			739			1065	
Turn Bay Length (ft)												
Base Capacity (vph)	398	445	480					1714	892	464	2409	
Starvation Cap Reductn	0	0	0					0	0	0	0	
Spillback Cap Reductn	0	0	0					0	0	0	0	
Storage Cap Reductn	0	0	0					0	0	0	0	
Reduced v/c Ratio	0.52	0.45	0.40					0.49	0.27	0.42	0.38	

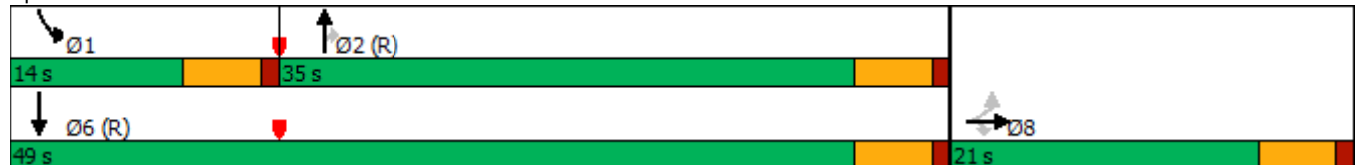
Intersection Summary

Area Type: Other  
 Cycle Length: 70  
 Actuated Cycle Length: 70  
 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green  
 Natural Cycle: 50  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.63  
 Intersection Signal Delay: 13.5  
 Intersection Capacity Utilization 54.2%  
 Analysis Period (min) 15  
 Description: Alternative 1

Intersection LOS: B

ICU Level of Service A

Splits and Phases: 4: Redlands Boulevard & SR-60 EB



Arco AM/PM Service Station  
4: Redlands Boulevard & SR-60 EB

GPBO (2040) Without Project (AM Peak Hour)

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	285	0	269	0	0	0	0	779	220	180	840	0
Future Volume (veh/h)	285	0	269	0	0	0	0	779	220	180	840	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900				0	1900	1900	1900	1900	0
Adj Flow Rate, veh/h	401	0	195				0	847	239	196	913	0
Peak Hour Factor	0.92	0.92	0.92				0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0				0	0	0	0	0	0
Cap, veh/h	582	0	259				0	1903	849	343	2514	0
Arrive On Green	0.16	0.00	0.16				0.00	0.53	0.53	0.10	0.70	0.00
Sat Flow, veh/h	3619	0	1610				0	3705	1610	3510	3705	0
Grp Volume(v), veh/h	401	0	195				0	847	239	196	913	0
Grp Sat Flow(s),veh/h/ln	1810	0	1610				0	1805	1610	1755	1805	0
Q Serve(g_s), s	7.3	0.0	8.1				0.0	10.1	5.8	3.7	7.2	0.0
Cycle Q Clear(g_c), s	7.3	0.0	8.1				0.0	10.1	5.8	3.7	7.2	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	582	0	259				0	1903	849	343	2514	0
V/C Ratio(X)	0.69	0.00	0.75				0.00	0.45	0.28	0.57	0.36	0.00
Avail Cap(c_a), veh/h	827	0	368				0	1903	849	451	2514	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	0.90	0.90	0.79	0.79	0.00
Uniform Delay (d), s/veh	27.7	0.0	28.1				0.0	10.2	9.2	30.2	4.3	0.0
Incr Delay (d2), s/veh	1.5	0.0	5.3				0.0	0.7	0.7	1.2	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.0	0.0	3.2				0.0	3.2	1.7	1.5	1.4	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	29.2	0.0	33.4				0.0	10.9	9.9	31.4	4.6	0.0
LnGrp LOS	C	A	C				A	B	A	C	A	A
Approach Vol, veh/h		596						1086			1109	
Approach Delay, s/veh		30.6						10.7			9.4	
Approach LOS		C						B			A	
Timer - Assigned Phs	1	2				6		8				
Phs Duration (G+Y+Rc), s	11.8	41.9				53.8		16.2				
Change Period (Y+Rc), s	5.0	5.0				5.0		5.0				
Max Green Setting (Gmax), s	9.0	30.0				44.0		16.0				
Max Q Clear Time (g_c+I1), s	5.7	12.1				9.2		10.1				
Green Ext Time (p_c), s	0.2	5.8				6.5		1.2				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay			14.4									
HCM 6th LOS			B									
<b>Notes</b>												
User approved volume balancing among the lanes for turning movement.												

Arco AM/PM Service Station  
5: Redlands Boulevard & Eucalyptus Avenue

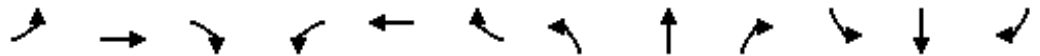
GPBO (2040) Without Project (AM Peak Hour)

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	167	60	96	70	60	180	134	648	180	330	503	247
Future Volume (vph)	167	60	96	70	60	180	134	648	180	330	503	247
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	275		0	150		0	150		0	0		0
Storage Lanes	2		1	1		1	1		1	2		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	0.97	0.95	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3502	3610	1615	1805	3610	1615	1805	3610	1615	3502	3610	1615
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3502	3610	1615	1805	3610	1615	1805	3610	1615	3502	3610	1615
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			119			188			188			257
Link Speed (mph)		40			40			50			50	
Link Distance (ft)		2576			1616			680			819	
Travel Time (s)		43.9			27.5			9.3			11.2	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	174	63	100	73	63	188	140	675	188	344	524	257
Shared Lane Traffic (%)												
Lane Group Flow (vph)	174	63	100	73	63	188	140	675	188	344	524	257
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		8			8			8			8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	20		10	20		10	20		10	20		10
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	pt+ov
Protected Phases	3	8		7	4		5	2		1	6	63
Permitted Phases			8			4			2			
Detector Phase	3	8	8	7	4	4	5	2	2	1	6	63
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	10.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	12.4	36.0	36.0	15.0	36.0	36.0	13.2	36.7	36.7	13.2	23.2	
Total Split (s)	16.0	36.0	36.0	16.0	36.0	36.0	21.0	40.0	40.0	18.0	37.0	
Total Split (%)	14.5%	32.7%	32.7%	14.5%	32.7%	32.7%	19.1%	36.4%	36.4%	16.4%	33.6%	
Maximum Green (s)	11.0	31.0	31.0	11.0	31.0	31.0	16.0	35.0	35.0	13.0	32.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	C-Min	C-Min	None	C-Min	
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0			



Arco AM/PM Service Station  
5: Redlands Boulevard & Eucalyptus Avenue

GPBO (2040) Without Project (AM Peak Hour)

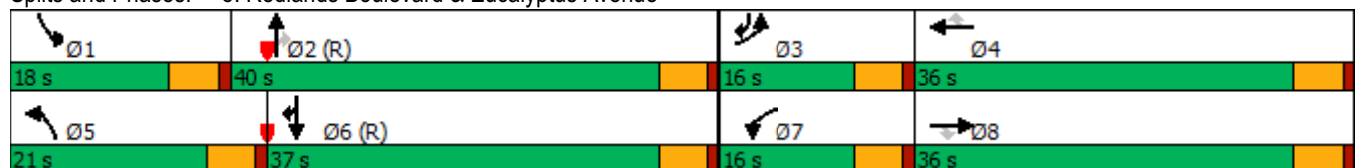


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Flash Dont Walk (s)		18.0	18.0		18.0	18.0		16.0	16.0			
Pedestrian Calls (#/hr)		0	0		0	0		0	0			
Act Effct Green (s)	10.8	11.5	11.5	11.0	8.7	8.7	13.8	54.2	54.2	16.3	56.8	72.6
Actuated g/C Ratio	0.10	0.10	0.10	0.10	0.08	0.08	0.13	0.49	0.49	0.15	0.52	0.66
v/c Ratio	0.51	0.17	0.36	0.41	0.22	0.63	0.62	0.38	0.21	0.66	0.28	0.22
Control Delay	51.9	47.1	9.5	53.1	48.5	16.6	57.1	19.5	3.6	50.4	17.0	1.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	51.9	47.1	9.5	53.1	48.5	16.6	57.1	19.5	3.6	50.4	17.0	1.7
LOS	D	D	A	D	D	B	E	B	A	D	B	A
Approach Delay		38.4			31.0			21.7			23.7	
Approach LOS		D			C			C			C	
Queue Length 50th (ft)	61	22	0	50	22	0	95	147	0	119	103	0
Queue Length 95th (ft)	93	42	36	94	42	65	153	238	44	162	178	34
Internal Link Dist (ft)		2496			1536			600			739	
Turn Bay Length (ft)	275			150			150					
Base Capacity (vph)	375	1017	540	190	1017	590	272	1778	890	524	1862	1164
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.46	0.06	0.19	0.38	0.06	0.32	0.51	0.38	0.21	0.66	0.28	0.22

Intersection Summary

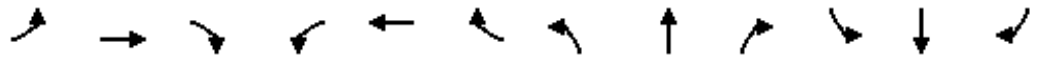
Area Type:	Other
Cycle Length:	110
Actuated Cycle Length:	110
Offset:	0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle:	105
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.66
Intersection Signal Delay:	25.6
Intersection LOS:	C
Intersection Capacity Utilization:	55.1%
ICU Level of Service:	B
Analysis Period (min):	15

Splits and Phases: 5: Redlands Boulevard & Eucalyptus Avenue



Arco AM/PM Service Station  
5: Redlands Boulevard & Eucalyptus Avenue

GPBO (2040) Without Project (AM Peak Hour)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖↗	↑↑	↖	↖	↑↑	↖	↖	↑↑	↖	↖↗	↑↑	↖
Traffic Volume (veh/h)	167	60	96	70	60	180	134	648	180	330	503	247
Future Volume (veh/h)	167	60	96	70	60	180	134	648	180	330	503	247
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	174	62	100	73	62	188	140	675	188	344	524	257
Peak Hour Factor	0.96	0.96	0.96	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	0	0	0
Cap, veh/h	239	456	203	147	503	224	170	1791	799	403	1865	941
Arrive On Green	0.07	0.13	0.13	0.08	0.14	0.14	0.09	0.50	0.50	0.11	0.52	0.52
Sat Flow, veh/h	3510	3610	1610	1810	3610	1610	1810	3610	1610	3510	3610	1610
Grp Volume(v), veh/h	174	62	100	73	62	188	140	675	188	344	524	257
Grp Sat Flow(s),veh/h/ln	1755	1805	1610	1810	1805	1610	1810	1805	1610	1755	1805	1610
Q Serve(g_s), s	5.3	1.7	6.4	4.2	1.7	12.5	8.4	12.8	7.3	10.6	9.0	8.7
Cycle Q Clear(g_c), s	5.3	1.7	6.4	4.2	1.7	12.5	8.4	12.8	7.3	10.6	9.0	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	239	456	203	147	503	224	170	1791	799	403	1865	941
V/C Ratio(X)	0.73	0.14	0.49	0.50	0.12	0.84	0.82	0.38	0.24	0.85	0.28	0.27
Avail Cap(c_a), veh/h	351	1017	454	181	1017	454	263	1791	799	415	1865	941
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	0.93	0.93	0.93
Uniform Delay (d), s/veh	50.3	42.7	44.8	48.4	41.5	46.1	48.9	17.2	15.8	47.8	15.0	11.3
Incr Delay (d2), s/veh	4.2	0.1	1.8	2.6	0.1	8.1	11.4	0.6	0.7	14.5	0.4	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.4	0.7	2.6	2.0	0.7	5.4	4.2	5.0	2.7	5.2	3.5	3.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	54.5	42.9	46.6	51.0	41.6	54.2	60.3	17.8	16.5	62.2	15.4	12.0
LnGrp LOS	D	D	D	D	D	D	E	B	B	E	B	B
Approach Vol, veh/h		336			323			1003			1125	
Approach Delay, s/veh		50.0			51.0			23.5			28.9	
Approach LOS		D			D			C			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	17.6	59.6	12.5	20.3	15.4	61.8	13.9	18.9				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	13.0	35.0	11.0	31.0	16.0	32.0	11.0	31.0				
Max Q Clear Time (g_c+I1), s	12.6	14.8	7.3	14.5	10.4	11.0	6.2	8.4				
Green Ext Time (p_c), s	0.1	4.6	0.2	0.8	0.1	3.9	0.0	0.6				

Intersection Summary

HCM 6th Ctrl Delay	32.1
HCM 6th LOS	C

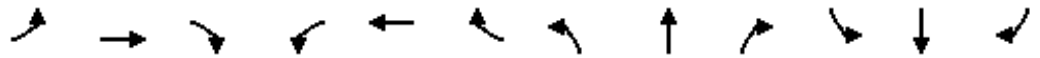
Notes

User approved pedestrian interval to be less than phase max green.



Arco AM/PM Service Station  
1: Redlands Boulevard & Ironwood Avenue

GPBO (2040) Without Project (PM Peak Hour)



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↕			↕↕		↕	↕↕		↕	↕↕	↕
Traffic Volume (vph)	200	170	132	130	120	6	149	936	90	10	891	224
Future Volume (vph)	200	170	132	130	120	6	149	936	90	10	891	224
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	400		0	435		115
Storage Lanes	0		0	0		0	1		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	0.95	0.95	1.00	0.95	1.00
Frt		0.960			0.997			0.987				0.850
Flt Protected		0.981			0.975		0.950			0.950		
Satd. Flow (prot)	0	3400	0	0	3509	0	1805	3563	0	1805	3610	1615
Flt Permitted		0.981			0.975		0.950			0.950		
Satd. Flow (perm)	0	3400	0	0	3509	0	1805	3563	0	1805	3610	1615
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		39			2			9				115
Link Speed (mph)		55			55			50				50
Link Distance (ft)		1467			1500			765				1354
Travel Time (s)		18.2			18.6			10.4				18.5
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	208	177	138	135	125	6	155	975	94	10	928	233
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	523	0	0	266	0	155	1069	0	10	928	233
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		8			8			8				8
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	20		10	20		10	20		10	20		10
Turn Type	Split	NA		Split	NA		Prot	NA		Prot	NA	Perm
Protected Phases	8	8		4	4		5	2		1	6	
Permitted Phases												6
Detector Phase	8	8		4	4		5	2		1	6	6
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	10.0
Minimum Split (s)	31.0	31.0		31.0	31.0		15.7	28.7		15.7	28.7	28.7
Total Split (s)	31.0	31.0		31.0	31.0		17.0	42.0		16.0	41.0	41.0
Total Split (%)	25.8%	25.8%		25.8%	25.8%		14.2%	35.0%		13.3%	34.2%	34.2%
Maximum Green (s)	26.0	26.0		26.0	26.0		12.0	37.0		11.0	36.0	36.0
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)		5.0			5.0		5.0	5.0		5.0	5.0	5.0
Lead/Lag							Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None		None	None		None	Min		None	Min	Min
Walk Time (s)	7.0	7.0		7.0	7.0			7.0			7.0	7.0

Arco AM/PM Service Station  
1: Redlands Boulevard & Ironwood Avenue

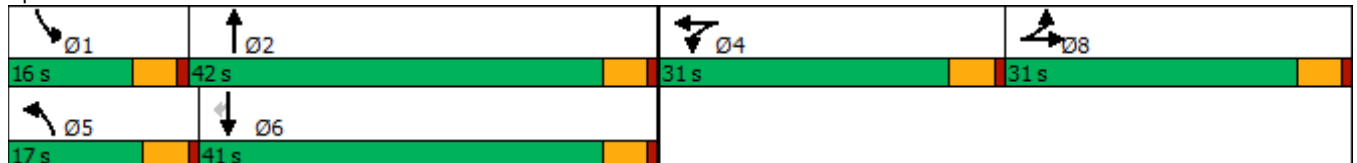
GPBO (2040) Without Project (PM Peak Hour)

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Flash Dont Walk (s)	18.0	18.0		18.0	18.0			16.0			16.0	16.0
Pedestrian Calls (#/hr)	0	0		0	0			0			0	0
Act Effct Green (s)		19.3			13.1		11.8	45.7		10.2	31.4	31.4
Actuated g/C Ratio		0.20			0.14		0.12	0.48		0.11	0.33	0.33
v/c Ratio		0.73			0.55		0.70	0.63		0.05	0.79	0.38
Control Delay		40.5			44.7		61.6	22.9		45.2	35.4	15.2
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	0.0
Total Delay		40.5			44.7		61.6	22.9		45.2	35.4	15.2
LOS		D			D		E	C		D	D	B
Approach Delay		40.5			44.7			27.8			31.5	
Approach LOS		D			D			C			C	
Queue Length 50th (ft)		152			83		95	229		6	267	52
Queue Length 95th (ft)		223			135		#220	#470		24	395	129
Internal Link Dist (ft)		1387			1420			685			1274	
Turn Bay Length (ft)							400			435		115
Base Capacity (vph)		964			968		229	1700		210	1377	687
Starvation Cap Reductn		0			0		0	0		0	0	0
Spillback Cap Reductn		0			0		0	0		0	0	0
Storage Cap Reductn		0			0		0	0		0	0	0
Reduced v/c Ratio		0.54			0.27		0.68	0.63		0.05	0.67	0.34

Intersection Summary

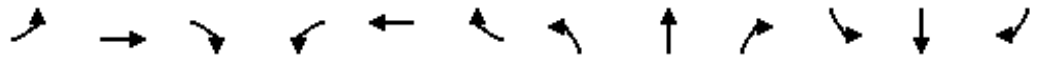
Area Type: Other  
 Cycle Length: 120  
 Actuated Cycle Length: 96  
 Natural Cycle: 110  
 Control Type: Actuated-Uncoordinated  
 Maximum v/c Ratio: 0.79  
 Intersection Signal Delay: 32.7      Intersection LOS: C  
 Intersection Capacity Utilization 83.5%      ICU Level of Service E  
 Analysis Period (min) 15  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

Splits and Phases: 1: Redlands Boulevard & Ironwood Avenue



Arco AM/PM Service Station  
1: Redlands Boulevard & Ironwood Avenue

GPBO (2040) Without Project (PM Peak Hour)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔↔			↔↔		↔	↔↔		↔	↔↔	↔
Traffic Volume (veh/h)	200	170	132	130	120	6	149	936	90	10	891	224
Future Volume (veh/h)	200	170	132	130	120	6	149	936	90	10	891	224
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	208	177	138	135	125	6	155	975	94	10	928	233
Peak Hour Factor	0.96	0.96	0.96	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	0	0	0
Cap, veh/h	265	237	191	213	221	11	212	1393	134	45	1178	525
Arrive On Green	0.20	0.20	0.20	0.12	0.12	0.12	0.12	0.42	0.42	0.02	0.33	0.33
Sat Flow, veh/h	1360	1216	979	1772	1835	88	1810	3327	321	1810	3610	1610
Grp Volume(v), veh/h	280	0	243	138	0	128	155	529	540	10	928	233
Grp Sat Flow(s),veh/h/ln	1832	0	1724	1811	0	1884	1810	1805	1842	1810	1805	1610
Q Serve(g_s), s	12.1	0.0	10.9	6.0	0.0	5.3	6.9	20.0	20.0	0.4	19.3	9.5
Cycle Q Clear(g_c), s	12.1	0.0	10.9	6.0	0.0	5.3	6.9	20.0	20.0	0.4	19.3	9.5
Prop In Lane	0.74		0.57	0.98		0.05	1.00		0.17	1.00		1.00
Lane Grp Cap(c), veh/h	358	0	336	218	0	227	212	756	771	45	1178	525
V/C Ratio(X)	0.78	0.00	0.72	0.63	0.00	0.56	0.73	0.70	0.70	0.22	0.79	0.44
Avail Cap(c_a), veh/h	574	0	540	568	0	591	262	805	822	240	1567	699
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	31.7	0.0	31.3	34.7	0.0	34.4	35.4	19.8	19.8	39.7	25.3	22.0
Incr Delay (d2), s/veh	3.8	0.0	2.9	3.0	0.0	2.2	7.8	2.5	2.5	2.5	2.0	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/ln	5.2	0.0	4.4	2.6	0.0	2.4	3.3	7.7	7.9	0.2	7.6	3.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	35.5	0.0	34.2	37.8	0.0	36.6	43.2	22.4	22.3	42.1	27.3	22.6
LnGrp LOS	D	A	C	D	A	D	D	C	C	D	C	C
Approach Vol, veh/h		523			266			1224			1171	
Approach Delay, s/veh		34.9			37.2			25.0			26.5	
Approach LOS		C			D			C			C	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.1	39.7		15.0	14.7	32.1		21.2				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0				
Max Green Setting (Gmax), s	11.0	37.0		26.0	12.0	36.0		26.0				
Max Q Clear Time (g_c+I1), s	2.4	22.0		8.0	8.9	21.3		14.1				
Green Ext Time (p_c), s	0.0	5.4		1.1	0.1	5.7		2.1				

Intersection Summary

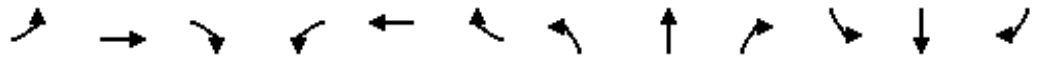
HCM 6th Ctrl Delay	28.2
HCM 6th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

Arco AM/PM Service Station  
2: Redlands Boulevard & Hemlock Avenue

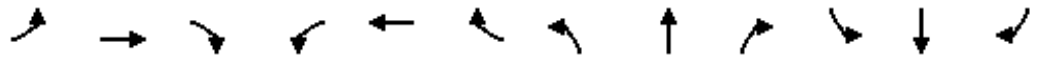
GPBO (2040) Without Project (PM Peak Hour)



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	110	87	160	160	87	110	96	965	50	80	977	54
Future Volume (vph)	110	87	160	160	87	110	96	965	50	80	977	54
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>		0.903			0.916			0.993			0.992	
Fl <sub>t</sub> Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	1716	0	1805	1740	0	1805	1887	0	1805	1885	0
Fl <sub>t</sub> Permitted	0.457			0.357			0.950			0.950		
Satd. Flow (perm)	868	1716	0	678	1740	0	1805	1887	0	1805	1885	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		72			49			3			4	
Link Speed (mph)		30			30			50			50	
Link Distance (ft)		503			253			294			546	
Travel Time (s)		11.4			5.8			4.0			7.4	
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
Adj. Flow (vph)	120	95	174	174	95	120	104	1049	54	87	1062	59
Shared Lane Traffic (%)												
Lane Group Flow (vph)	120	269	0	174	215	0	104	1103	0	87	1121	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		8			8			8			8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	20		10	20		10	20		10	20		10
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Detector Phase	4	4		8	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	22.0	22.0		22.0	22.0		15.0	22.7		15.0	30.0	
Total Split (s)	33.0	33.0		33.0	33.0		15.0	72.0		15.0	72.0	
Total Split (%)	27.5%	27.5%		27.5%	27.5%		12.5%	60.0%		12.5%	60.0%	
Maximum Green (s)	28.0	28.0		28.0	28.0		10.0	67.0		10.0	67.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	Min		None	Min	
Walk Time (s)	7.0	7.0		7.0	7.0						7.0	
Flash Dont Walk (s)	10.0	10.0		10.0	10.0						18.0	
Pedestrian Calls (#/hr)	0	0		0	0						0	
Act Effect Green (s)	28.0	28.0		28.0	28.0		10.0	67.0		10.0	67.0	

Arco AM/PM Service Station  
2: Redlands Boulevard & Hemlock Avenue

GPBO (2040) Without Project (PM Peak Hour)

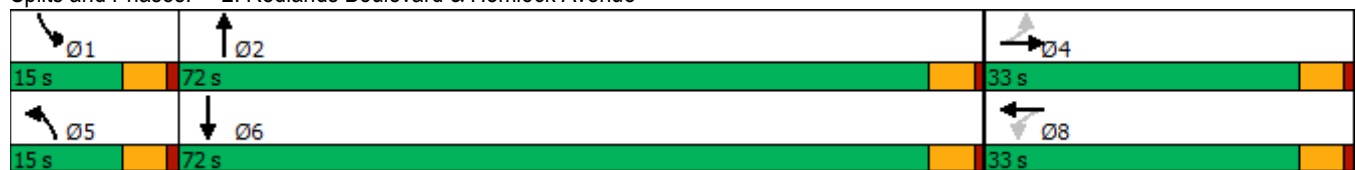


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio	0.23	0.23		0.23	0.23		0.08	0.56		0.08	0.56	
v/c Ratio	0.59	0.59		1.10	0.49		0.69	1.05		0.58	1.06	
Control Delay	54.6	35.6		144.9	34.6		77.4	67.7		69.0	73.3	
Queue Delay	0.0	0.0		0.0	0.0		0.0	21.6		0.0	0.0	
Total Delay	54.6	35.6		144.9	34.6		77.4	89.3		69.0	73.3	
LOS	D	D		F	C		E	F		E	E	
Approach Delay		41.5			83.9			88.3			73.0	
Approach LOS		D			F			F			E	
Queue Length 50th (ft)	83	136		~153	111		80	~928		66	~958	
Queue Length 95th (ft)	152	228		#298	189		#162	#1189		#127	#1220	
Internal Link Dist (ft)		423			173			214			466	
Turn Bay Length (ft)												
Base Capacity (vph)	202	455		158	443		150	1054		150	1054	
Starvation Cap Reductn	0	0		0	0		0	147		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.59	0.59		1.10	0.49		0.69	1.22		0.58	1.06	

Intersection Summary

Area Type:	Other
Cycle Length:	120
Actuated Cycle Length:	120
Natural Cycle:	120
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	1.10
Intersection Signal Delay:	76.3
Intersection LOS:	E
Intersection Capacity Utilization:	105.9%
ICU Level of Service:	G
Analysis Period (min):	15
~ 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.	

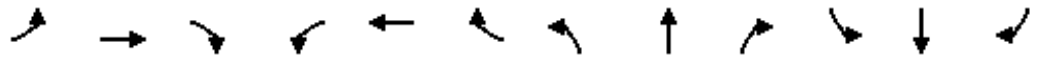
Splits and Phases: 2: Redlands Boulevard & Hemlock Avenue





Arco AM/PM Service Station  
2: Redlands Boulevard & Hemlock Avenue
















GPBO (2040) Without Project (PM Peak Hour)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	110	87	160	160	87	110	96	965	50	80	977	54
Future Volume (veh/h)	110	87	160	160	87	110	96	965	50	80	977	54
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	120	95	174	174	95	120	104	1049	54	87	1062	59
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	208	141	258	162	178	225	146	1006	52	143	998	55
Arrive On Green	0.23	0.23	0.23	0.23	0.23	0.23	0.08	0.56	0.56	0.08	0.56	0.56
Sat Flow, veh/h	1185	601	1101	1128	763	964	1810	1791	92	1810	1783	99
Grp Volume(v), veh/h	120	0	269	174	0	215	104	0	1103	87	0	1121
Grp Sat Flow(s),veh/h/ln	1185	0	1702	1128	0	1727	1810	0	1883	1810	0	1882
Q Serve(g_s), s	11.8	0.0	17.2	10.8	0.0	13.0	6.7	0.0	67.2	5.6	0.0	67.0
Cycle Q Clear(g_c), s	24.8	0.0	17.2	28.0	0.0	13.0	6.7	0.0	67.2	5.6	0.0	67.0
Prop In Lane	1.00		0.65	1.00		0.56	1.00		0.05	1.00		0.05
Lane Grp Cap(c), veh/h	208	0	398	162	0	404	146	0	1058	143	0	1054
V/C Ratio(X)	0.58	0.00	0.68	1.08	0.00	0.53	0.71	0.00	1.04	0.61	0.00	1.06
Avail Cap(c_a), veh/h	208	0	398	162	0	404	151	0	1058	151	0	1054
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	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	51.0	0.0	41.7	56.5	0.0	40.1	53.6	0.0	26.2	53.3	0.0	26.3
Incr Delay (d2), s/veh	3.9	0.0	4.5	92.2	0.0	1.3	13.9	0.0	39.4	6.3	0.0	46.4
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	3.7	0.0	7.7	9.1	0.0	5.7	3.5	0.0	37.6	2.7	0.0	39.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	54.8	0.0	46.2	148.7	0.0	41.5	67.5	0.0	65.6	59.7	0.0	72.7
LnGrp LOS	D	A	D	F	A	D	E	A	F	E	A	F
Approach Vol, veh/h		389			389			1207			1208	
Approach Delay, s/veh		48.9			89.4			65.8			71.8	
Approach LOS		D			F			E			E	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	14.4	72.2		33.0	14.7	72.0		33.0				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0				
Max Green Setting (Gmax), s	10.0	67.0		28.0	10.0	67.0		28.0				
Max Q Clear Time (g_c+I1), s	7.6	69.2		26.8	8.7	69.0		30.0				
Green Ext Time (p_c), s	0.0	0.0		0.3	0.0	0.0		0.0				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				68.9								
HCM 6th LOS				E								

Arco AM/PM Service Station  
3: Redlands Boulevard & SR-60 WB

GPBO (2040) Without Project (PM Peak Hour)

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	 		 			 
Traffic Volume (vph)	290	267	1037	462	355	750
Future Volume (vph)	290	267	1037	462	355	750
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0		250	0	
Storage Lanes	2	1		1	1	
Taper Length (ft)	25				25	
Lane Util. Factor	0.97	0.91	0.95	1.00	1.00	0.95
Frt	0.964	0.850		0.850		
Flt Protected	0.963				0.950	
Satd. Flow (prot)	3422	1470	3610	1615	1805	3610
Flt Permitted	0.963				0.950	
Satd. Flow (perm)	3422	1470	3610	1615	1805	3610
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)	52	183		218		
Link Speed (mph)	45		50			50
Link Distance (ft)	1692		1145			350
Travel Time (s)	25.6		15.6			4.8
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	302	278	1080	481	370	781
Shared Lane Traffic (%)		34%				
Lane Group Flow (vph)	397	183	1080	481	370	781
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	24		12			12
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	8		8			8
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	20	10		10	20	
Turn Type	Prot	Prot	NA	pt+ov	Prot	NA
Protected Phases	7	7	2	2 7	1	6
Permitted Phases						
Detector Phase	7	7	2	2 7	1	6
Switch Phase						
Minimum Initial (s)	7.0	7.0	7.0		7.0	7.0
Minimum Split (s)	13.2	13.2	23.2		13.2	23.2
Total Split (s)	15.0	15.0	29.0		26.0	55.0
Total Split (%)	21.4%	21.4%	41.4%		37.1%	78.6%
Maximum Green (s)	10.0	10.0	24.0		21.0	50.0
Yellow Time (s)	4.0	4.0	4.0		4.0	4.0
All-Red Time (s)	1.0	1.0	1.0		1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0		5.0	5.0
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Recall Mode	None	None	C-Min		None	C-Min
Act Effct Green (s)	10.5	10.5	26.3	41.8	18.2	49.5

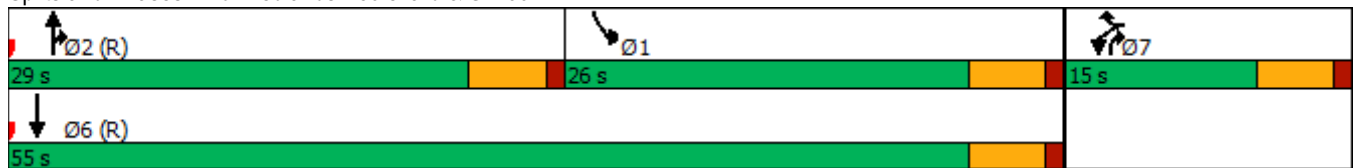


Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Actuated g/C Ratio	0.15	0.15	0.38	0.60	0.26	0.71
v/c Ratio	0.71	0.49	0.80	0.46	0.79	0.31
Control Delay	33.0	9.8	26.2	6.1	36.7	4.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	33.0	9.8	26.2	6.1	36.7	4.2
LOS	C	A	C	A	D	A
Approach Delay	25.7		20.0			14.6
Approach LOS	C		C			B
Queue Length 50th (ft)	72	0	225	51	144	56
Queue Length 95th (ft)	#132	57	#338	118	228	70
Internal Link Dist (ft)	1612		1065			270
Turn Bay Length (ft)				250		
Base Capacity (vph)	568	379	1356	1036	541	2589
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	0.70	0.48	0.80	0.46	0.68	0.30

**Intersection Summary**

Area Type: Other  
 Cycle Length: 70  
 Actuated Cycle Length: 70  
 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green  
 Natural Cycle: 60  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.80  
 Intersection Signal Delay: 19.1 Intersection LOS: B  
 Intersection Capacity Utilization 74.4% ICU Level of Service D  
 Analysis Period (min) 15  
 Description: Alternative 1  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

**Splits and Phases: 3: Redlands Boulevard & SR-60 WB**



Arco AM/PM Service Station  
3: Redlands Boulevard & SR-60 WB

GPBO (2040) Without Project (PM Peak Hour)



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↙↘	↗	↕↕	↗	↘	↕↕
Traffic Volume (veh/h)	290	267	1037	462	355	750
Future Volume (veh/h)	290	267	1037	462	355	750
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	381	193	1080	481	370	781
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	517	230	1209	769	557	2579
Arrive On Green	0.14	0.14	0.34	0.34	0.31	0.71
Sat Flow, veh/h	3619	1610	3705	1610	1810	3705
Grp Volume(v), veh/h	381	193	1080	481	370	781
Grp Sat Flow(s),veh/h/ln	1810	1610	1805	1610	1810	1805
Q Serve(g_s), s	7.1	8.2	19.9	15.6	12.5	5.5
Cycle Q Clear(g_c), s	7.1	8.2	19.9	15.6	12.5	5.5
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	517	230	1209	769	557	2579
V/C Ratio(X)	0.74	0.84	0.89	0.63	0.66	0.30
Avail Cap(c_a), veh/h	517	230	1238	782	557	2579
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.60	0.60	1.00	1.00
Uniform Delay (d), s/veh	28.7	29.2	22.1	13.6	21.1	3.6
Incr Delay (d2), s/veh	5.5	23.1	6.6	2.3	3.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.2	8.4	8.2	6.8	5.0	1.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	34.2	52.3	28.6	15.9	24.0	3.9
LnGrp LOS	C	D	C	B	C	A
Approach Vol, veh/h	574		1561			1151
Approach Delay, s/veh	40.3		24.7			10.4
Approach LOS	D		C			B
Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	26.5	28.5		15.0		55.0
Change Period (Y+Rc), s	5.0	5.0		5.0		5.0
Max Green Setting (Gmax), s	21.0	24.0		10.0		50.0
Max Q Clear Time (g_c+I1), s	14.5	21.9		10.2		7.5
Green Ext Time (p_c), s	0.6	1.6		0.0		5.4

Intersection Summary





















HCM 6th Ctrl Delay	22.4
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

Arco AM/PM Service Station  
4: Redlands Boulevard & SR-60 EB

GPBO (2040) Without Project (PM Peak Hour)

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	557	0	454	0	0	0	0	903	940	440	707	0
Future Volume (vph)	557	0	454	0	0	0	0	903	940	440	707	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.91	0.95	1.00	1.00	1.00	1.00	0.95	1.00	0.97	0.95	1.00
Fr <sub>t</sub>		0.940	0.850						0.850			
Fl <sub>t</sub> Protected	0.950	0.971								0.950		
Satd. Flow (prot)	1715	1578	1534	0	0	0	0	3610	1615	3502	3610	0
Fl <sub>t</sub> Permitted	0.950	0.971								0.950		
Satd. Flow (perm)	1715	1578	1534	0	0	0	0	3610	1615	3502	3610	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		95	215						687			
Link Speed (mph)		45			45			50			50	
Link Distance (ft)		1655			1667			819			1145	
Travel Time (s)		25.1			25.3			11.2			15.6	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	612	0	499	0	0	0	0	992	1033	484	777	0
Shared Lane Traffic (%)	37%		30%									
Lane Group Flow (vph)	386	376	349	0	0	0	0	992	1033	484	777	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		8			8			8			8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	20		10	20		10	20		10	20		10
Turn Type	Perm	NA	Perm					NA	Perm	Prot	NA	
Protected Phases		8						2		1	6	
Permitted Phases	8		8						2			
Detector Phase	8	8	8					2	2	1	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0					7.0	7.0	7.0	7.0	
Minimum Split (s)	12.0	12.0	12.0					23.2	23.2	13.2	23.2	
Total Split (s)	25.0	25.0	25.0					38.0	38.0	17.0	55.0	
Total Split (%)	31.3%	31.3%	31.3%					47.5%	47.5%	21.3%	68.8%	
Maximum Green (s)	20.0	20.0	20.0					33.0	33.0	12.0	50.0	
Yellow Time (s)	4.0	4.0	4.0					4.0	4.0	4.0	4.0	
All-Red Time (s)	1.0	1.0	1.0					1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0					0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0					5.0	5.0	5.0	5.0	
Lead/Lag								Lag	Lag	Lead		
Lead-Lag Optimize?								Yes	Yes	Yes		
Vehicle Extension (s)	3.0	3.0	3.0					3.0	3.0	3.0	3.0	
Recall Mode	None	None	None					C-Min	C-Min	None	C-Min	
Act Effct Green (s)	19.7	19.7	19.7					32.9	32.9	12.3	50.3	
Actuated g/C Ratio	0.25	0.25	0.25					0.41	0.41	0.15	0.63	
v/c Ratio	0.91	0.82	0.65					0.67	0.97	0.90	0.34	
Control Delay	58.2	37.3	16.7					21.8	30.3	55.5	7.6	

Arco AM/PM Service Station  
4: Redlands Boulevard & SR-60 EB

GPBO (2040) Without Project (PM Peak Hour)



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Delay	0.0	0.0	0.0					0.0	0.0	0.0	0.0	
Total Delay	58.2	37.3	16.7					21.8	30.3	55.5	7.6	
LOS	E	D	B					C	C	E	A	
Approach Delay		38.1						26.1			26.0	
Approach LOS		D						C			C	
Queue Length 50th (ft)	196	146	57					205	195	124	86	
Queue Length 95th (ft)	#365	#304	152					271	#535	#212	117	
Internal Link Dist (ft)		1575			1587			739			1065	
Turn Bay Length (ft)												
Base Capacity (vph)	428	465	544					1489	1069	539	2268	
Starvation Cap Reductn	0	0	0					0	0	0	0	
Spillback Cap Reductn	0	0	0					0	0	0	0	
Storage Cap Reductn	0	0	0					0	0	0	0	
Reduced v/c Ratio	0.90	0.81	0.64					0.67	0.97	0.90	0.34	

Intersection Summary





















Area Type: Other  
 Cycle Length: 80  
 Actuated Cycle Length: 80  
 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green  
 Natural Cycle: 80  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.97  
 Intersection Signal Delay: 29.1  
 Intersection LOS: C  
 Intersection Capacity Utilization 105.8%  
 ICU Level of Service G  
 Analysis Period (min) 15  
 Description: Alternative 1  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

Splits and Phases: 4: Redlands Boulevard & SR-60 EB

































Arco AM/PM Service Station  
4: Redlands Boulevard & SR-60 EB

GPBO (2040) Without Project (PM Peak Hour)

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	557	0	454	0	0	0	0	903	940	440	707	0
Future Volume (veh/h)	557	0	454	0	0	0	0	903	940	440	707	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900				0	1900	1900	1900	1900	0
Adj Flow Rate, veh/h	767	0	333				0	992	1033	484	777	0
Peak Hour Factor	0.91	0.91	0.91				0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	0	0				0	0	0	0	0	0
Cap, veh/h	867	0	386				0	1527	681	527	2294	0
Arrive On Green	0.24	0.00	0.24				0.00	0.42	0.42	0.15	0.64	0.00
Sat Flow, veh/h	3619	0	1610				0	3705	1610	3510	3705	0
Grp Volume(v), veh/h	767	0	333				0	992	1033	484	777	0
Grp Sat Flow(s),veh/h/ln	1810	0	1610				0	1805	1610	1755	1805	0
Q Serve(g_s), s	16.4	0.0	15.9				0.0	17.5	33.8	10.9	8.0	0.0
Cycle Q Clear(g_c), s	16.4	0.0	15.9				0.0	17.5	33.8	10.9	8.0	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	867	0	386				0	1527	681	527	2294	0
V/C Ratio(X)	0.88	0.00	0.86				0.00	0.65	1.52	0.92	0.34	0.00
Avail Cap(c_a), veh/h	905	0	403				0	1527	681	527	2294	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	0.67	0.67	0.90	0.90	0.00
Uniform Delay (d), s/veh	29.4	0.0	29.2				0.0	18.4	23.1	33.5	6.8	0.0
Incr Delay (d2), s/veh	10.1	0.0	16.9				0.0	1.5	237.7	19.8	0.4	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	7.7	0.0	7.4				0.0	6.5	55.6	5.7	2.3	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	39.5	0.0	46.0				0.0	19.8	260.7	53.3	7.1	0.0
LnGrp LOS	D	A	D				A	B	F	D	A	A
Approach Vol, veh/h		1100						2025			1261	
Approach Delay, s/veh		41.5						142.7			24.9	
Approach LOS		D						F			C	
Timer - Assigned Phs	1	2				6		8				
Phs Duration (G+Y+Rc), s	17.0	38.8				55.8		24.2				
Change Period (Y+Rc), s	5.0	5.0				5.0		5.0				
Max Green Setting (Gmax), s	12.0	33.0				50.0		20.0				
Max Q Clear Time (g_c+I1), s	12.9	35.8				10.0		18.4				
Green Ext Time (p_c), s	0.0	0.0				5.4		0.8				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay			83.4									
HCM 6th LOS			F									
<b>Notes</b>												
User approved volume balancing among the lanes for turning movement.												

Arco AM/PM Service Station  
5: Redlands Boulevard & Eucalyptus Avenue

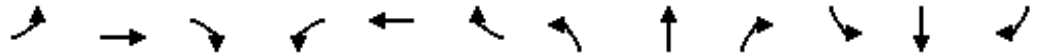
GPBO (2040) Without Project (PM Peak Hour)

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 	 			 			 		 	 	
Traffic Volume (vph)	390	72	155	101	61	255	160	890	82	157	727	278
Future Volume (vph)	390	72	155	101	61	255	160	890	82	157	727	278
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	275		0	150		0	150		0	0		0
Storage Lanes	2		1	1		1	1		1	2		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	0.97	0.95	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3502	3610	1615	1805	3610	1615	1805	3610	1615	3502	3610	1615
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3502	3610	1615	1805	3610	1615	1805	3610	1615	3502	3610	1615
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			178			218			109			320
Link Speed (mph)		40			40			50			50	
Link Distance (ft)		2576			1616			680			819	
Travel Time (s)		43.9			27.5			9.3			11.2	
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
Adj. Flow (vph)	448	83	178	116	70	293	184	1023	94	180	836	320
Shared Lane Traffic (%)												
Lane Group Flow (vph)	448	83	178	116	70	293	184	1023	94	180	836	320
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		8			8			8			8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	20		10	20		10	20		10	20		10
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	pm+ov
Protected Phases	3	8		7	4		5	2		1	6	3
Permitted Phases			8			4			2			6
Detector Phase	3	8	8	7	4	4	5	2	2	1	6	3
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	10.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	12.4	36.0	36.0	15.0	36.0	36.0	13.2	36.7	36.7	13.2	23.2	12.4
Total Split (s)	24.0	36.0	36.0	24.0	36.0	36.0	22.0	43.0	43.0	17.0	38.0	24.0
Total Split (%)	20.0%	30.0%	30.0%	20.0%	30.0%	30.0%	18.3%	35.8%	35.8%	14.2%	31.7%	20.0%
Maximum Green (s)	19.0	31.0	31.0	19.0	31.0	31.0	17.0	38.0	38.0	12.0	33.0	19.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	C-Min	C-Min	None	C-Min	None
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0			



Arco AM/PM Service Station  
5: Redlands Boulevard & Eucalyptus Avenue

GPBO (2040) Without Project (PM Peak Hour)

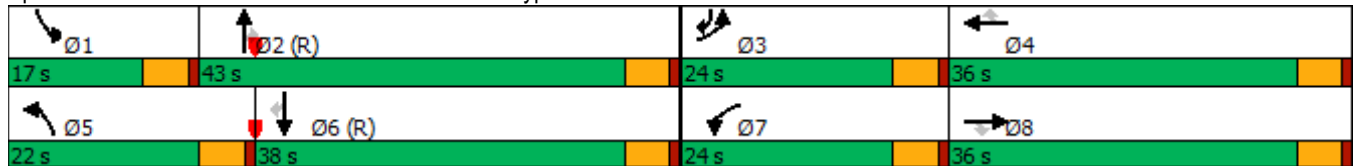


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Flash Dont Walk (s)		18.0	18.0		18.0	18.0		16.0	16.0			
Pedestrian Calls (#/hr)		0	0		0	0		0	0			
Act Effct Green (s)	18.8	18.4	18.4	13.4	13.1	13.1	17.6	56.7	56.7	11.5	50.5	74.3
Actuated g/C Ratio	0.16	0.15	0.15	0.11	0.11	0.11	0.15	0.47	0.47	0.10	0.42	0.62
v/c Ratio	0.82	0.15	0.45	0.58	0.18	0.79	0.69	0.60	0.11	0.54	0.55	0.29
Control Delay	62.0	43.1	9.8	61.7	47.0	29.8	62.0	27.0	3.7	57.4	30.2	2.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	62.0	43.1	9.8	61.7	47.0	29.8	62.0	27.0	3.7	57.4	30.2	2.4
LOS	E	D	A	E	D	C	E	C	A	E	C	A
Approach Delay		46.7			40.0			30.2			27.2	
Approach LOS		D			D			C			C	
Queue Length 50th (ft)	170	28	0	87	26	56	137	305	0	69	257	0
Queue Length 95th (ft)	#225	49	53	138	43	131	197	430	24	101	375	40
Internal Link Dist (ft)		2496			1536			600			739	
Turn Bay Length (ft)	275			150			150					
Base Capacity (vph)	567	932	549	285	932	578	286	1705	820	370	1520	1129
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.79	0.09	0.32	0.41	0.08	0.51	0.64	0.60	0.11	0.49	0.55	0.28

Intersection Summary

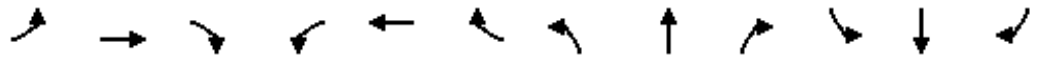
Area Type: Other  
 Cycle Length: 120  
 Actuated Cycle Length: 120  
 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green  
 Natural Cycle: 105  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.82  
 Intersection Signal Delay: 33.5      Intersection LOS: C  
 Intersection Capacity Utilization 66.5%      ICU Level of Service C  
 Analysis Period (min) 15  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

Splits and Phases: 5: Redlands Boulevard & Eucalyptus Avenue



Arco AM/PM Service Station  
5: Redlands Boulevard & Eucalyptus Avenue

GPBO (2040) Without Project (PM Peak Hour)

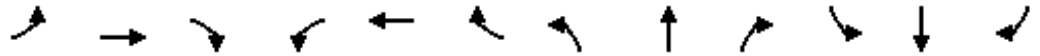


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖↗	↑↑	↖	↗	↑↑	↖	↖	↑↑	↖	↖↗	↑↑	↖
Traffic Volume (veh/h)	390	72	155	101	61	255	160	890	82	157	727	278
Future Volume (veh/h)	390	72	155	101	61	255	160	890	82	157	727	278
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	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	448	83	178	116	70	293	184	1023	94	180	836	320
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
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	508	955	426	148	727	324	212	1512	674	240	1335	828
Arrive On Green	0.14	0.26	0.26	0.08	0.20	0.20	0.12	0.42	0.42	0.07	0.37	0.37
Sat Flow, veh/h	3510	3610	1610	1810	3610	1610	1810	3610	1610	3510	3610	1610
Grp Volume(v), veh/h	448	83	178	116	70	293	184	1023	94	180	836	320
Grp Sat Flow(s),veh/h/ln	1755	1805	1610	1810	1805	1610	1810	1805	1610	1755	1805	1610
Q Serve(g_s), s	15.0	2.1	11.0	7.5	1.9	21.3	12.0	27.6	4.3	6.0	22.8	14.4
Cycle Q Clear(g_c), s	15.0	2.1	11.0	7.5	1.9	21.3	12.0	27.6	4.3	6.0	22.8	14.4
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	508	955	426	148	727	324	212	1512	674	240	1335	828
V/C Ratio(X)	0.88	0.09	0.42	0.79	0.10	0.90	0.87	0.68	0.14	0.75	0.63	0.39
Avail Cap(c_a), veh/h	556	955	426	287	933	416	256	1512	674	351	1335	828
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	0.90	0.90	0.90
Uniform Delay (d), s/veh	50.3	33.2	36.5	54.1	39.0	46.8	52.0	28.3	21.5	54.9	31.0	17.6
Incr Delay (d2), s/veh	14.4	0.0	0.7	8.8	0.1	19.3	22.3	2.5	0.4	4.6	2.0	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	7.5	0.9	4.3	3.7	0.8	10.1	6.6	11.7	1.7	2.7	9.7	5.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	64.7	33.2	37.1	62.9	39.1	66.1	74.3	30.7	22.0	59.5	33.0	18.9
LnGrp LOS	E	C	D	E	D	E	E	C	C	E	C	B
Approach Vol, veh/h		709			479			1301			1336	
Approach Delay, s/veh		54.1			61.4			36.3			33.2	
Approach LOS		D			E			D			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	13.2	55.3	22.4	29.2	19.1	49.4	14.8	36.8				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	12.0	38.0	19.0	31.0	17.0	33.0	19.0	31.0				
Max Q Clear Time (g_c+I1), s	8.0	29.6	17.0	23.3	14.0	24.8	9.5	13.0				
Green Ext Time (p_c), s	0.2	4.2	0.4	0.9	0.1	3.9	0.2	0.9				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay			41.6									
HCM 6th LOS			D									
<b>Notes</b>												
User approved pedestrian interval to be less than phase max green.												

**GENERAL PLAN BUILDOUT WITH PROJECT - ALTERNATIVE 1**

Arco AM/PM Service Station  
1: Redlands Boulevard & Ironwood Avenue

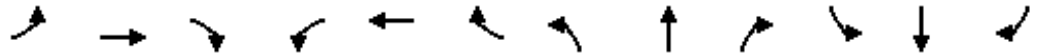
GPBO (2040) With Project (AM Peak Hour)



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↕			↕↕		↕	↕↕		↕	↕↕	↕
Traffic Volume (vph)	133	150	118	22	100	20	92	734	52	30	774	130
Future Volume (vph)	133	150	118	22	100	20	92	734	52	30	774	130
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	400		0	435		115
Storage Lanes	0		0	0		0	1		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	0.95	0.95	1.00	0.95	1.00
Frt		0.956			0.979			0.990				0.850
Flt Protected		0.984			0.992		0.950			0.950		
Satd. Flow (prot)	0	3396	0	0	3506	0	1805	3574	0	1805	3610	1615
Flt Permitted		0.984			0.992		0.950			0.950		
Satd. Flow (perm)	0	3396	0	0	3506	0	1805	3574	0	1805	3610	1615
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		49			14			6				109
Link Speed (mph)		55			55			50				50
Link Distance (ft)		1467			1500			765				1354
Travel Time (s)		18.2			18.6			10.4				18.5
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	139	156	123	23	104	21	96	765	54	31	806	135
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	418	0	0	148	0	96	819	0	31	806	135
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		8			8			8				8
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	20		10	20		10	20		10	20		10
Turn Type	Split	NA		Split	NA		Prot	NA		Prot	NA	Perm
Protected Phases	8	8		4	4		5	2		1	6	
Permitted Phases												6
Detector Phase	8	8		4	4		5	2		1	6	6
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	10.0
Minimum Split (s)	31.0	31.0		31.0	31.0		15.7	28.7		15.7	28.7	28.7
Total Split (s)	31.0	31.0		31.0	31.0		17.0	42.0		16.0	41.0	41.0
Total Split (%)	25.8%	25.8%		25.8%	25.8%		14.2%	35.0%		13.3%	34.2%	34.2%
Maximum Green (s)	26.0	26.0		26.0	26.0		12.0	37.0		11.0	36.0	36.0
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)		5.0			5.0		5.0	5.0		5.0	5.0	5.0
Lead/Lag							Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None		None	None		None	Min		None	Min	Min
Walk Time (s)	7.0	7.0		7.0	7.0			7.0			7.0	7.0

Arco AM/PM Service Station  
1: Redlands Boulevard & Ironwood Avenue

GPBO (2040) With Project (AM Peak Hour)



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Flash Dont Walk (s)	18.0	18.0		18.0	18.0			16.0			16.0	16.0
Pedestrian Calls (#/hr)	0	0		0	0			0			0	0
Act Effct Green (s)		15.1			10.7		11.2	29.8		10.5	25.9	25.9
Actuated g/C Ratio		0.19			0.13		0.14	0.38		0.13	0.33	0.33
v/c Ratio		0.61			0.30		0.38	0.61		0.13	0.68	0.23
Control Delay		31.9			34.2		41.1	23.5		38.5	27.6	7.8
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	0.0
Total Delay		31.9			34.2		41.1	23.5		38.5	27.6	7.8
LOS		C			C		D	C		D	C	A
Approach Delay		31.9			34.2			25.3			25.2	
Approach LOS		C			C			C			C	
Queue Length 50th (ft)		90			32		45	188		14	186	9
Queue Length 95th (ft)		162			73		110	278		47	284	50
Internal Link Dist (ft)		1387			1420			685			1274	
Turn Bay Length (ft)							400			435		115
Base Capacity (vph)		1198			1213		286	1757		262	1717	825
Starvation Cap Reductn		0			0		0	0		0	0	0
Spillback Cap Reductn		0			0		0	0		0	0	0
Storage Cap Reductn		0			0		0	0		0	0	0
Reduced v/c Ratio		0.35			0.12		0.34	0.47		0.12	0.47	0.16

Intersection Summary

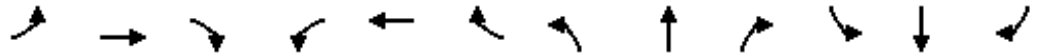
Area Type:	Other
Cycle Length:	120
Actuated Cycle Length:	79.3
Natural Cycle:	110
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.68
Intersection Signal Delay:	26.9
Intersection LOS:	C
Intersection Capacity Utilization:	63.7%
ICU Level of Service:	B
Analysis Period (min):	15

Splits and Phases: 1: Redlands Boulevard & Ironwood Avenue

Ø1 16 s	Ø2 42 s	Ø4 31 s	Ø8 31 s
Ø5 17 s	Ø6 41 s		

Arco AM/PM Service Station  
1: Redlands Boulevard & Ironwood Avenue

GPBO (2040) With Project (AM Peak Hour)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↕			↕↕		↕	↕↕		↕	↕↕	↕
Traffic Volume (veh/h)	133	150	118	22	100	20	92	734	52	30	774	130
Future Volume (veh/h)	133	150	118	22	100	20	92	734	52	30	774	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	139	156	123	23	104	21	96	765	54	31	806	135
Peak Hour Factor	0.96	0.96	0.96	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	0	0	0
Cap, veh/h	193	223	183	73	341	71	215	1219	86	116	1090	486
Arrive On Green	0.17	0.17	0.17	0.13	0.13	0.13	0.12	0.36	0.36	0.06	0.30	0.30
Sat Flow, veh/h	1141	1323	1083	553	2582	540	1810	3420	241	1810	3610	1610
Grp Volume(v), veh/h	224	0	194	78	0	70	96	404	415	31	806	135
Grp Sat Flow(s),veh/h/ln	1843	0	1705	1872	0	1803	1810	1805	1857	1810	1805	1610
Q Serve(g_s), s	8.3	0.0	7.6	2.7	0.0	2.5	3.5	13.3	13.3	1.2	14.4	4.6
Cycle Q Clear(g_c), s	8.3	0.0	7.6	2.7	0.0	2.5	3.5	13.3	13.3	1.2	14.4	4.6
Prop In Lane	0.62		0.64	0.30		0.30	1.00		0.13	1.00		1.00
Lane Grp Cap(c), veh/h	311	0	288	247	0	238	215	643	662	116	1090	486
V/C Ratio(X)	0.72	0.00	0.67	0.32	0.00	0.29	0.45	0.63	0.63	0.27	0.74	0.28
Avail Cap(c_a), veh/h	667	0	617	678	0	653	302	930	956	277	1809	807
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	28.2	0.0	28.0	28.2	0.0	28.2	29.5	19.2	19.2	32.0	22.5	19.1
Incr Delay (d2), s/veh	3.1	0.0	2.7	0.7	0.0	0.7	1.5	1.0	1.0	1.2	1.0	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	3.5	0.0	3.0	1.1	0.0	1.0	1.5	4.9	5.0	0.5	5.4	1.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	31.4	0.0	30.7	29.0	0.0	28.8	30.9	20.2	20.1	33.2	23.5	19.4
LnGrp LOS	C	A	C	C	A	C	C	C	C	C	C	B
Approach Vol, veh/h		418			148			915			972	
Approach Delay, s/veh		31.1			28.9			21.3			23.3	
Approach LOS		C			C			C			C	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.6	30.6		14.5	13.5	26.7		17.1				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0				
Max Green Setting (Gmax), s	11.0	37.0		26.0	12.0	36.0		26.0				
Max Q Clear Time (g_c+I1), s	3.2	15.3		4.7	5.5	16.4		10.3				
Green Ext Time (p_c), s	0.0	4.5		0.6	0.1	5.3		1.9				

Intersection Summary

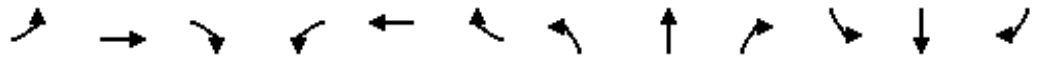
HCM 6th Ctrl Delay	24.2
HCM 6th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

Arco AM/PM Service Station  
2: Redlands Boulevard & Hemlock Avenue

GPBO (2040) With Project (AM Peak Hour)



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	50	36	70	50	36	30	235	770	100	150	778	100
Future Volume (vph)	50	36	70	50	36	30	235	770	100	150	778	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>		0.901			0.931			0.983			0.983	
Fl <sub>t</sub> Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	1712	0	1805	1769	0	1805	1868	0	1805	1868	0
Fl <sub>t</sub> Permitted	0.710			0.613			0.950			0.950		
Satd. Flow (perm)	1349	1712	0	1165	1769	0	1805	1868	0	1805	1868	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		68			30			10			9	
Link Speed (mph)		30			30			50			50	
Link Distance (ft)		503			205			294			546	
Travel Time (s)		11.4			4.7			4.0			7.4	
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
Adj. Flow (vph)	54	39	76	54	39	33	255	837	109	163	846	109
Shared Lane Traffic (%)												
Lane Group Flow (vph)	54	115	0	54	72	0	255	946	0	163	955	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		8			8			8			8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	20		10	20		10	20		10	20		10
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Detector Phase	4	4		8	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	22.0	22.0		22.0	22.0		15.7	22.7		15.0	30.0	
Total Split (s)	22.0	22.0		22.0	22.0		26.0	79.0		19.0	72.0	
Total Split (%)	18.3%	18.3%		18.3%	18.3%		21.7%	65.8%		15.8%	60.0%	
Maximum Green (s)	17.0	17.0		17.0	17.0		21.0	74.0		14.0	67.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	Min		None	Min	
Walk Time (s)	7.0	7.0		7.0	7.0						7.0	
Flash Dont Walk (s)	10.0	10.0		10.0	10.0						18.0	
Pedestrian Calls (#/hr)	0	0		0	0						0	
Act Effect Green (s)	12.0	12.0		12.0	12.0		18.7	63.1		13.1	57.6	

Arco AM/PM Service Station  
2: Redlands Boulevard & Hemlock Avenue

GPBO (2040) With Project (AM Peak Hour)

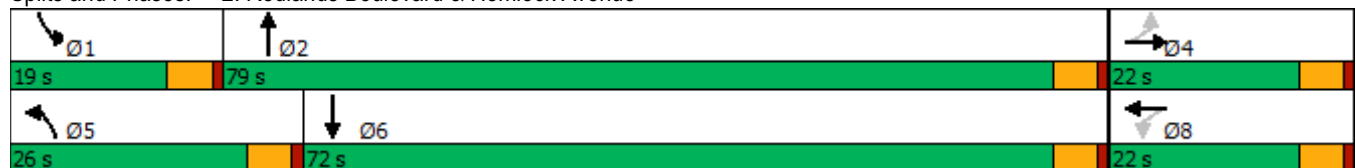


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio	0.12	0.12		0.12	0.12		0.18	0.61		0.13	0.56	
v/c Ratio	0.35	0.45		0.40	0.31		0.78	0.83		0.71	0.92	
Control Delay	53.2	27.8		56.3	34.0		60.7	23.4		64.9	35.7	
Queue Delay	0.0	0.0		0.0	0.0		0.0	1.3		0.0	0.0	
Total Delay	53.2	27.8		56.3	34.0		60.7	24.7		64.9	35.7	
LOS	D	C		E	C		E	C		E	D	
Approach Delay		35.9			43.6			32.4			39.9	
Approach LOS		D			D			C			D	
Queue Length 50th (ft)	37	32		37	28		175	444		114	547	
Queue Length 95th (ft)	79	90		80	74		#320	724		#231	#933	
Internal Link Dist (ft)		423			125			214			466	
Turn Bay Length (ft)												
Base Capacity (vph)	227	345		196	323		375	1373		250	1243	
Starvation Cap Reductn	0	0		0	0		0	225		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.24	0.33		0.28	0.22		0.68	0.82		0.65	0.77	

Intersection Summary

Area Type:	Other
Cycle Length:	120
Actuated Cycle Length:	103.7
Natural Cycle:	90
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.92
Intersection Signal Delay:	36.4
Intersection LOS:	D
Intersection Capacity Utilization:	85.8%
ICU Level of Service:	E
Analysis Period (min):	15
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

Splits and Phases: 2: Redlands Boulevard & Hemlock Avenue





Arco AM/PM Service Station  
2: Redlands Boulevard & Hemlock Avenue
















GPBO (2040) With Project (AM Peak Hour)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	50	36	70	50	36	30	235	770	100	150	778	100
Future Volume (veh/h)	50	36	70	50	36	30	235	770	100	150	778	100
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	54	39	76	54	39	33	255	837	109	163	846	109
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	195	73	142	156	120	102	292	1004	131	197	918	118
Arrive On Green	0.13	0.13	0.13	0.13	0.13	0.13	0.16	0.61	0.61	0.11	0.56	0.56
Sat Flow, veh/h	1349	576	1122	1298	951	804	1810	1647	214	1810	1649	212
Grp Volume(v), veh/h	54	0	115	54	0	72	255	0	946	163	0	955
Grp Sat Flow(s),veh/h/ln	1349	0	1698	1298	0	1755	1810	0	1861	1810	0	1862
Q Serve(g_s), s	3.7	0.0	6.1	3.9	0.0	3.6	13.3	0.0	39.0	8.5	0.0	45.2
Cycle Q Clear(g_c), s	7.3	0.0	6.1	10.1	0.0	3.6	13.3	0.0	39.0	8.5	0.0	45.2
Prop In Lane	1.00		0.66	1.00		0.46	1.00		0.12	1.00		0.11
Lane Grp Cap(c), veh/h	195	0	215	156	0	222	292	0	1135	197	0	1037
V/C Ratio(X)	0.28	0.00	0.53	0.35	0.00	0.32	0.87	0.00	0.83	0.83	0.00	0.92
Avail Cap(c_a), veh/h	261	0	298	220	0	308	393	0	1423	262	0	1289
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	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	41.8	0.0	39.6	44.3	0.0	38.5	39.6	0.0	15.0	42.2	0.0	19.5
Incr Delay (d2), s/veh	0.8	0.0	2.1	1.3	0.0	0.8	15.0	0.0	3.6	15.1	0.0	9.5
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	1.3	0.0	2.7	1.3	0.0	1.6	6.8	0.0	14.0	4.4	0.0	18.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	42.6	0.0	41.7	45.6	0.0	39.3	54.6	0.0	18.6	57.3	0.0	29.0
LnGrp LOS	D	A	D	D	A	D	D	A	B	E	A	C
Approach Vol, veh/h		169			126			1201			1118	
Approach Delay, s/veh		41.9			42.0			26.2			33.1	
Approach LOS		D			D			C			C	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	15.5	64.0		17.3	20.6	58.9		17.3				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0				
Max Green Setting (Gmax), s	14.0	74.0		17.0	21.0	67.0		17.0				
Max Q Clear Time (g_c+I1), s	10.5	41.0		9.3	15.3	47.2		12.1				
Green Ext Time (p_c), s	0.1	7.8		0.4	0.3	6.7		0.2				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				31.0								
HCM 6th LOS				C								

Arco AM/PM Service Station  
3: Redlands Boulevard & SR-60 WB

GPBO (2040) With Project (AM Peak Hour)

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	 		 			 
Traffic Volume (vph)	530	250	773	286	343	510
Future Volume (vph)	530	250	773	286	343	510
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0		250	0	
Storage Lanes	2	1		1	1	
Taper Length (ft)	25				25	
Lane Util. Factor	0.97	0.91	0.95	1.00	1.00	0.95
Frt	0.993	0.850		0.850		
Flt Protected	0.954				0.950	
Satd. Flow (prot)	3492	1470	3610	1615	1805	3610
Flt Permitted	0.954				0.950	
Satd. Flow (perm)	3492	1470	3610	1615	1805	3610
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)	7	242		177		
Link Speed (mph)	45		50			50
Link Distance (ft)	1692		1145			350
Travel Time (s)	25.6		15.6			4.8
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	570	269	831	308	369	548
Shared Lane Traffic (%)		10%				
Lane Group Flow (vph)	597	242	831	308	369	548
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	24		12			12
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	8		8			8
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	20	10		10	20	
Turn Type	Prot	Prot	NA	pt+ov	Prot	NA
Protected Phases	7	7	2	2 7	1	6
Permitted Phases						
Detector Phase	7	7	2	2 7	1	6
Switch Phase						
Minimum Initial (s)	7.0	7.0	7.0		7.0	7.0
Minimum Split (s)	13.2	13.2	23.2		13.2	23.2
Total Split (s)	15.0	15.0	24.0		21.0	45.0
Total Split (%)	25.0%	25.0%	40.0%		35.0%	75.0%
Maximum Green (s)	10.0	10.0	19.0		16.0	40.0
Yellow Time (s)	4.0	4.0	4.0		4.0	4.0
All-Red Time (s)	1.0	1.0	1.0		1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0		5.0	5.0
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Recall Mode	None	None	C-Min		None	C-Min
Act Effct Green (s)	11.3	11.3	18.7	35.0	15.0	38.7

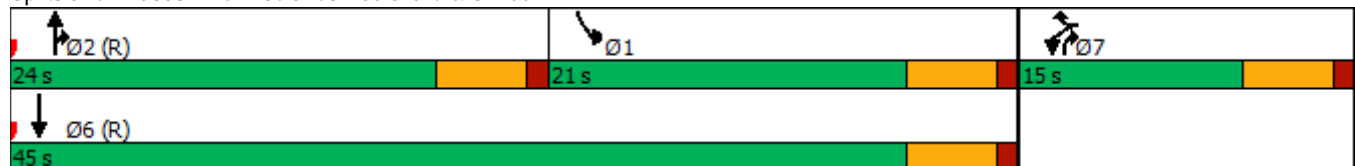


Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Actuated g/C Ratio	0.19	0.19	0.31	0.58	0.25	0.64
v/c Ratio	0.90	0.51	0.74	0.30	0.82	0.24
Control Delay	45.5	8.1	23.2	3.8	37.8	4.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	45.5	8.1	23.2	3.8	37.8	4.6
LOS	D	A	C	A	D	A
Approach Delay	34.7		17.9			17.9
Approach LOS	C		B			B
Queue Length 50th (ft)	~114	0	137	20	123	33
Queue Length 95th (ft)	#211	58	196	52	#243	49
Internal Link Dist (ft)	1612		1065			270
Turn Bay Length (ft)				250		
Base Capacity (vph)	664	473	1143	1023	481	2406
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	0.90	0.51	0.73	0.30	0.77	0.23

Intersection Summary

Area Type: Other  
 Cycle Length: 60  
 Actuated Cycle Length: 60  
 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green  
 Natural Cycle: 60  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.90  
 Intersection Signal Delay: 22.8 Intersection LOS: C  
 Intersection Capacity Utilization 73.1% ICU Level of Service D  
 Analysis Period (min) 15  
 Description: Alternative 1  
 ~ 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.

Splits and Phases: 3: Redlands Boulevard & SR-60 WB



Arco AM/PM Service Station  
3: Redlands Boulevard & SR-60 WB

GPBO (2040) With Project (AM Peak Hour)



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↙↙	↙	↕↕	↘	↘	↕↕
Traffic Volume (veh/h)	530	250	773	286	343	510
Future Volume (veh/h)	530	250	773	286	343	510
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	570	269	831	308	369	548
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	603	268	1030	728	539	2407
Arrive On Green	0.17	0.17	0.29	0.29	0.30	0.67
Sat Flow, veh/h	3619	1610	3705	1610	1810	3705
Grp Volume(v), veh/h	570	269	831	308	369	548
Grp Sat Flow(s),veh/h/ln	1810	1610	1805	1610	1810	1805
Q Serve(g_s), s	9.3	10.0	12.8	7.8	10.8	3.6
Cycle Q Clear(g_c), s	9.3	10.0	12.8	7.8	10.8	3.6
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	603	268	1030	728	539	2407
V/C Ratio(X)	0.94	1.00	0.81	0.42	0.68	0.23
Avail Cap(c_a), veh/h	603	268	1143	778	539	2407
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.83	0.83	1.00	1.00
Uniform Delay (d), s/veh	24.7	25.0	19.9	11.1	18.6	3.9
Incr Delay (d2), s/veh	23.9	55.5	5.7	1.5	3.6	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.5	12.3	5.2	3.4	4.2	0.6
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	48.6	80.5	25.6	12.6	22.1	4.2
LnGrp LOS	D	F	C	B	C	A
Approach Vol, veh/h	839		1139			917
Approach Delay, s/veh	58.8		22.1			11.4
Approach LOS	E		C			B
Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	22.9	22.1		15.0		45.0
Change Period (Y+Rc), s	5.0	5.0		5.0		5.0
Max Green Setting (Gmax), s	16.0	19.0		10.0		40.0
Max Q Clear Time (g_c+I1), s	12.8	14.8		12.0		5.6
Green Ext Time (p_c), s	0.4	2.3		0.0		3.5

Intersection Summary





















HCM 6th Ctrl Delay	29.3
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

Arco AM/PM Service Station  
4: Redlands Boulevard & SR-60 EB

GPBO (2040) With Project (AM Peak Hour)

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	295	0	269	0	0	0	0	791	220	188	852	0
Future Volume (vph)	295	0	269	0	0	0	0	791	220	188	852	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.91	0.95	1.00	1.00	1.00	1.00	0.95	1.00	0.97	0.95	1.00
Fr <sub>t</sub>		0.930	0.850						0.850			
Fl <sub>t</sub> Protected	0.950	0.974								0.950		
Satd. Flow (prot)	1715	1566	1534	0	0	0	0	3610	1615	3502	3610	0
Fl <sub>t</sub> Permitted	0.950	0.974								0.950		
Satd. Flow (perm)	1715	1566	1534	0	0	0	0	3610	1615	3502	3610	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		109	157						239			
Link Speed (mph)		45			45			50			50	
Link Distance (ft)		1655			1667			819			1145	
Travel Time (s)		25.1			25.3			11.2			15.6	
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
Adj. Flow (vph)	321	0	292	0	0	0	0	860	239	204	926	0
Shared Lane Traffic (%)	34%		33%									
Lane Group Flow (vph)	212	205	196	0	0	0	0	860	239	204	926	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		8			8			8			8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	20		10	20		10	20		10	20		10
Turn Type	Perm	NA	Perm					NA	Perm	Prot	NA	
Protected Phases		8						2		1	6	
Permitted Phases	8		8						2			
Detector Phase	8	8	8					2	2	1	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0					7.0	7.0	7.0	7.0	
Minimum Split (s)	12.0	12.0	12.0					23.2	23.2	13.2	23.2	
Total Split (s)	21.0	21.0	21.0					35.0	35.0	14.0	49.0	
Total Split (%)	30.0%	30.0%	30.0%					50.0%	50.0%	20.0%	70.0%	
Maximum Green (s)	16.0	16.0	16.0					30.0	30.0	9.0	44.0	
Yellow Time (s)	4.0	4.0	4.0					4.0	4.0	4.0	4.0	
All-Red Time (s)	1.0	1.0	1.0					1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0					0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0					5.0	5.0	5.0	5.0	
Lead/Lag								Lag	Lag	Lead		
Lead-Lag Optimize?								Yes	Yes	Yes		
Vehicle Extension (s)	3.0	3.0	3.0					3.0	3.0	3.0	3.0	
Recall Mode	None	None	None					C-Min	C-Min	None	C-Min	
Act Effct Green (s)	13.6	13.6	13.6					32.6	32.6	8.8	46.4	
Actuated g/C Ratio	0.19	0.19	0.19					0.47	0.47	0.13	0.66	
v/c Ratio	0.63	0.52	0.46					0.51	0.27	0.46	0.39	
Control Delay	34.3	16.8	10.5					15.3	2.9	31.9	6.4	

Arco AM/PM Service Station  
4: Redlands Boulevard & SR-60 EB

GPBO (2040) With Project (AM Peak Hour)



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Delay	0.0	0.0	0.0					0.0	0.0	0.0	0.0	
Total Delay	34.3	16.8	10.5					15.3	2.9	31.9	6.4	
LOS	C	B	B					B	A	C	A	
Approach Delay		20.9						12.6			11.0	
Approach LOS		C						B			B	
Queue Length 50th (ft)	87	38	14					136	0	42	84	
Queue Length 95th (ft)	152	100	66					193	36	73	124	
Internal Link Dist (ft)		1575			1587			739			1065	
Turn Bay Length (ft)												
Base Capacity (vph)	399	448	477					1708	889	466	2406	
Starvation Cap Reductn	0	0	0					0	0	0	0	
Spillback Cap Reductn	0	0	0					0	0	0	0	
Storage Cap Reductn	0	0	0					0	0	0	0	
Reduced v/c Ratio	0.53	0.46	0.41					0.50	0.27	0.44	0.38	

Intersection Summary





















Area Type: Other  
 Cycle Length: 70  
 Actuated Cycle Length: 70  
 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green  
 Natural Cycle: 50  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.63  
 Intersection Signal Delay: 13.8  
 Intersection Capacity Utilization 54.8%  
 Analysis Period (min) 15  
 Description: Alternative 1

Splits and Phases: 4: Redlands Boulevard & SR-60 EB



Arco AM/PM Service Station  
4: Redlands Boulevard & SR-60 EB

GPBO (2040) With Project (AM Peak Hour)

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	295	0	269	0	0	0	0	791	220	188	852	0
Future Volume (veh/h)	295	0	269	0	0	0	0	791	220	188	852	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900				0	1900	1900	1900	1900	0
Adj Flow Rate, veh/h	412	0	195				0	860	239	204	926	0
Peak Hour Factor	0.92	0.92	0.92				0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0				0	0	0	0	0	0
Cap, veh/h	583	0	259				0	1901	848	344	2513	0
Arrive On Green	0.16	0.00	0.16				0.00	0.53	0.53	0.10	0.70	0.00
Sat Flow, veh/h	3619	0	1610				0	3705	1610	3510	3705	0
Grp Volume(v), veh/h	412	0	195				0	860	239	204	926	0
Grp Sat Flow(s),veh/h/ln	1810	0	1610				0	1805	1610	1755	1805	0
Q Serve(g_s), s	7.5	0.0	8.1				0.0	10.4	5.8	3.9	7.3	0.0
Cycle Q Clear(g_c), s	7.5	0.0	8.1				0.0	10.4	5.8	3.9	7.3	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	583	0	259				0	1901	848	344	2513	0
V/C Ratio(X)	0.71	0.00	0.75				0.00	0.45	0.28	0.59	0.37	0.00
Avail Cap(c_a), veh/h	827	0	368				0	1901	848	451	2513	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	0.89	0.89	0.79	0.79	0.00
Uniform Delay (d), s/veh	27.8	0.0	28.0				0.0	10.3	9.2	30.2	4.3	0.0
Incr Delay (d2), s/veh	1.6	0.0	5.3				0.0	0.7	0.7	1.3	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.1	0.0	3.2				0.0	3.2	1.7	1.6	1.4	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	29.4	0.0	33.3				0.0	11.0	10.0	31.5	4.7	0.0
LnGrp LOS	C	A	C				A	B	A	C	A	A
Approach Vol, veh/h		607						1099			1130	
Approach Delay, s/veh		30.7						10.8			9.5	
Approach LOS		C						B			A	
Timer - Assigned Phs	1	2				6		8				
Phs Duration (G+Y+Rc), s	11.9	41.9				53.7		16.3				
Change Period (Y+Rc), s	5.0	5.0				5.0		5.0				
Max Green Setting (Gmax), s	9.0	30.0				44.0		16.0				
Max Q Clear Time (g_c+I1), s	5.9	12.4				9.3		10.1				
Green Ext Time (p_c), s	0.2	5.8				6.6		1.2				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay			14.5									
HCM 6th LOS			B									
<b>Notes</b>												
User approved volume balancing among the lanes for turning movement.												

Arco AM/PM Service Station  
5: Redlands Boulevard & Eucalyptus Avenue

GPBO (2040) With Project (AM Peak Hour)



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖↗	↕	↖	↗	↕	↖	↖	↕	↖	↖↗	↕	↖
Traffic Volume (vph)	171	60	96	70	60	184	134	652	180	334	507	251
Future Volume (vph)	171	60	96	70	60	184	134	652	180	334	507	251
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	275		0	150		0	150		0	0		0
Storage Lanes	2		1	1		1	1		1	2		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	0.97	0.95	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3502	3610	1615	1805	3610	1615	1805	3610	1615	3502	3610	1615
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3502	3610	1615	1805	3610	1615	1805	3610	1615	3502	3610	1615
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			119			192			188			261
Link Speed (mph)		40			40			50			50	
Link Distance (ft)		2576			1616			680			819	
Travel Time (s)		43.9			27.5			9.3			11.2	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	178	63	100	73	63	192	140	679	188	348	528	261
Shared Lane Traffic (%)												
Lane Group Flow (vph)	178	63	100	73	63	192	140	679	188	348	528	261
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		8			8			8			8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	20		10	20		10	20		10	20		10
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	pt+ov
Protected Phases	3	8		7	4		5	2		1	6	63
Permitted Phases			8			4			2			
Detector Phase	3	8	8	7	4	4	5	2	2	1	6	63
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	10.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	12.4	36.0	36.0	15.0	36.0	36.0	13.2	36.7	36.7	13.2	23.2	
Total Split (s)	16.0	36.0	36.0	16.0	36.0	36.0	21.0	40.0	40.0	18.0	37.0	
Total Split (%)	14.5%	32.7%	32.7%	14.5%	32.7%	32.7%	19.1%	36.4%	36.4%	16.4%	33.6%	
Maximum Green (s)	11.0	31.0	31.0	11.0	31.0	31.0	16.0	35.0	35.0	13.0	32.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	C-Min	C-Min	None	C-Min	
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0			



Arco AM/PM Service Station  
5: Redlands Boulevard & Eucalyptus Avenue

GPBO (2040) With Project (AM Peak Hour)

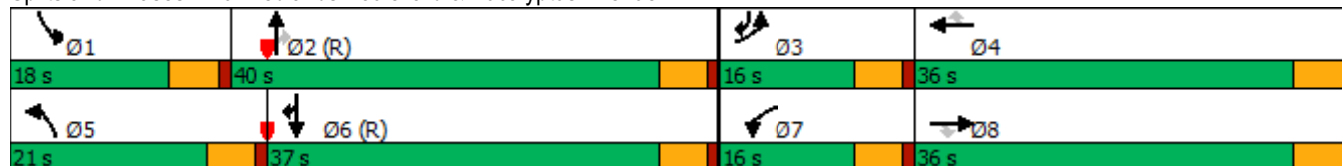


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Flash Dont Walk (s)		18.0	18.0		18.0	18.0		16.0	16.0			
Pedestrian Calls (#/hr)		0	0		0	0		0	0			
Act Effect Green (s)	10.9	11.6	11.6	11.0	8.7	8.7	13.8	53.8	53.8	16.5	56.6	72.6
Actuated g/C Ratio	0.10	0.11	0.11	0.10	0.08	0.08	0.13	0.49	0.49	0.15	0.51	0.66
v/c Ratio	0.51	0.16	0.36	0.41	0.22	0.63	0.62	0.38	0.21	0.66	0.28	0.23
Control Delay	51.9	46.9	9.4	53.1	48.5	16.6	57.1	19.8	3.6	50.2	17.2	1.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	51.9	46.9	9.4	53.1	48.5	16.6	57.1	19.8	3.6	50.2	17.2	1.7
LOS	D	D	A	D	D	B	E	B	A	D	B	A
Approach Delay		38.5			30.8			21.9			23.7	
Approach LOS		D			C			C			C	
Queue Length 50th (ft)	62	22	0	50	22	0	95	149	0	120	104	0
Queue Length 95th (ft)	95	42	36	94	42	66	153	242	44	163	181	34
Internal Link Dist (ft)		2496			1536			600			739	
Turn Bay Length (ft)	275			150			150					
Base Capacity (vph)	377	1017	540	190	1017	593	272	1767	886	528	1858	1165
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.47	0.06	0.19	0.38	0.06	0.32	0.51	0.38	0.21	0.66	0.28	0.22

Intersection Summary

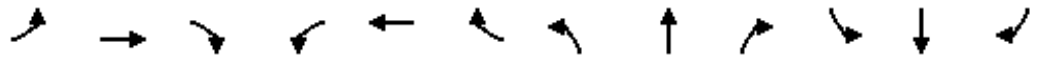
Area Type:	Other
Cycle Length:	110
Actuated Cycle Length:	110
Offset:	102 (93%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle:	105
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.66
Intersection Signal Delay:	25.7
Intersection LOS:	C
Intersection Capacity Utilization:	55.4%
ICU Level of Service:	B
Analysis Period (min):	15

Splits and Phases: 5: Redlands Boulevard & Eucalyptus Avenue



Arco AM/PM Service Station  
5: Redlands Boulevard & Eucalyptus Avenue

GPBO (2040) With Project (AM Peak Hour)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖↗	↑↑	↖	↗	↑↑	↖	↖	↑↑	↖	↖↗	↑↑	↖
Traffic Volume (veh/h)	171	60	96	70	60	184	134	652	180	334	507	251
Future Volume (veh/h)	171	60	96	70	60	184	134	652	180	334	507	251
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	178	62	100	73	62	192	140	679	188	348	528	261
Peak Hour Factor	0.96	0.96	0.96	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	0	0	0
Cap, veh/h	243	469	209	147	512	228	170	1774	791	407	1852	937
Arrive On Green	0.07	0.13	0.13	0.08	0.14	0.14	0.09	0.49	0.49	0.12	0.51	0.51
Sat Flow, veh/h	3510	3610	1610	1810	3610	1610	1810	3610	1610	3510	3610	1610
Grp Volume(v), veh/h	178	62	100	73	62	192	140	679	188	348	528	261
Grp Sat Flow(s),veh/h/ln	1755	1805	1610	1810	1805	1610	1810	1805	1610	1755	1805	1610
Q Serve(g_s), s	5.5	1.7	6.3	4.2	1.6	12.8	8.4	13.0	7.4	10.7	9.2	8.9
Cycle Q Clear(g_c), s	5.5	1.7	6.3	4.2	1.6	12.8	8.4	13.0	7.4	10.7	9.2	8.9
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	243	469	209	147	512	228	170	1774	791	407	1852	937
V/C Ratio(X)	0.73	0.13	0.48	0.50	0.12	0.84	0.82	0.38	0.24	0.86	0.29	0.28
Avail Cap(c_a), veh/h	351	1017	454	181	1017	454	263	1774	791	415	1852	937
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	0.92	0.92	0.92
Uniform Delay (d), s/veh	50.2	42.4	44.4	48.4	41.2	46.0	48.9	17.5	16.1	47.7	15.3	11.5
Incr Delay (d2), s/veh	4.5	0.1	1.7	2.6	0.1	8.1	11.4	0.6	0.7	14.7	0.4	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.5	0.7	2.6	2.0	0.7	5.5	4.2	5.1	2.8	5.3	3.5	3.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	54.7	42.5	46.1	51.0	41.3	54.1	60.3	18.2	16.8	62.4	15.6	12.1
LnGrp LOS	D	D	D	D	D	D	E	B	B	E	B	B
Approach Vol, veh/h		340			327			1007			1137	
Approach Delay, s/veh		49.9			51.0			23.8			29.2	
Approach LOS		D			D			C			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	17.7	59.1	12.6	20.6	15.4	61.4	13.9	19.3				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	13.0	35.0	11.0	31.0	16.0	32.0	11.0	31.0				
Max Q Clear Time (g_c+I1), s	12.7	15.0	7.5	14.8	10.4	11.2	6.2	8.3				
Green Ext Time (p_c), s	0.0	4.6	0.2	0.8	0.1	3.9	0.0	0.6				

Intersection Summary

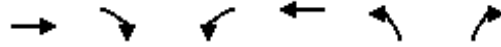
HCM 6th Ctrl Delay	32.3
HCM 6th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

Arco AM/PM Service Station  
6: Project Driveway & Hemlock Avenue

GPBO (2040) With Project (AM Peak Hour)



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔			↔	↔	
Traffic Volume (vph)	116	0	82	289	0	40
Future Volume (vph)	116	0	82	289	0	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>					0.865	
Fl <sub>t</sub> Protected				0.989		
Satd. Flow (prot)	1900	0	0	1879	1644	0
Fl <sub>t</sub> Permitted				0.989		
Satd. Flow (perm)	1900	0	0	1879	1644	0
Link Speed (mph)	30			30	25	
Link Distance (ft)	2801			503	360	
Travel Time (s)	63.7			11.4	9.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	126	0	89	314	0	43
Shared Lane Traffic (%)						
Lane Group Flow (vph)	126	0	0	403	43	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	8			8	8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		10	20		20	10
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	39.7%
Analysis Period (min)	15
	ICU Level of Service A

Intersection						
Int Delay, s/veh	1.9					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	116	0	82	289	0	40
Future Vol, veh/h	116	0	82	289	0	40
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	126	0	89	314	0	43

Major/Minor	Major1	Major2	Minor1	Minor2		
Conflicting Flow All	0	0	126	0	618	126
Stage 1	-	-	-	-	126	-
Stage 2	-	-	-	-	492	-
Critical Hdwy	-	-	4.1	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1473	-	456	930
Stage 1	-	-	-	-	905	-
Stage 2	-	-	-	-	619	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1473	-	423	930
Mov Cap-2 Maneuver	-	-	-	-	423	-
Stage 1	-	-	-	-	839	-
Stage 2	-	-	-	-	619	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.7	9.1
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	930	-	-	1473	-
HCM Lane V/C Ratio	0.047	-	-	0.061	-
HCM Control Delay (s)	9.1	-	-	7.6	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0.2	-

Arco AM/PM Service Station  
8: Redlands Boulevard & Project Driveway

GPBO (2040) With Project (AM Peak Hour)



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↗		↑↑	↑↓	
Traffic Volume (vph)	0	58	0	904	831	20
Future Volume (vph)	0	58	0	904	831	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Fr <sub>t</sub>		0.865			0.996	
Fl <sub>t</sub> Protected						
Satd. Flow (prot)	0	1644	0	3610	3596	0
Fl <sub>t</sub> Permitted						
Satd. Flow (perm)	0	1644	0	3610	3596	0
Link Speed (mph)	25			50	50	
Link Distance (ft)	344			350	294	
Travel Time (s)	9.4			4.8	4.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	63	0	983	903	22
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	63	0	983	925	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	8			8	8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	20	10	20			10
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	35.6%
Analysis Period (min)	15
	ICU Level of Service A

Intersection						
Int Delay, s/veh	0.4					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↗		↑↑	↑↑	
Traffic Vol, veh/h	0	58	0	904	831	20
Future Vol, veh/h	0	58	0	904	831	20
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	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	63	0	983	903	22

Major/Minor	Minor2	Major1	Major2		
Conflicting Flow All	-	463	-	0	0
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-
Critical Hdwy	-	6.9	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-
Follow-up Hdwy	-	3.3	-	-	-
Pot Cap-1 Maneuver	0	551	0	-	-
Stage 1	0	-	0	-	-
Stage 2	0	-	0	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	-	551	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	12.4	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	551	-	-
HCM Lane V/C Ratio	-	0.114	-	-
HCM Control Delay (s)	-	12.4	-	-
HCM Lane LOS	-	B	-	-
HCM 95th %tile Q(veh)	-	0.4	-	-



Arco AM/PM Service Station  
1: Redlands Boulevard & Ironwood Avenue

GPBO (2040) With Project (PM Peak Hour)

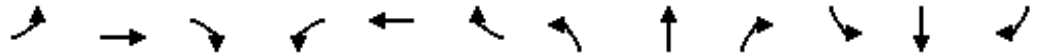


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔↔			↔↔		↔	↔↔		↔	↔↔	↔
Traffic Volume (vph)	200	170	135	133	120	6	151	941	92	10	896	224
Future Volume (vph)	200	170	135	133	120	6	151	941	92	10	896	224
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	400		0	435		115
Storage Lanes	0		0	0		0	1		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	0.95	0.95	1.00	0.95	1.00
Frt		0.960			0.997			0.987				0.850
Flt Protected		0.981			0.975		0.950			0.950		
Satd. Flow (prot)	0	3400	0	0	3509	0	1805	3563	0	1805	3610	1615
Flt Permitted		0.981			0.975		0.950			0.950		
Satd. Flow (perm)	0	3400	0	0	3509	0	1805	3563	0	1805	3610	1615
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		40			2			9				114
Link Speed (mph)		55			55			50				50
Link Distance (ft)		1467			1500			765				1354
Travel Time (s)		18.2			18.6			10.4				18.5
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	208	177	141	139	125	6	157	980	96	10	933	233
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	526	0	0	270	0	157	1076	0	10	933	233
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		8			8			8				8
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	20		10	20		10	20		10	20		10
Turn Type	Split	NA		Split	NA		Prot	NA		Prot	NA	Perm
Protected Phases	8	8		4	4		5	2		1	6	
Permitted Phases												6
Detector Phase	8	8		4	4		5	2		1	6	6
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	10.0
Minimum Split (s)	31.0	31.0		31.0	31.0		15.7	28.7		15.7	28.7	28.7
Total Split (s)	31.0	31.0		31.0	31.0		17.0	42.0		16.0	41.0	41.0
Total Split (%)	25.8%	25.8%		25.8%	25.8%		14.2%	35.0%		13.3%	34.2%	34.2%
Maximum Green (s)	26.0	26.0		26.0	26.0		12.0	37.0		11.0	36.0	36.0
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)		5.0			5.0		5.0	5.0		5.0	5.0	5.0
Lead/Lag							Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None		None	None		None	Min		None	Min	Min
Walk Time (s)	7.0	7.0		7.0	7.0			7.0			7.0	7.0



Arco AM/PM Service Station  
1: Redlands Boulevard & Ironwood Avenue

GPBO (2040) With Project (PM Peak Hour)



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Flash Dont Walk (s)	18.0	18.0		18.0	18.0			16.0			16.0	16.0
Pedestrian Calls (#/hr)	0	0		0	0			0			0	0
Act Effct Green (s)		19.7			13.3		11.8	45.9		10.2	31.6	31.6
Actuated g/C Ratio		0.20			0.14		0.12	0.47		0.11	0.33	0.33
v/c Ratio		0.73			0.56		0.71	0.63		0.05	0.79	0.39
Control Delay		40.3			45.0		62.7	23.3		45.5	35.9	15.4
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	0.0
Total Delay		40.3			45.0		62.7	23.3		45.5	35.9	15.4
LOS		D			D		E	C		D	D	B
Approach Delay		40.3			45.0			28.3			31.9	
Approach LOS		D			D			C			C	
Queue Length 50th (ft)		153			84		97	233		6	270	52
Queue Length 95th (ft)		224			137		#223	#495		24	398	130
Internal Link Dist (ft)		1387			1420			685			1274	
Turn Bay Length (ft)							400			435		115
Base Capacity (vph)		959			961		227	1696		208	1367	682
Starvation Cap Reductn		0			0		0	0		0	0	0
Spillback Cap Reductn		0			0		0	0		0	0	0
Storage Cap Reductn		0			0		0	0		0	0	0
Reduced v/c Ratio		0.55			0.28		0.69	0.63		0.05	0.68	0.34

Intersection Summary

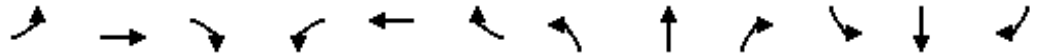
Area Type: Other  
 Cycle Length: 120  
 Actuated Cycle Length: 96.7  
 Natural Cycle: 110  
 Control Type: Actuated-Uncoordinated  
 Maximum v/c Ratio: 0.79  
 Intersection Signal Delay: 33.0 Intersection LOS: C  
 Intersection Capacity Utilization 83.8% ICU Level of Service E  
 Analysis Period (min) 15  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

Splits and Phases: 1: Redlands Boulevard & Ironwood Avenue

Ø1	Ø2	Ø4	Ø8
16 s	42 s	31 s	31 s
Ø5	Ø6		
17 s	41 s		

Arco AM/PM Service Station  
1: Redlands Boulevard & Ironwood Avenue

GPBO (2040) With Project (PM Peak Hour)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↕			↕↕		↕	↕↕		↕	↕↕	↕
Traffic Volume (veh/h)	200	170	135	133	120	6	151	941	92	10	896	224
Future Volume (veh/h)	200	170	135	133	120	6	151	941	92	10	896	224
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	208	177	141	139	125	6	157	980	96	10	933	233
Peak Hour Factor	0.96	0.96	0.96	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	0	0	0
Cap, veh/h	265	237	195	215	217	10	212	1393	136	45	1181	527
Arrive On Green	0.20	0.20	0.20	0.12	0.12	0.12	0.12	0.42	0.42	0.02	0.33	0.33
Sat Flow, veh/h	1352	1207	994	1797	1811	87	1810	3321	325	1810	3610	1610
Grp Volume(v), veh/h	282	0	244	140	0	130	157	533	543	10	933	233
Grp Sat Flow(s),veh/h/ln	1832	0	1721	1810	0	1884	1810	1805	1841	1810	1805	1610
Q Serve(g_s), s	12.2	0.0	11.1	6.1	0.0	5.4	7.0	20.2	20.3	0.5	19.5	9.5
Cycle Q Clear(g_c), s	12.2	0.0	11.1	6.1	0.0	5.4	7.0	20.2	20.3	0.5	19.5	9.5
Prop In Lane	0.74		0.58	0.99		0.05	1.00		0.18	1.00		1.00
Lane Grp Cap(c), veh/h	359	0	337	217	0	226	212	757	772	45	1181	527
V/C Ratio(X)	0.79	0.00	0.72	0.65	0.00	0.58	0.74	0.70	0.70	0.22	0.79	0.44
Avail Cap(c_a), veh/h	572	0	537	565	0	588	261	802	818	239	1560	696
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	31.8	0.0	31.4	35.0	0.0	34.7	35.6	19.9	19.9	39.8	25.4	22.0
Incr Delay (d2), s/veh	3.8	0.0	3.0	3.2	0.0	2.3	8.6	2.6	2.6	2.5	2.1	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/ln	5.2	0.0	4.4	2.7	0.0	2.4	3.4	7.8	8.0	0.2	7.8	3.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	35.6	0.0	34.3	38.2	0.0	37.0	44.1	22.5	22.5	42.3	27.5	22.6
LnGrp LOS	D	A	C	D	A	D	D	C	C	D	C	C
Approach Vol, veh/h		526			270			1233			1176	
Approach Delay, s/veh		35.0			37.6			25.3			26.7	
Approach LOS		D			D			C			C	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.1	39.9		15.0	14.7	32.3		21.3				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0				
Max Green Setting (Gmax), s	11.0	37.0		26.0	12.0	36.0		26.0				
Max Q Clear Time (g_c+I1), s	2.5	22.3		8.1	9.0	21.5		14.2				
Green Ext Time (p_c), s	0.0	5.4		1.1	0.1	5.7		2.1				

Intersection Summary

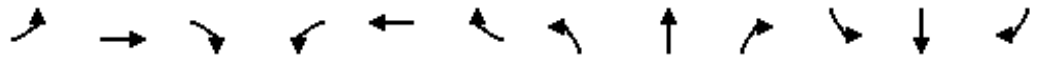
HCM 6th Ctrl Delay	28.4
HCM 6th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

Arco AM/PM Service Station  
2: Redlands Boulevard & Hemlock Avenue

GPBO (2040) With Project (PM Peak Hour)



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	131	87	182	160	87	110	187	965	50	80	1000	54
Future Volume (vph)	131	87	182	160	87	110	187	965	50	80	1000	54
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>		0.899			0.916			0.993			0.992	
Fl <sub>t</sub> Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	1708	0	1805	1740	0	1805	1887	0	1805	1885	0
Fl <sub>t</sub> Permitted	0.466			0.327			0.950			0.950		
Satd. Flow (perm)	885	1708	0	621	1740	0	1805	1887	0	1805	1885	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		82			50			3			3	
Link Speed (mph)		30			30			50			50	
Link Distance (ft)		503			271			294			546	
Travel Time (s)		11.4			6.2			4.0			7.4	
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
Adj. Flow (vph)	142	95	198	174	95	120	203	1049	54	87	1087	59
Shared Lane Traffic (%)												
Lane Group Flow (vph)	142	293	0	174	215	0	203	1103	0	87	1146	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		8			8			8			8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	20		10	20		10	20		10	20		10
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Detector Phase	4	4		8	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	22.0	22.0		22.0	22.0		15.7	22.7		15.0	30.0	
Total Split (s)	34.0	34.0		34.0	34.0		17.0	71.0		15.0	69.0	
Total Split (%)	28.3%	28.3%		28.3%	28.3%		14.2%	59.2%		12.5%	57.5%	
Maximum Green (s)	29.0	29.0		29.0	29.0		12.0	66.0		10.0	64.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	Min		None	Min	
Walk Time (s)	7.0	7.0		7.0	7.0						7.0	
Flash Dont Walk (s)	10.0	10.0		10.0	10.0						18.0	
Pedestrian Calls (#/hr)	0	0		0	0						0	
Act Effect Green (s)	29.0	29.0		29.0	29.0		12.0	66.0		10.0	64.0	

Arco AM/PM Service Station  
2: Redlands Boulevard & Hemlock Avenue

GPBO (2040) With Project (PM Peak Hour)



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio	0.24	0.24		0.24	0.24		0.10	0.55		0.08	0.53	
v/c Ratio	0.67	0.62		1.16	0.47		1.13	1.06		0.58	1.14	
Control Delay	57.9	35.2		164.4	33.4		154.2	73.2		69.0	102.9	
Queue Delay	0.0	0.0		0.0	0.0		0.0	16.0		0.0	0.0	
Total Delay	57.9	35.2		164.4	33.4		154.2	89.3		69.0	102.9	
LOS	E	D		F	C		F	F		E	F	
Approach Delay		42.6			92.0			99.4			100.5	
Approach LOS		D			F			F			F	
Queue Length 50th (ft)	100	146		~160	109		~182	~941		66	~1038	
Queue Length 95th (ft)	#189	243		#305	186		#335	#1202		#127	#1301	
Internal Link Dist (ft)		423			191			214			466	
Turn Bay Length (ft)												
Base Capacity (vph)	213	474		150	458		180	1039		150	1006	
Starvation Cap Reductn	0	0		0	0		0	141		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.67	0.62		1.16	0.47		1.13	1.23		0.58	1.14	

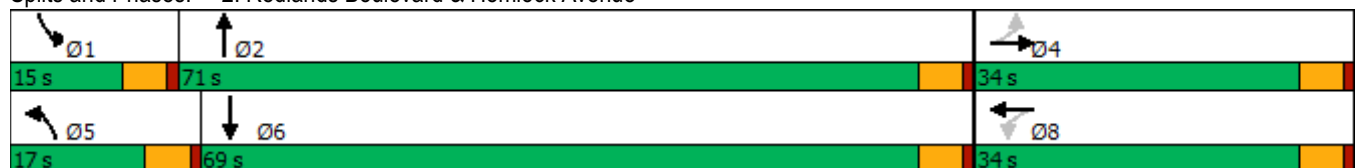
Intersection Summary

Area Type: Other  
 Cycle Length: 120  
 Actuated Cycle Length: 120  
 Natural Cycle: 120  
 Control Type: Actuated-Uncoordinated  
 Maximum v/c Ratio: 1.16  
 Intersection Signal Delay: 91.6  
 Intersection Capacity Utilization 112.0%  
 Analysis Period (min) 15  
 Intersection LOS: F  
 ICU Level of Service H

~ Volume exceeds capacity, queue is theoretically infinite.  
 Queue shown is maximum after two cycles.

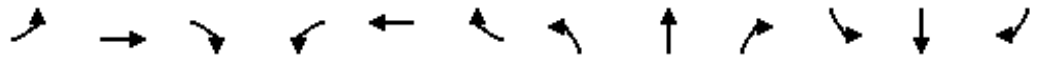
# 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

Splits and Phases: 2: Redlands Boulevard & Hemlock Avenue



Arco AM/PM Service Station  
2: Redlands Boulevard & Hemlock Avenue























GPBO (2040) With Project (PM Peak Hour)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	131	87	182	160	87	110	187	965	50	80	1000	54
Future Volume (veh/h)	131	87	182	160	87	110	187	965	50	80	1000	54
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	142	95	198	174	95	120	203	1049	54	87	1087	59
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	219	133	277	152	184	233	181	993	51	142	952	52
Arrive On Green	0.24	0.24	0.24	0.24	0.24	0.24	0.10	0.55	0.55	0.08	0.53	0.53
Sat Flow, veh/h	1185	549	1145	1103	763	964	1810	1791	92	1810	1786	97
Grp Volume(v), veh/h	142	0	293	174	0	215	203	0	1103	87	0	1146
Grp Sat Flow(s),veh/h/ln	1185	0	1694	1103	0	1727	1810	0	1883	1810	0	1883
Q Serve(g_s), s	14.2	0.0	19.0	10.0	0.0	12.9	12.0	0.0	66.6	5.6	0.0	64.0
Cycle Q Clear(g_c), s	27.1	0.0	19.0	29.0	0.0	12.9	12.0	0.0	66.6	5.6	0.0	64.0
Prop In Lane	1.00		0.68	1.00		0.56	1.00		0.05	1.00		0.05
Lane Grp Cap(c), veh/h	219	0	409	152	0	417	181	0	1045	142	0	1004
V/C Ratio(X)	0.65	0.00	0.72	1.15	0.00	0.52	1.12	0.00	1.06	0.61	0.00	1.14
Avail Cap(c_a), veh/h	219	0	409	152	0	417	181	0	1045	151	0	1004
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	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	51.1	0.0	41.7	57.0	0.0	39.4	54.0	0.0	26.7	53.5	0.0	28.0
Incr Delay (d2), s/veh	6.6	0.0	5.9	118.2	0.0	1.1	103.4	0.0	43.9	6.4	0.0	75.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.6	0.0	8.6	9.6	0.0	5.6	10.5	0.0	38.7	2.7	0.0	46.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	57.8	0.0	47.6	175.1	0.0	40.5	157.4	0.0	70.6	59.9	0.0	103.8
LnGrp LOS	E	A	D	F	A	D	F	A	F	E	A	F
Approach Vol, veh/h		435			389			1306			1233	
Approach Delay, s/veh		50.9			100.7			84.1			100.7	
Approach LOS		D			F			F			F	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	14.4	71.6		34.0	17.0	69.0		34.0				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0				
Max Green Setting (Gmax), s	10.0	66.0		29.0	12.0	64.0		29.0				
Max Q Clear Time (g_c+I1), s	7.6	68.6		29.1	14.0	66.0		31.0				
Green Ext Time (p_c), s	0.0	0.0		0.0	0.0	0.0		0.0				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				87.8								
HCM 6th LOS				F								

Arco AM/PM Service Station  
3: Redlands Boulevard & SR-60 WB

GPBO (2040) With Project (PM Peak Hour)

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	  	 	  	 	  	  
Traffic Volume (vph)	290	280	1065	462	367	778
Future Volume (vph)	290	280	1065	462	367	778
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0		250	0	
Storage Lanes	2	1		1	1	
Taper Length (ft)	25				25	
Lane Util. Factor	0.97	0.91	0.95	1.00	1.00	0.95
Frt	0.961	0.850		0.850		
Flt Protected	0.964				0.950	
Satd. Flow (prot)	3415	1470	3610	1615	1805	3610
Flt Permitted	0.964				0.950	
Satd. Flow (perm)	3415	1470	3610	1615	1805	3610
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)	60	187		206		
Link Speed (mph)	45		50			50
Link Distance (ft)	1692		1145			350
Travel Time (s)	25.6		15.6			4.8
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	302	292	1109	481	382	810
Shared Lane Traffic (%)		36%				
Lane Group Flow (vph)	407	187	1109	481	382	810
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	24		12			12
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	8		8			8
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	20	10		10	20	
Turn Type	Prot	Prot	NA	pt+ov	Prot	NA
Protected Phases	7	7	2	2 7	1	6
Permitted Phases						
Detector Phase	7	7	2	2 7	1	6
Switch Phase						
Minimum Initial (s)	7.0	7.0	7.0		7.0	7.0
Minimum Split (s)	13.2	13.2	23.2		13.2	23.2
Total Split (s)	15.0	15.0	29.0		26.0	55.0
Total Split (%)	21.4%	21.4%	41.4%		37.1%	78.6%
Maximum Green (s)	10.0	10.0	24.0		21.0	50.0
Yellow Time (s)	4.0	4.0	4.0		4.0	4.0
All-Red Time (s)	1.0	1.0	1.0		1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0		5.0	5.0
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Recall Mode	None	None	C-Min		None	C-Min
Act Effct Green (s)	10.4	10.4	26.1	41.5	18.5	49.6

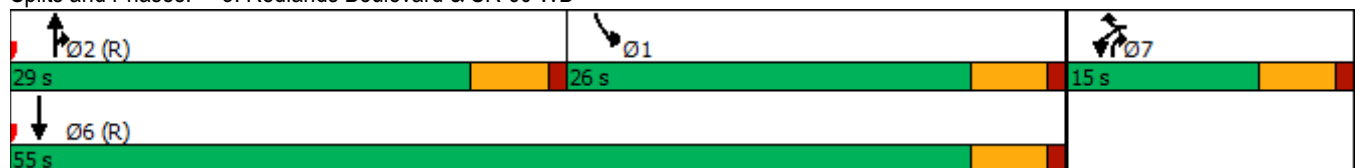


Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Actuated g/C Ratio	0.15	0.15	0.37	0.59	0.26	0.71
v/c Ratio	0.73	0.50	0.83	0.46	0.80	0.32
Control Delay	33.2	9.9	27.6	6.4	37.5	4.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	33.2	9.9	27.6	6.4	37.5	4.2
LOS	C	A	C	A	D	A
Approach Delay	25.9		21.2			14.9
Approach LOS	C		C			B
Queue Length 50th (ft)	73	0	234	55	148	57
Queue Length 95th (ft)	#135	57	#354	122	#244	73
Internal Link Dist (ft)	1612		1065			270
Turn Bay Length (ft)				250		
Base Capacity (vph)	569	381	1344	1025	541	2588
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	0.72	0.49	0.83	0.47	0.71	0.31

Intersection Summary

Area Type: Other  
 Cycle Length: 70  
 Actuated Cycle Length: 70  
 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green  
 Natural Cycle: 65  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.83  
 Intersection Signal Delay: 19.8 Intersection LOS: B  
 Intersection Capacity Utilization 76.0% ICU Level of Service D  
 Analysis Period (min) 15  
 Description: Alternative 1  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

Splits and Phases: 3: Redlands Boulevard & SR-60 WB



Arco AM/PM Service Station  
3: Redlands Boulevard & SR-60 WB

GPBO (2040) With Project (PM Peak Hour)



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	290	280	1065	462	367	778
Future Volume (veh/h)	290	280	1065	462	367	778
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	390	198	1109	481	382	810
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	517	230	1220	774	552	2579
Arrive On Green	0.14	0.14	0.34	0.34	0.30	0.71
Sat Flow, veh/h	3619	1610	3705	1610	1810	3705
Grp Volume(v), veh/h	390	198	1109	481	382	810
Grp Sat Flow(s),veh/h/ln	1810	1610	1805	1610	1810	1805
Q Serve(g_s), s	7.2	8.4	20.5	15.5	13.0	5.8
Cycle Q Clear(g_c), s	7.2	8.4	20.5	15.5	13.0	5.8
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	517	230	1220	774	552	2579
V/C Ratio(X)	0.75	0.86	0.91	0.62	0.69	0.31
Avail Cap(c_a), veh/h	517	230	1238	782	552	2579
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.58	0.58	1.00	1.00
Uniform Delay (d), s/veh	28.8	29.3	22.1	13.4	21.4	3.7
Incr Delay (d2), s/veh	6.2	26.6	7.2	2.2	3.7	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.3	8.8	8.5	6.7	5.3	1.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	35.0	55.9	29.4	15.6	25.2	4.0
LnGrp LOS	D	E	C	B	C	A
Approach Vol, veh/h	588		1590			1192
Approach Delay, s/veh	42.1		25.2			10.8
Approach LOS	D		C			B
Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	26.3	28.7		15.0		55.0
Change Period (Y+Rc), s	5.0	5.0		5.0		5.0
Max Green Setting (Gmax), s	21.0	24.0		10.0		50.0
Max Q Clear Time (g_c+I1), s	15.0	22.5		10.4		7.8
Green Ext Time (p_c), s	0.6	1.1		0.0		5.7

Intersection Summary

HCM 6th Ctrl Delay			23.1			
HCM 6th LOS			C			





















Notes

User approved volume balancing among the lanes for turning movement.



Arco AM/PM Service Station  
4: Redlands Boulevard & SR-60 EB

GPBO (2040) With Project (PM Peak Hour)

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	570	0	454	0	0	0	0	918	940	453	722	0
Future Volume (vph)	570	0	454	0	0	0	0	918	940	453	722	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.91	0.95	1.00	1.00	1.00	1.00	0.95	1.00	0.97	0.95	1.00
Fr <sub>t</sub>		0.942	0.850							0.850		
Fl <sub>t</sub> Protected	0.950	0.970								0.950		
Satd. Flow (prot)	1715	1580	1534	0	0	0	0	3610	1615	3502	3610	0
Fl <sub>t</sub> Permitted	0.950	0.970								0.950		
Satd. Flow (perm)	1715	1580	1534	0	0	0	0	3610	1615	3502	3610	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		95	208						686			
Link Speed (mph)		45			45			50			50	
Link Distance (ft)		1655			1667			819			1145	
Travel Time (s)		25.1			25.3			11.2			15.6	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	626	0	499	0	0	0	0	1009	1033	498	793	0
Shared Lane Traffic (%)	37%		29%									
Lane Group Flow (vph)	394	377	354	0	0	0	0	1009	1033	498	793	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		8			8			8			8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	20		10	20		10	20		10	20		10
Turn Type	Perm	NA	Perm					NA	Perm	Prot	NA	
Protected Phases		8						2		1	6	
Permitted Phases	8		8						2			
Detector Phase	8	8	8					2	2	1	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0					7.0	7.0	7.0	7.0	
Minimum Split (s)	12.0	12.0	12.0					23.2	23.2	13.2	23.2	
Total Split (s)	25.0	25.0	25.0					38.0	38.0	17.0	55.0	
Total Split (%)	31.3%	31.3%	31.3%					47.5%	47.5%	21.3%	68.8%	
Maximum Green (s)	20.0	20.0	20.0					33.0	33.0	12.0	50.0	
Yellow Time (s)	4.0	4.0	4.0					4.0	4.0	4.0	4.0	
All-Red Time (s)	1.0	1.0	1.0					1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0					0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0					5.0	5.0	5.0	5.0	
Lead/Lag								Lag	Lag	Lead		
Lead-Lag Optimize?								Yes	Yes	Yes		
Vehicle Extension (s)	3.0	3.0	3.0					3.0	3.0	3.0	3.0	
Recall Mode	None	None	None					C-Min	C-Min	None	C-Min	
Act Effct Green (s)	19.9	19.9	19.9					32.6	32.6	12.5	50.1	
Actuated g/C Ratio	0.25	0.25	0.25					0.41	0.41	0.16	0.63	
v/c Ratio	0.92	0.81	0.66					0.69	0.97	0.91	0.35	
Control Delay	59.8	36.8	17.7					22.3	31.0	57.7	7.7	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Delay	0.0	0.0	0.0					0.0	0.0	0.0	0.0	
Total Delay	59.8	36.8	17.7					22.3	31.0	57.7	7.7	
LOS	E	D	B					C	C	E	A	
Approach Delay		38.8						26.7			27.0	
Approach LOS		D						C			C	
Queue Length 50th (ft)	202	147	64					210	196	128	88	
Queue Length 95th (ft)	#375	#305	162					277	#536	#221	120	
Internal Link Dist (ft)		1575			1587			739			1065	
Turn Bay Length (ft)												
Base Capacity (vph)	428	466	539					1489	1069	545	2260	
Starvation Cap Reductn	0	0	0					0	0	0	0	
Spillback Cap Reductn	0	0	0					0	0	0	0	
Storage Cap Reductn	0	0	0					0	0	0	0	
Reduced v/c Ratio	0.92	0.81	0.66					0.68	0.97	0.91	0.35	

Intersection Summary





















Area Type: Other  
 Cycle Length: 80  
 Actuated Cycle Length: 80  
 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green  
 Natural Cycle: 80  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.97  
 Intersection Signal Delay: 29.9  
 Intersection LOS: C  
 Intersection Capacity Utilization 106.5%  
 ICU Level of Service G  
 Analysis Period (min) 15  
 Description: Alternative 1  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

Splits and Phases: 4: Redlands Boulevard & SR-60 EB



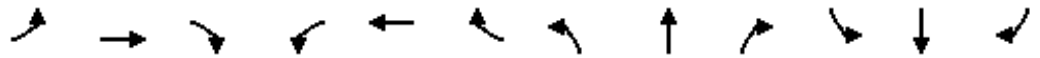
Arco AM/PM Service Station  
4: Redlands Boulevard & SR-60 EB

GPBO (2040) With Project (PM Peak Hour)

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	570	0	454	0	0	0	0	918	940	453	722	0
Future Volume (veh/h)	570	0	454	0	0	0	0	918	940	453	722	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900				0	1900	1900	1900	1900	0
Adj Flow Rate, veh/h	781	0	333				0	1009	1033	498	793	0
Peak Hour Factor	0.91	0.91	0.91				0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	0	0				0	0	0	0	0	0
Cap, veh/h	875	0	390				0	1518	677	527	2285	0
Arrive On Green	0.24	0.00	0.24				0.00	0.42	0.42	0.15	0.63	0.00
Sat Flow, veh/h	3619	0	1610				0	3705	1610	3510	3705	0
Grp Volume(v), veh/h	781	0	333				0	1009	1033	498	793	0
Grp Sat Flow(s),veh/h/ln	1810	0	1610				0	1805	1610	1755	1805	0
Q Serve(g_s), s	16.7	0.0	15.8				0.0	18.0	33.6	11.2	8.3	0.0
Cycle Q Clear(g_c), s	16.7	0.0	15.8				0.0	18.0	33.6	11.2	8.3	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	875	0	390				0	1518	677	527	2285	0
V/C Ratio(X)	0.89	0.00	0.85				0.00	0.66	1.53	0.95	0.35	0.00
Avail Cap(c_a), veh/h	905	0	403				0	1518	677	527	2285	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	0.65	0.65	0.89	0.89	0.00
Uniform Delay (d), s/veh	29.3	0.0	29.0				0.0	18.6	23.2	33.7	6.9	0.0
Incr Delay (d2), s/veh	10.9	0.0	16.0				0.0	1.5	241.3	24.3	0.4	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	7.9	0.0	7.3				0.0	6.7	56.0	6.1	2.3	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	40.2	0.0	44.9				0.0	20.1	264.5	58.0	7.3	0.0
LnGrp LOS	D	A	D				A	C	F	E	A	A
Approach Vol, veh/h		1114						2042			1291	
Approach Delay, s/veh		41.6						143.8			26.8	
Approach LOS		D						F			C	
Timer - Assigned Phs	1	2				6		8				
Phs Duration (G+Y+Rc), s	17.0	38.6				55.6		24.4				
Change Period (Y+Rc), s	5.0	5.0				5.0		5.0				
Max Green Setting (Gmax), s	12.0	33.0				50.0		20.0				
Max Q Clear Time (g_c+I1), s	13.2	35.6				10.3		18.7				
Green Ext Time (p_c), s	0.0	0.0				5.5		0.7				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay			84.2									
HCM 6th LOS			F									
<b>Notes</b>												
User approved volume balancing among the lanes for turning movement.												

Arco AM/PM Service Station  
5: Redlands Boulevard & Eucalyptus Avenue

GPBO (2040) With Project (PM Peak Hour)



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖↗	↕	↖	↖	↕	↖	↖	↕	↖	↖↗	↕	↖
Traffic Volume (vph)	395	72	155	101	61	260	160	895	82	162	732	283
Future Volume (vph)	395	72	155	101	61	260	160	895	82	162	732	283
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	275		0	150		0	150		0	0		0
Storage Lanes	2		1	1		1	1		1	2		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	0.97	0.95	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3502	3610	1615	1805	3610	1615	1805	3610	1615	3502	3610	1615
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3502	3610	1615	1805	3610	1615	1805	3610	1615	3502	3610	1615
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			178			218			109			325
Link Speed (mph)		40			40			50			50	
Link Distance (ft)		2576			1616			680			819	
Travel Time (s)		43.9			27.5			9.3			11.2	
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
Adj. Flow (vph)	454	83	178	116	70	299	184	1029	94	186	841	325
Shared Lane Traffic (%)												
Lane Group Flow (vph)	454	83	178	116	70	299	184	1029	94	186	841	325
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		8			8			8			8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	20		10	20		10	20		10	20		10
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	pt+ov
Protected Phases	3	8		7	4		5	2		1	6	63
Permitted Phases			8			4			2			
Detector Phase	3	8	8	7	4	4	5	2	2	1	6	63
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	10.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	12.4	36.0	36.0	15.0	36.0	36.0	13.2	36.7	36.7	13.2	23.2	
Total Split (s)	24.0	36.0	36.0	24.0	36.0	36.0	22.0	43.0	43.0	17.0	38.0	
Total Split (%)	20.0%	30.0%	30.0%	20.0%	30.0%	30.0%	18.3%	35.8%	35.8%	14.2%	31.7%	
Maximum Green (s)	19.0	31.0	31.0	19.0	31.0	31.0	17.0	38.0	38.0	12.0	33.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	C-Min	C-Min	None	C-Min	
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0			

Arco AM/PM Service Station  
5: Redlands Boulevard & Eucalyptus Avenue

GPBO (2040) With Project (PM Peak Hour)

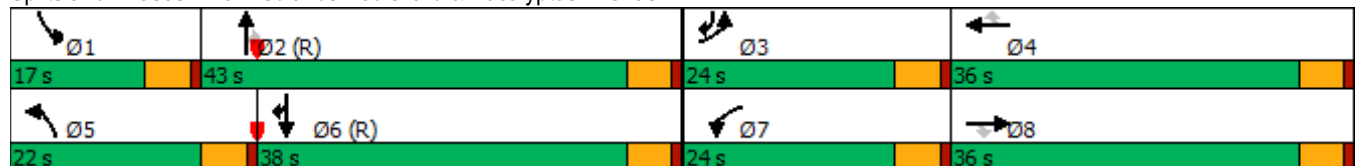


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Flash Dont Walk (s)		18.0	18.0		18.0	18.0		16.0	16.0			
Pedestrian Calls (#/hr)		0	0		0	0		0	0			
Act Effct Green (s)	18.7	18.9	18.9	13.4	13.5	13.5	17.6	56.1	56.1	11.7	50.1	73.9
Actuated g/C Ratio	0.16	0.16	0.16	0.11	0.11	0.11	0.15	0.47	0.47	0.10	0.42	0.62
v/c Ratio	0.83	0.15	0.44	0.58	0.17	0.80	0.69	0.61	0.12	0.55	0.56	0.29
Control Delay	63.0	42.7	9.6	61.7	46.5	30.4	62.0	27.6	3.8	57.4	30.7	2.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	63.0	42.7	9.6	61.7	46.5	30.4	62.0	27.6	3.8	57.4	30.7	2.4
LOS	E	D	A	E	D	C	E	C	A	E	C	A
Approach Delay		47.3			40.2			30.8			27.6	
Approach LOS		D			D			C			C	
Queue Length 50th (ft)	174	29	0	87	26	60	137	308	0	72	259	0
Queue Length 95th (ft)	#231	48	53	138	43	136	197	438	25	103	381	41
Internal Link Dist (ft)		2496			1536			600			739	
Turn Bay Length (ft)	275			150			150					
Base Capacity (vph)	563	932	549	285	932	578	286	1686	812	373	1507	1125
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.81	0.09	0.32	0.41	0.08	0.52	0.64	0.61	0.12	0.50	0.56	0.29

Intersection Summary

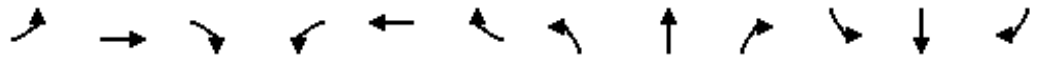
Area Type: Other  
 Cycle Length: 120  
 Actuated Cycle Length: 120  
 Offset: 102 (85%), Referenced to phase 2:NBT and 6:SBT, Start of Green  
 Natural Cycle: 105  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.83  
 Intersection Signal Delay: 33.9 Intersection LOS: C  
 Intersection Capacity Utilization 67.1% ICU Level of Service C  
 Analysis Period (min) 15  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

Splits and Phases: 5: Redlands Boulevard & Eucalyptus Avenue



Arco AM/PM Service Station  
5: Redlands Boulevard & Eucalyptus Avenue

GPBO (2040) With Project (PM Peak Hour)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖↗	↑↑	↖	↗	↑↑	↖	↖	↑↑	↖	↖↗	↑↑	↖
Traffic Volume (veh/h)	395	72	155	101	61	260	160	895	82	162	732	283
Future Volume (veh/h)	395	72	155	101	61	260	160	895	82	162	732	283
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	454	83	178	116	70	299	184	1029	94	186	841	325
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
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	513	973	434	148	740	330	212	1487	663	246	1317	823
Arrive On Green	0.15	0.27	0.27	0.08	0.20	0.20	0.12	0.41	0.41	0.07	0.36	0.36
Sat Flow, veh/h	3510	3610	1610	1810	3610	1610	1810	3610	1610	3510	3610	1610
Grp Volume(v), veh/h	454	83	178	116	70	299	184	1029	94	186	841	325
Grp Sat Flow(s),veh/h/ln	1755	1805	1610	1810	1805	1610	1810	1805	1610	1755	1805	1610
Q Serve(g_s), s	15.2	2.1	10.9	7.5	1.9	21.8	12.0	28.1	4.4	6.2	23.2	14.8
Cycle Q Clear(g_c), s	15.2	2.1	10.9	7.5	1.9	21.8	12.0	28.1	4.4	6.2	23.2	14.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	513	973	434	148	740	330	212	1487	663	246	1317	823
V/C Ratio(X)	0.88	0.09	0.41	0.79	0.09	0.91	0.87	0.69	0.14	0.76	0.64	0.39
Avail Cap(c_a), veh/h	556	973	434	287	933	416	256	1487	663	351	1317	823
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	0.90	0.90	0.90
Uniform Delay (d), s/veh	50.2	32.8	36.0	54.1	38.7	46.6	52.0	29.0	22.0	54.8	31.6	18.0
Incr Delay (d2), s/veh	14.8	0.0	0.6	8.8	0.1	20.0	22.3	2.7	0.4	5.1	2.1	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	7.6	0.9	4.3	3.7	0.8	10.3	6.6	11.9	1.7	2.8	9.9	5.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	65.1	32.8	36.6	62.9	38.7	66.6	74.3	31.7	22.5	59.9	33.7	19.3
LnGrp LOS	E	C	D	E	D	E	E	C	C	E	C	B
Approach Vol, veh/h		715			485			1307			1352	
Approach Delay, s/veh		54.2			61.7			37.0			33.8	
Approach LOS		D			E			D			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	13.4	54.4	22.6	29.6	19.1	48.8	14.8	37.4				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	12.0	38.0	19.0	31.0	17.0	33.0	19.0	31.0				
Max Q Clear Time (g_c+I1), s	8.2	30.1	17.2	23.8	14.0	25.2	9.5	12.9				
Green Ext Time (p_c), s	0.2	4.0	0.3	0.8	0.1	3.8	0.2	0.9				

Intersection Summary

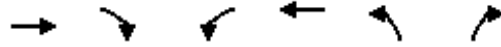
HCM 6th Ctrl Delay	42.2
HCM 6th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.

Arco AM/PM Service Station  
6: Project Driveway & Hemlock Avenue

GPBO (2040) With Project (PM Peak Hour)



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	357	0	91	237	0	43
Future Volume (vph)	357	0	91	237	0	43
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>					0.865	
Fl <sub>t</sub> Protected				0.986		
Satd. Flow (prot)	1900	0	0	1873	1644	0
Fl <sub>t</sub> Permitted				0.986		
Satd. Flow (perm)	1900	0	0	1873	1644	0
Link Speed (mph)	30			30	25	
Link Distance (ft)	2801			503	360	
Travel Time (s)	63.7			11.4	9.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	388	0	99	258	0	47
Shared Lane Traffic (%)						
Lane Group Flow (vph)	388	0	0	357	47	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	8			8	8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		10	20		20	10
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	52.3%
Analysis Period (min)	15
	ICU Level of Service A

Intersection						
Int Delay, s/veh	1.7					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	357	0	91	237	0	43
Future Vol, veh/h	357	0	91	237	0	43
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	388	0	99	258	0	47

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	388	0	844
Stage 1	-	-	-	-	388
Stage 2	-	-	-	-	456
Critical Hdwy	-	-	4.1	-	6.4
Critical Hdwy Stg 1	-	-	-	-	5.4
Critical Hdwy Stg 2	-	-	-	-	5.4
Follow-up Hdwy	-	-	2.2	-	3.5
Pot Cap-1 Maneuver	-	-	1182	-	336
Stage 1	-	-	-	-	690
Stage 2	-	-	-	-	643
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1182	-	303
Mov Cap-2 Maneuver	-	-	-	-	303
Stage 1	-	-	-	-	622
Stage 2	-	-	-	-	643

Approach	EB	WB	NB
HCM Control Delay, s	0	2.3	10.8
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	665	-	-	1182	-
HCM Lane V/C Ratio	0.07	-	-	0.084	-
HCM Control Delay (s)	10.8	-	-	8.3	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.2	-	-	0.3	-



Arco AM/PM Service Station  
8: Redlands Boulevard & Project Driveway

GPBO (2040) With Project (PM Peak Hour)



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↗		↕	↕↗	
Traffic Volume (vph)	0	67	0	1157	988	23
Future Volume (vph)	0	67	0	1157	988	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Fr <sub>t</sub>		0.865			0.997	
Fl <sub>t</sub> Protected						
Satd. Flow (prot)	0	1644	0	3610	3599	0
Fl <sub>t</sub> Permitted						
Satd. Flow (perm)	0	1644	0	3610	3599	0
Link Speed (mph)	25			50	50	
Link Distance (ft)	344			350	294	
Travel Time (s)	9.4			4.8	4.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	73	0	1258	1074	25
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	73	0	1258	1099	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	8			8	8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	20	10	20			10
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	40.2%
Analysis Period (min)	15
	ICU Level of Service A

Intersection						
Int Delay, s/veh	0.4					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↗		↑↑	↑↑	
Traffic Vol, veh/h	0	67	0	1157	988	23
Future Vol, veh/h	0	67	0	1157	988	23
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	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	73	0	1258	1074	25

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	-	550	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.9	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.3	-	-	-	-
Pot Cap-1 Maneuver	0	484	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	484	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	13.8	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	484	-	-
HCM Lane V/C Ratio	-	0.15	-	-
HCM Control Delay (s)	-	13.8	-	-
HCM Lane LOS	-	B	-	-
HCM 95th %tile Q(veh)	-	0.5	-	-

**GENERAL PLAN BUILDOUT WITHOUT PROJECT - ALTERNATIVE 2**

Arco AM/PM Service Station  
3: Redlands Boulevard & SR-60 WB

GPBO (2040) without Project (AM Peak Hour)  
Alternative 2



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↖	↔	↗	↖↗	↕			↕	↗
Traffic Volume (vph)	0	0	0	530	0	240	286	751	0	0	490	334
Future Volume (vph)	0	0	0	530	0	240	286	751	0	0	490	334
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	0		250	330		0
Storage Lanes	0		0	1		1	2		0	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	0.95	0.91	0.95	0.97	0.95	1.00	1.00	0.95	1.00
Frt					0.977	0.850						0.850
Flt Protected				0.950	0.959		0.950					
Satd. Flow (prot)	0	0	0	1715	1620	1534	3502	3610	0	0	3610	1615
Flt Permitted				0.950	0.959		0.950					
Satd. Flow (perm)	0	0	0	1715	1620	1534	3502	3610	0	0	3610	1615
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					109	162						359
Link Speed (mph)		45			45			50				50
Link Distance (ft)		1733			1692			1145				340
Travel Time (s)		26.3			25.6			15.6				4.6
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	0	0	0	570	0	258	308	808	0	0	527	359
Shared Lane Traffic (%)				44%		18%						
Lane Group Flow (vph)	0	0	0	319	297	212	308	808	0	0	527	359
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			24				24
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		8			8			8				8
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	20		10	20		10	20		10	20		10
Turn Type				Perm	NA	Perm	Prot	NA				NA
Protected Phases					4		5	2				6
Permitted Phases				4		4						6
Detector Phase				4	4	4	5	2				6
Switch Phase												
Minimum Initial (s)				7.0	7.0	7.0	7.0	7.0				7.0
Minimum Split (s)				12.0	12.0	12.0	12.0	12.0				12.0
Total Split (s)				26.0	26.0	26.0	16.0	44.0				28.0
Total Split (%)				37.1%	37.1%	37.1%	22.9%	62.9%				40.0%
Maximum Green (s)				21.0	21.0	21.0	11.0	39.0				23.0
Yellow Time (s)				4.0	4.0	4.0	4.0	4.0				4.0
All-Red Time (s)				1.0	1.0	1.0	1.0	1.0				1.0
Lost Time Adjust (s)				0.0	0.0	0.0	0.0	0.0				0.0
Total Lost Time (s)				5.0	5.0	5.0	5.0	5.0				5.0
Lead/Lag							Lead				Lag	Lag
Lead-Lag Optimize?							Yes				Yes	Yes
Vehicle Extension (s)				3.0	3.0	3.0	3.0	3.0				3.0
Recall Mode				None	None	None	None	C-Min			C-Min	C-Min
Act Effect Green (s)				18.2	18.2	18.2	10.7	41.8				26.1



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio				0.26	0.26	0.26	0.15	0.60			0.37	0.37
v/c Ratio				0.71	0.59	0.41	0.58	0.38			0.39	0.43
Control Delay				32.5	18.5	8.4	29.6	11.5			18.5	4.2
Queue Delay				0.0	0.0	0.0	0.0	0.0			0.0	0.0
Total Delay				32.5	18.5	8.4	29.6	11.5			18.5	4.2
LOS				C	B	A	C	B			B	A
Approach Delay				21.3				16.5				
Approach LOS				C				B				
Queue Length 50th (ft)				127	72	16	68	78			90	0
Queue Length 95th (ft)				207	148	65	101	186			134	53
Internal Link Dist (ft)		1653		1612				1065				
Turn Bay Length (ft)												
Base Capacity (vph)				522	569	580	569	2171			1380	839
Starvation Cap Reductn				0	0	0	0	0			0	0
Spillback Cap Reductn				0	0	0	0	0			0	0
Storage Cap Reductn				0	0	0	0	0			0	0
Reduced v/c Ratio				0.61	0.52	0.37	0.54	0.37			0.38	0.43

Intersection Summary

Area Type:	Other
Cycle Length:	70
Actuated Cycle Length:	70
Offset:	0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle:	45
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.71
Intersection Signal Delay:	16.7
Intersection LOS:	B
Intersection Capacity Utilization:	61.0%
ICU Level of Service:	B
Analysis Period (min):	15
Description:	Alternative 2

Splits and Phases: 3: Redlands Boulevard & SR-60 WB



Arco AM/PM Service Station  
3: Redlands Boulevard & SR-60 WB





















GPBO (2040) without Project (AM Peak Hour)  
Alternative 2

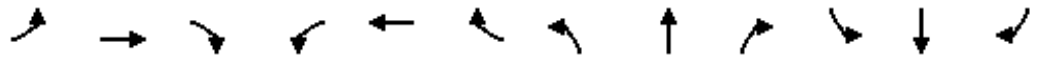


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↙	↔	↗	↙↗	↕			↕	↗
Traffic Volume (veh/h)	0	0	0	530	0	240	286	751	0	0	490	334
Future Volume (veh/h)	0	0	0	530	0	240	286	751	0	0	490	334
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		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	1900	1900	0	0	1900	1900
Adj Flow Rate, veh/h				650	0	172	308	808	0	0	527	359
Peak Hour Factor				0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %				0	0	0	0	0	0	0	0	0
Cap, veh/h				815	0	362	404	2282	0	0	1609	718
Arrive On Green				0.23	0.00	0.23	0.23	1.00	0.00	0.00	0.45	0.45
Sat Flow, veh/h				3619	0	1610	3510	3705	0	0	3705	1610
Grp Volume(v), veh/h				650	0	172	308	808	0	0	527	359
Grp Sat Flow(s),veh/h/ln				1810	0	1610	1755	1805	0	0	1805	1610
Q Serve(g_s), s				11.9	0.0	6.5	5.7	0.0	0.0	0.0	6.6	11.1
Cycle Q Clear(g_c), s				11.9	0.0	6.5	5.7	0.0	0.0	0.0	6.6	11.1
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				815	0	362	404	2282	0	0	1609	718
V/C Ratio(X)				0.80	0.00	0.47	0.76	0.35	0.00	0.00	0.33	0.50
Avail Cap(c_a), veh/h				1086	0	483	552	2282	0	0	1609	718
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.85	0.85	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				25.6	0.0	23.5	26.1	0.0	0.0	0.0	12.6	13.8
Incr Delay (d2), s/veh				3.1	0.0	1.0	3.6	0.4	0.0	0.0	0.5	2.5
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				4.9	0.0	6.0	2.2	0.1	0.0	0.0	2.3	3.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				28.7	0.0	24.5	29.7	0.4	0.0	0.0	13.1	16.3
LnGrp LOS				C	A	C	C	A	A	A	B	B
Approach Vol, veh/h					822			1116			886	
Approach Delay, s/veh					27.9			8.5			14.4	
Approach LOS					C			A			B	
Timer - Assigned Phs		2		4	5	6						
Phs Duration (G+Y+Rc), s		49.2		20.8	13.0	36.2						
Change Period (Y+Rc), s		5.0		5.0	5.0	5.0						
Max Green Setting (Gmax), s		39.0		21.0	11.0	23.0						
Max Q Clear Time (g_c+I1), s		2.0		13.9	7.7	13.1						
Green Ext Time (p_c), s		5.6		1.9	0.3	3.1						
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				16.0								
HCM 6th LOS				B								
<b>Notes</b>												
User approved volume balancing among the lanes for turning movement.												

Arco AM/PM Service Station  
4: Redlands Boulevard & SR-60 EB

GPBO (2040) without Project (AM Peak Hour)  
Alternative 2

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	285	0	269	0	0	0	0	779	220	180	840	0
Future Volume (vph)	285	0	269	0	0	0	0	779	220	180	840	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.91	0.95	1.00	1.00	1.00	1.00	0.95	1.00	0.97	0.95	1.00
Fr <sub>t</sub>		0.935	0.850							0.850		
Fl <sub>t</sub> Protected	0.950	0.972								0.950		
Satd. Flow (prot)	1715	1571	1534	0	0	0	0	3610	1615	3502	3610	0
Fl <sub>t</sub> Permitted	0.950	0.972								0.950		
Satd. Flow (perm)	1715	1571	1534	0	0	0	0	3610	1615	3502	3610	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		109	162						239			
Link Speed (mph)		45			45			50			50	
Link Distance (ft)		1655			1667			819			1145	
Travel Time (s)		25.1			25.3			11.2			15.6	
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
Adj. Flow (vph)	310	0	292	0	0	0	0	847	239	196	913	0
Shared Lane Traffic (%)	37%		30%									
Lane Group Flow (vph)	195	203	204	0	0	0	0	847	239	196	913	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		8			8			8			8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	20		10	20		10	20		10	20		10
Turn Type	Split	NA	Perm					NA	Perm	Prot	NA	
Protected Phases	8	8						2		1	6	
Permitted Phases			8						2			
Detector Phase	8	8	8					2	2	1	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0					7.0	7.0	7.0	7.0	
Minimum Split (s)	12.0	12.0	12.0					12.0	12.0	12.0	12.0	
Total Split (s)	21.0	21.0	21.0					35.0	35.0	14.0	49.0	
Total Split (%)	30.0%	30.0%	30.0%					50.0%	50.0%	20.0%	70.0%	
Maximum Green (s)	16.0	16.0	16.0					30.0	30.0	9.0	44.0	
Yellow Time (s)	4.0	4.0	4.0					4.0	4.0	4.0	4.0	
All-Red Time (s)	1.0	1.0	1.0					1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0					0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0					5.0	5.0	5.0	5.0	
Lead/Lag												
								Lag	Lag	Lead		
Lead-Lag Optimize?								Yes	Yes	Yes		
Vehicle Extension (s)	3.0	3.0	3.0					3.0	3.0	3.0	3.0	
Recall Mode	None	None	None					C-Min	C-Min	None	C-Min	
Act Effct Green (s)	13.2	13.2	13.2					33.1	33.1	8.7	46.8	
Actuated g/C Ratio	0.19	0.19	0.19					0.47	0.47	0.12	0.67	
v/c Ratio	0.60	0.53	0.49					0.50	0.27	0.45	0.38	
Control Delay	33.6	17.1	11.0					14.9	2.9	24.6	5.7	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Delay	0.0	0.0	0.0					0.0	0.0	0.0	0.0	
Total Delay	33.6	17.1	11.0					14.9	2.9	24.6	5.7	
LOS	C	B	B					B	A	C	A	
Approach Delay		20.4						12.2			9.0	
Approach LOS		C						B			A	
Queue Length 50th (ft)	80	38	15					130	0	38	111	
Queue Length 95th (ft)	140	98	68					189	36	m67	149	
Internal Link Dist (ft)		1575			1587			739			1065	
Turn Bay Length (ft)												
Base Capacity (vph)	396	446	478					1727	897	464	2423	
Starvation Cap Reductn	0	0	0					0	0	0	0	
Spillback Cap Reductn	0	0	0					0	0	0	0	
Storage Cap Reductn	0	0	0					0	0	0	0	
Reduced v/c Ratio	0.49	0.46	0.43					0.49	0.27	0.42	0.38	

**Intersection Summary**

Area Type: Other  
 Cycle Length: 70  
 Actuated Cycle Length: 70  
 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green  
 Natural Cycle: 45  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.60  
 Intersection Signal Delay: 12.7  
 Intersection Capacity Utilization 61.0%  
 Analysis Period (min) 15  
 Description: Alternative 2  
 m Volume for 95th percentile queue is metered by upstream signal.





















**Splits and Phases: 4: Redlands Boulevard & SR-60 EB**





Arco AM/PM Service Station  
4: Redlands Boulevard & SR-60 EB

GPBO (2040) without Project (AM Peak Hour)  
Alternative 2

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	285	0	269	0	0	0	0	779	220	180	840	0
Future Volume (veh/h)	285	0	269	0	0	0	0	779	220	180	840	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900				0	1900	1900	1900	1900	0
Adj Flow Rate, veh/h	401	0	195				0	847	239	196	913	0
Peak Hour Factor	0.92	0.92	0.92				0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0				0	0	0	0	0	0
Cap, veh/h	582	0	259				0	1903	849	343	2514	0
Arrive On Green	0.16	0.00	0.16				0.00	0.53	0.53	0.10	0.70	0.00
Sat Flow, veh/h	3619	0	1610				0	3705	1610	3510	3705	0
Grp Volume(v), veh/h	401	0	195				0	847	239	196	913	0
Grp Sat Flow(s),veh/h/ln	1810	0	1610				0	1805	1610	1755	1805	0
Q Serve(g_s), s	7.3	0.0	8.1				0.0	10.1	5.8	3.7	7.2	0.0
Cycle Q Clear(g_c), s	7.3	0.0	8.1				0.0	10.1	5.8	3.7	7.2	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	582	0	259				0	1903	849	343	2514	0
V/C Ratio(X)	0.69	0.00	0.75				0.00	0.45	0.28	0.57	0.36	0.00
Avail Cap(c_a), veh/h	827	0	368				0	1903	849	451	2514	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	0.71	0.71	0.85	0.85	0.00
Uniform Delay (d), s/veh	27.7	0.0	28.1				0.0	10.2	9.2	30.2	4.3	0.0
Incr Delay (d2), s/veh	1.5	0.0	5.3				0.0	0.5	0.6	1.3	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.0	0.0	3.2				0.0	3.1	1.7	1.5	1.4	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	29.2	0.0	33.4				0.0	10.8	9.8	31.4	4.7	0.0
LnGrp LOS	C	A	C				A	B	A	C	A	A
Approach Vol, veh/h		596						1086			1109	
Approach Delay, s/veh		30.6						10.5			9.4	
Approach LOS		C						B			A	
Timer - Assigned Phs	1	2				6		8				
Phs Duration (G+Y+Rc), s	11.8	41.9				53.8		16.2				
Change Period (Y+Rc), s	5.0	5.0				5.0		5.0				
Max Green Setting (Gmax), s	9.0	30.0				44.0		16.0				
Max Q Clear Time (g_c+I1), s	5.7	12.1				9.2		10.1				
Green Ext Time (p_c), s	0.2	5.8				6.5		1.2				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay			14.4									
HCM 6th LOS			B									
<b>Notes</b>												
User approved volume balancing among the lanes for turning movement.												



Arco AM/PM Service Station  
3: Redlands Boulevard & SR-60 WB

GPBO (2040) without Project (PM Peak Hour)  
Alternative 2



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	290	0	267	462	1037	0	0	750	355
Future Volume (vph)	0	0	0	290	0	267	462	1037	0	0	750	355
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	0		250	330		0
Storage Lanes	0		0	1		1	2		0	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	0.95	0.91	0.95	0.97	0.95	1.00	1.00	0.95	1.00
Frt					0.959	0.850						0.850
Flt Protected				0.950	0.965		0.950					
Satd. Flow (prot)	0	0	0	1715	1600	1534	3502	3610	0	0	3610	1615
Flt Permitted				0.950	0.965		0.950					
Satd. Flow (perm)	0	0	0	1715	1600	1534	3502	3610	0	0	3610	1615
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					102	102						370
Link Speed (mph)		45			45			50				50
Link Distance (ft)		1733			1692			1145				340
Travel Time (s)		26.3			25.6			15.6				4.6
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	0	0	0	302	0	278	481	1080	0	0	781	370
Shared Lane Traffic (%)				44%		18%						
Lane Group Flow (vph)	0	0	0	169	183	228	481	1080	0	0	781	370
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			24				24
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		8			8			8				8
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	20		10	20		10	20		10	20		10
Turn Type				Split	NA	Perm	Prot	NA			NA	Perm
Protected Phases				4	4		5	2			6	
Permitted Phases						4						6
Detector Phase				4	4	4	5	2			6	6
Switch Phase												
Minimum Initial (s)				7.0	7.0	7.0	7.0	7.0			7.0	7.0
Minimum Split (s)				12.0	12.0	12.0	16.0	12.0			12.0	12.0
Total Split (s)				28.0	28.0	28.0	18.0	47.0			29.0	29.0
Total Split (%)				37.3%	37.3%	37.3%	24.0%	62.7%			38.7%	38.7%
Maximum Green (s)				23.0	23.0	23.0	13.0	42.0			24.0	24.0
Yellow Time (s)				4.0	4.0	4.0	4.0	4.0			4.0	4.0
All-Red Time (s)				1.0	1.0	1.0	1.0	1.0			1.0	1.0
Lost Time Adjust (s)				0.0	0.0	0.0	0.0	0.0			0.0	0.0
Total Lost Time (s)				5.0	5.0	5.0	5.0	5.0			5.0	5.0
Lead/Lag							Lag				Lead	Lead
Lead-Lag Optimize?							Yes				Yes	Yes
Vehicle Extension (s)				3.0	3.0	3.0	3.0	3.0			3.0	3.0
Recall Mode				None	None	None	None	C-Min			C-Min	C-Min
Act Effect Green (s)				13.7	13.7	13.7	13.5	51.3			32.8	32.8

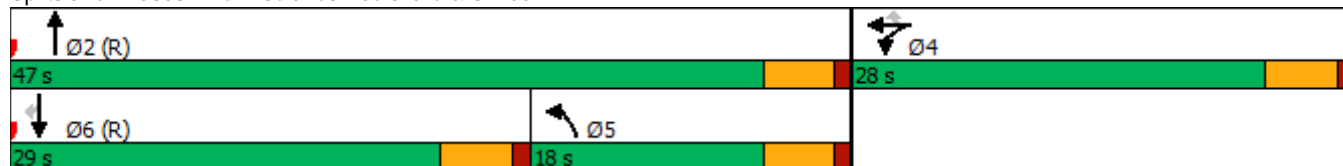


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio				0.18	0.18	0.18	0.18	0.68			0.44	0.44
v/c Ratio				0.54	0.49	0.63	0.76	0.44			0.50	0.41
Control Delay				33.0	16.4	22.4	38.7	6.8			17.7	3.6
Queue Delay				0.0	0.0	0.0	0.0	0.0			0.0	0.0
Total Delay				33.0	16.4	22.4	38.7	6.8			17.7	3.6
LOS				C	B	C	D	A			B	A
Approach Delay					23.6			16.6			13.1	
Approach LOS					C			B			B	
Queue Length 50th (ft)				75	36	55	106	99			140	0
Queue Length 95th (ft)				120	84	112	#180	188			215	53
Internal Link Dist (ft)		1653			1612			1065			260	
Turn Bay Length (ft)												
Base Capacity (vph)				525	561	541	642	2467			1576	913
Starvation Cap Reductn				0	0	0	0	0			0	0
Spillback Cap Reductn				0	0	0	0	0			0	0
Storage Cap Reductn				0	0	0	0	0			0	0
Reduced v/c Ratio				0.32	0.33	0.42	0.75	0.44			0.50	0.41

Intersection Summary

Area Type: Other  
 Cycle Length: 75  
 Actuated Cycle Length: 75  
 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green  
 Natural Cycle: 50  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.76  
 Intersection Signal Delay: 16.6      Intersection LOS: B  
 Intersection Capacity Utilization 105.8%      ICU Level of Service G  
 Analysis Period (min) 15  
 Description: Alternative 2  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

Splits and Phases: 3: Redlands Boulevard & SR-60 WB



Arco AM/PM Service Station  
3: Redlands Boulevard & SR-60 WB





















GPBO (2040) without Project (PM Peak Hour)  
Alternative 2



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↙	↔	↗	↙↗	↕			↕	↗
Traffic Volume (veh/h)	0	0	0	290	0	267	462	1037	0	0	750	355
Future Volume (veh/h)	0	0	0	290	0	267	462	1037	0	0	750	355
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach				No			No			No		
Adj Sat Flow, veh/h/ln				1900	1900	1900	1900	1900	0	0	1900	1900
Adj Flow Rate, veh/h				388	0	185	481	1080	0	0	781	370
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				572	0	254	1267	2558	0	0	1015	453
Arrive On Green				0.16	0.00	0.16	0.36	0.71	0.00	0.00	0.28	0.28
Sat Flow, veh/h				3619	0	1610	3510	3705	0	0	3705	1610
Grp Volume(v), veh/h				388	0	185	481	1080	0	0	781	370
Grp Sat Flow(s),veh/h/ln				1810	0	1610	1755	1805	0	0	1805	1610
Q Serve(g_s), s				7.6	0.0	8.2	7.6	9.3	0.0	0.0	14.9	16.1
Cycle Q Clear(g_c), s				7.6	0.0	8.2	7.6	9.3	0.0	0.0	14.9	16.1
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				572	0	254	1267	2558	0	0	1015	453
V/C Ratio(X)				0.68	0.00	0.73	0.38	0.42	0.00	0.00	0.77	0.82
Avail Cap(c_a), veh/h				1110	0	494	1267	2558	0	0	1155	515
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	0.60	0.60	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				29.8	0.0	30.0	17.7	4.5	0.0	0.0	24.7	25.2
Incr Delay (d2), s/veh				1.4	0.0	4.0	0.1	0.3	0.0	0.0	5.6	15.0
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				3.2	0.0	7.4	2.7	1.9	0.0	0.0	6.4	7.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				31.2	0.0	34.0	17.9	4.8	0.0	0.0	30.3	40.2
LnGrp LOS				C	A	C	B	A	A	A	C	D
Approach Vol, veh/h					573			1561			1151	
Approach Delay, s/veh					32.1			8.9			33.5	
Approach LOS					C			A			C	
Timer - Assigned Phs		2		4	5	6						
Phs Duration (G+Y+Rc), s		58.2		16.8	32.1	26.1						
Change Period (Y+Rc), s		5.0		5.0	5.0	5.0						
Max Green Setting (Gmax), s		42.0		23.0	13.0	24.0						
Max Q Clear Time (g_c+I1), s		11.3		10.2	9.6	18.1						
Green Ext Time (p_c), s		8.0		1.6	0.6	3.0						
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				21.6								
HCM 6th LOS				C								
<b>Notes</b>												
User approved volume balancing among the lanes for turning movement.												

Arco AM/PM Service Station  
4: Redlands Boulevard & SR-60 EB

GPBO (2040) without Project (PM Peak Hour)  
Alternative 2

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	557	0	454	0	0	0	0	903	940	440	707	0
Future Volume (vph)	557	0	454	0	0	0	0	903	940	440	707	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.91	0.95	1.00	1.00	1.00	1.00	0.95	1.00	0.97	0.95	1.00
Fr <sub>t</sub>		0.940	0.850						0.850			
Fl <sub>t</sub> Protected	0.950	0.971								0.950		
Satd. Flow (prot)	1715	1578	1534	0	0	0	0	3610	1615	3502	3610	0
Fl <sub>t</sub> Permitted	0.950	0.971								0.950		
Satd. Flow (perm)	1715	1578	1534	0	0	0	0	3610	1615	3502	3610	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		95	215						687			
Link Speed (mph)		45			45			50			50	
Link Distance (ft)		1655			1667			819			1145	
Travel Time (s)		25.1			25.3			11.2			15.6	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	612	0	499	0	0	0	0	992	1033	484	777	0
Shared Lane Traffic (%)	37%		30%									
Lane Group Flow (vph)	386	376	349	0	0	0	0	992	1033	484	777	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		8			8			8			8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	20		10	20		10	20		10	20		10
Turn Type	Split	NA	Perm					NA	Perm	Prot	NA	
Protected Phases	8	8						2		1	6	
Permitted Phases			8						2			
Detector Phase	8	8	8					2	2	1	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0					7.0	7.0	7.0	7.0	
Minimum Split (s)	12.0	12.0	12.0					12.0	12.0	13.2	12.0	
Total Split (s)	25.0	25.0	25.0					38.0	38.0	17.0	55.0	
Total Split (%)	31.3%	31.3%	31.3%					47.5%	47.5%	21.3%	68.8%	
Maximum Green (s)	20.0	20.0	20.0					33.0	33.0	12.0	50.0	
Yellow Time (s)	4.0	4.0	4.0					4.0	4.0	4.0	4.0	
All-Red Time (s)	1.0	1.0	1.0					1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0					0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0					5.0	5.0	5.0	5.0	
Lead/Lag								Lag	Lag	Lead		
Lead-Lag Optimize?								Yes	Yes	Yes		
Vehicle Extension (s)	3.0	3.0	3.0					3.0	3.0	3.0	3.0	
Recall Mode	None	None	None					C-Min	C-Min	None	C-Min	
Act Effct Green (s)	19.7	19.7	19.7					32.9	32.9	12.3	50.3	
Actuated g/C Ratio	0.25	0.25	0.25					0.41	0.41	0.15	0.63	
v/c Ratio	0.91	0.82	0.65					0.67	0.97	0.90	0.34	
Control Delay	58.2	37.3	16.7					21.8	30.3	55.5	7.6	

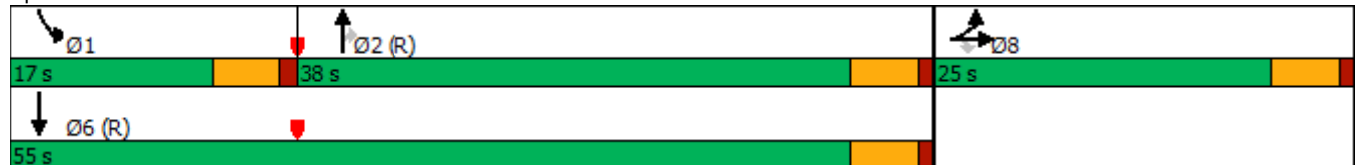


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Delay	0.0	0.0	0.0					0.0	0.0	0.0	0.0	
Total Delay	58.2	37.3	16.7					21.8	30.3	55.5	7.6	
LOS	E	D	B					C	C	E	A	
Approach Delay		38.1						26.1			26.0	
Approach LOS		D						C			C	
Queue Length 50th (ft)	196	146	57					205	195	124	86	
Queue Length 95th (ft)	#365	#304	152					271	#535	#212	117	
Internal Link Dist (ft)		1575			1587			739			1065	
Turn Bay Length (ft)												
Base Capacity (vph)	428	465	544					1489	1069	539	2268	
Starvation Cap Reductn	0	0	0					0	0	0	0	
Spillback Cap Reductn	0	0	0					0	0	0	0	
Storage Cap Reductn	0	0	0					0	0	0	0	
Reduced v/c Ratio	0.90	0.81	0.64					0.67	0.97	0.90	0.34	

**Intersection Summary**

Area Type: Other  
 Cycle Length: 80  
 Actuated Cycle Length: 80  
 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green  
 Natural Cycle: 75  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.97  
 Intersection Signal Delay: 29.1  
 Intersection LOS: C  
 Intersection Capacity Utilization 105.8%  
 ICU Level of Service G  
 Analysis Period (min) 15  
 Description: Alternative 2  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

**Splits and Phases: 4: Redlands Boulevard & SR-60 EB**



Arco AM/PM Service Station  
4: Redlands Boulevard & SR-60 EB

GPBO (2040) without Project (PM Peak Hour)  
Alternative 2



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	557	0	454	0	0	0	0	903	940	440	707	0
Future Volume (veh/h)	557	0	454	0	0	0	0	903	940	440	707	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900				0	1900	1900	1900	1900	0
Adj Flow Rate, veh/h	767	0	333				0	992	1033	484	777	0
Peak Hour Factor	0.91	0.91	0.91				0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	0	0				0	0	0	0	0	0
Cap, veh/h	867	0	386				0	1527	681	527	2294	0
Arrive On Green	0.24	0.00	0.24				0.00	0.42	0.42	0.15	0.64	0.00
Sat Flow, veh/h	3619	0	1610				0	3705	1610	3510	3705	0
Grp Volume(v), veh/h	767	0	333				0	992	1033	484	777	0
Grp Sat Flow(s),veh/h/ln	1810	0	1610				0	1805	1610	1755	1805	0
Q Serve(g_s), s	16.4	0.0	15.9				0.0	17.5	33.8	10.9	8.0	0.0
Cycle Q Clear(g_c), s	16.4	0.0	15.9				0.0	17.5	33.8	10.9	8.0	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	867	0	386				0	1527	681	527	2294	0
V/C Ratio(X)	0.88	0.00	0.86				0.00	0.65	1.52	0.92	0.34	0.00
Avail Cap(c_a), veh/h	905	0	403				0	1527	681	527	2294	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	0.50	0.50	0.86	0.86	0.00
Uniform Delay (d), s/veh	29.4	0.0	29.2				0.0	18.4	23.1	33.5	6.8	0.0
Incr Delay (d2), s/veh	10.1	0.0	16.9				0.0	1.1	236.4	19.1	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.7	0.0	7.4				0.0	6.4	55.4	5.6	2.2	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	39.5	0.0	46.0				0.0	19.5	259.5	52.7	7.1	0.0
LnGrp LOS	D	A	D				A	B	F	D	A	A
Approach Vol, veh/h		1100						2025			1261	
Approach Delay, s/veh		41.5						141.9			24.6	
Approach LOS		D						F			C	
Timer - Assigned Phs	1	2				6		8				
Phs Duration (G+Y+Rc), s	17.0	38.8				55.8		24.2				
Change Period (Y+Rc), s	5.0	5.0				5.0		5.0				
Max Green Setting (Gmax), s	12.0	33.0				50.0		20.0				
Max Q Clear Time (g_c+I1), s	12.9	35.8				10.0		18.4				
Green Ext Time (p_c), s	0.0	0.0				5.4		0.8				

Intersection Summary

HCM 6th Ctrl Delay	83.0
HCM 6th LOS	F

Notes

User approved volume balancing among the lanes for turning movement.



**GENERAL PLAN BUILDOUT WITH PROJECT - ALTERNATIVE 2**

Arco AM/PM Service Station  
3: Redlands Boulevard & SR-60 WB

GPBO (2040) With Project (AM Peak Hour)  
Alternative 2



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↖	↔	↗	↖↗	↕			↕	↗
Traffic Volume (vph)	0	0	0	530	0	250	286	773	0	0	510	343
Future Volume (vph)	0	0	0	530	0	250	286	773	0	0	510	343
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	0		250	330		0
Storage Lanes	0		0	1		1	2		0	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	0.95	0.91	0.95	0.97	0.95	1.00	1.00	0.95	1.00
Frt					0.976	0.850						0.850
Flt Protected				0.950	0.960		0.950					
Satd. Flow (prot)	0	0	0	1715	1620	1534	3502	3610	0	0	3610	1615
Flt Permitted				0.950	0.960		0.950					
Satd. Flow (perm)	0	0	0	1715	1620	1534	3502	3610	0	0	3610	1615
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					109	153						369
Link Speed (mph)		45			45			50				50
Link Distance (ft)		1733			1692			1145				340
Travel Time (s)		26.3			25.6			15.6				4.6
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	0	0	0	570	0	269	308	831	0	0	548	369
Shared Lane Traffic (%)				44%		18%						
Lane Group Flow (vph)	0	0	0	319	299	221	308	831	0	0	548	369
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			24				24
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		8			8			8				8
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	20		10	20		10	20		10	20		10
Turn Type				Perm	NA	Perm	Prot	NA				NA
Protected Phases					4		5	2				6
Permitted Phases				4		4						6
Detector Phase				4	4	4	5	2				6
Switch Phase												
Minimum Initial (s)				7.0	7.0	7.0	7.0	7.0				7.0
Minimum Split (s)				12.0	12.0	12.0	12.0	12.0				12.0
Total Split (s)				26.0	26.0	26.0	16.0	44.0				28.0
Total Split (%)				37.1%	37.1%	37.1%	22.9%	62.9%				40.0%
Maximum Green (s)				21.0	21.0	21.0	11.0	39.0				23.0
Yellow Time (s)				4.0	4.0	4.0	4.0	4.0				4.0
All-Red Time (s)				1.0	1.0	1.0	1.0	1.0				1.0
Lost Time Adjust (s)				0.0	0.0	0.0	0.0	0.0				0.0
Total Lost Time (s)				5.0	5.0	5.0	5.0	5.0				5.0
Lead/Lag							Lead				Lag	Lag
Lead-Lag Optimize?							Yes				Yes	Yes
Vehicle Extension (s)				3.0	3.0	3.0	3.0	3.0				3.0
Recall Mode				None	None	None	None	C-Min			C-Min	C-Min
Act Effect Green (s)				18.2	18.2	18.2	10.6	41.8				26.1



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio				0.26	0.26	0.26	0.15	0.60			0.37	0.37
v/c Ratio				0.71	0.60	0.43	0.58	0.39			0.41	0.44
Control Delay				32.5	18.6	9.7	29.1	12.2			18.6	4.2
Queue Delay				0.0	0.0	0.0	0.0	0.0			0.0	0.0
Total Delay				32.5	18.6	9.7	29.1	12.2			18.6	4.2
LOS				C	B	A	C	B			B	A
Approach Delay					21.6			16.8			12.8	
Approach LOS					C			B			B	
Queue Length 50th (ft)				127	72	23	64	99			94	0
Queue Length 95th (ft)				207	149	74	100	193			140	53
Internal Link Dist (ft)		1653			1612			1065			260	
Turn Bay Length (ft)												
Base Capacity (vph)				522	569	574	567	2171			1380	845
Starvation Cap Reductn				0	0	0	0	0			0	0
Spillback Cap Reductn				0	0	0	0	0			0	0
Storage Cap Reductn				0	0	0	0	0			0	0
Reduced v/c Ratio				0.61	0.53	0.39	0.54	0.38			0.40	0.44

Intersection Summary

Area Type:	Other
Cycle Length:	70
Actuated Cycle Length:	70
Offset:	0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle:	45
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.71
Intersection Signal Delay:	16.9
Intersection LOS:	B
Intersection Capacity Utilization:	61.6%
ICU Level of Service:	B
Analysis Period (min):	15
Description:	Alternative 2

Splits and Phases: 3: Redlands Boulevard & SR-60 WB



Arco AM/PM Service Station  
3: Redlands Boulevard & SR-60 WB

GPBO (2040) With Project (AM Peak Hour)  
Alternative 2



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↙	↔	↗	↙↗	↕			↕	↗
Traffic Volume (veh/h)	0	0	0	530	0	250	286	773	0	0	510	343
Future Volume (veh/h)	0	0	0	530	0	250	286	773	0	0	510	343
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	1900	1900	0	0	1900	1900
Adj Flow Rate, veh/h				654	0	179	308	831	0	0	548	369
Peak Hour Factor				0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %				0	0	0	0	0	0	0	0	0
Cap, veh/h				819	0	364	404	2277	0	0	1604	716
Arrive On Green				0.23	0.00	0.23	0.23	1.00	0.00	0.00	0.44	0.44
Sat Flow, veh/h				3619	0	1610	3510	3705	0	0	3705	1610
Grp Volume(v), veh/h				654	0	179	308	831	0	0	548	369
Grp Sat Flow(s),veh/h/ln				1810	0	1610	1755	1805	0	0	1805	1610
Q Serve(g_s), s				11.9	0.0	6.8	5.7	0.0	0.0	0.0	7.0	11.6
Cycle Q Clear(g_c), s				11.9	0.0	6.8	5.7	0.0	0.0	0.0	7.0	11.6
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				819	0	364	404	2277	0	0	1604	716
V/C Ratio(X)				0.80	0.00	0.49	0.76	0.36	0.00	0.00	0.34	0.52
Avail Cap(c_a), veh/h				1086	0	483	552	2277	0	0	1604	716
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.83	0.83	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				25.6	0.0	23.6	26.1	0.0	0.0	0.0	12.7	14.0
Incr Delay (d2), s/veh				3.2	0.0	1.0	3.6	0.4	0.0	0.0	0.6	2.6
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				4.9	0.0	6.3	2.1	0.1	0.0	0.0	2.4	3.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				28.7	0.0	24.6	29.6	0.4	0.0	0.0	13.3	16.7
LnGrp LOS				C	A	C	C	A	A	A	B	B
Approach Vol, veh/h					833			1139			917	
Approach Delay, s/veh					27.8			8.3			14.7	
Approach LOS					C			A			B	
Timer - Assigned Phs		2		4	5	6						
Phs Duration (G+Y+Rc), s		49.2		20.8	13.0	36.1						
Change Period (Y+Rc), s		5.0		5.0	5.0	5.0						
Max Green Setting (Gmax), s		39.0		21.0	11.0	23.0						
Max Q Clear Time (g_c+I1), s		2.0		13.9	7.7	13.6						
Green Ext Time (p_c), s		5.8		1.9	0.3	3.2						
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				15.9								
HCM 6th LOS				B								
<b>Notes</b>												
User approved volume balancing among the lanes for turning movement.												

Arco AM/PM Service Station  
4: Redlands Boulevard & SR-60 EB

GPBO (2040) With Project (AM Peak Hour)  
Alternative 2



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	295	0	269	0	0	0	0	791	220	188	852	0
Future Volume (vph)	295	0	269	0	0	0	0	791	220	188	852	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.91	0.95	1.00	1.00	1.00	1.00	0.95	1.00	0.97	0.95	1.00
Fr <sub>t</sub>		0.936	0.850						0.850			
Fl <sub>t</sub> Protected	0.950	0.972								0.950		
Satd. Flow (prot)	1715	1573	1534	0	0	0	0	3610	1615	3502	3610	0
Fl <sub>t</sub> Permitted	0.950	0.972								0.950		
Satd. Flow (perm)	1715	1573	1534	0	0	0	0	3610	1615	3502	3610	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		109	157						239			
Link Speed (mph)		45			45			50			50	
Link Distance (ft)		1655			1667			819			1145	
Travel Time (s)		25.1			25.3			11.2			15.6	
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
Adj. Flow (vph)	321	0	292	0	0	0	0	860	239	204	926	0
Shared Lane Traffic (%)	37%		30%									
Lane Group Flow (vph)	202	207	204	0	0	0	0	860	239	204	926	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		8			8			8			8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	20		10	20		10	20		10	20		10
Turn Type	Split	NA	Perm					NA	Perm	Prot	NA	
Protected Phases	8	8						2		1	6	
Permitted Phases			8						2			
Detector Phase	8	8	8					2	2	1	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0					7.0	7.0	7.0	7.0	
Minimum Split (s)	12.0	12.0	12.0					12.0	12.0	12.0	12.0	
Total Split (s)	21.0	21.0	21.0					35.0	35.0	14.0	49.0	
Total Split (%)	30.0%	30.0%	30.0%					50.0%	50.0%	20.0%	70.0%	
Maximum Green (s)	16.0	16.0	16.0					30.0	30.0	9.0	44.0	
Yellow Time (s)	4.0	4.0	4.0					4.0	4.0	4.0	4.0	
All-Red Time (s)	1.0	1.0	1.0					1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0					0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0					5.0	5.0	5.0	5.0	
Lead/Lag												
								Lag	Lag	Lead		
Lead-Lag Optimize?								Yes	Yes	Yes		
Vehicle Extension (s)	3.0	3.0	3.0					3.0	3.0	3.0	3.0	
Recall Mode	None	None	None					C-Min	C-Min	None	C-Min	
Act Effct Green (s)	13.4	13.4	13.4					32.8	32.8	8.8	46.6	
Actuated g/C Ratio	0.19	0.19	0.19					0.47	0.47	0.13	0.67	
v/c Ratio	0.62	0.53	0.49					0.51	0.27	0.46	0.39	
Control Delay	33.9	17.2	11.3					15.2	2.9	25.1	5.8	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Delay	0.0	0.0	0.0					0.0	0.0	0.0	0.0	
Total Delay	33.9	17.2	11.3					15.2	2.9	25.1	5.8	
LOS	C	B	B					B	A	C	A	
Approach Delay		20.8						12.5			9.3	
Approach LOS		C						B			A	
Queue Length 50th (ft)	83	39	17					135	0	42	114	
Queue Length 95th (ft)	145	101	71					193	36	m70	148	
Internal Link Dist (ft)		1575			1587			739			1065	
Turn Bay Length (ft)												
Base Capacity (vph)	397	448	475					1717	893	468	2415	
Starvation Cap Reductn	0	0	0					0	0	0	0	
Spillback Cap Reductn	0	0	0					0	0	0	0	
Storage Cap Reductn	0	0	0					0	0	0	0	
Reduced v/c Ratio	0.51	0.46	0.43					0.50	0.27	0.44	0.38	

**Intersection Summary**

Area Type: Other  
 Cycle Length: 70  
 Actuated Cycle Length: 70  
 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green  
 Natural Cycle: 45  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.62  
 Intersection Signal Delay: 13.0  
 Intersection Capacity Utilization 61.6%  
 Analysis Period (min) 15  
 Description: Alternative 2  
 m Volume for 95th percentile queue is metered by upstream signal.

**Splits and Phases: 4: Redlands Boulevard & SR-60 EB**



Arco AM/PM Service Station  
4: Redlands Boulevard & SR-60 EB

GPBO (2040) With Project (AM Peak Hour)  
Alternative 2



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	295	0	269	0	0	0	0	791	220	188	852	0
Future Volume (veh/h)	295	0	269	0	0	0	0	791	220	188	852	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900				0	1900	1900	1900	1900	0
Adj Flow Rate, veh/h	412	0	195				0	860	239	204	926	0
Peak Hour Factor	0.92	0.92	0.92				0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0				0	0	0	0	0	0
Cap, veh/h	583	0	259				0	1901	848	344	2513	0
Arrive On Green	0.16	0.00	0.16				0.00	0.53	0.53	0.10	0.70	0.00
Sat Flow, veh/h	3619	0	1610				0	3705	1610	3510	3705	0
Grp Volume(v), veh/h	412	0	195				0	860	239	204	926	0
Grp Sat Flow(s),veh/h/ln	1810	0	1610				0	1805	1610	1755	1805	0
Q Serve(g_s), s	7.5	0.0	8.1				0.0	10.4	5.8	3.9	7.3	0.0
Cycle Q Clear(g_c), s	7.5	0.0	8.1				0.0	10.4	5.8	3.9	7.3	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	583	0	259				0	1901	848	344	2513	0
V/C Ratio(X)	0.71	0.00	0.75				0.00	0.45	0.28	0.59	0.37	0.00
Avail Cap(c_a), veh/h	827	0	368				0	1901	848	451	2513	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	0.71	0.71	0.84	0.84	0.00
Uniform Delay (d), s/veh	27.8	0.0	28.0				0.0	10.3	9.2	30.2	4.3	0.0
Incr Delay (d2), s/veh	1.6	0.0	5.3				0.0	0.6	0.6	1.4	0.4	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	3.1	0.0	3.2				0.0	3.2	1.7	1.6	1.4	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	29.4	0.0	33.3				0.0	10.9	9.8	31.6	4.7	0.0
LnGrp LOS	C	A	C				A	B	A	C	A	A
Approach Vol, veh/h		607						1099			1130	
Approach Delay, s/veh		30.7						10.6			9.6	
Approach LOS		C						B			A	
Timer - Assigned Phs	1	2				6		8				
Phs Duration (G+Y+Rc), s	11.9	41.9				53.7		16.3				
Change Period (Y+Rc), s	5.0	5.0				5.0		5.0				
Max Green Setting (Gmax), s	9.0	30.0				44.0		16.0				
Max Q Clear Time (g_c+I1), s	5.9	12.4				9.3		10.1				
Green Ext Time (p_c), s	0.2	5.8				6.6		1.2				

Intersection Summary

HCM 6th Ctrl Delay	14.5
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.





Arco AM/PM Service Station  
3: Redlands Boulevard & SR-60 WB

GPBO (2040) with Project (PM Peak Hour)  
Alternative 2



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↖	↔	↗	↖↗	↕			↕	↗
Traffic Volume (vph)	0	0	0	290	0	280	462	1065	0	0	778	367
Future Volume (vph)	0	0	0	290	0	280	462	1065	0	0	778	367
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	0		250	330		0
Storage Lanes	0		0	1		1	2		0	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	0.95	0.91	0.95	0.97	0.95	1.00	1.00	0.95	1.00
Frt					0.957	0.850						0.850
Flt Protected				0.950	0.965		0.950					
Satd. Flow (prot)	0	0	0	1715	1597	1534	3502	3610	0	0	3610	1615
Flt Permitted				0.950	0.965		0.950					
Satd. Flow (perm)	0	0	0	1715	1597	1534	3502	3610	0	0	3610	1615
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					102	102						382
Link Speed (mph)		45			45			50				50
Link Distance (ft)		1733			1692			1145				340
Travel Time (s)		26.3			25.6			15.6				4.6
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	0	0	0	302	0	292	481	1109	0	0	810	382
Shared Lane Traffic (%)				44%		18%						
Lane Group Flow (vph)	0	0	0	169	186	239	481	1109	0	0	810	382
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			24				24
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		8			8			8				8
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	20		10	20		10	20		10	20		10
Turn Type				Split	NA	Perm	Prot	NA			NA	Perm
Protected Phases				4	4		5	2			6	
Permitted Phases						4						6
Detector Phase				4	4	4	5	2			6	6
Switch Phase												
Minimum Initial (s)				7.0	7.0	7.0	7.0	7.0			7.0	7.0
Minimum Split (s)				12.0	12.0	12.0	16.0	12.0			12.0	12.0
Total Split (s)				28.0	28.0	28.0	18.0	47.0			29.0	29.0
Total Split (%)				37.3%	37.3%	37.3%	24.0%	62.7%			38.7%	38.7%
Maximum Green (s)				23.0	23.0	23.0	13.0	42.0			24.0	24.0
Yellow Time (s)				4.0	4.0	4.0	4.0	4.0			4.0	4.0
All-Red Time (s)				1.0	1.0	1.0	1.0	1.0			1.0	1.0
Lost Time Adjust (s)				0.0	0.0	0.0	0.0	0.0			0.0	0.0
Total Lost Time (s)				5.0	5.0	5.0	5.0	5.0			5.0	5.0
Lead/Lag							Lag				Lead	Lead
Lead-Lag Optimize?							Yes				Yes	Yes
Vehicle Extension (s)				3.0	3.0	3.0	3.0	3.0			3.0	3.0
Recall Mode				None	None	None	None	C-Min			C-Min	C-Min
Act Effect Green (s)				14.0	14.0	14.0	13.4	51.0			32.6	32.6

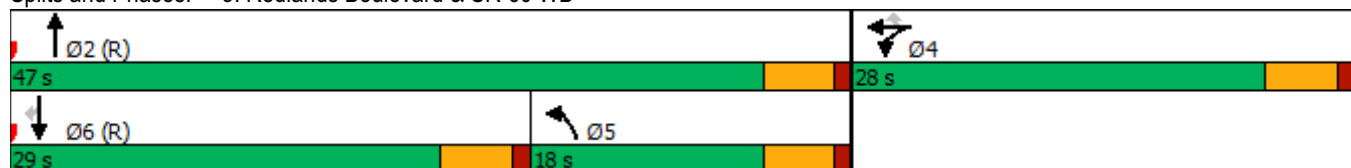


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio				0.19	0.19	0.19	0.18	0.68			0.43	0.43
v/c Ratio				0.53	0.49	0.65	0.77	0.45			0.52	0.42
Control Delay				32.4	16.4	23.4	39.2	7.1			18.1	3.6
Queue Delay				0.0	0.0	0.0	0.0	0.0			0.0	0.0
Total Delay				32.4	16.4	23.4	39.2	7.1			18.1	3.6
LOS				C	B	C	D	A			B	A
Approach Delay					23.7			16.8			13.5	
Approach LOS					C			B			B	
Queue Length 50th (ft)				75	37	61	107	103			144	0
Queue Length 95th (ft)				117	85	118	#180	200			227	55
Internal Link Dist (ft)		1653			1612			1065			260	
Turn Bay Length (ft)												
Base Capacity (vph)				525	560	541	637	2455			1571	918
Starvation Cap Reductn				0	0	0	0	0			0	0
Spillback Cap Reductn				0	0	0	0	0			0	0
Storage Cap Reductn				0	0	0	0	0			0	0
Reduced v/c Ratio				0.32	0.33	0.44	0.76	0.45			0.52	0.42

Intersection Summary

Area Type: Other  
 Cycle Length: 75  
 Actuated Cycle Length: 75  
 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green  
 Natural Cycle: 50  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.77  
 Intersection Signal Delay: 16.8      Intersection LOS: B  
 Intersection Capacity Utilization 106.5%      ICU Level of Service G  
 Analysis Period (min) 15  
 Description: Alternative 2  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

Splits and Phases: 3: Redlands Boulevard & SR-60 WB





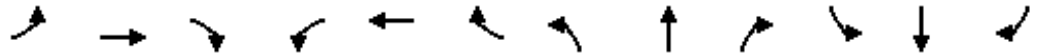
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↙	↔	↗	↙↗	↕			↕	↗
Traffic Volume (veh/h)	0	0	0	290	0	280	462	1065	0	0	778	367
Future Volume (veh/h)	0	0	0	290	0	280	462	1065	0	0	778	367
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	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	1900	1900	0	0	1900	1900
Adj Flow Rate, veh/h				393	0	195	481	1109	0	0	810	382
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				594	0	264	1225	2536	0	0	1035	462
Arrive On Green				0.16	0.00	0.16	0.35	0.70	0.00	0.00	0.29	0.29
Sat Flow, veh/h				3619	0	1610	3510	3705	0	0	3705	1610
Grp Volume(v), veh/h				393	0	195	481	1109	0	0	810	382
Grp Sat Flow(s),veh/h/ln				1810	0	1610	1755	1805	0	0	1805	1610
Q Serve(g_s), s				7.6	0.0	8.6	7.8	9.9	0.0	0.0	15.5	16.6
Cycle Q Clear(g_c), s				7.6	0.0	8.6	7.8	9.9	0.0	0.0	15.5	16.6
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				594	0	264	1225	2536	0	0	1035	462
V/C Ratio(X)				0.66	0.00	0.74	0.39	0.44	0.00	0.00	0.78	0.83
Avail Cap(c_a), veh/h				1110	0	494	1225	2536	0	0	1155	515
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	0.58	0.58	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				29.4	0.0	29.8	18.4	4.8	0.0	0.0	24.6	25.0
Incr Delay (d2), s/veh				1.3	0.0	4.0	0.1	0.3	0.0	0.0	5.9	15.6
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				3.2	0.0	7.7	2.7	2.1	0.0	0.0	6.6	7.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				30.7	0.0	33.8	18.5	5.1	0.0	0.0	30.5	40.6
LnGrp LOS				C	A	C	B	A	A	A	C	D
Approach Vol, veh/h					588			1590			1192	
Approach Delay, s/veh					31.7			9.2			33.7	
Approach LOS					C			A			C	
Timer - Assigned Phs		2		4	5	6						
Phs Duration (G+Y+Rc), s		57.7		17.3	31.2	26.5						
Change Period (Y+Rc), s		5.0		5.0	5.0	5.0						
Max Green Setting (Gmax), s		42.0		23.0	13.0	24.0						
Max Q Clear Time (g_c+I1), s		11.9		10.6	9.8	18.6						
Green Ext Time (p_c), s		8.2		1.7	0.6	2.9						
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				21.8								
HCM 6th LOS				C								
<b>Notes</b>												
User approved volume balancing among the lanes for turning movement.												

Arco AM/PM Service Station  
4: Redlands Boulevard & SR-60 EB

GPBO (2040) with Project (PM Peak Hour)  
Alternative 2



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	570	0	454	0	0	0	0	918	940	453	722	0
Future Volume (vph)	570	0	454	0	0	0	0	918	940	453	722	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.91	0.95	1.00	1.00	1.00	1.00	0.95	1.00	0.97	0.95	1.00
Fr <sub>t</sub>		0.941	0.850							0.850		
Fl <sub>t</sub> Protected	0.950	0.971								0.950		
Satd. Flow (prot)	1715	1580	1534	0	0	0	0	3610	1615	3502	3610	0
Fl <sub>t</sub> Permitted	0.950	0.971								0.950		
Satd. Flow (perm)	1715	1580	1534	0	0	0	0	3610	1615	3502	3610	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		95	208						686			
Link Speed (mph)		45			45			50				50
Link Distance (ft)		1655			1667			819				1145
Travel Time (s)		25.1			25.3			11.2				15.6
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	626	0	499	0	0	0	0	1009	1033	498	793	0
Shared Lane Traffic (%)	37%		30%									
Lane Group Flow (vph)	394	382	349	0	0	0	0	1009	1033	498	793	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			24				24
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		8			8			8				8
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	20		10	20		10	20		10	20		10
Turn Type	Split	NA	Perm					NA	Perm	Prot	NA	
Protected Phases	8	8						2		1	6	
Permitted Phases			8						2			
Detector Phase	8	8	8					2	2	1	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0					7.0	7.0	7.0	7.0	
Minimum Split (s)	12.0	12.0	12.0					12.0	12.0	13.2	12.0	
Total Split (s)	25.0	25.0	25.0					38.0	38.0	17.0	55.0	
Total Split (%)	31.3%	31.3%	31.3%					47.5%	47.5%	21.3%	68.8%	
Maximum Green (s)	20.0	20.0	20.0					33.0	33.0	12.0	50.0	
Yellow Time (s)	4.0	4.0	4.0					4.0	4.0	4.0	4.0	
All-Red Time (s)	1.0	1.0	1.0					1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0					0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0					5.0	5.0	5.0	5.0	
Lead/Lag												
								Lag	Lag	Lead		
Lead-Lag Optimize?								Yes	Yes	Yes		
Vehicle Extension (s)	3.0	3.0	3.0					3.0	3.0	3.0	3.0	
Recall Mode	None	None	None					C-Min	C-Min	None	C-Min	
Act Effct Green (s)	19.9	19.9	19.9					32.6	32.6	12.5	50.1	
Actuated g/C Ratio	0.25	0.25	0.25					0.41	0.41	0.16	0.63	
v/c Ratio	0.92	0.82	0.65					0.69	0.97	0.91	0.35	
Control Delay	59.8	37.8	17.2					22.3	31.0	57.7	7.7	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Delay	0.0	0.0	0.0					0.0	0.0	0.0	0.0	
Total Delay	59.8	37.8	17.2					22.3	31.0	57.7	7.7	
LOS	E	D	B					C	C	E	A	
Approach Delay		39.1						26.7			27.0	
Approach LOS		D						C			C	
Queue Length 50th (ft)	202	150	61					210	196	128	88	
Queue Length 95th (ft)	#375	#312	157					277	#536	#221	120	
Internal Link Dist (ft)		1575			1587			739			1065	
Turn Bay Length (ft)												
Base Capacity (vph)	428	466	539					1489	1069	545	2260	
Starvation Cap Reductn	0	0	0					0	0	0	0	
Spillback Cap Reductn	0	0	0					0	0	0	0	
Storage Cap Reductn	0	0	0					0	0	0	0	
Reduced v/c Ratio	0.92	0.82	0.65					0.68	0.97	0.91	0.35	

**Intersection Summary**





















Area Type: Other  
 Cycle Length: 80  
 Actuated Cycle Length: 80  
 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green  
 Natural Cycle: 70  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.97  
 Intersection Signal Delay: 29.9  
 Intersection LOS: C  
 Intersection Capacity Utilization 106.5%  
 ICU Level of Service G  
 Analysis Period (min) 15  
 Description: Alternative 2  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

**Splits and Phases: 4: Redlands Boulevard & SR-60 EB**



Arco AM/PM Service Station  
4: Redlands Boulevard & SR-60 EB

GPBO (2040) with Project (PM Peak Hour)  
Alternative 2

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	570	0	454	0	0	0	0	918	940	453	722	0
Future Volume (veh/h)	570	0	454	0	0	0	0	918	940	453	722	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900				0	1900	1900	1900	1900	0
Adj Flow Rate, veh/h	781	0	333				0	1009	1033	498	793	0
Peak Hour Factor	0.91	0.91	0.91				0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	0	0				0	0	0	0	0	0
Cap, veh/h	875	0	390				0	1518	677	527	2285	0
Arrive On Green	0.24	0.00	0.24				0.00	0.42	0.42	0.15	0.63	0.00
Sat Flow, veh/h	3619	0	1610				0	3705	1610	3510	3705	0
Grp Volume(v), veh/h	781	0	333				0	1009	1033	498	793	0
Grp Sat Flow(s),veh/h/ln	1810	0	1610				0	1805	1610	1755	1805	0
Q Serve(g_s), s	16.7	0.0	15.8				0.0	18.0	33.6	11.2	8.3	0.0
Cycle Q Clear(g_c), s	16.7	0.0	15.8				0.0	18.0	33.6	11.2	8.3	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	875	0	390				0	1518	677	527	2285	0
V/C Ratio(X)	0.89	0.00	0.85				0.00	0.66	1.53	0.95	0.35	0.00
Avail Cap(c_a), veh/h	905	0	403				0	1518	677	527	2285	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	0.48	0.48	0.84	0.84	0.00
Uniform Delay (d), s/veh	29.3	0.0	29.0				0.0	18.6	23.2	33.7	6.9	0.0
Incr Delay (d2), s/veh	10.9	0.0	16.0				0.0	1.1	240.0	23.4	0.4	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	7.9	0.0	7.3				0.0	6.6	55.8	6.1	2.3	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	40.2	0.0	44.9				0.0	19.8	263.2	57.1	7.3	0.0
LnGrp LOS	D	A	D				A	B	F	E	A	A
Approach Vol, veh/h		1114						2042			1291	
Approach Delay, s/veh		41.6						142.9			26.5	
Approach LOS		D						F			C	
Timer - Assigned Phs	1	2				6		8				
Phs Duration (G+Y+Rc), s	17.0	38.6				55.6		24.4				
Change Period (Y+Rc), s	5.0	5.0				5.0		5.0				
Max Green Setting (Gmax), s	12.0	33.0				50.0		20.0				
Max Q Clear Time (g_c+I1), s	13.2	35.6				10.3		18.7				
Green Ext Time (p_c), s	0.0	0.0				5.5		0.7				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay			83.7									
HCM 6th LOS			F									
<b>Notes</b>												
User approved volume balancing among the lanes for turning movement.												

**GENERAL PLAN BUILDOUT WITHOUT PROJECT - ALTERNATIVE 3**

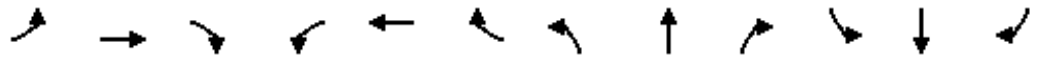
Arco AM/PM Service Station  
3: Redlands Boulevard & SR-60 WB

GPBO (2040) Without Project (AM Peak Hour)  
Alternative 3



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↖	↔	↗		↑↑	↗		↑↑	↗
Traffic Volume (vph)	0	0	0	530	0	240	0	751	286	0	490	334
Future Volume (vph)	0	0	0	530	0	240	0	751	286	0	490	334
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	0		250	0		0
Storage Lanes	0		0	1		1	0		1	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	0.95	0.91	0.95	1.00	0.95	1.00	1.00	0.95	1.00
Frt					0.987	0.850			0.850			0.850
Flt Protected				0.950	0.956							
Satd. Flow (prot)	0	0	0	1715	1631	1534	0	3610	1615	0	3610	1615
Flt Permitted				0.950	0.956							
Satd. Flow (perm)	0	0	0	1715	1631	1534	0	3610	1615	0	3610	1615
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					36	83						359
Link Speed (mph)		45			45			50				50
Link Distance (ft)		1733			1692			1145				339
Travel Time (s)		26.3			25.6			15.6				4.6
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	0	0	0	570	0	258	0	808	308	0	527	359
Shared Lane Traffic (%)				47%		10%						
Lane Group Flow (vph)	0	0	0	302	294	232	0	808	308	0	527	359
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0				0
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	20		10	20		10	20		10	20		10
Turn Type				Split	NA	Perm		NA	pm+ov		NA	Perm
Protected Phases				4	4			2	4		6	
Permitted Phases						4			2			6
Detector Phase				4	4	4		2	4		6	6
Switch Phase												
Minimum Initial (s)				7.0	7.0	7.0		7.0	7.0		7.0	7.0
Minimum Split (s)				20.0	20.0	20.0		20.0	20.0		20.0	20.0
Total Split (s)				30.0	30.0	30.0		30.0	30.0		30.0	30.0
Total Split (%)				50.0%	50.0%	50.0%		50.0%	50.0%		50.0%	50.0%
Maximum Green (s)				25.0	25.0	25.0		25.0	25.0		25.0	25.0
Yellow Time (s)				4.0	4.0	4.0		4.0	4.0		4.0	4.0
All-Red Time (s)				1.0	1.0	1.0		1.0	1.0		1.0	1.0
Lost Time Adjust (s)				0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Lost Time (s)				5.0	5.0	5.0		5.0	5.0		5.0	5.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)				3.0	3.0	3.0		3.0	3.0		3.0	3.0
Recall Mode				None	None	None		C-Min	None		C-Min	C-Min
Act Effect Green (s)				18.5	18.5	18.5		31.5	60.0		31.5	31.5





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio				0.31	0.31	0.31		0.52	1.00		0.52	0.52
v/c Ratio				0.57	0.56	0.44		0.43	0.19		0.28	0.35
Control Delay				20.6	18.0	11.6		9.3	0.2		9.8	2.7
Queue Delay				0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Delay				20.6	18.0	11.6		9.3	0.2		9.8	2.7
LOS				C	B	B		A	A		A	A
Approach Delay					17.1			6.8			6.9	
Approach LOS					B			A			A	
Queue Length 50th (ft)				93	81	42		74	0		52	0
Queue Length 95th (ft)				136	128	78		141	0		98	41
Internal Link Dist (ft)		1653			1612			1065			259	
Turn Bay Length (ft)									250			
Base Capacity (vph)				715	701	688		1895	1596		1895	1018
Starvation Cap Reductn				0	0	0		0	0		0	0
Spillback Cap Reductn				0	0	0		0	0		0	0
Storage Cap Reductn				0	0	0		0	0		0	0
Reduced v/c Ratio				0.42	0.42	0.34		0.43	0.19		0.28	0.35

Intersection Summary

Area Type:	Other
Cycle Length:	60
Actuated Cycle Length:	60
Offset:	0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle:	40
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.57
Intersection Signal Delay:	9.9
Intersection LOS:	A
Intersection Capacity Utilization:	47.9%
ICU Level of Service:	A
Analysis Period (min):	15
Description:	Alternative 3

Splits and Phases: 3: Redlands Boulevard & SR-60 WB

<p>Ø2 (R)</p> <p>30 s</p>	<p>Ø4</p> <p>30 s</p>
<p>Ø6 (R)</p> <p>30 s</p>	

Arco AM/PM Service Station  
3: Redlands Boulevard & SR-60 WB




















GPBO (2040) Without Project (AM Peak Hour)  
Alternative 3



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↵	↔	↗		↕	↗		↕	↗
Traffic Volume (veh/h)	0	0	0	530	0	240	0	751	286	0	490	334
Future Volume (veh/h)	0	0	0	530	0	240	0	751	286	0	490	334
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				650	0	172	0	808	308	0	527	359
Peak Hour Factor				0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %				0	0	0	0	0	0	0	0	0
Cap, veh/h				874	0	389	0	2136	1342	0	2136	953
Arrive On Green				0.24	0.00	0.24	0.00	1.00	1.00	0.00	0.59	0.59
Sat Flow, veh/h				3619	0	1610	0	3705	1610	0	3705	1610
Grp Volume(v), veh/h				650	0	172	0	808	308	0	527	359
Grp Sat Flow(s),veh/h/ln				1810	0	1610	0	1805	1610	0	1805	1610
Q Serve(g_s), s				10.0	0.0	5.4	0.0	0.0	0.0	0.0	4.2	7.0
Cycle Q Clear(g_c), s				10.0	0.0	5.4	0.0	0.0	0.0	0.0	4.2	7.0
Prop In Lane				1.00		1.00	0.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h				874	0	389	0	2136	1342	0	2136	953
V/C Ratio(X)				0.74	0.00	0.44	0.00	0.38	0.23	0.00	0.25	0.38
Avail Cap(c_a), veh/h				1508	0	671	0	2136	1342	0	2136	953
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	0.91	0.91	0.00	1.00	1.00
Uniform Delay (d), s/veh				21.0	0.0	19.3	0.0	0.0	0.0	0.0	5.9	6.4
Incr Delay (d2), s/veh				1.3	0.0	0.8	0.0	0.5	0.4	0.0	0.3	1.1
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				3.8	0.0	1.8	0.0	0.1	0.1	0.0	1.0	1.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				22.3	0.0	20.1	0.0	0.5	0.4	0.0	6.1	7.6
LnGrp LOS				C	A	C	A	A	A	A	A	A
Approach Vol, veh/h					822			1116			886	
Approach Delay, s/veh					21.8			0.4			6.7	
Approach LOS					C			A			A	
Timer - Assigned Phs		2		4		6						
Phs Duration (G+Y+Rc), s		40.5		19.5		40.5						
Change Period (Y+Rc), s		5.0		5.0		5.0						
Max Green Setting (Gmax), s		25.0		25.0		25.0						
Max Q Clear Time (g_c+I1), s		2.0		12.0		9.0						
Green Ext Time (p_c), s		6.3		2.5		3.9						
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				8.6								
HCM 6th LOS				A								
<b>Notes</b>												
User approved volume balancing among the lanes for turning movement.												

Arco AM/PM Service Station  
4: Redlands Boulevard & SR-60 EB

GPBO (2040) Without Project (AM Peak Hour)  
Alternative 3

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	285	0	269	0	0	0	0	779	220	0	840	180
Future Volume (vph)	285	0	269	0	0	0	0	779	220	0	840	180
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.91	0.95	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Fr <sub>t</sub>		0.926	0.850						0.850			0.850
Fl <sub>t</sub> Protected	0.950	0.975										
Satd. Flow (prot)	1715	1561	1534	0	0	0	0	3610	1615	0	3610	1615
Fl <sub>t</sub> Permitted	0.950	0.975										
Satd. Flow (perm)	1715	1561	1534	0	0	0	0	3610	1615	0	3610	1615
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		87	97						239			
Link Speed (mph)		45			45			50			50	
Link Distance (ft)		1655			1667			819			1145	
Travel Time (s)		25.1			25.3			11.2			15.6	
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
Adj. Flow (vph)	310	0	292	0	0	0	0	847	239	0	913	196
Shared Lane Traffic (%)	33%		34%									
Lane Group Flow (vph)	208	201	193	0	0	0	0	847	239	0	913	196
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	20		10	20		10	20		10	20		10
Turn Type	Split	NA	Perm					NA	Perm		NA	pm+ov
Protected Phases	8	8						2			6	8
Permitted Phases			8						2			6
Detector Phase	8	8	8					2	2		6	8
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0					7.0	7.0		7.0	7.0
Minimum Split (s)	12.0	12.0	12.0					20.0	20.0		20.0	12.0
Total Split (s)	25.0	25.0	25.0					35.0	35.0		35.0	25.0
Total Split (%)	41.7%	41.7%	41.7%					58.3%	58.3%		58.3%	41.7%
Maximum Green (s)	20.0	20.0	20.0					30.0	30.0		30.0	20.0
Yellow Time (s)	4.0	4.0	4.0					4.0	4.0		4.0	4.0
All-Red Time (s)	1.0	1.0	1.0					1.0	1.0		1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0					0.0	0.0		0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0					5.0	5.0		5.0	5.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0					3.0	3.0		3.0	3.0
Recall Mode	None	None	None					C-Min	C-Min		C-Min	None
Act Effct Green (s)	14.2	14.2	14.2					35.8	35.8		35.8	60.0
Actuated g/C Ratio	0.24	0.24	0.24					0.60	0.60		0.60	1.00
v/c Ratio	0.51	0.46	0.44					0.39	0.23		0.42	0.12
Control Delay	23.2	13.7	12.3					8.0	2.0		6.0	0.1

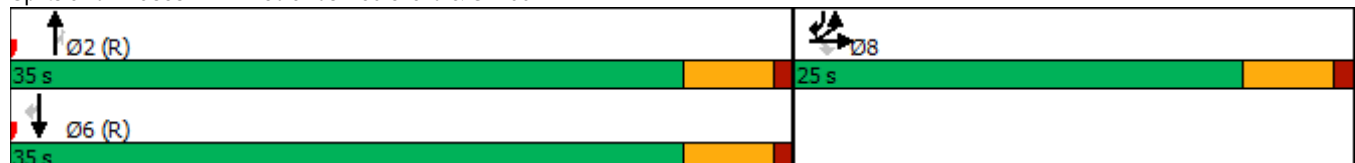


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Delay	0.0	0.0	0.0					0.0	0.0		0.0	0.0
Total Delay	23.2	13.7	12.3					8.0	2.0		6.0	0.1
LOS	C	B	B					A	A		A	A
Approach Delay		16.5						6.7			4.9	
Approach LOS		B						A			A	
Queue Length 50th (ft)	69	37	29					73	0		27	0
Queue Length 95th (ft)	107	78	67					143	29		142	0
Internal Link Dist (ft)		1575			1587			739			1065	
Turn Bay Length (ft)												
Base Capacity (vph)	576	582	580					2163	1063		2163	1604
Starvation Cap Reductn	0	0	0					0	0		0	0
Spillback Cap Reductn	0	0	0					0	0		0	0
Storage Cap Reductn	0	0	0					0	0		0	0
Reduced v/c Ratio	0.36	0.35	0.33					0.39	0.22		0.42	0.12

**Intersection Summary**

Area Type: Other  
 Cycle Length: 60  
 Actuated Cycle Length: 60  
 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green  
 Natural Cycle: 40  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.51  
 Intersection Signal Delay: 8.1  
 Intersection Capacity Utilization 44.3%  
 Analysis Period (min) 15  
 Description: Alternative 3

**Splits and Phases: 4: Redlands Boulevard & SR-60 EB**



Arco AM/PM Service Station  
4: Redlands Boulevard & SR-60 EB

GPBO (2040) Without Project (AM Peak Hour)  
Alternative 3



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	285	0	269	0	0	0	0	779	220	0	840	180
Future Volume (veh/h)	285	0	269	0	0	0	0	779	220	0	840	180
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	401	0	195				0	847	239	0	913	196
Peak Hour Factor	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
Cap, veh/h	631	0	281				0	2379	1061	0	2379	1342
Arrive On Green	0.17	0.00	0.17				0.00	0.66	0.66	0.00	1.00	1.00
Sat Flow, veh/h	3619	0	1610				0	3705	1610	0	3705	1610
Grp Volume(v), veh/h	401	0	195				0	847	239	0	913	196
Grp Sat Flow(s),veh/h/ln	1810	0	1610				0	1805	1610	0	1805	1610
Q Serve(g_s), s	6.2	0.0	6.8				0.0	6.3	3.6	0.0	0.0	0.0
Cycle Q Clear(g_c), s	6.2	0.0	6.8				0.0	6.3	3.6	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	631	0	281				0	2379	1061	0	2379	1342
V/C Ratio(X)	0.64	0.00	0.69				0.00	0.36	0.23	0.00	0.38	0.15
Avail Cap(c_a), veh/h	1206	0	537				0	2379	1061	0	2379	1342
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	0.93	0.93
Uniform Delay (d), s/veh	23.0	0.0	23.3				0.0	4.6	4.1	0.0	0.0	0.0
Incr Delay (d2), s/veh	1.1	0.0	3.1				0.0	0.4	0.4	0.0	0.4	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	2.4	0.0	2.5				0.0	1.2	0.7	0.0	0.1	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	24.1	0.0	26.4				0.0	4.9	4.5	0.0	0.4	0.2
LnGrp LOS	C	A	C				A	A	A	A	A	A
Approach Vol, veh/h		596						1086			1109	
Approach Delay, s/veh		24.8						4.8			0.4	
Approach LOS		C						A			A	
Timer - Assigned Phs		2				6		8				
Phs Duration (G+Y+Rc), s		44.5				44.5		15.5				
Change Period (Y+Rc), s		5.0				5.0		5.0				
Max Green Setting (Gmax), s		30.0				30.0		20.0				
Max Q Clear Time (g_c+I1), s		8.3				2.0		8.8				
Green Ext Time (p_c), s		6.2				7.0		1.6				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay			7.3									
HCM 6th LOS			A									
<b>Notes</b>												
User approved volume balancing among the lanes for turning movement.												

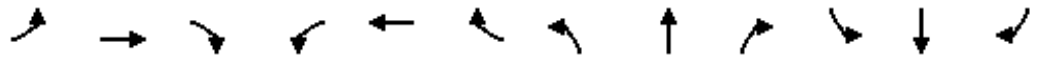


Arco AM/PM Service Station  
3: Redlands Boulevard & SR-60 WB

GPBO (2040) Without Project (PM Peak Hour)  
Alternative 3



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↖	↔	↗		↑↑	↗		↑↑	↗
Traffic Volume (vph)	0	0	0	290	0	267	0	1037	462	0	750	355
Future Volume (vph)	0	0	0	290	0	267	0	1037	462	0	750	355
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	0		250	0		0
Storage Lanes	0		0	1		1	0		1	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	0.95	0.91	0.95	1.00	0.95	1.00	1.00	0.95	1.00
Frt					0.927	0.850			0.850			0.850
Flt Protected				0.950	0.975							
Satd. Flow (prot)	0	0	0	1715	1563	1534	0	3610	1615	0	3610	1615
Flt Permitted				0.950	0.975							
Satd. Flow (perm)	0	0	0	1715	1563	1534	0	3610	1615	0	3610	1615
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					42	123						370
Link Speed (mph)		45			45			50				50
Link Distance (ft)		1733			1692			1145				339
Travel Time (s)		26.3			25.6			15.6				4.6
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	0	0	0	302	0	278	0	1080	481	0	781	370
Shared Lane Traffic (%)				33%		34%						
Lane Group Flow (vph)	0	0	0	202	195	183	0	1080	481	0	781	370
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0				0
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	20		10	20		10	20		10	20		10
Turn Type				Split	NA	Perm		NA	pt+ov		NA	Perm
Protected Phases				4	4			2	24		6	
Permitted Phases						4						6
Detector Phase				4	4	4		2	24		6	6
Switch Phase												
Minimum Initial (s)				7.0	7.0	7.0		7.0			7.0	7.0
Minimum Split (s)				20.0	20.0	20.0		65.0			20.0	20.0
Total Split (s)				33.0	33.0	33.0		77.0			77.0	77.0
Total Split (%)				30.0%	30.0%	30.0%		70.0%			70.0%	70.0%
Maximum Green (s)				28.0	28.0	28.0		72.0			72.0	72.0
Yellow Time (s)				4.0	4.0	4.0		4.0			4.0	4.0
All-Red Time (s)				1.0	1.0	1.0		1.0			1.0	1.0
Lost Time Adjust (s)				0.0	0.0	0.0		0.0			0.0	0.0
Total Lost Time (s)				5.0	5.0	5.0		5.0			5.0	5.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)				3.0	3.0	3.0		3.0			3.0	3.0
Recall Mode				None	None	None		C-Min			C-Min	C-Min
Act Effect Green (s)				21.4	21.4	21.4		78.6	110.0		78.6	78.6



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio				0.19	0.19	0.19		0.71	1.00		0.71	0.71
v/c Ratio				0.61	0.58	0.46		0.42	0.30		0.30	0.29
Control Delay				47.1	36.9	16.6		7.8	0.5		6.8	1.4
Queue Delay				0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Delay				47.1	36.9	16.6		7.8	0.5		6.8	1.4
LOS				D	D	B		A	A		A	A
Approach Delay					34.1			5.5			5.1	
Approach LOS					C			A			A	
Queue Length 50th (ft)				138	108	37		140	0		90	0
Queue Length 95th (ft)				195	170	95		244	0		162	33
Internal Link Dist (ft)		1653			1612			1065			259	
Turn Bay Length (ft)									250			
Base Capacity (vph)				445	437	490		2600	1603		2600	1266
Starvation Cap Reductn				0	0	0		0	0		0	0
Spillback Cap Reductn				0	0	0		0	0		0	0
Storage Cap Reductn				0	0	0		0	0		0	0
Reduced v/c Ratio				0.45	0.45	0.37		0.42	0.30		0.30	0.29

Intersection Summary

Area Type:	Other
Cycle Length:	110
Actuated Cycle Length:	110
Offset:	0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle:	85
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.61
Intersection Signal Delay:	10.4
Intersection LOS:	B
Intersection Capacity Utilization:	49.7%
ICU Level of Service:	A
Analysis Period (min):	15
Description:	Alternative 3

Splits and Phases: 3: Redlands Boulevard & SR-60 WB

<p>Ø2 (R)</p> <p>77 s</p>	<p>Ø4</p> <p>33 s</p>
<p>Ø6 (R)</p> <p>77 s</p>	



Arco AM/PM Service Station  
3: Redlands Boulevard & SR-60 WB

GPBO (2040) Without Project (PM Peak Hour)  
Alternative 3



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↖	↔	↗		↑↑	↗		↑↑	↗
Traffic Volume (veh/h)	0	0	0	290	0	267	0	1037	462	0	750	355
Future Volume (veh/h)	0	0	0	290	0	267	0	1037	462	0	750	355
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach				No			No			No		
Adj Sat Flow, veh/h/ln				1900	1900	1900	0	1900	1900	0	1900	1900
Adj Flow Rate, veh/h				388	0	185	0	1080	481	0	781	370
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				523	0	233	0	2760	1464	0	2760	1231
Arrive On Green				0.14	0.00	0.14	0.00	0.76	0.76	0.00	0.76	0.76
Sat Flow, veh/h				3619	0	1610	0	3705	1610	0	3705	1610
Grp Volume(v), veh/h				388	0	185	0	1080	481	0	781	370
Grp Sat Flow(s),veh/h/ln				1810	0	1610	0	1805	1610	0	1805	1610
Q Serve(g_s), s				11.3	0.0	12.2	0.0	11.1	4.3	0.0	7.2	7.7
Cycle Q Clear(g_c), s				11.3	0.0	12.2	0.0	11.1	4.3	0.0	7.2	7.7
Prop In Lane				1.00		1.00	0.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h				523	0	233	0	2760	1464	0	2760	1231
V/C Ratio(X)				0.74	0.00	0.79	0.00	0.39	0.33	0.00	0.28	0.30
Avail Cap(c_a), veh/h				921	0	410	0	2760	1464	0	2760	1231
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	0.83	0.83	0.00	1.00	1.00
Uniform Delay (d), s/veh				45.1	0.0	45.5	0.0	4.4	0.6	0.0	3.9	4.0
Incr Delay (d2), s/veh				2.1	0.0	6.1	0.0	0.3	0.5	0.0	0.3	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
%ile BackOfQ(50%),veh/ln				5.1	0.0	5.1	0.0	2.8	2.5	0.0	1.8	1.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				47.2	0.0	51.5	0.0	4.7	1.1	0.0	4.1	4.6
LnGrp LOS				D	A	D	A	A	A	A	A	A
Approach Vol, veh/h					573			1561			1151	
Approach Delay, s/veh					48.6			3.6			4.3	
Approach LOS					D			A			A	
Timer - Assigned Phs		2		4		6						
Phs Duration (G+Y+Rc), s		89.1		20.9		89.1						
Change Period (Y+Rc), s		5.0		5.0		5.0						
Max Green Setting (Gmax), s		72.0		28.0		72.0						
Max Q Clear Time (g_c+I1), s		13.1		14.2		9.7						
Green Ext Time (p_c), s		11.9		1.7		7.2						

Intersection Summary

HCM 6th Ctrl Delay	11.7
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

Arco AM/PM Service Station  
4: Redlands Boulevard & SR-60 EB

GPBO (2040) Without Project (PM Peak Hour)  
Alternative 3

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	557	0	454	0	0	0	0	903	940	0	707	440
Future Volume (vph)	557	0	454	0	0	0	0	903	940	0	707	440
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.91	0.95	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Fr <sub>t</sub>		0.940	0.850						0.850			0.850
Fl <sub>t</sub> Protected	0.950	0.971										
Satd. Flow (prot)	1715	1578	1534	0	0	0	0	3610	1615	0	3610	1615
Fl <sub>t</sub> Permitted	0.950	0.971										
Satd. Flow (perm)	1715	1578	1534	0	0	0	0	3610	1615	0	3610	1615
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		32	180						1033			
Link Speed (mph)		45			45			50			50	
Link Distance (ft)		1655			1667			819			1145	
Travel Time (s)		25.1			25.3			11.2			15.6	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	612	0	499	0	0	0	0	992	1033	0	777	484
Shared Lane Traffic (%)	37%		30%									
Lane Group Flow (vph)	386	376	349	0	0	0	0	992	1033	0	777	484
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	20		10	20		10	20		10	20		10
Turn Type	Split	NA	Perm					NA	Perm		NA	pt+ov
Protected Phases	8	8						2			6	6 8
Permitted Phases			8						2			
Detector Phase	8	8	8					2	2		6	6 8
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0					7.0	7.0		7.0	
Minimum Split (s)	12.0	12.0	12.0					20.0	20.0		20.0	
Total Split (s)	45.0	45.0	45.0					70.0	70.0		70.0	
Total Split (%)	39.1%	39.1%	39.1%					60.9%	60.9%		60.9%	
Maximum Green (s)	40.0	40.0	40.0					65.0	65.0		65.0	
Yellow Time (s)	4.0	4.0	4.0					4.0	4.0		4.0	
All-Red Time (s)	1.0	1.0	1.0					1.0	1.0		1.0	
Lost Time Adjust (s)	0.0	0.0	0.0					0.0	0.0		0.0	
Total Lost Time (s)	5.0	5.0	5.0					5.0	5.0		5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0					3.0	3.0		3.0	
Recall Mode	None	None	None					C-Min	C-Min		C-Min	
Act Effct Green (s)	35.6	35.6	35.6					69.4	69.4		69.4	115.0
Actuated g/C Ratio	0.31	0.31	0.31					0.60	0.60		0.60	1.00
v/c Ratio	0.73	0.74	0.58					0.46	0.75		0.36	0.30
Control Delay	43.2	40.8	18.7					14.2	4.8		13.0	0.5



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Delay	0.0	0.0	0.0					0.0	0.0		0.0	0.0
Total Delay	43.2	40.8	18.7					14.2	4.8		13.0	0.5
LOS	D	D	B					B	A		B	A
Approach Delay		34.7						9.4			8.2	
Approach LOS		C						A			A	
Queue Length 50th (ft)	258	242	104					209	0		151	0
Queue Length 95th (ft)	366	357	198					272	55		201	0
Internal Link Dist (ft)		1575			1587			739			1065	
Turn Bay Length (ft)												
Base Capacity (vph)	607	579	659					2200	1387		2200	1603
Starvation Cap Reductn	0	0	0					0	9		0	0
Spillback Cap Reductn	0	0	0					0	0		0	0
Storage Cap Reductn	0	0	0					0	0		0	0
Reduced v/c Ratio	0.64	0.65	0.53					0.45	0.75		0.35	0.30

**Intersection Summary**

Area Type: Other  
 Cycle Length: 115  
 Actuated Cycle Length: 115  
 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green  
 Natural Cycle: 45  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.75  
 Intersection Signal Delay: 15.5  
 Intersection Capacity Utilization 88.2%  
 Analysis Period (min) 15  
 Description: Alternative 3

Splits and Phases: 4: Redlands Boulevard & SR-60 EB



Arco AM/PM Service Station  
4: Redlands Boulevard & SR-60 EB

GPBO (2040) Without Project (PM Peak Hour)  
Alternative 3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	557	0	454	0	0	0	0	903	940	0	707	440
Future Volume (veh/h)	557	0	454	0	0	0	0	903	940	0	707	440
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	767	0	333				0	992	1033	0	777	484
Peak Hour Factor	0.91	0.91	0.91				0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	0	0				0	0	0	0	0	0
Cap, veh/h	908	0	404				0	2391	1066	0	2391	1470
Arrive On Green	0.25	0.00	0.25				0.00	0.66	0.66	0.00	0.66	0.66
Sat Flow, veh/h	3619	0	1610				0	3705	1610	0	3705	1610
Grp Volume(v), veh/h	767	0	333				0	992	1033	0	777	484
Grp Sat Flow(s),veh/h/ln	1810	0	1610				0	1805	1610	0	1805	1610
Q Serve(g_s), s	23.2	0.0	22.5				0.0	14.7	69.5	0.0	10.7	4.3
Cycle Q Clear(g_c), s	23.2	0.0	22.5				0.0	14.7	69.5	0.0	10.7	4.3
Prop In Lane	1.00		1.00				0.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h	908	0	404				0	2391	1066	0	2391	1470
V/C Ratio(X)	0.84	0.00	0.82				0.00	0.41	0.97	0.00	0.33	0.33
Avail Cap(c_a), veh/h	1259	0	560				0	2391	1066	0	2391	1470
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	0.62	0.62	0.00	0.94	0.94
Uniform Delay (d), s/veh	41.0	0.0	40.7				0.0	9.0	18.3	0.0	8.4	0.6
Incr Delay (d2), s/veh	4.0	0.0	7.0				0.0	0.3	15.5	0.0	0.3	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
%ile BackOfQ(50%),veh/ln	10.4	0.0	9.3				0.0	4.9	24.8	0.0	3.6	5.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	44.9	0.0	47.7				0.0	9.4	33.8	0.0	8.7	1.2
LnGrp LOS	D	A	D				A	A	C	A	A	A
Approach Vol, veh/h		1100						2025			1261	
Approach Delay, s/veh		45.8						21.8			5.8	
Approach LOS		D						C			A	
Timer - Assigned Phs		2				6		8				
Phs Duration (G+Y+Rc), s		81.2				81.2		33.8				
Change Period (Y+Rc), s		5.0				5.0		5.0				
Max Green Setting (Gmax), s		65.0				65.0		40.0				
Max Q Clear Time (g_c+I1), s		71.5				12.7		25.2				
Green Ext Time (p_c), s		0.0				7.9		3.7				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay			23.2									
HCM 6th LOS			C									
<b>Notes</b>												
User approved volume balancing among the lanes for turning movement.												

**GENERAL PLAN BUILDOUT WITH PROJECT - ALTERNATIVE 3**

Arco AM/PM Service Station  
3: Redlands Boulevard & SR-60 WB

GPBO (2040) With Project (AM Peak Hour)  
Alternative 3



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	530	0	250	0	773	286	0	510	343
Future Volume (vph)	0	0	0	530	0	250	0	773	286	0	510	343
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	0		250	0		0
Storage Lanes	0		0	1		1	0		1	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	0.95	0.91	0.95	1.00	0.95	1.00	1.00	0.95	1.00
Frt					0.986	0.850			0.850			0.850
Flt Protected				0.950	0.957							
Satd. Flow (prot)	0	0	0	1715	1631	1534	0	3610	1615	0	3610	1615
Flt Permitted				0.950	0.957							
Satd. Flow (perm)	0	0	0	1715	1631	1534	0	3610	1615	0	3610	1615
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					36	77						369
Link Speed (mph)		45			45			50				50
Link Distance (ft)		1733			1692			1145				339
Travel Time (s)		26.3			25.6			15.6				4.6
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	0	0	0	570	0	269	0	831	308	0	548	369
Shared Lane Traffic (%)				47%		10%						
Lane Group Flow (vph)	0	0	0	302	295	242	0	831	308	0	548	369
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0				0
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	20		10	20		10	20		10	20		10
Turn Type				Split	NA	Perm		NA	pm+ov		NA	Perm
Protected Phases				4	4			2	4		6	
Permitted Phases						4			2			6
Detector Phase				4	4	4		2	4		6	6
Switch Phase												
Minimum Initial (s)				7.0	7.0	7.0		7.0	7.0		7.0	7.0
Minimum Split (s)				20.0	20.0	20.0		20.0	20.0		20.0	20.0
Total Split (s)				30.0	30.0	30.0		30.0	30.0		30.0	30.0
Total Split (%)				50.0%	50.0%	50.0%		50.0%	50.0%		50.0%	50.0%
Maximum Green (s)				25.0	25.0	25.0		25.0	25.0		25.0	25.0
Yellow Time (s)				4.0	4.0	4.0		4.0	4.0		4.0	4.0
All-Red Time (s)				1.0	1.0	1.0		1.0	1.0		1.0	1.0
Lost Time Adjust (s)				0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Lost Time (s)				5.0	5.0	5.0		5.0	5.0		5.0	5.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)				3.0	3.0	3.0		3.0	3.0		3.0	3.0
Recall Mode				None	None	None		C-Min	None		C-Min	C-Min
Act Effect Green (s)				18.5	18.5	18.5		31.5	60.0		31.5	31.5

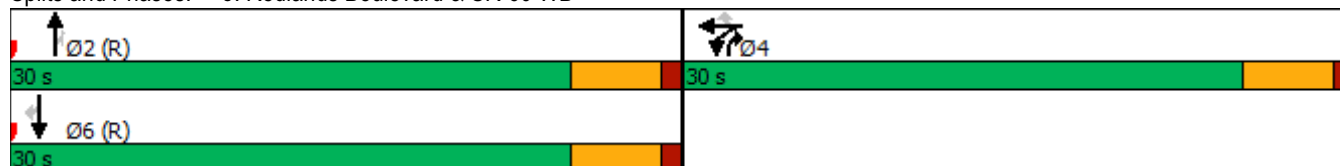


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio				0.31	0.31	0.31		0.52	1.00		0.52	0.52
v/c Ratio				0.57	0.56	0.46		0.44	0.19		0.29	0.36
Control Delay				20.7	18.1	12.7		9.3	0.2		9.8	2.7
Queue Delay				0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Delay				20.7	18.1	12.7		9.3	0.2		9.8	2.7
LOS				C	B	B		A	A		A	A
Approach Delay					17.5			6.8			6.9	
Approach LOS					B			A			A	
Queue Length 50th (ft)				93	82	47		78	0		54	0
Queue Length 95th (ft)				137	129	86		144	0		102	42
Internal Link Dist (ft)		1653			1612			1065			259	
Turn Bay Length (ft)									250			
Base Capacity (vph)				714	700	684		1895	1596		1895	1023
Starvation Cap Reductn				0	0	0		0	0		0	0
Spillback Cap Reductn				0	0	0		0	0		0	0
Storage Cap Reductn				0	0	0		0	0		0	0
Reduced v/c Ratio				0.42	0.42	0.35		0.44	0.19		0.29	0.36

Intersection Summary

Area Type:	Other
Cycle Length:	60
Actuated Cycle Length:	60
Offset:	0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle:	40
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.57
Intersection Signal Delay:	10.0
Intersection LOS:	A
Intersection Capacity Utilization:	48.6%
ICU Level of Service:	A
Analysis Period (min):	15
Description:	Alternative 3

Splits and Phases: 3: Redlands Boulevard & SR-60 WB



Arco AM/PM Service Station  
3: Redlands Boulevard & SR-60 WB

GPBO (2040) With Project (AM Peak Hour)  
Alternative 3



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↖	↔	↗		↑↑	↗		↑↑	↗
Traffic Volume (veh/h)	0	0	0	530	0	250	0	773	286	0	510	343
Future Volume (veh/h)	0	0	0	530	0	250	0	773	286	0	510	343
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				654	0	179	0	831	308	0	548	369
Peak Hour Factor				0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %				0	0	0	0	0	0	0	0	0
Cap, veh/h				880	0	391	0	2131	1342	0	2131	950
Arrive On Green				0.24	0.00	0.24	0.00	1.00	1.00	0.00	0.59	0.59
Sat Flow, veh/h				3619	0	1610	0	3705	1610	0	3705	1610
Grp Volume(v), veh/h				654	0	179	0	831	308	0	548	369
Grp Sat Flow(s),veh/h/ln				1810	0	1610	0	1805	1610	0	1805	1610
Q Serve(g_s), s				10.0	0.0	5.7	0.0	0.0	0.0	0.0	4.4	7.3
Cycle Q Clear(g_c), s				10.0	0.0	5.7	0.0	0.0	0.0	0.0	4.4	7.3
Prop In Lane				1.00		1.00	0.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h				880	0	391	0	2131	1342	0	2131	950
V/C Ratio(X)				0.74	0.00	0.46	0.00	0.39	0.23	0.00	0.26	0.39
Avail Cap(c_a), veh/h				1508	0	671	0	2131	1342	0	2131	950
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	0.91	0.91	0.00	1.00	1.00
Uniform Delay (d), s/veh				21.0	0.0	19.3	0.0	0.0	0.0	0.0	5.9	6.5
Incr Delay (d2), s/veh				1.3	0.0	0.8	0.0	0.5	0.4	0.0	0.3	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
%ile BackOfQ(50%),veh/ln				3.8	0.0	1.9	0.0	0.1	0.1	0.0	1.1	1.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				22.2	0.0	20.2	0.0	0.5	0.4	0.0	6.2	7.7
LnGrp LOS				C	A	C	A	A	A	A	A	A
Approach Vol, veh/h					833			1139			917	
Approach Delay, s/veh					21.8			0.5			6.8	
Approach LOS					C			A			A	
Timer - Assigned Phs		2		4		6						
Phs Duration (G+Y+Rc), s		40.4		19.6		40.4						
Change Period (Y+Rc), s		5.0		5.0		5.0						
Max Green Setting (Gmax), s		25.0		25.0		25.0						
Max Q Clear Time (g_c+I1), s		2.0		12.0		9.3						
Green Ext Time (p_c), s		6.5		2.6		4.1						
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				8.6								
HCM 6th LOS				A								
<b>Notes</b>												
User approved volume balancing among the lanes for turning movement.												



Arco AM/PM Service Station  
4: Redlands Boulevard & SR-60 EB

GPBO (2040) With Project (AM Peak Hour)  
Alternative 3



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	295	0	269	0	0	0	0	791	220	0	852	188
Future Volume (vph)	295	0	269	0	0	0	0	791	220	0	852	188
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.91	0.95	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Fr <sub>t</sub>		0.930	0.850						0.850			0.850
Fl <sub>t</sub> Protected	0.950	0.974										
Satd. Flow (prot)	1715	1566	1534	0	0	0	0	3610	1615	0	3610	1615
Fl <sub>t</sub> Permitted	0.950	0.974										
Satd. Flow (perm)	1715	1566	1534	0	0	0	0	3610	1615	0	3610	1615
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		79	93						239			
Link Speed (mph)		45			45			50				50
Link Distance (ft)		1655			1667			819				1145
Travel Time (s)		25.1			25.3			11.2				15.6
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
Adj. Flow (vph)	321	0	292	0	0	0	0	860	239	0	926	204
Shared Lane Traffic (%)	34%		33%									
Lane Group Flow (vph)	212	205	196	0	0	0	0	860	239	0	926	204
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0				0
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	20		10	20		10	20		10	20		10
Turn Type	Split	NA	Perm					NA	Perm		NA	pm+ov
Protected Phases	8	8						2			6	8
Permitted Phases			8						2			6
Detector Phase	8	8	8					2	2		6	8
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0					7.0	7.0		7.0	7.0
Minimum Split (s)	12.0	12.0	12.0					20.0	20.0		20.0	12.0
Total Split (s)	25.0	25.0	25.0					35.0	35.0		35.0	25.0
Total Split (%)	41.7%	41.7%	41.7%					58.3%	58.3%		58.3%	41.7%
Maximum Green (s)	20.0	20.0	20.0					30.0	30.0		30.0	20.0
Yellow Time (s)	4.0	4.0	4.0					4.0	4.0		4.0	4.0
All-Red Time (s)	1.0	1.0	1.0					1.0	1.0		1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0					0.0	0.0		0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0					5.0	5.0		5.0	5.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0					3.0	3.0		3.0	3.0
Recall Mode	None	None	None					C-Min	C-Min		C-Min	None
Act Effct Green (s)	14.3	14.3	14.3					35.7	35.7		35.7	60.0
Actuated g/C Ratio	0.24	0.24	0.24					0.60	0.60		0.60	1.00
v/c Ratio	0.52	0.47	0.45					0.40	0.23		0.43	0.13
Control Delay	23.4	14.6	12.9					8.1	2.0		6.0	0.2



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Delay	0.0	0.0	0.0					0.0	0.0		0.0	0.0
Total Delay	23.4	14.6	12.9					8.1	2.0		6.0	0.2
LOS	C	B	B					A	A		A	A
Approach Delay		17.1						6.8			4.9	
Approach LOS		B						A			A	
Queue Length 50th (ft)	70	41	31					75	0		60	0
Queue Length 95th (ft)	110	83	70					144	29		142	0
Internal Link Dist (ft)		1575			1587			739			1065	
Turn Bay Length (ft)												
Base Capacity (vph)	575	578	576					2157	1061		2157	1604
Starvation Cap Reductn	0	0	0					0	0		0	0
Spillback Cap Reductn	0	0	0					0	0		0	0
Storage Cap Reductn	0	0	0					0	0		0	0
Reduced v/c Ratio	0.37	0.35	0.34					0.40	0.23		0.43	0.13

**Intersection Summary**

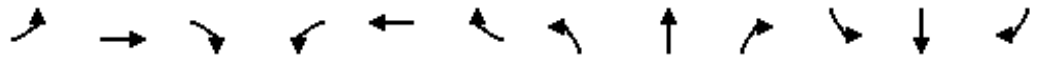
Area Type: Other  
 Cycle Length: 60  
 Actuated Cycle Length: 60  
 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green  
 Natural Cycle: 40  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.52  
 Intersection Signal Delay: 8.3  
 Intersection Capacity Utilization 44.7%  
 Analysis Period (min) 15  
 Description: Alternative 3

**Splits and Phases: 4: Redlands Boulevard & SR-60 EB**

Ø2 (R) 35 s	Ø8 25 s
Ø6 (R) 35 s	

Arco AM/PM Service Station  
4: Redlands Boulevard & SR-60 EB

GPBO (2040) With Project (AM Peak Hour)  
Alternative 3



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	295	0	269	0	0	0	0	791	220	0	852	188
Future Volume (veh/h)	295	0	269	0	0	0	0	791	220	0	852	188
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	412	0	195				0	860	239	0	926	204
Peak Hour Factor	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
Cap, veh/h	633	0	281				0	2377	1060	0	2377	1342
Arrive On Green	0.17	0.00	0.17				0.00	0.66	0.66	0.00	1.00	1.00
Sat Flow, veh/h	3619	0	1610				0	3705	1610	0	3705	1610
Grp Volume(v), veh/h	412	0	195				0	860	239	0	926	204
Grp Sat Flow(s),veh/h/ln	1810	0	1610				0	1805	1610	0	1805	1610
Q Serve(g_s), s	6.4	0.0	6.8				0.0	6.4	3.6	0.0	0.0	0.0
Cycle Q Clear(g_c), s	6.4	0.0	6.8				0.0	6.4	3.6	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	633	0	281				0	2377	1060	0	2377	1342
V/C Ratio(X)	0.65	0.00	0.69				0.00	0.36	0.23	0.00	0.39	0.15
Avail Cap(c_a), veh/h	1206	0	537				0	2377	1060	0	2377	1342
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	0.93	0.93
Uniform Delay (d), s/veh	23.1	0.0	23.2				0.0	4.6	4.1	0.0	0.0	0.0
Incr Delay (d2), s/veh	1.1	0.0	3.0				0.0	0.4	0.4	0.0	0.4	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	2.5	0.0	2.5				0.0	1.2	0.7	0.0	0.1	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	24.2	0.0	26.3				0.0	5.0	4.5	0.0	0.4	0.2
LnGrp LOS	C	A	C				A	A	A	A	A	A
Approach Vol, veh/h		607						1099			1130	
Approach Delay, s/veh		24.9						4.9			0.4	
Approach LOS		C						A			A	
Timer - Assigned Phs		2				6		8				
Phs Duration (G+Y+Rc), s		44.5				44.5		15.5				
Change Period (Y+Rc), s		5.0				5.0		5.0				
Max Green Setting (Gmax), s		30.0				30.0		20.0				
Max Q Clear Time (g_c+I1), s		8.4				2.0		8.8				
Green Ext Time (p_c), s		6.3				7.2		1.7				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay			7.4									
HCM 6th LOS			A									
<b>Notes</b>												
User approved volume balancing among the lanes for turning movement.												



Arco AM/PM Service Station  
3: Redlands Boulevard & SR-60 WB

GPBO (2040) With Project (PM Peak Hour)  
Alternative 3



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↖	↔	↗		↕	↗		↕	↗
Traffic Volume (vph)	0	0	0	290	0	280	0	1065	462	0	778	367
Future Volume (vph)	0	0	0	290	0	280	0	1065	462	0	778	367
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	0		250	0		0
Storage Lanes	0		0	1		1	0		1	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	0.95	0.91	0.95	1.00	0.95	1.00	1.00	0.95	1.00
Frt					0.923	0.850			0.850			0.850
Flt Protected				0.950	0.976							
Satd. Flow (prot)	0	0	0	1715	1558	1534	0	3610	1615	0	3610	1615
Flt Permitted				0.950	0.976							
Satd. Flow (perm)	0	0	0	1715	1558	1534	0	3610	1615	0	3610	1615
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					46	116						382
Link Speed (mph)		45			45			50				50
Link Distance (ft)		1733			1692			1145				339
Travel Time (s)		26.3			25.6			15.6				4.6
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	0	0	0	302	0	292	0	1109	481	0	810	382
Shared Lane Traffic (%)				32%		35%						
Lane Group Flow (vph)	0	0	0	205	199	190	0	1109	481	0	810	382
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0				0
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	20		10	20		10	20		10	20		10
Turn Type				Split	NA	Perm		NA	pt+ov		NA	Perm
Protected Phases				4	4			2	24		6	
Permitted Phases						4						6
Detector Phase				4	4	4		2	24		6	6
Switch Phase												
Minimum Initial (s)				7.0	7.0	7.0		7.0			7.0	7.0
Minimum Split (s)				20.0	20.0	20.0		65.0			20.0	20.0
Total Split (s)				33.0	33.0	33.0		77.0			77.0	77.0
Total Split (%)				30.0%	30.0%	30.0%		70.0%			70.0%	70.0%
Maximum Green (s)				28.0	28.0	28.0		72.0			72.0	72.0
Yellow Time (s)				4.0	4.0	4.0		4.0			4.0	4.0
All-Red Time (s)				1.0	1.0	1.0		1.0			1.0	1.0
Lost Time Adjust (s)				0.0	0.0	0.0		0.0			0.0	0.0
Total Lost Time (s)				5.0	5.0	5.0		5.0			5.0	5.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)				3.0	3.0	3.0		3.0			3.0	3.0
Recall Mode				None	None	None		C-Min			C-Min	C-Min
Act Effect Green (s)				21.7	21.7	21.7		78.3	110.0		78.3	78.3



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio				0.20	0.20	0.20		0.71	1.00		0.71	0.71
v/c Ratio				0.61	0.58	0.48		0.43	0.30		0.32	0.30
Control Delay				46.7	36.0	18.6		8.1	0.5		7.1	1.5
Queue Delay				0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Delay				46.7	36.0	18.6		8.1	0.5		7.1	1.5
LOS				D	D	B		A	A		A	A
Approach Delay					34.1			5.8			5.3	
Approach LOS					C			A			A	
Queue Length 50th (ft)				140	107	46		151	0		98	0
Queue Length 95th (ft)				197	171	106		255	0		170	34
Internal Link Dist (ft)		1653			1612			1065			259	
Turn Bay Length (ft)									250			
Base Capacity (vph)				446	439	484		2590	1603		2590	1266
Starvation Cap Reductn				0	0	0		0	0		0	0
Spillback Cap Reductn				0	0	0		0	0		0	0
Storage Cap Reductn				0	0	0		0	0		0	0
Reduced v/c Ratio				0.46	0.45	0.39		0.43	0.30		0.31	0.30

Intersection Summary

Area Type:	Other
Cycle Length:	110
Actuated Cycle Length:	110
Offset:	0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle:	85
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.61
Intersection Signal Delay:	10.6
Intersection LOS:	B
Intersection Capacity Utilization:	51.0%
ICU Level of Service:	A
Analysis Period (min):	15
Description:	Alternative 3

Splits and Phases: 3: Redlands Boulevard & SR-60 WB

Ø2 (R) 77 s	Ø4 33 s
Ø6 (R) 77 s	

Arco AM/PM Service Station  
3: Redlands Boulevard & SR-60 WB

GPBO (2040) With Project (PM Peak Hour)  
Alternative 3



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↙	↔	↗		↑↑	↗		↑↑	↗
Traffic Volume (veh/h)	0	0	0	290	0	280	0	1065	462	0	778	367
Future Volume (veh/h)	0	0	0	290	0	280	0	1065	462	0	778	367
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				393	0	195	0	1109	481	0	810	382
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				546	0	243	0	2738	1464	0	2738	1221
Arrive On Green				0.15	0.00	0.15	0.00	0.76	0.76	0.00	0.76	0.76
Sat Flow, veh/h				3619	0	1610	0	3705	1610	0	3705	1610
Grp Volume(v), veh/h				393	0	195	0	1109	481	0	810	382
Grp Sat Flow(s),veh/h/ln				1810	0	1610	0	1805	1610	0	1805	1610
Q Serve(g_s), s				11.4	0.0	12.9	0.0	11.8	4.3	0.0	7.7	8.3
Cycle Q Clear(g_c), s				11.4	0.0	12.9	0.0	11.8	4.3	0.0	7.7	8.3
Prop In Lane				1.00		1.00	0.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h				546	0	243	0	2738	1464	0	2738	1221
V/C Ratio(X)				0.72	0.00	0.80	0.00	0.41	0.33	0.00	0.30	0.31
Avail Cap(c_a), veh/h				921	0	410	0	2738	1464	0	2738	1221
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	0.82	0.82	0.00	1.00	1.00
Uniform Delay (d), s/veh				44.5	0.0	45.1	0.0	4.6	0.6	0.0	4.1	4.2
Incr Delay (d2), s/veh				1.8	0.0	6.1	0.0	0.4	0.5	0.0	0.3	0.7
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				5.1	0.0	5.4	0.0	3.0	2.7	0.0	2.0	2.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				46.3	0.0	51.3	0.0	5.0	1.1	0.0	4.4	4.9
LnGrp LOS				D	A	D	A	A	A	A	A	A
Approach Vol, veh/h					588			1590			1192	
Approach Delay, s/veh					47.9			3.8			4.6	
Approach LOS					D			A			A	
Timer - Assigned Phs		2		4		6						
Phs Duration (G+Y+Rc), s		88.4		21.6		88.4						
Change Period (Y+Rc), s		5.0		5.0		5.0						
Max Green Setting (Gmax), s		72.0		28.0		72.0						
Max Q Clear Time (g_c+I1), s		13.8		14.9		10.3						
Green Ext Time (p_c), s		12.3		1.7		7.6						

Intersection Summary

HCM 6th Ctrl Delay	11.8
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

Arco AM/PM Service Station  
4: Redlands Boulevard & SR-60 EB

GPBO (2040) With Project (PM Peak Hour)  
Alternative 3



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	570	0	454	0	0	0	0	918	940	0	722	453
Future Volume (vph)	570	0	454	0	0	0	0	918	940	0	722	453
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.91	0.95	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Fr <sub>t</sub>		0.942	0.850						0.850			0.850
Fl <sub>t</sub> Protected	0.950	0.970										
Satd. Flow (prot)	1715	1580	1534	0	0	0	0	3610	1615	0	3610	1615
Fl <sub>t</sub> Permitted	0.950	0.970										
Satd. Flow (perm)	1715	1580	1534	0	0	0	0	3610	1615	0	3610	1615
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		30	173						1033			
Link Speed (mph)		45			45			50				50
Link Distance (ft)		1655			1667			819				1145
Travel Time (s)		25.1			25.3			11.2				15.6
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	626	0	499	0	0	0	0	1009	1033	0	793	498
Shared Lane Traffic (%)	37%		29%									
Lane Group Flow (vph)	394	377	354	0	0	0	0	1009	1033	0	793	498
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0				0
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	20		10	20		10	20		10	20		10
Turn Type	Split	NA	Perm					NA	Perm		NA	pt+ov
Protected Phases	8	8						2			6	6 8
Permitted Phases			8						2			
Detector Phase	8	8	8					2	2		6	6 8
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0					7.0	7.0		7.0	
Minimum Split (s)	12.0	12.0	12.0					20.0	20.0		20.0	
Total Split (s)	45.0	45.0	45.0					70.0	70.0		70.0	
Total Split (%)	39.1%	39.1%	39.1%					60.9%	60.9%		60.9%	
Maximum Green (s)	40.0	40.0	40.0					65.0	65.0		65.0	
Yellow Time (s)	4.0	4.0	4.0					4.0	4.0		4.0	
All-Red Time (s)	1.0	1.0	1.0					1.0	1.0		1.0	
Lost Time Adjust (s)	0.0	0.0	0.0					0.0	0.0		0.0	
Total Lost Time (s)	5.0	5.0	5.0					5.0	5.0		5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0					3.0	3.0		3.0	
Recall Mode	None	None	None					C-Min	C-Min		C-Min	
Act Effct Green (s)	36.0	36.0	36.0					69.0	69.0		69.0	115.0
Actuated g/C Ratio	0.31	0.31	0.31					0.60	0.60		0.60	1.00
v/c Ratio	0.74	0.73	0.59					0.47	0.75		0.37	0.31
Control Delay	43.3	40.6	19.7					14.5	4.8		13.2	0.5





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Delay	0.0	0.0	0.0					0.0	0.0		0.0	0.0
Total Delay	43.3	40.6	19.7					14.5	4.8		13.2	0.5
LOS	D	D	B					B	A		B	A
Approach Delay		35.0						9.6			8.3	
Approach LOS		C						A			A	
Queue Length 50th (ft)	264	243	111					216	0		156	0
Queue Length 95th (ft)	375	360	208					279	55		206	0
Internal Link Dist (ft)		1575			1587			739			1065	
Turn Bay Length (ft)												
Base Capacity (vph)	608	580	655					2191	1386		2191	1603
Starvation Cap Reductn	0	0	0					0	7		0	0
Spillback Cap Reductn	0	0	0					0	0		0	0
Storage Cap Reductn	0	0	0					0	0		0	0
Reduced v/c Ratio	0.65	0.65	0.54					0.46	0.75		0.36	0.31

**Intersection Summary**

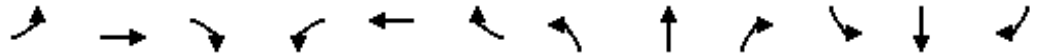
Area Type: Other  
 Cycle Length: 115  
 Actuated Cycle Length: 115  
 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green  
 Natural Cycle: 45  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.75  
 Intersection Signal Delay: 15.7  
 Intersection Capacity Utilization 88.6%  
 Analysis Period (min) 15  
 Description: Alternative 3

Splits and Phases: 4: Redlands Boulevard & SR-60 EB



Arco AM/PM Service Station  
4: Redlands Boulevard & SR-60 EB

GPBO (2040) With Project (PM Peak Hour)  
Alternative 3



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	570	0	454	0	0	0	0	918	940	0	722	453
Future Volume (veh/h)	570	0	454	0	0	0	0	918	940	0	722	453
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	781	0	333				0	1009	1033	0	793	498
Peak Hour Factor	0.91	0.91	0.91				0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	0	0				0	0	0	0	0	0
Cap, veh/h	922	0	410				0	2377	1060	0	2377	1470
Arrive On Green	0.25	0.00	0.25				0.00	0.66	0.66	0.00	0.66	0.66
Sat Flow, veh/h	3619	0	1610				0	3705	1610	0	3705	1610
Grp Volume(v), veh/h	781	0	333				0	1009	1033	0	793	498
Grp Sat Flow(s),veh/h/ln	1810	0	1610				0	1805	1610	0	1805	1610
Q Serve(g_s), s	23.6	0.0	22.3				0.0	15.2	70.3	0.0	11.1	4.5
Cycle Q Clear(g_c), s	23.6	0.0	22.3				0.0	15.2	70.3	0.0	11.1	4.5
Prop In Lane	1.00		1.00				0.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h	922	0	410				0	2377	1060	0	2377	1470
V/C Ratio(X)	0.85	0.00	0.81				0.00	0.42	0.97	0.00	0.33	0.34
Avail Cap(c_a), veh/h	1259	0	560				0	2377	1060	0	2377	1470
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	0.09	0.09	0.00	0.93	0.93
Uniform Delay (d), s/veh	40.7	0.0	40.3				0.0	9.3	18.7	0.0	8.6	0.6
Incr Delay (d2), s/veh	4.1	0.0	6.4				0.0	0.1	4.2	0.0	0.4	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	10.6	0.0	9.2				0.0	5.0	21.8	0.0	3.7	5.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	44.9	0.0	46.7				0.0	9.4	23.0	0.0	9.0	1.2
LnGrp LOS	D	A	D				A	A	C	A	A	A
Approach Vol, veh/h		1114						2042			1291	
Approach Delay, s/veh		45.4						16.2			6.0	
Approach LOS		D						B			A	
Timer - Assigned Phs		2				6		8				
Phs Duration (G+Y+Rc), s		80.7				80.7		34.3				
Change Period (Y+Rc), s		5.0				5.0		5.0				
Max Green Setting (Gmax), s		65.0				65.0		40.0				
Max Q Clear Time (g_c+I1), s		72.3				13.1		25.6				
Green Ext Time (p_c), s		0.0				8.2		3.7				

Intersection Summary

HCM 6th Ctrl Delay	20.6
HCM 6th LOS	C

Notes

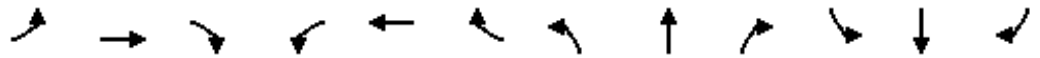
User approved volume balancing among the lanes for turning movement.

**GENERAL PLAN BUILDOUT WITHOUT PROJECT – ALTERNATIVE 1**

**WITH IMPROVEMENTS**

Arco AM/PM Service Station  
2: Redlands Boulevard & Hemlock Avenue

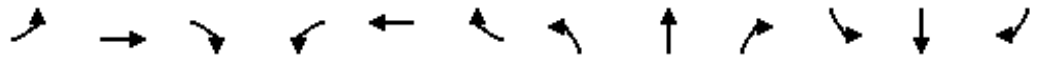
GPBO (2040) Without Project (AM Peak Hour)  
With Improvements



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	30	36	50	50	36	30	153	770	100	150	758	100
Future Volume (vph)	30	36	50	50	36	30	153	770	100	150	758	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Fr <sub>t</sub>		0.913			0.931			0.983			0.982	
Fl <sub>t</sub> Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	1735	0	1805	1769	0	1805	3549	0	1805	3545	0
Fl <sub>t</sub> Permitted	0.710			0.697			0.950			0.950		
Satd. Flow (perm)	1349	1735	0	1324	1769	0	1805	3549	0	1805	3545	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		48			30			21			21	
Link Speed (mph)		30			30			50			50	
Link Distance (ft)		503			200			294			546	
Travel Time (s)		11.4			4.5			4.0			7.4	
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
Adj. Flow (vph)	33	39	54	54	39	33	166	837	109	163	824	109
Shared Lane Traffic (%)												
Lane Group Flow (vph)	33	93	0	54	72	0	166	946	0	163	933	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		8			8			8			8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	20		10	20		10	20		10	20		10
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Detector Phase	4	4		8	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	22.0	22.0		22.0	22.0		15.7	22.7		15.0	30.0	
Total Split (s)	22.0	22.0		22.0	22.0		21.0	78.0		20.0	77.0	
Total Split (%)	18.3%	18.3%		18.3%	18.3%		17.5%	65.0%		16.7%	64.2%	
Maximum Green (s)	17.0	17.0		17.0	17.0		16.0	73.0		15.0	72.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	Min		None	Min	
Walk Time (s)	7.0	7.0		7.0	7.0						7.0	
Flash Dont Walk (s)	10.0	10.0		10.0	10.0						18.0	
Pedestrian Calls (#/hr)	0	0		0	0						0	
Act Effct Green (s)	10.9	10.9		10.9	10.9		12.3	23.9		12.2	23.8	

Arco AM/PM Service Station  
2: Redlands Boulevard & Hemlock Avenue

GPBO (2040) Without Project (AM Peak Hour)  
With Improvements



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio	0.19	0.19		0.19	0.19		0.21	0.41		0.21	0.41	
v/c Ratio	0.13	0.26		0.22	0.20		0.43	0.64		0.43	0.64	
Control Delay	26.4	16.8		27.6	18.5		27.4	16.5		27.5	16.6	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	26.4	16.8		27.6	18.5		27.4	16.5		27.5	16.6	
LOS	C	B		C	B		C	B		C	B	
Approach Delay		19.3			22.4			18.2			18.2	
Approach LOS		B			C			B			B	
Queue Length 50th (ft)	10	14		17	13		54	138		53	135	
Queue Length 95th (ft)	38	58		54	52		122	221		123	223	
Internal Link Dist (ft)		423			120			214			466	
Turn Bay Length (ft)												
Base Capacity (vph)	419	571		411	570		527	3533		494	3519	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.08	0.16		0.13	0.13		0.31	0.27		0.33	0.27	

Intersection Summary

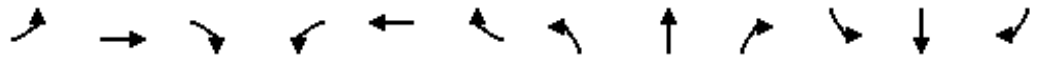
Area Type:	Other
Cycle Length:	120
Actuated Cycle Length:	58.1
Natural Cycle:	70
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.64
Intersection Signal Delay:	18.5
Intersection LOS:	B
Intersection Capacity Utilization:	60.2%
ICU Level of Service:	B
Analysis Period (min):	15

Splits and Phases: 2: Redlands Boulevard & Hemlock Avenue



Arco AM/PM Service Station  
2: Redlands Boulevard & Hemlock Avenue





















GPBO (2040) Without Project (AM Peak Hour)  
With Improvements



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↕	↗	↖	↕	↗
Traffic Volume (veh/h)	30	36	50	50	36	30	153	770	100	150	758	100
Future Volume (veh/h)	30	36	50	50	36	30	153	770	100	150	758	100
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	33	39	54	54	39	33	166	837	109	163	824	109
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	329	130	180	310	172	145	307	1199	156	306	1194	158
Arrive On Green	0.18	0.18	0.18	0.18	0.18	0.18	0.17	0.37	0.37	0.17	0.37	0.37
Sat Flow, veh/h	1349	721	999	1324	951	804	1810	3212	418	1810	3205	424
Grp Volume(v), veh/h	33	0	93	54	0	72	166	470	476	163	464	469
Grp Sat Flow(s),veh/h/ln	1349	0	1720	1324	0	1755	1810	1805	1825	1810	1805	1824
Q Serve(g_s), s	1.2	0.0	2.5	2.0	0.0	1.9	4.5	12.0	12.0	4.5	11.7	11.8
Cycle Q Clear(g_c), s	3.1	0.0	2.5	4.5	0.0	1.9	4.5	12.0	12.0	4.5	11.7	11.8
Prop In Lane	1.00		0.58	1.00		0.46	1.00		0.23	1.00		0.23
Lane Grp Cap(c), veh/h	329	0	311	310	0	317	307	674	681	306	673	680
V/C Ratio(X)	0.10	0.00	0.30	0.17	0.00	0.23	0.54	0.70	0.70	0.53	0.69	0.69
Avail Cap(c_a), veh/h	510	0	540	487	0	551	535	2435	2462	502	2402	2427
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	20.2	0.0	19.2	21.2	0.0	18.9	20.5	14.4	14.4	20.5	14.3	14.3
Incr Delay (d2), s/veh	0.1	0.0	0.5	0.3	0.0	0.4	1.5	1.3	1.3	1.4	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	0.3	0.0	1.0	0.6	0.0	0.7	1.7	3.8	3.9	1.7	3.8	3.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	20.4	0.0	19.7	21.4	0.0	19.3	22.0	15.7	15.7	22.0	15.6	15.6
LnGrp LOS	C	A	B	C	A	B	C	B	B	C	B	B
Approach Vol, veh/h		126			126			1112			1096	
Approach Delay, s/veh		19.9			20.2			16.6			16.6	
Approach LOS		B			C			B			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	14.1	25.2		14.8	14.2	25.2		14.8				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0				
Max Green Setting (Gmax), s	15.0	73.0		17.0	16.0	72.0		17.0				
Max Q Clear Time (g_c+I1), s	6.5	14.0		5.1	6.5	13.8		6.5				
Green Ext Time (p_c), s	0.2	6.2		0.4	0.3	6.1		0.3				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				16.9								
HCM 6th LOS				B								

Arco AM/PM Service Station  
4: Redlands Boulevard & SR-60 EB

GPBO (2040) Without Project (AM Peak Hour)  
Alternative 1 With Improvements

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	285	0	269	0	0	0	0	779	220	180	840	0
Future Volume (vph)	285	0	269	0	0	0	0	779	220	180	840	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.91	0.95	1.00	1.00	1.00	1.00	0.95	0.88	0.97	0.95	1.00
Fr <sub>t</sub>		0.926	0.850						0.850			
Fl <sub>t</sub> Protected	0.950	0.975								0.950		
Satd. Flow (prot)	1715	1561	1534	0	0	0	0	3610	2842	3502	3610	0
Fl <sub>t</sub> Permitted	0.950	0.975								0.950		
Satd. Flow (perm)	1715	1561	1534	0	0	0	0	3610	2842	3502	3610	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		109	162						239			
Link Speed (mph)		45			45			50			50	
Link Distance (ft)		1655			1667			819			1145	
Travel Time (s)		25.1			25.3			11.2			15.6	
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
Adj. Flow (vph)	310	0	292	0	0	0	0	847	239	196	913	0
Shared Lane Traffic (%)	33%		34%									
Lane Group Flow (vph)	208	201	193	0	0	0	0	847	239	196	913	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		8			8			8			8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	20		10	20		10	20		10	20		10
Turn Type	Perm	NA	Perm					NA	Perm	Prot	NA	
Protected Phases		8						2		1	6	
Permitted Phases	8		8						2			
Detector Phase	8	8	8					2	2	1	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0					7.0	7.0	7.0	7.0	
Minimum Split (s)	12.0	12.0	12.0					23.2	23.2	13.2	23.2	
Total Split (s)	21.0	21.0	21.0					35.0	35.0	14.0	49.0	
Total Split (%)	30.0%	30.0%	30.0%					50.0%	50.0%	20.0%	70.0%	
Maximum Green (s)	16.0	16.0	16.0					30.0	30.0	9.0	44.0	
Yellow Time (s)	4.0	4.0	4.0					4.0	4.0	4.0	4.0	
All-Red Time (s)	1.0	1.0	1.0					1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0					0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0					5.0	5.0	5.0	5.0	
Lead/Lag								Lag	Lag	Lead		
Lead-Lag Optimize?								Yes	Yes	Yes		
Vehicle Extension (s)	3.0	3.0	3.0					3.0	3.0	3.0	3.0	
Recall Mode	None	None	None					C-Min	C-Min	None	C-Min	
Act Effct Green (s)	13.5	13.5	13.5					32.7	32.7	8.7	46.5	
Actuated g/C Ratio	0.19	0.19	0.19					0.47	0.47	0.12	0.66	
v/c Ratio	0.63	0.52	0.45					0.50	0.16	0.45	0.38	
Control Delay	34.2	16.6	9.8					15.1	2.3	31.7	6.3	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Delay	0.0	0.0	0.0					0.0	0.0	0.0	0.0	
Total Delay	34.2	16.6	9.8					15.1	2.3	31.7	6.3	
LOS	C	B	A					B	A	C	A	
Approach Delay		20.5						12.3			10.8	
Approach LOS		C						B			B	
Queue Length 50th (ft)	85	37	11					132	0	40	82	
Queue Length 95th (ft)	148	96	62					189	19	70	122	
Internal Link Dist (ft)		1575			1587			739			1065	
Turn Bay Length (ft)												
Base Capacity (vph)	398	445	480					1714	1474	464	2409	
Starvation Cap Reductn	0	0	0					0	0	0	0	
Spillback Cap Reductn	0	0	0					0	0	0	0	
Storage Cap Reductn	0	0	0					0	0	0	0	
Reduced v/c Ratio	0.52	0.45	0.40					0.49	0.16	0.42	0.38	

**Intersection Summary**

Area Type: Other  
 Cycle Length: 70  
 Actuated Cycle Length: 70  
 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green  
 Natural Cycle: 50  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.63  
 Intersection Signal Delay: 13.5  
 Intersection Capacity Utilization 54.2%  
 Analysis Period (min) 15  
 Description: Alternative 1

**Splits and Phases: 4: Redlands Boulevard & SR-60 EB**





Arco AM/PM Service Station  
4: Redlands Boulevard & SR-60 EB

GPBO (2040) Without Project (AM Peak Hour)  
Alternative 1 With Improvements

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	285	0	269	0	0	0	0	779	220	180	840	0
Future Volume (veh/h)	285	0	269	0	0	0	0	779	220	180	840	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900				0	1900	1900	1900	1900	0
Adj Flow Rate, veh/h	401	0	195				0	847	239	196	913	0
Peak Hour Factor	0.92	0.92	0.92				0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0				0	0	0	0	0	0
Cap, veh/h	582	0	259				0	1903	1494	343	2514	0
Arrive On Green	0.16	0.00	0.16				0.00	0.53	0.53	0.10	0.70	0.00
Sat Flow, veh/h	3619	0	1610				0	3705	2834	3510	3705	0
Grp Volume(v), veh/h	401	0	195				0	847	239	196	913	0
Grp Sat Flow(s),veh/h/ln	1810	0	1610				0	1805	1417	1755	1805	0
Q Serve(g_s), s	7.3	0.0	8.1				0.0	10.1	3.0	3.7	7.2	0.0
Cycle Q Clear(g_c), s	7.3	0.0	8.1				0.0	10.1	3.0	3.7	7.2	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	582	0	259				0	1903	1494	343	2514	0
V/C Ratio(X)	0.69	0.00	0.75				0.00	0.45	0.16	0.57	0.36	0.00
Avail Cap(c_a), veh/h	827	0	368				0	1903	1494	451	2514	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	0.91	0.91	0.79	0.79	0.00
Uniform Delay (d), s/veh	27.7	0.0	28.1				0.0	10.2	8.5	30.2	4.3	0.0
Incr Delay (d2), s/veh	1.5	0.0	5.3				0.0	0.7	0.2	1.2	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.0	0.0	3.2				0.0	3.2	0.7	1.5	1.4	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	29.2	0.0	33.4				0.0	10.9	8.8	31.4	4.6	0.0
LnGrp LOS	C	A	C				A	B	A	C	A	A
Approach Vol, veh/h		596						1086			1109	
Approach Delay, s/veh		30.6						10.4			9.4	
Approach LOS		C						B			A	
Timer - Assigned Phs	1	2				6		8				
Phs Duration (G+Y+Rc), s	11.8	41.9				53.8		16.2				
Change Period (Y+Rc), s	5.0	5.0				5.0		5.0				
Max Green Setting (Gmax), s	9.0	30.0				44.0		16.0				
Max Q Clear Time (g_c+I1), s	5.7	12.1				9.2		10.1				
Green Ext Time (p_c), s	0.2	5.9				6.5		1.2				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay			14.3									
HCM 6th LOS			B									
<b>Notes</b>												
User approved volume balancing among the lanes for turning movement.												



Arco AM/PM Service Station  
2: Redlands Boulevard & Hemlock Avenue

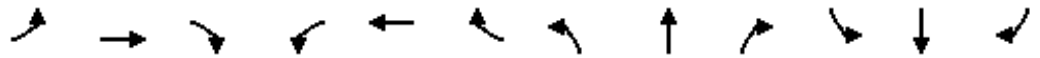
GPBO (2040) Without Project (PM Peak Hour)  
With Improvements



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	110	87	160	160	87	110	96	965	50	80	977	54
Future Volume (vph)	110	87	160	160	87	110	96	965	50	80	977	54
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Fr <sub>t</sub>		0.903			0.916			0.993			0.992	
Fl <sub>t</sub> Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	1716	0	1805	1740	0	1805	3585	0	1805	3581	0
Fl <sub>t</sub> Permitted	0.553			0.475			0.950			0.950		
Satd. Flow (perm)	1051	1716	0	902	1740	0	1805	3585	0	1805	3581	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		72			49			7			8	
Link Speed (mph)		30			30			50			50	
Link Distance (ft)		503			253			294			546	
Travel Time (s)		11.4			5.8			4.0			7.4	
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
Adj. Flow (vph)	120	95	174	174	95	120	104	1049	54	87	1062	59
Shared Lane Traffic (%)												
Lane Group Flow (vph)	120	269	0	174	215	0	104	1103	0	87	1121	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		8			8			8			8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	20		10	20		10	20		10	20		10
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Detector Phase	4	4		8	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	22.0	22.0		22.0	22.0		15.0	22.7		15.0	30.0	
Total Split (s)	33.0	33.0		33.0	33.0		15.0	72.0		15.0	72.0	
Total Split (%)	27.5%	27.5%		27.5%	27.5%		12.5%	60.0%		12.5%	60.0%	
Maximum Green (s)	28.0	28.0		28.0	28.0		10.0	67.0		10.0	67.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	Min		None	Min	
Walk Time (s)	7.0	7.0		7.0	7.0						7.0	
Flash Dont Walk (s)	10.0	10.0		10.0	10.0						18.0	
Pedestrian Calls (#/hr)	0	0		0	0						0	
Act Effect Green (s)	28.2	28.2		28.2	28.2		10.1	37.7		10.1	34.4	

Arco AM/PM Service Station  
2: Redlands Boulevard & Hemlock Avenue

GPBO (2040) Without Project (PM Peak Hour)  
With Improvements

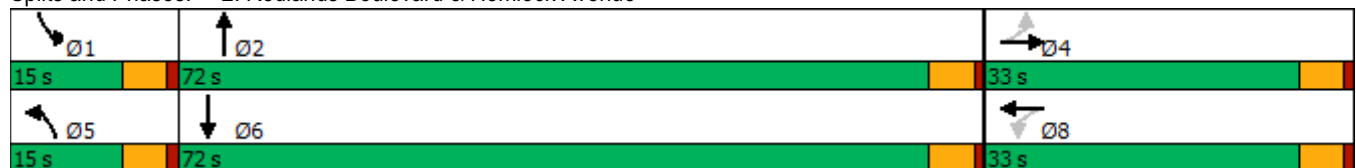


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio	0.32	0.32		0.32	0.32		0.12	0.43		0.12	0.39	
v/c Ratio	0.36	0.45		0.60	0.36		0.50	0.71		0.42	0.80	
Control Delay	28.7	21.1		37.6	21.0		47.8	24.2		45.2	27.9	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	28.7	21.1		37.6	21.0		47.8	24.2		45.2	27.9	
LOS	C	C		D	C		D	C		D	C	
Approach Delay		23.5			28.4			26.2			29.1	
Approach LOS		C			C			C			C	
Queue Length 50th (ft)	50	84		80	68		55	272		45	277	
Queue Length 95th (ft)	114	179		#191	149		#118	344		101	352	
Internal Link Dist (ft)		423			173			214			466	
Turn Bay Length (ft)												
Base Capacity (vph)	337	599		289	592		206	2755		206	2753	
Starvation Cap Reductn	0	0		0	0		0	6		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.36	0.45		0.60	0.36		0.50	0.40		0.42	0.41	

Intersection Summary

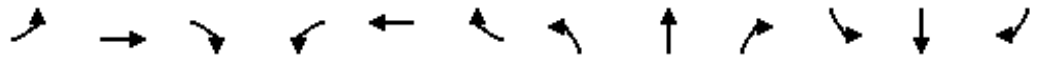
Area Type:	Other
Cycle Length:	120
Actuated Cycle Length:	87.7
Natural Cycle:	70
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.80
Intersection Signal Delay:	27.2
Intersection LOS:	C
Intersection Capacity Utilization:	83.1%
ICU Level of Service:	E
Analysis Period (min):	15
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

Splits and Phases: 2: Redlands Boulevard & Hemlock Avenue



Arco AM/PM Service Station  
2: Redlands Boulevard & Hemlock Avenue





















GPBO (2040) Without Project (PM Peak Hour)  
With Improvements

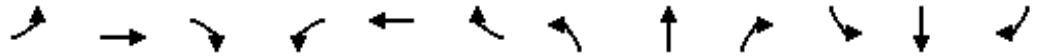


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	110	87	160	160	87	110	96	965	50	80	977	54
Future Volume (veh/h)	110	87	160	160	87	110	96	965	50	80	977	54
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	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	120	95	174	174	95	120	104	1049	54	87	1062	59
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	343	187	343	295	238	300	203	1383	71	192	1357	75
Arrive On Green	0.31	0.31	0.31	0.31	0.31	0.31	0.11	0.40	0.40	0.11	0.39	0.39
Sat Flow, veh/h	1185	601	1101	1128	763	964	1810	3493	180	1810	3477	193
Grp Volume(v), veh/h	120	0	269	174	0	215	104	542	561	87	551	570
Grp Sat Flow(s),veh/h/ln	1185	0	1702	1128	0	1727	1810	1805	1868	1810	1805	1865
Q Serve(g_s), s	7.1	0.0	10.4	12.0	0.0	7.9	4.4	20.9	20.9	3.6	21.6	21.6
Cycle Q Clear(g_c), s	15.0	0.0	10.4	22.4	0.0	7.9	4.4	20.9	20.9	3.6	21.6	21.6
Prop In Lane	1.00		0.65	1.00		0.56	1.00		0.10	1.00		0.10
Lane Grp Cap(c), veh/h	343	0	530	295	0	538	203	715	739	192	705	728
V/C Ratio(X)	0.35	0.00	0.51	0.59	0.00	0.40	0.51	0.76	0.76	0.45	0.78	0.78
Avail Cap(c_a), veh/h	385	0	591	335	0	600	224	1500	1552	224	1500	1550
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	27.7	0.0	22.7	31.9	0.0	21.8	33.7	21.0	21.0	33.8	21.6	21.6
Incr Delay (d2), s/veh	0.6	0.0	0.8	2.1	0.0	0.5	2.0	1.7	1.6	1.7	1.9	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	2.0	0.0	4.1	3.4	0.0	3.1	1.9	7.9	8.2	1.6	8.2	8.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	28.3	0.0	23.4	34.0	0.0	22.3	35.7	22.7	22.7	35.5	23.5	23.5
LnGrp LOS	C	A	C	C	A	C	D	C	C	D	C	C
Approach Vol, veh/h		389			389			1207			1208	
Approach Delay, s/veh		25.0			27.5			23.8			24.4	
Approach LOS		C			C			C			C	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	13.6	36.9		30.1	14.0	36.5		30.1				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0				
Max Green Setting (Gmax), s	10.0	67.0		28.0	10.0	67.0		28.0				
Max Q Clear Time (g_c+I1), s	5.6	22.9		17.0	6.4	23.6		24.4				
Green Ext Time (p_c), s	0.1	7.7		1.6	0.1	7.9		0.7				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				24.6								
HCM 6th LOS				C								

Arco AM/PM Service Station  
4: Redlands Boulevard & SR-60 EB

GPBO (2040) Without Project (PM Peak Hour)  
With Improvements

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	557	0	454	0	0	0	0	903	940	440	707	0
Future Volume (vph)	557	0	454	0	0	0	0	903	940	440	707	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.91	0.95	1.00	1.00	1.00	1.00	0.95	0.88	0.97	0.95	1.00
Fr <sub>t</sub>		0.940	0.850						0.850			
Fl <sub>t</sub> Protected	0.950	0.971								0.950		
Satd. Flow (prot)	1715	1578	1534	0	0	0	0	3610	2842	3502	3610	0
Fl <sub>t</sub> Permitted	0.950	0.971								0.950		
Satd. Flow (perm)	1715	1578	1534	0	0	0	0	3610	2842	3502	3610	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		85	174						1033			
Link Speed (mph)		45			45			50			50	
Link Distance (ft)		1655			1667			819			1145	
Travel Time (s)		25.1			25.3			11.2			15.6	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	612	0	499	0	0	0	0	992	1033	484	777	0
Shared Lane Traffic (%)	37%		30%									
Lane Group Flow (vph)	386	376	349	0	0	0	0	992	1033	484	777	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		8			8			8			8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	20		10	20		10	20		10	20		10
Turn Type	Perm	NA	Perm					NA	Perm	Prot	NA	
Protected Phases		8						2		1	6	
Permitted Phases	8		8						2			
Detector Phase	8	8	8					2	2	1	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0					7.0	7.0	7.0	7.0	
Minimum Split (s)	12.0	12.0	12.0					23.2	23.2	13.2	23.2	
Total Split (s)	35.0	35.0	35.0					35.0	35.0	20.0	55.0	
Total Split (%)	38.9%	38.9%	38.9%					38.9%	38.9%	22.2%	61.1%	
Maximum Green (s)	30.0	30.0	30.0					30.0	30.0	15.0	50.0	
Yellow Time (s)	4.0	4.0	4.0					4.0	4.0	4.0	4.0	
All-Red Time (s)	1.0	1.0	1.0					1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0					0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0					5.0	5.0	5.0	5.0	
Lead/Lag								Lag	Lag	Lead		
Lead-Lag Optimize?								Yes	Yes	Yes		
Vehicle Extension (s)	3.0	3.0	3.0					3.0	3.0	3.0	3.0	
Recall Mode	None	None	None					C-Min	C-Min	None	C-Min	
Act Effct Green (s)	26.0	26.0	26.0					33.7	33.7	15.3	54.0	
Actuated g/C Ratio	0.29	0.29	0.29					0.37	0.37	0.17	0.60	
v/c Ratio	0.78	0.73	0.62					0.73	0.60	0.81	0.36	
Control Delay	40.5	30.3	17.7					29.5	3.2	48.4	10.4	

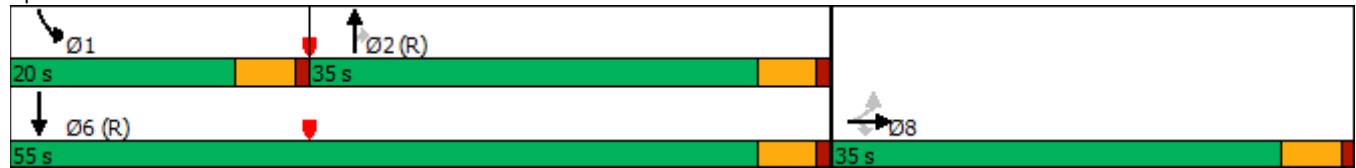


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Delay	0.0	0.0	0.0					0.0	0.0	0.0	0.0	
Total Delay	40.5	30.3	17.7					29.5	3.2	48.4	10.4	
LOS	D	C	B					C	A	D	B	
Approach Delay		29.9						16.1			25.0	
Approach LOS		C						B			C	
Queue Length 50th (ft)	203	157	82					270	0	135	117	
Queue Length 95th (ft)	304	261	171					350	44	#215	162	
Internal Link Dist (ft)		1575			1587			739			1065	
Turn Bay Length (ft)												
Base Capacity (vph)	571	582	627					1350	1710	606	2165	
Starvation Cap Reductn	0	0	0					0	0	0	0	
Spillback Cap Reductn	0	0	0					0	0	0	0	
Storage Cap Reductn	0	0	0					0	0	0	0	
Reduced v/c Ratio	0.68	0.65	0.56					0.73	0.60	0.80	0.36	

**Intersection Summary**

Area Type: Other  
 Cycle Length: 90  
 Actuated Cycle Length: 90  
 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green  
 Natural Cycle: 65  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.81  
 Intersection Signal Delay: 22.1  
 Intersection Capacity Utilization 80.5%  
 Analysis Period (min) 15  
 Description: Alternative 1  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

**Splits and Phases: 4: Redlands Boulevard & SR-60 EB**



Arco AM/PM Service Station  
4: Redlands Boulevard & SR-60 EB

GPBO (2040) Without Project (PM Peak Hour)  
With Improvements

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	557	0	454	0	0	0	0	903	940	440	707	0
Future Volume (veh/h)	557	0	454	0	0	0	0	903	940	440	707	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900				0	1900	1900	1900	1900	0
Adj Flow Rate, veh/h	767	0	333				0	992	1033	484	777	0
Peak Hour Factor	0.91	0.91	0.91				0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	0	0				0	0	0	0	0	0
Cap, veh/h	929	0	413				0	1508	1184	558	2282	0
Arrive On Green	0.26	0.00	0.26				0.00	0.42	0.42	0.16	0.63	0.00
Sat Flow, veh/h	3619	0	1610				0	3705	2834	3510	3705	0
Grp Volume(v), veh/h	767	0	333				0	992	1033	484	777	0
Grp Sat Flow(s),veh/h/ln	1810	0	1610				0	1805	1417	1755	1805	0
Q Serve(g_s), s	18.0	0.0	17.4				0.0	19.9	30.1	12.1	9.1	0.0
Cycle Q Clear(g_c), s	18.0	0.0	17.4				0.0	19.9	30.1	12.1	9.1	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	929	0	413				0	1508	1184	558	2282	0
V/C Ratio(X)	0.83	0.00	0.81				0.00	0.66	0.87	0.87	0.34	0.00
Avail Cap(c_a), veh/h	1206	0	537				0	1508	1184	585	2282	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	0.67	0.67	0.90	0.90	0.00
Uniform Delay (d), s/veh	31.6	0.0	31.3				0.0	21.0	24.0	36.9	7.8	0.0
Incr Delay (d2), s/veh	3.8	0.0	6.8				0.0	1.5	6.3	11.6	0.4	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	7.8	0.0	7.1				0.0	7.7	9.8	5.7	2.8	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	35.3	0.0	38.1				0.0	22.5	30.3	48.6	8.1	0.0
LnGrp LOS	D	A	D				A	C	C	D	A	A
Approach Vol, veh/h		1100						2025			1261	
Approach Delay, s/veh		36.2						26.5			23.7	
Approach LOS		D						C			C	
Timer - Assigned Phs	1	2				6		8				
Phs Duration (G+Y+Rc), s	19.3	42.6				61.9		28.1				
Change Period (Y+Rc), s	5.0	5.0				5.0		5.0				
Max Green Setting (Gmax), s	15.0	30.0				50.0		30.0				
Max Q Clear Time (g_c+I1), s	14.1	32.1				11.1		20.0				
Green Ext Time (p_c), s	0.2	0.0				5.3		3.1				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay			28.1									
HCM 6th LOS			C									
<b>Notes</b>												
User approved volume balancing among the lanes for turning movement.												



**GENERAL PLAN BUILDOUT WITH PROJECT – ALTERNATIVE 1**

**WITH IMPROVEMENTS**

Arco AM/PM Service Station  
2: Redlands Boulevard & Hemlock Avenue

GPBO (2040) With Project (AM Peak Hour)  
With Improvements



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	50	36	70	50	36	30	235	770	100	150	778	100
Future Volume (vph)	50	36	70	50	36	30	235	770	100	150	778	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Fr <sub>t</sub>		0.901			0.931			0.983			0.983	
Fl <sub>t</sub> Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	1712	0	1805	1769	0	1805	3549	0	1805	3549	0
Fl <sub>t</sub> Permitted	0.710			0.683			0.950			0.950		
Satd. Flow (perm)	1349	1712	0	1298	1769	0	1805	3549	0	1805	3549	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		68			30			22			19	
Link Speed (mph)		30			30			50			50	
Link Distance (ft)		503			205			294			546	
Travel Time (s)		11.4			4.7			4.0			7.4	
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
Adj. Flow (vph)	54	39	76	54	39	33	255	837	109	163	846	109
Shared Lane Traffic (%)												
Lane Group Flow (vph)	54	115	0	54	72	0	255	946	0	163	955	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		8			8			8			8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	20		10	20		10	20		10	20		10
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Detector Phase	4	4		8	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	22.0	22.0		22.0	22.0		15.7	22.7		15.0	30.0	
Total Split (s)	22.0	22.0		22.0	22.0		26.0	79.0		19.0	72.0	
Total Split (%)	18.3%	18.3%		18.3%	18.3%		21.7%	65.8%		15.8%	60.0%	
Maximum Green (s)	17.0	17.0		17.0	17.0		21.0	74.0		14.0	67.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	Min		None	Min	
Walk Time (s)	7.0	7.0		7.0	7.0						7.0	
Flash Dont Walk (s)	10.0	10.0		10.0	10.0						18.0	
Pedestrian Calls (#/hr)	0	0		0	0						0	
Act Effect Green (s)	11.3	11.3		11.3	11.3		16.0	29.7		12.7	26.5	

Arco AM/PM Service Station  
2: Redlands Boulevard & Hemlock Avenue

GPBO (2040) With Project (AM Peak Hour)  
With Improvements



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio	0.17	0.17		0.17	0.17		0.25	0.46		0.20	0.41	
v/c Ratio	0.23	0.32		0.24	0.22		0.57	0.58		0.46	0.65	
Control Delay	31.7	17.5		31.9	21.0		30.1	14.8		32.6	19.0	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	31.7	17.5		31.9	21.0		30.1	14.8		32.6	19.0	
LOS	C	B		C	C		C	B		C	B	
Approach Delay		22.0			25.7			18.1			21.0	
Approach LOS		C			C			B			C	
Queue Length 50th (ft)	20	17		20	15		93	144		60	162	
Queue Length 95th (ft)	60	69		61	57		196	219		144	265	
Internal Link Dist (ft)		423			125			214			466	
Turn Bay Length (ft)												
Base Capacity (vph)	381	533		367	522		630	3457		420	3335	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.14	0.22		0.15	0.14		0.40	0.27		0.39	0.29	

Intersection Summary

Area Type:	Other
Cycle Length:	120
Actuated Cycle Length:	64.8
Natural Cycle:	70
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.65
Intersection Signal Delay:	19.9
Intersection LOS:	B
Intersection Capacity Utilization:	63.5%
ICU Level of Service:	B
Analysis Period (min):	15

Splits and Phases: 2: Redlands Boulevard & Hemlock Avenue



Arco AM/PM Service Station  
2: Redlands Boulevard & Hemlock Avenue

GPBO (2040) With Project (AM Peak Hour)  
With Improvements



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↕	↗	↖	↕	↗
Traffic Volume (veh/h)	50	36	70	50	36	30	235	770	100	150	778	100
Future Volume (veh/h)	50	36	70	50	36	30	235	770	100	150	778	100
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	54	39	76	54	39	33	255	837	109	163	846	109
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	324	103	200	284	170	144	320	1236	161	300	1202	155
Arrive On Green	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.38	0.38	0.17	0.37	0.37
Sat Flow, veh/h	1349	576	1122	1298	951	804	1810	3212	418	1810	3216	414
Grp Volume(v), veh/h	54	0	115	54	0	72	255	470	476	163	475	480
Grp Sat Flow(s),veh/h/ln	1349	0	1698	1298	0	1755	1810	1805	1825	1810	1805	1825
Q Serve(g_s), s	2.0	0.0	3.3	2.1	0.0	1.9	7.5	12.0	12.0	4.6	12.4	12.4
Cycle Q Clear(g_c), s	3.9	0.0	3.3	5.4	0.0	1.9	7.5	12.0	12.0	4.6	12.4	12.4
Prop In Lane	1.00		0.66	1.00		0.46	1.00		0.23	1.00		0.23
Lane Grp Cap(c), veh/h	324	0	303	284	0	313	320	695	702	300	674	682
V/C Ratio(X)	0.17	0.00	0.38	0.19	0.00	0.23	0.80	0.68	0.68	0.54	0.70	0.70
Avail Cap(c_a), veh/h	497	0	521	451	0	539	686	2411	2438	457	2183	2208
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	21.2	0.0	20.0	22.4	0.0	19.5	21.8	14.2	14.2	21.2	14.7	14.7
Incr Delay (d2), s/veh	0.2	0.0	0.8	0.3	0.0	0.4	4.5	1.2	1.2	1.5	1.4	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	0.6	0.0	1.3	0.6	0.0	0.8	3.0	3.8	3.9	1.8	4.0	4.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	21.4	0.0	20.8	22.8	0.0	19.9	26.4	15.3	15.3	22.7	16.1	16.1
LnGrp LOS	C	A	C	C	A	B	C	B	B	C	B	B
Approach Vol, veh/h		169			126			1201			1118	
Approach Delay, s/veh		21.0			21.1			17.7			17.1	
Approach LOS		C			C			B			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	14.2	26.3		14.9	14.8	25.7		14.9				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0				
Max Green Setting (Gmax), s	14.0	74.0		17.0	21.0	67.0		17.0				
Max Q Clear Time (g_c+I1), s	6.6	14.0		5.9	9.5	14.4		7.4				
Green Ext Time (p_c), s	0.2	6.3		0.5	0.5	6.3		0.3				

Intersection Summary

HCM 6th Ctrl Delay	17.8
HCM 6th LOS	B

Arco AM/PM Service Station  
4: Redlands Boulevard & SR-60 EB

GPBO (2040) With Project (AM Peak Hour)  
Alternative 1 With Improvements

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	295	0	269	0	0	0	0	791	220	188	852	0
Future Volume (vph)	295	0	269	0	0	0	0	791	220	188	852	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.91	0.95	1.00	1.00	1.00	1.00	0.95	0.88	0.97	0.95	1.00
Fr <sub>t</sub>		0.930	0.850						0.850			
Fl <sub>t</sub> Protected	0.950	0.974								0.950		
Satd. Flow (prot)	1715	1566	1534	0	0	0	0	3610	2842	3502	3610	0
Fl <sub>t</sub> Permitted	0.950	0.974								0.950		
Satd. Flow (perm)	1715	1566	1534	0	0	0	0	3610	2842	3502	3610	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		109	157						239			
Link Speed (mph)		45			45			50			50	
Link Distance (ft)		1655			1667			819			1145	
Travel Time (s)		25.1			25.3			11.2			15.6	
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
Adj. Flow (vph)	321	0	292	0	0	0	0	860	239	204	926	0
Shared Lane Traffic (%)	34%		33%									
Lane Group Flow (vph)	212	205	196	0	0	0	0	860	239	204	926	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		8			8			8			8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	20		10	20		10	20		10	20		10
Turn Type	Perm	NA	Perm					NA	Perm	Prot	NA	
Protected Phases		8						2		1	6	
Permitted Phases	8		8						2			
Detector Phase	8	8	8					2	2	1	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0					7.0	7.0	7.0	7.0	
Minimum Split (s)	12.0	12.0	12.0					23.2	23.2	13.2	23.2	
Total Split (s)	21.0	21.0	21.0					35.0	35.0	14.0	49.0	
Total Split (%)	30.0%	30.0%	30.0%					50.0%	50.0%	20.0%	70.0%	
Maximum Green (s)	16.0	16.0	16.0					30.0	30.0	9.0	44.0	
Yellow Time (s)	4.0	4.0	4.0					4.0	4.0	4.0	4.0	
All-Red Time (s)	1.0	1.0	1.0					1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0					0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0					5.0	5.0	5.0	5.0	
Lead/Lag								Lag	Lag	Lead		
Lead-Lag Optimize?								Yes	Yes	Yes		
Vehicle Extension (s)	3.0	3.0	3.0					3.0	3.0	3.0	3.0	
Recall Mode	None	None	None					C-Min	C-Min	None	C-Min	
Act Effct Green (s)	13.6	13.6	13.6					32.6	32.6	8.8	46.4	
Actuated g/C Ratio	0.19	0.19	0.19					0.47	0.47	0.13	0.66	
v/c Ratio	0.63	0.52	0.46					0.51	0.16	0.46	0.39	
Control Delay	34.3	16.8	10.5					15.3	2.3	31.9	6.4	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Delay	0.0	0.0	0.0					0.0	0.0	0.0	0.0	
Total Delay	34.3	16.8	10.5					15.3	2.3	31.9	6.4	
LOS	C	B	B					B	A	C	A	
Approach Delay		20.9						12.5			11.0	
Approach LOS		C						B			B	
Queue Length 50th (ft)	87	38	14					136	0	42	84	
Queue Length 95th (ft)	152	100	66					193	19	73	124	
Internal Link Dist (ft)		1575			1587			739			1065	
Turn Bay Length (ft)												
Base Capacity (vph)	399	448	477					1708	1470	466	2406	
Starvation Cap Reductn	0	0	0					0	0	0	0	
Spillback Cap Reductn	0	0	0					0	0	0	0	
Storage Cap Reductn	0	0	0					0	0	0	0	
Reduced v/c Ratio	0.53	0.46	0.41					0.50	0.16	0.44	0.38	

**Intersection Summary**

Area Type: Other  
 Cycle Length: 70  
 Actuated Cycle Length: 70  
 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green  
 Natural Cycle: 50  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.63  
 Intersection Signal Delay: 13.7  
 Intersection Capacity Utilization 54.8%  
 Analysis Period (min) 15  
 Description: Alternative 1

**Splits and Phases: 4: Redlands Boulevard & SR-60 EB**



Arco AM/PM Service Station  
4: Redlands Boulevard & SR-60 EB

GPBO (2040) With Project (AM Peak Hour)  
Alternative 1 With Improvements

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	295	0	269	0	0	0	0	791	220	188	852	0
Future Volume (veh/h)	295	0	269	0	0	0	0	791	220	188	852	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900				0	1900	1900	1900	1900	0
Adj Flow Rate, veh/h	412	0	195				0	860	239	204	926	0
Peak Hour Factor	0.92	0.92	0.92				0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0				0	0	0	0	0	0
Cap, veh/h	583	0	259				0	1901	1492	344	2513	0
Arrive On Green	0.16	0.00	0.16				0.00	0.53	0.53	0.10	0.70	0.00
Sat Flow, veh/h	3619	0	1610				0	3705	2834	3510	3705	0
Grp Volume(v), veh/h	412	0	195				0	860	239	204	926	0
Grp Sat Flow(s),veh/h/ln	1810	0	1610				0	1805	1417	1755	1805	0
Q Serve(g_s), s	7.5	0.0	8.1				0.0	10.4	3.1	3.9	7.3	0.0
Cycle Q Clear(g_c), s	7.5	0.0	8.1				0.0	10.4	3.1	3.9	7.3	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	583	0	259				0	1901	1492	344	2513	0
V/C Ratio(X)	0.71	0.00	0.75				0.00	0.45	0.16	0.59	0.37	0.00
Avail Cap(c_a), veh/h	827	0	368				0	1901	1492	451	2513	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	0.91	0.91	0.79	0.79	0.00
Uniform Delay (d), s/veh	27.8	0.0	28.0				0.0	10.3	8.6	30.2	4.3	0.0
Incr Delay (d2), s/veh	1.6	0.0	5.3				0.0	0.7	0.2	1.3	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.1	0.0	3.2				0.0	3.2	0.8	1.6	1.4	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	29.4	0.0	33.3				0.0	11.0	8.8	31.5	4.7	0.0
LnGrp LOS	C	A	C				A	B	A	C	A	A
Approach Vol, veh/h		607						1099			1130	
Approach Delay, s/veh		30.7						10.5			9.5	
Approach LOS		C						B			A	
Timer - Assigned Phs	1	2				6		8				
Phs Duration (G+Y+Rc), s	11.9	41.9				53.7		16.3				
Change Period (Y+Rc), s	5.0	5.0				5.0		5.0				
Max Green Setting (Gmax), s	9.0	30.0				44.0		16.0				
Max Q Clear Time (g_c+I1), s	5.9	12.4				9.3		10.1				
Green Ext Time (p_c), s	0.2	5.9				6.6		1.2				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay			14.4									
HCM 6th LOS			B									
<b>Notes</b>												
User approved volume balancing among the lanes for turning movement.												





Arco AM/PM Service Station  
2: Redlands Boulevard & Hemlock Avenue

GPBO (2040) With Project (PM Peak Hour)  
With Improvements



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	131	87	182	160	87	110	187	965	50	80	1000	54
Future Volume (vph)	131	87	182	160	87	110	187	965	50	80	1000	54
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Fr <sub>t</sub>		0.899			0.916			0.993			0.992	
Fl <sub>t</sub> Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	1708	0	1805	1740	0	1805	3585	0	1805	3581	0
Fl <sub>t</sub> Permitted	0.542			0.429			0.950			0.950		
Satd. Flow (perm)	1030	1708	0	815	1740	0	1805	3585	0	1805	3581	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		82			50			7			7	
Link Speed (mph)		30			30			50			50	
Link Distance (ft)		503			271			294			546	
Travel Time (s)		11.4			6.2			4.0			7.4	
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
Adj. Flow (vph)	142	95	198	174	95	120	203	1049	54	87	1087	59
Shared Lane Traffic (%)												
Lane Group Flow (vph)	142	293	0	174	215	0	203	1103	0	87	1146	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		8			8			8			8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	20		10	20		10	20		10	20		10
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Detector Phase	4	4		8	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	22.0	22.0		22.0	22.0		15.7	22.7		15.0	30.0	
Total Split (s)	34.0	34.0		34.0	34.0		17.0	71.0		15.0	69.0	
Total Split (%)	28.3%	28.3%		28.3%	28.3%		14.2%	59.2%		12.5%	57.5%	
Maximum Green (s)	29.0	29.0		29.0	29.0		12.0	66.0		10.0	64.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	Min		None	Min	
Walk Time (s)	7.0	7.0		7.0	7.0						7.0	
Flash Dont Walk (s)	10.0	10.0		10.0	10.0						18.0	
Pedestrian Calls (#/hr)	0	0		0	0						0	
Act Effct Green (s)	29.2	29.2		29.2	29.2		12.1	42.2		10.1	36.9	

Arco AM/PM Service Station  
2: Redlands Boulevard & Hemlock Avenue

GPBO (2040) With Project (PM Peak Hour)  
With Improvements

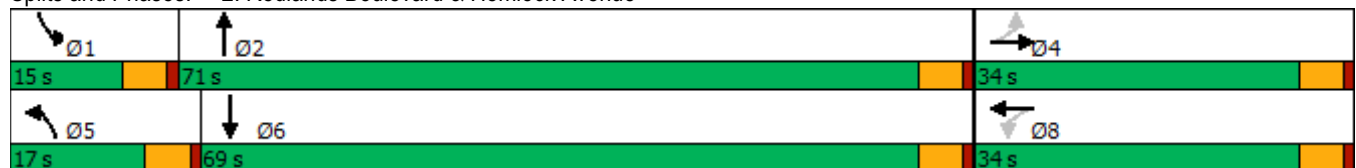


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio	0.31	0.31		0.31	0.31		0.13	0.45		0.11	0.40	
v/c Ratio	0.44	0.50		0.68	0.37		0.87	0.68		0.45	0.81	
Control Delay	33.0	23.1		46.0	22.6		76.0	23.1		49.3	29.6	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	33.0	23.1		46.0	22.6		76.0	23.1		49.3	29.6	
LOS	C	C		D	C		E	C		D	C	
Approach Delay		26.4			33.0			31.3			31.0	
Approach LOS		C			C			C			C	
Queue Length 50th (ft)	66	98		89	73		119	277		49	305	
Queue Length 95th (ft)	143	205		#220	157		#282	347		107	382	
Internal Link Dist (ft)		423			191			214			466	
Turn Bay Length (ft)												
Base Capacity (vph)	322	590		255	579		233	2555		194	2475	
Starvation Cap Reductn	0	0		0	0		0	42		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.44	0.50		0.68	0.37		0.87	0.44		0.45	0.46	

Intersection Summary

Area Type:	Other
Cycle Length:	120
Actuated Cycle Length:	93.2
Natural Cycle:	75
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.87
Intersection Signal Delay:	30.8
Intersection LOS:	C
Intersection Capacity Utilization:	85.5%
ICU Level of Service:	E
Analysis Period (min):	15
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

Splits and Phases: 2: Redlands Boulevard & Hemlock Avenue



Arco AM/PM Service Station  
2: Redlands Boulevard & Hemlock Avenue





















GPBO (2040) With Project (PM Peak Hour)  
With Improvements



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	131	87	182	160	87	110	187	965	50	80	1000	54
Future Volume (veh/h)	131	87	182	160	87	110	187	965	50	80	1000	54
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	142	95	198	174	95	120	203	1049	54	87	1087	59
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	340	174	364	272	242	306	237	1469	76	176	1348	73
Arrive On Green	0.32	0.32	0.32	0.32	0.32	0.32	0.13	0.42	0.42	0.10	0.39	0.39
Sat Flow, veh/h	1185	549	1145	1103	763	964	1810	3493	180	1810	3482	189
Grp Volume(v), veh/h	142	0	293	174	0	215	203	542	561	87	563	583
Grp Sat Flow(s),veh/h/ln	1185	0	1694	1103	0	1727	1810	1805	1868	1810	1805	1866
Q Serve(g_s), s	9.7	0.0	13.0	14.1	0.0	8.9	10.0	22.7	22.7	4.2	25.4	25.4
Cycle Q Clear(g_c), s	18.6	0.0	13.0	27.1	0.0	8.9	10.0	22.7	22.7	4.2	25.4	25.4
Prop In Lane	1.00		0.68	1.00		0.56	1.00		0.10	1.00		0.10
Lane Grp Cap(c), veh/h	340	0	538	272	0	548	237	759	786	176	699	722
V/C Ratio(X)	0.42	0.00	0.54	0.64	0.00	0.39	0.86	0.71	0.71	0.49	0.81	0.81
Avail Cap(c_a), veh/h	340	0	538	272	0	548	238	1305	1350	198	1265	1308
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	31.5	0.0	25.7	36.9	0.0	24.3	38.8	21.9	21.9	39.1	24.9	24.9
Incr Delay (d2), s/veh	0.8	0.0	1.1	5.0	0.0	0.5	25.2	1.3	1.2	2.1	2.3	2.2
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	2.8	0.0	5.3	4.1	0.0	3.6	5.8	8.7	9.0	1.8	10.1	10.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	32.3	0.0	26.8	41.9	0.0	24.7	64.0	23.2	23.1	41.2	27.2	27.1
LnGrp LOS	C	A	C	D	A	C	E	C	C	D	C	C
Approach Vol, veh/h		435			389			1306			1233	
Approach Delay, s/veh		28.6			32.4			29.5			28.1	
Approach LOS		C			C			C			C	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	13.9	43.4		34.0	17.0	40.4		34.0				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0				
Max Green Setting (Gmax), s	10.0	66.0		29.0	12.0	64.0		29.0				
Max Q Clear Time (g_c+I1), s	6.2	24.7		20.6	12.0	27.4		29.1				
Green Ext Time (p_c), s	0.1	7.6		1.5	0.0	7.9		0.0				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				29.2								
HCM 6th LOS				C								

Arco AM/PM Service Station  
4: Redlands Boulevard & SR-60 EB

GPBO (2040) With Project (PM Peak Hour)  
With Improvements

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	570	0	454	0	0	0	0	918	940	453	722	0
Future Volume (vph)	570	0	454	0	0	0	0	918	940	453	722	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.91	0.95	1.00	1.00	1.00	1.00	0.95	0.88	0.97	0.95	1.00
Fr <sub>t</sub>		0.942	0.850						0.850			
Fl <sub>t</sub> Protected	0.950	0.970								0.950		
Satd. Flow (prot)	1715	1580	1534	0	0	0	0	3610	2842	3502	3610	0
Fl <sub>t</sub> Permitted	0.950	0.970								0.950		
Satd. Flow (perm)	1715	1580	1534	0	0	0	0	3610	2842	3502	3610	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		85	167						1033			
Link Speed (mph)		45			45			50			50	
Link Distance (ft)		1655			1667			819			1145	
Travel Time (s)		25.1			25.3			11.2			15.6	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	626	0	499	0	0	0	0	1009	1033	498	793	0
Shared Lane Traffic (%)	37%		29%									
Lane Group Flow (vph)	394	377	354	0	0	0	0	1009	1033	498	793	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		8			8			8			8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	20		10	20		10	20		10	20		10
Turn Type	Perm	NA	Perm					NA	Perm	Prot	NA	
Protected Phases		8						2		1	6	
Permitted Phases	8		8						2			
Detector Phase	8	8	8					2	2	1	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0					7.0	7.0	7.0	7.0	
Minimum Split (s)	12.0	12.0	12.0					23.2	23.2	13.2	23.2	
Total Split (s)	35.0	35.0	35.0					35.0	35.0	20.0	55.0	
Total Split (%)	38.9%	38.9%	38.9%					38.9%	38.9%	22.2%	61.1%	
Maximum Green (s)	30.0	30.0	30.0					30.0	30.0	15.0	50.0	
Yellow Time (s)	4.0	4.0	4.0					4.0	4.0	4.0	4.0	
All-Red Time (s)	1.0	1.0	1.0					1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0					0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0					5.0	5.0	5.0	5.0	
Lead/Lag								Lag	Lag	Lead		
Lead-Lag Optimize?								Yes	Yes	Yes		
Vehicle Extension (s)	3.0	3.0	3.0					3.0	3.0	3.0	3.0	
Recall Mode	None	None	None					C-Min	C-Min	None	C-Min	
Act Effct Green (s)	26.4	26.4	26.4					33.2	33.2	15.4	53.6	
Actuated g/C Ratio	0.29	0.29	0.29					0.37	0.37	0.17	0.60	
v/c Ratio	0.78	0.72	0.62					0.76	0.61	0.83	0.37	
Control Delay	40.5	29.7	18.6					30.5	3.2	49.6	10.7	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Delay	0.0	0.0	0.0					0.0	0.0	0.0	0.0	
Total Delay	40.5	29.7	18.6					30.5	3.2	49.6	10.7	
LOS	D	C	B					C	A	D	B	
Approach Delay		30.0						16.7			25.7	
Approach LOS		C						B			C	
Queue Length 50th (ft)	206	157	88					276	0	140	121	
Queue Length 95th (ft)	312	262	181					#357	44	#224	166	
Internal Link Dist (ft)		1575			1587			739			1065	
Turn Bay Length (ft)												
Base Capacity (vph)	571	583	622					1331	1700	606	2150	
Starvation Cap Reductn	0	0	0					0	0	0	0	
Spillback Cap Reductn	0	0	0					0	0	0	0	
Storage Cap Reductn	0	0	0					0	0	0	0	
Reduced v/c Ratio	0.69	0.65	0.57					0.76	0.61	0.82	0.37	

**Intersection Summary**





















Area Type: Other  
 Cycle Length: 90  
 Actuated Cycle Length: 90  
 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green  
 Natural Cycle: 65  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.83  
 Intersection Signal Delay: 22.7  
 Intersection Capacity Utilization 81.2%  
 Analysis Period (min) 15  
 Description: Alternative 1  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

**Splits and Phases: 4: Redlands Boulevard & SR-60 EB**



Arco AM/PM Service Station  
4: Redlands Boulevard & SR-60 EB

GPBO (2040) With Project (PM Peak Hour)  
With Improvements

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	570	0	454	0	0	0	0	918	940	453	722	0
Future Volume (veh/h)	570	0	454	0	0	0	0	918	940	453	722	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900				0	1900	1900	1900	1900	0
Adj Flow Rate, veh/h	781	0	333				0	1009	1033	498	793	0
Peak Hour Factor	0.91	0.91	0.91				0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	0	0				0	0	0	0	0	0
Cap, veh/h	942	0	419				0	1484	1165	569	2270	0
Arrive On Green	0.26	0.00	0.26				0.00	0.41	0.41	0.16	0.63	0.00
Sat Flow, veh/h	3619	0	1610				0	3705	2834	3510	3705	0
Grp Volume(v), veh/h	781	0	333				0	1009	1033	498	793	0
Grp Sat Flow(s),veh/h/ln	1810	0	1610				0	1805	1417	1755	1805	0
Q Serve(g_s), s	18.3	0.0	17.4				0.0	20.6	30.4	12.5	9.4	0.0
Cycle Q Clear(g_c), s	18.3	0.0	17.4				0.0	20.6	30.4	12.5	9.4	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	942	0	419				0	1484	1165	569	2270	0
V/C Ratio(X)	0.83	0.00	0.79				0.00	0.68	0.89	0.88	0.35	0.00
Avail Cap(c_a), veh/h	1206	0	537				0	1484	1165	585	2270	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	0.65	0.65	0.89	0.89	0.00
Uniform Delay (d), s/veh	31.4	0.0	31.0				0.0	21.7	24.6	36.8	8.0	0.0
Incr Delay (d2), s/veh	4.0	0.0	6.3				0.0	1.7	6.9	12.4	0.4	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	7.9	0.0	7.0				0.0	8.0	10.0	6.0	2.9	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	35.4	0.0	37.4				0.0	23.3	31.5	49.2	8.3	0.0
LnGrp LOS	D	A	D				A	C	C	D	A	A
Approach Vol, veh/h		1114						2042			1291	
Approach Delay, s/veh		36.0						27.5			24.1	
Approach LOS		D						C			C	
Timer - Assigned Phs	1	2				6		8				
Phs Duration (G+Y+Rc), s	19.6	42.0				61.6		28.4				
Change Period (Y+Rc), s	5.0	5.0				5.0		5.0				
Max Green Setting (Gmax), s	15.0	30.0				50.0		30.0				
Max Q Clear Time (g_c+I1), s	14.5	32.4				11.4		20.3				
Green Ext Time (p_c), s	0.1	0.0				5.5		3.1				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay			28.6									
HCM 6th LOS			C									
<b>Notes</b>												
User approved volume balancing among the lanes for turning movement.												

**GENERAL PLAN BUILDOUT WITHOUT PROJECT – ALTERNATIVE 2**

**WITH IMPROVEMENTS**

Arco AM/PM Service Station  
2: Redlands Boulevard & Hemlock Avenue

GPBO (2040) without Project (AM Peak Hour)  
Alternative 2 With Improvements

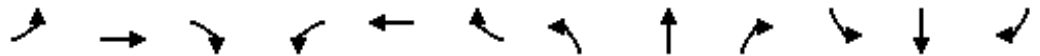


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	30	36	50	50	36	30	153	770	100	150	758	100
Future Volume (vph)	30	36	50	50	36	30	153	770	100	150	758	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frts		0.913			0.931			0.983			0.982	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	1735	0	1805	1769	0	1805	3549	0	1805	3545	0
Flt Permitted	0.710			0.697			0.950			0.950		
Satd. Flow (perm)	1349	1735	0	1324	1769	0	1805	3549	0	1805	3545	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		48			30			21			21	
Link Speed (mph)		30			30			50			50	
Link Distance (ft)		473			236			304			616	
Travel Time (s)		10.8			5.4			4.1			8.4	
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
Adj. Flow (vph)	33	39	54	54	39	33	166	837	109	163	824	109
Shared Lane Traffic (%)												
Lane Group Flow (vph)	33	93	0	54	72	0	166	946	0	163	933	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		8			8			8			8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	20		10	20		10	20		10	20		10
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Detector Phase	4	4		8	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	22.0	22.0		22.0	22.0		15.7	22.7		15.0	30.0	
Total Split (s)	22.0	22.0		22.0	22.0		21.0	78.0		20.0	77.0	
Total Split (%)	18.3%	18.3%		18.3%	18.3%		17.5%	65.0%		16.7%	64.2%	
Maximum Green (s)	17.0	17.0		17.0	17.0		16.0	73.0		15.0	72.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	Min		None	Min	
Walk Time (s)	7.0	7.0		7.0	7.0						7.0	
Flash Dont Walk (s)	10.0	10.0		10.0	10.0						18.0	
Pedestrian Calls (#/hr)	0	0		0	0						0	
Act Effect Green (s)	10.9	10.9		10.9	10.9		12.3	23.9		12.2	23.8	



Arco AM/PM Service Station  
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GPBO (2040) without Project (AM Peak Hour)  
Alternative 2 With Improvements



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio	0.19	0.19		0.19	0.19		0.21	0.41		0.21	0.41	
v/c Ratio	0.13	0.26		0.22	0.20		0.43	0.64		0.43	0.64	
Control Delay	26.4	16.8		27.6	18.5		27.4	16.5		27.5	16.6	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	26.4	16.8		27.6	18.5		27.4	16.5		27.5	16.6	
LOS	C	B		C	B		C	B		C	B	
Approach Delay		19.3			22.4			18.2			18.2	
Approach LOS		B			C			B			B	
Queue Length 50th (ft)	10	14		17	13		54	138		53	135	
Queue Length 95th (ft)	38	58		54	52		122	221		123	223	
Internal Link Dist (ft)		393			156			224			536	
Turn Bay Length (ft)												
Base Capacity (vph)	419	571		411	570		527	3533		494	3519	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.08	0.16		0.13	0.13		0.31	0.27		0.33	0.27	

Intersection Summary

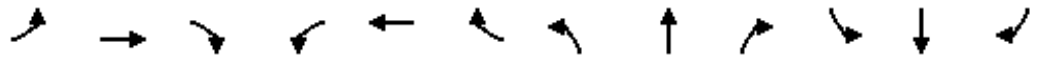
Area Type:	Other
Cycle Length:	120
Actuated Cycle Length:	58.1
Natural Cycle:	70
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.64
Intersection Signal Delay:	18.5
Intersection LOS:	B
Intersection Capacity Utilization:	60.2%
ICU Level of Service:	B
Analysis Period (min):	15

Splits and Phases: 2: Redlands Boulevard & Hemlock Avenue



Arco AM/PM Service Station  
2: Redlands Boulevard & Hemlock Avenue




















GPBO (2040) without Project (AM Peak Hour)  
Alternative 2 With Improvements



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↕		↖	↕	
Traffic Volume (veh/h)	30	36	50	50	36	30	153	770	100	150	758	100
Future Volume (veh/h)	30	36	50	50	36	30	153	770	100	150	758	100
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	33	39	54	54	39	33	166	837	109	163	824	109
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	329	130	180	310	172	145	307	1199	156	306	1194	158
Arrive On Green	0.18	0.18	0.18	0.18	0.18	0.18	0.17	0.37	0.37	0.17	0.37	0.37
Sat Flow, veh/h	1349	721	999	1324	951	804	1810	3212	418	1810	3205	424
Grp Volume(v), veh/h	33	0	93	54	0	72	166	470	476	163	464	469
Grp Sat Flow(s),veh/h/ln	1349	0	1720	1324	0	1755	1810	1805	1825	1810	1805	1824
Q Serve(g_s), s	1.2	0.0	2.5	2.0	0.0	1.9	4.5	12.0	12.0	4.5	11.7	11.8
Cycle Q Clear(g_c), s	3.1	0.0	2.5	4.5	0.0	1.9	4.5	12.0	12.0	4.5	11.7	11.8
Prop In Lane	1.00		0.58	1.00		0.46	1.00		0.23	1.00		0.23
Lane Grp Cap(c), veh/h	329	0	311	310	0	317	307	674	681	306	673	680
V/C Ratio(X)	0.10	0.00	0.30	0.17	0.00	0.23	0.54	0.70	0.70	0.53	0.69	0.69
Avail Cap(c_a), veh/h	510	0	540	487	0	551	535	2435	2462	502	2402	2427
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	20.2	0.0	19.2	21.2	0.0	18.9	20.5	14.4	14.4	20.5	14.3	14.3
Incr Delay (d2), s/veh	0.1	0.0	0.5	0.3	0.0	0.4	1.5	1.3	1.3	1.4	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	0.3	0.0	1.0	0.6	0.0	0.7	1.7	3.8	3.9	1.7	3.8	3.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	20.4	0.0	19.7	21.4	0.0	19.3	22.0	15.7	15.7	22.0	15.6	15.6
LnGrp LOS	C	A	B	C	A	B	C	B	B	C	B	B
Approach Vol, veh/h		126			126			1112			1096	
Approach Delay, s/veh		19.9			20.2			16.6			16.6	
Approach LOS		B			C			B			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	14.1	25.2		14.8	14.2	25.2		14.8				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0				
Max Green Setting (Gmax), s	15.0	73.0		17.0	16.0	72.0		17.0				
Max Q Clear Time (g_c+I1), s	6.5	14.0		5.1	6.5	13.8		6.5				
Green Ext Time (p_c), s	0.2	6.2		0.4	0.3	6.1		0.3				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				16.9								
HCM 6th LOS				B								

Arco AM/PM Service Station  
4: Redlands Boulevard & SR-60 EB

GPBO (2040) without Project (AM Peak Hour)  
Alternative 2 With Improvements

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	285	0	269	0	0	0	0	779	220	180	840	0
Future Volume (vph)	285	0	269	0	0	0	0	779	220	180	840	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.91	0.95	1.00	1.00	1.00	1.00	0.95	0.88	0.97	0.95	1.00
Fr <sub>t</sub>		0.935	0.850						0.850			
Fl <sub>t</sub> Protected	0.950	0.972								0.950		
Satd. Flow (prot)	1715	1571	1534	0	0	0	0	3610	2842	3502	3610	0
Fl <sub>t</sub> Permitted	0.950	0.972								0.950		
Satd. Flow (perm)	1715	1571	1534	0	0	0	0	3610	2842	3502	3610	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		109	162						239			
Link Speed (mph)		45			45			50			50	
Link Distance (ft)		1655			1667			819			1145	
Travel Time (s)		25.1			25.3			11.2			15.6	
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
Adj. Flow (vph)	310	0	292	0	0	0	0	847	239	196	913	0
Shared Lane Traffic (%)	37%		30%									
Lane Group Flow (vph)	195	203	204	0	0	0	0	847	239	196	913	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		8			8			8			8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	20		10	20		10	20		10	20		10
Turn Type	Split	NA	Perm					NA	Perm	Prot	NA	
Protected Phases	8	8						2		1	6	
Permitted Phases			8						2			
Detector Phase	8	8	8					2	2	1	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0					7.0	7.0	7.0	7.0	
Minimum Split (s)	12.0	12.0	12.0					12.0	12.0	12.0	12.0	
Total Split (s)	21.0	21.0	21.0					35.0	35.0	14.0	49.0	
Total Split (%)	30.0%	30.0%	30.0%					50.0%	50.0%	20.0%	70.0%	
Maximum Green (s)	16.0	16.0	16.0					30.0	30.0	9.0	44.0	
Yellow Time (s)	4.0	4.0	4.0					4.0	4.0	4.0	4.0	
All-Red Time (s)	1.0	1.0	1.0					1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0					0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0					5.0	5.0	5.0	5.0	
Lead/Lag												
								Lag	Lag	Lead		
Lead-Lag Optimize?								Yes	Yes	Yes		
Vehicle Extension (s)	3.0	3.0	3.0					3.0	3.0	3.0	3.0	
Recall Mode	None	None	None					C-Min	C-Min	None	C-Min	
Act Effct Green (s)	13.2	13.2	13.2					33.1	33.1	8.7	46.8	
Actuated g/C Ratio	0.19	0.19	0.19					0.47	0.47	0.12	0.67	
v/c Ratio	0.60	0.53	0.49					0.50	0.16	0.45	0.38	
Control Delay	33.6	17.1	11.0					14.9	2.3	24.6	5.7	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Delay	0.0	0.0	0.0					0.0	0.0	0.0	0.0	
Total Delay	33.6	17.1	11.0					14.9	2.3	24.6	5.7	
LOS	C	B	B					B	A	C	A	
Approach Delay		20.4						12.1			9.0	
Approach LOS		C						B			A	
Queue Length 50th (ft)	80	38	15					130	0	38	111	
Queue Length 95th (ft)	140	98	68					189	19	m67	149	
Internal Link Dist (ft)		1575			1587			739			1065	
Turn Bay Length (ft)												
Base Capacity (vph)	396	446	478					1727	1484	464	2423	
Starvation Cap Reductn	0	0	0					0	0	0	0	
Spillback Cap Reductn	0	0	0					0	0	0	0	
Storage Cap Reductn	0	0	0					0	0	0	0	
Reduced v/c Ratio	0.49	0.46	0.43					0.49	0.16	0.42	0.38	

**Intersection Summary**





















Area Type: Other  
 Cycle Length: 70  
 Actuated Cycle Length: 70  
 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green  
 Natural Cycle: 45  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.60  
 Intersection Signal Delay: 12.7  
 Intersection Capacity Utilization 61.0%  
 Analysis Period (min) 15  
 Description: Alternative 2  
 m Volume for 95th percentile queue is metered by upstream signal.

**Splits and Phases: 4: Redlands Boulevard & SR-60 EB**



Arco AM/PM Service Station  
4: Redlands Boulevard & SR-60 EB

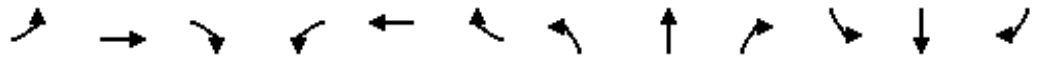
GPBO (2040) without Project (AM Peak Hour)  
Alternative 2 With Improvements

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	285	0	269	0	0	0	0	779	220	180	840	0
Future Volume (veh/h)	285	0	269	0	0	0	0	779	220	180	840	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900				0	1900	1900	1900	1900	0
Adj Flow Rate, veh/h	401	0	195				0	847	239	196	913	0
Peak Hour Factor	0.92	0.92	0.92				0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0				0	0	0	0	0	0
Cap, veh/h	582	0	259				0	1903	1494	343	2514	0
Arrive On Green	0.16	0.00	0.16				0.00	0.53	0.53	0.10	0.70	0.00
Sat Flow, veh/h	3619	0	1610				0	3705	2834	3510	3705	0
Grp Volume(v), veh/h	401	0	195				0	847	239	196	913	0
Grp Sat Flow(s),veh/h/ln	1810	0	1610				0	1805	1417	1755	1805	0
Q Serve(g_s), s	7.3	0.0	8.1				0.0	10.1	3.0	3.7	7.2	0.0
Cycle Q Clear(g_c), s	7.3	0.0	8.1				0.0	10.1	3.0	3.7	7.2	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	582	0	259				0	1903	1494	343	2514	0
V/C Ratio(X)	0.69	0.00	0.75				0.00	0.45	0.16	0.57	0.36	0.00
Avail Cap(c_a), veh/h	827	0	368				0	1903	1494	451	2514	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	0.72	0.72	0.85	0.85	0.00
Uniform Delay (d), s/veh	27.7	0.0	28.1				0.0	10.2	8.5	30.2	4.3	0.0
Incr Delay (d2), s/veh	1.5	0.0	5.3				0.0	0.5	0.2	1.3	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.0	0.0	3.2				0.0	3.1	0.7	1.5	1.4	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	29.2	0.0	33.4				0.0	10.8	8.7	31.4	4.7	0.0
LnGrp LOS	C	A	C				A	B	A	C	A	A
Approach Vol, veh/h		596						1086			1109	
Approach Delay, s/veh		30.6						10.3			9.4	
Approach LOS		C						B			A	
Timer - Assigned Phs	1	2				6		8				
Phs Duration (G+Y+Rc), s	11.8	41.9				53.8		16.2				
Change Period (Y+Rc), s	5.0	5.0				5.0		5.0				
Max Green Setting (Gmax), s	9.0	30.0				44.0		16.0				
Max Q Clear Time (g_c+I1), s	5.7	12.1				9.2		10.1				
Green Ext Time (p_c), s	0.2	5.9				6.5		1.2				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay			14.3									
HCM 6th LOS			B									
<b>Notes</b>												
User approved volume balancing among the lanes for turning movement.												



Arco AM/PM Service Station  
2: Redlands Boulevard & Hemlock Avenue

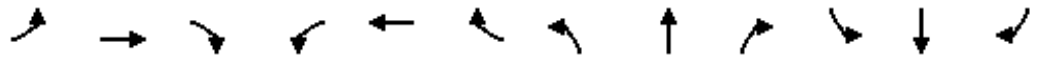
GPBO (2040) without Project (PM Peak Hour)  
Alternative 2 With Improvements



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	110	87	160	160	87	110	96	965	50	80	977	54
Future Volume (vph)	110	87	160	160	87	110	96	965	50	80	977	54
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Fr <sub>t</sub>		0.903			0.916			0.993			0.992	
Fl <sub>t</sub> Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	1716	0	1805	1740	0	1805	3585	0	1805	3581	0
Fl <sub>t</sub> Permitted	0.553			0.475			0.950			0.950		
Satd. Flow (perm)	1051	1716	0	902	1740	0	1805	3585	0	1805	3581	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		72			49			7			8	
Link Speed (mph)		30			30			50			50	
Link Distance (ft)		473			296			304			616	
Travel Time (s)		10.8			6.7			4.1			8.4	
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
Adj. Flow (vph)	120	95	174	174	95	120	104	1049	54	87	1062	59
Shared Lane Traffic (%)												
Lane Group Flow (vph)	120	269	0	174	215	0	104	1103	0	87	1121	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		8			8			8			8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	20		10	20		10	20		10	20		10
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Detector Phase	4	4		8	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	22.0	22.0		22.0	22.0		15.0	22.7		15.0	30.0	
Total Split (s)	33.0	33.0		33.0	33.0		15.0	72.0		15.0	72.0	
Total Split (%)	27.5%	27.5%		27.5%	27.5%		12.5%	60.0%		12.5%	60.0%	
Maximum Green (s)	28.0	28.0		28.0	28.0		10.0	67.0		10.0	67.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	Min		None	Min	
Walk Time (s)	7.0	7.0		7.0	7.0						7.0	
Flash Dont Walk (s)	10.0	10.0		10.0	10.0						18.0	
Pedestrian Calls (#/hr)	0	0		0	0						0	
Act Effct Green (s)	28.2	28.2		28.2	28.2		10.1	37.7		10.1	34.4	

Arco AM/PM Service Station  
2: Redlands Boulevard & Hemlock Avenue

GPBO (2040) without Project (PM Peak Hour)  
Alternative 2 With Improvements

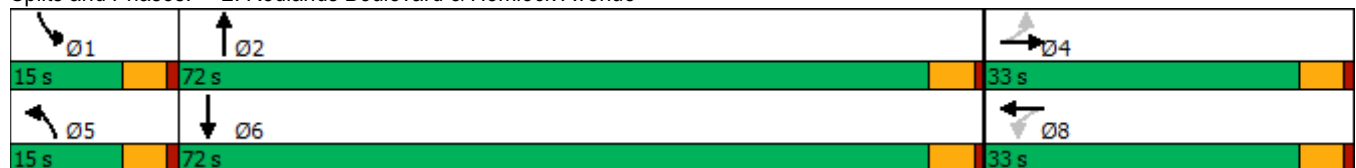


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio	0.32	0.32		0.32	0.32		0.12	0.43		0.12	0.39	
v/c Ratio	0.36	0.45		0.60	0.36		0.50	0.71		0.42	0.80	
Control Delay	28.7	21.1		37.6	21.0		47.8	24.2		45.2	27.9	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	28.7	21.1		37.6	21.0		47.8	24.2		45.2	27.9	
LOS	C	C		D	C		D	C		D	C	
Approach Delay		23.5			28.4			26.2			29.1	
Approach LOS		C			C			C			C	
Queue Length 50th (ft)	50	84		80	68		55	272		45	277	
Queue Length 95th (ft)	114	179		#191	149		#118	344		101	352	
Internal Link Dist (ft)		393			216			224			536	
Turn Bay Length (ft)												
Base Capacity (vph)	337	599		289	592		206	2755		206	2753	
Starvation Cap Reductn	0	0		0	0		0	6		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.36	0.45		0.60	0.36		0.50	0.40		0.42	0.41	

Intersection Summary

Area Type:	Other
Cycle Length:	120
Actuated Cycle Length:	87.7
Natural Cycle:	70
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.80
Intersection Signal Delay:	27.2
Intersection LOS:	C
Intersection Capacity Utilization:	83.1%
ICU Level of Service:	E
Analysis Period (min):	15
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

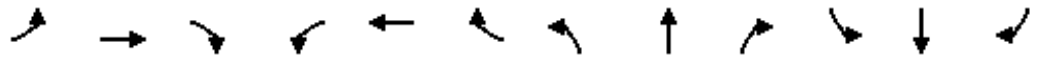
Splits and Phases: 2: Redlands Boulevard & Hemlock Avenue





Arco AM/PM Service Station  
2: Redlands Boulevard & Hemlock Avenue

GPBO (2040) without Project (PM Peak Hour)  
Alternative 2 With Improvements



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↕		↖	↗	
Traffic Volume (veh/h)	110	87	160	160	87	110	96	965	50	80	977	54
Future Volume (veh/h)	110	87	160	160	87	110	96	965	50	80	977	54
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	120	95	174	174	95	120	104	1049	54	87	1062	59
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	343	187	343	295	238	300	203	1383	71	192	1357	75
Arrive On Green	0.31	0.31	0.31	0.31	0.31	0.31	0.11	0.40	0.40	0.11	0.39	0.39
Sat Flow, veh/h	1185	601	1101	1128	763	964	1810	3493	180	1810	3477	193
Grp Volume(v), veh/h	120	0	269	174	0	215	104	542	561	87	551	570
Grp Sat Flow(s),veh/h/ln	1185	0	1702	1128	0	1727	1810	1805	1868	1810	1805	1865
Q Serve(g_s), s	7.1	0.0	10.4	12.0	0.0	7.9	4.4	20.9	20.9	3.6	21.6	21.6
Cycle Q Clear(g_c), s	15.0	0.0	10.4	22.4	0.0	7.9	4.4	20.9	20.9	3.6	21.6	21.6
Prop In Lane	1.00		0.65	1.00		0.56	1.00		0.10	1.00		0.10
Lane Grp Cap(c), veh/h	343	0	530	295	0	538	203	715	739	192	705	728
V/C Ratio(X)	0.35	0.00	0.51	0.59	0.00	0.40	0.51	0.76	0.76	0.45	0.78	0.78
Avail Cap(c_a), veh/h	385	0	591	335	0	600	224	1500	1552	224	1500	1550
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	27.7	0.0	22.7	31.9	0.0	21.8	33.7	21.0	21.0	33.8	21.6	21.6
Incr Delay (d2), s/veh	0.6	0.0	0.8	2.1	0.0	0.5	2.0	1.7	1.6	1.7	1.9	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	2.0	0.0	4.1	3.4	0.0	3.1	1.9	7.9	8.2	1.6	8.2	8.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	28.3	0.0	23.4	34.0	0.0	22.3	35.7	22.7	22.7	35.5	23.5	23.5
LnGrp LOS	C	A	C	C	A	C	D	C	C	D	C	C
Approach Vol, veh/h		389			389			1207			1208	
Approach Delay, s/veh		25.0			27.5			23.8			24.4	
Approach LOS		C			C			C			C	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	13.6	36.9		30.1	14.0	36.5		30.1				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0				
Max Green Setting (Gmax), s	10.0	67.0		28.0	10.0	67.0		28.0				
Max Q Clear Time (g_c+I1), s	5.6	22.9		17.0	6.4	23.6		24.4				
Green Ext Time (p_c), s	0.1	7.7		1.6	0.1	7.9		0.7				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				24.6								
HCM 6th LOS				C								

Arco AM/PM Service Station  
4: Redlands Boulevard & SR-60 EB

GPBO (2040) without Project (PM Peak Hour)  
Alternative 2 With Improvements

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	557	0	454	0	0	0	0	903	940	440	707	0
Future Volume (vph)	557	0	454	0	0	0	0	903	940	440	707	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.91	0.95	1.00	1.00	1.00	1.00	0.95	0.88	0.97	0.95	1.00
Fr <sub>t</sub>		0.940	0.850						0.850			
Fl <sub>t</sub> Protected	0.950	0.971								0.950		
Satd. Flow (prot)	1715	1578	1534	0	0	0	0	3610	2842	3502	3610	0
Fl <sub>t</sub> Permitted	0.950	0.971								0.950		
Satd. Flow (perm)	1715	1578	1534	0	0	0	0	3610	2842	3502	3610	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		85	174						1033			
Link Speed (mph)		45			45			50			50	
Link Distance (ft)		1655			1667			819			1145	
Travel Time (s)		25.1			25.3			11.2			15.6	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	612	0	499	0	0	0	0	992	1033	484	777	0
Shared Lane Traffic (%)	37%		30%									
Lane Group Flow (vph)	386	376	349	0	0	0	0	992	1033	484	777	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		8			8			8			8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	20		10	20		10	20		10	20		10
Turn Type	Split	NA	Perm					NA	Perm	Prot	NA	
Protected Phases	8	8						2		1	6	
Permitted Phases			8						2			
Detector Phase	8	8	8					2	2	1	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0					7.0	7.0	7.0	7.0	
Minimum Split (s)	12.0	12.0	12.0					12.0	12.0	13.2	12.0	
Total Split (s)	35.0	35.0	35.0					35.0	35.0	20.0	55.0	
Total Split (%)	38.9%	38.9%	38.9%					38.9%	38.9%	22.2%	61.1%	
Maximum Green (s)	30.0	30.0	30.0					30.0	30.0	15.0	50.0	
Yellow Time (s)	4.0	4.0	4.0					4.0	4.0	4.0	4.0	
All-Red Time (s)	1.0	1.0	1.0					1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0					0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0					5.0	5.0	5.0	5.0	
Lead/Lag								Lag	Lag	Lead		
Lead-Lag Optimize?								Yes	Yes	Yes		
Vehicle Extension (s)	3.0	3.0	3.0					3.0	3.0	3.0	3.0	
Recall Mode	None	None	None					C-Min	C-Min	None	C-Min	
Act Effct Green (s)	26.0	26.0	26.0					33.7	33.7	15.3	54.0	
Actuated g/C Ratio	0.29	0.29	0.29					0.37	0.37	0.17	0.60	
v/c Ratio	0.78	0.73	0.62					0.73	0.60	0.81	0.36	
Control Delay	40.5	30.3	17.7					29.5	3.2	48.4	10.4	

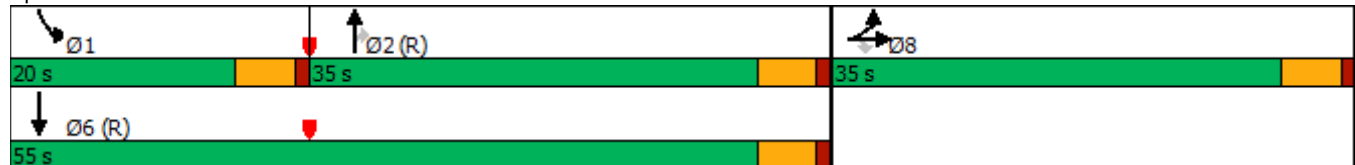


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Delay	0.0	0.0	0.0					0.0	0.0	0.0	0.0	
Total Delay	40.5	30.3	17.7					29.5	3.2	48.4	10.4	
LOS	D	C	B					C	A	D	B	
Approach Delay		29.9						16.1			25.0	
Approach LOS		C						B			C	
Queue Length 50th (ft)	203	157	82					270	0	135	117	
Queue Length 95th (ft)	304	261	171					350	44	#215	162	
Internal Link Dist (ft)		1575			1587			739			1065	
Turn Bay Length (ft)												
Base Capacity (vph)	571	582	627					1350	1710	606	2165	
Starvation Cap Reductn	0	0	0					0	0	0	0	
Spillback Cap Reductn	0	0	0					0	0	0	0	
Storage Cap Reductn	0	0	0					0	0	0	0	
Reduced v/c Ratio	0.68	0.65	0.56					0.73	0.60	0.80	0.36	

**Intersection Summary**

Area Type: Other  
 Cycle Length: 90  
 Actuated Cycle Length: 90  
 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green  
 Natural Cycle: 65  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.81  
 Intersection Signal Delay: 22.1  
 Intersection Capacity Utilization 80.5%  
 Analysis Period (min) 15  
 Description: Alternative 2  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

**Splits and Phases: 4: Redlands Boulevard & SR-60 EB**



Arco AM/PM Service Station  
4: Redlands Boulevard & SR-60 EB

GPBO (2040) without Project (PM Peak Hour)  
Alternative 2 With Improvements

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	557	0	454	0	0	0	0	903	940	440	707	0
Future Volume (veh/h)	557	0	454	0	0	0	0	903	940	440	707	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900				0	1900	1900	1900	1900	0
Adj Flow Rate, veh/h	767	0	333				0	992	1033	484	777	0
Peak Hour Factor	0.91	0.91	0.91				0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	0	0				0	0	0	0	0	0
Cap, veh/h	929	0	413				0	1508	1184	558	2282	0
Arrive On Green	0.26	0.00	0.26				0.00	0.42	0.42	0.16	0.63	0.00
Sat Flow, veh/h	3619	0	1610				0	3705	2834	3510	3705	0
Grp Volume(v), veh/h	767	0	333				0	992	1033	484	777	0
Grp Sat Flow(s),veh/h/ln	1810	0	1610				0	1805	1417	1755	1805	0
Q Serve(g_s), s	18.0	0.0	17.4				0.0	19.9	30.1	12.1	9.1	0.0
Cycle Q Clear(g_c), s	18.0	0.0	17.4				0.0	19.9	30.1	12.1	9.1	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	929	0	413				0	1508	1184	558	2282	0
V/C Ratio(X)	0.83	0.00	0.81				0.00	0.66	0.87	0.87	0.34	0.00
Avail Cap(c_a), veh/h	1206	0	537				0	1508	1184	585	2282	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	0.50	0.50	0.86	0.86	0.00
Uniform Delay (d), s/veh	31.6	0.0	31.3				0.0	21.0	24.0	36.9	7.8	0.0
Incr Delay (d2), s/veh	3.8	0.0	6.8				0.0	1.1	4.8	11.2	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.8	0.0	7.1				0.0	7.6	9.5	5.7	2.8	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	35.3	0.0	38.1				0.0	22.2	28.8	48.1	8.1	0.0
LnGrp LOS	D	A	D				A	C	C	D	A	A
Approach Vol, veh/h		1100						2025			1261	
Approach Delay, s/veh		36.2						25.5			23.5	
Approach LOS		D						C			C	
Timer - Assigned Phs	1	2				6		8				
Phs Duration (G+Y+Rc), s	19.3	42.6				61.9		28.1				
Change Period (Y+Rc), s	5.0	5.0				5.0		5.0				
Max Green Setting (Gmax), s	15.0	30.0				50.0		30.0				
Max Q Clear Time (g_c+I1), s	14.1	32.1				11.1		20.0				
Green Ext Time (p_c), s	0.2	0.0				5.3		3.1				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay			27.6									
HCM 6th LOS			C									
<b>Notes</b>												
User approved volume balancing among the lanes for turning movement.												

**GENERAL PLAN BUILDOUT WITH PROJECT - ALTERNATIVE 2**

**WITH IMPROVEMENTS**

Arco AM/PM Service Station  
2: Redlands Boulevard & Hemlock Avenue

GPBO (2040) With Project (AM Peak Hour)  
Alternative 2 With Improvements



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	50	36	70	50	36	30	235	770	100	150	778	100
Future Volume (vph)	50	36	70	50	36	30	235	770	100	150	778	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Fr <sub>t</sub>		0.901			0.931			0.983			0.983	
Fl <sub>t</sub> Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	1712	0	1805	1769	0	1805	3549	0	1805	3549	0
Fl <sub>t</sub> Permitted	0.710			0.683			0.950			0.950		
Satd. Flow (perm)	1349	1712	0	1298	1769	0	1805	3549	0	1805	3549	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		68			30			22			19	
Link Speed (mph)		30			30			50			50	
Link Distance (ft)		473			248			304			616	
Travel Time (s)		10.8			5.6			4.1			8.4	
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
Adj. Flow (vph)	54	39	76	54	39	33	255	837	109	163	846	109
Shared Lane Traffic (%)												
Lane Group Flow (vph)	54	115	0	54	72	0	255	946	0	163	955	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		8			8			8			8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	20		10	20		10	20		10	20		10
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Detector Phase	4	4		8	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	22.0	22.0		22.0	22.0		15.7	22.7		15.0	30.0	
Total Split (s)	22.0	22.0		22.0	22.0		26.0	79.0		19.0	72.0	
Total Split (%)	18.3%	18.3%		18.3%	18.3%		21.7%	65.8%		15.8%	60.0%	
Maximum Green (s)	17.0	17.0		17.0	17.0		21.0	74.0		14.0	67.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	Min		None	Min	
Walk Time (s)	7.0	7.0		7.0	7.0						7.0	
Flash Dont Walk (s)	10.0	10.0		10.0	10.0						18.0	
Pedestrian Calls (#/hr)	0	0		0	0						0	
Act Effect Green (s)	11.3	11.3		11.3	11.3		16.0	29.7		12.7	26.5	

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio	0.17	0.17		0.17	0.17		0.25	0.46		0.20	0.41	
v/c Ratio	0.23	0.32		0.24	0.22		0.57	0.58		0.46	0.65	
Control Delay	31.7	17.5		31.9	21.0		30.1	14.8		32.6	19.0	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	31.7	17.5		31.9	21.0		30.1	14.8		32.6	19.0	
LOS	C	B		C	C		C	B		C	B	
Approach Delay		22.0			25.7			18.1			21.0	
Approach LOS		C			C			B			C	
Queue Length 50th (ft)	20	17		20	15		93	144		60	162	
Queue Length 95th (ft)	60	69		61	57		196	219		144	265	
Internal Link Dist (ft)		393			168			224			536	
Turn Bay Length (ft)												
Base Capacity (vph)	381	533		367	522		630	3457		420	3335	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.14	0.22		0.15	0.14		0.40	0.27		0.39	0.29	

Intersection Summary

Area Type:	Other
Cycle Length:	120
Actuated Cycle Length:	64.8
Natural Cycle:	70
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.65
Intersection Signal Delay:	19.9
Intersection LOS:	B
Intersection Capacity Utilization:	63.5%
ICU Level of Service:	B
Analysis Period (min):	15

Splits and Phases: 2: Redlands Boulevard & Hemlock Avenue



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GPBO (2040) With Project (AM Peak Hour)  
Alternative 2 With Improvements























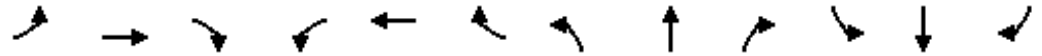
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	50	36	70	50	36	30	235	770	100	150	778	100
Future Volume (veh/h)	50	36	70	50	36	30	235	770	100	150	778	100
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	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	54	39	76	54	39	33	255	837	109	163	846	109
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	324	103	200	284	170	144	320	1236	161	300	1202	155
Arrive On Green	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.38	0.38	0.17	0.37	0.37
Sat Flow, veh/h	1349	576	1122	1298	951	804	1810	3212	418	1810	3216	414
Grp Volume(v), veh/h	54	0	115	54	0	72	255	470	476	163	475	480
Grp Sat Flow(s),veh/h/ln	1349	0	1698	1298	0	1755	1810	1805	1825	1810	1805	1825
Q Serve(g_s), s	2.0	0.0	3.3	2.1	0.0	1.9	7.5	12.0	12.0	4.6	12.4	12.4
Cycle Q Clear(g_c), s	3.9	0.0	3.3	5.4	0.0	1.9	7.5	12.0	12.0	4.6	12.4	12.4
Prop In Lane	1.00		0.66	1.00		0.46	1.00		0.23	1.00		0.23
Lane Grp Cap(c), veh/h	324	0	303	284	0	313	320	695	702	300	674	682
V/C Ratio(X)	0.17	0.00	0.38	0.19	0.00	0.23	0.80	0.68	0.68	0.54	0.70	0.70
Avail Cap(c_a), veh/h	497	0	521	451	0	539	686	2411	2438	457	2183	2208
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	21.2	0.0	20.0	22.4	0.0	19.5	21.8	14.2	14.2	21.2	14.7	14.7
Incr Delay (d2), s/veh	0.2	0.0	0.8	0.3	0.0	0.4	4.5	1.2	1.2	1.5	1.4	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	0.6	0.0	1.3	0.6	0.0	0.8	3.0	3.8	3.9	1.8	4.0	4.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	21.4	0.0	20.8	22.8	0.0	19.9	26.4	15.3	15.3	22.7	16.1	16.1
LnGrp LOS	C	A	C	C	A	B	C	B	B	C	B	B
Approach Vol, veh/h		169			126			1201			1118	
Approach Delay, s/veh		21.0			21.1			17.7			17.1	
Approach LOS		C			C			B			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	14.2	26.3		14.9	14.8	25.7		14.9				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0				
Max Green Setting (Gmax), s	14.0	74.0		17.0	21.0	67.0		17.0				
Max Q Clear Time (g_c+I1), s	6.6	14.0		5.9	9.5	14.4		7.4				
Green Ext Time (p_c), s	0.2	6.3		0.5	0.5	6.3		0.3				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				17.8								
HCM 6th LOS				B								



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GPBO (2040) with Project (AM Peak Hour)  
Alternative 2 With Improvements

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	295	0	269	0	0	0	0	791	220	188	852	0
Future Volume (vph)	295	0	269	0	0	0	0	791	220	188	852	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.91	0.95	1.00	1.00	1.00	1.00	0.95	0.88	0.97	0.95	1.00
Fr <sub>t</sub>		0.936	0.850						0.850			
Fl <sub>t</sub> Protected	0.950	0.972								0.950		
Satd. Flow (prot)	1715	1573	1534	0	0	0	0	3610	2842	3502	3610	0
Fl <sub>t</sub> Permitted	0.950	0.972								0.950		
Satd. Flow (perm)	1715	1573	1534	0	0	0	0	3610	2842	3502	3610	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		109	157						239			
Link Speed (mph)		45			45			50			50	
Link Distance (ft)		1655			1667			819			1145	
Travel Time (s)		25.1			25.3			11.2			15.6	
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
Adj. Flow (vph)	321	0	292	0	0	0	0	860	239	204	926	0
Shared Lane Traffic (%)	37%		30%									
Lane Group Flow (vph)	202	207	204	0	0	0	0	860	239	204	926	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		8			8			8			8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	20		10	20		10	20		10	20		10
Turn Type	Split	NA	Perm					NA	Perm	Prot	NA	
Protected Phases	8	8						2		1	6	
Permitted Phases			8						2			
Detector Phase	8	8	8					2	2	1	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0					7.0	7.0	7.0	7.0	
Minimum Split (s)	12.0	12.0	12.0					12.0	12.0	12.0	12.0	
Total Split (s)	21.0	21.0	21.0					35.0	35.0	14.0	49.0	
Total Split (%)	30.0%	30.0%	30.0%					50.0%	50.0%	20.0%	70.0%	
Maximum Green (s)	16.0	16.0	16.0					30.0	30.0	9.0	44.0	
Yellow Time (s)	4.0	4.0	4.0					4.0	4.0	4.0	4.0	
All-Red Time (s)	1.0	1.0	1.0					1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0					0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0					5.0	5.0	5.0	5.0	
Lead/Lag								Lag	Lag	Lead		
Lead-Lag Optimize?								Yes	Yes	Yes		
Vehicle Extension (s)	3.0	3.0	3.0					3.0	3.0	3.0	3.0	
Recall Mode	None	None	None					C-Min	C-Min	None	C-Min	
Act Effct Green (s)	13.4	13.4	13.4					32.8	32.8	8.8	46.6	
Actuated g/C Ratio	0.19	0.19	0.19					0.47	0.47	0.13	0.67	
v/c Ratio	0.62	0.53	0.49					0.51	0.16	0.46	0.39	
Control Delay	33.9	17.2	11.3					15.2	2.3	25.1	5.8	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Delay	0.0	0.0	0.0					0.0	0.0	0.0	0.0	
Total Delay	33.9	17.2	11.3					15.2	2.3	25.1	5.8	
LOS	C	B	B					B	A	C	A	
Approach Delay		20.8						12.4			9.3	
Approach LOS		C						B			A	
Queue Length 50th (ft)	83	39	17					135	0	42	114	
Queue Length 95th (ft)	145	101	71					193	19	m70	148	
Internal Link Dist (ft)		1575			1587			739			1065	
Turn Bay Length (ft)												
Base Capacity (vph)	397	448	475					1717	1477	468	2415	
Starvation Cap Reductn	0	0	0					0	0	0	0	
Spillback Cap Reductn	0	0	0					0	0	0	0	
Storage Cap Reductn	0	0	0					0	0	0	0	
Reduced v/c Ratio	0.51	0.46	0.43					0.50	0.16	0.44	0.38	

**Intersection Summary**





















Area Type: Other  
 Cycle Length: 70  
 Actuated Cycle Length: 70  
 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green  
 Natural Cycle: 45  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.62  
 Intersection Signal Delay: 13.0  
 Intersection Capacity Utilization 61.6%  
 Analysis Period (min) 15  
 Description: Alternative 2  
 m Volume for 95th percentile queue is metered by upstream signal.

**Splits and Phases: 4: Redlands Boulevard & SR-60 EB**



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4: Redlands Boulevard & SR-60 EB

GPBO (2040) with Project (AM Peak Hour)  
Alternative 2 With Improvements

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	295	0	269	0	0	0	0	791	220	188	852	0
Future Volume (veh/h)	295	0	269	0	0	0	0	791	220	188	852	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900				0	1900	1900	1900	1900	0
Adj Flow Rate, veh/h	412	0	195				0	860	239	204	926	0
Peak Hour Factor	0.92	0.92	0.92				0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0				0	0	0	0	0	0
Cap, veh/h	583	0	259				0	1901	1492	344	2513	0
Arrive On Green	0.16	0.00	0.16				0.00	0.53	0.53	0.10	0.70	0.00
Sat Flow, veh/h	3619	0	1610				0	3705	2834	3510	3705	0
Grp Volume(v), veh/h	412	0	195				0	860	239	204	926	0
Grp Sat Flow(s),veh/h/ln	1810	0	1610				0	1805	1417	1755	1805	0
Q Serve(g_s), s	7.5	0.0	8.1				0.0	10.4	3.1	3.9	7.3	0.0
Cycle Q Clear(g_c), s	7.5	0.0	8.1				0.0	10.4	3.1	3.9	7.3	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	583	0	259				0	1901	1492	344	2513	0
V/C Ratio(X)	0.71	0.00	0.75				0.00	0.45	0.16	0.59	0.37	0.00
Avail Cap(c_a), veh/h	827	0	368				0	1901	1492	451	2513	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	0.72	0.72	0.84	0.84	0.00
Uniform Delay (d), s/veh	27.8	0.0	28.0				0.0	10.3	8.6	30.2	4.3	0.0
Incr Delay (d2), s/veh	1.6	0.0	5.3				0.0	0.6	0.2	1.4	0.4	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	3.1	0.0	3.2				0.0	3.2	0.7	1.6	1.4	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	29.4	0.0	33.3				0.0	10.9	8.7	31.6	4.7	0.0
LnGrp LOS	C	A	C				A	B	A	C	A	A
Approach Vol, veh/h		607						1099			1130	
Approach Delay, s/veh		30.7						10.4			9.6	
Approach LOS		C						B			A	
Timer - Assigned Phs	1	2				6		8				
Phs Duration (G+Y+Rc), s	11.9	41.9				53.7		16.3				
Change Period (Y+Rc), s	5.0	5.0				5.0		5.0				
Max Green Setting (Gmax), s	9.0	30.0				44.0		16.0				
Max Q Clear Time (g_c+I1), s	5.9	12.4				9.3		10.1				
Green Ext Time (p_c), s	0.2	5.9				6.6		1.2				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay			14.4									
HCM 6th LOS			B									
<b>Notes</b>												
User approved volume balancing among the lanes for turning movement.												



Arco AM/PM Service Station  
2: Redlands Boulevard & Hemlock Avenue

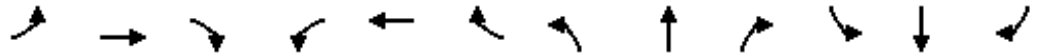
GPBO (2040) with Project (PM Peak Hour)  
Alternative 2 With Improvements



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	131	87	182	160	87	110	187	965	50	80	1000	54
Future Volume (vph)	131	87	182	160	87	110	187	965	50	80	1000	54
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Fr <sub>t</sub>		0.899			0.916			0.993			0.992	
Fl <sub>t</sub> Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	1708	0	1805	1740	0	1805	3585	0	1805	3581	0
Fl <sub>t</sub> Permitted	0.542			0.429			0.950			0.950		
Satd. Flow (perm)	1030	1708	0	815	1740	0	1805	3585	0	1805	3581	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		82			50			7			7	
Link Speed (mph)		30			30			50			50	
Link Distance (ft)		473			271			304			616	
Travel Time (s)		10.8			6.2			4.1			8.4	
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
Adj. Flow (vph)	142	95	198	174	95	120	203	1049	54	87	1087	59
Shared Lane Traffic (%)												
Lane Group Flow (vph)	142	293	0	174	215	0	203	1103	0	87	1146	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		8			8			8			8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	20		10	20		10	20		10	20		10
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Detector Phase	4	4		8	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	22.0	22.0		22.0	22.0		15.7	22.7		15.0	30.0	
Total Split (s)	34.0	34.0		34.0	34.0		17.0	71.0		15.0	69.0	
Total Split (%)	28.3%	28.3%		28.3%	28.3%		14.2%	59.2%		12.5%	57.5%	
Maximum Green (s)	29.0	29.0		29.0	29.0		12.0	66.0		10.0	64.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	Min		None	Min	
Walk Time (s)	7.0	7.0		7.0	7.0						7.0	
Flash Dont Walk (s)	10.0	10.0		10.0	10.0						18.0	
Pedestrian Calls (#/hr)	0	0		0	0						0	
Act Effct Green (s)	29.2	29.2		29.2	29.2		12.1	42.2		10.1	36.9	

Arco AM/PM Service Station  
2: Redlands Boulevard & Hemlock Avenue

GPBO (2040) with Project (PM Peak Hour)  
Alternative 2 With Improvements

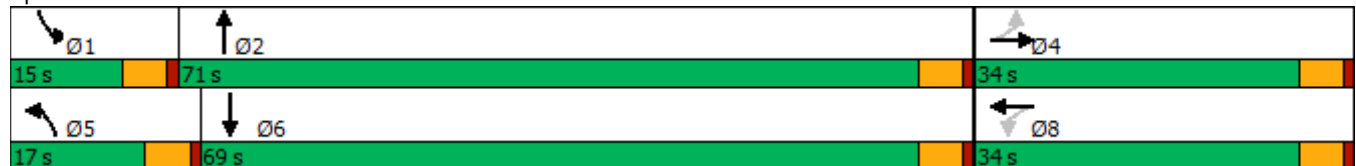


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio	0.31	0.31		0.31	0.31		0.13	0.45		0.11	0.40	
v/c Ratio	0.44	0.50		0.68	0.37		0.87	0.68		0.45	0.81	
Control Delay	33.0	23.1		46.0	22.6		76.0	23.1		49.3	29.6	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	33.0	23.1		46.0	22.6		76.0	23.1		49.3	29.6	
LOS	C	C		D	C		E	C		D	C	
Approach Delay		26.4			33.0			31.3			31.0	
Approach LOS		C			C			C			C	
Queue Length 50th (ft)	66	98		89	73		119	277		49	305	
Queue Length 95th (ft)	143	205		#220	157		#282	347		107	382	
Internal Link Dist (ft)		393			191			224			536	
Turn Bay Length (ft)												
Base Capacity (vph)	322	590		255	579		233	2555		194	2475	
Starvation Cap Reductn	0	0		0	0		0	42		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.44	0.50		0.68	0.37		0.87	0.44		0.45	0.46	

Intersection Summary

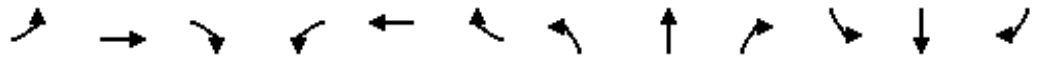
Area Type: Other  
 Cycle Length: 120  
 Actuated Cycle Length: 93.2  
 Natural Cycle: 75  
 Control Type: Actuated-Uncoordinated  
 Maximum v/c Ratio: 0.87  
 Intersection Signal Delay: 30.8  
 Intersection LOS: C  
 Intersection Capacity Utilization 85.5%  
 ICU Level of Service E  
 Analysis Period (min) 15  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

Splits and Phases: 2: Redlands Boulevard & Hemlock Avenue



Arco AM/PM Service Station  
2: Redlands Boulevard & Hemlock Avenue





















GPBO (2040) with Project (PM Peak Hour)  
Alternative 2 With Improvements



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	131	87	182	160	87	110	187	965	50	80	1000	54
Future Volume (veh/h)	131	87	182	160	87	110	187	965	50	80	1000	54
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	142	95	198	174	95	120	203	1049	54	87	1087	59
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	340	174	364	272	242	306	237	1469	76	176	1348	73
Arrive On Green	0.32	0.32	0.32	0.32	0.32	0.32	0.13	0.42	0.42	0.10	0.39	0.39
Sat Flow, veh/h	1185	549	1145	1103	763	964	1810	3493	180	1810	3482	189
Grp Volume(v), veh/h	142	0	293	174	0	215	203	542	561	87	563	583
Grp Sat Flow(s),veh/h/ln	1185	0	1694	1103	0	1727	1810	1805	1868	1810	1805	1866
Q Serve(g_s), s	9.7	0.0	13.0	14.1	0.0	8.9	10.0	22.7	22.7	4.2	25.4	25.4
Cycle Q Clear(g_c), s	18.6	0.0	13.0	27.1	0.0	8.9	10.0	22.7	22.7	4.2	25.4	25.4
Prop In Lane	1.00		0.68	1.00		0.56	1.00		0.10	1.00		0.10
Lane Grp Cap(c), veh/h	340	0	538	272	0	548	237	759	786	176	699	722
V/C Ratio(X)	0.42	0.00	0.54	0.64	0.00	0.39	0.86	0.71	0.71	0.49	0.81	0.81
Avail Cap(c_a), veh/h	340	0	538	272	0	548	238	1305	1350	198	1265	1308
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	31.5	0.0	25.7	36.9	0.0	24.3	38.8	21.9	21.9	39.1	24.9	24.9
Incr Delay (d2), s/veh	0.8	0.0	1.1	5.0	0.0	0.5	25.2	1.3	1.2	2.1	2.3	2.2
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	2.8	0.0	5.3	4.1	0.0	3.6	5.8	8.7	9.0	1.8	10.1	10.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	32.3	0.0	26.8	41.9	0.0	24.7	64.0	23.2	23.1	41.2	27.2	27.1
LnGrp LOS	C	A	C	D	A	C	E	C	C	D	C	C
Approach Vol, veh/h		435			389			1306			1233	
Approach Delay, s/veh		28.6			32.4			29.5			28.1	
Approach LOS		C			C			C			C	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	13.9	43.4		34.0	17.0	40.4		34.0				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0				
Max Green Setting (Gmax), s	10.0	66.0		29.0	12.0	64.0		29.0				
Max Q Clear Time (g_c+I1), s	6.2	24.7		20.6	12.0	27.4		29.1				
Green Ext Time (p_c), s	0.1	7.6		1.5	0.0	7.9		0.0				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				29.2								
HCM 6th LOS				C								

Arco AM/PM Service Station  
4: Redlands Boulevard & SR-60 EB

GPBO (2040) with Project (PM Peak Hour)  
Alternative 2 With Improvements

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	570	0	454	0	0	0	0	918	940	453	722	0
Future Volume (vph)	570	0	454	0	0	0	0	918	940	453	722	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.91	0.95	1.00	1.00	1.00	1.00	0.95	0.88	0.97	0.95	1.00
Fr <sub>t</sub>		0.941	0.850						0.850			
Fl <sub>t</sub> Protected	0.950	0.971								0.950		
Satd. Flow (prot)	1715	1580	1534	0	0	0	0	3610	2842	3502	3610	0
Fl <sub>t</sub> Permitted	0.950	0.971								0.950		
Satd. Flow (perm)	1715	1580	1534	0	0	0	0	3610	2842	3502	3610	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		85	167						1033			
Link Speed (mph)		45			45			50			50	
Link Distance (ft)		1655			1667			819			1145	
Travel Time (s)		25.1			25.3			11.2			15.6	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	626	0	499	0	0	0	0	1009	1033	498	793	0
Shared Lane Traffic (%)	37%		30%									
Lane Group Flow (vph)	394	382	349	0	0	0	0	1009	1033	498	793	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		8			8			8			8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	20		10	20		10	20		10	20		10
Turn Type	Split	NA	Perm					NA	Perm	Prot	NA	
Protected Phases	8	8						2		1	6	
Permitted Phases			8						2			
Detector Phase	8	8	8					2	2	1	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0					7.0	7.0	7.0	7.0	
Minimum Split (s)	12.0	12.0	12.0					12.0	12.0	13.2	12.0	
Total Split (s)	35.0	35.0	35.0					35.0	35.0	20.0	55.0	
Total Split (%)	38.9%	38.9%	38.9%					38.9%	38.9%	22.2%	61.1%	
Maximum Green (s)	30.0	30.0	30.0					30.0	30.0	15.0	50.0	
Yellow Time (s)	4.0	4.0	4.0					4.0	4.0	4.0	4.0	
All-Red Time (s)	1.0	1.0	1.0					1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0					0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0					5.0	5.0	5.0	5.0	
Lead/Lag								Lag	Lag	Lead		
Lead-Lag Optimize?								Yes	Yes	Yes		
Vehicle Extension (s)	3.0	3.0	3.0					3.0	3.0	3.0	3.0	
Recall Mode	None	None	None					C-Min	C-Min	None	C-Min	
Act Effct Green (s)	26.4	26.4	26.4					33.2	33.2	15.4	53.6	
Actuated g/C Ratio	0.29	0.29	0.29					0.37	0.37	0.17	0.60	
v/c Ratio	0.78	0.73	0.62					0.76	0.61	0.83	0.37	
Control Delay	40.5	30.3	18.2					30.5	3.2	49.6	10.7	





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Delay	0.0	0.0	0.0					0.0	0.0	0.0	0.0	
Total Delay	40.5	30.3	18.2					30.5	3.2	49.6	10.7	
LOS	D	C	B					C	A	D	B	
Approach Delay		30.1						16.7			25.7	
Approach LOS		C						B			C	
Queue Length 50th (ft)	206	160	86					276	0	140	121	
Queue Length 95th (ft)	312	267	175					#357	44	#224	166	
Internal Link Dist (ft)		1575			1587			739			1065	
Turn Bay Length (ft)												
Base Capacity (vph)	571	583	622					1331	1700	606	2150	
Starvation Cap Reductn	0	0	0					0	0	0	0	
Spillback Cap Reductn	0	0	0					0	0	0	0	
Storage Cap Reductn	0	0	0					0	0	0	0	
Reduced v/c Ratio	0.69	0.66	0.56					0.76	0.61	0.82	0.37	

**Intersection Summary**





















Area Type: Other  
 Cycle Length: 90  
 Actuated Cycle Length: 90  
 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green  
 Natural Cycle: 65  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.83  
 Intersection Signal Delay: 22.7  
 Intersection LOS: C  
 Intersection Capacity Utilization 81.2%  
 ICU Level of Service D  
 Analysis Period (min) 15  
 Description: Alternative 2  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

**Splits and Phases: 4: Redlands Boulevard & SR-60 EB**



Arco AM/PM Service Station  
4: Redlands Boulevard & SR-60 EB

GPBO (2040) with Project (PM Peak Hour)  
Alternative 2 With Improvements

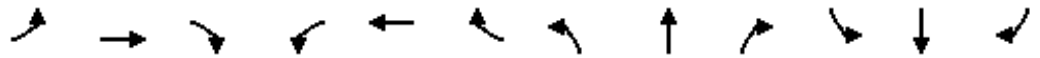
												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	570	0	454	0	0	0	0	918	940	453	722	0
Future Volume (veh/h)	570	0	454	0	0	0	0	918	940	453	722	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900				0	1900	1900	1900	1900	0
Adj Flow Rate, veh/h	781	0	333				0	1009	1033	498	793	0
Peak Hour Factor	0.91	0.91	0.91				0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	0	0				0	0	0	0	0	0
Cap, veh/h	942	0	419				0	1484	1165	569	2270	0
Arrive On Green	0.26	0.00	0.26				0.00	0.41	0.41	0.16	0.63	0.00
Sat Flow, veh/h	3619	0	1610				0	3705	2834	3510	3705	0
Grp Volume(v), veh/h	781	0	333				0	1009	1033	498	793	0
Grp Sat Flow(s),veh/h/ln	1810	0	1610				0	1805	1417	1755	1805	0
Q Serve(g_s), s	18.3	0.0	17.4				0.0	20.6	30.4	12.5	9.4	0.0
Cycle Q Clear(g_c), s	18.3	0.0	17.4				0.0	20.6	30.4	12.5	9.4	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	942	0	419				0	1484	1165	569	2270	0
V/C Ratio(X)	0.83	0.00	0.79				0.00	0.68	0.89	0.88	0.35	0.00
Avail Cap(c_a), veh/h	1206	0	537				0	1484	1165	585	2270	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	0.48	0.48	0.84	0.84	0.00
Uniform Delay (d), s/veh	31.4	0.0	31.0				0.0	21.7	24.6	36.8	8.0	0.0
Incr Delay (d2), s/veh	4.0	0.0	6.3				0.0	1.2	5.3	11.8	0.4	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	7.9	0.0	7.0				0.0	7.9	9.7	5.9	2.9	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	35.4	0.0	37.4				0.0	22.9	29.8	48.6	8.3	0.0
LnGrp LOS	D	A	D				A	C	C	D	A	A
Approach Vol, veh/h		1114						2042			1291	
Approach Delay, s/veh		36.0						26.4			23.9	
Approach LOS		D						C			C	
Timer - Assigned Phs	1	2				6		8				
Phs Duration (G+Y+Rc), s	19.6	42.0				61.6		28.4				
Change Period (Y+Rc), s	5.0	5.0				5.0		5.0				
Max Green Setting (Gmax), s	15.0	30.0				50.0		30.0				
Max Q Clear Time (g_c+I1), s	14.5	32.4				11.4		20.3				
Green Ext Time (p_c), s	0.1	0.0				5.5		3.1				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay			28.1									
HCM 6th LOS			C									
<b>Notes</b>												
User approved volume balancing among the lanes for turning movement.												

**GENERAL PLAN BUILDOUT WITHOUT PROJECT – ALTERNATIVE 3**

**WITH IMPROVEMENTS**

Arco AM/PM Service Station  
2: Redlands Boulevard & Hemlock Avenue

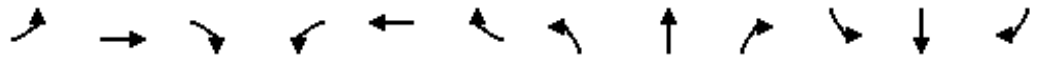
GPBO (2040) Without Project (AM Peak Hour)  
Alternative 3 With Improvements



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	30	36	50	50	36	30	153	770	100	150	758	100
Future Volume (vph)	30	36	50	50	36	30	153	770	100	150	758	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Fr <sub>t</sub>		0.913			0.931			0.983			0.982	
Fl <sub>t</sub> Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	1735	0	1805	1769	0	1805	3549	0	1805	3545	0
Fl <sub>t</sub> Permitted	0.710			0.697			0.950			0.950		
Satd. Flow (perm)	1349	1735	0	1324	1769	0	1805	3549	0	1805	3545	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		48			30			21			21	
Link Speed (mph)		30			30			50			50	
Link Distance (ft)		553			234			305			696	
Travel Time (s)		12.6			5.3			4.2			9.5	
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
Adj. Flow (vph)	33	39	54	54	39	33	166	837	109	163	824	109
Shared Lane Traffic (%)												
Lane Group Flow (vph)	33	93	0	54	72	0	166	946	0	163	933	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	20		10	20		10	20		10	20		10
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Detector Phase	4	4		8	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	22.0	22.0		22.0	22.0		15.7	22.7		15.0	30.0	
Total Split (s)	22.0	22.0		22.0	22.0		21.0	78.0		20.0	77.0	
Total Split (%)	18.3%	18.3%		18.3%	18.3%		17.5%	65.0%		16.7%	64.2%	
Maximum Green (s)	17.0	17.0		17.0	17.0		16.0	73.0		15.0	72.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	Min		None	Min	
Walk Time (s)	7.0	7.0		7.0	7.0						7.0	
Flash Dont Walk (s)	10.0	10.0		10.0	10.0						18.0	
Pedestrian Calls (#/hr)	0	0		0	0						0	
Act Effct Green (s)	10.9	10.9		10.9	10.9		12.3	23.9		12.2	23.8	

Arco AM/PM Service Station  
2: Redlands Boulevard & Hemlock Avenue

GPBO (2040) Without Project (AM Peak Hour)  
Alternative 3 With Improvements



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio	0.19	0.19		0.19	0.19		0.21	0.41		0.21	0.41	
v/c Ratio	0.13	0.26		0.22	0.20		0.43	0.64		0.43	0.64	
Control Delay	26.4	16.8		27.6	18.5		27.4	16.5		27.5	16.6	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	26.4	16.8		27.6	18.5		27.4	16.5		27.5	16.6	
LOS	C	B		C	B		C	B		C	B	
Approach Delay		19.3			22.4			18.2			18.2	
Approach LOS		B			C			B			B	
Queue Length 50th (ft)	10	14		17	13		54	138		53	135	
Queue Length 95th (ft)	38	58		54	52		122	221		123	223	
Internal Link Dist (ft)		473			154			225			616	
Turn Bay Length (ft)												
Base Capacity (vph)	419	571		411	570		527	3533		494	3519	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.08	0.16		0.13	0.13		0.31	0.27		0.33	0.27	

Intersection Summary

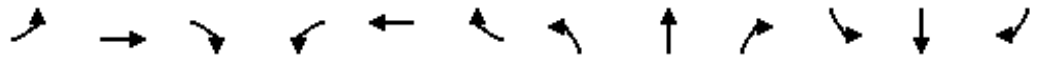
Area Type:	Other
Cycle Length:	120
Actuated Cycle Length:	58.1
Natural Cycle:	70
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.64
Intersection Signal Delay:	18.5
Intersection LOS:	B
Intersection Capacity Utilization:	60.2%
ICU Level of Service:	B
Analysis Period (min):	15

Splits and Phases: 2: Redlands Boulevard & Hemlock Avenue



Arco AM/PM Service Station  
2: Redlands Boulevard & Hemlock Avenue

GPBO (2040) Without Project (AM Peak Hour)  
Alternative 3 With Improvements

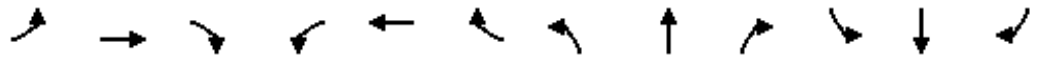


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↕	↗	↖	↕	
Traffic Volume (veh/h)	30	36	50	50	36	30	153	770	100	150	758	100
Future Volume (veh/h)	30	36	50	50	36	30	153	770	100	150	758	100
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	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	33	39	54	54	39	33	166	837	109	163	824	109
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	329	130	180	310	172	145	307	1199	156	306	1194	158
Arrive On Green	0.18	0.18	0.18	0.18	0.18	0.18	0.17	0.37	0.37	0.17	0.37	0.37
Sat Flow, veh/h	1349	721	999	1324	951	804	1810	3212	418	1810	3205	424
Grp Volume(v), veh/h	33	0	93	54	0	72	166	470	476	163	464	469
Grp Sat Flow(s),veh/h/ln	1349	0	1720	1324	0	1755	1810	1805	1825	1810	1805	1824
Q Serve(g_s), s	1.2	0.0	2.5	2.0	0.0	1.9	4.5	12.0	12.0	4.5	11.7	11.8
Cycle Q Clear(g_c), s	3.1	0.0	2.5	4.5	0.0	1.9	4.5	12.0	12.0	4.5	11.7	11.8
Prop In Lane	1.00		0.58	1.00		0.46	1.00		0.23	1.00		0.23
Lane Grp Cap(c), veh/h	329	0	311	310	0	317	307	674	681	306	673	680
V/C Ratio(X)	0.10	0.00	0.30	0.17	0.00	0.23	0.54	0.70	0.70	0.53	0.69	0.69
Avail Cap(c_a), veh/h	510	0	540	487	0	551	535	2435	2462	502	2402	2427
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	20.2	0.0	19.2	21.2	0.0	18.9	20.5	14.4	14.4	20.5	14.3	14.3
Incr Delay (d2), s/veh	0.1	0.0	0.5	0.3	0.0	0.4	1.5	1.3	1.3	1.4	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	0.3	0.0	1.0	0.6	0.0	0.7	1.7	3.8	3.9	1.7	3.8	3.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	20.4	0.0	19.7	21.4	0.0	19.3	22.0	15.7	15.7	22.0	15.6	15.6
LnGrp LOS	C	A	B	C	A	B	C	B	B	C	B	B
Approach Vol, veh/h		126			126			1112			1096	
Approach Delay, s/veh		19.9			20.2			16.6			16.6	
Approach LOS		B			C			B			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	14.1	25.2		14.8	14.2	25.2		14.8				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0				
Max Green Setting (Gmax), s	15.0	73.0		17.0	16.0	72.0		17.0				
Max Q Clear Time (g_c+I1), s	6.5	14.0		5.1	6.5	13.8		6.5				
Green Ext Time (p_c), s	0.2	6.2		0.4	0.3	6.1		0.3				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				16.9								
HCM 6th LOS				B								



Arco AM/PM Service Station  
2: Redlands Boulevard & Hemlock Avenue

GPBO (2040) Without Project (PM Peak Hour)  
Alternative 3 With Improvements

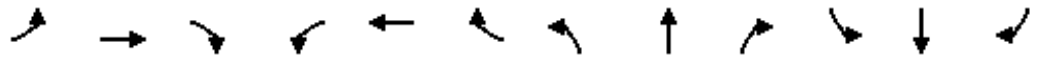


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	110	87	160	160	87	110	96	965	50	80	977	54
Future Volume (vph)	110	87	160	160	87	110	96	965	50	80	977	54
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frts		0.903			0.916			0.993			0.992	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	1716	0	1805	1740	0	1805	3585	0	1805	3581	0
Flt Permitted	0.553			0.475			0.950			0.950		
Satd. Flow (perm)	1051	1716	0	902	1740	0	1805	3585	0	1805	3581	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		72			49			7			8	
Link Speed (mph)		30			30			50			50	
Link Distance (ft)		553			276			305			696	
Travel Time (s)		12.6			6.3			4.2			9.5	
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
Adj. Flow (vph)	120	95	174	174	95	120	104	1049	54	87	1062	59
Shared Lane Traffic (%)												
Lane Group Flow (vph)	120	269	0	174	215	0	104	1103	0	87	1121	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	20		10	20		10	20		10	20		10
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Detector Phase	4	4		8	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	22.0	22.0		22.0	22.0		15.0	22.7		15.0	30.0	
Total Split (s)	33.0	33.0		33.0	33.0		15.0	72.0		15.0	72.0	
Total Split (%)	27.5%	27.5%		27.5%	27.5%		12.5%	60.0%		12.5%	60.0%	
Maximum Green (s)	28.0	28.0		28.0	28.0		10.0	67.0		10.0	67.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	Min		None	Min	
Walk Time (s)	7.0	7.0		7.0	7.0						7.0	
Flash Dont Walk (s)	10.0	10.0		10.0	10.0						18.0	
Pedestrian Calls (#/hr)	0	0		0	0						0	
Act Effct Green (s)	28.2	28.2		28.2	28.2		10.1	37.7		10.1	34.4	



Arco AM/PM Service Station  
2: Redlands Boulevard & Hemlock Avenue

GPBO (2040) Without Project (PM Peak Hour)  
Alternative 3 With Improvements

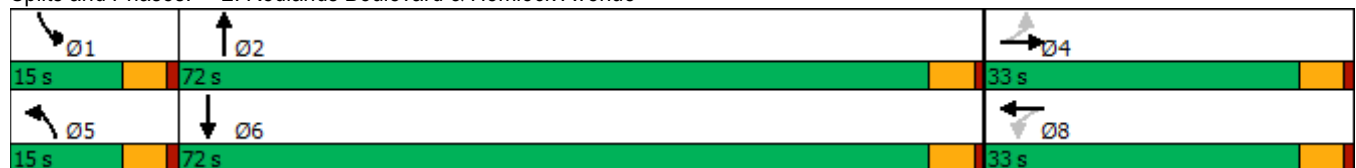


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio	0.32	0.32		0.32	0.32		0.12	0.43		0.12	0.39	
v/c Ratio	0.36	0.45		0.60	0.36		0.50	0.71		0.42	0.80	
Control Delay	28.7	21.1		37.6	21.0		47.8	24.2		45.2	27.9	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	28.7	21.1		37.6	21.0		47.8	24.2		45.2	27.9	
LOS	C	C		D	C		D	C		D	C	
Approach Delay		23.5			28.4			26.2			29.1	
Approach LOS		C			C			C			C	
Queue Length 50th (ft)	50	84		80	68		55	272		45	277	
Queue Length 95th (ft)	114	179		#191	149		#118	344		101	352	
Internal Link Dist (ft)		473			196			225			616	
Turn Bay Length (ft)												
Base Capacity (vph)	337	599		289	592		206	2755		206	2753	
Starvation Cap Reductn	0	0		0	0		0	6		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.36	0.45		0.60	0.36		0.50	0.40		0.42	0.41	

Intersection Summary

Area Type:	Other
Cycle Length:	120
Actuated Cycle Length:	87.7
Natural Cycle:	70
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.80
Intersection Signal Delay:	27.2
Intersection LOS:	C
Intersection Capacity Utilization:	83.1%
ICU Level of Service:	E
Analysis Period (min):	15
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

Splits and Phases: 2: Redlands Boulevard & Hemlock Avenue



Arco AM/PM Service Station  
2: Redlands Boulevard & Hemlock Avenue

GPBO (2040) Without Project (PM Peak Hour)  
Alternative 3 With Improvements



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	110	87	160	160	87	110	96	965	50	80	977	54
Future Volume (veh/h)	110	87	160	160	87	110	96	965	50	80	977	54
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	120	95	174	174	95	120	104	1049	54	87	1062	59
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	343	187	343	295	238	300	203	1383	71	192	1357	75
Arrive On Green	0.31	0.31	0.31	0.31	0.31	0.31	0.11	0.40	0.40	0.11	0.39	0.39
Sat Flow, veh/h	1185	601	1101	1128	763	964	1810	3493	180	1810	3477	193
Grp Volume(v), veh/h	120	0	269	174	0	215	104	542	561	87	551	570
Grp Sat Flow(s),veh/h/ln	1185	0	1702	1128	0	1727	1810	1805	1868	1810	1805	1865
Q Serve(g_s), s	7.1	0.0	10.4	12.0	0.0	7.9	4.4	20.9	20.9	3.6	21.6	21.6
Cycle Q Clear(g_c), s	15.0	0.0	10.4	22.4	0.0	7.9	4.4	20.9	20.9	3.6	21.6	21.6
Prop In Lane	1.00		0.65	1.00		0.56	1.00		0.10	1.00		0.10
Lane Grp Cap(c), veh/h	343	0	530	295	0	538	203	715	739	192	705	728
V/C Ratio(X)	0.35	0.00	0.51	0.59	0.00	0.40	0.51	0.76	0.76	0.45	0.78	0.78
Avail Cap(c_a), veh/h	385	0	591	335	0	600	224	1500	1552	224	1500	1550
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	27.7	0.0	22.7	31.9	0.0	21.8	33.7	21.0	21.0	33.8	21.6	21.6
Incr Delay (d2), s/veh	0.6	0.0	0.8	2.1	0.0	0.5	2.0	1.7	1.6	1.7	1.9	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	2.0	0.0	4.1	3.4	0.0	3.1	1.9	7.9	8.2	1.6	8.2	8.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	28.3	0.0	23.4	34.0	0.0	22.3	35.7	22.7	22.7	35.5	23.5	23.5
LnGrp LOS	C	A	C	C	A	C	D	C	C	D	C	C
Approach Vol, veh/h		389			389			1207			1208	
Approach Delay, s/veh		25.0			27.5			23.8			24.4	
Approach LOS		C			C			C			C	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	13.6	36.9		30.1	14.0	36.5		30.1				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0				
Max Green Setting (Gmax), s	10.0	67.0		28.0	10.0	67.0		28.0				
Max Q Clear Time (g_c+I1), s	5.6	22.9		17.0	6.4	23.6		24.4				
Green Ext Time (p_c), s	0.1	7.7		1.6	0.1	7.9		0.7				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				24.6								
HCM 6th LOS				C								

**GENERAL PLAN BUILDOUT WITH PROJECT – ALTERNATIVE 3**

**WITH IMPROVEMENTS**

Arco AM/PM Service Station  
2: Redlands Boulevard & Hemlock Avenue

GPBO (2040) With Project (AM Peak Hour)  
Alternative 3 With Improvements



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	50	36	70	50	36	30	235	770	100	150	778	100
Future Volume (vph)	50	36	70	50	36	30	235	770	100	150	778	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Fr <sub>t</sub>		0.901			0.931			0.983			0.983	
Fl <sub>t</sub> Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	1712	0	1805	1769	0	1805	3549	0	1805	3549	0
Fl <sub>t</sub> Permitted	0.710			0.683			0.950			0.950		
Satd. Flow (perm)	1349	1712	0	1298	1769	0	1805	3549	0	1805	3549	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		68			30			22			19	
Link Speed (mph)		30			30			50			50	
Link Distance (ft)		553			242			305			696	
Travel Time (s)		12.6			5.5			4.2			9.5	
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
Adj. Flow (vph)	54	39	76	54	39	33	255	837	109	163	846	109
Shared Lane Traffic (%)												
Lane Group Flow (vph)	54	115	0	54	72	0	255	946	0	163	955	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	20		10	20		10	20		10	20		10
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Detector Phase	4	4		8	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	22.0	22.0		22.0	22.0		15.7	22.7		15.0	30.0	
Total Split (s)	22.0	22.0		22.0	22.0		26.0	79.0		19.0	72.0	
Total Split (%)	18.3%	18.3%		18.3%	18.3%		21.7%	65.8%		15.8%	60.0%	
Maximum Green (s)	17.0	17.0		17.0	17.0		21.0	74.0		14.0	67.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	Min		None	Min	
Walk Time (s)	7.0	7.0		7.0	7.0						7.0	
Flash Dont Walk (s)	10.0	10.0		10.0	10.0						18.0	
Pedestrian Calls (#/hr)	0	0		0	0						0	
Act Effect Green (s)	11.3	11.3		11.3	11.3		16.0	29.7		12.7	26.5	

Arco AM/PM Service Station  
2: Redlands Boulevard & Hemlock Avenue

GPBO (2040) With Project (AM Peak Hour)  
Alternative 3 With Improvements



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio	0.17	0.17		0.17	0.17		0.25	0.46		0.20	0.41	
v/c Ratio	0.23	0.32		0.24	0.22		0.57	0.58		0.46	0.65	
Control Delay	31.7	17.5		31.9	21.0		30.1	14.8		32.6	19.0	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	31.7	17.5		31.9	21.0		30.1	14.8		32.6	19.0	
LOS	C	B		C	C		C	B		C	B	
Approach Delay		22.0			25.7			18.1			21.0	
Approach LOS		C			C			B			C	
Queue Length 50th (ft)	20	17		20	15		93	144		60	162	
Queue Length 95th (ft)	60	69		61	57		196	219		144	265	
Internal Link Dist (ft)		473			162			225			616	
Turn Bay Length (ft)												
Base Capacity (vph)	381	533		367	522		630	3457		420	3335	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.14	0.22		0.15	0.14		0.40	0.27		0.39	0.29	

Intersection Summary

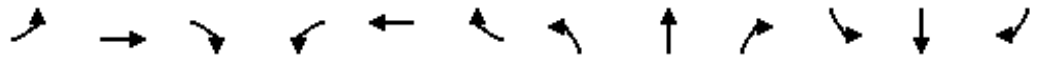
Area Type:	Other
Cycle Length:	120
Actuated Cycle Length:	64.8
Natural Cycle:	70
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.65
Intersection Signal Delay:	19.9
Intersection LOS:	B
Intersection Capacity Utilization:	63.5%
ICU Level of Service:	B
Analysis Period (min):	15

Splits and Phases: 2: Redlands Boulevard & Hemlock Avenue



Arco AM/PM Service Station  
2: Redlands Boulevard & Hemlock Avenue

GPBO (2040) With Project (AM Peak Hour)  
Alternative 3 With Improvements



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↕		↖	↕	
Traffic Volume (veh/h)	50	36	70	50	36	30	235	770	100	150	778	100
Future Volume (veh/h)	50	36	70	50	36	30	235	770	100	150	778	100
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	54	39	76	54	39	33	255	837	109	163	846	109
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	324	103	200	284	170	144	320	1236	161	300	1202	155
Arrive On Green	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.38	0.38	0.17	0.37	0.37
Sat Flow, veh/h	1349	576	1122	1298	951	804	1810	3212	418	1810	3216	414
Grp Volume(v), veh/h	54	0	115	54	0	72	255	470	476	163	475	480
Grp Sat Flow(s),veh/h/ln	1349	0	1698	1298	0	1755	1810	1805	1825	1810	1805	1825
Q Serve(g_s), s	2.0	0.0	3.3	2.1	0.0	1.9	7.5	12.0	12.0	4.6	12.4	12.4
Cycle Q Clear(g_c), s	3.9	0.0	3.3	5.4	0.0	1.9	7.5	12.0	12.0	4.6	12.4	12.4
Prop In Lane	1.00		0.66	1.00		0.46	1.00		0.23	1.00		0.23
Lane Grp Cap(c), veh/h	324	0	303	284	0	313	320	695	702	300	674	682
V/C Ratio(X)	0.17	0.00	0.38	0.19	0.00	0.23	0.80	0.68	0.68	0.54	0.70	0.70
Avail Cap(c_a), veh/h	497	0	521	451	0	539	686	2411	2438	457	2183	2208
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	21.2	0.0	20.0	22.4	0.0	19.5	21.8	14.2	14.2	21.2	14.7	14.7
Incr Delay (d2), s/veh	0.2	0.0	0.8	0.3	0.0	0.4	4.5	1.2	1.2	1.5	1.4	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	0.6	0.0	1.3	0.6	0.0	0.8	3.0	3.8	3.9	1.8	4.0	4.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	21.4	0.0	20.8	22.8	0.0	19.9	26.4	15.3	15.3	22.7	16.1	16.1
LnGrp LOS	C	A	C	C	A	B	C	B	B	C	B	B
Approach Vol, veh/h		169			126			1201			1118	
Approach Delay, s/veh		21.0			21.1			17.7			17.1	
Approach LOS		C			C			B			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	14.2	26.3		14.9	14.8	25.7		14.9				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0				
Max Green Setting (Gmax), s	14.0	74.0		17.0	21.0	67.0		17.0				
Max Q Clear Time (g_c+I1), s	6.6	14.0		5.9	9.5	14.4		7.4				
Green Ext Time (p_c), s	0.2	6.3		0.5	0.5	6.3		0.3				

Intersection Summary												
HCM 6th Ctrl Delay				17.8								
HCM 6th LOS				B								



Arco AM/PM Service Station  
2: Redlands Boulevard & Hemlock Avenue

GPBO (2040) With Project (PM Peak Hour)  
Alternative 3 With Improvements

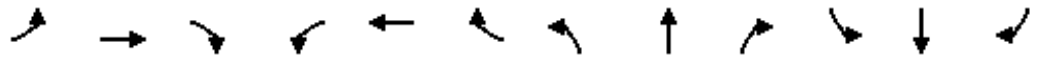


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	131	87	182	160	87	110	187	965	50	80	1000	54
Future Volume (vph)	131	87	182	160	87	110	187	965	50	80	1000	54
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Fr <sub>t</sub>		0.899			0.916			0.993			0.992	
Fl <sub>t</sub> Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	1708	0	1805	1740	0	1805	3585	0	1805	3581	0
Fl <sub>t</sub> Permitted	0.542			0.429			0.950			0.950		
Satd. Flow (perm)	1030	1708	0	815	1740	0	1805	3585	0	1805	3581	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		82			50			7				7
Link Speed (mph)		30			30			50				50
Link Distance (ft)		553			280			305				696
Travel Time (s)		12.6			6.4			4.2				9.5
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
Adj. Flow (vph)	142	95	198	174	95	120	203	1049	54	87	1087	59
Shared Lane Traffic (%)												
Lane Group Flow (vph)	142	293	0	174	215	0	203	1103	0	87	1146	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	20		10	20		10	20		10	20		10
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Detector Phase	4	4		8	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	22.0	22.0		22.0	22.0		15.7	22.7		15.0	30.0	
Total Split (s)	34.0	34.0		34.0	34.0		17.0	71.0		15.0	69.0	
Total Split (%)	28.3%	28.3%		28.3%	28.3%		14.2%	59.2%		12.5%	57.5%	
Maximum Green (s)	29.0	29.0		29.0	29.0		12.0	66.0		10.0	64.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	Min		None	Min	
Walk Time (s)	7.0	7.0		7.0	7.0							7.0
Flash Dont Walk (s)	10.0	10.0		10.0	10.0							18.0
Pedestrian Calls (#/hr)	0	0		0	0							0
Act Effct Green (s)	29.2	29.2		29.2	29.2		12.1	42.2		10.1	36.9	



Arco AM/PM Service Station  
2: Redlands Boulevard & Hemlock Avenue

GPBO (2040) With Project (PM Peak Hour)  
Alternative 3 With Improvements



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio	0.31	0.31		0.31	0.31		0.13	0.45		0.11	0.40	
v/c Ratio	0.44	0.50		0.68	0.37		0.87	0.68		0.45	0.81	
Control Delay	33.0	23.1		46.0	22.6		76.0	23.1		49.3	29.6	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	33.0	23.1		46.0	22.6		76.0	23.1		49.3	29.6	
LOS	C	C		D	C		E	C		D	C	
Approach Delay		26.4			33.0			31.3			31.0	
Approach LOS		C			C			C			C	
Queue Length 50th (ft)	66	98		89	73		119	277		49	305	
Queue Length 95th (ft)	143	205		#220	157		#282	347		107	382	
Internal Link Dist (ft)		473			200			225			616	
Turn Bay Length (ft)												
Base Capacity (vph)	322	590		255	579		233	2555		194	2475	
Starvation Cap Reductn	0	0		0	0		0	42		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.44	0.50		0.68	0.37		0.87	0.44		0.45	0.46	

Intersection Summary

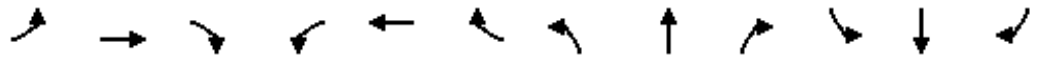
Area Type:	Other
Cycle Length:	120
Actuated Cycle Length:	93.2
Natural Cycle:	75
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.87
Intersection Signal Delay:	30.8
Intersection LOS:	C
Intersection Capacity Utilization:	85.5%
ICU Level of Service:	E
Analysis Period (min):	15
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

Splits and Phases: 2: Redlands Boulevard & Hemlock Avenue

Ø1	Ø2	Ø4
15 s	71 s	34 s
Ø5	Ø6	Ø8
17 s	69 s	34 s

Arco AM/PM Service Station  
2: Redlands Boulevard & Hemlock Avenue

GPBO (2040) With Project (PM Peak Hour)  
Alternative 3 With Improvements



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	131	87	182	160	87	110	187	965	50	80	1000	54
Future Volume (veh/h)	131	87	182	160	87	110	187	965	50	80	1000	54
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	142	95	198	174	95	120	203	1049	54	87	1087	59
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	340	174	364	272	242	306	237	1469	76	176	1348	73
Arrive On Green	0.32	0.32	0.32	0.32	0.32	0.32	0.13	0.42	0.42	0.10	0.39	0.39
Sat Flow, veh/h	1185	549	1145	1103	763	964	1810	3493	180	1810	3482	189
Grp Volume(v), veh/h	142	0	293	174	0	215	203	542	561	87	563	583
Grp Sat Flow(s),veh/h/ln	1185	0	1694	1103	0	1727	1810	1805	1868	1810	1805	1866
Q Serve(g_s), s	9.7	0.0	13.0	14.1	0.0	8.9	10.0	22.7	22.7	4.2	25.4	25.4
Cycle Q Clear(g_c), s	18.6	0.0	13.0	27.1	0.0	8.9	10.0	22.7	22.7	4.2	25.4	25.4
Prop In Lane	1.00		0.68	1.00		0.56	1.00		0.10	1.00		0.10
Lane Grp Cap(c), veh/h	340	0	538	272	0	548	237	759	786	176	699	722
V/C Ratio(X)	0.42	0.00	0.54	0.64	0.00	0.39	0.86	0.71	0.71	0.49	0.81	0.81
Avail Cap(c_a), veh/h	340	0	538	272	0	548	238	1305	1350	198	1265	1308
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	31.5	0.0	25.7	36.9	0.0	24.3	38.8	21.9	21.9	39.1	24.9	24.9
Incr Delay (d2), s/veh	0.8	0.0	1.1	5.0	0.0	0.5	25.2	1.3	1.2	2.1	2.3	2.2
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	2.8	0.0	5.3	4.1	0.0	3.6	5.8	8.7	9.0	1.8	10.1	10.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	32.3	0.0	26.8	41.9	0.0	24.7	64.0	23.2	23.1	41.2	27.2	27.1
LnGrp LOS	C	A	C	D	A	C	E	C	C	D	C	C
Approach Vol, veh/h		435			389			1306			1233	
Approach Delay, s/veh		28.6			32.4			29.5			28.1	
Approach LOS		C			C			C			C	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	13.9	43.4		34.0	17.0	40.4		34.0				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0				
Max Green Setting (Gmax), s	10.0	66.0		29.0	12.0	64.0		29.0				
Max Q Clear Time (g_c+I1), s	6.2	24.7		20.6	12.0	27.4		29.1				
Green Ext Time (p_c), s	0.1	7.6		1.5	0.0	7.9		0.0				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				29.2								
HCM 6th LOS				C								



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