LAND USE SERVICES DEPARTMENT

COUNTY OF SAN BERNARDINO

PLANNING DIVISION
15900 Smoke Tree Street, Hesperia, CA 92345
(760) 995-8140 Fax (760) 995-8167
http://cms.sbcounty.gov/lus/Home.aspx

TOM HUDSON
Director

LETTER OF TRANSMITTAL

Date: September 12, 2013

VIA HAND DELIVERY

From: Heidi Duron, Supervising Planner

To: California Department of Transportation
Nivine Georges, Transportation Civil Engineer

Subject: DYNAMIC DEVELOPMENT, LANDERS; APN 0629-051-62; PROJECT NO.: P201300087

ENCLOSED FOR YOUR:

☐	Urgent Attention	☐	Signature	☐	Information
☒	Review & Comment	☐	Use/File	☐	Use at your Request

Enclosures: Site Plans

Remarks: Attached is technical memorandum prepared by Kunzman Associates, Inc., dated September 11, 2013 for the referenced project. This is in response to your letter dated August 26, 2013 requiring a Traffic Impact Study for this project.

Should you have questions, or need additional information, please contact Tracy Creason at 760.995.8143.

September 11, 2013

Ms. Kelly Harrison, Director of Development
DYNAMIC DEVELOPMENT COMPANY, LLC
1725 21st Street
Santa Monica, CA 90404

Dear Ms. Harrison:

INTRODUCTION

The firm of Kunzman Associates, Inc. is pleased to provide this technical memorandum for the Landers project in the County of San Bernardino. The Landers Retail Building project consists of a 9,100 square foot variety store and is located on the northwest corner of Cedarbird Road and Old Woman Springs Road (SR-247) (see Figure 1). Figure 2 illustrates the project site plan. The purpose of this technical memorandum is to determine if a traffic impact study is required based on the criteria established by the California Department of Transportation.

Although this is a technical report, every effort has been made to write the report clearly and concisely. To assist the reader with those terms unique to transportation engineering, a glossary of terms is provided within Appendix A.

TRAFFIC IMPACT ANALYSIS CRITERIA

As stated in the Guide for the Preparation of Traffic Impact Studies, California Department of Transportation, December 2002, a traffic impact study may be needed when a project:

1. Generates over 100 peak hour trips assigned to a State highway facility.

2. Generates 50 to 100 peak hour trips assigned to a State highway facility - and, affected State highway facilities are experiencing noticeable delay; approaching unstable traffic flow conditions (Level of Service "C" or "D").

3. Generates 1 to 49 peak hour trips assigned to a State highway facility - the following are examples that may require a full traffic impact study or some lesser analysis:

    a. Affected State highway facilities experiencing significant delay; unstable or forced traffic flow conditions (Level of Service "E" or "F").

    b. The potential risk for a traffic accident is significantly increased (i.e., congestion related collisions, non-standard sight distance considerations, increase in traffic conflict points, etc.).

c. Change in local circulation networks that impact a State highway facility (i.e., direct access to State highway facility, a non-standard highway geometric design, etc.).

PROJECT TRIP GENERATION

Trip generation rates were determined for daily traffic, morning peak hour inbound and outbound traffic, and evening peak hour inbound and outbound traffic for the proposed land use. By multiplying the trip generation rates by the land use quantity, the project generated traffic volumes are determined. Table 1 exhibits the trip generation rates, project peak hour volumes, and project daily traffic volumes. The trip generation rates are derived from the Institute of Transportation Engineers, Trip Generation, 9th Edition, 2012. In the absence of data from the Institute of Transportation Engineers, the morning and evening peak hour inbound/outbound ratio splits for specialty retail/strip commercial were obtained from the San Diego Association of Governments, Traffic Generators, April 2003.

The proposed development is projected to generate approximately 583 daily vehicle trips, 35 of which occur during the morning peak hour and 62 of which occur during the evening peak hour.

PROJECT TRIP DISTRIBUTION

Figures 2 and 3 contain the directional distributions of the project trips for the proposed land use. To determine the trip distributions for the proposed project, peak hour traffic counts of the existing directional distribution of traffic for existing areas in the vicinity of the site and other additional information on future development and traffic impacts in the area were reviewed.

The proposed development must meet the Criteria 3 items to warrant a traffic impact study.

STUDY AREA TRAFFIC CONDITIONS

Old Woman Springs Road (SR-247) is a two lane undivided roadway adjacent to the project site. Based on manual 24 hour tube counts obtained by Kunzman Associates, Inc. from September 2013, Old Woman Springs Road (SR-247) currently carries approximately 4,000 trips per day (4,600 in passenger car equivalent's), including approximately 200 morning peak hour trips (250 in passenger car equivalent's) and approximately 300 evening peak hour trips (400 in passenger car equivalent's) adjacent to the project site. Appendix B includes the traffic count worksheets.

The existing Level of Service for Old Woman Springs Road (SR-247) adjacent to the project was estimated based on the Highway Capacity Manual (2010) methodology for two-lane highways using the Highway Capacity Software 2010. Based on the posted speed limit (55 miles per hour) and the density of access points, the roadway segment has been analyzed as a Class III highway. Default geometric and demand data were assumed based on the Highway Capacity Manual recommendations. Based on the two-lane highway Level of Service analysis, Old Woman Springs Road (SR-247) is currently estimated to operate at Level of Service B adjacent to the project site. The Highway Capacity Software Level of Service worksheet is included in Appendix C.

The project access points were analyzed for Existing Plus Project and Opening Year (2015) With Project traffic conditions (see Appendix D).

The technique used to assess the capacity needs of an intersection is known as the Intersection Delay Method (see Appendix D) based on the 2000 Highway Capacity Manual – Transportation Research Board Special Report 209. To calculate delay, the volume of traffic using the intersection is compared with the capacity of the intersection. The signalized intersections are considered deficient (Level of Service F) if the overall intersection critical volume to capacity ratio equals or exceeds 1.0, even if the Level of Service defined by the delay value is below the defined Level of Service standard. The volume to capacity ratio is defined as the critical volumes divided by the intersection capacity. A volume to capacity ratio greater than 1.0 implies an infinite queue.

For existing plus project and opening year (2015) with project traffic conditions, saturation flow rates of 1,800 vehicles per hour of green for through and right turn lanes and 1,700 vehicles per lane for single left turn lanes, 1,600 vehicles per lane for dual left turn lanes and 1,500 vehicles per lane for triple left turn lanes have been assumed for the capacity analysis.

For opening year (2015) with project traffic conditions, an annual growth rate of 0.37% was used. This growth rate was based on historical and current traffic count data.

The definition of an intersection deficiency has been obtained from the County of San Bernardino General Plan. The General Plan states that peak hour intersection operations of Level of Service D or better are generally acceptable. Therefore, any intersection operating at Level of Service E or F will be considered deficient.

The identification of significant impacts is a requirement of the California Environmental Quality Act. The County of San Bernardino General Plan and Circulation Element have been adopted in accordance with California Environmental Quality Act requirements, and any roadway improvements within the County of San Bernardino that are consistent with these documents are not considered a significant impact, so long as the project contributes its “fair share” funding for improvements.

A traffic impact is considered significant if the project both: i) contributes measurable traffic to and ii) substantially and adversely changes the level of service at any off-site location projected to experience deficient operations under foreseeable cumulative conditions, where feasible improvements consistent with the County of San Bernardino General Plan cannot be constructed.

For Existing Plus Project traffic conditions, the study area intersections are projected to operate at acceptable Levels of Service during the peak hours (see Table 2).

For Opening Year (2015) With Project traffic conditions, the study area intersections are projected to operate at acceptable Levels of Service during the peak hours (see Table 3).

The identification of the study area, and the intersections and highway segments requiring analysis, was based on an estimate of the two-way traffic volumes on the roadway segments near the project site. All arterial segments are required to be included in the analysis when the anticipated project volume equals

or exceeds 50 two-way trips in the peak hours. The requirement is 100 two-way peak hour trips for freeways.

Based on the Existing Plus Project and Opening Year (2015) With Project morning and evening peak hour intersection analysis for both project access points, it has been determined that the project will not add 50 or more peak hour trips to Old Woman Springs Road (SR-247) north or south of the project site.

Based on the criteria established by the California Department of Transportation, the project does not warrant a full traffic impact study because the project accesses generate 1 to 49 peak hour trips assigned to a State highway facility (Old Woman Springs Road (SR-247)) which does not operate at Level of Service E or F.

OTHER CONSIDERATIONS

Standard California Department of Transportation driveway design and sight distance considerations should be applied to the project driveways to ensure Criteria 3b and 3c are not warranted. As requested by the California Department of Transportation, a "pork chop" island will restrict the project driveway on Old Woman Springs Road (SR-247) to right turn in/out only access.

CONCLUSIONS

The proposed development is projected to generate approximately 583 daily vehicle trips, 35 of which occur during the morning peak hour and 62 of which occur during the evening peak hour.

For Existing Plus Project traffic conditions, the study area intersections are projected to operate at acceptable Levels of Service during the peak hours.

For Opening Year (2015) With Project traffic conditions, the study area intersections are projected to operate at acceptable Levels of Service during the peak hours.

Based on the criteria established by the California Department of Transportation, the project does not warrant a full traffic impact study because the project generates 50 to 100 peak hour trips assigned to a State highway facility (Old Woman Springs Road (SR-247)) which does not operate at Level of Service C or D.

Based on the criteria established by the California Department of Transportation, the project does not warrant a full traffic impact study because the project accesses generate 1 to 49 peak hour trips assigned to a State highway facility (Old Woman Springs Road (SR-247)) which does not operate at Level of Service E or F.

Ms. Kelly Harrison, Director of Development
DYNAMIC DEVELOPMENT COMPANY, LLC
September 11, 2013

It has been a pleasure to service your needs on this project. Should you have any questions or if we can be of further assistance, please do not hesitate to call at (714) 973-8383.

Sincerely,

KUNZMAN ASSOCIATES , INC.

Carl Ballard, LEED GA
Principal Associate

#5360a-2

KUNZMAN ASSOCIATES, INC.

William Kunzman, P.E.
Principal

Table 1

Project Trip Generation[1]

Land Use	Quantity	Units[2]	Peak Hour						Daily
			Morning			Evening			
			Inbound	Outbound	Total	Inbound	Outbound	Total	
Trip Generation Rates									
Specialty Retail	9.100	TSF	2.29	1.52	3.81	3.41	3.41	6.82	64.03
Trips Generated									
Specialty Retail	9.100	TSF	21	14	35	31	31	62	583

[1] Source: Institute of Transportation Engineers, Trip Generation, 9th Edition, 2012, Land Use Category 814. Since morning and evening peak hour inbound/outbound ratios are not available, the morning and evening peak hour inbound/outbound ratio splits for specialty retail/strip commercial has been obtained from the San Diego Association of Governments, Traffic Generators, April 2003.

[2] TSF = Thousand Square Feet

Table 2

Existing Plus Project Intersection Delay and Level of Service

Intersection	Traffic Control[3]	Intersection Approach Lanes[1]												Peak Hour Delay-LOS[2]	
		Northbound			Southbound			Eastbound			Westbound				
		L	T	R	L	T	R	L	T	R	L	T	R	Morning	Evening
SR-247 (NS) at:															
Project North Access (EW) - #1	**CSS**	0	1	0	0	1	0	0	0	1	0	0	0	9.1-A	9.4-A
Project South Access (EW) - #2	**CSS**	0	1	0	0	1	0	0	1	0	0	0	0	10.1-B	10.8-B

[1] When a right turn lane is designated, the lane can either be striped or unstriped. To function as a right turn lane there must be sufficient width for right turning vehicles to travel outside the through lanes.
L = Left; T = Through; R = Right; **1** = Improvement

[2] Delay and level of service has been calculated using the following analysis software: Traffix, Version 7.9.0215 (2008). Per the 2000 Highway Capacity Manual, overall average for intersection delay and level of service are shown for intersections with traffic signal or all way stop control, the delay and level of service for the worst individual movement (or movements sharing a single lane) are shown.

[3] CSS = Cross Street Stop

Table 3

Opening Year (2015) With Project
Intersection Delay and Level of Service

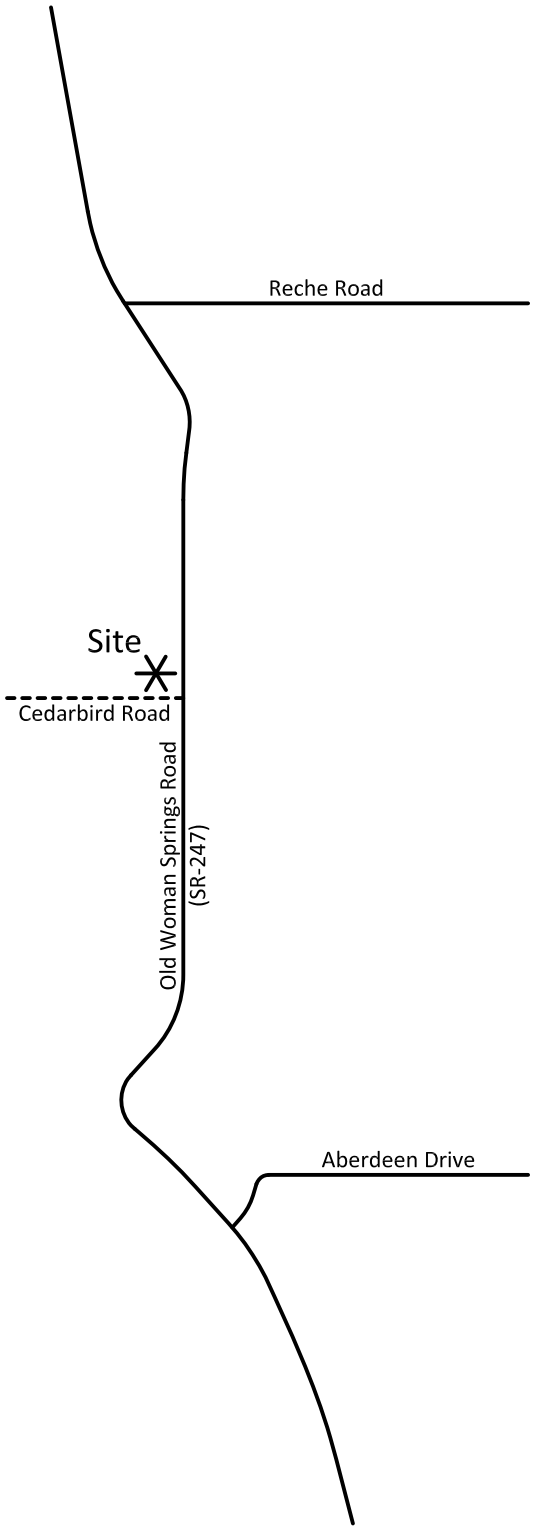
Intersection	Traffic Control[3]	Intersection Approach Lanes[1]												Peak Hour Delay-LOS[2]	
		Northbound			Southbound			Eastbound			Westbound				
		L	T	R	L	T	R	L	T	R	L	T	R	Morning	Evening
SR-247 (NS) at:															
Project North Access (EW) - #1	**CSS**	0	1	0	0	1	0	0	0	1	0	0	0	9.1-A	9.4-A
Project South Access (EW) - #2	**CSS**	0	1	0	0	1	0	0	1	0	0	0	0	10.1-B	10.9-B

[1] When a right turn lane is designated, the lane can either be striped or unstriped. To function as a right turn lane there must be sufficient width for right turning vehicles to travel outside the through lanes.
L = Left; T = Through; R = Right; **1** = Improvement

[2] Delay and level of service has been calculated using the following analysis software: Traffix, Version 7.9.0215 (2008). Per the 2000 Highway Capacity Manual, overall average for intersection delay and level of service are shown for intersections with traffic signal or all way stop control, the delay and level of service for the worst individual movement (or movements sharing a single lane) are shown.

[3] CSS = Cross Street Stop

Figure 1
Project Location Map



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OVER 35 YEARS OF EXCELLENT SERVICE

Figure 2
Site Plan

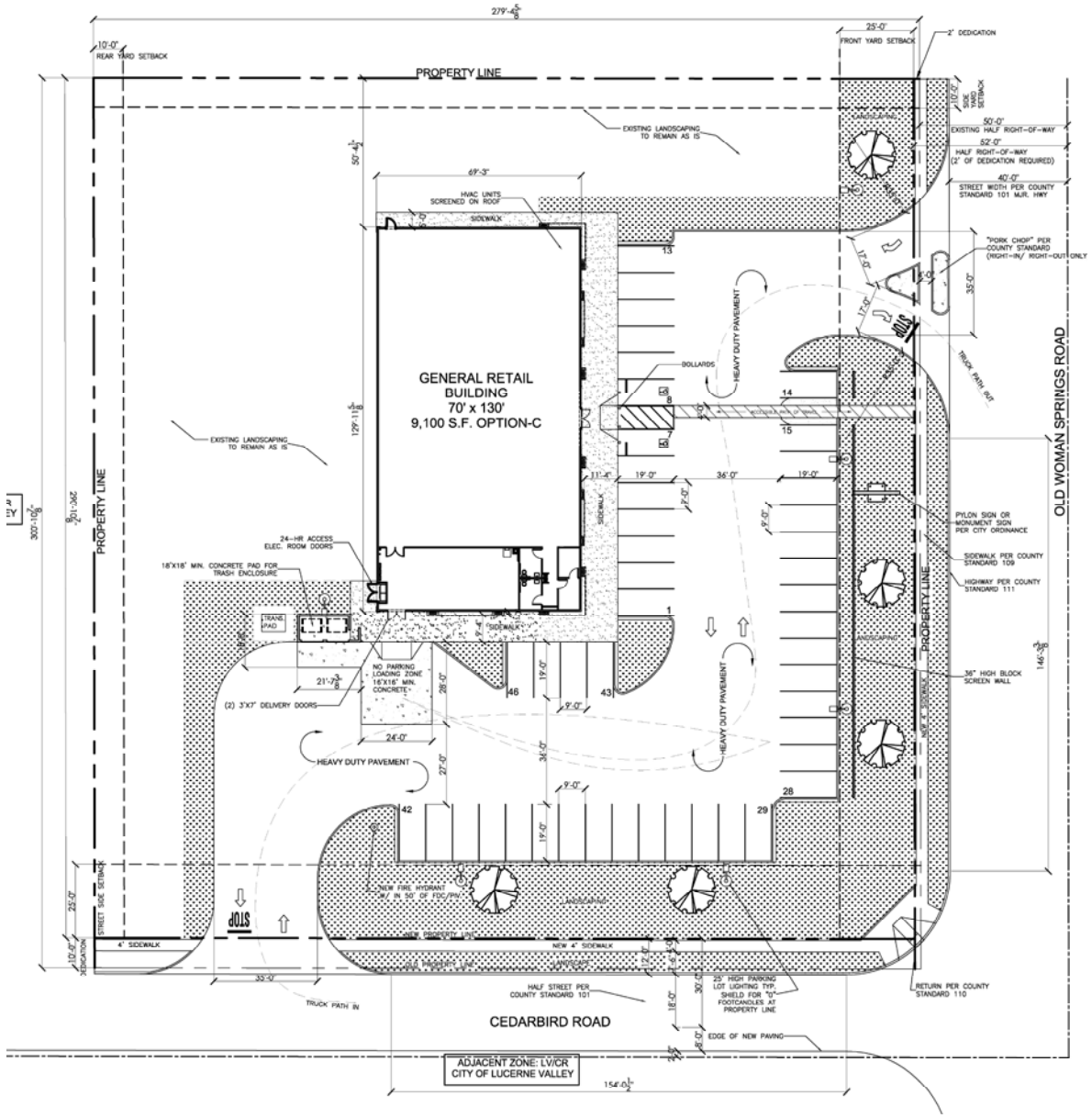

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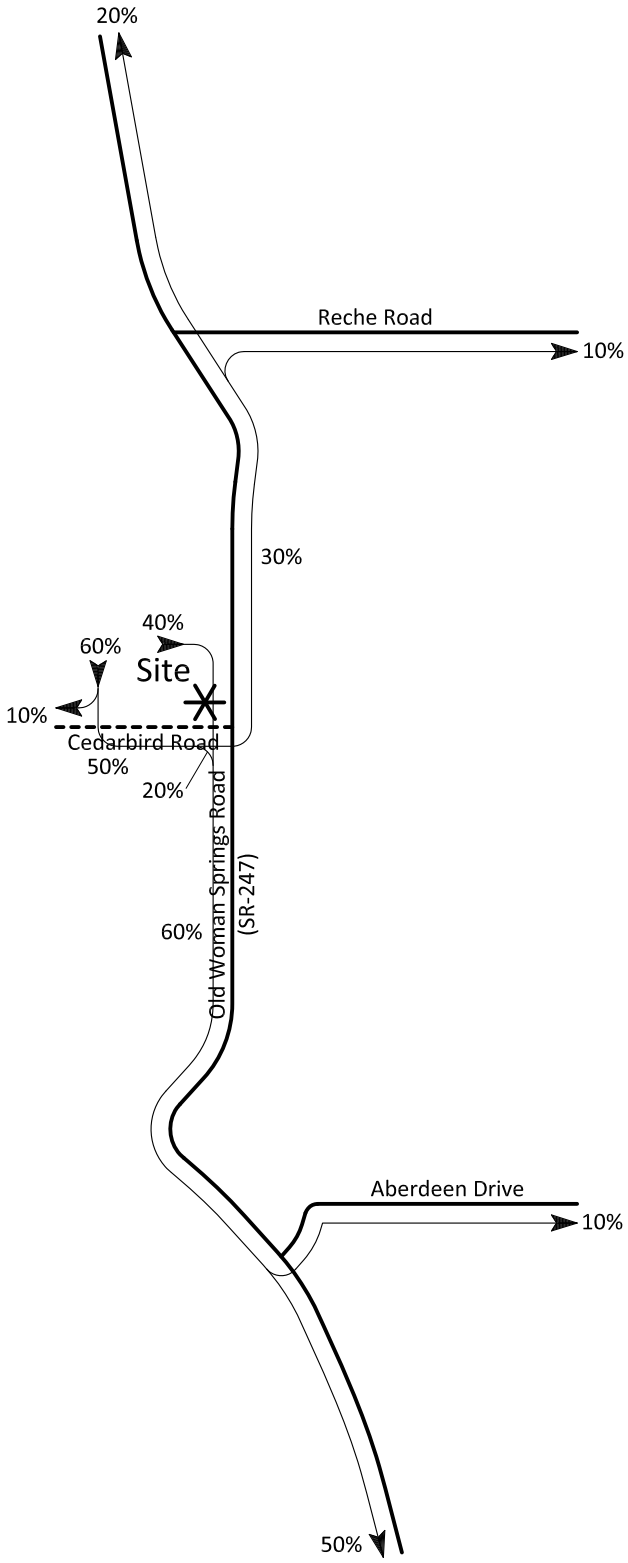
Figure 3
Project Outbound Traffic Distribution



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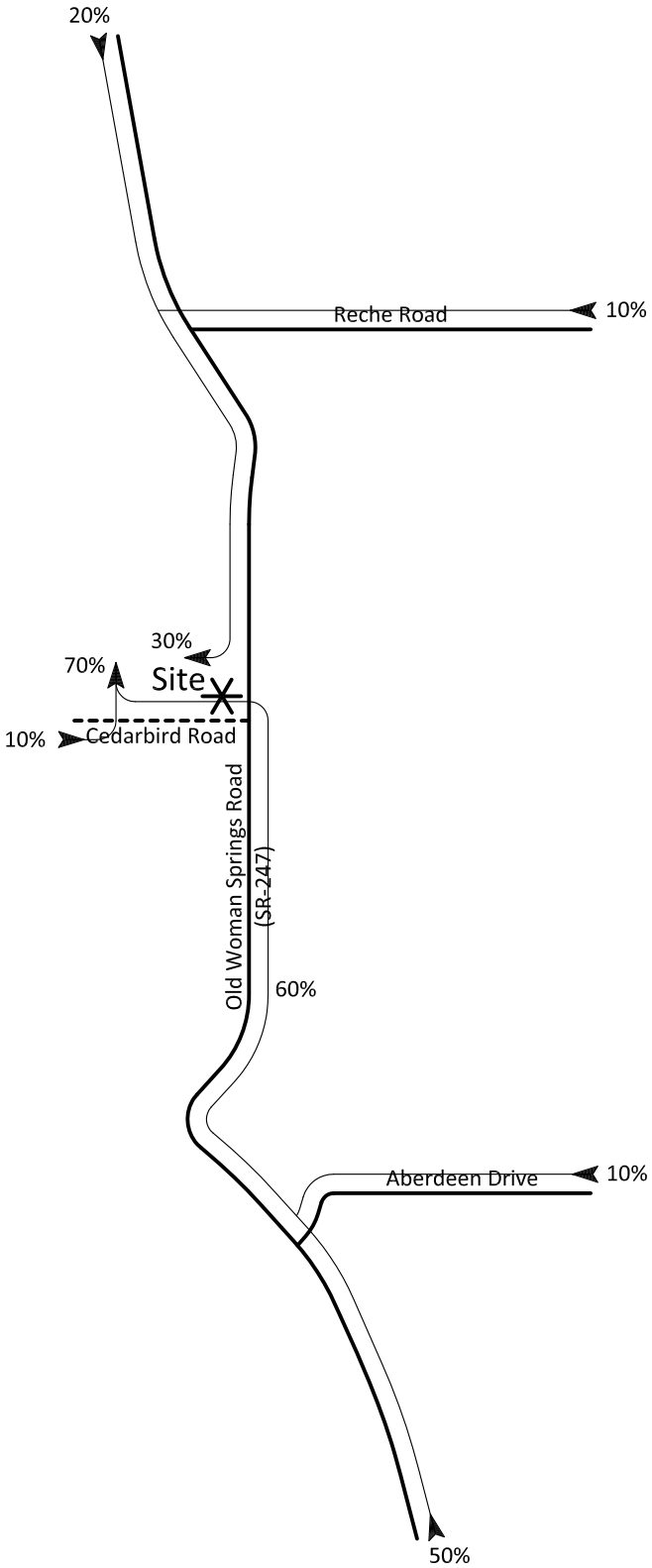
OVER 35 YEARS OF EXCELLENT SERVICE

Figure 4
Project Inbound Traffic Distribution



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OVER 35 YEARS OF EXCELLENT SERVICE

APPENDIX A

Glossary of Transportation Terms

GLOSSARY OF TRANSPORTATION TERMS

COMMON ABBREVIATIONS

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 total volume during a year divided by the number of days in a year. Usually only weekdays are included.

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

BOTTLENECK: A constriction along a travelway 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.

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

CYCLE LENGTH: The time period in seconds required for one complete signal cycle.

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

DAILY CAPACITY: The daily volume of traffic that will result in a volume during the peak hour 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.

ORIGIN-DESTINATION SURVEY: A survey to determine the point of origin and the point of destination for a given vehicle trip.

PASSENGER CAR EQUIVALENTS: One car is one Passenger Car Equivalent. A truck is equal to 2 or 3 Passenger Car Equivalents in that a truck requires longer to start, goes slower, and accelerates slower. Loaded trucks have a higher Passenger Car Equivalent than empty trucks.

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.

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

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.

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

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.

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

Traffic Count Worksheets

24-HOUR ROADWAY SEGMENT COUNTS (WITH CLASSIFICATION)

PREPARED BY: PACIFIC TRAFFIC DATA SERVICES pacific@aimtd.com 951 249 3226

DATE: Thursday, September 05, 2013 **CITY:** Yucca
JOB #: i1417 **LOCATION:** Count PCE conversion

AM TIME	1	2	3	4	TOTAL	PM Time	1	2	3	4	TOTAL
0:00	4	0	0	0	4	12:00	24	1	0	0	25
0:15	1	0	0	1	2	12:15	26	1	0	4	31
0:30	6	0	0	2	8	12:30	23	1	0	1	25
0:45	6	0	0	0	6	12:45	36	0	0	3	39
1:00	2	0	0	0	2	13:00	31	1	1	4	37
1:15	2	0	0	0	2	13:15	26	0	0	2	28
1:30	0	0	0	0	0	13:30	26	0	0	1	27
1:45	0	0	0	0	0	13:45	24	1	0	3	28
2:00	1	0	0	0	1	14:00	29	0	0	2	31
2:15	3	0	0	1	4	14:15	40	0	0	4	44
2:30	1	0	0	1	2	14:30	31	0	0	2	33
2:45	2	0	0	0	2	14:45	46	3	0	2	51
3:00	0	0	0	1	1	15:00	34	1	0	1	36
3:15	0	0	0	1	1	15:15	34	0	0	1	35
3:30	0	0	0	1	1	15:30	43	1	0	3	47
3:45	1	0	0	0	1	15:45	34	2	0	4	40
4:00	3	0	0	0	3	16:00	49	0	0	1	50
4:15	1	0	0	1	2	16:15	39	0	0	4	43
4:30	6	0	0	0	6	16:30	44	0	0	0	44
4:45	4	0	1	0	5	16:45	45	0	0	4	49
5:00	4	0	0	0	4	17:00	33	1	0	0	34
5:15	4	0	0	0	4	17:15	48	0	0	4	52
5:30	4	1	1	0	6	17:30	39	1	0	3	43
5:45	6	1	0	1	8	17:45	33	0	0	1	34
6:00	3	1	0	0	4	18:00	28	0	0	0	28
6:15	10	1	0	1	12	18:15	41	0	0	0	41
6:30	6	1	0	1	8	18:30	36	0	0	1	37
6:45	16	0	0	0	16	18:45	38	1	0	1	40
7:00	8	1	0	0	9	19:00	30	0	0	1	31
7:15	11	0	0	0	11	19:15	29	0	0	0	29
7:30	10	0	1	1	12	19:30	22	0	0	0	22
7:45	19	0	0	1	20	19:45	20	1	0	0	21
8:00	13	0	0	1	14	20:00	27	0	0	0	27
8:15	14	0	0	2	16	20:15	21	0	0	1	22
8:30	19	1	0	4	24	20:30	21	0	0	1	22
8:45	14	1	1	1	17	20:45	23	0	0	0	23
9:00	29	0	0	1	30	21:00	15	0	0	1	16
9:15	20	0	0	2	22	21:15	22	0	0	1	23
9:30	26	0	0	4	30	21:30	14	0	0	2	16
9:45	21	2	0	3	26	21:45	11	0	0	1	12
10:00	30	0	0	1	31	22:00	21	1	0	2	24
10:15	30	0	0	5	35	22:15	16	0	0	1	17
10:30	30	1	0	3	34	22:30	14	0	0	1	15
10:45	25	1	0	3	29	22:45	11	0	0	1	12
11:00	25	1	0	2	28	23:00	6	0	0	1	7
11:15	25	1	0	3	29	23:15	5	0	0	0	5
11:30	29	0	0	1	30	23:30	6	0	0	2	8
11:45	41	0	0	4	45	23:45	3	0	0	0	3
TOTAL	535	14	4	54	607	TOTAL	1,317	17	1	72	1,407

	1	2	3	4	
TOTAL: AM+PM	1,852	31	5	126	2,014
% OF TOTAL	92.0%	1.5%	0.2%	6.3%	100.0%

	1	2	3	4	
TOTAL: ALL	3,681	73	10	256	4,020
% OF TOTAL	91.6%	1.8%	0.2%	6.4%	100.0%

CLASS 1	PASSENGER VEHICLES
CLASS 2	2-AXLE TRUCKS
CLASS 3	3-AXLE TRUCKS
CLASS 4	4 OR MORE AXLE TRUCKS

24-HOUR ROADWAY SEGMENT COUNTS (WITH CLASSIFICATION)

PREPARED BY: PACIFIC TRAFFIC DATA SERVICES pacific@aimtd.com 951 249 3226

DATE: Thursday, September 05, 2013 **CITY:** Yucca
JOB #: i1417 **LOCATION:** Count PCE conversion

AM TIME	1	2	3	4	TOTAL	PM Time	1	2	3	4	TOTAL
0:00	5	0	0	0	5	12:00	40	1	0	4	45
0:15	0	0	0	0	0	12:15	30	1	0	1	32
0:30	5	0	0	1	6	12:30	32	1	0	2	35
0:45	0	0	0	0	0	12:45	24	1	0	2	27
1:00	1	0	0	0	1	13:00	29	0	1	2	32
1:15	1	0	0	0	1	13:15	23	0	0	1	24
1:30	3	0	0	2	5	13:30	35	1	0	4	40
1:45	2	0	0	0	2	13:45	37	1	0	2	40
2:00	3	0	0	0	3	14:00	36	1	0	4	41
2:15	0	0	0	0	0	14:15	25	3	0	2	30
2:30	2	0	0	1	3	14:30	34	2	0	0	36
2:45	0	0	0	0	0	14:45	32	3	0	2	37
3:00	0	0	0	0	0	15:00	42	1	0	2	45
3:15	1	0	0	0	1	15:15	46	0	0	2	48
3:30	2	0	0	0	2	15:30	42	0	0	2	44
3:45	1	0	0	0	1	15:45	37	1	0	2	40
4:00	3	0	0	2	5	16:00	26	0	0	3	29
4:15	4	0	0	0	4	16:15	20	3	0	1	24
4:30	7	0	0	0	7	16:30	25	1	0	7	33
4:45	8	0	0	0	8	16:45	29	2	0	3	34
5:00	7	0	0	0	7	17:00	35	1	0	3	39
5:15	9	0	0	0	9	17:15	26	0	0	1	27
5:30	9	0	0	1	10	17:30	28	0	0	2	30
5:45	16	0	0	1	17	17:45	27	0	0	1	28
6:00	17	0	0	1	18	18:00	22	3	0	1	26
6:15	23	0	0	0	23	18:15	18	0	0	0	18
6:30	25	1	0	0	26	18:30	31	0	0	2	33
6:45	38	1	0	2	41	18:45	19	0	0	1	20
7:00	34	0	0	1	35	19:00	18	0	0	1	19
7:15	29	0	0	2	31	19:15	16	0	0	2	18
7:30	28	1	0	4	33	19:30	18	1	0	1	20
7:45	33	2	0	0	35	19:45	13	0	0	0	13
8:00	36	0	0	3	39	20:00	10	0	0	0	10
8:15	29	1	0	2	32	20:15	13	0	0	0	13
8:30	28	1	0	3	32	20:30	6	0	0	1	7
8:45	37	1	0	0	38	20:45	10	0	0	1	11
9:00	34	1	0	2	37	21:00	10	0	0	2	12
9:15	45	1	0	4	50	21:15	8	0	0	0	8
9:30	25	0	0	2	27	21:30	8	0	0	0	8
9:45	27	1	1	3	32	21:45	7	0	0	0	7
10:00	32	0	1	6	39	22:00	5	0	0	0	5
10:15	28	1	0	7	36	22:15	6	0	0	0	6
10:30	34	0	1	2	37	22:30	6	0	0	0	6
10:45	24	0	0	0	24	22:45	7	0	0	0	7
11:00	31	0	1	2	34	23:00	5	0	0	0	5
11:15	30	2	0	3	35	23:15	4	0	0	0	4
11:30	31	0	0	4	35	23:30	0	0	0	0	0
11:45	22	0	0	2	24	23:45	0	0	0	0	0
TOTAL	809	14	4	63	890	TOTAL	1,020	28	1	67	1,116

	1	2	3	4	
TOTAL: AM+PM	1,829	42	5	130	2,006
% OF TOTAL	91.2%	2.1%	0.2%	6.5%	100.0%

CLASS 1	PASSENGER VEHICLES
CLASS 2	2-AXLE TRUCKS
CLASS 3	3-AXLE TRUCKS
CLASS 4	4 OR MORE AXLE TRUCKS

24-HOUR ROADWAY SEGMENT COUNTS (WITH CLASSIFICATION)

PREPARED BY: PACIFIC TRAFFIC DATA SERVICES pacific@aimtd.com 951 249 3226

DATE: Thursday, September 05, 2013 **CITY:** Yucca
JOB #: i1417 **LOCATION:** Count PCE conversion

AM TIME	1	2	3	4	TOTAL	PM Time	1	2	3	4	TOTAL
0:00	4	0	0	0	4	12:00	24	2	0	0	26
0:15	1	0	0	3	4	12:15	26	2	0	12	40
0:30	6	0	0	6	12	12:30	23	2	0	3	28
0:45	6	0	0	0	6	12:45	36	0	0	9	45
1:00	2	0	0	0	2	13:00	31	2	2	12	47
1:15	2	0	0	0	2	13:15	26	0	0	6	32
1:30	0	0	0	0	0	13:30	26	0	0	3	29
1:45	0	0	0	0	0	13:45	24	2	0	9	35
2:00	1	0	0	0	1	14:00	29	0	0	6	35
2:15	3	0	0	3	6	14:15	40	0	0	12	52
2:30	1	0	0	3	4	14:30	31	0	0	6	37
2:45	2	0	0	0	2	14:45	46	5	0	6	57
3:00	0	0	0	3	3	15:00	34	2	0	3	39
3:15	0	0	0	3	3	15:15	34	0	0	3	37
3:30	0	0	0	3	3	15:30	43	2	0	9	54
3:45	1	0	0	0	1	15:45	34	3	0	12	49
4:00	3	0	0	0	3	16:00	49	0	0	3	52
4:15	1	0	0	3	4	16:15	39	0	0	12	51
4:30	6	0	0	0	6	16:30	44	0	0	0	44
4:45	4	0	2	0	6	16:45	45	0	0	12	57
5:00	4	0	0	0	4	17:00	33	2	0	0	35
5:15	4	0	0	0	4	17:15	48	0	0	12	60
5:30	4	2	2	0	8	17:30	39	2	0	9	50
5:45	6	2	0	3	11	17:45	33	0	0	3	36
6:00	3	2	0	0	5	18:00	28	0	0	0	28
6:15	10	2	0	3	15	18:15	41	0	0	0	41
6:30	6	2	0	3	11	18:30	36	0	0	3	39
6:45	16	0	0	0	16	18:45	38	2	0	3	43
7:00	8	2	0	0	10	19:00	30	0	0	3	33
7:15	11	0	0	0	11	19:15	29	0	0	0	29
7:30	10	0	2	3	15	19:30	22	0	0	0	22
7:45	19	0	0	3	22	19:45	20	2	0	0	22
8:00	13	0	0	3	16	20:00	27	0	0	0	27
8:15	14	0	0	6	20	20:15	21	0	0	3	24
8:30	19	2	0	12	33	20:30	21	0	0	3	24
8:45	14	2	2	3	21	20:45	23	0	0	0	23
9:00	29	0	0	3	32	21:00	15	0	0	3	18
9:15	20	0	0	6	26	21:15	22	0	0	3	25
9:30	26	0	0	12	38	21:30	14	0	0	6	20
9:45	21	3	0	9	33	21:45	11	0	0	3	14
10:00	30	0	0	3	33	22:00	21	2	0	6	29
10:15	30	0	0	15	45	22:15	16	0	0	3	19
10:30	30	2	0	9	41	22:30	14	0	0	3	17
10:45	25	2	0	9	36	22:45	11	0	0	3	14
11:00	25	2	0	6	33	23:00	6	0	0	3	9
11:15	25	2	0	9	36	23:15	5	0	0	0	5
11:30	29	0	0	3	32	23:30	6	0	0	6	12
11:45	41	0	0	12	53	23:45	3	0	0	0	3
TOTAL	535	21	8	162	726	TOTAL	1,317	26	2	216	1,561

	1	2	3	4	
TOTAL: AM+PM	1,852	47	10	378	2,287
% OF TOTAL	81.0%	2.0%	0.4%	16.5%	100.0%

	1	2	3	4	
TOTAL: ALL	3,681	110	20	768	4,579
% OF TOTAL	80.4%	2.4%	0.4%	16.8%	100.0%

CLASS 1	PASSENGER VEHICLES
CLASS 2	2-AXLE TRUCKS
CLASS 3	3-AXLE TRUCKS
CLASS 4	4 OR MORE AXLE TRUCKS

24-HOUR ROADWAY SEGMENT COUNTS (WITH CLASSIFICATION)

PREPARED BY: PACIFIC TRAFFIC DATA SERVICES pacific@aimtd.com 951 249 3226

DATE: Thursday, September 05, 2013 **CITY:** Yucca
JOB #: i1417 **LOCATION:** Count PCE conversion

AM TIME	1	2	3	4	TOTAL	PM Time	1	2	3	4	TOTAL
0:00	5	0	0	0	5	12:00	40	2	0	12	4
0:15	0	0	0	0	0	12:15	30	2	0	3	6
0:30	5	0	0	3	8	12:30	32	2	0	6	40
0:45	0	0	0	0	0	12:45	24	2	0	6	32
1:00	1	0	0	0	1	13:00	29	0	2	6	37
1:15	1	0	0	0	1	13:15	23	0	0	3	26
1:30	3	0	0	6	9	13:30	35	2	0	12	49
1:45	2	0	0	0	2	13:45	37	2	0	6	45
2:00	3	0	0	0	3	14:00	36	2	0	12	50
2:15	0	0	0	0	0	14:15	25	5	0	6	36
2:30	2	0	0	3	5	14:30	34	3	0	0	37
2:45	0	0	0	0	0	14:45	32	5	0	6	43
3:00	0	0	0	0	0	15:00	42	2	0	6	50
3:15	1	0	0	0	1	15:15	46	0	0	6	52
3:30	2	0	0	0	2	15:30	42	0	0	6	48
3:45	1	0	0	0	1	15:45	37	2	0	6	45
4:00	3	0	0	6	9	16:00	26	0	0	9	35
4:15	4	0	0	0	4	16:15	20	5	0	3	28
4:30	7	0	0	0	7	16:30	25	2	0	21	48
4:45	8	0	0	0	8	16:45	29	3	0	9	41
5:00	7	0	0	0	7	17:00	35	2	0	9	46
5:15	9	0	0	0	9	17:15	26	0	0	3	29
5:30	9	0	0	3	12	17:30	28	0	0	6	34
5:45	16	0	0	3	19	17:45	27	0	0	3	30
6:00	17	0	0	3	20	18:00	22	5	0	3	30
6:15	23	0	0	0	23	18:15	18	0	0	0	18
6:30	25	2	0	0	27	18:30	31	0	0	6	37
6:45	38	2	0	6	46	18:45	19	0	0	3	22
7:00	34	0	0	3	37	19:00	18	0	0	3	21
7:15	29	0	0	6	35	19:15	16	0	0	6	22
7:30	28	2	0	12	42	19:30	18	2	0	3	23
7:45	33	3	0	0	36	19:45	13	0	0	0	13
8:00	36	0	0	9	45	20:00	10	0	0	0	10
8:15	29	2	0	6	37	20:15	13	0	0	0	13
8:30	28	2	0	9	39	20:30	6	0	0	3	9
8:45	37	2	0	0	39	20:45	10	0	0	3	13
9:00	34	2	0	6	42	21:00	10	0	0	6	16
9:15	45	2	0	12	59	21:15	8	0	0	0	8
9:30	25	0	0	6	31	21:30	8	0	0	0	8
9:45	27	2	2	9	40	21:45	7	0	0	0	7
10:00	32	0	2	18	52	22:00	5	0	0	0	5
10:15	28	2	0	21	51	22:15	6	0	0	0	6
10:30	34	0	2	6	42	22:30	6	0	0	0	6
10:45	24	0	0	0	24	22:45	7	0	0	0	7
11:00	31	0	2	6	39	23:00	5	0	0	0	5
11:15	30	3	0	9	42	23:15	4	0	0	0	4
11:30	31	0	0	12	43	23:30	0	0	0	0	0
11:45	22	0	0	6	28	23:45	0	0	0	0	0
TOTAL	809	21	8	189	1,027	TOTAL	1,020	42	2	201	1,187

	1	2	3	4	
TOTAL: AM+PM	1,829	63	10	390	2,214
% OF TOTAL	82.6%	2.8%	0.5%	17.6%	100.0%

CLASS 1	PASSENGER VEHICLES
CLASS 2	2-AXLE TRUCKS
CLASS 3	3-AXLE TRUCKS
CLASS 4	4 OR MORE AXLE TRUCKS

APPENDIX C

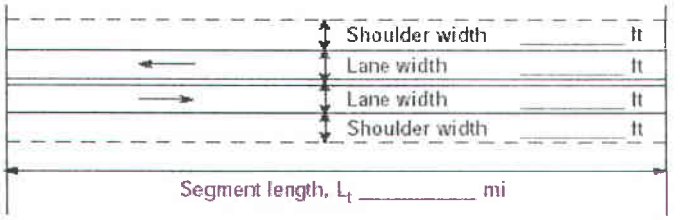
Highway Capacity Software Level of Service Worksheet

DIRECTIONAL TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		Site Information	
Analyst		Highway / Direction of Travel	Old Woman Springs Rd. (SR-247)
Agency or Company	Kunzman Associates, Inc.	From/To	Starlight Mesa to Tracy Blvd
Date Performed	9/11/2013	Jurisdiction	County of San Bernardino
Analysis Time Period	Peak Hour	Analysis Year	Existing

Project Description: Landers Dollar General

Input Data



Class I highway ☐ Class II highway ☑ Class III highway

Terrain ☑ Level ☐ Rolling

Grade Length mi Up/down

Peak-hour factor, PHF 0.88

No-passing zone 20%

% Trucks and Buses , P_T 0 %

% Recreational vehicles, P_R 0%

Access points mi 16/mi

Show North Arrow

Analysis direction vol., V_d 201veh/h

Opposing direction vol., V_o 192veh/h

Shoulder width ft 6.0

Lane Width ft 12.0

Segment Length mi 0.5

Average Travel Speed

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T (Exhibit 15-11 or 15-12)	1.0	1.0
Passenger-car equivalents for RVs, E_R (Exhibit 15-11 or 15-13)	1.0	1.0
Heavy-vehicle adjustment factor, $f_{HV,ATS}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	1.000	1.000
Grade adjustment factor[1], $f_{g,ATS}$ (Exhibit 15-9)	1.00	1.00
Demand flow rate[2], v_i (pc/h) $v_i=V_i/(PHF*f_{g,ATS}*f_{HV,ATS})$	228	218

Free-Flow Speed from Field Measurement		Estimated Free-Flow Speed	
Mean speed of sample[3], S_{FM}		Base free-flow speed[4], BFFS	65.0 mi/h
Total demand flow rate, both directions, v		Adj. for lane and shoulder width,[4] f_{LS}(Exhibit 15-7)	0.0 mi/h
Free-flow speed, $FFS=S_{FM}+0.00776(v/f_{HV,ATS})$		Adj. for access points[4], f_A (Exhibit 15-8)	4.0 mi/h
Adj. for no-passing zones, $f_{np,ATS}$ (Exhibit 15-15)	1.9 mi/h	Free-flow speed, FFS (FSS=BFFS-f_{LS}-f_A)	61.0 mi/h
		Average travel speed, $ATS_d=FFS-0.00776(v_{d,ATS}+v_{o,ATS})-f_{np,ATS}$	55.6 mi/h

Percent Time-Spent-Following

	Analysis Direction (d)	Opposing Direction (o)
Passenger-car equivalents for trucks, E_T(Exhibit 15-18 or 15-19)	1.1	1.1
Passenger-car equivalents for RVs, E_R (Exhibit 15-18 or 15-19)	1.0	1.0
Heavy-vehicle adjustment factor, $f_{HV}=1/(1+P_T(E_T-1)+P_R(E_R-1))$	1.000	1.000
Grade adjustment factor[1], $f_{g,PTSF}$ (Exhibit 15-16 or Ex 15-17)	1.00	1.00
Directional flow rate[2], v_i(pc/h) $v_i=V_i/(PHF*f_{HV,PTSF}*f_{g,PTSF})$	228	218
Base percent time-spent-following[4], $BPTSF_d(\%)=100(1-e^{av_d^b})$	25.1	
Adj. for no-passing zone, $f_{np,PTSF}$ (Exhibit 15-21)	39.9	
Percent time-spent-following, $PTSF_d(\%)=BPTSF_d+f_{np,PTSF}*(v_{d,PTSF}/v_{d,PTSF}+v_{o,PTSF})$	45.5	

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 15-3)	B
Volume to capacity ratio, v/c	0.14

Capacity, $C_{d,ATS}$ (Equation 15-12) pc/h	*1700*
Capacity, $C_{d,PTSF}$ (Equation 15-13) pc/h	*1700*
Percent Free-Flow Speed $PFFS_d$(Equation 15-11 - Class III only)	*91.2*
Bicycle Level of Service	
Directional demand flow rate in outside lane, v_{OL} (Eq. 15-24) veh/h	*228.4*
Effective width, Wv (Eq. 15-29) ft	*24.00*
Effective speed factor, S_t (Eq. 15-30)	*4.79*
Bicycle level of service score, BLOS (Eq. 15-31)	*1.67*
Bicycle level of service (Exhibit 15-4)	*B*
Notes	
1. Note that the adjustment factor for level terrain is 1.00,as level terrain is one of the base conditions. For the purpose of grade adjustment, specific downgrade segments are treated as level terrain. 2. If v_i(v_d or v_o) >=1,700 pc/h, terminate analysis--the LOS is F. 3. For the analysis direction only and for v>200 veh/h. 4. For the analysis direction only 5. Exhibit 15-20 provides coefficients a and b for Equation 15-10. 6. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.	

 HCS 2010™ Version 6.1 Generated: 9/12/2013 6:10 PM

APPENDIX D

Explanation and Calculation of Intersection Delay

EXPLANATION AND CALCULATION OF INTERSECTION LEVEL OF SERVICE USING DELAY METHODOLOGY

The levels of service at the unsignalized and signalized intersections are calculated using the delay methodology in the 2000 Highway Capacity Manual. This methodology views an intersection as consisting of several lane groups. A lane group is a set of lanes serving a movement. If there are two northbound left turn lanes, then the lane group serving the northbound left turn movement has two lanes. Similarly, there may be three lanes in the lane group serving the northbound through movement, one lane in the lane group serving the northbound right turn movement, and so forth. It is also possible for one lane to serve two lane groups. A shared lane might result in there being 1.5 lanes in the northbound left turn lane group and 2.5 lanes in the northbound through lane group.

For each lane group, there is a capacity. That capacity is calculated by multiplying the number of lanes in the lane group times a theoretical maximum lane capacity per lane time's 12 adjustment factors.

Each of the 12 adjustment factors has a value of approximately 1.00. A value less than 1.00 is generally assigned when a less than desirable condition occurs.

The 12 adjustment factors are as follows:

1. Peak hour factor (to account for peaking within the peak hour)
2. Lane utilization factor (to account for not all lanes loading equally)
3. Lane width
4. Percent of heavy trucks
5. Approach grade
6. Parking
7. Bus stops at intersections
8. Area type (CBD or other)
9. Right turns
10. Left turns

11. Pedestrian activity

12. Signal progression

The maximum theoretical lane capacity and the 12 adjustment factors for it are all unknowns for which approximate estimates have been recommended in the 2000 Highway Capacity Manual. For the most part, the recommended values are not based on statistical analysis but rather on educated estimates. However, it is possible to use the delay method and get reasonable results as will be discussed below.

Once the lane group volume is known and the lane group capacity is known, a volume to capacity ratio can be calculated for the lane group.

With a volume to capacity ratio calculated, average delay per vehicle in a lane group can be estimated. The average delay per vehicle in a lane group is calculated using a complex formula provided by the 2000 Highway Capacity Manual, which can be simplified and described as follows:

Delay per vehicle in a lane group is a function of the following:

1. Cycle length

2. Amount of red time faced by a lane group

3. Amount of yellow time for that lane group

4. The volume to capacity ratio of the lane group

The average delay per vehicle for each lane group is calculated, and eventually an overall average delay for all vehicles entering the intersection is calculated. This average delay per vehicle is then used to judge Level of Service. The Level of Services are defined in the table that follows this discussion.

Experience has shown that when a maximum lane capacity of 1,900 vehicles per hour is used (as recommended in the 2000 Highway Capacity Manual), little or no yellow time penalty is used, and none of the 12 penalty factors are applied, calculated delay is realistic. The delay calculation for instance assumes that yellow time is totally unused. Yet experience shows that most of the yellow time is used.

An idiosyncrasy of the delay methodology is that it is possible to add traffic to an intersection and reduce the average total delay per vehicle. If the average total delay is 30 seconds per vehicle for all vehicles traveling through an intersection, and traffic is

added to a movement that has an average total delay of 15 seconds per vehicle, then the overall average total delay is reduced.

The delay calculation for a lane group is based on a concept that the delay is a function of the amount of unused capacity available. As the volume approaches capacity and there is no more unused capacity available, then the delay rapidly increases. Delay is not proportional to volume, but rather increases rapidly as the unused capacity approaches zero.

Because delay is not linearly related to volumes, the delay does not reflect how close an intersection is to overloading. If an intersection is operating at Level of Service C and has an average total delay of 18 seconds per vehicle, you know very little as to what percent the traffic can increase before Level of Service E is reached.

LEVEL OF SERVICE DESCRIPTION[1]

Level Of Service	Description	Average Total Delay Per Vehicle (Seconds)	
		Signalized	**Unsignalized**
A	Level of Service A occurs when progression is extremely favorable and most vehicles arrive during the green phase. Most vehicles do not stop at all. Short cycle lengths may also contribute to low delay.	0 to 10.00	0 to 10.00
B	Level of Service B generally occurs with good progression and/or short cycle lengths. More vehicles stop than for Level of Service A, causing higher levels of average total delay.	10.01 to 20.00	10.01 to 15.00
C	Level of Service C generally results when there is fair progression and/or longer cycle lengths. Individual cycle failures may begin to appear in this level. The number of vehicles stopping is significant at this level, although many still pass through the intersection without stopping.	20.01 to 35.00	15.01 to 25.00
D	Level of Service D generally results in noticeable congestion. Longer delays may result from some combination of unfavorable progression, long cycle lengths, or high volume to capacity ratios. Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.	35.01 to 55.00	25.01 to 35.00
E	Level of Service E is considered to be the limit of acceptable delay. These high delay values generally indicate poor progression, long cycle lengths, and high volume to capacity ratios. Individual cycle failures are frequent occurrences.	55.01 to 80.00	35.01 to 50.00
F	Level of Service F is considered to be unacceptable to most drivers. This condition often occurs with oversaturation, i.e., when arrival flow rates exceed the capacity of the intersection. It may also occur at high volume to capacity ratios below 1.00 with many individual cycle failures. Poor progression and long cycle lengths may also be major contributing causes to such delay levels.	80.01 and up	50.01 and up

[1] Source: Highway Capacity Manual Special Report 209, Transportation Research Board, National Research Council, Washington, D.C., 2000.

Existing Plus Project

Landers Project
Existing Plus Project
Morning Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

****

Intersection #1 Project North Access (NS) at SR-247 (EW)

****

Average Delay (sec/veh): 0.2 Worst Case Level Of Service: A[9.1]

****

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 1	0	0	0 0 0	1	0	0 0 0	0	1	0 0 0	0	0
Volume Module:												
Base Vol:	0	89	0	0	159	0	0	0	0	0	0	0
Growth 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
Initial Bse:	0	89	0	0	159	0	0	0	0	0	0	0
Added Vol:	0	4	0	0	0	6	0	0	6	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	93	0	0	159	6	0	0	6	0	0	0
User 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
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	0	98	0	0	167	6	0	0	6	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	98	0	0	167	6	0	0	6	0	0	0
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	6.2	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	3.3	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	171	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	879	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	879	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.01	xxxx	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	0.0	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	9.1	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	*	*	A	*	*	*
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			9.1			xxxxxx		
ApproachLOS:	*			*			A			*		

****

Note: Queue reported is the number of cars per lane.

****

Landers Project
Existing Plus Project
Evening Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #1 Project North Access (NS) at SR-247 (EW)

Average Delay (sec/veh): 0.3 Worst Case Level Of Service: A[9.4]

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 1	0	0	0 0	0 1	0	0 0	0	0 1	0 0	0	0 0
Volume Module:												
Base Vol:	0	201	0	0	192	0	0	0	0	0	0	0
Growth 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
Initial Bse:	0	201	0	0	192	0	0	0	0	0	0	0
Added Vol:	0	9	0	0	0	9	0	0	12	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	210	0	0	192	9	0	0	12	0	0	0
User 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
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	0	221	0	0	202	9	0	0	13	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	221	0	0	202	9	0	0	13	0	0	0
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	6.2	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	3.3	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	207	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	839	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	839	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.02	xxxx	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	0.0	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	9.4	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	*	*	A	*	*	*
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			9.4			xxxxxx		
ApproachLOS:	*			*			A			*		

Note: Queue reported is the number of cars per lane.

Landers Project
Existing Plus Project
Morning Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

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Intersection #2 Project South Access (NS) at SR-247 (EW)

****

Average Delay (sec/veh): 9.8 Worst Case Level Of Service: B[10.1]

****

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 1 0	0 0		0 0 1	0 0		0 0 1!	0 0		0 0 0	0 0	
Volume Module:												
Base Vol:	0	89	0	0	159	0	0	0	0	0	0	0
Growth 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
Initial Bse:	0	89	0	0	159	0	0	0	0	0	0	0
Added Vol:	13	0	0	0	6	0	4	0	3	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	13	89	0	0	165	0	4	0	3	0	0	0
User 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
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	14	94	0	0	174	0	4	0	3	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	14	94	0	0	174	0	4	0	3	0	0	0
Critical Gap Module:												
Critical Gp:	7.1	6.5	xxxxx	xxxxx	6.5	xxxxx	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx
FollowUpTim:	3.5	4.0	xxxxx	xxxxx	4.0	xxxxx	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	97	10	xxxxx	xxxx	12	xxxxx	0	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	890	889	xxxxx	xxxx	887	xxxxx	900	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	753	885	xxxxx	xxxx	883	xxxxx	900	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	0.02	0.11	xxxx	xxxx	0.20	xxxx	0.00	xxxx	xxxx	xxxx	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	0.7	xxxxx	0.0	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	10.1	xxxxx	9.0	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	*	B	*	A	*	*	*	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	865	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	0.4	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	9.7	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	A	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:		9.7			10.1			xxxxxx			xxxxxx	
ApproachLOS:		A			B			*			*	

****

Note: Queue reported is the number of cars per lane.

****

Landers Project
Existing Plus Project
Evening Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

****

Intersection #2 Project South Access (NS) at SR-247 (EW)

****

Average Delay (sec/veh): 10.5 Worst Case Level Of Service: B[10.8]

****

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 1	0	0 0	0 0	1	0 0	0 0	1!	0 0	0 0	0	0 0 0
Volume Module:												
Base Vol:	0	201	0	0	192	0	0	0	0	0	0	0
Growth 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
Initial Bse:	0	201	0	0	192	0	0	0	0	0	0	0
Added Vol:	19	0	0	0	12	0	9	0	6	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	19	201	0	0	204	0	9	0	6	0	0	0
User 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
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	20	212	0	0	215	0	9	0	6	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	20	212	0	0	215	0	9	0	6	0	0	0
Critical Gap Module:												
Critical Gp:	7.1	6.5	xxxxx	xxxxx	6.5	xxxxx	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx
FollowUpTim:	3.5	4.0	xxxxx	xxxxx	4.0	xxxxx	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	129	22	xxxxx	xxxx	25	xxxxx	0	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	848	875	xxxxx	xxxx	872	xxxxx	900	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	680	866	xxxxx	xxxx	863	xxxxx	900	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	0.03	0.24	xxxx	xxxx	0.25	xxxx	0.01	xxxx	xxxx	xxxx	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	1.0	xxxxx	0.0	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	10.5	xxxxx	9.0	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	*	B	*	A	*	*	*	*	*
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	846	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	1.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	10.8	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	B	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	10.8			10.5			xxxxxx			xxxxxx		
ApproachLOS:	B			B			*			*		

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Note: Queue reported is the number of cars per lane.

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Opening Year (2015) With Project

Landers Project
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Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

****

Intersection #1 Project North Access (NS) at SR-247 (EW)

****

Average Delay (sec/veh): 0.2 Worst Case Level Of Service: A[9.1]

****

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 1	0	0	0 0 0	1	0	0 0 0	0	1	0 0 0	0	0
Volume Module:												
Base Vol:	0	89	0	0	159	0	0	0	0	0	0	0
Growth Adj:	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Initial Bse:	0	90	0	0	160	0	0	0	0	0	0	0
Added Vol:	0	4	0	0	0	6	0	0	6	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	94	0	0	160	6	0	0	6	0	0	0
User 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
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	0	99	0	0	169	6	0	0	6	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	99	0	0	169	6	0	0	6	0	0	0
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	6.2	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	3.3	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	172	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	877	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	877	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.01	xxxx	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	0.0	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	9.1	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	*	*	A	*	*	*
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			9.1			xxxxxx		
ApproachLOS:	*			*			A			*		

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Note: Queue reported is the number of cars per lane.

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Landers Project
Opening Year (2015) With Project
Evening Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

****

Intersection #1 Project North Access (NS) at SR-247 (EW)

****

Average Delay (sec/veh): 0.3 Worst Case Level Of Service: A[9.4]

****

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 1	0	0	0 0 0	1	0	0 0 0	0	1	0 0 0	0	0
Volume Module:												
Base Vol:	0 201	0		0 192	0		0 0	0		0 0	0	
Growth Adj:	1.01 1.01	1.01		1.01 1.01	1.01		1.01 1.01	1.01		1.01 1.01	1.01	
Initial Bse:	0 202	0		0 193	0		0 0	0		0 0	0	
Added Vol:	0 9	0		0 0	9		0 0	12		0 0	0	
PasserByVol:	0 0	0		0 0	0		0 0	0		0 0	0	
Initial Fut:	0 211	0		0 193	9		0 0	12		0 0	0	
User 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	
PHF Adj:	0.95 0.95	0.95		0.95 0.95	0.95		0.95 0.95	0.95		0.95 0.95	0.95	
PHF Volume:	0 223	0		0 204	9		0 0	13		0 0	0	
Reduct Vol:	0 0	0		0 0	0		0 0	0		0 0	0	
FinalVolume:	0 223	0		0 204	9		0 0	13		0 0	0	
Critical Gap Module:												
Critical Gp:	xxxxx xxxx	xxxxx		xxxxx xxxx	xxxxx		xxxx xxxx	6.2		xxxxx xxxx	xxxxx	
FollowUpTim:	xxxxx xxxx	xxxxx		xxxxx xxxx	xxxxx		xxxx xxxx	3.3		xxxxx xxxx	xxxxx	
Capacity Module:												
Cnflict Vol:	xxxx xxxx	xxxxx		xxxx xxxx	xxxxx		xxxx xxxx	208		xxxx xxxx	xxxxx	
Potent Cap.:	xxxx xxxx	xxxxx		xxxx xxxx	xxxxx		xxxx xxxx	837		xxxx xxxx	xxxxx	
Move Cap.:	xxxx xxxx	xxxxx		xxxx xxxx	xxxxx		xxxx xxxx	837		xxxx xxxx	xxxxx	
Volume/Cap:	xxxx xxxx	xxxx		xxxx xxxx	xxxx		xxxx xxxx	0.02		xxxx xxxx	xxxx	
Level Of Service Module:												
2Way95thQ:	xxxx xxxx	xxxxx		xxxx xxxx	xxxxx		xxxx xxxx	0.0		xxxx xxxx	xxxxx	
Control Del:	xxxxx xxxx	xxxxx		xxxxx xxxx	xxxxx		xxxxx xxxx	9.4		xxxxx xxxx	xxxxx	
LOS by Move:	* *	*		* *	*		* *	A		* *	*	
Movement:	LT - LTR	- RT		LT - LTR	- RT		LT - LTR	- RT		LT - LTR	- RT	
Shared Cap.:	xxxx xxxx	xxxxx		xxxx xxxx	xxxxx		xxxx xxxx	xxxxx		xxxx xxxx	xxxxx	
SharedQueue:	xxxxx xxxx	xxxxx		xxxxx xxxx	xxxxx		xxxxx xxxx	xxxxx		xxxxx xxxx	xxxxx	
Shrd ConDel:	xxxxx xxxx	xxxxx		xxxxx xxxx	xxxxx		xxxxx xxxx	xxxxx		xxxxx xxxx	xxxxx	
Shared LOS:	* *	*		* *	*		* *	*		* *	*	
ApproachDel:	xxxxxx			xxxxxx			9.4			xxxxxx		
ApproachLOS:	*			*			A			*		

****

Note: Queue reported is the number of cars per lane.

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Landers Project
Opening Year (2015) With Project
Morning Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

****

Intersection #2 Project South Access (NS) at SR-247 (EW)

****

Average Delay (sec/veh): 9.8 Worst Case Level Of Service: B[10.1]

****

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 1	0 0	0	0 0	1 0	0	0 0	1! 0	0	0 0	0 0	0
Volume Module:												
Base Vol:	0	89	0	0	159	0	0	0	0	0	0	0
Growth Adj:	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Initial Bse:	0	90	0	0	160	0	0	0	0	0	0	0
Added Vol:	13	0	0	0	6	0	4	0	3	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	13	90	0	0	166	0	4	0	3	0	0	0
User 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
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	14	94	0	0	175	0	4	0	3	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	14	94	0	0	175	0	4	0	3	0	0	0
Critical Gap Module:												
Critical Gp:	7.1	6.5	xxxxx	xxxxx	6.5	xxxxx	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx
FollowUpTim:	3.5	4.0	xxxxx	xxxxx	4.0	xxxxx	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	97	10	xxxxx	xxxx	12	xxxxx	0	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	890	889	xxxxx	xxxx	887	xxxxx	900	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	751	885	xxxxx	xxxx	883	xxxxx	900	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	0.02	0.11	xxxx	xxxx	0.20	xxxx	0.00	xxxx	xxxx	xxxx	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	0.7	xxxxx	0.0	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	10.1	xxxxx	9.0	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	*	B	*	A	*	*	*	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	865	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	0.4	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	9.8	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	A	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:		9.8			10.1			xxxxxx			xxxxxx	
ApproachLOS:		A			B			*			*	

****

Note: Queue reported is the number of cars per lane.

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Landers Project
Opening Year (2015) With Project
Evening Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

****

Intersection #2 Project South Access (NS) at SR-247 (EW)

****

Average Delay (sec/veh): 10.5 Worst Case Level Of Service: B[10.9]

****

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 1	0	0 0	0	0 1	0 0	0	0 1!	0 0	0	0 0	0 0 0
Volume Module:												
Base Vol:	0	201	0	0	192	0	0	0	0	0	0	0
Growth Adj:	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Initial Bse:	0	202	0	0	193	0	0	0	0	0	0	0
Added Vol:	19	0	0	0	12	0	9	0	6	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	19	202	0	0	205	0	9	0	6	0	0	0
User 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
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	20	213	0	0	216	0	9	0	6	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	20	213	0	0	216	0	9	0	6	0	0	0
Critical Gap Module:												
Critical Gp:	7.1	6.5	xxxxx xxxxx		6.5	xxxxx	4.1	xxxx	xxxxx xxxxx	xxxx	xxxxx	
FollowUpTim:	3.5	4.0	xxxxx xxxxx		4.0	xxxxx	2.2	xxxx	xxxxx xxxxx	xxxx	xxxxx	
Capacity Module:												
Cnflict Vol:	130	22	xxxxx	xxxx	25	xxxxx	0	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	847	875	xxxxx	xxxx	872	xxxxx	900	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	678	866	xxxxx	xxxx	863	xxxxx	900	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	0.03	0.25	xxxx	xxxx	0.25	xxxx	0.01	xxxx	xxxx	xxxx	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	1.0	xxxxx	0.0	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	10.6	xxxxx	9.0	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	*	B	*	A	*	*	*	*	*
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	846	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	1.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	10.9	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	B	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	10.9			10.6			xxxxxx			xxxxxx		
ApproachLOS:	B			B			*			*		

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Note: Queue reported is the number of cars per lane.

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