

TRAFFIC IMPACT ANALYSIS
FOR
QUARRY PLACE MIXED USE PROJECT
Rocklin, California

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November 12, 2018

Job No. 6875-03

Quarry Place.rpt

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INTRODUCTION

This report documents **KD Anderson & Associates'** analysis of the traffic impacts associated with developing the **Quarry Place Mixed Use Project** in the City of Rocklin, California. This assessment of traffic impacts has been required by the City of Rocklin, and per City staff direction addresses project impacts within the context of all transportation modes. The analysis addresses both current and future background conditions at key intersections providing access to the site and assesses traffic impacts based on adopted General Plan standards for significance. The analysis also describes the project's impact to pedestrian, bicycle and transit facilities.

Project Description

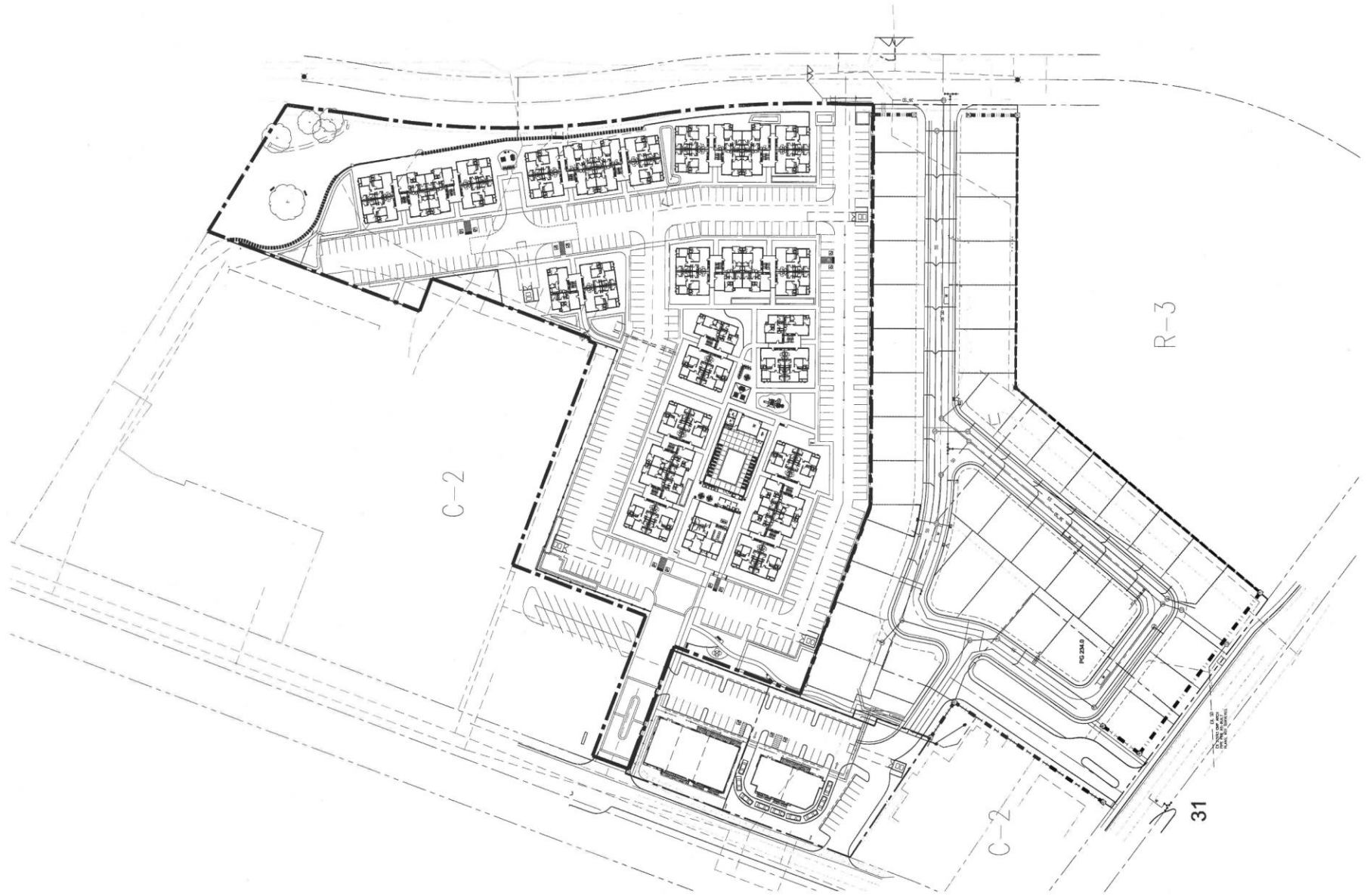
The Quarry Place Mixed Use Project combines residential and non-residential uses:

- Up to 180 multiple family residences
- Up to 40 single family detached residences
- A 3.5 ksf fast food restaurant
- Up to 6.2 ksf of general retail commercial space

The project is located on a site located near the eastern corner of the intersection of Pacific Street and Sunset Blvd, as noted in Figure 1 and Figure 2. The site is currently designated Retail Commercial (RC) in the Rocklin General Plan and is currently occupied by a vacant Kmart store. Access to the site is proposed at the driveways that serve the site today on Pacific Street, at a relocated driveway on Sunset Blvd, and at two locations on Woodside Drive. The project includes modifications to the current emergency vehicle access gate on Woodside Drive near Evelyn Avenue, but regular through traffic will continue to be prohibited.



VICINITY MAP



SITE PLAN

EXISTING SETTING

This report section describes the facilities that are available today serving vehicular, pedestrian and bicycle traffic and transit users in Rocklin, as well as General Plan policies that guide consideration of traffic impacts.

Study Area Circulation System - Roads

Regionally, the Quarry Place Mixed Use Project will be served by major city streets that link the site with important state highways. Interstate 80 (I-80) connects Rocklin with the balance of Placer County and the Sacramento Metropolitan area. In the area of the proposed project, access to state highways occurs at a grade separated interchange on Pacific Street roughly 1½ miles west of the site and on Rocklin Road roughly 1½ miles to the east. Community-wide circulation is provided via Pacific Street, which roughly parallels Interstate 80 through the community and Sunset Blvd, which runs parallel to SR 65 for 4 miles from Pacific Street to an interchange on SR 65.

The text which follows provides additional detail regarding the streets included in the study area.

Pacific Street is a four-lane east-west street that runs parallel to Interstate 80 through Rocklin and links Taylor Road in the Town of Loomis in the east with the Atlantic Street interchange on Interstate 80 in the west. Pacific Street has two lanes at the Loomis Town limits and transitions to a four-lane road between Americana Way and Delmar Avenue. Pacific Street remains four lanes through the study area and loses one westbound lane as it passes below the SR 65 viaduct west of Sunset Blvd. The Rocklin General Plan Circulation Element classifies Pacific Street as an Arterial street. A raised median controls access to Pacific Street. On-street parking is not permitted, and the speed limit on Pacific Street is posted at 45 mph in the area west of Sunset Blvd and 40 mph east of Sunset Blvd in the area of the project. Pacific Street is a designated truck route.

Recent daily traffic volume counts conducted in 2015 indicated that Pacific Street carries an Average Daily Traffic (ADT) volume of 25,420 vehicles per day in the area east of Sunset Blvd.

Sunset Blvd is a four-lane / six-lane street which links the established area of Rocklin near Pacific Street with SR 65 at the far western limits of the City. Sunset Blvd is designated an Arterial in the General Plan. On-street parking is prohibited along Sunset Blvd, and the posted speed limit ranges from 40 to 45 mph.

Daily traffic conducted by the City of Rocklin indicated that in 2010 Sunset Blvd carried 17,519 vehicles per day north of South Whitney Blvd to Topaz Avenue and 24,092 to the south between Third Street and Pacific Street. A traffic count conducted for this study in May 2015 indicated that Sunset Blvd carried 2,920 ADT in the area southeast of the existing Kmart access.

Rocklin Road is a four-lane east-west street that links Rocklin's downtown core with Interstate 80 and with the eastern portion of the City beyond I-80. Rocklin Road originates at an intersection on 5th Street and continues easterly across Pacific Street before passing beneath I-80. Rocklin Road continues easterly through Rocklin to Sierra College Blvd before terminating at Barton Road in the Town of Loomis.

The Rocklin General Plan classifies Rocklin Road as an Arterial street. Rocklin Road generally has a paved width of roughly 60 feet (curb to curb) to accommodate two travel lanes in each direction. On-street parking is not permitted. The speed limit on Rocklin Road in the vicinity of the project is 35 mph.

Traffic volume information collected in 2008 for the General Plan EIR indicated that Rocklin Road carries an Average Daily Traffic (ADT) volume of 17,600 vehicles per day in the area between Pacific Street and Grove Street, with the volume increasing to 18,900 ADT between Grove Street and Granite Drive and 30,300 between Granite Drive and the I-80 ramps.

Other Rocklin streets intersect these major arterials and connect the project with existing neighborhoods, schools or commercial districts.

Springview Drive and **3rd Street** are east-west collector streets that lie north of the UPRR crossing and link the project with established neighborhoods and Johnson-Springview Park. Each is a two-lane roadway with sidewalks and bicycle lanes. The speed limit on Springview Drive is 35 mph, while 3rd Street has a 30 mph speed limit.

Woodside Drive is a residential collector street that traverses the established residential neighborhoods southwest of the project from a signalized intersection on Pacific Street across Sunset Blvd to its current terminus at an emergency access gate near Evelyn Avenue. Woodside Drive is a two-lane street with on-street parking and bicycle lanes, and the posted speed limit is 30 mph.

Farron Street is a collector street that extends west from an intersection on Pacific Street near the Post Office across the UPRR to 5th Street near Johnson-Springview Park. 5th Street continues easterly to Spring View Middle School.

Study Area Circulation System - Intersections

The quality of traffic flow in urban areas is often governed by the operation of key intersections. The following intersections have been identified for evaluation in this study in consultation with City of Rocklin staff.

The **Sunset Blvd / Springview Drive / 3rd Street intersection** is controlled by a traffic signal with split phases for Springview Drive and 3rd Street approaches. There are two through lanes in each direction on Sunset Blvd, along with separate left turn lanes. A single through lane is available on the westbound 3rd Street approaches, and the two-lane Springview Drive approach is

configured with a separate right turn lane. Crosswalks are striped across the northern Sunset Blvd leg of the intersection and across Springview Drive and 3rd Street. There are street lights at the intersection.

The **Pacific Street / Woodside Drive intersection** is a “tee” controlled by a traffic signal. Pacific Street has two through lanes in each direction, along with separate westbound left turn and eastbound right turn lanes. Woodside Drive has separate left and right turn lanes. Crosswalks are striped across Woodside Drive, and there are street lights at the intersection.

The **Pacific Street / Sunset Blvd intersection** is controlled by a traffic signal with split phases on the Sunset Blvd approaches. Pacific Street has two through lanes in each direction. Eastbound Pacific Street has dual left turn lanes, while westbound Pacific Street has a left turn lane and a right turn lane that is separated from the intersection’s traffic signal control by a raised island. The four lane southbound Sunset Blvd approach is configured with a left turn lane, a combined left and through lane, a second through lane and a right turn lane that is separated from the traffic signal by a raised island. The four lane northbound Sunset Blvd approach has separate left turn and right turn lanes. Crosswalks are striped across both Pacific Street legs and across the southern Sunset Blvd leg. The intersection has street lights.

The Kmart Center and adjoining Walmart store have access to Pacific Street at several locations with alternative traffic controls. The **western driveway** closest to Sunset Blvd is limited to right turns in and out only by a median in Pacific Street. The westbound left turns from Pacific Street are also permitted at the **central Kmart driveway** from a separate left turn lane, but outbound left turns onto Pacific Street are prohibited. Full access is allowed at the **Walmart – Les Schwab Tire Store driveway**, and separate left turn lanes are provided on the Pacific Street approaches. The side street approaches at this intersection are single lanes. There are no crosswalks across Pacific Street at these driveways.

The **Pacific Street / Farron Street intersection** is controlled by a traffic signal. Pacific Street has two through lanes in each direction at this location. Both approaches have separate left turn lanes, and the westbound approach has a right turn lane. The two-lane southbound Farron Street approach has a separate right turn lane. The two-lane northbound approach provides access to the Rocklin Post Office, and is configured with a separate left turn lane. Crosswalks are striped across the western and northern legs of the intersection, and street lights are provided.

The **Pacific Street / Rocklin Road intersection** is controlled by a traffic signal. The intersection features two through travel lanes in each direction on Pacific Street, along with separate left turn lanes and an eastbound right turn lane which is timed to “overlap” the northbound Rocklin Road left turn. The Rocklin Road approaches operate with “split” phases in order to accommodate auxiliary lanes. The three lane northbound approach is configured with a separate left turn lane, a combined through plus left turn lane and separate right turn lane. The three lane southbound approach has two through lanes and a separate left turn lane. Crosswalks exist on all four legs of the intersection.

The **Sunset Blvd / Kmart Access intersection** is about 350 feet south of Pacific Street and is controlled by a stop sign on the Kmart exit and on the exit from the retail center on the other side of Sunset Blvd. Sunset Blvd is a four-lane roadway in this area with a continuous Two-Way Left-Turn (TWLT) lane south of the Kmart access. Access to the existing retail center across Sunset Blvd is provided at a driveway roughly 90 feet to the north (centerline to centerline). There are no crosswalks on Sunset Blvd at this location.

The **Sunset Blvd / Woodside Drive intersection** is a “tee” controlled by an all-way stop. The two lane Sunset Blvd approach is configured with separate left turn and right turn lanes. The Woodside Drive approaches are single lanes. Crosswalks are striped across the Sunset Blvd leg of the intersection.

Standards of Significance: Levels of Service - Methodology

Levels of Service were calculated at study area intersections in order to assess the quality of existing traffic conditions and to provide a basis for analyzing project impacts. "Level of Service" is a qualitative measure of traffic operating conditions whereby a letter grade "A" through "F", corresponding to progressively worsening operating conditions, is assigned to an intersection or roadway segment.

Analysis Methodology for Intersections. The City of Rocklin utilizes a modified version of the *Interim Materials on Highway Capacity – Circular 212* (Transportation Research Board, 1980) critical movement method to determine Levels of Service at signalized intersections. Modified capacities which are approximately 5 percent higher than the published Circular 212 capacities are employed. This methodology determines the Level of Service by comparing the volume-to-capacity (v/c) ratio of critical intersection movements to the thresholds shown in Table 1. Un-signalized intersections are analyzed using the methodology described *2000 Highway Capacity Manual (HCM)*. HCM techniques base Level of Service on the length of delays experienced by motorists waiting at stop signs. Delay values can be reported as an average value for the overall operation of the intersection in the case of all-way stop controls or for each movement where motorists are required to yield the right of way to other traffic, in the case of side street stops. The City of Rocklin bases evaluation of un-signalized LOS on the overall average delay.

Table 1 presents general characteristics associated with each Level of Service grade.

At intersections, Level of Service calculations can reflect average conditions occurring over the breadth of the hour or can be indicative of conditions occurring during the highest volume 15 minute period within that hour. The choice of perspective is made by local agencies as part of their development of standards of significance. Based on the assumptions made for the General Plan EIR, this analysis addresses average conditions occurring over the breadth of the peak hour (i.e., PHF = 1.00).

**TABLE 1
LEVEL OF SERVICE DEFINITIONS**

Level of Service	Signalized Intersection	Un-signalized Intersection	Roadway (Daily)
"A"	Uncongested operations, all queues clear in a single-signal cycle. V/C < 0.60	Little or no delay. Ave Delay ≤ 10 sec/veh	Completely free flow.
"B"	Uncongested operations, all queues clear in a single cycle. V/C > 0.61 and < 0.70	Short traffic delays. Delay > 10 sec/veh and ≤ 15 sec/veh	Free flow, presence of other vehicles noticeable.
"C"	Light congestion, occasional backups on critical approaches. V/C > 0.71 and < 0.80	Average traffic delays. Delay > 15 sec/veh and ≤ 25 sec/veh	Ability to maneuver and select operating speed affected.
"D"	Significant congestions of critical approaches but intersection functional. Cars required to wait through more than one cycle during short peaks. No long queues formed. V/C > 0.81 and < 0.90	Long traffic delays. Delay > 25 sec/veh and ≤ 35 sec/veh	Unstable flow, speeds and ability to maneuver restricted.
"E"	Severe congestion with some long standing queues on critical approaches. Blockage of intersection may occur if traffic signal does not provide for protected turning movements. Traffic queue may block nearby intersection(s) upstream of critical approach(es). V/C > 0.91 and < 1.00	Very long traffic delays, failure, extreme congestion. Delay > 35 sec/veh and ≤ 50 sec/veh	At or near capacity, flow quite unstable.
"F"	Total breakdown, stop-and-go operation. V/C > 1.01	Intersection often blocked by external causes. Delay > 50 sec/veh	Forced flow, breakdown.

Sources: 2000 Highway Capacity Manual, and Transportation Research Board (TRB) Special Report 209.

Traffic Signal Warrants. The extent to which a traffic signal may be justified is determined based on many factors. From the standpoint of traffic impact analysis, signal warrant criteria contained in the *California Manual of Uniform Traffic Control Devices (CMUTCD)* are employed in order to assess the relative impact of the additional traffic accompanying a development proposal. For this analysis, Warrant 3 (Peak Hour Traffic) has been employed. Variation in warrant requirements occurs based on the design speed of the road (i.e., > 40 mph) and on the location of the intersection (i.e., rural versus urban locations). In this case, urban criteria have been employed. It is important to note that other warrants addressing factors such as pedestrian activity and collision history should be considered before a decision is made to install a traffic signal.

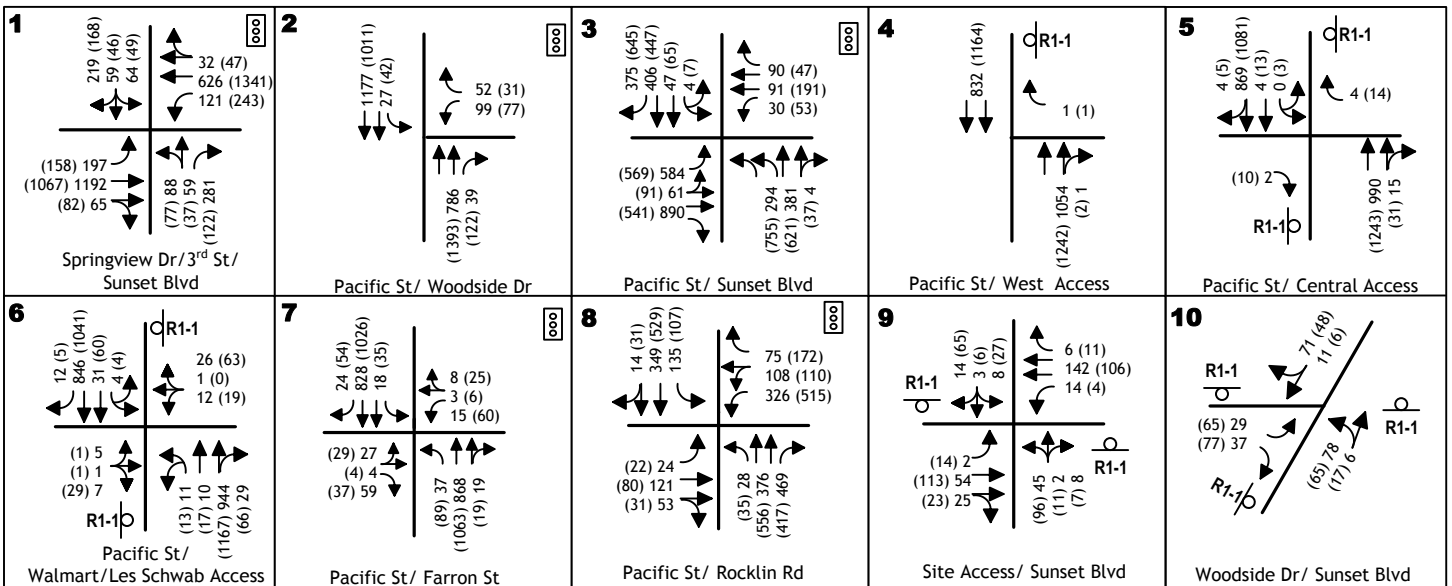
Standards of Significance. Local jurisdictions adopt Standards of Significance for determining environmental impacts relating to traffic, and in this study area the standards of the City of Rocklin apply. As indicated in the REGULATORY Setting section, the General Plan notes that Level of Service C is the minimum standard but that LOS D may be accepted during peak periods under identified circumstances.

City of Rocklin General Plan LOS policy applies to the intersection of public streets. While information contained herein describes the operation of private driveways, for the purpose of this analysis LOS at private driveways is not a significance criteria under CEQA.

Based on the City's significance threshold, if an intersection is already operating at an unsatisfactory Level of Service, an increase of 5 percent (i.e., an addition of 0.05) to the v/c ratio at a signalized intersection would be considered a measureable worsening of intersection operations and therefore would constitute a significant project impact. If an un-signalized intersection is already operating at an unsatisfactory Level of Service (i.e., LOS D or worse), then the addition of traffic that is more than 5% of the total traffic at an intersection would be a significant project impact.

Existing Traffic Volumes / Levels of Service

Traffic Volume Counts. New a.m. and p.m. traffic counts were made for this study in 2016 to supplement data collected by the City of Rocklin in April 2016. These counts were made while area schools were in session. Figure 3 illustrates the intersection turning movement count data recorded for each count period, and the actual traffic counts are included in the technical appendix to this report. This figure also notes the existing geometric layout of each intersection and the location of traffic controls. This data has been used to determine the operating Level of Service at each intersection.



Intersection Level of Service. Table 2 identifies current intersection Levels of Service at the study locations. As shown, with one exception, the overall Level of Service at each location meets the City’s LOS C goal. The Sunset Blvd / 3rd Street / Springview Drive intersection operates at LOS D in both the a.m. and p.m. peak hour. The Rocklin General Plan and CIP indicate that this intersection will someday be widened to provide three through lanes in each direction, and with that improvement the intersection would operate with a Level of Service that satisfied the minimum LOS C standard.

**TABLE 2
EXISTING INTERSECTION LEVEL OF SERVICE**

Intersection	Control	Time Period					
		AM Peak Hour (7:00 to 9:00 a.m.)			PM Peak Hour (4:00 to 6:00 p.m.)		
		LOS	V / C	Average Delay (sec/veh)	LOS	V / C	Average Delay (sec/veh)
Sunset Blvd / Springview Dr / 3 rd St	Signal	D	0.863	-	D	0.849	-
Pacific Street / Woodside Drive	Signal	A	0.458	-	A	0.544	-
Pacific Street / Sunset Blvd	Signal	A	0.505	-	B	0.677	-
Pacific Street / West access (overall)	NB Stop	(A)	-	(0.0)	(A)	-	(0.0)
Northbound right turn		B	-	12.2	B	-	13.3
Pacific Street / Central access (overall)	NB Stop	(A)	-	(0.1)	(A)	-	(0.2)
Northbound right turn		B	-	12.0	B	-	13.8
Westbound left turn		B	-	10.2	B	-	11.7
Pacific St / Walmart / Les Schwab (overall)	NB/SB Stop	(A)	-	(1.1)	(A)	-	(3.6)
Northbound approach		D	-	30.2	F	-	86.9
Southbound approach		D	-	31.5	C	-	21.2
Eastbound left turn		A	-	9.7	B	-	10.6
Westbound left turn		B	-	10.3	B	-	12.1
Rocklin Road / Farron Street	Signal	A	0.369	-	A	0.482	-
Pacific Street / Rocklin Road	Signal	A	0.477	-	A	0.519	-
Sunset Blvd / Existing Kmart Access (overall)	EB/WB Stop	(A)	-	(2.8)	(A)	-	(4.9)
Eastbound approach		A	-	9.9	B	-	11.4
Westbound approach		A	-	9.4	A	-	9.7
Northbound left turn		A	-	7.4	A	-	7.5
Southbound left turn		A	-	7.5	A	-	7.4
Sunset Blvd / Woodside Drive	All-Way Stop	A	-	7.4	A	-	7.7
Bold indicates conditions in excess of adopted minimum LOS standard							

Traffic Signal Warrants. Current peak hour traffic volumes at un-signalized intersections were compared to warrants for signalization. The Sunset Blvd / Walmart / Les Schwab intersection come closest to reaching warrant levels. However, while the volume of traffic on Pacific Street is large enough to satisfy mainline volume requirements, the volume entering from the Walmart exit falls below the minimum level that would satisfy this warrant (i.e., less than 100 vph).

Transit Facilities

Bus Service. Rocklin is generally served by four Placer County Transit (PCT) bus routes: the Auburn Light Rail Express route, the Lincoln / Rocklin / Sierra College route, the Taylor Road shuttle, and the Placer Commuter Express. PCT is a fixed-route scheduled transit system operated by Placer County. PCT principally serves the I-80 corridor area between Alta and Roseville, the State Route 65 corridor area into Lincoln, and the Highway 49 corridor. Some of the routes are “deviated.” A deviated route means that the buses generally travel on a main route (e.g., I-80) but can deviate from that route up to a certain distance (three-quarters of a mile in the case of PCT) to serve the specific needs of transit patrons.

There are currently 15 bus runs a day in each direction on PCT’s Auburn-Light Rail Express route between Auburn and Sacramento Regional Transit’s Watt/I-80 light rail station. This route provides service to Sierra College and the Roseville Galleria shopping center. It connects with Roseville Transit and RT buses at Auburn Boulevard near I-80. PCT’s Lincoln / Rocklin / Sierra College route has 14 runs a day in each direction and passes the project site via Sunset Blvd and Pacific Street on one hour headways. The Taylor Road shuttle is a deviated route that connects Auburn and Sierra College with seven runs a day in each direction, although service frequency on this route may be increasing. Placer Commuter Express is a commuter bus service traveling from Rocklin Road and Bush Street in central Rocklin to downtown Sacramento with three morning and three afternoon trips.

In addition to regular bus service, PCT also provides paratransit services for patrons with more challenging transportation needs. Such services include a dial-a-ride program in the Rocklin/Loomis area and in Granite Bay. Dial-a-ride also serves the portion of Roseville along the State Route 65 corridor adjacent to Rocklin.

Rail Service. The Capitol Corridor Intercity Train Service provides passenger rail service between Auburn and San Jose. There are three stations in Placer County: Auburn, Rocklin, and Roseville. There are currently nine runs per day in each direction, but only one run in each direction from Auburn to Oakland that serves Rocklin. There are four runs in each direction from Sacramento to Oakland and four runs in each direction from Sacramento to San Jose. Amtrak provides bus connections from Rocklin to the Sacramento Amtrak Station to connect to these additional Capitol Corridor runs. The Rocklin Multimodal Train Station is a permanent building for rail users located along the Union Pacific Railroad track at the Rocklin Road crossing.

Pedestrian Facilities

Sidewalks are available along streets throughout Rocklin, including those in the immediate vicinity of the proposed project. Sidewalks exist on both sides of Sunset Blvd and on both sides of Pacific Street. Crosswalks exist at signalized intersections, and applicable crossing protection features are included.

Bicycle Facilities

Bikeways are defined by the State of California Street and Highways Code as follows:

- Class I bikeways provide a completely separated right-of-way designated for the exclusive use of bicycles and pedestrians with cross-flows by motorists minimized (also called a bike path or trail).
- Class II bikeways provide a restricted right-of-way designated for exclusive or semi exclusive use of bicycles with through travel by motor vehicles or pedestrians prohibited, but with vehicle parking and cross-flows by pedestrians and motorists permitted (also called a bike lane).
- Class III bikeways provide a right-of-way designated by signs or permanent markings and shared with pedestrians or motorists (also called a bike route).

The City of Rocklin's General Plan includes a Bikeway Diagram, which specifies a number of existing and proposed bike lanes and bike routes. Class II on-street bike lanes already exist on a number of roadways in the area of the proposed project, including Pacific Street east and west of Sunset Blvd, on Sunset Blvd south of Pacific Street and on Woodside Drive. Bike lanes do not exist on Sunset Blvd north of Pacific Street.

REGULATORY SETTING

City of Rocklin General Plan Circulation Element

The Circulation Element of the City of Rocklin's General Plan has, as its key goal, "To create a balanced and coordinated transportation system which utilizes all transportation modes efficiently and promotes sound land use". A complete list of the General Plan goals and policies can be found in the Circulation Element of the General Plan, and policies are noted below. Policy C-40 deals with the connection of Woodside Drive and Ruhkala Road in the Civic Center area in the area of the existing gate.

Policies for Transportation System

C-1 Provide for a circulation pattern for regional, community, and neighborhood traffic needs.

C-2 Coordinate land use and transportation planning to support transit services, NEV facilities and non-motorized transportation.

Policies for City and Regional Street System

C-7 Monitor traffic on City streets to determine improvements needed to maintain an acceptable Level of Service.

C-8 Update the Capital Improvement Program (CIP) and traffic impact fees at least every five years, or as determined necessary with the approval of major new developments or major general plan amendments not considered in the adopted Capital Improvement Program.

C-9 Provide for an annual inflationary adjustment to the City's traffic impact fee to ensure that the fee is adequate for the future construction of roads.

C-10 A. Maintain a minimum traffic Level of Service "C" for all signalized intersections during the p.m. peak hour on an average weekday, except in the circumstances described in C-10.B and C. below.

B. Recognizing that some signalized intersections within the City serve and are impacted by development located in adjacent jurisdictions, and that these impacts are outside the control of the City, a development project which is determined to result in a Level of Service worse than "C" may be approved, if the approving body finds (1) the diminished level of service is an interim situation which will be alleviated by the implementation of planned improvements or (2) based on the specific circumstances described in Section C. below, there are no feasible street improvements that will improve the Level of Service to "C" or better as set forward in the Action Plan for the Circulation Element.

C. All development in another jurisdiction outside of Rocklin's control which creates traffic impacts in Rocklin should be required to construct all mitigation necessary in order to maintain a LOS C in Rocklin unless the mitigation is determined to be infeasible by the Rocklin City Council. The standard for determining the feasibility of

- the mitigation would be whether or not the improvements create unusual economic, legal, social, technological, physical or other similar burdens and considerations.
- C-11 Continue to participate with adjacent jurisdictions toward the completion and improvement of streets that extend into other communities through individual cooperation and/or use of the Placer County Transportation Planning Agency (PCTPA), joint powers authorities, and similar entities.
- C-12 Encourage improvements to the existing Federal Interstate and State highway system, and the addition of new routes that would benefit the City of Rocklin.
- C-13 Consider a variety of funding mechanisms, either independently or with other government agencies, to fund needed regional improvements.
- C-14 Prohibit residential driveways along collector or arterial streets within newly developing residential areas. This policy does not apply to multi-family residential uses, or where past decisions have created existing lots with residential frontages on collector or arterial streets.
- C-15 Reduce the potential for the use of local residential streets as shortcuts for through traffic on streets that are not improved to full City standards.
- C-16 Provide each new elementary school site with a minimum of two full street frontages.
- C-17 Keep truck traffic away from residential areas and streets not structurally designed for truck traffic by designating truck routes.
- C-18 Designate truck routes that can be used for the hauling of hazardous materials.
- C-19 Maintain existing streets in a safe condition and require that new streets be built to City standards.
- C-20 Maintain street design standards for arterials, collectors and local streets.
- C-21 Apply appropriate street design standards for private streets.
- C-22 Interconnect traffic signals and/or consider the use of roundabouts where financially feasible and warranted to provide flexibility in controlling traffic movements at intersections.
- C-23 Require street designs where appropriate to connect neighborhoods. These connections allow for vehicular and pedestrian use and for the efficient movement of service and emergency vehicles.
- C-24 Require landscaping and tree planting along major new streets, properties abutting highways/freeways and along existing streets as appropriate.
- C-25 Minimize the impact of road construction on the natural terrain and the character of existing neighborhoods.
- C-26 Minimize the impact of road construction on creek corridors and related floodplain and riparian areas.
- C-27 Design and phase construction of road improvements to minimize disruption to local residents and traffic, to the extent feasible.
- C-28 Design new street alignments to minimize the number of creek crossings and adverse impacts to existing wildlife habitats.
- C-29 Conduct a comprehensive inventory of the vegetative structure of riparian corridors prior to specific siting of new road alignments and creek crossings. This inventory will be used as a factor in the selection of an alignment which minimizes impacts to mature riparian

vegetation, while still meeting the alignment or access and engineering requirements of siting the alignment or crossing.

C-30 Restore streambed and bank contours as near as possible to pre-project conditions following construction of creek crossings.

C-31 Design road improvements and new road alignments to avoid or minimize disturbance to identified cultural resources, where feasible.

Special Street Improvement Policies

C-32 Restrict vehicular access to emergency vehicles only from the Clover Valley Community Area onto the existing portions of Clover Valley Road and Rawhide Road within the Mission Hills-Clover Valley Community Area to minimize traffic volume increases on Midas Avenue.

C-33 Seek improvement to existing railroad crossings and construction of new grade separated crossings or under-crossings where appropriate and feasible.

C-34 Provide for the extension of Dominguez Road over I-80 as a future improvement to relieve the Sierra College Boulevard/I-80 and Rocklin Road/I-80 interchanges and create access to the southeast quadrant of the Sierra College Boulevard/I-80 interchange.

C-35 Increase traffic capacity at Rocklin Road and I-80, as traffic conditions require, by widening, overcrossings, or other design features, to allow for more efficient traffic movement and pedestrian and bike facilities.

C-36 Develop a new east/west road connection between State Route 65 and Sierra College Boulevard. The road shall traverse the Northwest Rocklin area, connect to Park Drive in the northern portion of Whitney Oaks, and extend from Park Drive through Clover Valley to intersect with Sierra College Boulevard.

C-37 Develop a new north/south road connection between Sunset Boulevard and the new east/west road connection described in Policy C-36.

C-38 Provide primary vehicular access to future development within the Parcel K planning area of the North West Rocklin General Development Plan by at least two points of access. The access points shall consist of one street that intersects with Wyckford Boulevard and another that connects to the extension of Kali Place. These facilities shall be open non-gated public streets.

C-39 Prohibit extension of Wyckford Boulevard north of Parcel K into the Whitney Ranch / Sunset Ranchos Planning Area.

C-40 Provide for the connection of Woodside Drive and Ruhkala Road in the Civic Center area.

C-41 Create a Civic Center street/drive network south of Rocklin Road that provides access to Pacific Street and South Grove Street.

C-42 Improve and extend Railroad Avenue between Farron Street and Midas Avenue to provide an alternative north/south route to Pacific Street.

C-43 Minimize the need to sever existing developed parcels for new roads designed to serve the Southeast Rocklin area.

C-44 Prohibit an easterly extension of Greenbrae Road that would connect with Southside Ranch Road.

C-45 Extend Monument Springs Drive southerly across Secret Ravine Creek to developing areas south of Greenbrae Road.

C-46 Sever Aguilar Road at a time specified by the City of Rocklin. The severing shall occur at or near the Aguilar tributary crossing to preclude through traffic.

C-47 Design road improvements and new alignments to avoid or minimize encroachments into existing yards on Aguilar Road, Greenbrae Road and Foothills Road by minimizing the use of standard curb, gutter and sidewalks, where appropriate.

C-48 Acknowledge that new taxes, fees, or assessments to finance the severing of Aguilar Road and the Monument Springs Bridge/extension identified in the policies above shall not be levied upon fully developed parcels that cannot be further subdivided.

C-49 Encourage use of a free span bridge design over Secret Ravine Creek as the environmentally preferred option whenever feasible, to minimize the fragmenting effects of any bridge crossing on riparian habitat. Pre-cast concrete bridge joists should be used, whenever possible, to avoid prolonged construction and reduce construction disturbances in riparian corridors.

City of Rocklin Capital Improvement Program

The City's Capital Improvement Program (CIP) identifies roadway and intersection improvements for City-based monitoring of traffic conditions in Rocklin and maintenance of the City's existing LOS standard. The current CIP was updated in 2007 and has a horizon year of 2025.

PROJECT IMPACTS

For the purpose of the traffic impact analysis the proposed project includes these uses:

- Up to 180 affordable apartments units
- Up to 40 single family residential lots
- 6,200 sf of retail space
- 3,500 sf fast food restaurant with drive-thru window

The project will have access to Sunset Blvd via existing driveways. Secondary access to the residential portions of the project will occur onto Woodside Drive in the area near Evelyn Avenue. The exist emergency access gate on Woodside Drive will be replaced by separate gates on Ruhkala Road and Evelyn Avenue, and through traffic will continue to be prohibited.

Project Characteristics

The characteristics of the project are described in terms of its *Trip Generation* and its *Trip Distribution*.

Trip Generation. The amount of new traffic associated with development projects is typically forecast using information developed from recognized national sources. The Institute of Transportation Engineers (ITE) publication *Trip Generation, 10th Edition* is a source recognized by the City of Rocklin and Caltrans, and applicable average trip generation rates for single family and multi-family residential development are presented in Table 3. Trip generation rates for the site use as retail space are also presented. These rates represent “general” retail development as assumed in the citywide traffic model. These rates would be applicable to freestanding retail pad. Rates for the fast food restaurants are also presented.

The City’s general retail trip generation rate would not necessarily represent the trip generation associated with a discount retailer such as Kmart. However, the trip generation associated with the previous Kmart store would have varied greatly over its life. At its peak the store’s trip generation could have exceeded a forecast derived from general rates, but the estimate could have been lower during the store’s decline.

**TABLE 3
TRIP GENERATION RATES**

Description	ITE Code	Unit	Trips per Unit						
			Daily	AM Peak Hour			PM Peak Hour		
				In	Out	Total	In	Out	Total
Single Family Residence	210	Dwelling	9.0*	25%	75%	0.74	63%	37%	0.99
Multiple Family Residence – Low Rise	220	Dwelling	6.5*	23%	77%	0.46	63%	37%	0.56
Retail - General	820	ksf	35.0*	62%	38%	0.94	48%	52%	3.81
Fast Food Restaurant with Drive Thru window	934	ksf	470.95	51%	49%	40.19	52%	48%	32.67

(*) Daily rates from Rocklin Traffic Model. Peak hour rates for general retail are ITE average for Shopping Center (code 820).

As shown in Table 4, the proposed Quarry Place project could generate 2,589 net new daily trip ends (½ inbound and ½ outbound), with 214 trips generated in the a.m. peak hour and 233 new trips occurring in the p.m. peak hour.

The trip generation estimate for the Kmart has been identified for comparison and for use in developing cumulative traffic volume forecasts. As indicated the Kmart could have generated 3,010 daily trips, which is roughly 421 more daily trips than the proposed project. The Kmart estimate for the a.m. peak hour would be lower than that associated with the proposed project typical retail uses are not open in the early morning. The p.m. peak hour estimates for the proposed project and for the Kmart are relatively similar with the proposed Quarry Row project generating 14 fewer trips.

**TABLE 4
TRIP GENERATION COMPARISON**

Description	Quantity	Trips						
		Daily	AM Peak Hour			PM Peak Hour		
			In	Out	Total	In	Out	Total
<i>Proposed Project</i>								
Multiple Family Residences	180 du's	1,170	19	64	83	64	37	101
Single Family Residences	40 du's	378	7	23	30	25	15	40
Retail – General	6.20 ksf	217	4	2	6	11	13	24
Fast Food Restaurant	3.5 ksf	1,648	72	69	141	59	55	114
Gross Total		3,413	102	158	260	159	120	279
Pass-by - Retail	30%	n.a	0	0	0	<3>	<4>	<7>
Pass-by Fast Food	49% / 50%	<824>	<35>	<34>	<69>	<29>	<28>	<57>
Total Net New Trips		2,589	67	124	191	127	88	215
<i>Retail-Kmart</i>								
Standard Retail	86 ksf	3,010	50	31	81	110	119	229

Vehicle Trip Distribution. Having determined the number of vehicle trips that are expected to be generated by the project, it is necessary to identify the directional distribution of project-generated traffic. For single and multiple family residences, the general location of employment, shopping, schools, social services and entertainment are the primary indicators of the regional trip distribution. These factors affect the distribution of trips generated by existing residential development in this area of Rocklin, and current travel patterns can be used to identify the project's trip distribution. In addition, the City of Rocklin regional travel demand forecasting model's "select zone" utility can be employed to identify the origins-destinations of trips generated by residences in the study area. Table 5 identifies the local area assumptions made for the residential uses in this study.

A similar assessment was conducted for the fast food restaurant and retail uses. In this case an appreciable share of the total trip generation will be "pass-by" trips drawn from the stream of traffic already passing the site on Pacific Street. New trips will generally be spread to residences and business within the typical trade area for convenience-oriented uses, as noted in Table 3. Because access to the retail and restaurant uses is limited by the median on Pacific Street, pass-by trips will come from eastbound traffic on Pacific Street.

**TABLE 5
REGIONAL TRIP DISTRIBUTION ASSUMPTIONS**

Direction	Route	Residential				Net Non-Residential Trips			
		Percentage	Daily Trips	AM Peak Hour	PM Peak Hour	Percentage	Daily Trips	AM Peak Hour	PM Peak Hour
North	Sunset Blvd beyond Pacific Street	37%	573	42	52	20%	208	16	15
West	Pacific Street beyond Sunset Blvd	27%	418	31	38	15%	156	12	11
East	Pacific Street beyond Rocklin Road	11%	170	12	16	15%	156	12	11
South	Rocklin Road south of Pacific Street	15%	232	17	21	15%	156	12	11
	Local area	10%	155	11	14	35%	365	26	26
Total		100%	1,548	113	141	100%	1,041	78	74

Trip Assignment. Project trips were assigned to the local street system based on the regional distribution assumptions identified above and on the locations of site access relative to the project's residences and retail uses in the project. Review of the site plan indicates that each use will likely have different access choices. For example, the single-family residences and apartments will have Primary access to Pacific Street and Sunset Blvd and secondary access will be available via Woodside Drive. The retail and restaurant uses will have their primary access at the main central driveway on Pacific Street and can access Sunset Blvd at the new driveway. Theoretically the retail uses could drive thru the residential areas to reach Woodside Drive, but this route has limited utility for retail customers and would not be used appreciably.

The medians on Pacific Street and Sunset Blvd create limitations on travel to the west and north. While the residential uses will be able to access Sunset Blvd and to travel in those directions, exiting trips from the retail uses will first turn right and then make u-turn at the Walmart driveway.

Figure 4 identifies the assignment of project trips through the study intersections and at the project's access driveways.

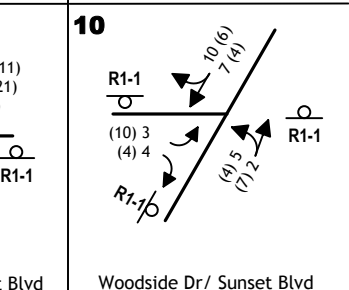
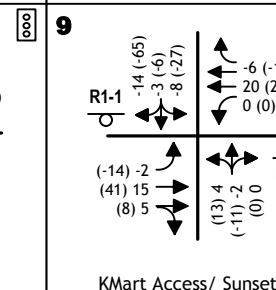
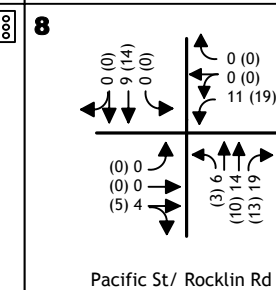
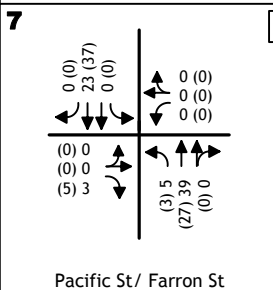
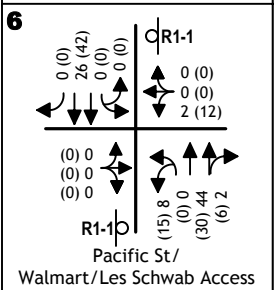
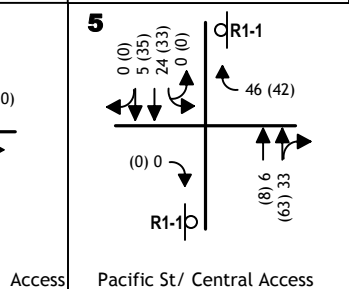
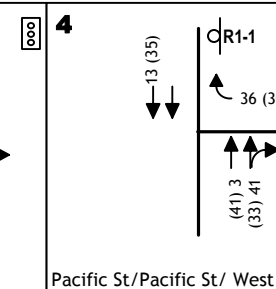
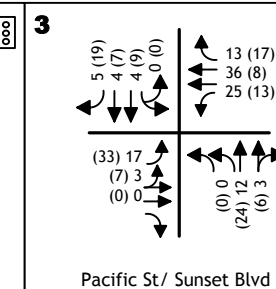
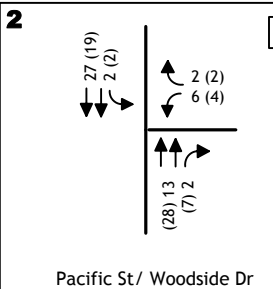
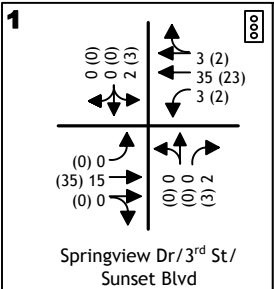
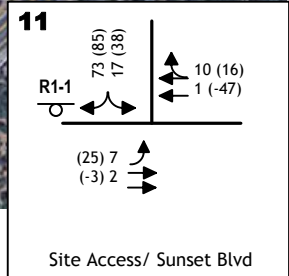
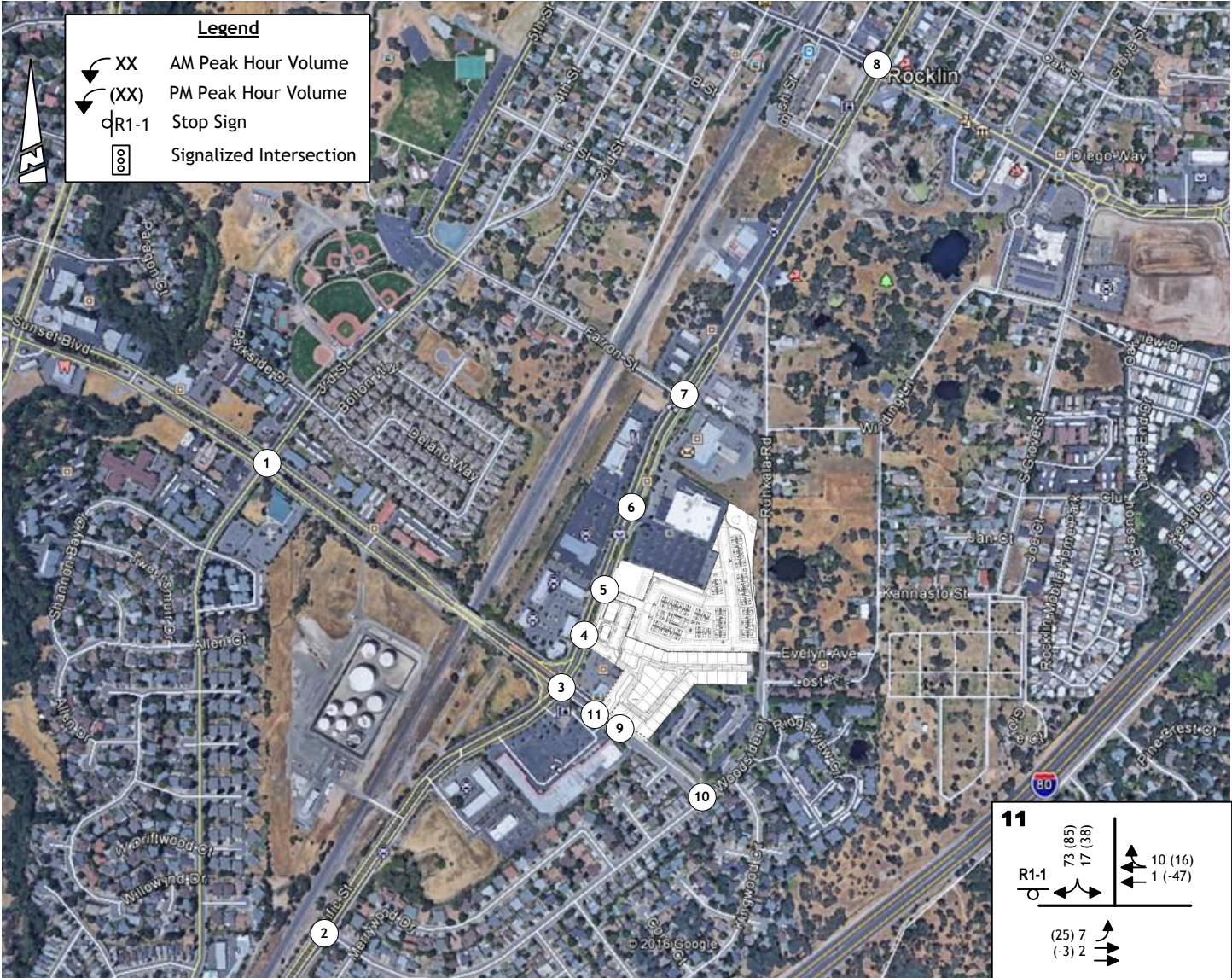
Diversion of Existing Traffic. While the site itself does not generate traffic today, some vehicles use the Kmart access on Sunset Blvd to reach the existing retail uses to the east (i.e., Walmart). With development of the project this route will not be available. For this analysis it has been assumed that the traffic using this driveway will continue to visit the Walmart and use the Pacific Street / Walmart driveway. Figure 5 includes the results of this traffic diversion in "Existing plus Project" conditions.

Existing Plus Project Traffic Conditions and Levels of Service

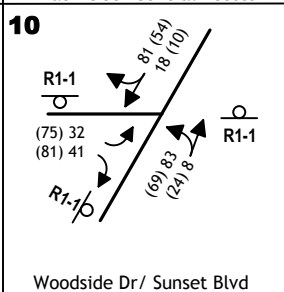
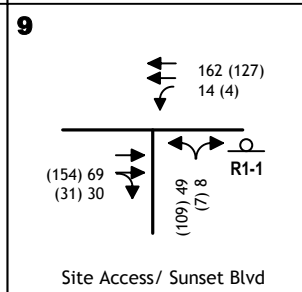
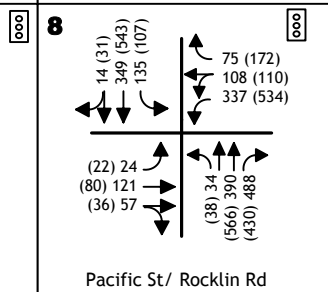
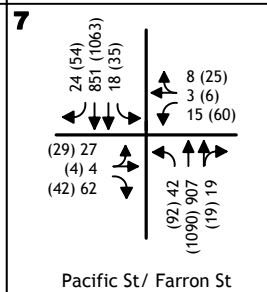
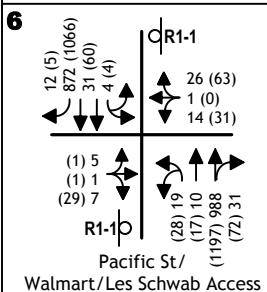
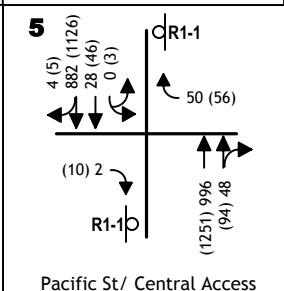
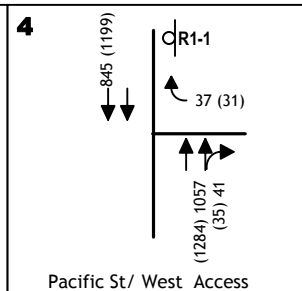
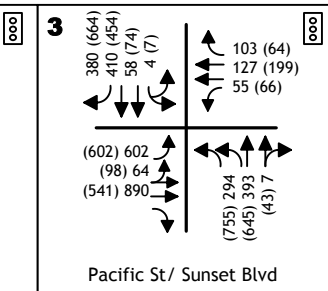
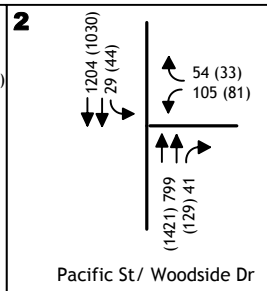
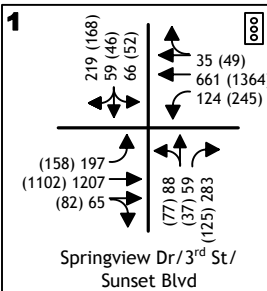
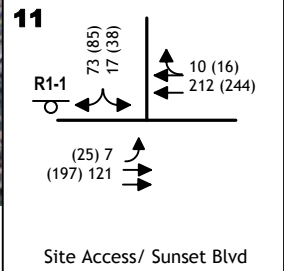
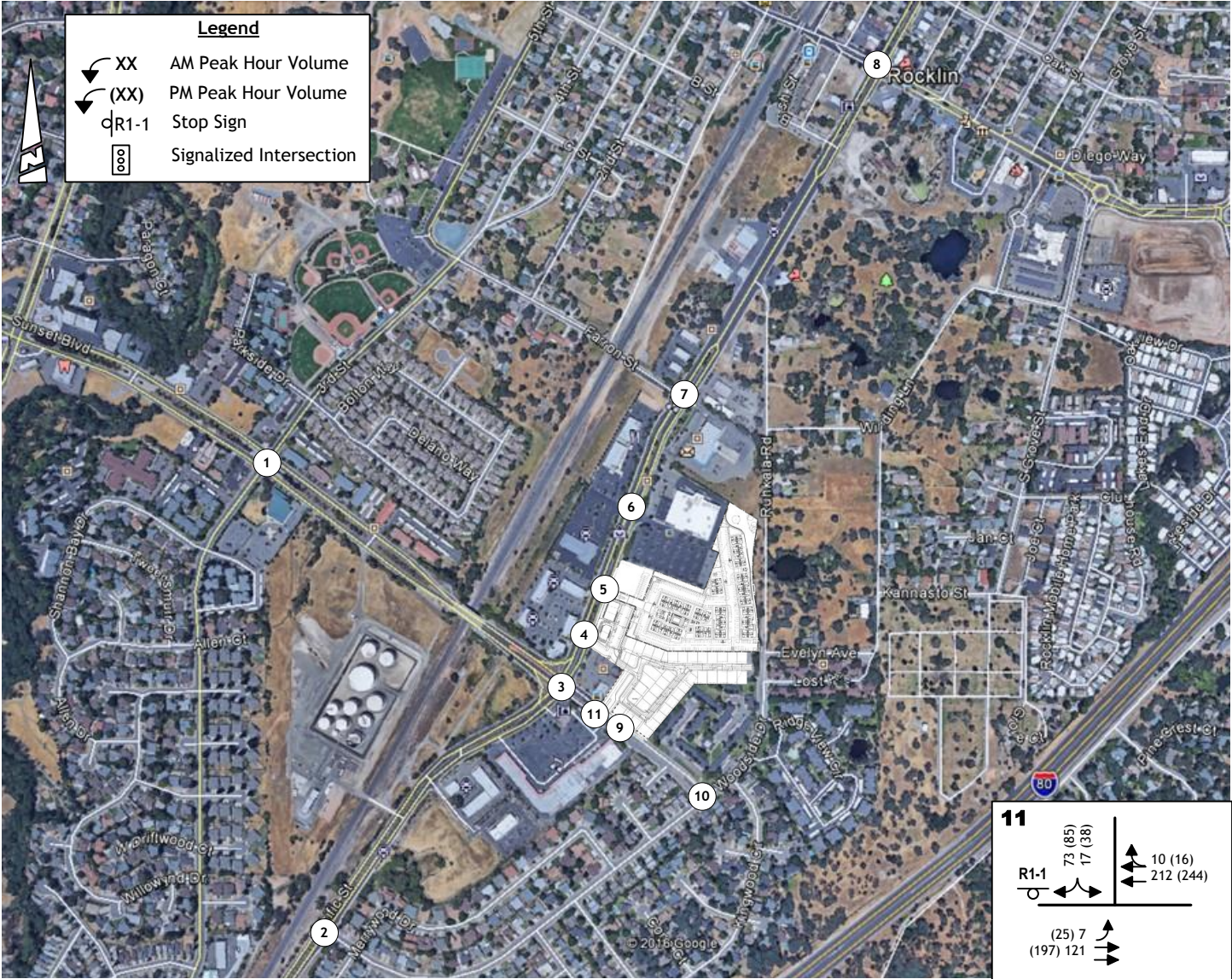
Figure 5 superimposes project trips onto the current background traffic volumes to create the "Existing plus Project" condition. Subsequent tables compare the "Existing" and "Existing plus Project" Levels of Service.

Project Traffic Impacts to Level of Service at Intersections. As shown in Table 6, because the amount of traffic associated with the project is relatively small, the addition of project traffic would not appreciably increase the length of delays occurring at study intersections, and the project does not result in any change to the peak hour Level of Service at any location. Levels of Service at most locations will remain within the City's overall LOS C minimum, but there is one exception.

The project will add traffic to the **Sunset Blvd / 3rd Street / Springview Drive intersection** which already operates at LOS D during the a.m. and p.m. peak hours today and will continue to do so with the project. Because LOS D exceeds the minimum standard, under City policy the significance of the project's impact is determined through comparison to the permissible change in volume / capacity ratio (v/c). In this case, the incremental change resulting from the project is 0.008 in the a.m. peak hour and 0.010 in the p.m. peak hour. Because these values are less than the 0.050 increment permitted by the City of Rocklin, the project's impact to this location is not significant.



**PROJECT ALONE TRAFFIC VOLUMES
AND LANE CONFIGURATIONS**



EXISTING PLUS PROJECT
TRAFFIC VOLUMES AND LANE CONFIGURATIONS

**TABLE 6
EXISTING PLUS PROJECT PEAK HOUR INTERSECTION LEVELS OF SERVICE**

Intersection	Control	AM Peak Hour						PM Peak Hour					
		Existing			Existing Plus Project			Existing			Existing Plus Project		
		LOS	V / C	Average Delay (sec/veh)	LOS	V / C	Average Delay (sec/veh)	LOS	V / C	Average Delay (sec/veh)	LOS	V / C	Average Delay (sec/veh)
Sunset Blvd / Springview Dr / 3 rd St	Signal	D	0.863	-	D	0.871	-	D	0.848	-	D	0.858	-
Pacific Street / Woodside Drive	Signal	A	0.458	-	A	0.471	-	A	0.544	-	A	0.557	-
Pacific Street / Sunset Blvd	Signal	A	0.505	-	A	0.521	-	B	0.677	-	B	0.693	-
Pacific Street / West access (overall)	NB Stop	(A)	-	(0.0)	(A)	-	(0.2)	(A)	-	(0.0)	(A)	-	(0.2)
Northbound right turn		B	-	12.2	B	-	13.0	B	-	13.3	B	-	14.5
Pacific Street / Central access (overall)	NB Stop	(A)	-	(0.1)	(A)	-	(0.5)	(A)	-	(0.2)	(A)	-	(0.6)
Northbound right turn		B	-	12.0	B	-	12.9	B	-	13.8	C	-	15.4
Westbound left turn		B	-	10.2	B	-	10.6	B	-	11.7	B	-	12.7
Pacific St / Walmart / Les Schwab (overall)	NB/SB Stop	(A)	-	(1.1)	(A)	-	(1.3)	(A)	-	(3.6)	(B)	-	(10.6)
Northbound approach		D	-	30.2	E	-	37.3	F	-	86.9	F	-	271.6
Southbound approach		D	-	31.5	D	-	35.0	C	-	21.2	C	-	23.5
Eastbound left turn		A	-	9.7	A	-	9.8	B	-	10.6	B	-	11.0
Westbound left turn		B	-	10.3	B	-	10.5	B	-	12.1	B	-	12.3
Rocklin Road / Farron Street	Signal	A	0.369	-	A	0.385	-	A	0.482	-	A	0.500	-
Pacific Street / Rocklin Road	Signal	A	0.477	-	A	0.491	-	A	0.519	-	A	0.531	-
Sunset Blvd / Kmart Access (overall)	EB/WB Stop	(A)	-	(2.8)	(A)	-	(2.0)	(A)	-	(4.9)	(A)	-	(3.0)
Eastbound approach		A	-	9.9	B	-	9.8	A	-	11.4	B	-	10.8
Westbound approach		A	-	9.4	A	-	-	A	-	9.7	A	-	-
Northbound left turn		A	-	7.4	A	-	7.4	A	-	7.5	A	-	7.6
Southbound left turn		A	-	7.5	A	-	-	A	-	7.4	A	-	-
Sunset Blvd / Woodside Drive	All-Way Stop	A	-	7.4	A	-	7.5	A	-	7.7	A	-	7.8
Sunset Blvd / New Access Westbound approach	WB Stop	-	-	-	-	-	-	-	-	-	(A)	-	(2.5)
Southbound left turn		-	-	-	-	-	-	-	-	-	B	-	10.6
		A	-	-	A	-	-	A	-	-	A	-	7.8

Bold indicates conditions in excess of adopted minimum LOS C standard. **Highlighted** values are a significant impact

KDA

Daily Traffic Volumes. While roadway segment traffic volume and associated Level of Service is not a measure of significance under City of Rocklin guidelines, the relative change in traffic volumes accompanying the project can be a useful tool for understanding project effects, and daily traffic volumes are needed for analysis of noise impacts. As noted in Table 7, project trips would represent a moderate percentage increase in the current traffic volume on the adjoining streets. After accounting for diversion the traffic increase on Sunset Blvd ranges from 15% to 2%. The volume on Pacific Street increases by 5%. Because current volumes are low, the anticipated increase on Woodside Drive east of Sunset Blvd represents 22% of the estimated current volume.

**TABLE 7
EXISTING PLUS PROJECT DAILY TRAFFIC VOLUMES**

Street	From	To	Daily Traffic Volume				
			Existing	Existing Plus Project			
				Project Alone	Diversion	Total	% increase
Sunset Blvd	Pacific Street	Kmart Access	5,360	1,045	-265	6,160	15%
	New Access	Kmart Access	5,360	345	-240	5465	2%
	Kmart Access	Woodside Drive	2,920	290	0	3,210	10%
Pacific Street	Sunset Blvd	Main Access	25,420	690	480	26,590	5%
	Main Access	Farron Street	25,070	1,255	0	26,325	5%
Woodside Dr	Sunset Blvd	Evelyn Avenue	1,360	300	0	1,660	22%
	Sunset Blvd	Pacific Street	1,650	240	0	1,890	15%
Road A	Sunset Blvd	To project	0	990	860	1,850	-

Traffic Signal Warrants. Existing Plus Project peak hour traffic volumes at un-signalized intersections were compared to warrants for signalization. All study intersection carry peak hour volumes that fall below the level that satisfies peak hour warrants.

Project Impacts to Alternative Transportation Modes

Development of the project may incrementally contribute to the demand for facilities to serve pedestrians, cyclists and transit riders in this area of Rocklin.

Pedestrian Impacts. Some of the project’s residents, employees and customers may elect to walk to and from the site to attractions within a reasonable distance of the site, including commercial areas along Pacific Street and Sunset Blvd, local schools and adjoining neighborhoods. As noted earlier, sidewalks already exist on these streets. Because sidewalks already exist to connect the project with probable attractions and will be provided in the project,

the project's impact to pedestrian travel is not significant and no additional improvements are required.

Bicycle Impacts. As with any residential development, the project may generate bicyclists who elect to use that transportation mode to reach area schools and retail or social destinations. Similarly, some customers and employees may ride to the project's retail uses. As noted earlier, Class II bike lanes already exist on Pacific Street and on Sunset Blvd adjoining the project.

While cycling may be a choice of some residents, due to the limited size of the project (i.e., 230 dwelling units) the number of cyclists associated with this project is not likely to create an appreciable safety impact on the streets that provide access to the project. Those residents who may choose to ride to the site would be expected to make use of designated bike lanes and would safely share the right of way with other vehicular traffic on designated bike routes. Because adequate facilities are available, the project's impact to bicycle circulation is not significant and no additional improvements are required.

Transit Impacts. Some project residents, employees and customers may take advantage of the regular Placer Transit bus service and Amtrak Capital Corridor trains that are already available in Rocklin. As noted earlier, PCT's Lincoln to Sierra College route has 14 runs a day in each direction and passes near the project site via Sunset Blvd and Pacific Street. Because convenient transit service is available and the number of additional riders created by this project is not appreciable, the project's impact is not significant and no additional transit improvements are needed.

Safety Issues

Project impacts relating to safety issues relating to vehicular traffic were assessed.

Left Turn Lanes on Pacific Street and on Sunset Blvd. The existing configuration of the left turn lanes on Pacific Street includes dedicated left turn pockets within the raised median. In the area of the project the westbound left turn lane at the project's main access on Pacific Street and the eastbound left turn lane approaching the Walmart median opening are each 100 feet long.

Similarly the existing median on Sunset Blvd south of Pacific Street creates a northbound left turn lane that is 100 feet long.

The project will add traffic to existing left turn pockets that today carry relatively little traffic during the a.m. and p.m. peak commute hours. Table 8 compares current traffic volumes with "plus project" conditions and uses that data to identify the peak period queue requirements in each lane in order to assess project impacts if no changes were made.

**TABLE 8
ACCESS TURN LANE QUEUES**

Location	Available Storage (ft - veh)	AM Peak Hour				PM Peak Hour			
		Volume (vehicles per hr)			95 th % Queue (veh)	Volume (vehicles per hr)			95 th % Queue (veh)
		Existing	Project	Total		Existing	Project	Total	
<i>With Current Traffic Controls</i>									
Pacific Street at Main Project Access Westbound left turn lane	100 – 4	4	24	28	≤2	16	33	49	≤3
Pacific Street at Walmart –Les Schwab Eastbound left turn lane	100 - 4	21	7	29	≤2	30	15	45	≤3
Sunset Blvd at Pacific St Northbound left turn lane	100 – 4	30	25	55	≤3	53	16	66	≤4 to 5
Sunset Blvd at Pacific St Northbound through lanes	210 – 8 to 9	91	36	127	≤3	191	8	199	≤8 to 9
Sunset Blvd at New Project Access Southbound left turn lane	60-2 to 3	0	7	7	≤1	0	25	25	≤2

Pacific Street Turn Pockets. Desirable left turn pocket lengths for left turn lanes on major streets at intersections that are controlled by side street stop signs can be determined from the standards presented in the Caltrans Highway Design Manual (HDM). Caltrans suggest that the combination of left turn lane and bay taper be long enough to hold waiting cars as well as deceleration outside of through travel lanes. If full deceleration from 40 mph is to be accommodated outside of the through travel lane, then the combination of bay taper and left turn lane would need to be 350 feet long. The HDM acknowledges that some deceleration prior to the bay taper is permissible. Assuming that up to 20 mph deceleration in advance of the turn pocket is acceptable, the HDM suggests that on a street with a 40 mph design these facilities would need to be 175 feet long to accommodate deceleration to a stop from 25 mph.

At a minimum short turn pockets should be long enough to accommodate waiting vehicles outside of the flow of through traffic. At un-signalized locations the HDM suggests that storage be provided to accommodate a two-minute accumulation of peak hour left turning vehicles. Because the gap in traffic needed to accommodate u-turns can be longer, this analysis assumes that three-minute accumulation of u-turns is applicable to provide a “worst case” assessment.

As noted in Table 8, the greatest total number of left turns and u-turns in either lane is expected in the p.m. peak hour when project residents are returning home. At that time 49 left turns would occur in the westbound left turn lane at the main project access, and this volume would justify storage for three vehicles under Caltrans guidelines and a three-minute accumulation. At 25 feet per vehicle, 75 feet of storage would be needed in each lane. The existing 100-foot long lanes satisfy this storage requirement.

Concurrently, 45 left and u-turns are expected in the eastbound left turn lane at the Walmart – Less Schwab access. This combination would require space of three waiting vehicles. At 25 feet per vehicle, 75 feet of storage would be needed, and the existing 100-foot long lane satisfies this storage requirement.

Short turn pockets can have an effect on the overall flow of traffic on Pacific Street because motorists wishing to turn begin to decelerate in the through travel lane prior to the median opening. In this case the combination of left turn lane and bay taper at each location is roughly 165 feet long. Caltrans Highway Design Manual (HDM) guidelines include information regarding deceleration lane length (Chapter 4) that can be used to suggest deceleration in this area. Under these conditions westbound motorists will slow to about 15 mph as they enter the turn pocket at the beginning of the bay taper and slow in the 115 feet that is available behind a two-car queue and 90 feet is available behind a three-car queue.

Because through traffic proceeds at a higher speed, conflicts could be created with turning vehicles if an appreciable number of turns are involved or if the queue spills over into the through lane. In this case, the number of westbound left turns in each lane is roughly equivalent to a vehicle every 80 seconds, and appreciable conflicts are not anticipated. It is important to note that this same turn pocket was in use when the Kmart Store was in operation and that a greater number of turns would have occurred with that use.

Reducing potential conflicts would require lengthening the turn pockets or reducing the volume of traffic in each lane. The existing landscaped median on Pacific Street could be modified to increase the length of the turn lanes. Today the total combined length of median bay tapers and turn lanes is 380 feet. Assuming a shared bay taper that was 90 feet long, roughly 145 feet of left turn lane could be made available for each lane. Eliminating the landscaped median would permit construction of turn lanes that satisfied minimum storage requirements.

Sunset Blvd Median Turn Pockets. The proposed project would modify the existing median on Sunset Blvd south of Pacific Street to create a short southbound left turn pocket that would be used by project traffic and by motorists diverted from the existing Kmart access, as noted in the Appendix. This lane would be about 60 feet long. The distance along Sunset Blvd from the crosswalk on Pacific Street to a point where a northbound queue might block left turns into the project is 210 feet. The length of queues on northbound Sunset Blvd has been determined as part of a Highway Capacity Manual (HCM) analysis of the Sunset Blvd / Pacific Street intersection. The 95th percentile queue was determined, which indicates that the likely

queue length will be shorter than the estimate 95 percent of the time. Because the speed on this segment of Sunset Blvd is relatively low, the issue of deceleration area is not a major consideration.

As noted in Table 8, the number of southbound vehicles turning left in the site is projected to be relatively low, and as a result the 95th percentile queue is two vehicles or less. Since the left turn lane can accommodate 2 to 3 vehicles the design is adequate in that regard.

The length of the queue of northbound Sunset Blvd traffic in the existing left turn lane has been assessed. While the queue is somewhat dependent on the signal cycle length selected by the City, as indicated the 95th percentile queue is expected to approach the lane capacity during the p.m. peak hour. This could mean that waiting vehicles may spillover into the adjoining through lane occasionally. However, because the forecast is close to the capacity and the speed of traffic on Sunset Blvd is low, the current left turn lane length should be adequate.

The length of queue in the northbound through travel lanes has also been estimated to determine whether that queue might be expected to block left turn into the site. As noted, the proposed design provides room for 8 to 9 vehicles before reaching the point that the driveway may be blocked. As noted, while the length of 95th percentile queue depends on cycle length, the projected queue length does not exceed the available storage.

BASELINE (EXISTING PLUS APPROVED PROJECTS) IMPACTS

The “Baseline” traffic impacts of the Quarry Place Mixed Use Project have been considered within the context of traffic conditions in this area of Rocklin assuming occupancy of other approved but as yet unconstructed projects under an “Existing Plus Approved Projects” (EPAP) condition.

Existing Plus Approved Projects (EPAP) Conditions

Land Use Assumptions. The City of Rocklin maintains a list of development proposals and tracks their completion status. This list of development proposals is updated periodically by the City of Rocklin to reflect both ongoing development activity as well as proposed changes to previously approved projects. Projects are periodically removed from the City’s list if development proposals where approved entitlements have lapsed or have been withdrawn.

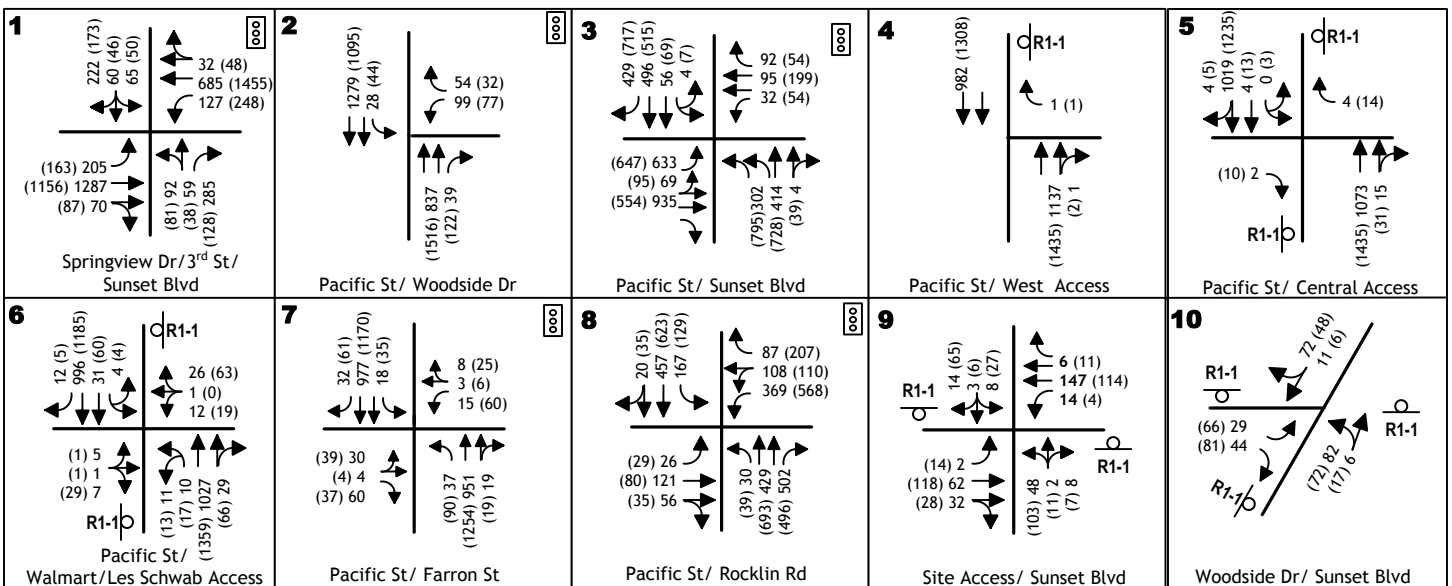
To ensure that the baseline for traffic analysis purposes includes existing and approved development at the study date, in October 2017 City of Rocklin staff evaluated recent development history in the project area to identify any additional approved development that should be assumed to be completed and to identify those previously approved projects that have lapsed or have been withdrawn by the project proponent.

Table 9 presents the list of approved but not constructed projects in the vicinity of the project, as well as their estimated a.m. and p.m. peak hour trip generation. Development on the currently vacant pads adjoining the proposed project is included in this development list. As shown, the number of new a.m. peak hour trips anticipated from approved / pending development totals 1,450 while 1,959 trips are forecast in the p.m. peak hour.

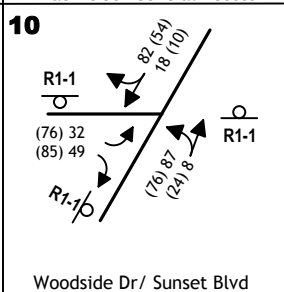
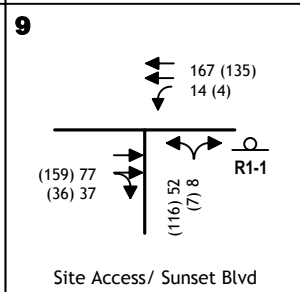
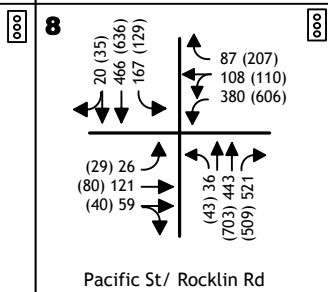
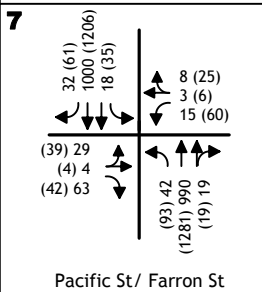
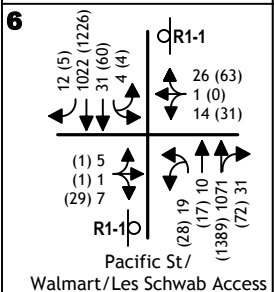
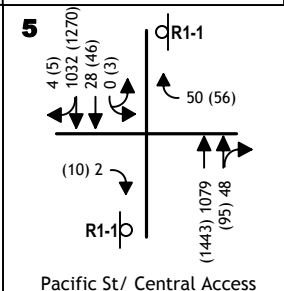
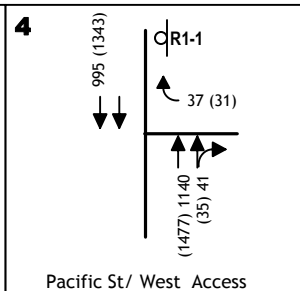
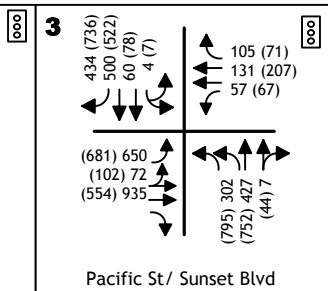
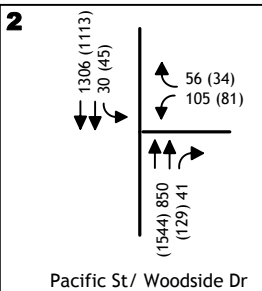
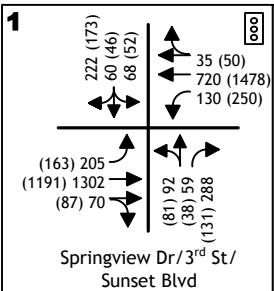
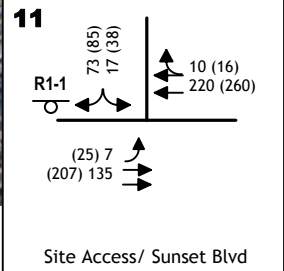
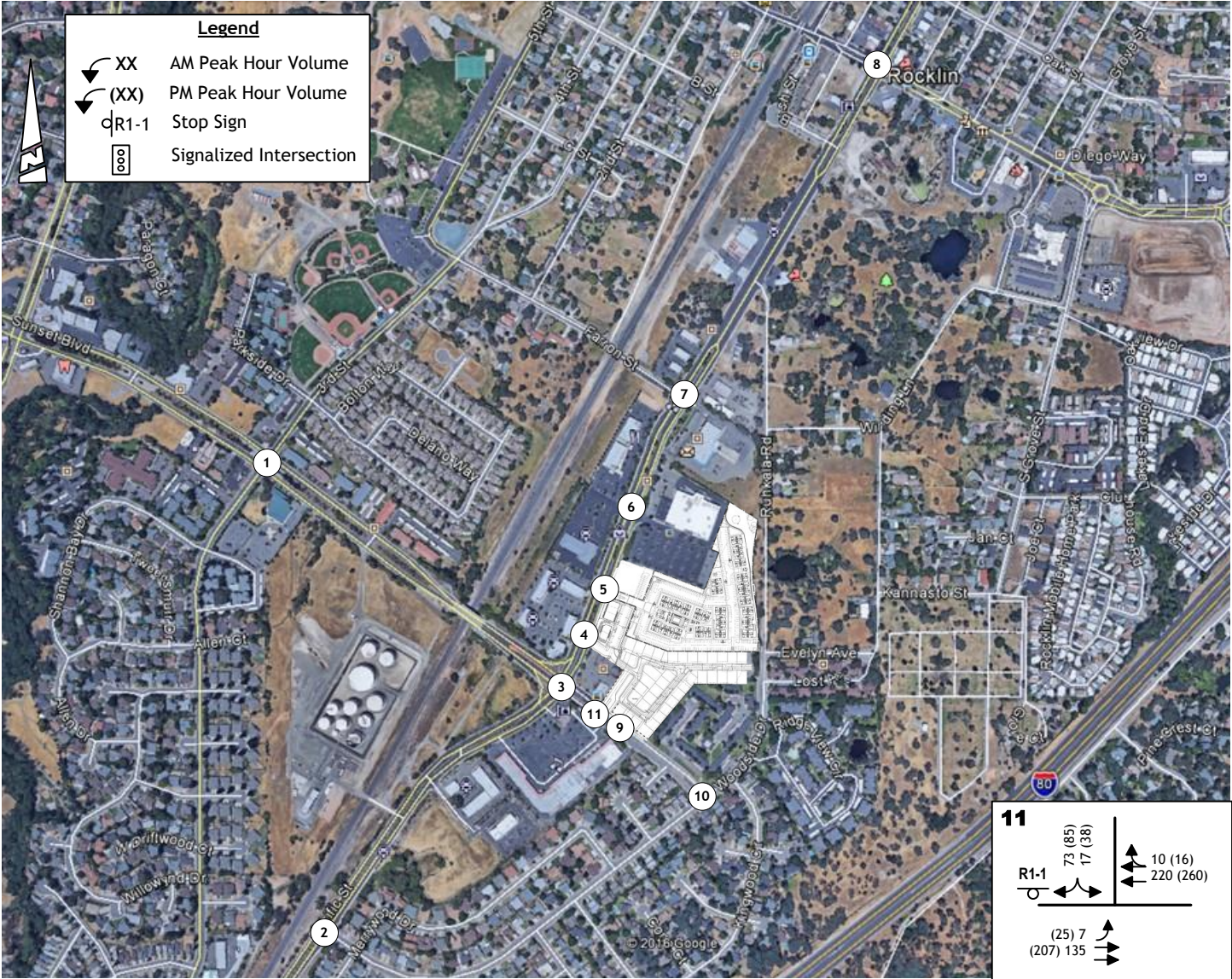
Background Traffic Volume Forecasts. Not every approved project will add traffic to the study intersections, but the volume of traffic on Pacific Street and Sunset Blvd will increase as development proceeds. Figure 6 presents Baseline (EPAP) traffic volumes in the study area without the proposed project. Figure 7 presents Baseline Plus Project volumes created by superimposing project trips onto the baseline volumes.

**TABLE 9
APPROVED / PENDING BUT UNBUILT PROJECTS AND THEIR TRIP GENERATION**

Description	Land Use	Size		AM Peak Hour			PM Peak Hour Trips		
		Quantity	Unit	In	Out	Total	In	Out	Total
Villages at Civic Center	Single Family Residential	11	du	2	6	8	7	4	11
	Multiple Family Residential	54	du	6	22	28	22	11	33
Racetrack Subdivision	Single Family Residential	9	du	2	5	7	6	3	9
Samoylovich Estates	Single Family Residential	4	du	1	2	3	2	2	4
Los Cerros Subdivision	Single Family Residential	115	du	22	64	86	74	41	115
Rocklin Gateway	Multiple Family Residential	204	du	22	82	104	82	45	127
Pacific Tech Park	Business Park	46.78	ksf	56	10	66	15	44	59
Granite Terrace	Single Family Residential	42	du	8	24	32	27	15	42
Sierra Pine	Single Family Residential	199	du	37	112	149	125	74	199
Quarry Row	Single Family Residential	64	du	12	36	48	40	24	64
Brighton Subdivision	Single Family Residential	75	du	14	42	56	47	28	75
Granite at Dominguez	Single Family Residential	70	du	13	40	53	46	24	70
Parklands Subdivision	Single Family Residential	142	du	27	80	107	89	53	142
Garnet Creek	Single family Residential	81	du	15	46	61	51	30	81
	Multiple Family Residential	260	du	27	106	133	104	57	161
Winding Lane Estates	Single Family Residential	27	du	5	15	20	18	9	27
Sunset Hills Townhomes	Multiple Family Residential	148	du	12	59	71	56	27	83
South Whitney Mixed Use	Multiple Family Residential	20	du	2	12	14	11	5	16
	Office	7.89	ksf	15	4	19	8	20	28
Gracepoint Adventist Church	Church expansion	23.91	ksf	8	5	14	6	7	13
Noble Learning Center	Day Care Center	196	students	82	75	157	75	82	157
Stanford Terrace	Condominiums / Retail	119	du	24	51	76	66	54	120
Rocklin Adventures	Recreation Center	1	facility	44	27	71	96	104	200
Quick Quack Car Wash	Automated Car	1	each	16	16	32	28	28	56
Sunset at Stanford Ranch	Single Family Residential	47	du	9	26	35	30	17	47
Total				481	967	1,450	1,131	808	1,939



**EXISTING PLUS APPROVED PROJECTS
TRAFFIC VOLUMES AND LANE CONFIGURATIONS**



EPAP PLUS PROJECT

TRAFFIC VOLUMES AND LANE CONFIGURATIONS

KD Anderson & Associates, Inc.
Transportation Engineers

EPAP Intersection Levels of Service. Table 10 compares Existing Plus Approved Projects (EPAP) Levels of Service with and without the Quarry Place Project. As shown, the City of Rocklin's minimum LOS C standard will be maintained at most study intersections, but LOS D conditions will continue at the **Sunset Blvd / Springview Drive / 3rd Street intersection**. The delays on the side street approaches to the **Pacific Street / Walmart / Les Schwab intersection** will lengthen, but while side street delays will be indicative of LOS F conditions the overall intersection Level of Service will remain within the City's minimum LOS C standard.

EPAP Plus Project Impacts. The Levels of Service occurring under EPAP plus Project conditions were evaluated. The project would not change the overall Level of Service at any signalized location, but LOS D conditions will remain at the **Sunset Blvd / 3rd Street / Springview Drive intersection**. At this location the significance of the project's impact is again based on General Plan policy, and the incremental effect of the proposed project at this location has been determined. As noted, the net change in v/c ratio caused by the project is 0.010 in the a.m. and 0.011 in the p.m. peak hour. These increments are less than the 0.050 increment permitted under City guidelines. Because significance criteria are not exceeded, the project's traffic impact is not significant at this location. While the project will contribute its fair share to the cost of regional and City-wide improvements by paying adopted fees, no additional mitigations are needed.

The project impacts on un-signalized intersections are similar to those identified under Existing plus Project conditions. Longer side street delays are anticipated at the **Pacific Street / Walmart / Les Schwab intersection** with the project. While the Level of Service for motorists exiting Walmart will be LOS F with and without the project, the overall Level of Service at this location will not drop beyond LOS C. Because the overall Level of Service at this intersection will not exceed the City's LOS C minimum standard, the project's impact is not significant at this location, and mitigation is not required.

**TABLE 10
EXISTING PLUS APPROVED PROJECTS PLUS PROJECT
PEAK HOUR INTERSECTION LEVELS OF SERVICE**

Intersection	Control	AM Peak Hour						PM Peak Hour					
		Existing Plus Approved			EPAP Plus Project			Existing Plus Approved			EPAP Plus Project		
		LOS	V / C	Average Delay (sec/veh)	LOS	V / C	Average Delay (sec/veh)	LOS	V / C	Average Delay (sec/veh)	LOS	V / C	Average Delay (sec/veh)
Sunset Blvd / Springview Dr / 3 rd St	Signal	E	0.904	-	E	0.913		D	0.898	-	D	0.908	
Pacific Street / Woodside Drive	Signal	A	0.492	-	A	0.505		A	0.586	-	A	0.599	
Pacific Street / Sunset Blvd	Signal	A	0.557	-	A	0.573		C	0.743		C	0.760	
Pacific Street / West access (overall)	NB Stop	(A)	-	(0.0)	(A)	-	(0.2)	(A)	-	(0.0)	(A)	-	(0.2)
Northbound right turn		B		12.7	B		13.6	B		14.6	C		16.1
Pacific Street / Central access (overall)	NB Stop	(A)	-	(0.1)	(A)	-	(0.5)	(A)	-	(0.2)	(A)	-	(0.6)
Northbound right turn		B		12.4	B		13.5	C		15.2	C		17.3
Westbound left turn		B		10.6	B		11.0	B		13.0	B		14.3
Pacific St / Walmart / Les Schwab (overall)	NB/SB Stop	(A)	-	(1.2)	(A)	-	(1.5)	(A)	-	(7.4)	(C)	-	(21.5)
Northbound approach		E		39.6	F		51.1	F		227.3	F		<300
Southbound approach		E		42.5	F		47.9	E		29.0	D		33.2
Eastbound left turn		B		10.3	B		10.5	B		11.4	B		11.8
Westbound left turn		B		10.6	B		10.9	B		13.6	B		13.9

Bold indicates conditions in excess of adopted minimum LOS standard. **Highlighted** values are a significant impact

**TABLE 10 (cont'd)
EXISTING PLUS APPROVED PROJECTS PLUS PROJECT
PEAK HOUR INTERSECTION LEVELS OF SERVICE**

Intersection	Control	AM Peak Hour						PM Peak Hour					
		Existing Plus Approved			EPAP Plus Project			Existing Plus Approved			EPAP Plus Project		
		LOS	V / C	Average Delay (sec/veh)	LOS	V / C	Average Delay (sec/veh)	LOS	V / C	Average Delay (sec/veh)	LOS	V / C	Average Delay (sec/veh)
Rocklin Road / Farron Street	Signal	A	0.414	-	A	0.428		A	0.537	-	A		0.551
Pacific Street / Rocklin Road	Signal	A	0.522	-	A	0.537		B	0.608	-	B		0.620
Sunset Blvd / Kmart Access (overall)	EB/WB Stop	(A)		(2.7)	(A)		(2.0)	(A)		(4.9)	(A)		(3.0)
Eastbound approach		A	-	10.1	B	-	9.9	A	-	11.6	B	-	10.9
Westbound approach		A	-	9.5	A	-	-	-	-	9.7	-	-	-
Northbound left turn		A	-	7.4	A	-	7.4	A	-	7.5	A	-	7.6
Southbound left turn		A	-	7.5	A	-	-	-	-	7.5	-	-	-
Sunset Blvd / Woodside Drive	All-Way Stop	A	-	7.5	A	-	7.5	A	-	7.7	A	-	7.9
Sunset Blvd / New Access	WB Stop				(A)		(2.0)				(A)		
Westbound approach		-	-	-	A	-	9.7	-	-	-	B	-	
Southbound left turn					A		7.7				A		10.9

Bold indicates conditions in excess of adopted minimum LOS standard. **Highlighted** values are a significant impact

LONG TERM CUMULATIVE CONDITIONS

This report section addresses long term traffic conditions based on the City of Rocklin's General Plan traffic model. Forecasts created using the traffic model are the basis for cumulative analysis under City guidelines.

Background Information

Basis for Long Term Projections. The travel demand forecasting model used for the adopted City of Rocklin General Plan Update EIR is the basis for the long-term cumulative traffic volume forecasts used for this analysis, and the technical approach employed to use model results to create intersection turning movements for study area intersections mimics the approach used for the adopted GPU EIR.

The traffic model was run for a cumulative scenario that is consistent with the General Plan and assumes retail development on the subject site. This is the condition addressed in the GPU EIR. Long term daily, a.m. and p.m. model forecasts were compared to the model's baseline year forecasts, and the net difference in volume was determined at study locations. Adjusted cumulative forecasts were created by adding this incremental volume change to the current traffic counts. Existing and adjusted cumulative traffic volumes were then compared to identify equivalent growth rates for intersection approaches for use in creating intersection turning movement volumes and on roadway segments to identify future daily traffic volumes.

To create peak hour intersection turning movements, the segment growth factors were applied to observed peak hour volumes and the results were balanced to best approximate conditions on each leg using the methodologies contained in the Transportation Research Board's (TRB's) NCHRP Report 255, *Highway Traffic Data for Urbanized Area Project Planning and Design*. This approach reflects the fact that the development of various land uses may affect current travel patterns while adding new traffic, while new roadways may provide alternative routes for existing traffic.

Land Use Assumptions. The General Plan travel demand forecasting model includes the project site in a large traffic analysis zone (TAZ). For this analysis, the "No Project" condition assumes retail development on the site. The "Plus Quarry Place Project" condition was created by identifying the site's trip assignment under a 100% retail condition, subtracting these trips from the forecasts and subsequently adding the Quarry Place Project's previously identified trip assignment. To evaluate the relative significance of project impacts a "No Site Development" condition was also created in order to identify the incremental change associated with this use.

Circulation System Assumptions. The assumptions made regarding future circulation system improvements will affect the cumulative traffic analysis in two ways. First, assumptions regarding circulation system improvements could result in changes to future traffic volumes and travel patterns as the regional traffic model assigns traffic in response to roadway capacity. Simply stated, those routes with added capacity would remain the quickest routes as traffic

volumes increase and would see more traffic that would take the same route under “constrained” assumptions without improvements. In this case, the traffic volume forecasts assume that Sunset Blvd is widened to 6 lanes in the area north of Pacific Street as noted in the General Plan and included in the City of Rocklin traffic impact mitigation fee program.

The traffic model also responds to the presence of new roadways by relocating traffic to new routes. In this case, General Plan Policy **C-40** directs the City to connect Woodside Drive to Ruhkala Road in the area north of the proposed project. Physically this connection exists today but is controlled by a gate that has been closed to automobile traffic. The GPU DEIR traffic analysis assumes this gate is opened. While opening the Woodside Drive –Ruhkala Road could affect traffic conditions in the immediate area of the proposed project, the City has been working with another project (i.e. the Village at Civic Center) to deal with Ruhkala Road north of the Quarry Place site. City staff have indicated that the plan for this area generally precludes the completion of a regular full-time connection to the north, and as a result cumulative impacts have been evaluated assuming that the Ruhkala Road connection is not opened.

The second aspect of circulation system assumptions is their effect on intersection Level of Service calculation results. For this analysis a conservative approach has been taken which assumes that long term improvements addressed in the General Plan EIR are not yet installed. With one exception existing intersection geometry has been assumed for the cumulative Level of Service analysis, with project’s included in the City CIP or General Plan EIR improvements included as potential mitigation measures. The exception is the two-lane roundabout planned for the Pacific Street / Rocklin Road intersection. This assumption is reasonable because the City is currently designing this improvement and funding has been identified.

Cumulative Traffic Volumes and Levels of Service

Daily Traffic Volumes. Table 11 compares daily traffic volumes on key study area roads under cumulative conditions (i.e., No Project with Retail on the site) with and without the Quarry Place. As shown, the volume of traffic on Pacific Street in the vicinity of the project is expected to increase appreciably in the future, but minimal increases are anticipated for Sunset Blvd south of Pacific Street.

**TABLE 11
CUMULATIVE DAILY TRAFFIC VOLUMES**

Street	From	To	Existing Daily Traffic Volume	Cumulative Daily Traffic Volume		
				With Project		With Retail
				Project Alone	Total	
Sunset Blvd	Pacific Street	Access	5,360	1,045	6,180	6,200
	Access	Woodside Drive	2,920	290	3,230	3,000
Pacific Street	Sunset Blvd	Main Access	25,420	690	48,650	48,660
	Main Access	Farron Street	25,070	1,255	48,240	48,300
Woodside Dr	Sunset Blvd	Evelyn Rd	1,360	240	1,660	1,400

Intersection Traffic Volume Forecasts. Figures 8 and 9 present Cumulative peak hour traffic volumes at study area intersections with and without the Quarry Place Project.

Cumulative Level of Service – 100% Retail Use on Project Site. Table 12 presents cumulative a.m. and p.m. peak hour Levels of Service at study intersections with 100% retail development on the subject site. As indicated four (4) intersections are projected to operate with Levels of Service that do not satisfy the City of Rocklin’s minimum LOS C standard. Three locations are signalized intersections addressed by the City’s GPU EIR.

The **Sunset Blvd / 3rd Street / Springview Drive intersection** is projected to operate at LOS F. The feasibility of improving this intersection was evaluated as part of the GPU EIR. The General Plan anticipated that Sunset Blvd would be widened to provide three through lanes in each direction through the intersection, but this level of improvement would still yield LOS F. The GPU DEIR suggested that possible mitigation to improve LOS at the intersection of Sunset Boulevard and Springview Drive would include adding two left turn lanes on eastbound Sunset Boulevard to northbound 3rd Street. This mitigation measure would improve this intersection to LOS D but would still not meet the City’s LOS C standard. The GPU EIR indicated that City staff recommended that this mitigation is feasible but would not result in an acceptable LOS. This intersection is identified under Policy C-10.B as an exception to the City’s LOS C standard.

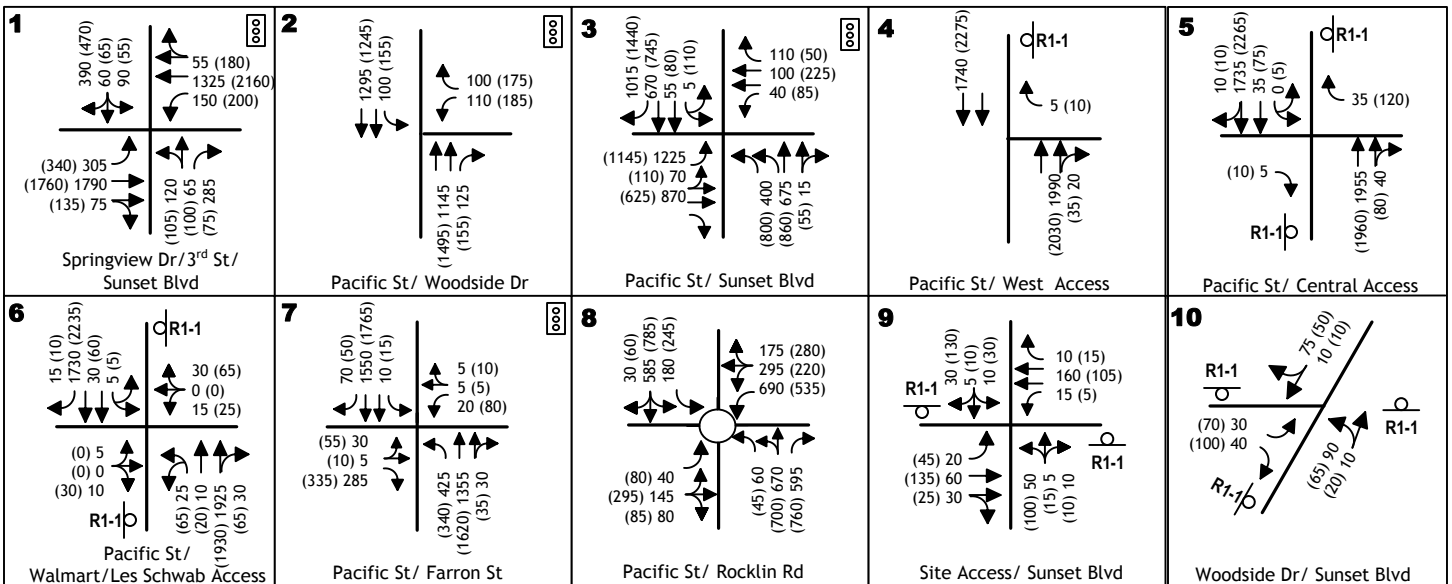
The **Sunset Blvd / Pacific Street intersection** is projected to operate at LOS D. The GPU EIR anticipated that Pacific Street would be widened to provide three through lanes on the Pacific Street approaches. GPU EIR MM 4.4.1 included this location as an intersection that shall be added to the City’s CIP as part of implementation of proposed General Plan Update Policy C-8. The prescribed mitigation would modify the intersection to include two left turn lanes, a shared left-through lane, and a right turn lane on eastbound Sunset Boulevard to improve intersection operations. However, while the GPU EIR indicated that these improvements would yield LOS C, LOS D conditions are forecast in this analysis.

The **Pacific Street / Farron Street intersection** is projected to operate at LOS F. GPU EIR **MM 4.4.1** included this location as an intersection that shall be added to the City's CIP as part of implementation of proposed General Plan Update Policy C-8. The prescribed mitigation would modify the intersection to include two left turn lanes from northbound Pacific Street to westbound Farron Street and a combined through/left and separate right turn lane with overlap on eastbound Farron Street to improve intersection operations to meet the LOS C standard. The GPU EIR notes that this improvement will require that Farron Street be modified to include two receiving lanes on the north side of Farron Street between Pacific Street and the UP railroad tracks.

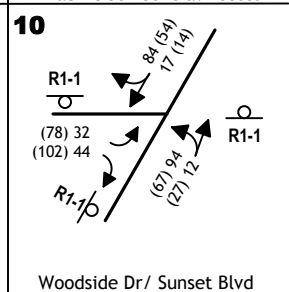
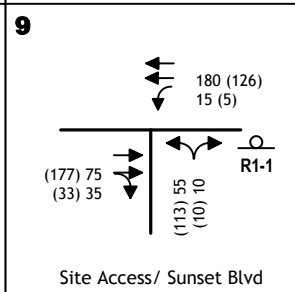
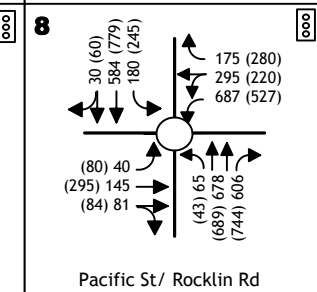
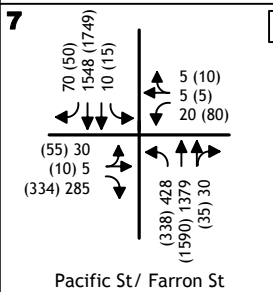
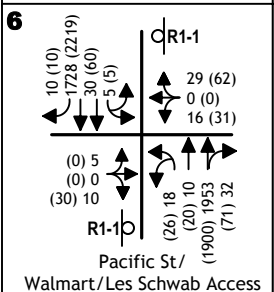
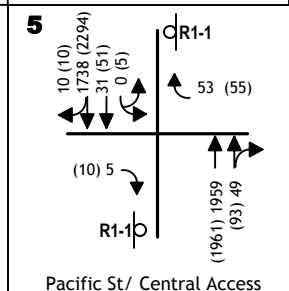
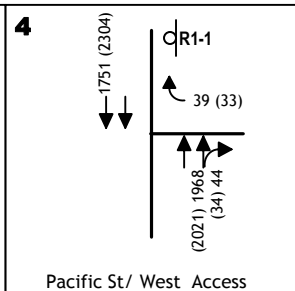
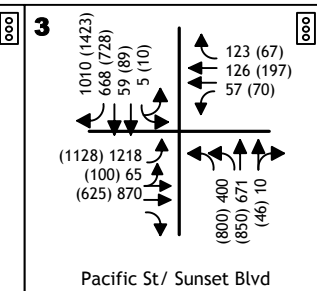
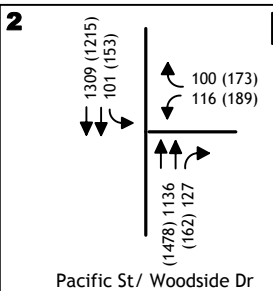
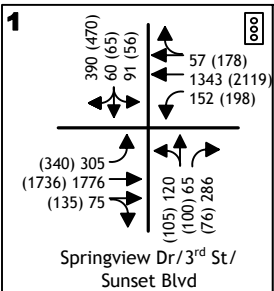
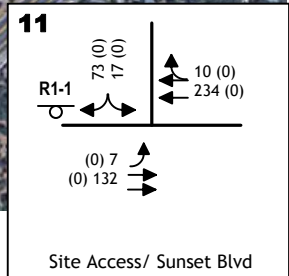
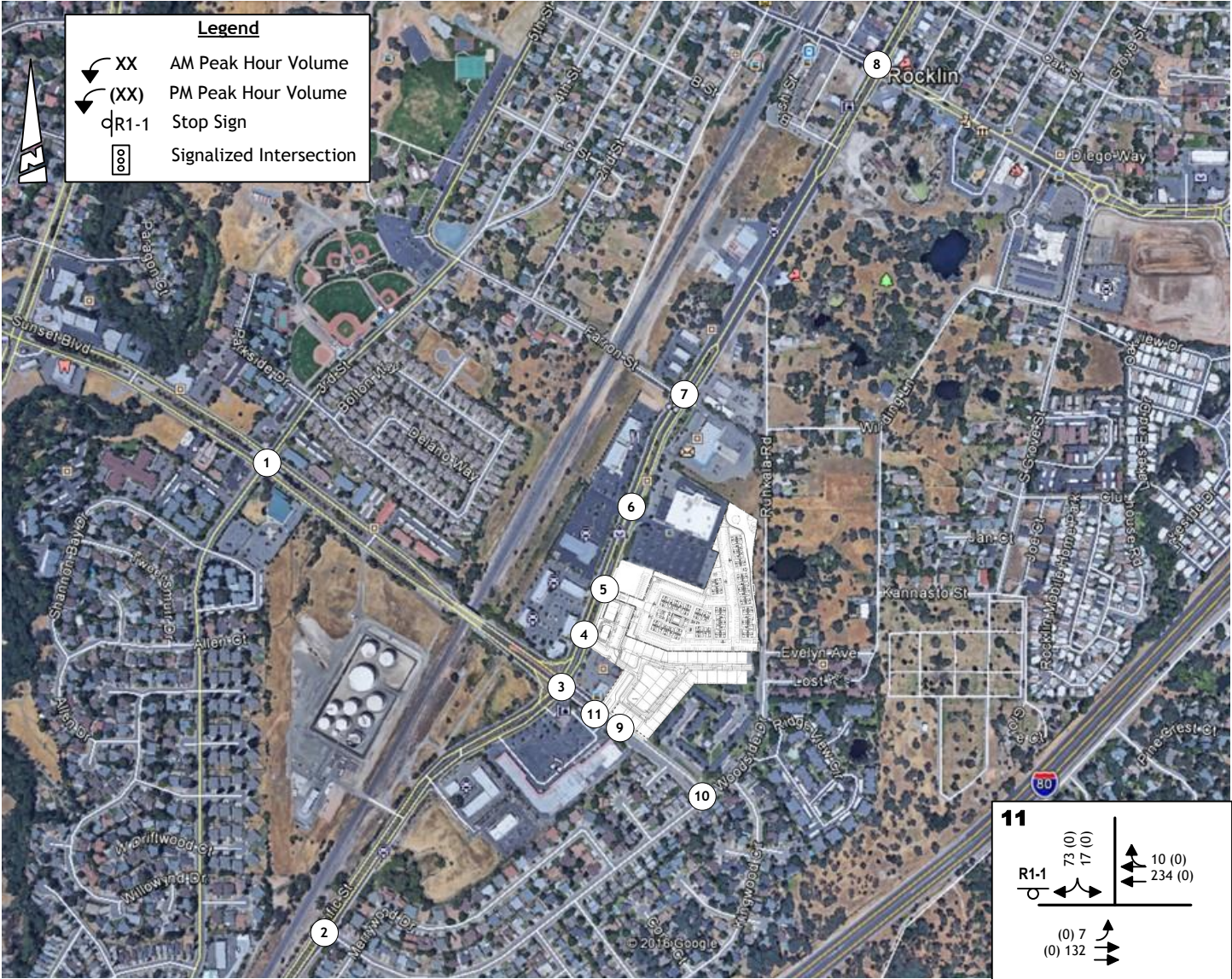
One un-signalized intersection not addressed by the GPU EIR would also operate with an overall Level of Service that does not meet the City's minimum LOS C standard. The **Pacific Street / Walmart / Les Schwab intersection** is projected to operate at an overall LOS F in the p.m. peak hour. While the volume of traffic on the side street approaches is not appreciably different from that occurring today, the appreciable increase in the volume on Pacific Street will result in very long delays for motorists waiting to turn left onto Pacific Street.

The GPU EIR indicates that Pacific Street in this area would be widened to provide three through lanes each direction. However, while widening Pacific Street does reduce side street delays for motorists turning left onto from Pacific Street somewhat, overall LOS F conditions remain with full access at the intersection. It is reasonable to assume that under long term cumulative conditions the intersection would be modified to prohibit left turns onto Pacific Street while allowing left turns into the commercial areas to continue. This prohibition would reduce the length of delay on the side street approaches and result in an overall Level of Service that satisfies the City's minimum LOS C standard.

This new traffic control would result in the redistribution of vehicles intending to leave the Walmart and travel westerly on Pacific Street. These motorists would likely turn right and make a u-turn at Farron Street. The diverted traffic volume could have an incremental effect on the Level of Service at the Pacific Street / Farron Street intersection, but the prescribed improvements would continue to yield a Level of Service that would meet the minimum City standard at this location.



**CUMULATIVE NO PROJECT
TRAFFIC VOLUMES AND LANE CONFIGURATIONS**



**CUMULATIVE PLUS PROJECT
TRAFFIC VOLUMES AND LANE CONFIGURATIONS**

**TABLE 12
CUMULATIVE PLUS PROJECT PEAK HOUR INTERSECTION LEVELS OF SERVICE**

Intersection	Control	AM Peak Hour						PM Peak Hour					
		100% Retail on Site			With Quarry Place Project			100% Retail on Site			With Quarry Place Project		
		LOS	V / C	Average Delay (sec/veh)	LOS	V / C	Average Delay (sec/veh)	LOS	V / C	Average Delay (sec/veh)	LOS	V / C	Average Delay (sec/veh)
Sunset Blvd / Springview Dr / 3 rd St	Signal	F	1.247	-	F	1.244	-	F	1.590	-	F	1.575	-
W/ GPU EIR Mitigation Improvements		D	0.832	-	D	0.832	-	D	0.879	-	D	0.869	-
Pacific Street / Woodside Drive	Signal	A	0.522	-	A	0.523	-	C	0.725	-	C	0.721	-
Pacific Street / Sunset Blvd	Signal	D	0.867	-	D	0.873	-	F	1.005	-	E	0.984	-
W/ GPU EIR Mitigation Improvements		B	0.666	-	B	0.671	-	D	0.813	-	C	0.793	-
Pacific Street / West access (overall)	NB Stop	(A)	-	(0.0)	(A)	-	(0.2)	(A)	-	(0.0)	(A)	-	(0.1)
Northbound right turn		C		20.1	C		22.6	C		21.1	C		22.8
Pacific Street / Central access (overall)	NB Stop	(A)	-	(0.4)	(A)	-	(0.5)	(A)	-	(1.4)	(A)	-	(0.6)
Northbound right turn		C		22.0	C		23.8	D		34.6	C		24.9
Westbound left turn		C		19.0	C		19.0	C		24.1	C		21.3
Pacific St / Walmart / Les Schwab (overall)	NB/SB Stop	(C)		(17.6)	(C)		(19.0)	(F)		(162.5)	(F)		(143.4)
Northbound approach		F	-	> 300	F	-	> 300	F	-	> 300	F	-	> 300
Southbound approach		F		> 300	F		> 300	D		25.8	D		25.5
Eastbound left turn		C		15.9	C		15.6	D		29.0	C		23.8
Westbound left turn		C		18.4	C		18.8	C		20.8	C		20.4
GPU EIR Mitigation		A	-	(8.6)	(A)	-	(9.3)	(F)	-	(73.5)	(F)	-	(64.6)

Bold indicates conditions in excess of adopted minimum LOS standard

**TABLE 12 (cont'd)
CUMULATIVE PLUS PROJECT PEAK HOUR INTERSECTION LEVELS OF SERVICE**

Intersection	Control	AM Peak Hour						PM Peak Hour					
		100% Retail on Site			With Quarry Place Project			100% Retail on Site			With Quarry Place Project		
		LOS	V / C	Average Delay (sec/veh)	LOS	V / C	Average Delay (sec/veh)	LOS	V / C	Average Delay (sec/veh)	LOS	V / C	Average Delay (sec/veh)
Rocklin Road / Farron Street	Signal	F	1.038	-	F	1.039	-	F	1.129	-	F	-	1.122
GPU EIR Mitigation		B	0.567	-	B	0.566	-	B	0.692	-	B	-	0.689
Pacific Street / Rocklin Road	Roundabout	C	-	17.7	C	-	17.9	C	-	24.8	C	-	23.7
Sunset Blvd / Kmart Access (overall)	EB/WB Stop	(A)		(3.4)	(A)		(2.2)	(A)		(6.1)	(A)		(3.1)
Eastbound approach		B		10.6	B		10.3	B		13.5	B		11.4
Westbound approach		A	-	9.7	A	-	-	B	-	10.2	B	-	-
Northbound left turn		A		7.4	A		7.4	A		7.5	A		7.6
Southbound left turn		A		7.6	A		-	A		7.5	A		-
Sunset Blvd / Woodside Drive	All Way Stop	A	-	7.5	A	-	7.6	A	-	7.8	A	-	7.9
Sunset Blvd / New Access Westbound approach	WB Stop				(A)		(2.0)				(A)		(2.4)
Southbound left turn		-	-	-	A	-	9.7	-	-	-	B	-	10.7
					A		7.7				A		7.8

Bold indicates conditions in excess of adopted minimum LOS standard

Cumulative Level of Service – Plus Quarry Place Project. As noted in Table 12, the same four intersections that operate with overall Levels of Service in excess of the LOS C minimum will continue to do so with the proposed Quarry Place Project. In this case the significance of the project’s impact is predicated on the incremental change in volume / capacity ratio or overall delay at the intersection.

Because the Quarry Place Project results in less traffic than the alternative retail use, at some locations the incremental change in v/c or delay can be a negative value when comparing the results of the two scenarios. However, the significance of the project’s cumulative traffic impact is evaluated in comparison to a “No Site Development” condition. The “Cumulative No Site Development” conditions were identified by subtracting project trips at each location and re-calculating LOS, v/c or overall delay, as noted in Table 13.

Comparison of v/c ratios reveals that at each signalized intersection with deficient Level of Service the incremental change resulting from the project is in the range of 0.010 to 0.018. Because each change is less than the 0.050 increment permitted under City guidelines, the project’s cumulative impacts at those locations is not significant.

At un-signalized intersections the change in overall traffic volume is the measure of significance when conditions exceed the minimum LOS C standard. In this case, the Pacific Street / Walmart / Les Schwab intersection will operate at LOS F in the p.m. peak hour with 100% retail development or with the Quarry Place Project. While the overall delay is decreased in comparison to retail use on the site, the Quarry Place Project adds 105 p.m. peak hour vehicles compared to no site development.

The difference in total intersection volume is the significance criteria at the un-signalized Pacific Street / Walmart / Les Schwab intersection. In this case, the Quarry Place Project contributes 105 vehicles to the intersection in the p.m. peak hour, which represents a 2.4% increase in the total Cumulative No Development volume. Because this increment is less than the 5.0% change permitted under City guidelines, the project’s cumulative impact to this intersection is not significant.

**TABLE 13
PROJECT CUMULATIVE IMPACT SIGNIFICANCE SUMMARY**

Intersection	AM Peak Hour				PM Peak Hour			
	v/c ratio			Significant?	v/c ratio*			Significant?
	No Site development	With Project	Change		No Site Development	With Project	Change	
Sunset Blvd / 3 rd Street / Springview Drive	1.234	1.244	0.010	No	1.564	1.575	0.011	No
Sunset Blvd / Pacific Street	0.857	0.873	0.016	No	0.967	0.984	0.017	No
Pacific Street / Farron Street	1.026	1.039	0.013	No	1.104	1.122	0.018	No
Pacific Street / Walmart / Les Schwab	Impact significant based on overall LOS E				61.8 sec LOS F (4,329)	143.4 sec LOS F (4,434)	105 veh 2/4%	No
(*) Note: un-signalized intersection evaluation based on change in total hourly volume								

APPENDIX

*Traffic Counts
Level of Service Worksheets*