

**DRAFT**

**TRAFFIC IMPACT ANALYSIS**

**FOR**

**PACIFIC STREET / MIDAS AVENUE MULTI-FAMILY RESIDENTIAL PROJECT**  
Rocklin, California

*Prepared For:*

**The Wolff Company**  
6710 E. Camelback Road, Suite 100  
Scottsdale, AZ 85251

*Prepared By:*

**KD Anderson & Associates, Inc.**  
3853 Taylor Road, Suite G  
Loomis, CA 95650  
(916) 660-1555

February 15, 2017

Job No. 1290-02

Pacific Street Midas Ave Apartments.rpt

***KD Anderson & Associates, Inc.***

**Transportation Engineers**

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PACIFIC STREET / MIDAS AVENUE MULTI-FAMILY RESIDENTIAL PROJECT  
Rocklin, California**

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February 15, 2017

*KDA*

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Rocklin, California

## **INTRODUCTION**

This report documents **KD Anderson & Associates'** analysis of the traffic impacts associated with developing the **Pacific Street / Midas Avenue Multi-Family Residential 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 Pacific Street / Midas Avenue Apartments proposes 204 multiple family residences on a 6 acre site located on the northeast corner of the intersection of Pacific Street and Midas Avenue, as noted in Figure 1 and Figure 2. The site is currently designated PD-MU in the Rocklin General Plan and was previously approved for a combination of 15 ksf retail and 140 multiple family uses. Access to the site is proposed at two locations. One driveway will provide full access on Pacific Street near the site's easterly boundary. The existing raised median on Pacific Street will be replaced by a striped Two-Way Left-Turn (TWLT) lane to allow this access. The second location is a right-turn-only access driveway on Midas Avenue just east of the UPRR crossing, as noted in Figure 2.

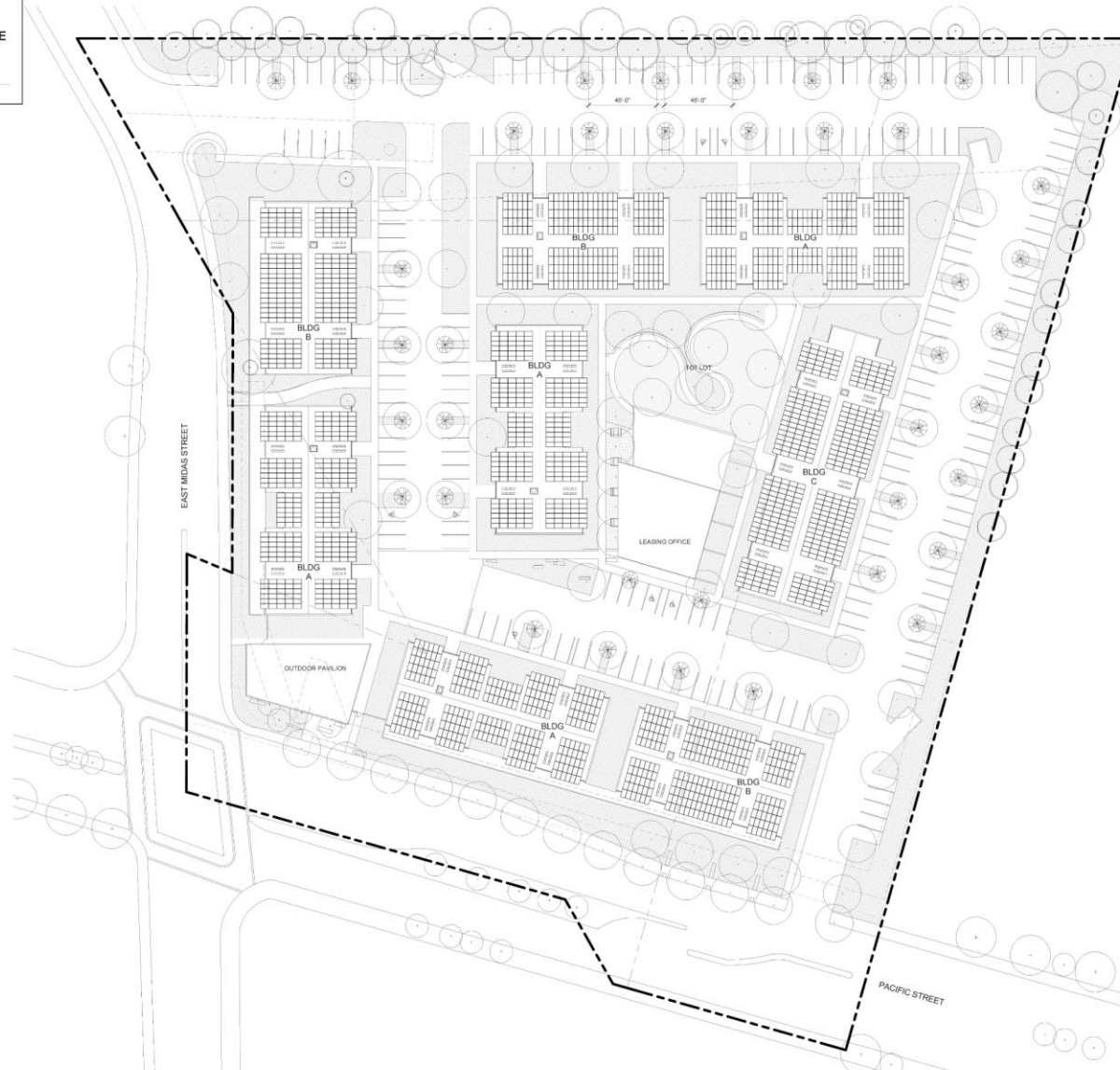




UNIT MIX			
UNIT TYPE	COUNT	AREA	PERCENTAGE
1BR-1BA	102	672 GSF	50%
2BR-1BA-L	54	864 GSF	26%
2BR-1BA-S	48	807 GSF	24%
	204		

#### Parking

Type	Count
ADA 9' x 18'	7
Compact 8' x 10'	2
Standard 8' x 18'	224
Grand total:	233



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**ROCKLIN GATEWAY**  
E MIDAS AVE & PACIFIC ST  
ROCKLIN, CA 95677

Project Manager: TS  
Project Team: CC, TS  
Job Number: 16602  
Date: 7/14/2016

Revisions:

# Date

NOT FOR CONSTRUCTION

PRELIM PRICING SET  
7/14/2016

1 SITE PLAN  
SCALE: 1/32" = 1'-0"

N  
SITE PLAN  
A100



## 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 Pacific Street / Midas Avenue Multiple Family Residential 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 Rocklin Road roughly one mile south of the site and on Sierra College Blvd roughly one mile to the east. Community-wide circulation is provided via Pacific Street, which roughly parallels Interstate 80 through the community.

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

**Pacific Street** is a four lane / two 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 four lanes west of the Americana Way intersection and transitions to a two lane road between Americana Way and Delmar Avenue. A continuous two-way left turn lane exists on Pacific Street from the Loomis / Rocklin city limit line to Sierra Meadows Drive. Raised center medians exist in the area west of Sierra Meadows Drive. The Rocklin General Plan Circulation Element classifies Pacific Street as an Arterial Street. On-street parking is not permitted, and the speed limit on Pacific Street is posted at 40 mph in the area of the project.

Traffic volume information collected for the General Plan EIR indicated that Pacific Street carries an Average Daily Traffic (ADT) volume of 15,000 vehicles per day in the area between Rocklin Road and Midas Avenue, with the volume decreasing to 14,300 ADT between Grove Street and Sierra Meadows Drive, and 12,800 ADT between Sierra Meadows Drive and Delmar Avenue.

**Midas Avenue** is a two-lane street which links the established residential areas around the project with Pacific Street to the south and to Whitney Blvd to the west. Midas Avenue is designated a Collector in the General Plan. On-street parking is permitted along Midas Avenue west of 2<sup>nd</sup> Street, but not along the project frontage. The posted speed limit is 30 mph.

Daily traffic counts conducted in 2013 when area schools were in session indicated that the volume of traffic on Midas Avenue varied along its length. The observed volumes in the area from Whitney Blvd to Argonaut Avenue ranged from 4,290 to 4,400 ADT. The volume was higher south of Argonaut Avenue, with 9,225 ADT counted between Argonaut Avenue and 5<sup>th</sup> Street and 8,765 ADT identified between 5<sup>th</sup> Street and Pacific Street. These counts are

representative of current conditions since no appreciable development has proceeded on Midas Avenue north of Pacific Street.

**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 5<sup>th</sup> 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 2013 by the City of Rocklin indicated that Rocklin Road carries an Average Daily Traffic (ADT) volume of 17,053 from the Loomis Border to El Don Drive and 24,848 vehicles per day from El Don Drive to Granite Drive.

**5th Street** runs parallel to and north of Pacific Street in the area adjoining Johnson Springview Park. 5<sup>th</sup> Street links Midas Avenue with Rocklin Road and continues westerly to Farron Street. 5<sup>th</sup> Street is a two lane street with on-street parking and bicycle lanes. The posted speed limit is 25 mph.

**Americana Way** is a local street that extends north from Pacific Street to serve the existing residential neighborhood east of the UPRR's eastbound line. Americana Way intersects Pacific Street at a signalized intersection and crosses the westbound UPRR line immediately north of the intersection. North of the crossing, Americana Way is a two lane street. Sidewalks exist on both sides of the street, on-street parking is permitted, and residential driveways are prevalent in this area. The posted speed limit on Americana Way is 25 mph.

Traffic counts conducted in 2013 indicated that Americana Way carried 1,830 vehicles per day between Pacific Street and Independence Drive and 315 vehicles per day north of Independence Drive.

**Sierra Meadows Drive** is the southerly extension of Americana Way, and the road continues to an intersection on Granite Drive. The Rocklin General Plan designates Sierra Meadows Drive as a Collector street, and class II bike lanes are provided. Traffic counts conducted in 2013 indicated that the daily volume on Sierra Meadows Drive south of Pacific Street was 4,330 vehicles per day.

## **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 **Midas Avenue / 5<sup>th</sup> Street / Oakcreek Drive intersection** is controlled by an all-way stop. Each of the four legs is a single lane. Crosswalks are striped across the northern Midas Avenue leg and across 5<sup>th</sup> Street and Oakcreek Drive. There is a street light at the intersection.

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. 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 a through lane, a combined through plus right turn lane and a separate left turn lane. Crosswalks exist on all four legs of the intersection. The City expects to convert this intersection to a roundabout in 2018-2019.

The **Midas Avenue / Pacific Street intersection** is controlled by an actuated traffic signal with “split” phases on the Midas Avenue approaches and protected left turns on Pacific Street. Separate left turn lanes are provided on each approach. Separate right turn lanes are available on both Midas Avenue approaches and on westbound Pacific Street. The southbound Midas Avenue to westbound Pacific Street is a free right turn with a sign indicating “right turn on red after stop” with a short acceleration lane. The westbound Pacific Street right turn is operated as an “overlap” phase with the southbound left turn on Midas Avenue. Westbound to eastbound u-turns on Pacific Street are permitted at the intersection. There are crosswalks across each leg of the intersection and a street light on each corner.

The **Pacific Street / Americana Way / Sierra Meadows Drive intersection** is controlled by a traffic signal. Each Pacific Street approach features a separate left turn lane, a through lane and a through plus right turn lane. The Sierra Meadows Drive and Americana Way approaches have a left turn lane and combined through plus right turn lane. Crosswalks are striped on all four legs, and street lights are present.

The **project’s access on Pacific Street** is near the driveways serving existing businesses along Pacific Street. United Rental has a driveway on the north side of Pacific Street adjoining the proposed project’s property line. This driveway is served by a short eastbound left turn lane (i.e., 40 feet long). Toy Hauler Liquidators and SpeedWash are located across the street and these businesses have a short westbound left turn lane (i.e., 60 feet) that serves both of their driveways.

The **project’s Right-Turn-Only Access on Midas Avenue** is located between the UPRR and a driveway serving the existing retail center on the other side of Midas Avenue. The centerline of



driveway is roughly 55 feet from the railroad right-of-way and about 150 feet from the driveway on the south side of Midas Avenue. There are a number of vehicles that turn left from Midas Avenue into the existing shopping center. Midas Avenue is a two-lane street in the area of the driveway with bicycle lanes and sidewalks.

### **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.

**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 $\leq 10$ 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 $\leq 15$ 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 $\leq 25$ 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 $\leq 35$ 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 $\leq 50$ 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 <u>Highway Capacity Manual</u> , and Transportation Research Board (TRB) Special Report 209.			

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.

**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 (CAMUTCD)* 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 a reduced LOS may be accepted during peak periods under identified circumstances.

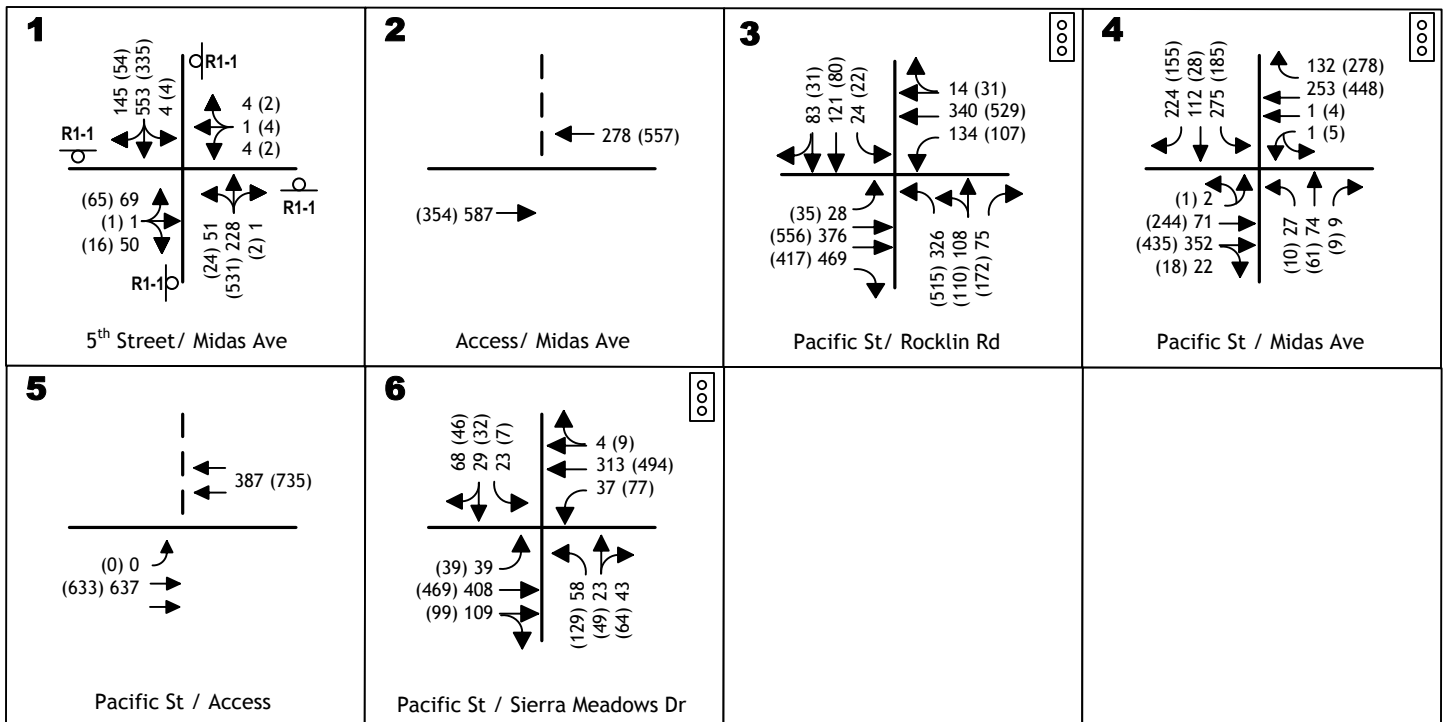
Based on the City's significance threshold, if an intersection is already operating at an unsatisfactory Level of Service, an increase of 5 percent (i.e., an addition of 0.05) to the v/c ratio at a signalized intersection would be considered a measureable worsening of intersection operations and therefore 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 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.** Traffic volume data collected for the City of Rocklin in April 2016 for the Circulation Element Update was employed for this analysis at three major intersections:

- Midas Avenue / 5<sup>th</sup> Street
- Pacific Street / Midas Avenue
- Pacific Street / Rocklin Road

Data from 2014 was used at the Pacific Street / Americana Drive intersection. Figure 3 illustrates the intersection turning movement count data recorded for each count period. 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.



## EXISTING TRAFFIC VOLUMES AND LANE CONFIGURATIONS



Weekday a.m. and p.m. peak hour traffic counts were conducted at the driveways serving existing businesses along Pacific Street on September 9, 2015. From 7:00 to 9:00 a.m. 16 vehicles entered or exited the United Rental's driveway on the north side of Pacific Street adjoining the proposed project's property line. That driveway carried 11 vehicles from 4:00 to 6:00 p.m. The volumes using the eastbound left turn lane were 5 in the morning and 1 in the two hour evening period.

Toy Hauler Liquidators and SpeedWash are located across the street and these businesses have a short westbound left turn lane (i.e., 60 feet) that serves both of their driveways. The volumes observed at Toy Hauler Liquidators totaled zero in the two hour a.m. period and 12 in the p.m. The car wash driveways carried 13 vehicles in the a.m. period and 28 vehicles in the two hour p.m. period. However, the total volume to both businesses using the westbound left turn lane totaled 2 vehicles in the morning two hours, and no westbound left turns occurred in the two hour p.m. peak hour period.

**Intersection Level of Service.** Table 2 identifies current intersection Levels of Service at the study locations. As shown, the overall Level of Service at each location meets the City's LOS C goal.

**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)
Midas Avenue / 5 <sup>th</sup> Street	All-Way Stop	C		23.3	C	-	15.5
Rocklin Road / Pacific Street	Signal	A	0.486	-	A	0.537	-
Pacific Street / Midas Avenue	Signal	A	0.378	-	A	0.492	-
Pacific Street / Americana Way / Sierra Meadows Drive	Signal	A	0.311	-	A	0.392	-
<b>Bold</b> indicates conditions in excess of adopted minimum LOS standard							

### **Transit Facilities**

**Bus Service.** Rocklin is generally served by four Placer County Transit (PCT) bus routes: the Auburn Light Rail Express route, the Lincoln to Galleria to 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 to Sierra College route has 14 runs a day in each direction and passes the project site via Sierra Meadows Drive and Pacific Street. 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 Midas Avenue east and west of Pacific Street. Sidewalks exist on both sides of Pacific Street south of Midas Avenue and north of Midas Avenue in the area west of Americana Way and on the south side of the street east of that intersection to Anthony Court.

### **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 exist on a number of roadways in the area of the proposed project, including Pacific Street west of Americana Way, Sierra Meadows Drive, Rocklin Road and on Grove Street south of the project.

## **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 specific policies that are relevant to this project are noted below. Policy C-34 deals with the extension of Dominguez Avenue across Interstate 80, which has an effect on future traffic conditions in the study area.

### **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 undercrossings 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

The proposed project is a 204 unit multiple family residential development. The proposed use would be consistent with the current PD/MU designation.

### Project Improvements

The project will install improvements on Pacific Street and Midas Avenue to control or facilitate site access.

On Pacific Street the existing raised medians will be eliminated and replaced by a continuous center Two-Way Left-Turn (TWLT) lane, as noted in **Figure 4**. The TWLT lane will extend for roughly 250 feet and facilitate full access to both the proposed project and to the existing driveways in the area.

On Midas Avenue the existing centerline median will be extended slightly to fully block left turns at the project driveway. A short right turn lane for inbound traffic will be provided.

### Project Characteristics

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

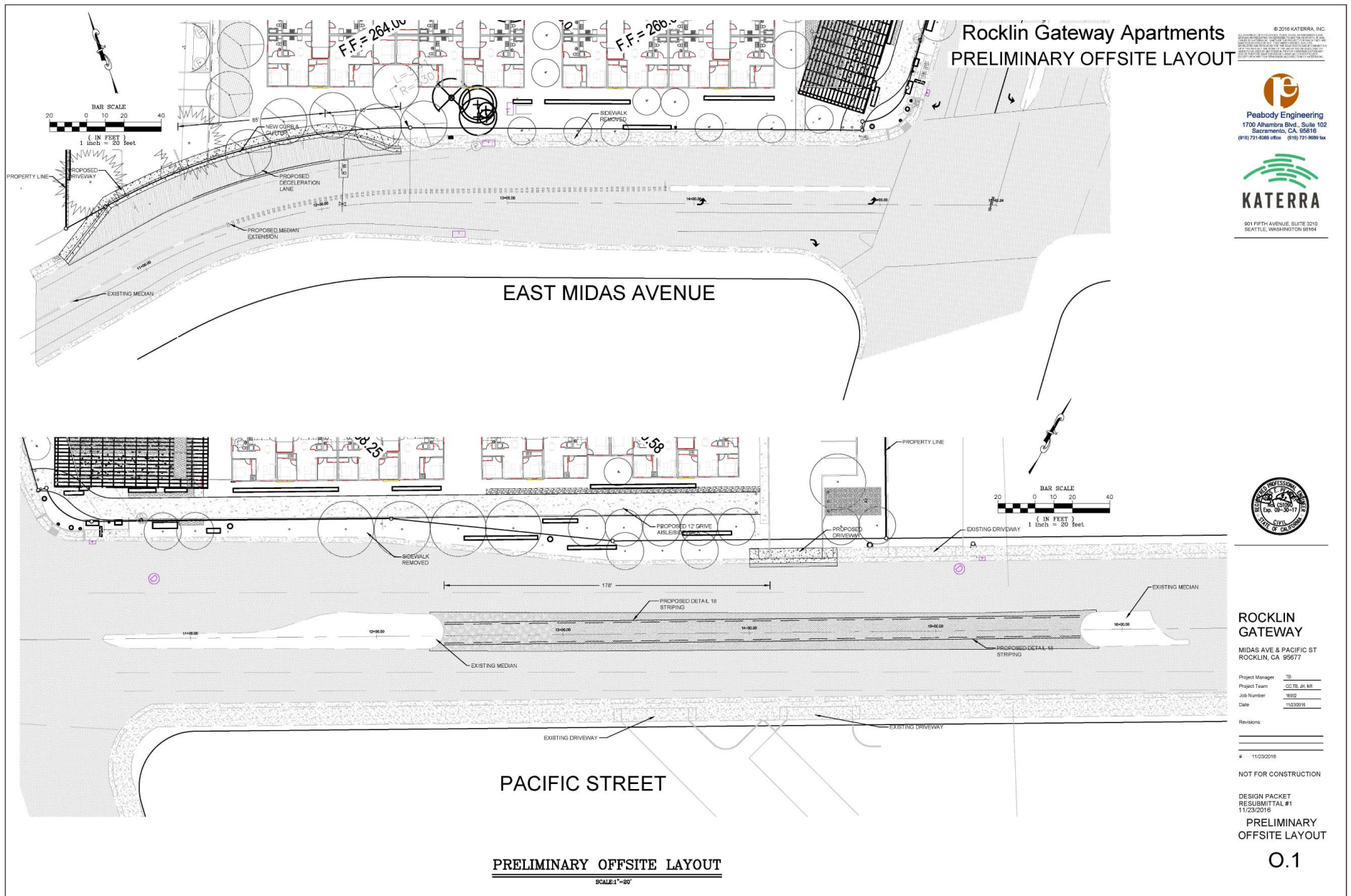
**Trip Generation.** The amount of new traffic associated with development projects is typically forecast using information developed from recognized national sources. The Institute of Transportation Engineers (ITE) publication *Trip Generation, 9<sup>th</sup> Edition* is a source recognized by the City of Rocklin and Caltrans, and applicable average trip generation rates for multi-family residential development are presented in Table 3.

**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
Multiple Family Residence	220	Dwelling	6.5	20%	80%	0.51	65%	35%	0.62
Daily rate from Rocklin Traffic Model.									

As shown in Table 4, the proposed project could generate 1,326 daily trip ends (½ inbound and ½ outbound), with 104 trips generated in the a.m. peak hour and 126 trips occurring in the p.m. peak hour.





The trip generation estimate for the site's previously approved mixed-use project has been identified for comparison. As indicated, that mixed-use project would have generated roughly 179 more daily trips than the proposed apartment project. Its trip generation estimate for the a.m. peak hour would have been less than that associated with the proposed project. The mixed use project would have generated 3 more new trips in the p.m. peak hour.

**TABLE 4  
TRIP GENERATION COMPARISON**

Description	Quantity	Trips						
		Daily	AM Peak Hour			PM Peak Hour		
			In	Out	Total	In	Out	Total
Previous Approved Project(*)								
Retail	15 ksf	644	10	5	15	29	31	60
Apartments	140 du's	992	14	58	72	62	33	95
Gross Total		1,636	24	63	87	91	64	155
Less Pass-by Retail and Internal Trips		131	0	0	0	14	12	26
Net New External Trips		1,505	24	63	87	77	52	129
Proposed Project								
Multiple Family Residences	204 du's	1,326	21	83	104	82	44	126
Net Difference		<179>	<3>	20	17	5	<8>	<3>
(*) source: Traffic Impact Analysis for Mixed-use Development Pacific Street @ Midas Avenue, Kimley Horn, January 14, 2008								

**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 residences, the general location of employment, shopping, 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 this study. As indicated, the distribution pattern will vary slightly over the course of the day, primarily due to school traffic in the a.m. peak hour. These assumptions are also noted in **Figure 4.**

**TABLE 5  
REGIONAL TRIP DISTRIBUTION ASSUMPTIONS**

Direction	Route	Share of Total		
		Daily	AM Peak Hour	PM Peak Hour
North	Midas Avenue	13%	18%	12%
West	Pacific Street beyond Rocklin Road	24%	20%	25%
East	Pacific Street beyond Sierra Meadows Drive	27%	20%	29%
	Sierra Meadows Drive	5%	6%	5%
South	Midas Avenue	9%	11%	8%
	Rocklin Road	22%	25%	21%
Total		100%	100%	100%

**Trip Assignment.** Project trips were assigned to the local street system through the two project driveways based on the regional distribution assumptions identified above. The relative use of either driveway was based on comparison of probable travel time on each route. Figure 5 identifies the assignment of project trips through the study intersections and at the project's access intersection. As noted, trips leaving the site and destined for locations east on Pacific Street were assumed to turn left from the Pacific Street driveway. Inbound trips arriving on Pacific Street from the west were assumed to use the Midas Avenue driveway or to use Pacific Street and make a left turn at the new project driveway intersection.

### **Existing Plus Project Traffic Conditions and Levels of Service**

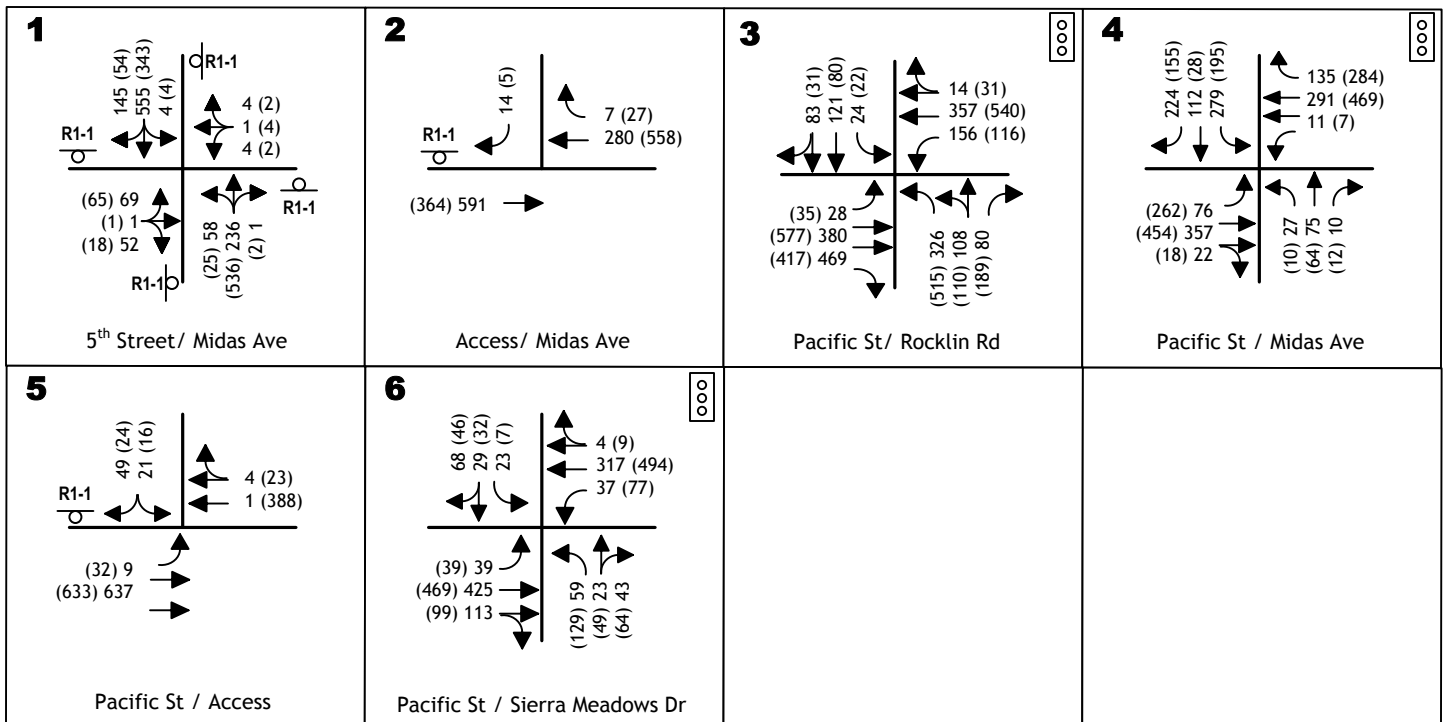
Figure 6 superimposes project trips onto the current background traffic volumes to create the "Existing plus Project" condition. Subsequent tables compare the "Existing" and "Existing plus Project" Levels of Service.

**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 each off site intersection will remain LOS A, which is within the adopted minimum standard (i.e., LOS C or better). The project access would also meet minimum LOS standards. Thus the project's impact isn't significant measured in terms of intersection Level of Service.









EXISTING PLUS PROJECT TRAFFIC VOLUMES  
AND LANE CONFIGURATIONS



**TABLE 6**  
**EXISTING PLUS PROJECT PEAK HOUR INTERSECTION LEVELS 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.)					
		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)
Midas Avenue / 5 <sup>th</sup> Street	All-Way Stop	C	-	23.3	C	-	24.0	C	-	15.5	C	-	15.9
Midas Avenue / Project Access (overall)	WB Stop	-	-	-	(A)	-	(0.2)	-	-	-	(A)	-	(0.1)
Westbound right turn					A		9.9				B		12.0
Rocklin Road / Pacific Street	Signal	A	0.486	-	A	0.501		A	0.537	-	A	0.551	
Pacific Street / Midas Avenue	Signal	A	0.378	-	A	0.398	-	A	0.492	-	A	0.522	-
Pacific Street / Project Access (overall)	SB Stop				(A)		(0.8)				(A)		(0.7)
Southbound Left+ right turn		-	-	-	B	-	12.0	-	-	-	C	-	17.6
Pacific Street / Americana Way / Sierra Meadows Drive	Signal	A	0.311	-	A	0.319	-	A	0.392	-	A	0.399	-
<b>Bold</b> indicates conditions in excess of adopted minimum LOS standard													

## **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 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 Sierra Meadows Drive, and to local schools. Some pedestrians may elect to walk along Midas Avenue and cross the UPRR at the two controlled crossings north of the site. As noted earlier, sidewalks already exist on Midas Avenue and on Pacific Street. 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. As noted earlier, class II bike lanes already exist on Pacific Street west of Americana Way and on Grove Street south of the project.

While cycling may be a choice of some residents, due to the limited size of the project (i.e., 204 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 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 / Rocklin / Sierra College route has 14 runs a day in each direction and passes near the project site via Sierra Meadows Drive and Pacific Street. Because 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.** The existing configuration of the left turn lanes on Pacific Street combines dedicated left turn pockets and continuous Two-Way-Left-Turn (TWLT) lanes at various locations. In the area of the project the distance between existing intersections and driveways is relatively short, particularly in the area between Midas Avenue and Yankee Hill Road. In this area the left turn lanes can be as short as 40 to 60 feet long, as is the case with the left turn pockets adjoining the project.

Without planned improvements (i.e., TWLT lane), 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 7 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 under a condition that assumes the existing lanes remained.

Desirable left turn pocket lengths 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 315 feet long. The HDM acknowledges that some deceleration prior to the bay taper is permissible. Assuming that 10 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 be 235 feet long to accommodate deceleration to a stop from 30 mph.

At a minimum short term pockets should be long enough to accommodate waiting vehicles outside of the flow of through traffic. At un-signalized locations the Caltrans HDM suggests that storage be provided to accommodate a two minute accumulation of peak hour vehicles.

As noted in Table 7, the greatest number of eastbound left turns is expected in the p.m. peak hour when project residents are returning home and make u-turns at the United Rentals left turn lane. At that time the peak hour volume in the eastbound left turn lane (i.e., 33 vehicles) would justify storage for one vehicle under Caltrans guidelines. At 25 feet per vehicle, 25 feet of storage would be needed, which can be satisfied by the current left turn length.

**TABLE 7  
ACCESS TURN LANE QUEUES**

Location	Storage (ft - veh)	AM Peak Hour				PM Peak Hour			
		Volume			Queue	Volume			Queue
		Existing	Project	Total		Existing	Project	Total	
Westbound Pacific Street at Midas Avenue	75 – 3	3	31	34	1	8	19	27	≤1
Westbound Pacific Street at SpeedWash and Toy Hauler	50 – 2	2	0	2	≤1	0	0	0	≤1
Eastbound Pacific Street at United Rentals	40 - 1	5	9	14	<1	1	32	33	1
Note: assumes existing left turn lanes remain									

Under these conditions project residents may occasionally arrive when another vehicle is already waiting in the eastbound left turn lane. The second motorist will be slowing to a near stop in the through travel lane on Pacific Street. Given the background traffic volume on Pacific Street that exists today and the greater volume projected for the future, this could eventually create an unsafe situation.

The proximity of the westbound left turn lane serving Toy Hauler Liquidators to the project's driveway presents another potential safety issue. While not assumed in the impact analysis, it is possible that some exiting motorists will attempt to enter this turn pocket to make a u-turn and travel east on Pacific Street. Due to the size of the turn pocket, this maneuver would be made at a relatively slow speed. While conflicts between higher-speed through traffic on Pacific Street and weaving project traffic may not present immediate safety problems under current conditions, this speed differential may be problematic in the future as the volume on Pacific Street increases.

**Improvement Alternatives.** Three alternative actions that might be considered have been identified and evaluated, and one is recommended as the proposed action:

***Replace short left turn lanes with a continuous Two-Way Left-Turn Lane (Proposed Action).*** Eliminating the existing raised medians and striping a TWLT lane will allow turning motorists to use the entire area for deceleration and storage at various times. The TWLT lane can also be used by motorists turning left onto Pacific Street who will be able to make a “two-step” turn by first turning into the TWLT lane and subsequently merging with through traffic.

Allowing multiple access does create the possibility of conflicts when motorists attempt to use the TWLT lane concurrently, but in the case the volume of traffic at the various driveways is very low and the possibility of conflicts is slight. This alternative does involve eliminating a portion of the landscaped median on Pacific Street.

***Eliminate westbound left turn lane serving Toy Hauler Liquidators and SpeedWash and lengthen eastbound left turn lane.*** If the westbound left turn lane was eliminated a 100 foot long eastbound left turn lane preceded by a 60 foot long bay taper could be provided without changing the existing landscaping in the median. This new lane would be similar in length to other left turn lanes on Pacific Street, but could be made longer by eliminating existing landscaping. This alternative would, however, reduce the access available to the two existing businesses on the south side of Pacific Street. While the volume of traffic using the left turn lanes is very low during weekday commute hours, it is likely that greater use occurs on weekends when activity for an RV sales-storage and car wash would peak. It is likely that each business owner would view the loss of access as a detriment.

***Allow Full Access on Midas Avenue.*** We understand that the prior site approval may have included a full access driveway on Midas Avenue located between the railroad and Pacific Street. The proposed project now includes a right-turn-only connection to Midas Avenue.

Creating a full movement Midas Avenue entrance would reduce the number of u-turns made into the site from eastbound Pacific Street slightly as residents arriving from the north would be able to turn in from Midas Avenue. The exact diversion would depend on the layout of the final site plan. However, it is likely that some u-turns would remain at the Pacific Street driveway. While the frequency of a multiple car queue in the westbound left turn lane would decrease, it is reasonable to conclude that the length of the eastbound left turn lane on Pacific Street would still be an issue.

Implementing this alternative would require resolving operational and safety issues. Creating a full project access on Midas Avenue would create additional activity in the area where southbound Midas Avenue traffic queues back from Pacific Street during peak periods. As there is no left turn lane on Midas Avenue in this area, southbound vehicles waiting to turn into the project site may interfere with other southbound traffic. The access would be close to the UPRR and could result in queueing back onto the railroad tracks. For these reasons, developing full access and the planned location is not recommended.



## **BASELINE (EXISTING PLUS APPROVED PROJECTS) IMPACTS**

The “Baseline” traffic impacts of the Pacific Street / Midas Avenue Multiple Family Residential 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.

For purposes of this analysis and to ensure that the baseline for traffic analysis purposes includes existing and approved development at the study date, in July 2016 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, to quantify the level of development that has occurred where projects have proceeded in phases (such as the Rocklin Crossings and Rocklin Commons projects) and to identify those previously approved projects that have lapsed or have been withdrawn by the project proponent. (Note: The approved mixed use development on the project site had been included in recent traffic studies but is not included as an approved project for this analysis).

Table 8 presents the list of approved but not constructed projects in the vicinity of the eastern portion of the project, as well as their estimated a.m. and p.m. peak hour trip generation. As shown, the number of new a.m. peak hour trips anticipated from approved / pending development totals 1,714 while 2,699 trips are forecast in the p.m. peak hour. The p.m. forecast is greater since many of the identified projects are retail uses that are often closed during the a.m. peak hour.

**Background Traffic Volume Forecasts.** Not every approved project will add traffic to the study intersections, but the volume of traffic on Rocklin Road and on Pacific Street will increase. Figure 7 presents Baseline (EPAP) traffic volumes in the study area without the proposed project. Figure 8 presents Baseline Plus Project volumes.

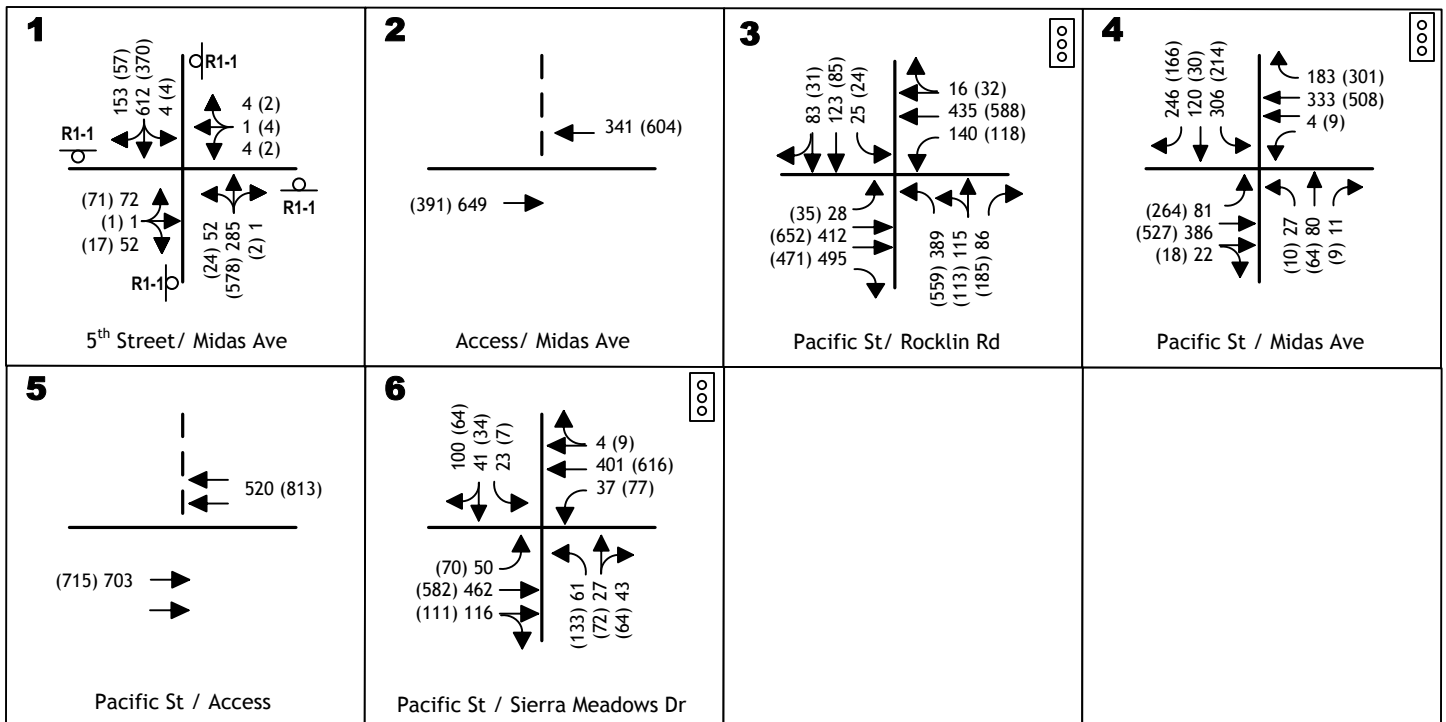
**EPAP Intersection Levels of Service.** Table 9 compares Existing Plus Approved Projects Levels of Service with and without the Pacific Street / Midas Avenue Apartments. As shown, with one exception, the City of Rocklin’s minimum LOS C standard will be maintained at study intersections. The **Midas Avenue / 5<sup>th</sup> Street intersection** is projected to operate at LOS E in the a.m. peak hour with and without the project. LOS E exceeds the minimum LOS C standard.

Because conditions are forecast to exceed the minimums standard with and without the project, the significance of the project's impact is based on its traffic contribution. If an un-signalized intersection is already operating at an unsatisfactory Level of Service (i.e., LOS D or worse), then the addition of more than 5% of the total traffic at an intersection would be a significant project impact. In this case, the project adds 18 vehicles to a location that is expected to carry 1,220 vehicles in the a.m. peak hour. Project trips represent 1½ % of the background volume, which is less than the 5% increment accepted by the City of Rocklin, and as a result, the project's impact is not significant.

The City of Rocklin traffic fee program includes improvements to the Midas Avenue / 5<sup>th</sup> Street intersection, and when deemed warranted by the City, an applicable solution would be identified through a public process.

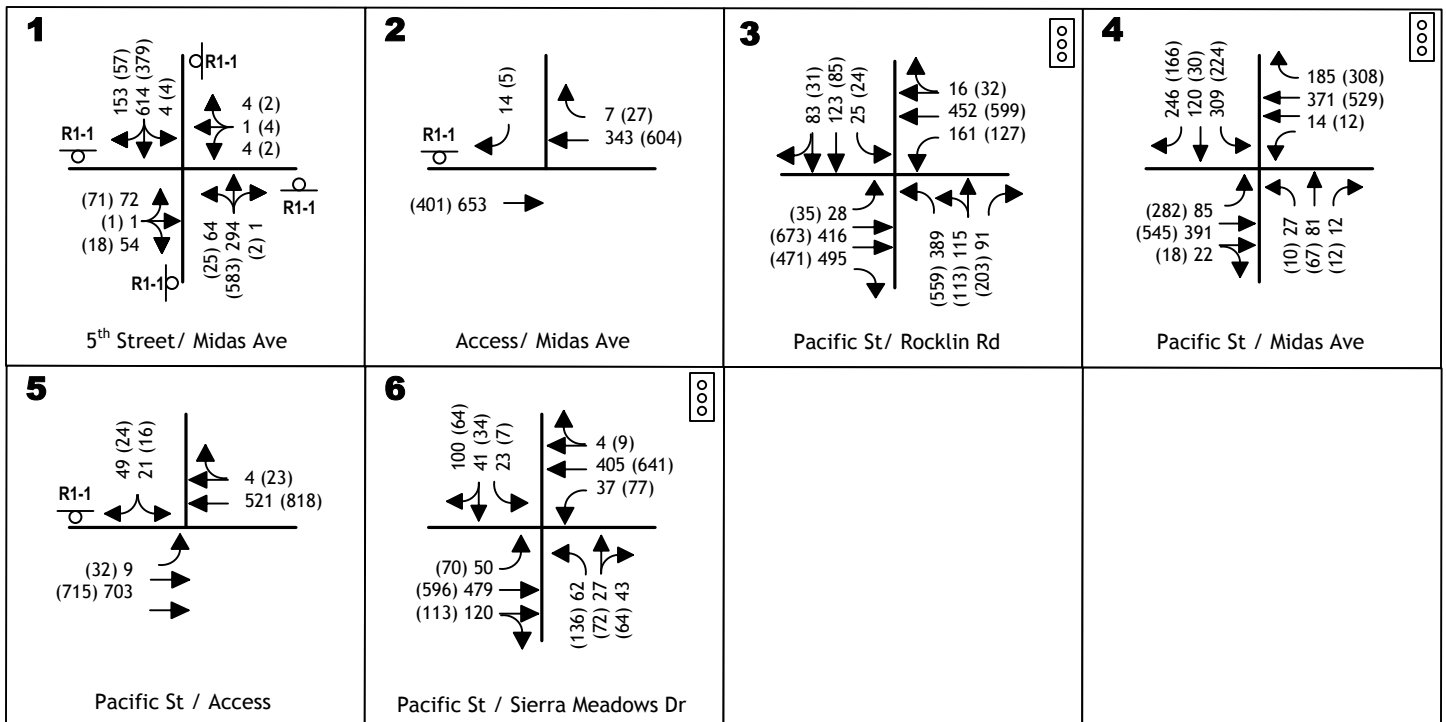
**TABLE 8**  
**APPROVED / PENDING BUT UNBUILT PROJECTS AND THEIR TRIP GENERATION**

Description	Land Use	Size		AM Peak Hour			PM Peak Hour Trips		
		Quantity	Unit	In	Out	Total	In	Out	Total
Avalon Subdivision <sup>(1)</sup>	Single Family Housing	79	du	15	44	59	50	29	79
Brighton Subdivision <sup>(1)</sup>	Single Family Housing	75	du	14	42	56	47	28	75
Garnet Creek	Single Family Housing & Multiple Family Housing	340	du	41	152	193	155	86	241
Granite Dominguez Subdivision	Single Family Housing	71	du	13	40	53	45	26	71
Los Cerros Subdivision	Single Family Housing	115	du	22	64	86	74	41	115
Grove Street Subdivision	Single Family Housing	7	du	1	4	5	4	3	7
Croftwood, Unit 1 / Rocklin 60	Single Family Housing	156 <sup>(5)</sup>	du	30	87	117	101	59	160
Granite Terrace	Single Family	42	du	8	24	32	27	15	42
ZL Rocklin	Retail / Multi-Family	140	du	24	62	86	75	55	130
Granite Marketplace (Lowes)	Home Improvement	138	ksf	105	80	185	115	130	245
Rocklin Crossings <sup>(2)</sup>	Home Improvement, Discount Superstore	97.8	ksf	46	29	75	175	182	357
Rocklin Commons <sup>(3)</sup>	Discount Superstore	49.3	ksf	24	15	39	82	88	170
The Center at Secret Ravine <sup>(4)</sup>	Retail Commercial	18.6	ksf	12	6	18	22	28	50
Parklands Subdivision <sup>(1)</sup>	Single Family Housing	142	du	27	80	107	94	63	157
Clover Valley	Residential	558	du	106	313	419	377	186	563
Winding Lane Estates	Single Family Residential	27	du	5	15	20	18	9	27
Rocklin Audi	Auto Dealership	34	ksf	49	16	65	35	53	89
Sierra Gateway Apartments	Multiple Family Residential	195	du	39	60	99	78	42	121
Total				581	1133	1714	1574	1123	2699
<sup>(1)</sup> Under Construction and partially occupied <sup>(2)</sup> 543,500 sf approved, in April 2016 a total of 97,800 sf remained to be occupied <sup>(3)</sup> 410,942 sf approved, in April 2016 a total of 47,300 sf remained to be occupied <sup>(4)</sup> 26,600 sf approved, in April 2016 4,000 sf occupied (Shell Station) <sup>(5)</sup> 156 du vacant or under construction in November 2015									



## EXISTING PLUS APPROVED PROJECTS VOLUMES AND LANE CONFIGURATIONS





## EPAP PLUS PROJECT VOLUMES AND LANE CONFIGURATIONS

**KD Anderson & Associates, Inc.**  
Transportation Engineers

1290-02 RA 2/15/2017

figure 8

**TABLE 9  
EXISTING PLUS APPROVED PROJECTS PLUS PROJECT  
PEAK HOUR INTERSECTION LEVELS 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.)					
		Existing Plus Approved Projects			EPAP Plus Project			Existing Plus Approved Projects			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)
Midas Avenue / 5th Street	All-Way stop	E	-	35.6	E		37.0	C	-	18.5	C	-	19.1
Pacific Street / Access (overall) Westbound right turn	WB Stop	-	-	-	(0.1) 10.3	-	(A) B	-	-	-	(A) B		(0.1) 12.4
Rocklin Road / Pacific Street	Signal	A	0.509	-	A	0.523	-	A	0.597	-	B	0.611	-
Pacific Street / Midas Avenue	Signal	A	0.437	-	A	0.456	-	A	0.549		A	0.578	-
Pacific Street / Access (overall) Southbound tight turn	SB Stop	-	-	-	(A) B	-	(0.8) 13.5	-	-	-	(A) C	-	(0.756) 19.8
Pacific Street / Americana Way / Sierra Meadows Drive	Signal	A	0.364	-	A	0.372	-	A	0.451	-	A	0.459	-
Bold indicates conditions in excess of adopted minimum LOS standard													

## LONG TERM CUMULATIVE CONDITIONS

This report section addresses long term traffic conditions based on the City of Rocklin's General Plan traffic model.

### **Background Information**

**Basis for Long Term Projections.** The travel demand forecasting model used for the 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 GPU EIR.

The traffic model was run for a cumulative scenario that assumes the project as proposed. The project's residential land use was substituted for the retail use assumed in the traffic model, and new traffic model runs were made. The new a.m. and p.m. forecasts were compared to the model's baseline year forecasts, and the net difference in volume was determined. Existing and adjusted cumulative traffic volumes were compared to identify equivalent growth rates for intersection approaches for use in creating intersection turning movement 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 acknowledged development on the project site in a large traffic analysis zone (TAZ). Future retail use is the primary land use change included in this TAZ. The retail space included in the approved project was removed and the additional dwellings that are part of the project were added. For this analysis, the "No Project" condition assumes no development on the site in order to identify the incremental change in traffic conditions resulting from the project itself. The "No Project" condition was created by subtracting the project trip assignment previously identified.

**Circulation System Assumptions.** The traffic volume forecasts made of this analysis continue to include those city-wide circulation system improvements incorporated into the General Plan traffic model. The cumulative analysis assumes the improvements to the Pacific Street identified in the General Plan EIR (i.e., four lanes on Pacific Street).

The General Plan EIR also addresses improvements to the Rocklin Road / Pacific Street intersection. The General Plan EIR identified widening of Rocklin Road as a mitigation measure to deliver LOS C. That widening would result in a four lane westbound approach configured as dual left turn lanes, a through lane and a separate right turn lane. Conversely the City of Rocklin



is proceeding with plans to install a roundabout at this location. While the design of the roundabout is unknown at this time, for this analysis a two-lane roundabout, similar to those already installed at other locations on Rocklin Road has been assumed.

### **Cumulative Traffic Volumes and Levels of Service**

**Traffic Volume Forecasts.** Figure 9 presents the background Cumulative No Project volumes, and Figure 10 presents the Cumulative Plus Project forecasts.

**Cumulative Level of Service – No Project.** Table 10 compares cumulative a.m. and p.m. peak hour Levels of Service at study intersections with and without the proposed project. As indicated two intersections are projected to operate with Levels of Service that do not satisfy the City of Rocklin’s minimum LOS C standard with and without completion of the project.

The **Midas Avenue / 5<sup>th</sup> Street intersection** is projected to operate at LOS E in the a.m. peak hour and LOS F in the p.m. peak hour. The GPUR EIR did not address this intersection. Installing a traffic signal would yield LOS B at this intersection, while a single lane roundabout would yield LOS A. The City of Rocklin traffic fee program includes improvements to this intersection, and when deemed warranted by the City, an applicable solution would be identified through a public process. This analysis presented Levels of Service assuming, alternatively, traffic signals or a roundabout is installed. However, as noted above, no decision has been made as the design that may ultimately be chosen by the City in response to actual conditions.

The **Midas Avenue / Pacific Street intersection** is projected to operate at LOS D. This exceeds the City’s LOS C minimum. The General Plan EIR identified no additional mitigation. However, it would be possible to achieve LOS D by reconfiguring the intersection to allow left turns to also be made from the through lane on the southbound Midas Avenue approach (i.e., left turn lane and combined left + through lane).

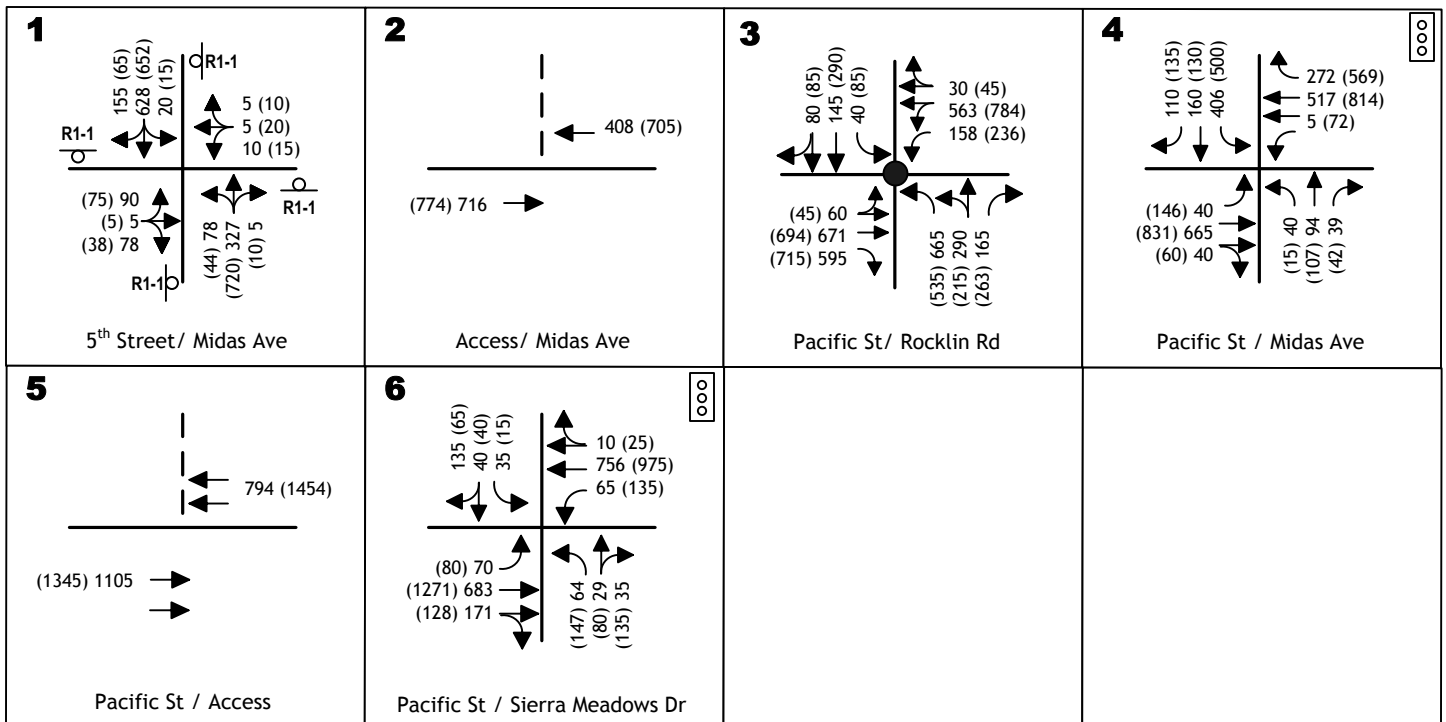
**Cumulative Level of Service – Plus Project.** As noted in Table 10, the same two intersections that operate with Levels of Service in excess of the LOS C minimum will continue to do so with the project. In this case the significance of the project’s impact is predicted on the incremental change in intersection traffic volume.

At the **Midas Avenue / 5<sup>th</sup> Street intersection** the project’s p.m. trips (16) represent only 0.9% of the total intersection volume without the project (1,669). As this is less than the 5.0% increment permitted under City guidelines, the project’s impact is not significant, and no mitigation is required.

At the **Midas Avenue / Pacific Street intersection** the project’s p.m. trips (84) represent only 2.5% of the total intersection volume without the project (3,421). As this is less than the 5.0% increment permitted under City guidelines, the project’s impact is not significant, and no mitigation is required.

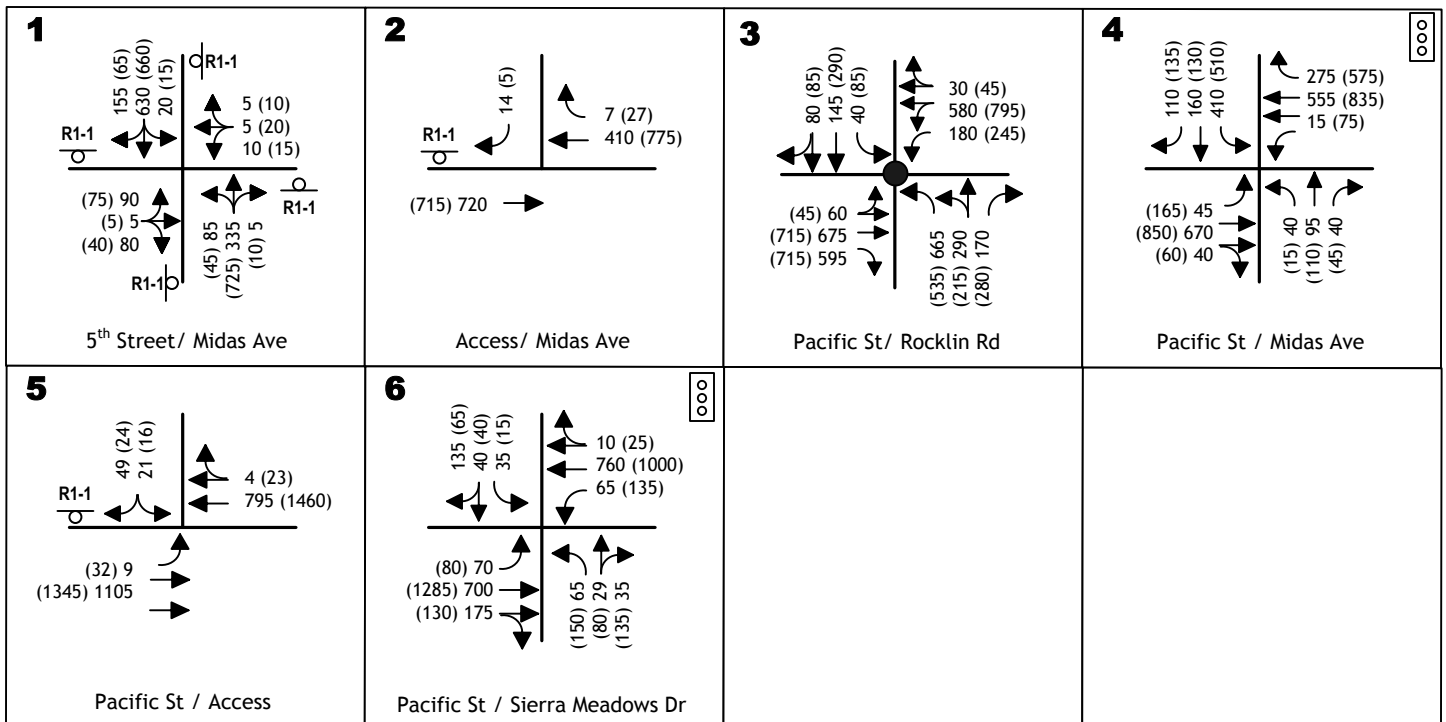


The **Pacific Avenue / Project Access intersection** is projected to operate at an overall Level of Service of LOS A, but long delays are forecast on the project exit in the p.m. peak hour. Because the overall Level of Service satisfies the City's LOS C minimum, this is not a significant impact under City guidelines. However, long delays on the exit would result in queues that block access to the parking spaces along the project access. Widening the exit to provide separate outbound left turn and right turn lanes is recommended. With this improvement, left turning motorists will be better able to use the TWLT lane on Pacific Street and the overall exit would operate at LOS C. While the width of the driveway would be determined in consultation with City staff, two eleven foot wide outbound lanes and a 14 foot wide inbound lane (i.e., 36 feet total) would be reasonable.



CUMULATIVE TRAFFIC VOLUMES  
AND LANE CONFIGURATIONS





## CUMULATIVE PLUS PROJECT TRAFFIC VOLUMES AND LANE CONFIGURATIONS

**TABLE 10  
CUMULATIVE PLUS PROJECT  
PEAK HOUR INTERSECTION LEVELS 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.)					
		Cumulative No Project			Cumulative with Project			Cumulative No Project			Cumulative 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)
Midas Avenue / 5 <sup>th</sup> Street	All-Way Stop	E	-	38.3	E	-	38.7	F	-	53.4	F	-	53.5
	signal	B	0.665	-	B	0.672	-	A	0.538	-	A	0.542	-
	Roundabout	A	-	6.8	A	-	6.9	A	-	7.1	A	-	7.2
Midas Avenue / Access (overall) Westbound right turn	WB Stop	-	-	-	(A)	-	(0.1)	-	-	-	(A)	-	(0.0)
		-	-	-	B	-	10.8	-	-	-	B	-	14.3
Rocklin Road / Pacific Street	Roundabout	C	-	16.9	C	-	17.3	C	-	22.9	C	-	23.6
Pacific Street / Midas Avenue	Signal	B	0.588	-	A	0.597	-	<b>D</b>	<b>0.800</b>	-	<b>D</b>	<b>0.829</b>	-
	Modify SB approach	-	-	-	-	-	-	B	0.690	-	C	0.716	-
Pacific Street / Access (overall) SB left+right turn	SB Stop	-	-	-	(A)	-	(0.8)	-	-	-	(A)	-	(1.4)
		-	-	-	C	-	21.1	-	-	-	F	-	93.3
	Two lane exit	-	-	-	-	-	-	-	-	-	(A) C	-	(0.5) 24.5
Pacific Street / Americana Way / Sierra Meadows Drive	Signal	A	0.504	-	A	0.512	-	C	0.749	-	C	0.757	-
<b>Bold</b> indicates conditions in excess of adopted minimum LOS standard													