

TRAFFIC IMPACT ANALYSIS

FOR

AMAZING FACTS CHURCH

Placer County, California

Prepared For:

Amazing Facts, Inc.

1203 W. Sunset Boulevard
Rocklin, CA 95765

Prepared By:

KD Anderson & Associates, Inc.

3853 Taylor Road, Suite G
Loomis, CA 95650
(916) 660-1555

August 20, 2010

Job No. 0457-001

Amazing Facts Church

KD Anderson & Associates, Inc.

Transportation Engineers

**TRAFFIC IMPACT ANALYSIS FOR
AMAZING FACTS CHURCH
Placer County, CA**

TABLE OF CONTENTS

INTRODUCTION	1
Project Description	1
Issue Raised in Response to Comments on the NOP	2
EXISTING SETTING	5
Study Area Circulation System - Roads	5
Study Area Circulation System – Intersections	7
Planned Improvements / Funding Sources	8
Standard of Significance: Levels of Service Methodology	10
Existing Traffic Volumes and Levels of Service	12
Daily Traffic Volumes	14
Transit Facilities	15
PROJECT IMPACTS	16
Project Characteristics	16
Existing Plus Project Traffic Conditions and Levels of Service	22
Existing Plus Project Impacts / Mitigations	23
EXISTING PLUS APPROVED PROJECTS CONDITIONS / IMPACTS	29
Background Information	29
EPAP Plus Project Impacts / Mitigations	37
CUMULATIVE IMPACTS	39
Year 2020 Cumulative Impacts (City of Roseville)	39
Year 2025 Cumulative Traffic Conditions	40
Cumulative Year 2025 Plus Project Impacts / Mitigations	45
SAFETY / ACCESS DESIGN EVALUATION	48
Evaluation of Key Issues	48
Design Issues	49
APPENDIX	50

August 20, 2010

KDA

TRAFFIC IMPACT ANALYSIS FOR AMAZING FACTS CHURCH

INTRODUCTION

This report documents **KD Anderson & Associates'** assessment of traffic impacts associated with developing the **Amazing Facts Church**. This analysis is intended to quantify the traffic impacts of the project and address circulation and access in the vicinity of the project site within the context of both current and future background conditions. While the proposed project lies within Placer County and will be processed through the County, Sierra College Blvd adjoining the project is under the jurisdiction of the City of Rocklin. The portion of the Sierra College Blvd north of the project site abuts the Town of Loomis, and the project lies north of the City of Roseville. Thus, the scope of this study was identified in consultation with the City of Rocklin, Town of Loomis and the City of Roseville, and standards of significance / evaluation methodologies accepted by these cities and the Town of Loomis have been employed for city streets within the study area.

Project Description

The Amazing Facts Church is proposed on a site along Sierra College Blvd in the unincorporated area of Placer County near the City of Rocklin. The project site is opposite the Sierra College Blvd/Nightwatch Drive intersection in the area along Sierra College Blvd between Rocklin Road and Douglas Blvd, as noted in Figure 1. As shown in the project site plan (Figure 2), the project will include access via the new south leg of the Nightwatch Drive intersection and via one right turn only driveway onto Sierra College Blvd. east of the Nightwatch Drive intersection.

The project will be developed in three phases, and the seating for Saturday services and the on-site parking supply are commensurate with the growth accommodated in each phase. Phase 1 will occupy 108,000 sf of buildings and provide seating for 1,300 persons on typical Saturdays. Under Phase 2 the 90,000 sf multi-use facility will be built and the total seating capacity will increase to 2,000 persons. Under phase 3 another 10,000 sf will be developed, for a total of 208,000 sf, but the seating for services will not increase under Phase 3.

The Amazing Facts Church is expected to draw persons who are today attending two affiliated churches, as well as persons who may not be attending services today. The Sacramento Central Church near CSU-Sacramento is home to a portion of the new congregation. In addition, another portion of the expected congregation today meets on Saturdays at the Shepherd of the Sierra church at Barton Road / Rocklin Road in Loomis.

Amazing Facts Church anticipates continuing the current schedule of operations that exists at the Sacramento Central Church. The main Saturday service begins at 10:45 a.m. and ends at 12:30. While normal ancillary activities associated with a church will occur on weekdays, the church does not propose creation of a traditional school or day care center that would add traffic during weekdays.

Issue Raised in Response to Comments on the Notice of Preparation

All comments received in response to the DEIR Notice of Preparation were reviewed and considered. With regards to traffic and circulation, some comments asked that the traffic study employ specific analytical techniques or address potential impacts to particular locations. While many requests were incorporated into this traffic study, the requests made in the following comments were not made a part of the study, for the reasons noted.

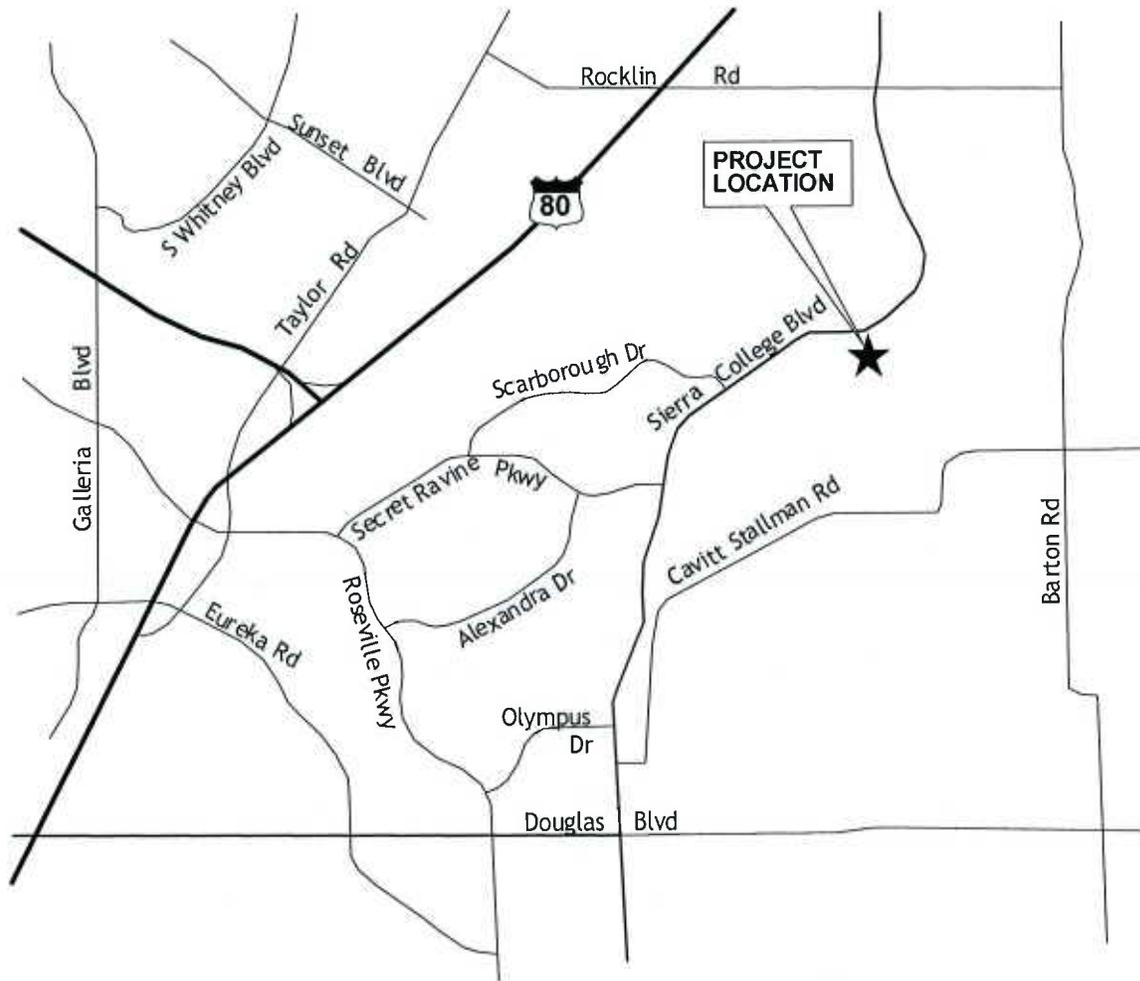
Town of Loomis (March 19, 2009)

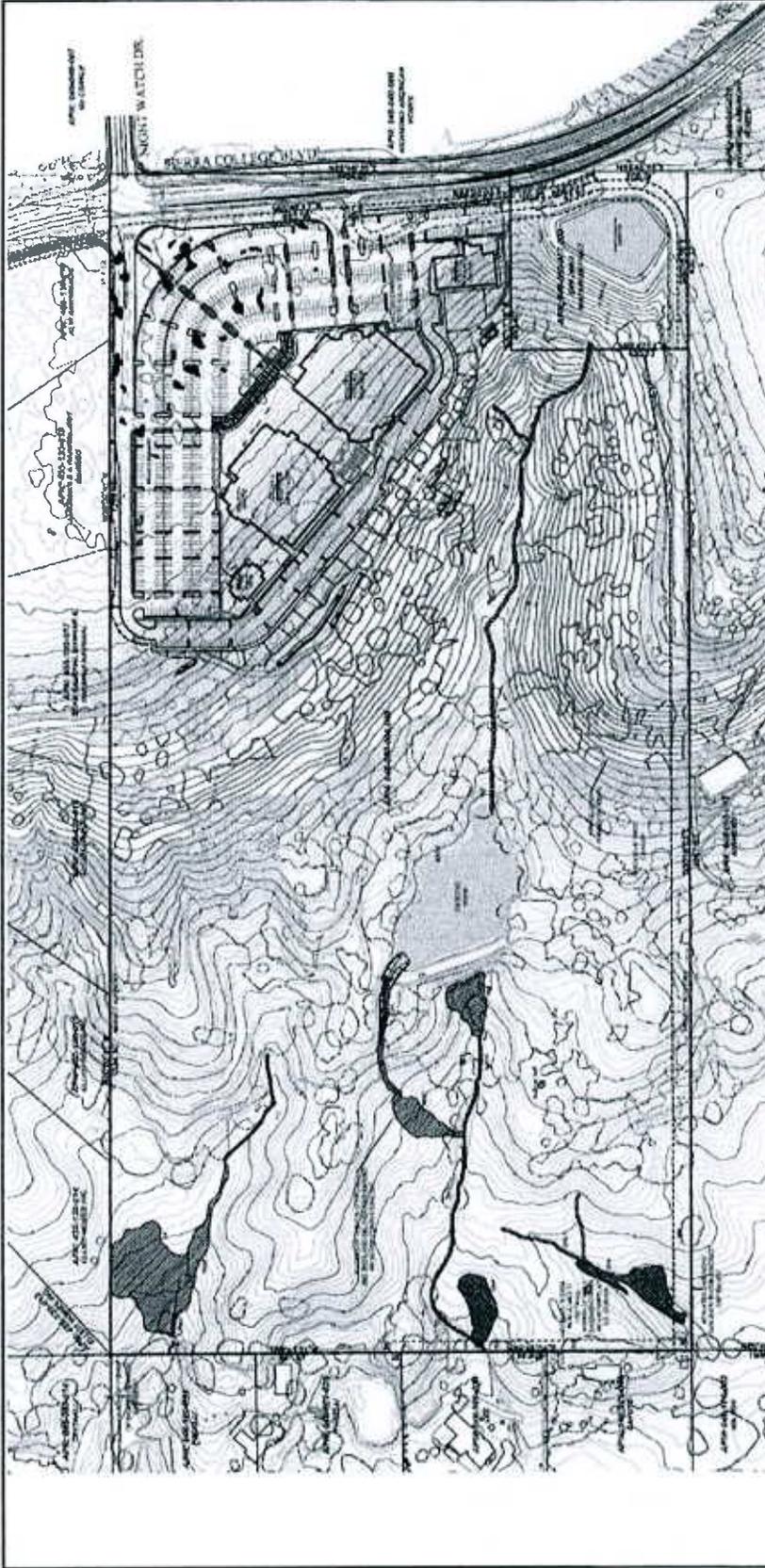
How will this project affect the traffic on I-80 and Sierra College Blvd and throughout the Town of Loomis (with and without additional widening improvements in Loomis and/or funding of these improvements)? Please include the following intersections: the Sierra College / I-80 interchange, Brace Road and Sierra College, Taylor and Sierra College Blvd, Horseshoe Bar on-ramp, King and Sierra College.

The traffic study does not address these intersections. The limits of the traffic impact analysis were identified based on consideration of the general location of the residences of current church members who would relocate to the new site, as well as the general population distribution in the South Placer area. As is noted later in this report, the majority of the trips attracted to Amazing Facts will be drawn from the south via Douglas Blvd and the west via Rocklin Road. The share arriving from the north via Sierra College Blvd beyond Rocklin Road is relatively small (i.e., identified in the traffic study as 7% of Saturday total). To a great extent project traffic on this portion of Sierra College Blvd represents persons who today are already attending services at Shepherd of the Sierra at Rocklin Road / Barton Road and would simply be diverted to the new site. Measured as a percentage of the capacity of the signalized intersections noted in the comment, project traffic would represent approximately 1% to 3%. This increment would be too small to create an appreciable impact to the locations noted.

Both Rocklin and Loomis have contracted with DKS for a traffic model for our respective jurisdictions – using the same assumptions. The Town will be looking for information that coincides with this new model – or a discussion of the EIR numbers compared to this model.

The new traffic models for Rocklin / Loomis have not been employed for this analysis for the following reasons. Various regional traffic models have been created to project long term future traffic volumes on the South Placer County regional roadway network. As the portion of the circulation system that will be primarily used by Amazing Facts traffic is under the jurisdiction of the City of Rocklin, that agency was first contacted to gain direction as to the applicable source of long term forecasts for the cumulative analysis. Similarly, the City of Roseville was contacted with regards to the basis for forecasts for streets within that city's jurisdiction. City of Rocklin staff suggested that the traffic studies being prepared for the Rocklin Crossing project were the most relevant source of long term data for this area of Rocklin. The work for Rocklin Crossing was based on the version of the City of Rocklin traffic model available at that time. City of Roseville staff suggested that the year 2020 Roseville traffic model be the source of traffic volume forecasts for their streets, and intersection turning movement forecasts were provided by Roseville. Further analysis of cumulative impacts using the new Rocklin –Loomis traffic model is not required.





SHEET
EQ-C1.0



ARCHITECTS VAN LOM
GROUP AIA P.C.
3340 THE UNIVERSITY BLVD
FAC. (925) 298-1200
F.A.C. (503) 273-8649
WWW.VANLOM.COM

PRELIMINARY SITE PLAN
NOVEMBER 3, 2009

A M A Z I N G F A C T S
MINISTRY
PLACER COUNTY, CALIFORNIA

DEVELOPMENT
SUBMITTAL

MYRE-GROUP
ENGINEERS
PLANNERS
ARCHITECTS

KD Anderson & Associates, Inc.
Transportation Engineers

0457-001 REV 2 - VSD 6/25/2010

SITE PLAN

figure 2

EXISTING SETTING

Regionally, the Amazing Facts site is served primarily by Sierra College Blvd, which links Lincoln and Loomis with Interstate 80 and which continues south through Roseville to Sacramento County. Interstate 80 will also provide regional access to the site via the Rocklin Road, Sierra College Blvd, Eureka Road and Douglas Blvd interchanges.

Study Area Circulation System - Roads

Interstate 80 is the primary east-west arterial across Placer County and Northern California. In the vicinity of the proposed project, Interstate 80 is a six lane controlled access freeway. Access for Amazing Facts to the interstate is available at the Rocklin Road and Sierra College Blvd in Rocklin and to a lesser extent, the Eureka Blvd and Douglas Blvd interchanges in Roseville.

The California Department of Transportation (Caltrans) provides annual reports of the volume of traffic on the state highway system. The most recent counts available from Caltrans report an *Annual Average Daily Traffic (AADT - 2008)* volume of 153,000 vehicles per day west of the SR 65 junction, 119,000 AADT between SR 65 and Rocklin Road, 95,000 AADT in the area of Sierra College Blvd and 91,000 AADT between the Sierra College Blvd and Horseshoe Bar Road interchanges.

Sierra College Blvd is a north-south arterial road that connects State Route 193 (SR 193) north of Penryn with Interstate 80 and then continues southerly through Rocklin and Roseville before becoming Hazel Avenue in Sacramento County. Within that area the road passes through portions of Placer County, the Town of Loomis, the City of Rocklin and the City of Roseville. Near the project the road itself is in the City of Rocklin, but adjoining property is in Placer County, and to the north of the project, the east side of the road abuts the Town of Loomis.

In the area of the proposed project Sierra College Blvd is transitioning from a two lane rural highway to a six lane limited access urban arterial street. South of the project site the road is currently a four lane roadway immediately north of Douglas Blvd, although a six lane section exists in the area of the Douglas Blvd intersection. Development has already occurred at the top of Sierra College Blvd in Rocklin and Roseville, and as a result the west side of the highway in Rocklin has been improved to its ultimate width from Secret Ravine Parkway north past the project site to Rocklin Road. East side improvements have lagged as development has been limited on that side of the road. As a result, a single northbound through lane is available in the area from Nightwatch Drive through Rocklin and Loomis to the Rocklin Road intersection.

On-street parking is prohibited along Sierra College Blvd in the area of the proposed project. Class II bicycle lanes are striped on the west side of Sierra College Blvd in the locations where ultimate improvements have been made. Meandering sidewalks exist along the portions of Sierra College Blvd that have been improved to their full width, including the area immediately west of the project site and opposite the project.

Traffic counts conducted for this study in July 2007 revealed that Sierra College Blvd carried a Friday volume of 19,150 vehicles per day in the area of the project, with the volume 14,340 vehicles per day on Saturday. While the weekday volume could be higher when Sierra College was in session, the Saturday volume is judged to be representative of “typical” conditions. Traffic counts conducted on a Saturday in November 2008 in Roseville indicated that Sierra College Blvd carried 15,250 vehicles per day between Douglas Blvd and Cavitt Stallman Road and 12,450 vehicles per day in the area between Olympus Drive and Secret Ravine Pkwy.

Rocklin Road is an east-west arterial street that links the eastern and western portions of the City of Rocklin that are otherwise separated by Interstate 80. Rocklin Road also continues easterly beyond Sierra College Blvd through the Town of Loomis to Barton Road, and this portion of Rocklin Road provides freeway access to the unincorporated portion of Placer County near Granite Bay. Today Rocklin Road is a 4 lane arterial street between Interstate 80 and Sierra College Blvd. East of Sierra College Blvd the south half of the roadway has been widened as development has occurred in Rocklin, but the road remains a two lane rural road through Loomis to its terminus at Barton Road.

Daily traffic volume counts on Rocklin Road were taken from available sources. The segment of Rocklin Road between Interstate 80 and Sierra College Blvd carries 13,100 vehicles per day on weekdays, while the volume between Sierra College Blvd and Barton Road is 6,100 vehicles per day.

Nightwatch Drive is a local collector street that provides access into the developed area of Rocklin across from the project site. Nightwatch Drive is a two lane street with a center landscaped median. Sidewalks exist along both sides of Nightwatch Drive

El Don Drive, Southside Ranch Road and Brookfield Circle are City of Rocklin collector streets that intersect Sierra College Blvd at signalized intersections north of the project site. Each is a two lane street with sidewalks and on-street parking.

Ridge Park Drive is a gated private street that provides access to an existing 19-unit residential subdivision in Loomis. Ridge Park Drive is approximately 24 feet wide, and the private gate is fifty feet from Sierra College Blvd.

Scarborough Drive is a City of Rocklin collector street that intersects Sierra College Blvd west of the project site. Scarborough Drive provides access to the residential area of Rocklin abutting the City of Roseville. Scarborough Drive also links Sierra College Blvd with Secret Ravine Parkway, an arterial street that extends across northern Roseville to East Roseville Parkway. Scarborough Drive is a two lane street with on-street parking.

Secret Ravine Parkway, Olympus Drive and Douglas Blvd are City of Roseville streets that connect Sierra College Blvd with the East Roseville Parkway neighborhood of Roseville and with interchanges on Interstate 80.

Study Area Circulation System - Intersections

The quality of traffic flow is often governed by the operation of key intersections. The following intersections have been identified for evaluation in this study in consultation with Placer County, Town of Loomis, City of Rocklin and City of Roseville staff.

The **Sierra College Blvd / Rocklin Road intersection** is a signalized intersection located north of the project site. The geometric configuration of the intersection is currently in transition as ongoing infrastructure construction has temporarily eliminated some auxiliary lanes. The intersection features separate left turn lanes on each approach, and a right turn lane is available on the eastbound approach. There are two eastbound, two northbound and two southbound through lanes, but only single through lanes are currently available on the westbound approaches. Crosswalks exist on all four legs of the intersection.

The **Sierra College Blvd / El Don Drive intersection** is controlled by a traffic signal. The geometric layout of the intersection includes left turn lanes on each approach, and the southbound approach is configured with three through lanes. The northbound approach includes a through lane and a short auxiliary through lane that terminates just north of the intersection at the Aguilar Creek crossing. Crosswalks exist on all four legs of the intersection.

The **Sierra College Blvd / Southside Ranch Road intersection** is signalized. The west side of the intersection has been improved to its ultimate width and three southbound through lanes are available. However, while separate left turn lanes exist on the northbound and southbound approaches, only one northbound lane extends through the intersection. The east leg of the intersection is a private access to a rural residential area in Loomis. Crosswalks exist on all four legs of the intersection.

The **Sierra College Blvd / Ridge Park Drive intersection** is one of the few unsignalized intersections on Sierra College Blvd. This location is controlled by a stop sign on the Ridge Park Drive approach to Sierra College Blvd. There is a southbound left turn lane on Sierra College Blvd to serve the intersection. The median area south of the intersection is relatively narrow and does not accommodate outbound vehicles that might attempt to turn into the striped median area prior to merging with southbound traffic. Town of Loomis staff report that at one time the median area was wide enough to serve as a refuge area but that the median area was narrowed during the last Sierra College Blvd widening project.

Sight distance at the Ridge Park Drive intersection is clear looking to the north and south and meets minimum requirements for this location.

The **Sierra College Blvd / Nightwatch Drive intersection** is signalized. The westbound Sierra College Blvd approach has been widened to its ultimate width and includes three through lanes and a separate right turn lane. The southbound Nightwatch Drive approach is configured to include separate left turn and right turn lanes. While Sierra College Blvd has been widened to the west of the intersection, the area is striped to provide only a left turn lane and a single through lane. Crosswalks do not exist across Sierra College Blvd at this intersection.

The **Sierra College Blvd / Scarborough Drive intersection** is controlled by a traffic signal. This intersection has been improved to its ultimate paved width, however, as with the Nightwatch Drive intersection, the Sierra College Blvd is currently striped to accommodate transition areas in advance of the narrower roadway sections adjoining the intersection. Today the westbound Sierra College Blvd approach offers three through lanes and a separate right turn lane. The eastbound Sierra College Blvd approach is also striped with a separate left turn and right turn lanes, as well as two through lanes. The southbound Scarborough Drive approach is configured with dual left turn lanes and a separate right turn lane. Crosswalks exist on all four legs of the intersection.

The **Sierra College Blvd / Secret Ravine Parkway intersection** is signalized. Both Sierra College Blvd approaches have two through lanes and separate left turn and right turn lanes. The eastbound Secret Ravine Parkway approach has three lanes that are configured as a separate left turn lane, a combined left turn and through lane and a right turn lane. Crosswalks exist across Sierra College Blvd at this intersection.

The **Sierra College Blvd / Olympus Drive intersection** is signalized. Both Sierra College Blvd approaches have two through lanes and separate left turn and right turn lanes. The eastbound Secret Ravine Parkway approach has three lanes that are configured as a separate left turn lane, a combined left turn and through lane and a right turn lane. The westbound approach leaving Bayside Church has three lanes that are configured as a separate left turn lane, a combined left turn and through lane and a combined through and right turn lane. Crosswalks exist across Sierra College Blvd at this intersection.

The **Sierra College Blvd / Douglas Blvd intersection** is signalized. Both Sierra College Blvd approaches have three through lanes and dual left turn lanes, and there is a separate right turn lane on the northbound approach. Douglas Blvd has three through lanes in each direction plus separate left turn and right turn lanes. Crosswalks exist across all four legs of the intersection.

Planned Improvements / Funding Sources

SPRTA. As a road of regional importance, improvements to Sierra College Blvd are important to both local residents and to the greater South Placer County public. While not uniformly endorsed, a mechanism has been created to accumulate funds towards the cost of installing improvements and to assign responsibility for longer term projects.

Placer County and the cities of Lincoln, Rocklin and Roseville have joined to form the South Placer Regional Transportation Authority (SPRTA). (SPRTA) is a Joint Powers Authority (JPA) formed for the purpose of implementing a Regional Transportation and Air Quality Mitigation Fee to fund specified regional transportation projects.

SPRTA funding is directed towards project such as Placer Parkway, Sierra College Blvd widening, Lincoln Bypass, I-80 / Douglas Blvd interchange, SR 65 widening, I-80 / Rocklin Road interchange, Auburn Folsom Road widening and HOV lanes on Interstate 80 through Roseville.

Locally, SPRTA funding is part of the ultimate plan for improving Sierra College Blvd from SR 193 to the Sacramento County line. Under the program, Sierra College Blvd is divided into 10 distinct segments. Segment 3 is the area from Taylor Road to Granite Drive, segment 5 is the area from I-80 to Rocklin Road and segment 6 is the segment from Rocklin Road to the Roseville city limits. In segments 3 and 6 SPRTA is expected to fund the second through travel lane in each direction, with the third through lane, bike lane and sidewalk the responsibility of fronting developers. SPRTA is to both the 2nd and 3rd through lanes in each direction on Segment 5.

While the SPRTA program outlines the ultimate improvements that will eventually be provided, actual implementation is directed by member agencies in a phased manner. For example, the City of Rocklin has finished the ultimate improvements to the west side of Sierra College Blvd in Segment 6. The City of Rocklin currently is preparing construction plans to add a 2nd through lane in each direction to Segment 3, although the completion date for that work is uncertain. The City of Rocklin is currently preparing plans for adding the 2nd through lane in each direction in Segment 5, and this work is expected to be constructed in 2010. The City of Rocklin is currently preparing plans for constructing the second northbound lane on Sierra College on the portion of Segment 6 from the El Don Drive intersection north to Rocklin Road. This work is expected to be completed in 2010.

Many issues associated with SPRTA are points of contention between the member agencies and the Town of Loomis. As a non-member, the extent to which Loomis is to contribute to the cost of Sierra College Blvd widening in the area of Loomis north of Granite Drive is being negotiated. The extent to which ultimate improvements not covered by SPRTA will be funded in locations where little or no Loomis development is anticipated is another issue.

City of Rocklin Capital Improvement Program (CIP). The City of Rocklin's Traffic Impact Fee and Capital Improvement Program (CIP) define the roadway and intersection improvements needed to maintain the Level of Service Policy adopted in the City's General Plan. The CIP includes the following improvements in the vicinity of the proposed project:

- Widen Rocklin Road to 4 lanes from 2-lanes from the Loomis Town limits to east of Sierra College Blvd
- Widen Rocklin Road to 6-lanes from west of Sierra College Blvd to Granite Drive
- Reconstruct I-80 / Rocklin Road interchange
- Widen Sierra College Blvd to 6-lanes from Nightwatch Drive to the Aguilar Tributary
- Widen Sierra College Blvd to 6-lanes from Aguilar Tributary to I-80

Placer County Traffic Impact Fee Program and CIP. In April 1996, the Placer County Board of Supervisors adopted the Countywide Traffic Impact Fee Program, requiring new development within the County to mitigate impacts to the roadway system by paying traffic impact fees. The fees collected through this program, in addition to other funding sources, make it possible for the County to construct roads and other transportation facilities and improvements needed to accommodate new development. The County's fee program and Capital Improvement program is divided into eleven districts. The Amazing Facts site is included in the Granite Bay Benefit District. The Granite Bay CIP includes the following projects in the area of Amazing facts:

- Widen pavement and add class II bike lanes on Barton Road from Sacramento County line to Loomis Town limits

Town of Loomis Capital Improvement Program (CIP). The Town of Loomis CIP includes the following improvements in the area of the proposed project:

- Barton Road Cape Seal from Via Francesco to South Town Limits
- Barton Road Overlay from Rutherford to Brace
- Sierra College Blvd Reconstruction from south Town limits to Brace Road
- Sierra College Blvd widening (unscheduled)

Standards of Significance: Levels of Service - Methodology

To assess the quality of existing traffic conditions and provide a basis for analyzing project impacts, Levels of Service were calculated at study area intersections and project driveways. "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.

Standards of Significance. The Level of Service policies in City of Rocklin General Plan are assumed to govern the significance of traffic impacts to intersections on Sierra College Blvd in this area of Placer County within the Rocklin City limits. According to the Rocklin General Plan, the minimum Level of Service standard at signalized intersections is LOS C, except for locations within ½ mile of access to an interstate freeway, where LOS D is accepted. Review of the study area indicates that all of the study intersections are more than ½ mile from Interstate 80. At unsignalized intersections LOS C is also the minimum, except at locations which already exceed LOS C. At unsignalized intersections the “overall” Level of Service determined for all motorists passing through the intersection is the applicable standard of significance.

While not a General Plan policy, the City of Rocklin employs a second measure of significance for locations where projected background traffic conditions exceed adopted Level of Service minimums. The City utilizes an increase in volume / capacity (i.e., v/c) ratio of 0.05 as the threshold of significance for intersections or roadways that are already operating at an unsatisfactory level of service. An increase of 0.05 in the v/c ratio would be considered a measurable worsening of the operations and, therefore, would constitute a significant impact.

City of Roseville standards govern minimum Level of Service at intersections within the Roseville city limits. The City of Roseville has a general minimum standard of LOS C, but has accepted LOS D conditions at designated intersections. The City’s minimum Level of Service is LOS C at the Secret Ravine Parkway and Olympus Drive intersections on Sierra College Blvd and LOS D at the Douglas Blvd / Sierra College Blvd intersection.

The Town of Loomis strives to maintain LOS C at intersections under its jurisdiction, with the exception of the Taylor Road / King Road intersection near Del Oro HS where LOS D is accepted in the morning peak hour.

Methodology at Signalized Intersections. Various methodologies exist to determine operating Levels of Service at signalized intersection. The available techniques vary with regard to factors such as traffic signal timing, interaction between adjoining signals, etc. The City of Rocklin makes use of the techniques contained in *TRB Circular No. 212*, which is more commonly identified as “critical movement analysis”. The City of Roseville makes use of the procedures contained in the *2000 Highway Capacity Manual* for determining operating Level of Service.

Table 1 presents general characteristics associated with each LOS grade.

**TABLE 1
LEVEL OF SERVICE DEFINITIONS**

Level of Service	Signalized Intersection	Unsignalized Intersection	Roadway (Daily)
"A"	Uncongested operations, all queues clear in a single-signal cycle. Volume / capacity (V/C) < 0.60 Ave Delay ≤ 10 seconds per vehicle	Little or no delay. Ave Delay ≤ 10 sec/veh	Completely free flow.
"B"	Uncongested operations, all queues clear in a single cycle. $0.60 \leq v/c < 0.70$ Delay > 10 sec/veh and ≤ 20 sec/veh	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. $0.70 \leq V/C < 0.80$ Delay > 20 sec/veh and < 35 sec/veh	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. $0.80 \leq V.C < 0.90$ Delay > 35 sec/veh and < 55 sec/veh	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). $0.90 \leq V/C < 1.00$ Delay > 55 sec and ≤ 80 sec/veh	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 > 1.00 Delay > 80 sec/veh	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.

Methodology at Unsignalized Intersections. At unsignalized intersections the number of gaps in through traffic, gap acceptance time and corresponding delays for motorists waiting to turn are used for Level of Service analysis. Procedures used for calculating unsignalized intersection Level of Service are as presented the *Highway Capacity Manual, 2000 edition*.

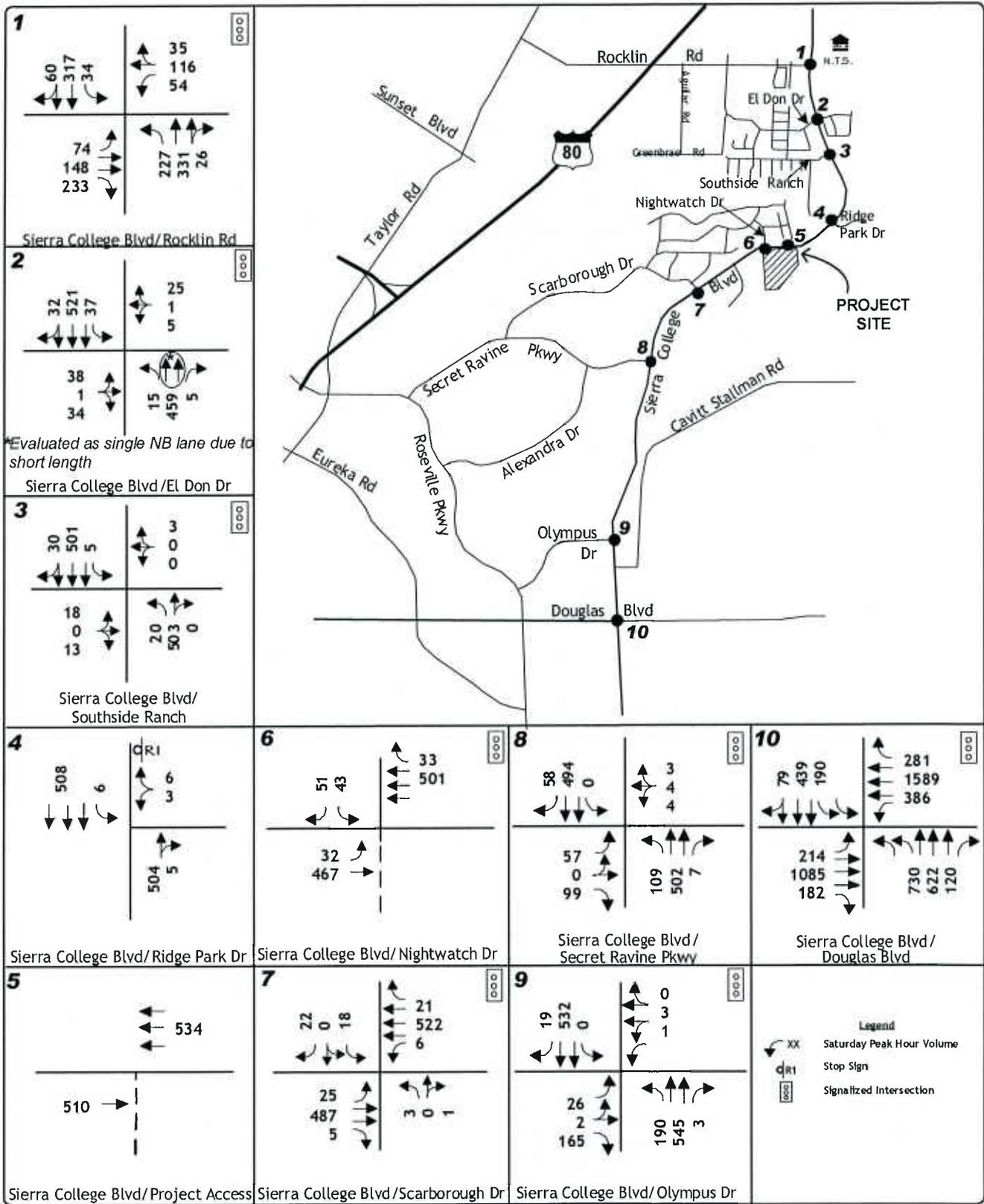
Existing Traffic Volumes and Intersection Levels of Service

Because Amazing Facts will have primary services on Saturdays, this analysis addresses traffic conditions occurring during mid-day Saturday peak hours. Saturday counts were conducted within the limits of the City of Rocklin between the hours of 10:00 and 1:00 p.m. in July 2007 and in Roseville in November 2008. Traffic at the Sierra College Blvd / Ridge Park Drive intersection was observed on August 9th 2009. The highest one-hour volume observed during this time period was employed for this analysis. The results of these traffic counts are presented in Figure 3.

Table 2 presents current peak hour Level of Service at the study area intersections. As shown, all study intersections currently operate with Levels of Service that meet the minimum requirements of each agency during the midday peak hour on Saturday.

**TABLE 2
EXISTING INTERSECTION LEVEL OF SERVICE**

Intersection	Jurisdiction	Control	Minimum LOS	Time Period		
				Saturday Peak Hour (10:00 a.m. to 1:00 p.m.)		
				LOS	Volume / Capacity Ratio	Average Delay (sec/veh)
Sierra College Blvd / Rocklin Rd	Rocklin	Signal	C	A	0.54	-
Sierra College Blvd / El Don Dr	Rocklin	Signal	C	A	0.42	-
Sierra College Blvd / Southside Ranch Rd	Rocklin	Signal	C	A	0.40	-
Sierra College Blvd / Ridge Park Drive (Overall) Westbound left+right turn	Rocklin	WB Stop	C	(A) B	- -	(0.2 sec) 13.8 sec
Sierra College Blvd / Nightwatch Dr	Rocklin	Signal	C	A	0.38	-
Sierra College Blvd / Scarborough Dr	Rocklin	Signal	C	A	0.21	-
Sierra College Blvd / Secret Ravine Pky	Roseville	Signal	C	B	-	12.5 sec
Sierra College Blvd / Olympus Dr	Roseville	Signal	C	B	-	12.6 sec
Sierra College Blvd / Douglas Blvd	Roseville	Signal	D	D	-	41.6 sec



**EXISTING SATURDAY
TRAFFIC VOLUMES
AND LANE CONFIGURATIONS**

KD Anderson & Associates, Inc.
Transportation Engineers

0457-001 REV 2.VSD

6/25/2010

figure 3

Daily Traffic Volumes

The quality of traffic flow on County roads and City streets can also be determined based on the daily traffic volumes and generalized Level of Service thresholds. General “planning level” daily volume thresholds presented in the Placer County General Plan EIR can be used to identify operating Levels of Service on streets and highways. These thresholds are re-printed in Table 3. However, the City of Rocklin makes use of the daily traffic volume thresholds shown in Table 4.

**TABLE 3
PLACER COUNTY
EVALUATION CRITERIA FOR ROADWAY SEGMENT LEVEL OF SERVICE**

Roadway Capacity Class	Maximum Daily Traffic Volume Per Lane Level of Service				
	A	B	C	D	E
1. Freeway – Level Terrain	6,300	10,620	13,680	17,740	18,000
2. Freeway – Rolling terrain	5,290	8,920	11,650	14,070	15,120
3. Freeway – Mountainous Terrain	3,400	5,740	7,490	9,040	9,720
4. Arterial – High Access Control	6,000	7,000	8,000	9,000	10,000
5. Arterial – Moderate Access Control	5,400	6,300	7,200	8,100	9,000
6. Arterial – Low Access Control	4,500	5,250	6,000	6,870	7,500
7. Rural 2-lane Highway – Level terrain	1,500	2,950	4,800	7,750	12,500
8. Rural 2-lane highway – Rolling terrain	800	2,100	3,800	5,700	10,500
9. Rural 2-lane highway – Mountainous Terrain	400	1,200	2,100	3,400	7,000

Source: Placer County General Plan FEIR

**TABLE 4
CITY OF ROCKLIN
EVALUATION CRITERIA FOR ROADWAY SEGMENT LEVEL OF SERVICE**

LOS	Roadway Segment Capacities: Two Way Average Daily Traffic Volumes						
	Two Lane Collector	Four Lane Undivided Arterial	Four Lane Divided Arterial	Four Lane Restricted Access Arterial	Six Lane Divided Arterial	Six Lane Restricted Access Arterial	Four Lane Freeway
A	9,000	18,000	20,250	21,600	30,315	30,315	37,600
B	10,700	21,300	23,625	25,200	36,000	36,000	52,800
C	12,000	24,000	27,000	28,800	40,500	40,500	68,000
D	13,500	27,000	30,375	32,400	45,560	45,560	76,000
E	15,000	30,000	33,750	36,000	50,525	50,525	80,000

Today Sierra College Blvd carries 19,150 weekday ADT and 14,340 vehicles per day on Saturday in the vicinity of the proposed project. Because the number of lanes in each direction is unequal, standard LOS threshold are not directly applicable. The 2 lane thresholds could be applicable in the northbound direction. Under Placer County GP standards the current volume is indicative of weekday LOS E on a two lane arterial with a high degree of access control, but LOS C occurs on Saturday. While the City of Rocklin does not have a 2 lane arterial LOS standard, the Saturday volume would be indicative of LOS C-D if ½ of the threshold identified for a 4 lane restricted access alternative was assumed (i.e., LOS C = 14,400 ADT).

The City of Roseville also identifies acceptable Levels of Service based on daily traffic volumes. The City assumes 9,000 vehicles per lane per day capacity on major arterials as a basis for roadway Level of Service and assumes a V/C of 0.81 for the LOS C threshold. For the 4-lane section north of Olympus, the resulting threshold is 29,160 ADT (9,000 X 4 X 0.81) for the LOS C threshold and for the 6-lane section north of Douglas, the threshold would be 43,740 ADT (9,000 x 6 x 0.81). The observed traffic volumes on Sierra College Blvd are far below the threshold and would be indicative of LOS A.

Transit Facilities

Placer County Transit provides bus service in the Rocklin area. However, the nearest local service is on Rocklin Road and on Sierra College Blvd north of Rocklin Road. Dial-a-Ride service is available to residents in the area of the proposed project.

Roseville Transit provides fixed route service in the area south of the project, but the closest route only runs on Sierra College Blvd as far north as Olympus Parkway.

PROJECT IMPACTS

The proposed project is a Seventh Day Adventist Church that would hold its primary services on Saturdays and would have limited weekday activities. Ultimately, the church could sit 2,000 persons for services, with seating for 1,300 anticipated with the first phase and 2,000 persons seated for phase 2 and 3. Because no change in seating is anticipated with phase 3, for the purposes of this traffic analysis Phase 2 represents operation of the church at full build out on Saturdays.

The site has two points of access. Primary access is to be via the southerly extension of Nightwatch Drive from the Sierra College Blvd / Nightwatch Drive intersection. Secondary access is proposed via a right turn only access on Sierra College Blvd roughly midway along the project's frontage. Development of the secondary access is planned with the first phase of the project but could be delayed to the second phase depending on the extent of Sierra College Blvd improvements required to accommodate this additional access.

Project Characteristics

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, 7th Edition* is a source recognized by Placer County, and applicable trip generation rates for churches operating on Saturdays are presented in Table 5, along with available weekday rates.

**TABLE 5
TRIP GENERATION RATES / FORECASTS**

Land Use	Unit / Quantity	Trip Generation						
		Daily	Sunday Peak Hour			Weekday P.M. Peak Hour		
			Inbound	Outbound	Total	Inbound	Outbound	Total
Church (ITE)	Seats	1.85	43%	57%	0.60	-	-	-
	kfs	-	-	-	-	52%	48%	0.66
Phase 1	1,300 seats	2,405	335	445	780	-	-	-
	108.0 ksf	-	-	-	-	37	34	71
Phase 1+2	2,000 seats	3,700	516	684	1,200	-	-	-
	198.0 ksf	-	-	-	-	68	63	131
Phase 1+2+3	208.0ksf					71	66	137
	2,000 seats		516	684	1,200	-	-	-
Weekday p.m. trip generation rates based on ksf as no "per seat" rate is available								
ITE Sunday "daily" rate employed								

As shown in Table 5, the initial 1,300 seat phase of the Amazing Facts Church project could generate 780 trips during the Saturday peak hour. The initial phase of the project is only expected to generate 71 trips during the weekday p.m. peak hour. At full occupancy at the end of phase 2, the site could generate 1,200 Saturday peak hour trips, with 131 trips occurring during the weekday peak hour. With completion of Phase 3 weekday peak hour trip generation could be 137 trips.

Weekday activities at the site will include typical ancillary activities that accompany a church. At full build out up to 80 persons are expected to work at the site as part of the outreach ministries. These persons would work a normal 8 to 5 schedule. Additional staff will be involved with operating the facilities (i.e., 6 to 12 persons). The current SDA church in Sacramento also offers regular weekday activities, including prayer meetings and small study groups. These events are typically scheduled in the evenings after the peak commute hour or during midday.

As noted, the most appreciable traffic volumes associated with the project will occur on Saturdays before and after church services. The amount of regular weekday traffic accompanying this project is very low in comparison to Saturday forecasts and is low enough to suggest that there is no significant possibility that analysis of weekday conditions would identify additional impacts or yield additional mitigation measures. As is the standard Placer County practice when addressing the impacts of churches, this impact analysis has been limited to peak conditions on the day when services will be held, which in this case is Saturday.

Trip Distribution. Having determined the number of trips that are expected to be generated by the project, it is necessary to identify the directional distribution of project-generated traffic. For churches, the location of church attendee residences is the primary indicator of the regional trip distribution.

As noted earlier, a portion of the congregation now attending Sacramento Central Church near CSU-Sacramento is expected to move their membership to the Amazing Facts site, as are the persons now attending Saturday services at the Shepherd of the Sierra church at Barton Road / Rocklin Road. Based on review of the location of existing church membership, it appears that approximately 50 families already attending Sacramento Central Church live in Placer County. Another 30 families reside in the Folsom-Citrus Heights-Orangevale area. While these church members would likely attend Amazing Facts, we are also told that a portion of the membership residing in Sacramento County along the Interstate 80 corridor could relocate their membership. All together, it is assumed that persons currently attending Sacramento Central Church will represent 10% of the total membership at the end of phase 2.

Similarly 200 to 300 persons are reported to attend Saturday services at Shepherd of the Sierra. This would represent roughly 10% of the attendance under Phase 2 of Amazing Facts.

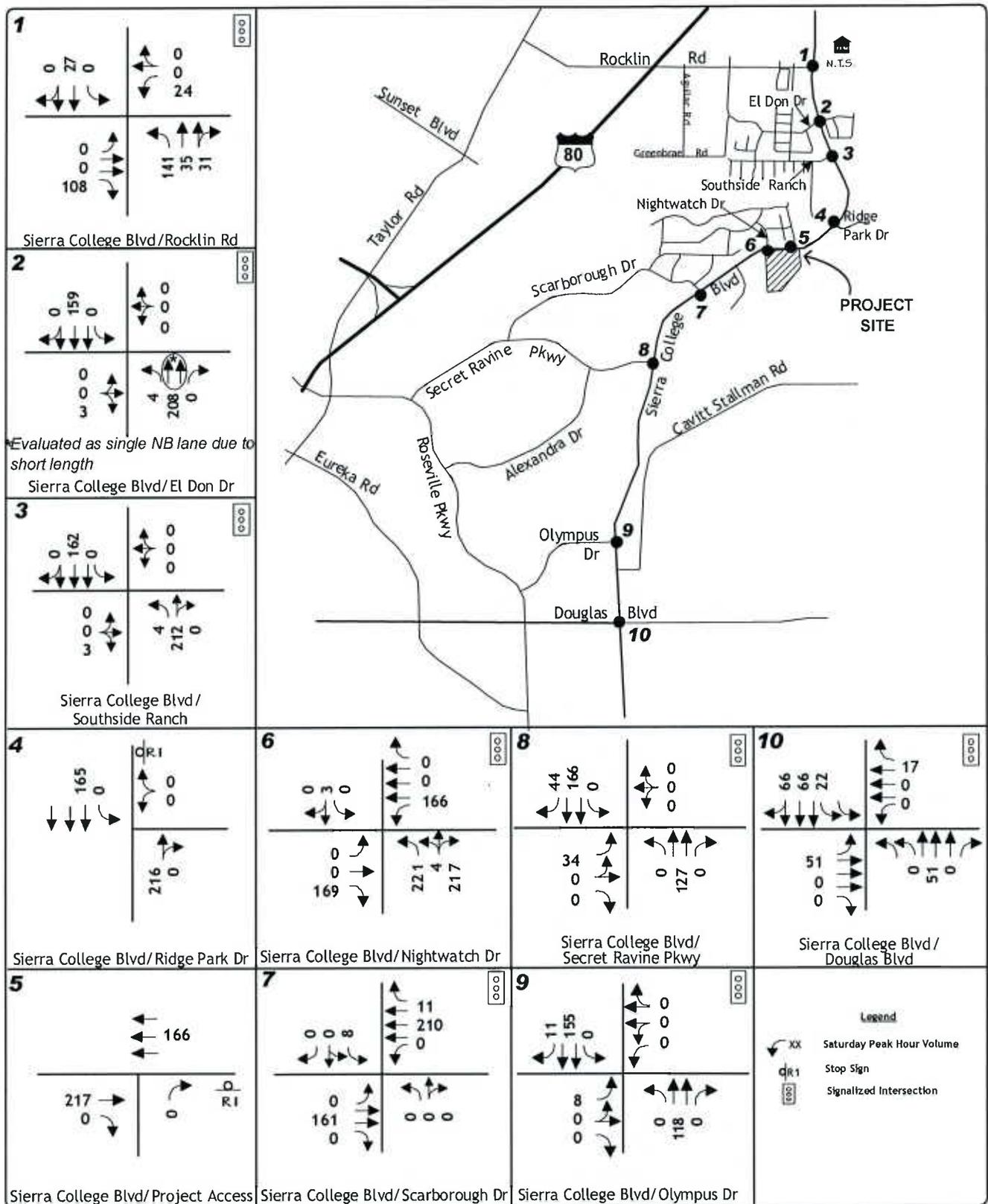
Because most of the church membership will be new, the distribution of church traffic has been assumed to be in rough proportion to the regional population distribution of the western Placer County, north Sacramento County and western El Dorado County area within ten miles of the site. Table 6 outlines the regional assumptions made for this study.

**TABLE 6
REGIONAL TRIP DISTRIBUTION ASSUMPTIONS**

Direction	Origin / Destination	Route	Percent of Total
North	Lincoln, Penryn, Yuba County	Sierra College Blvd North beyond Loomis	5%
	East Rocklin	Nightwatch Dr, Southside Ranch Rd, El Don Dr	3%
	Auburn, Loomis	Interstate 80 east	3%
East	Loomis, North Granite Bay	Rocklin Road east	2%
	Granite Bay, Folsom , West El Dorado County	Rocklin Road east	5%
	Granite Bay	Douglas Blvd east	5%
South	Orangevale, Citrus Heights, Rancho Cordova, Granite Bay	Sierra College Blvd south of Douglas Blvd	15%
	East Roseville	Scarborough Drive west	2.5%
		Secret Ravine Parkway west	10%
West	Rocklin	Rocklin Road west of I-80	2%
	Western Rocklin, Western Roseville, Western Lincoln	SR 65 to Interstate 80 to Rocklin Rd	15%
	North Sacramento County	Interstate 80 to Rocklin Road	15%
		Interstate 80 to Douglas Blvd to Sierra College Blvd	15%
		Interstate 80 to Douglas Blvd to Olympus Drive	2.5%
	Sierra College Blvd		
Total			100%

Project Trip Assignment. The assignment of project traffic to the local area street system will reflect the alternative routes available between the site and church member residences. The principal choice to be made involves use of the right turn only driveway on Sierra College Blvd. This driveway will be an attractive route for persons using the eastern portion of the parking lot developed under Phase 2, but may also be used under Phase 1.

Using the regional trip distribution assumptions noted previously, project trips were assigned to the local street system assuming access as planned. Figure 4 presents resulting “project only” traffic under Phase 1 with and without access via the Nightwatch Drive intersection, as well as under Phase 2 conditions with both access points available.



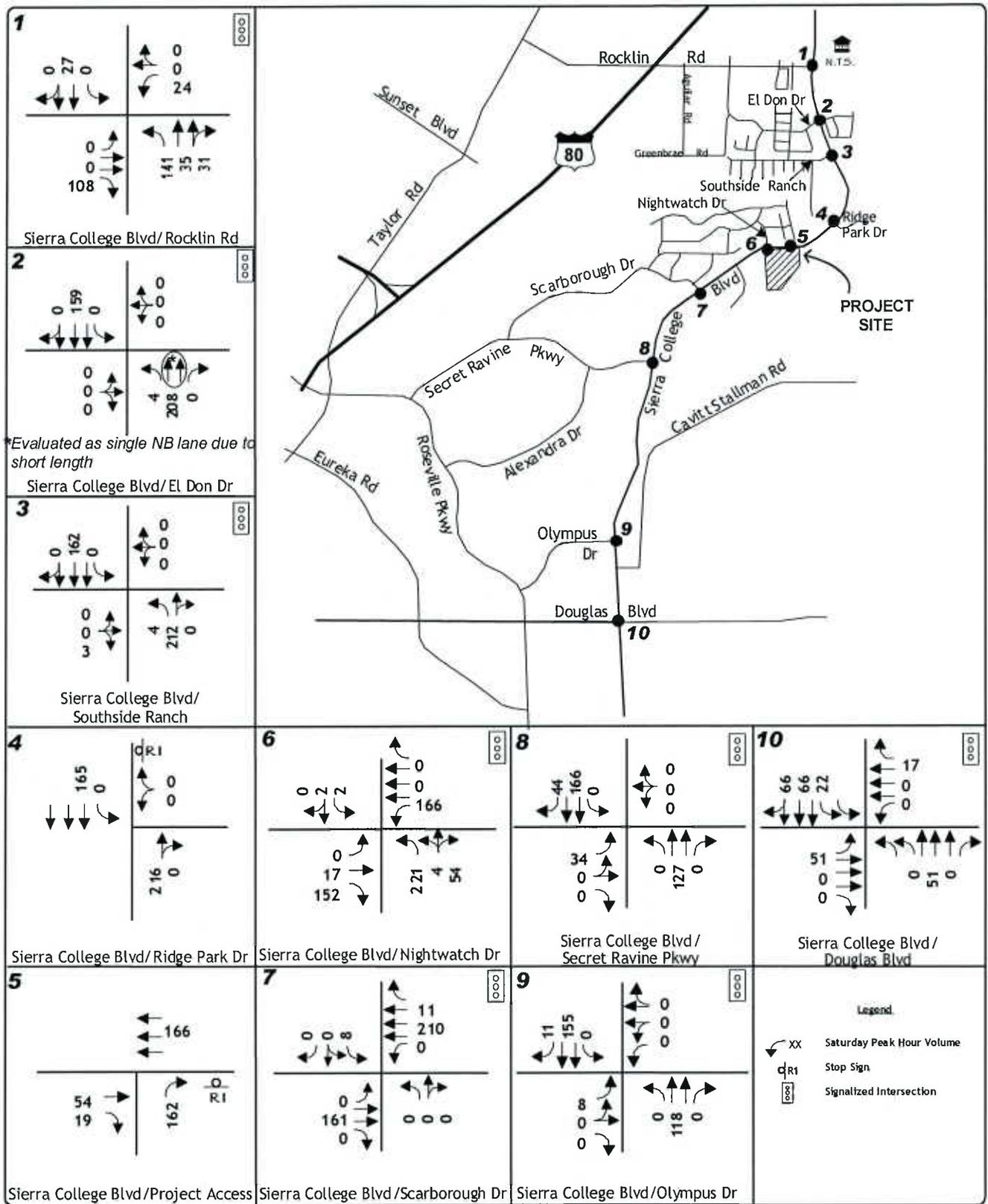
**PROJECT PHASE 1- ONE ACCESS ONLY
SATURDAY TRAFFIC VOLUMES
AND LANE CONFIGURATIONS**

KD Anderson & Associates, Inc.
Transportation Engineers

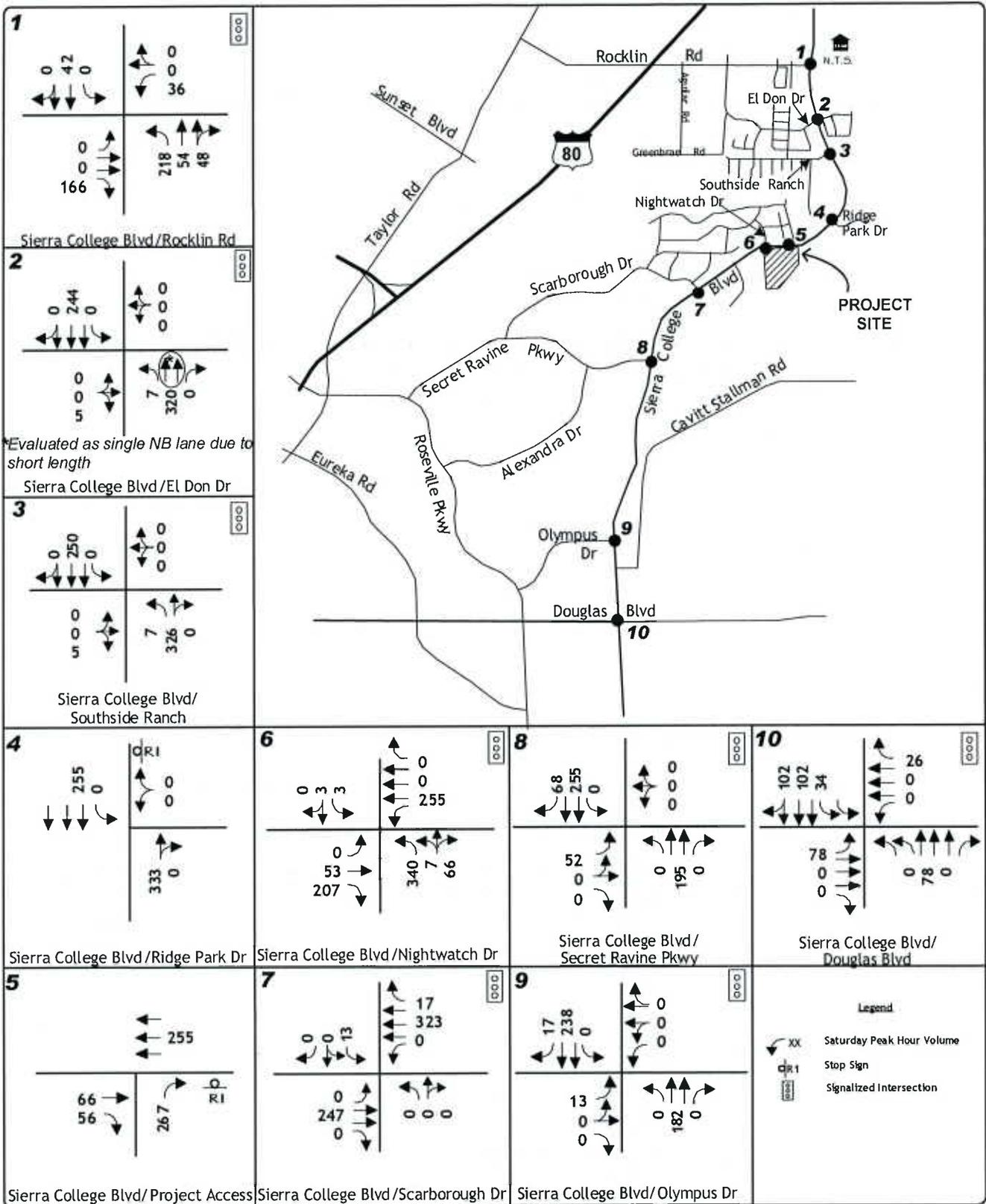
0457-001 REV 2.VSD

6/25/2010

figure 4a



PROJECT PHASE 1- TWO ACCESSES ONLY
 SATURDAY TRAFFIC VOLUMES
 AND LANE CONFIGURATIONS



**PROJECT PHASE 2 ONLY
 SATURDAY TRAFFIC VOLUMES
 AND LANE CONFIGURATIONS**

KD Anderson & Associates, Inc.
Transportation Engineers

0457-001 REV 2.VSD 6/25/2010

figure 4c

Assumed Improvements. As noted in the site plan (Figure 2), the project proponents expect to widen Sierra College Blvd along the project frontage. Thus two eastbound lanes will be provided on Sierra College Blvd through the Nightwatch Drive intersection. While project's frontage improvements on Sierra College Blvd provide the space for a third through lane, this lane and the second northbound lane would have to be "dropped" before they reach the single northbound lane on Sierra College Blvd beyond the project site. Because the distance required for the lane drop exceeds the project's frontage length, this analysis first addresses conditions without a second through lane in order to evaluate the need for the additional non-frontage improvements required to accommodate two eastbound lanes on Sierra College Blvd.

Improvements to the Sierra College Blvd / Nightwatch Drive intersection have also been assumed under these initial analysis conditions. Sierra College Blvd west of the intersection will be striped to create a right turn lane into the site at Nightwatch Drive. The median on Sierra College Blvd has been assumed to be reconstructed to create a single left turn lane into the project site. A two lane northbound Nightwatch Drive approach has been assumed, with these two lanes configured as a dedicated left turn lane and a combined left+thru+right turn lane. The existing southbound right turn lane on Nightwatch Drive has been assumed to be re-striped to permit through traffic. The project's frontage widening has been assumed to be striped to accommodate a separate right turn lane into the site at the new access on Sierra College Blvd.

Existing Plus Project Traffic Conditions and Levels of Service

Figure 5 superimposes project trips onto the current background traffic volumes to create three "Existing plus Project" conditions. Table 7 compares the existing and "plus project" Levels of Service at study intersections.

Phase 1 Traffic Conditions. As shown, the addition of project traffic associated with the first phase of the Amazing Facts Church project will have a negligible effect on Levels of Service occurring during the Saturday peak hour at study intersections. Development of Phase 1 results in Levels of Service within adopted minimum standards at all of the study intersections in Roseville and Rocklin, and implementing Phase 1 does not result in the need for improvements.

Locally, the Sierra College Blvd / Nightwatch Drive intersection is forecast to operate at LOS C under Phase 1 conditions with or without the proposed second access onto Sierra College Blvd. This conclusion assumes that only one northbound lane is provided on Sierra College Blvd through the intersection, but assumes striping a separate northbound right turn lane on Sierra College Blvd and a two lane exit on the new Nightwatch Drive extension. The Level of Service would be LOS A if the second northbound lane on Sierra College Blvd is provided.

Phase 2 Traffic Conditions. The development of the full project under "Existing Plus Phase 2" conditions results in three instances where the minimum LOS C standard will not be met in Rocklin. Minimum Level of Service standards will continue to be satisfied at the study intersections in Roseville.

Exiting traffic at the project's Sierra College Blvd Access is projected to operate at LOS F under Phase 2 if there is only one northbound (eastbound) lane available on Sierra College Blvd. Because the overall intersection Level of Service will be LOS B under Phase 2, this condition is not significant under City of Rocklin standards. While not required as a mitigation measure under standard policy, adding the second northbound through lane on Sierra College Blvd along the project frontage will allow the exit's northbound right turn to operate at LOS C under Phase 2. This improvement is recommended and is part of the proposed project

Peak Traffic Periods. The preceding analysis describes traffic conditions occurring over the peak traffic hour based on the methodologies employed by each agency (i.e., City of Roseville and City of Rocklin). Each agency evaluates impacts based on the condition over the peak hour and strives to maintain their minimum Level of Service standard on that basis. It is important to note that uses such as churches can generate traffic within a relatively short time period before and after services. Because church traffic is concentrated into short time periods, the delays occurring at that time can be longer than average, congestion can occur at access locations and minimum Level of Service standards are likely to be exceeded for short periods of time. While short term congestion is likely, this condition is not significant under the guidelines employed by each agency.

Existing Plus Project Impacts / Mitigations

Impact 1. At the **Sierra College Blvd / Rocklin Road intersection** the addition of project traffic would result in LOS D if the current geometric configuration remains.

Discussion: A second northbound left turn lane is needed to deliver LOS C with Phase 2. This improvement has been made a condition of other development projects in Rocklin, but is not included in the pending Sierra College Blvd 4 lane project planned by the City of Rocklin nor is this lane included in the SPRTA fee program. If this improvement is not constructed, seating equal to 36% of Phase 2 could be accommodated, or a total of 1,550 seats, before exceeding LOS C.

As this improvement has been a condition of approval for other development proposals in Rocklin, City of Rocklin staff has suggested that due to the timing of other intersection improvements the City would prefer that Amazing Facts contribute its fair share to the cost of adding this lane, rather than constructing the improvement. However, the improvement is not included in any adopted regional fee program.

Mitigation 1: Amazing Facts shall make a "fair share" financial contribution to the City of Rocklin towards the cost of installing a second northbound left turn lane at the Sierra College Blvd / Rocklin Road intersection. However, Placer County has no control over the timing of installation of this improvement. Therefore, payment of a fair share fees does not guarantee that this improvement will be constructed in the future. For this reason, the impact to the Sierra College Boulevard/Rocklin Road intersection shall remain **significant and unavoidable**.

Impact 2. With occupancy of Phase 2 the **Sierra College Blvd / Nightwatch Drive intersection** is projected to operate at LOS D if there is only one northbound through lane on Sierra College Blvd.

Discussion: To achieve the minimum LOS C goal, it would be necessary to develop the second northbound through lane on Sierra College Blvd through this intersection. With this lane the intersection would operate at LOS B ($v/c = 0.61$). This improvement is identified as part of the proposed project plan and will require widening of Sierra College Blvd in the area north of the project frontage

Mitigation 2. Amazing Facts shall be responsible for widening Sierra College Blvd to provide a second northbound through lane on Sierra College Blvd at the Nightwatch Drive intersection. With implementation of this mitigation the project's **impact is less than significant.**

**TABLE 7
EXISTING PLUS AMAZING FACTS CHURCH
SATURDAY PEAK HOUR INTERSECTION LEVELS OF SERVICE**

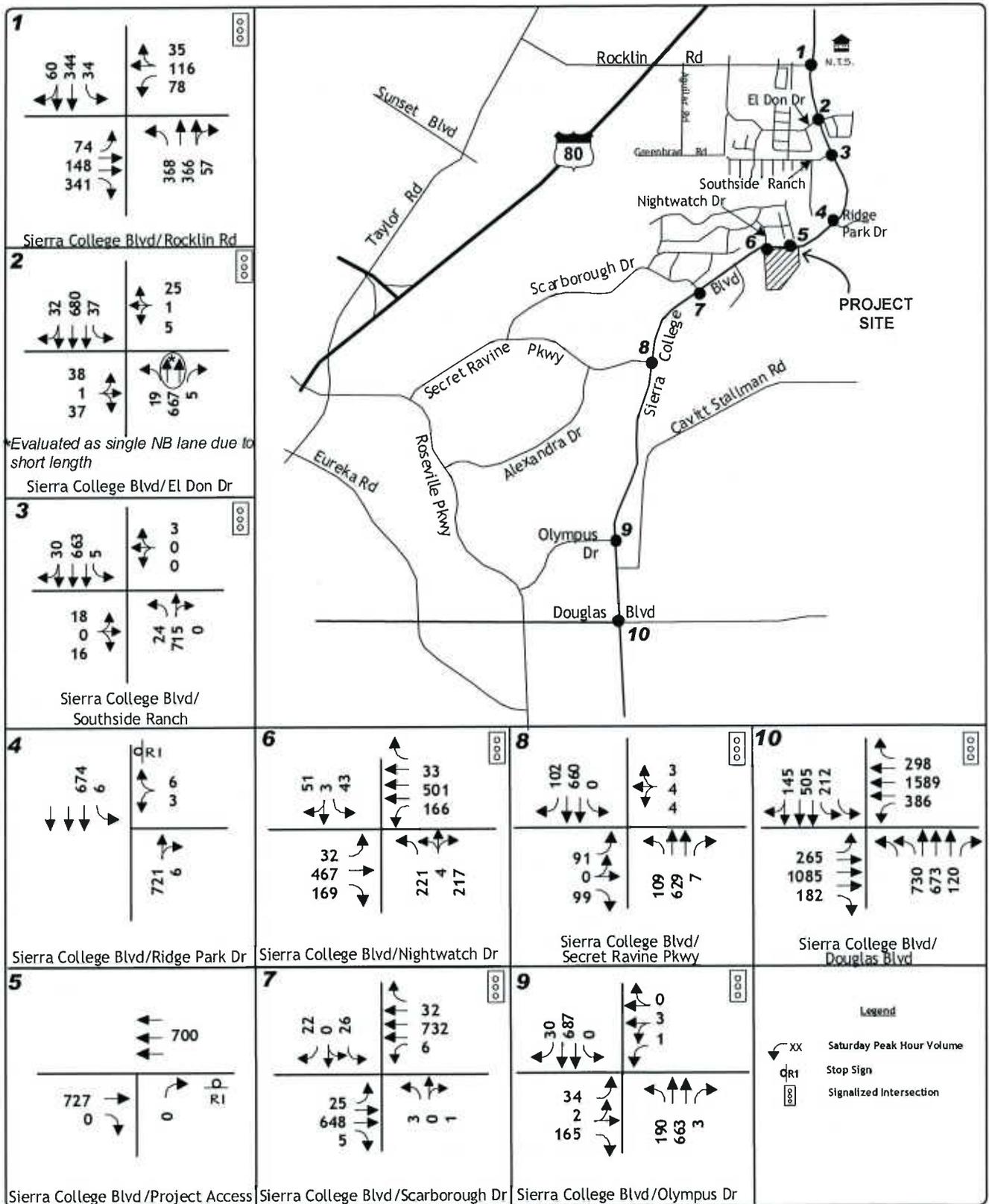
Sierra College Blvd Intersection	Control	Existing		Existing Plus Project					
		1 Access		Phase 1		Phase 2		2 Access	
		LOS	Volume / Capacity	LOS	Volume/ Capacity or Average Delay	LOS	Volume/ Capacity or Average Delay	LOS	Volume/ Capacity or Average Delay
Rocklin Road	Signal	A	0.54	C	0.76	C	0.76	D	0.88
	Mitigated ⁽¹⁾	A	0.41	A	0.48	A	0.48	A	0.54
El Don Drive	Signal	A	0.42	A	0.58	A	0.58	B	0.66
Southside Ranch Rd	Signal	A	0.40	A	0.56	A	0.56	B	0.64
Ridge Park Drive (Overall)	WB Stop	(A)	(0.2 sec)	(A)	(0.2 sec)	(A)	(0.2 sec)	(A)	(0.2 sec)
WB left+right turn		B	13.8 sec	C	18.2 sec	C	18.2 sec	C	21.5 sec
Amazing Facts Access (overall)	NB Stop	-	-	-	-	(A)	(3.4 sec)	(B)	(11.4 sec)
NB right turn	Mitigated ⁽²⁾					C	22.0 sec	F	53.6 sec
Nightwatch Drive	Signal	A	0.38	C	0.70	B	0.65	D	(3.6 sec)
	Mitigated ⁽²⁾							C	17.0 sec
Scarborough Drive	Signal	A	0.21	A	0.27	A	0.27	B	0.81
Secret Ravine Pkwy	Signal	B	12.5 sec	B	12.2 sec	B	12.2 sec	A	0.61
Olympus Drive	Signal	B	12.6 sec	B	12.2 sec	B	12.2 sec	A	0.31
Douglas Blvd	Signal	D	41.6 sec	D	48.2 sec	D	48.2 sec	B	12.1 sec
								B	12.0 sec
								D	53.5 sec

⁽¹⁾ Second northbound left turn lane (fair share)

⁽²⁾ Add second northbound through lane on Sierra College Blvd

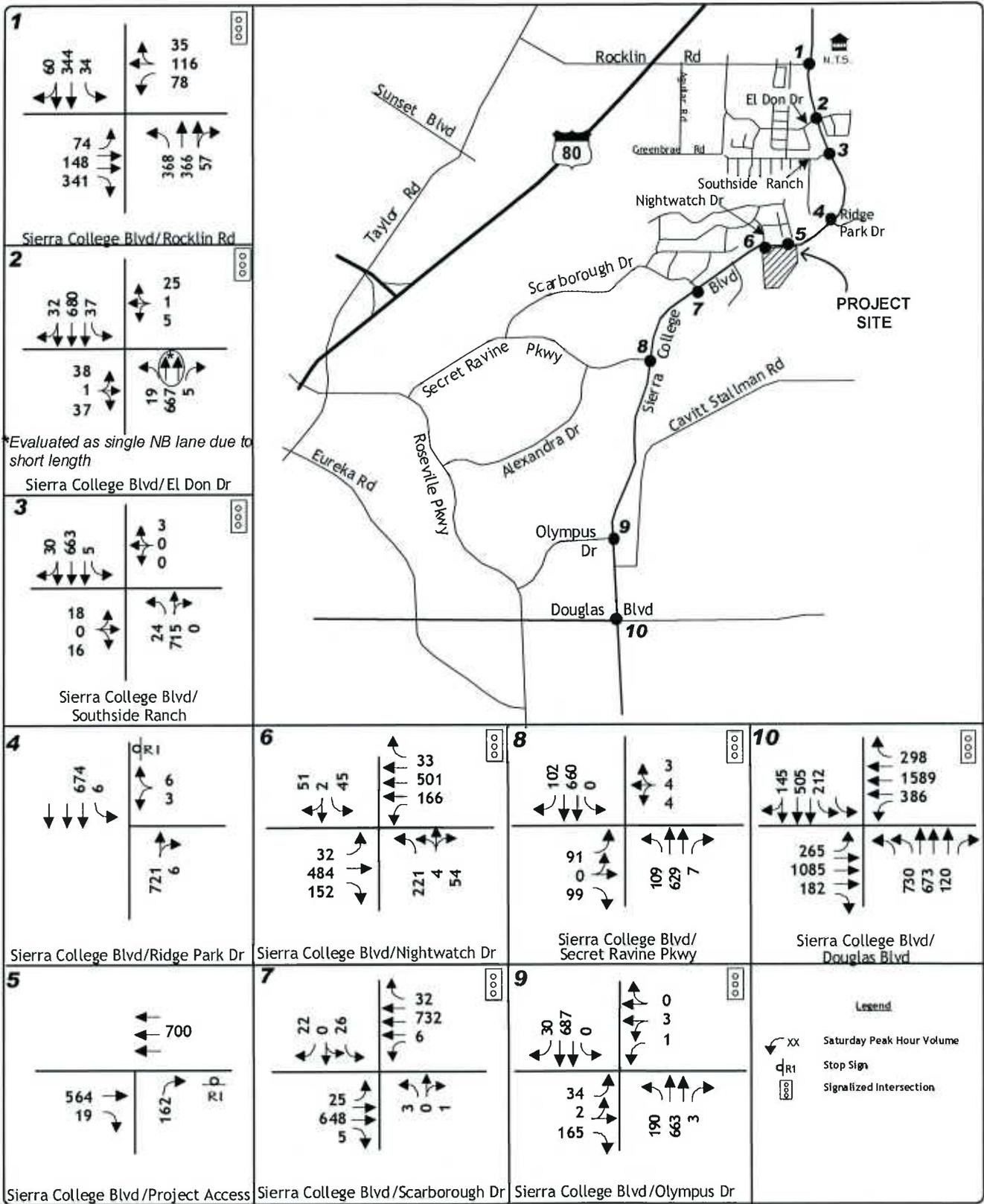
Bold indicates conditions in excess of standard. **Highlighted** values are significant impacts

KDA



EXISTING PLUS PROJECT PHASE 1-ONE ACCESS
SATURDAY TRAFFIC VOLUMES
AND LANE CONFIGURATIONS

KD Anderson & Associates, Inc.
Transportation Engineers

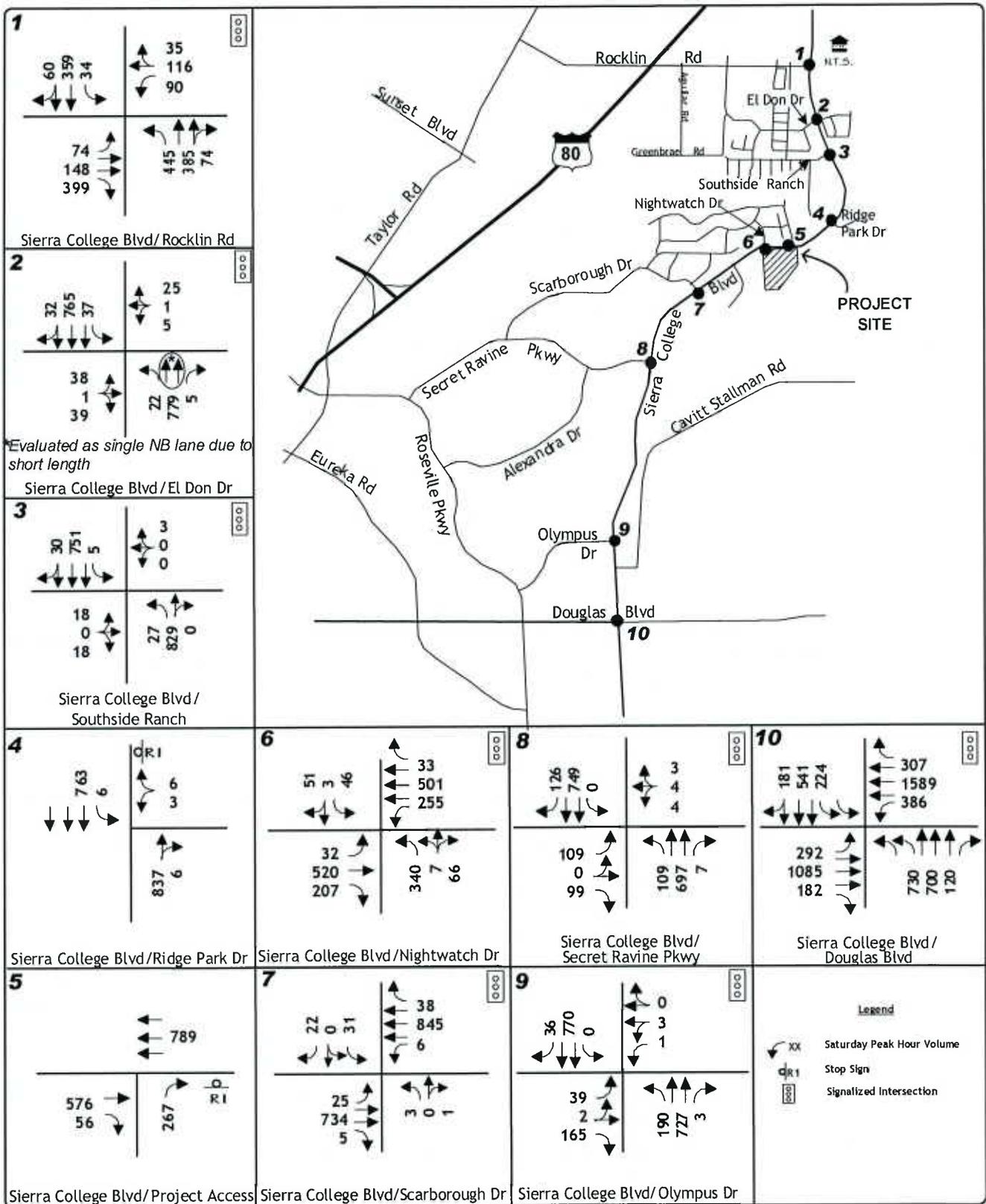


EXISTING PLUS PROJECT PHASE 1-TWO ACCESSES
SATURDAY TRAFFIC VOLUMES
AND LANE CONFIGURATIONS

KD Anderson & Associates, Inc.
Transportation Engineers

0457-001 REV 2.VSD 6/25/2010

figure 5b



EXISTING PLUS PROJECT PHASE 2
SATURDAY TRAFFIC VOLUMES
AND LANE CONFIGURATIONS

KD Anderson & Associates, Inc.
Transportation Engineers

0457-001 REV 2.VSD

6/25/2010

figure 5c

EXISTING PLUS APPROVED PROJECTS CONDITIONS / IMPACTS

The impacts of developing the Amazing Facts Church project have also been considered within the context of future traffic conditions in this area of Placer County. Three scenarios were considered at various intersection based on the guidelines followed by each agency. The “Existing Plus Approved Projects” scenario assumes completion of approved and pending projects identified by the City of Rocklin. This scenario was employed to investigate impacts to intersection in the Rocklin city limits but was not requested by the City of Roseville. Evaluation of conditions occurring in Roseville in the Year 2020 and long term cumulative conditions in Rocklin are presented under Cumulative Impacts.

Background Information

Approved Projects. The City of Rocklin maintains a list of approved projects and notes their development status. This information was used to create the short term future traffic conditions presented in the Draft Rocklin Crossing Traffic Study¹, the most recent traffic study completed in this area at the time the Amazing Facts Church analysis was begun. Because that study includes a Saturday analysis scenario, it was possible to identify the traffic growth increment identified in that report under “Short Term Plus Rocklin Crossing” condition and apply it for this analysis. Table 8 identifies the projects assumed to be complete and in operation under this scenario, along with the Saturday peak hour trip generation forecasts made for each project.

The traffic associated with additional local projects was added to the forecasts from Rocklin Crossing based on input from City of Rocklin staff. The Vista Oaks and Highlands Parcel A residential projects were assumed to be completed. Other development outside of Rocklin may also occur that will affect short term traffic conditions in the study area. The Stoneridge development area of Roseville abuts the Rocklin City limits and could directly add traffic to Scarborough Drive and to the balance of the study area street system. The current City of Roseville development report suggests that 449 single family and 345 multifamily approved dwelling units remain to be completed in that area. The amount of Saturday peak hour traffic associated with this development level was identified and assigned to the area roadway network. 15% of that total was assumed to use Sierra College Blvd north through the study area. One approved project in Loomis was considered (i.e., Homewood Lumber) but as this project generates relatively little Saturday traffic, it was not included in this analysis,

As shown, on Saturday the peak hour forecast for all these projects totals 4,243 trips, with more than half of that total associated with the Rocklin Crossings project.

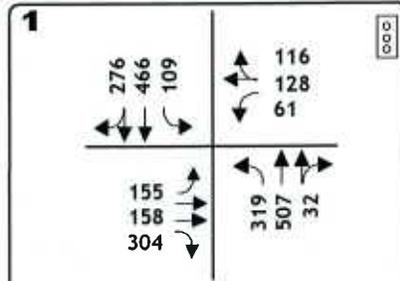
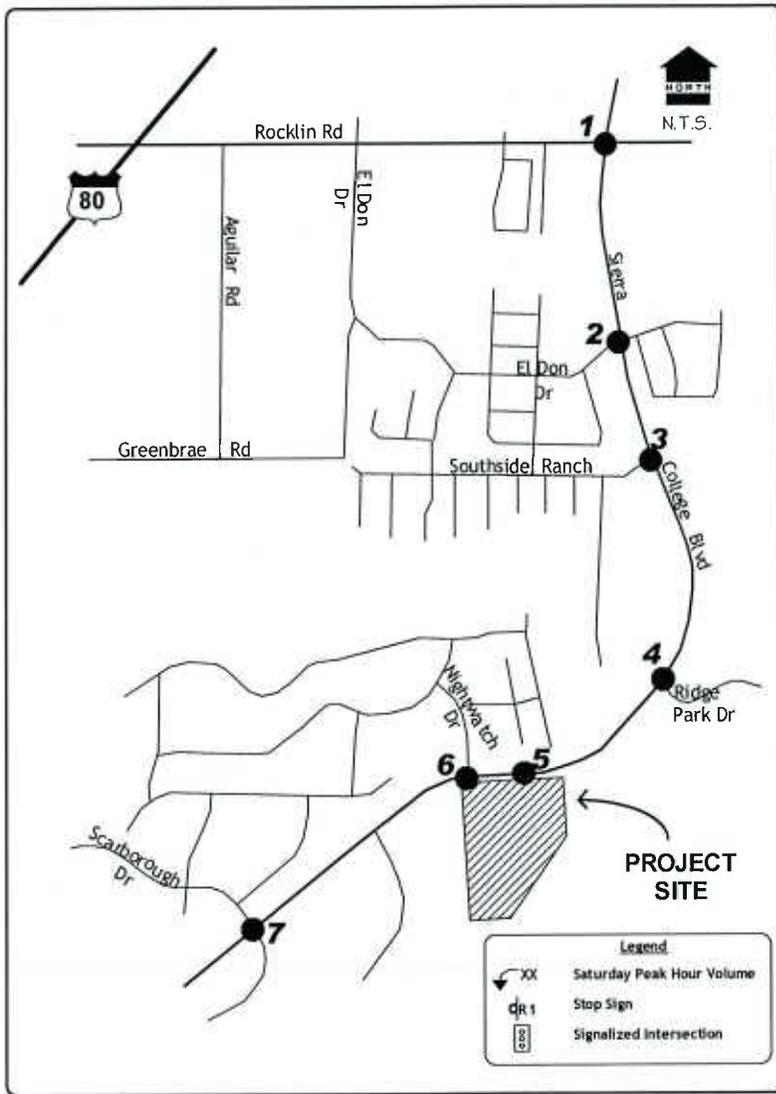
Together, the Saturday traffic increment identified in the Rocklin Crossing traffic study and the trips distributed from other identified projects were superimposed onto current volumes to create the background “Existing Plus Approved Projects (EPAP)” condition shown in Figure 6. As noted earlier, this scenario was limited to intersections in the Rocklin city limits.

¹ Traffic Impact Analysis prepared by LSA Associates, Inc., September 2006

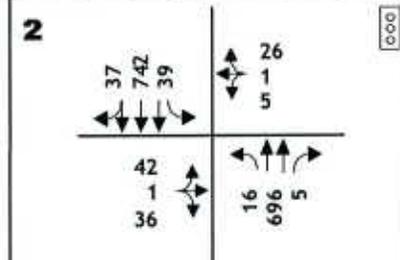
**TABLE 8
APPROVED PROJECTS**

Project	Description	Size	Saturday Peak Hour Trips
Granite Lake Estates	Single Family Residences	119 du's	112
Croftwood Unit 1	Single Family Residences	156 du's	147
Rocklin Sierra Plaza	Shopping Center	31.60 ksf	157
Bender Insurance Building	Office Building	14.74 ksf	6
Bramblewood Estates	Single Family Residences	2 du's	2
Sunrise Assisted Living	Senior Care	48 ksf	26
Rocklin Executive Office Park	Office Park	21 ksf	9
Rocklin 60 Residential	Single Family Residences	177 du's	166
Villages	Single Family Residences	65 du's	61
Granite Business Center	Office Building	16.60 ksf	7
Rocklin Mobile Home Addition	Mobile Home Park	21 gu's	11
Holy Cross Lutheran Church	church	40.63 ksf	144
Winding Lane Estates	Single Family Residences	26 du's	24
Samoylovich Estates	Single Family Residences	4 du's	4
Granite Drive Office	Office	22 ksf	9
Rocklin 94	Residential Condominiums	94 du's	44
Colish Subdivision	Single Family Residences	8 du's	8
Community Covenant Church	church	11.78 ksf	42
Rocklin Retail Center	Shopping Center	19.5 ksf	97
Pacific Center Retail Center	Shopping Center	32.2 ksf	160
Rocklin Crossings	Shopping Center	543.50 ksf	2,295
Vista Oaks - Highlands Parcel A	Single Family Residences	121 du's	113
Stoneridge (Roseville)	Single Family Residences	449 du's	418
	Multi Family Residences	345 du's	179
Total			4,243

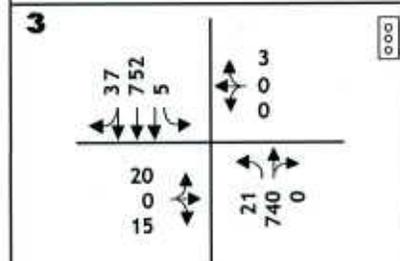
Background Improvements. Various circulation system improvements may be expected to be completed under the short term horizon. In the near term, Sierra College Blvd is to be widened by Rocklin to provide two through lanes in each direction from the El Don Drive intersection north to Interstate 80. This work will create two complete northbound through lanes at the Sierra College Blvd / El Don Drive intersection. However, at the Rocklin Road / Sierra College Blvd intersection no additional turn lanes will be developed as part of this project. Under the base condition, no improvements have been assumed at the Sierra College Blvd / Rocklin Road intersection.



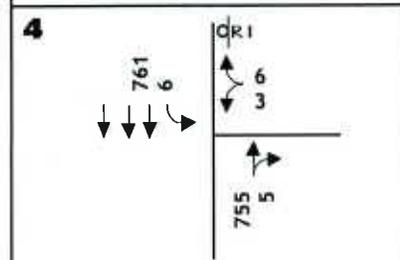
Sierra College Blvd/Rocklin Rd



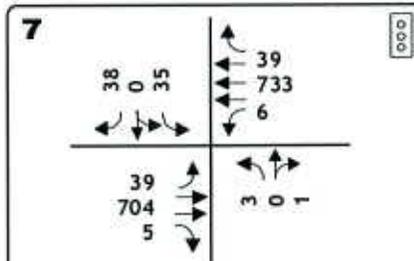
Sierra College Blvd/El Don Dr



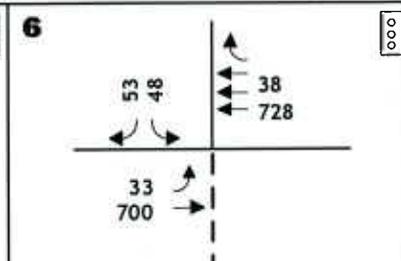
Sierra College Blvd/Southside Ranch



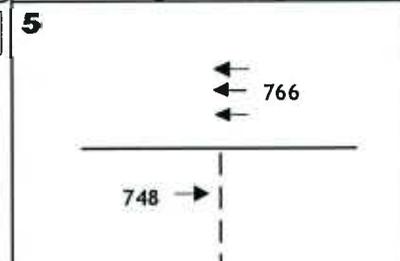
Sierra College Blvd/Ridge Park Dr



Sierra College Blvd/Scarborough Dr



Sierra College Blvd/Nightwatch Dr



Sierra College Blvd/Project Access

EXISTING PLUS APPROVED PROJECTS
SATURDAY TRAFFIC VOLUMES
AND LANE CONFIGURATIONS

KD Anderson & Associates, Inc.
Transportation Engineers

0457-001 REV 2.VSD 6/25/2010

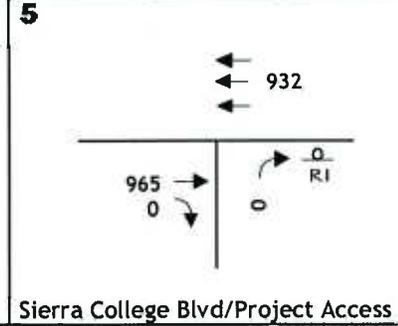
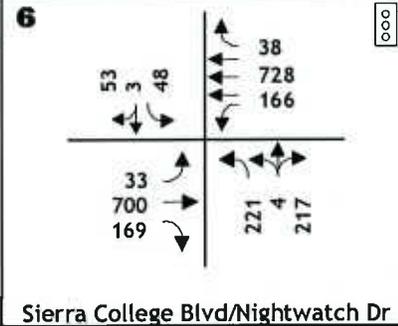
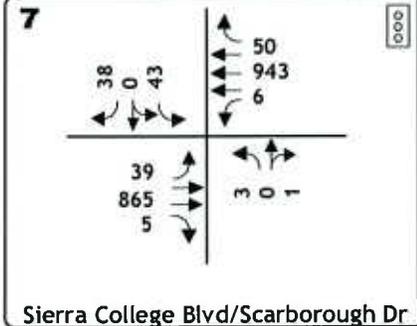
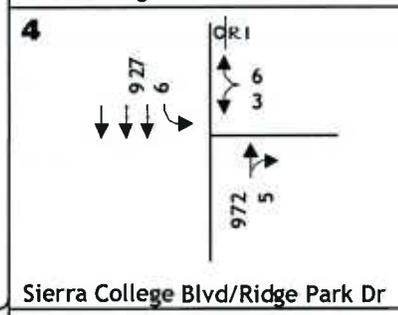
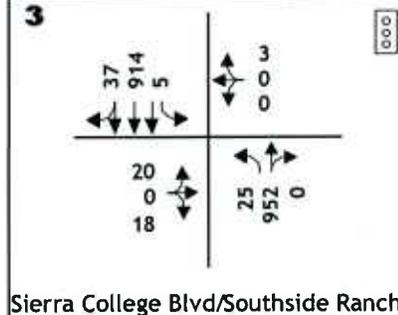
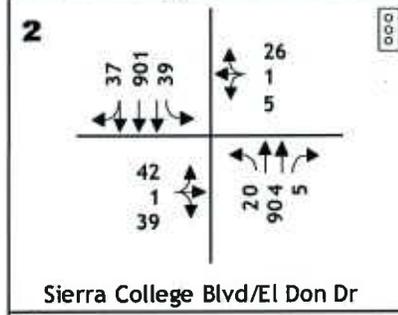
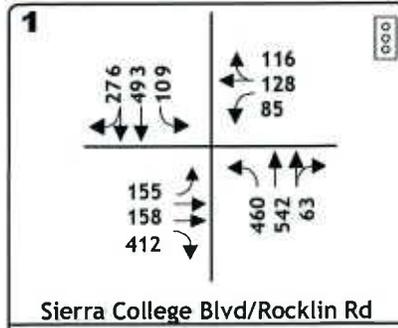
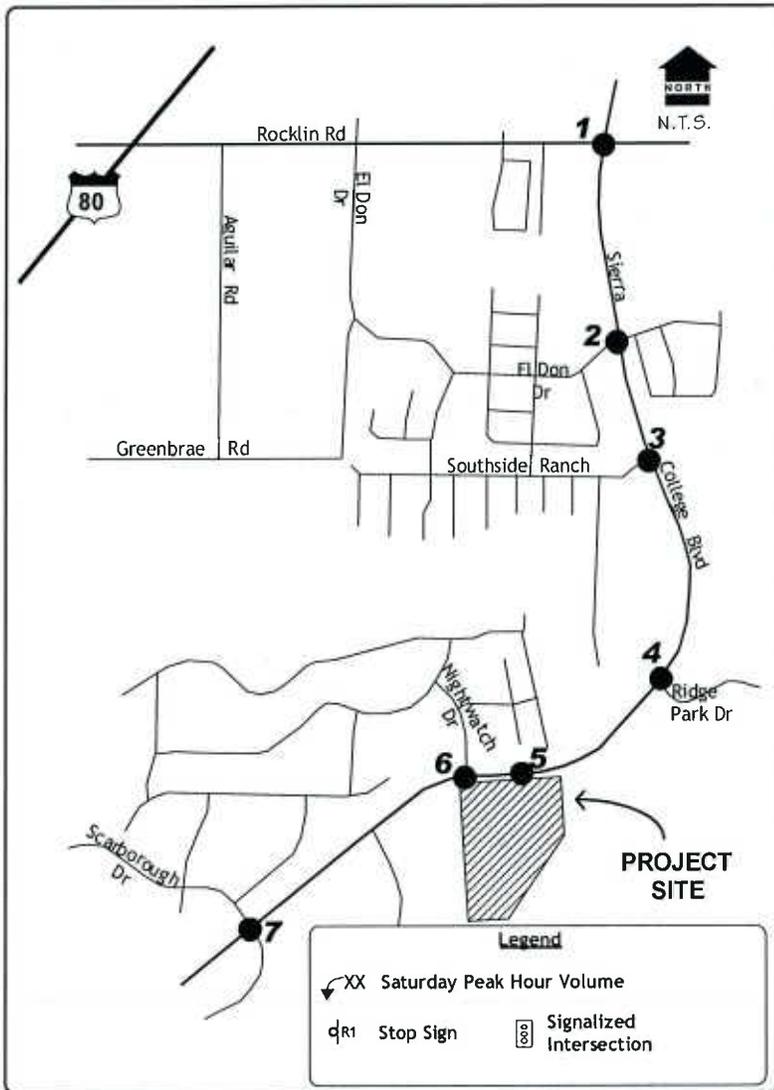
figure 6

Existing Plus Approved Projects Plus Amazing Facts Church Traffic Conditions. Traffic volumes under “EPAP plus Project” conditions are shown in Figure 7. Levels of Service at study intersections with and without the proposed project are shown in Table 9. As under the ”Existing Plus Project” evaluation, EPAP conditions are evaluated for both Phase 1 and Phase 2 site development levels. As noted, five locations are impacted by project traffic.

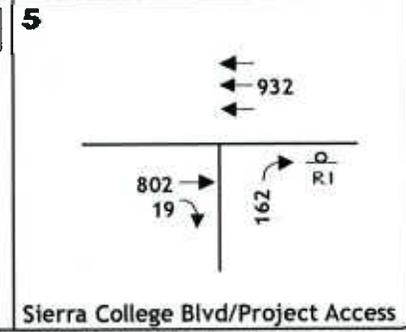
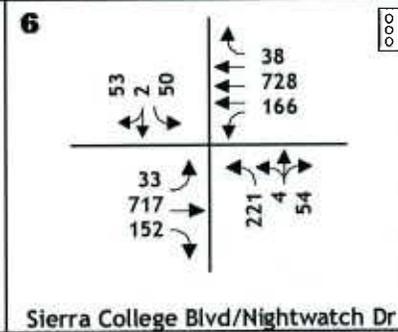
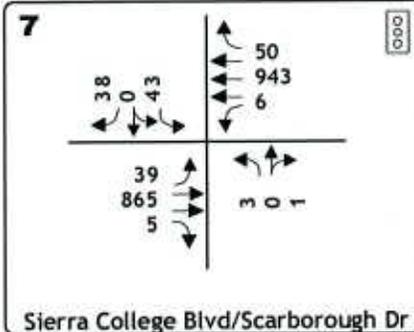
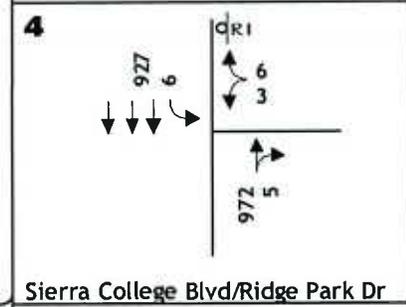
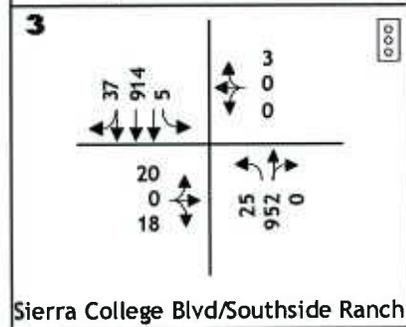
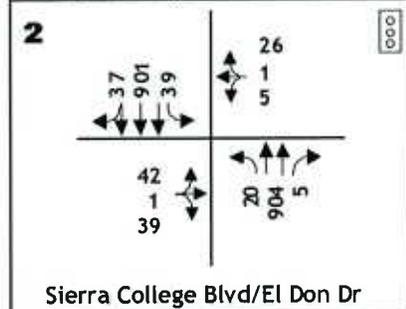
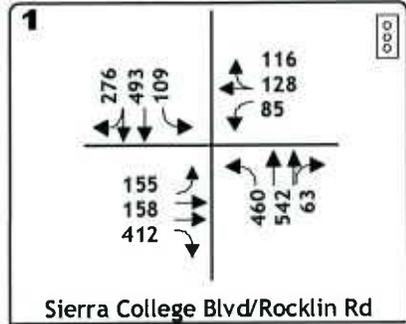
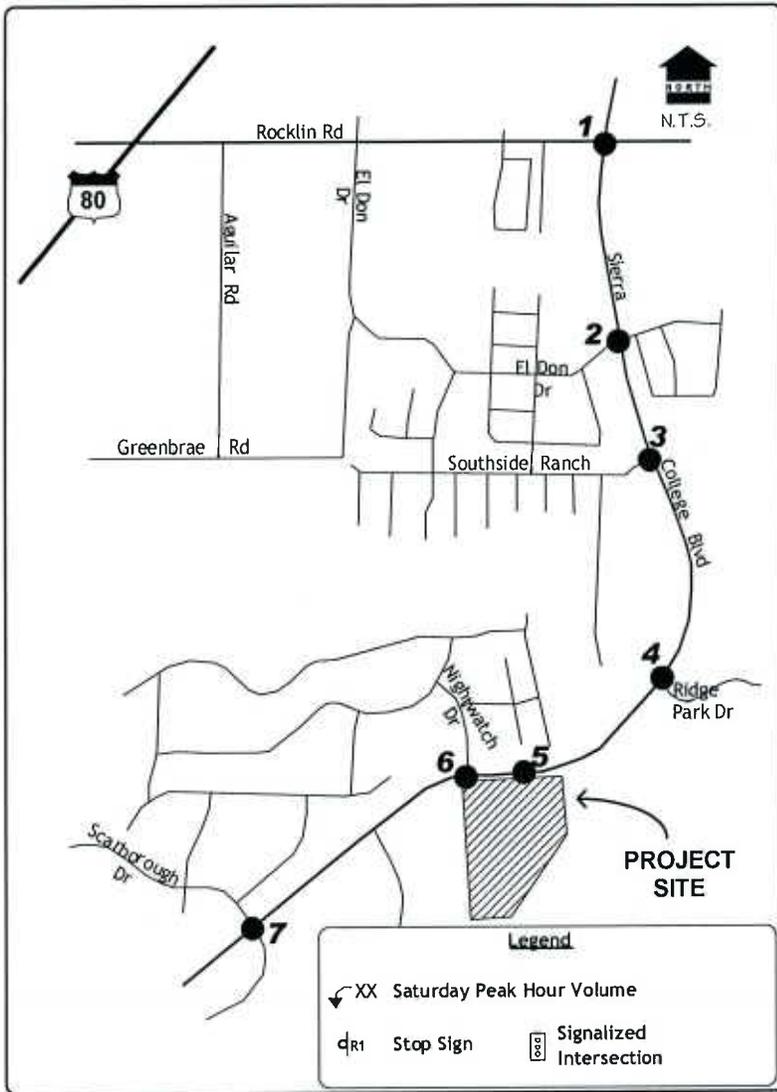
**TABLE 9
EXISTING PLUS APPROVED PROJECTS PLUS AMAZING FACTS CHURCH
SATURDAY PEAK HOUR INTERSECTION LEVELS OF SERVICE**

Sierra College Blvd Intersection With	Control	Existing Plus Approved Projects		Existing Plus Approved Projects Plus Amazing Facts Church					
		LOS	Volume / capacity	Phase 1		Phase 2		LOS	Volume / Capacity
				1 Access	2 Access	2 Access			
Rocklin Road	Signal	D	0.83	E	0.95	E	0.95	F	1.02
	Mitigation ⁽¹⁾			C	0.79	C	0.79	D	0.83
	Mitigation ⁽²⁾			B	0.69	B	0.69	C	0.73
El Don Drive	Signal	A	0.35	A	0.43	A	0.43	A	0.47
Southside Ranch Rd	Signal	A	0.58	C	0.74	C	0.74	D	0.82
	Mitigated ⁽³⁾							A	0.43
Ridge Park Drive (Overall) WB left+right turn	WB Stop	(A) C	(0.1 sec) 18.2 sec	(A) C	(0.1 sec) 24.7 sec	(A) C	(0.1 sec) 24.7 sec	(A) D	(0.1 sec) 29.6 sec
	Alternative ⁽³⁾							C	21.6 sec
	Alternative ⁽⁴⁾							C	24.5 sec
	Alternative ⁽⁵⁾							D	28.9 sec
	Alternative ⁽⁶⁾							C	23.8 sec
Amazing Facts Access (overall) NB right turn	NB Stop	-	-	-	-	(A) E	(5.7 sec) 49.2sec	(D) F	(33.9 sec) 202.0 sec
	Mitigated ⁽³⁾					(A) C	(1.8 sec) 15.5 sec	(A) C	4.0 sec) 24.0 sec
Nightwatch Drive	Signal	A	0.56	D	0.88	D	0.83	E	0.99
	Mitigated ⁽³⁾			B	0.61	A	0.56	C	0.70
Scarborough Drive	Signal	A	0.31	A	0.37	A	0.39	A	0.43

⁽¹⁾ add a second northbound left turn lane (fair share).
⁽²⁾ add second northbound left turn lane and separate southbound right turn lane (fair share)
⁽³⁾ add second through lane on Sierra College Blvd (SPRTA)
⁽⁴⁾ restrict movements to right turns only
⁽⁵⁾ widen Ridge Park Drive to separate left and right turns
⁽⁶⁾ widen Sierra College Blvd to create Southbound left turn Receiving Lane

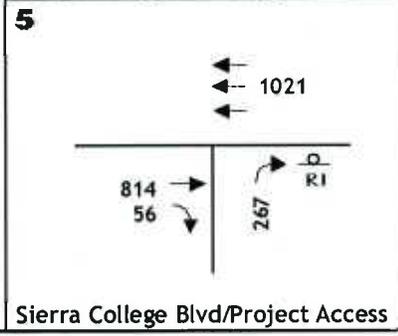
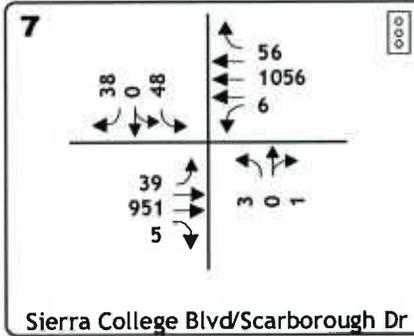
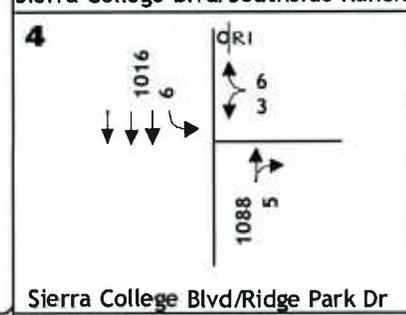
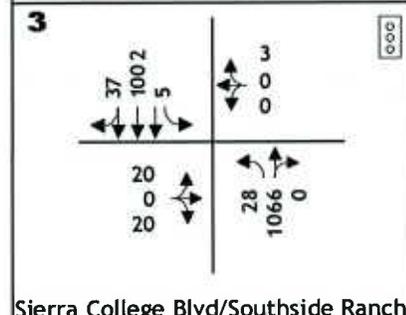
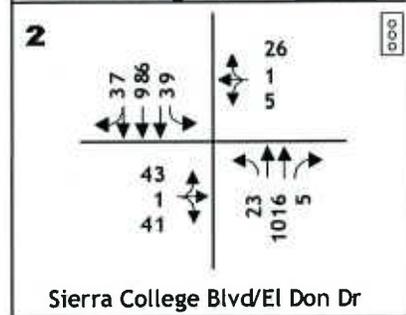
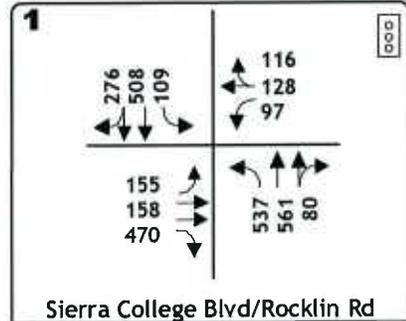
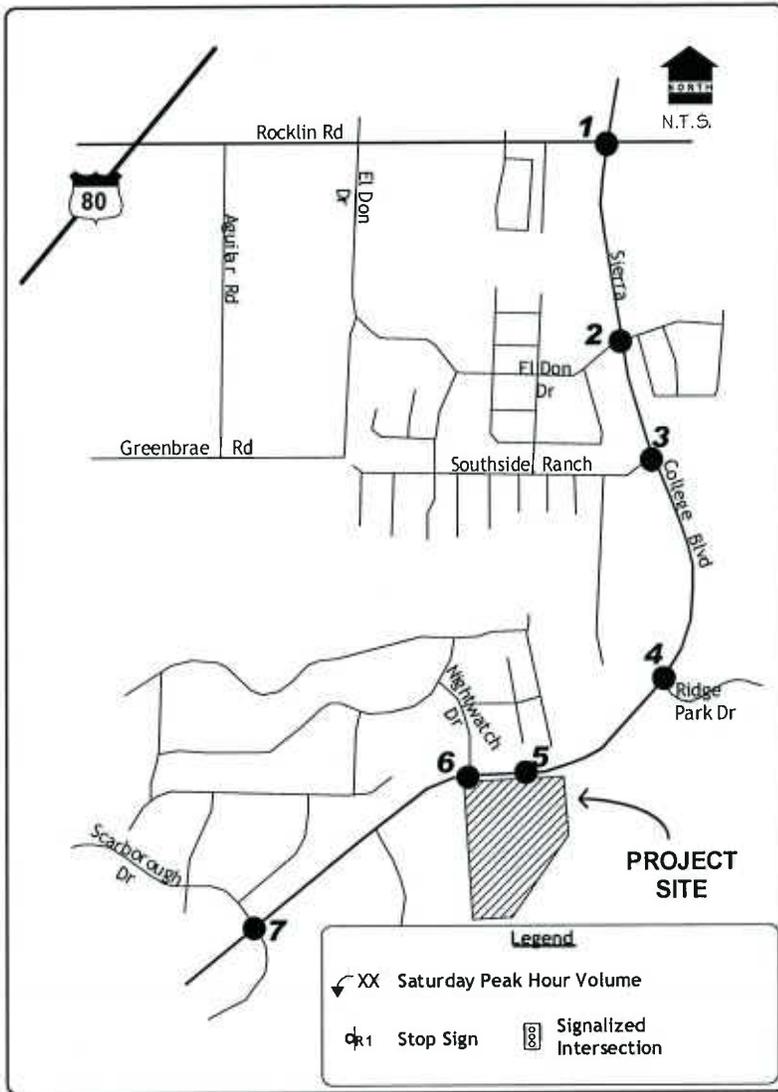


EXISTING PLUS APPROVED PROJECTS
 PLUS PROJECT PHASE 1-ONE ACCESS
 SATURDAY TRAFFIC VOLUMES
 AND LANE CONFIGURATIONS



EXISTING PLUS APPROVED PROJECTS
PLUS PROJECT PHASE 1-TWO ACCESSES
SATURDAY TRAFFIC VOLUMES
AND LANE CONFIGURATIONS

KD Anderson & Associates, Inc.
Transportation Engineers



**EXISTING PLUS APPROVED PROJECTS
PLUS PROJECT PHASE 2
SATURDAY TRAFFIC VOLUMES
AND LANE CONFIGURATIONS**

The length of delays experienced by motorists waiting to turn from the Sierra College Blvd / Ridge Park Drive intersection will increase as the volume of through traffic on Sierra College Blvd increases. While LOS C conditions of waiting motorists will remain under the baseline EPAP condition and with development of Phase 1 of Amazing Facts, when Phase 2 is fully occupied, motorists waiting to turn onto Sierra College Blvd will experience delays that are indicative of LOS D. However, the significance of this condition is predicated on overall LOS, and as the overall Level of Service at this location will remain at LOS A with and without the proposed project, the impact of Amazing Facts is not significant at this location under adopted standards.

While not required as mitigation, because this intersection is of interest to the Town of Loomis, the extent of possible improvements to this location has been considered in consultation with City of Rocklin and Town of Loomis staff. The breadth of possible alternatives, their feasibility and resulting Levels of Service are also noted.

Sierra College Blvd Widening. Adding a second northbound lane through the intersection as envisioned under the SPRTA program, would reduce delays at the intersection and yield LOS C. However, the availability of existing right of way for widening Sierra College Blvd in this area is uncertain and new right of way may be needed.

Signalization. Signalization is not an option at this location due to 1) the sustained uphill grade on southbound Sierra College Blvd and 2) the very low traffic volume occurring on Ridge Park Drive. Stopping southbound truck traffic at this location would result in an unsafe condition. Loaded trucks would not be able to accelerate from a stop, and slow moving trucks would create conflicts with other traffic. Projected traffic volumes also fall well below the requirements of peak hour CMUTCD warrants for signalization.

Access Restrictions. According to City staff, the City of Rocklin's expectation is that turning movements at un-signalized locations on Sierra College Blvd will eventually be limited to right turns in and out only using a raised median on Sierra College Blvd. Motorists intending to head south on Sierra College Blvd from Ridge Park Drive would instead turn right and make a u-turn at the Southside Ranch Road intersection. This improvement would result in LOS C conditions for motorists exiting on Ridge Park Drive. This traffic control measure could be installed within the existing street section by the City of Rocklin.

Widen Ridge Park Drive. Providing space on Ridge Park Drive for separate left and right turns could reduce delays slightly but would not result in LOS C conditions.

Widen Sierra College Blvd to Create a Receiving Lane on Southbound Sierra College Blvd. The Town of Loomis has suggested that the Sierra College Blvd / Ridge Park Drive intersection be widened to facilitate left turns. Widening the existing median area on Sierra College Blvd to permit "two-step" left turns from Ridge Park Drive onto southbound Sierra College Blvd would reduce the length of delays at his location. The length of the receiving lane would need to be determined based on design speed of Sierra College Blvd and on the speed achieved in the

receiving lane. A minimum length of 200 feet would be needed to reach 25 mph, while 1,000 feet is needed to reach 55 mph. Further widening to add northbound right turn acceleration and deceleration lanes was suggested by the Town of Loomis, but would not have an appreciable effect on Level of Service. Widening the median area would eventually result in a wider section when the overall Sierra College Blvd widening project proceeds under SPRTA. The availability of right of way for additional widening is uncertain.

EPAP Plus Project Impacts / Mitigations

Impact 3: The **Sierra College Blvd / Rocklin Road intersection** is projected to operate at LOS D under the baseline EPAP condition. This exceeds the City of Rocklin's minimum LOS C standard. The addition of trips associated with Phase 1 of Amazing facts would result in LOS E conditions, and the incremental change in v/c ratio of 0.12 exceeds the 0.05 threshold employed by the City. The addition of Phase 2 traffic would result in LOS F conditions and the v/c ratio would reach 1.02. Therefore, the impacts of Amazing Facts Church at this location are significant with both Phase 1 and Phase 2.

Discussion: To deliver LOS C with Phase 1, a northbound left turn lane is required (Mitigation 1). With Amazing Facts Phase 2 it would be necessary to add the northbound left turn lane, and an exclusive southbound right turn lane on Sierra College Blvd is also required. Neither improvement is included in the pending Sierra College Blvd widening project being pursued by the City of Rocklin. The same concerns expressed by the City of Rocklin with regards to installation of intersection improvements that were noted for mitigation 1 apply, and this improvement is not included in an adopted regional fee program.

Mitigation 3 In addition to Mitigation 1, the project shall contribute its fair share to the cost of a separate southbound right turn lane on Sierra College Blvd. . However, Placer County has no control over the timing of installation of this improvement. Therefore, payment of a fair share fees does not guarantee that this improvement will be constructed in the future. For this reason, the impact to the Sierra College Boulevard/Rocklin Road intersection shall remain **significant and unavoidable**.

Impact 4: Conditions at the **Sierra College Blvd / Southside Ranch Drive intersection** are forecast at LOS A under baseline EPAP conditions, with LOS C occurring with completion of the first phase of Amazing Facts and LOS D experienced with Phase 2. Because LOS D exceeds the City of Rocklin's minimum LOS C standard, the impact of Phase 2 of the project is significant at this location.

Discussion: To deliver LOS C, it would be necessary to add a second northbound through lane on Sierra College Blvd at this intersection. This action is generally consistent with long terms plans for improving Sierra College and is included in the SPRTA program.

Mitigation 4: Amazing Facts shall contribute a fair share towards the cost of constructing a second northbound through lane on Sierra College Blvd at the Southside Ranch Road

intersection. This improvement is included under the SPRTA fee program, and therefore payment of associated development fees to SPRTA would be considered adequate mitigation, and with this mitigation the **impact is not significant**.

Impact 5: Under the baseline EPAP No Project condition and only one northbound through lane the **Sierra College Blvd / Nightwatch Drive intersection** would operate at LOS A. This location would operate at LOS D with the first phase of the Amazing Facts project and LOS E with Phase 2. Each condition would exceed the City of Rocklin's minimum LOS C threshold and would be a **significant impact**.

Discussion: As discussed earlier under Existing Plus Project conditions, adding a second through lane on Sierra College Blvd would improve the Level of Service at this location. LOS A conditions can be maintained under "EPAP Plus Phase 1" conditions, while LOS C is forecast with Phases 1 + 2.

Mitigation: **Mitigation 2** which prescribes the creation of a second northbound through lane, will also mitigate impact 5. With implementation of Mitigation 2 the project's **impact is less than significant**.

Impact 6: The Level of Service at the **Amazing Facts / Sierra College Blvd Access intersection** will be poor if there is only one northbound (eastbound) lane available on Sierra College Blvd. LOS E conditions are projected with Phase 1 and LOS F conditions are projected with Phase 2 of the project. As the overall Level of Service reaches LOS D with Phase 2, this is a **significant impact**.

Discussion: The addition of a second through lane would yield LOS C conditions for northbound exiting traffic under both Phase 1 and Phases 2, and the overall Level of Service would be LOS A.

Mitigation 6: A second northbound through lane on Sierra College Blvd at this intersection will mitigate this impact. With implementation of Mitigation 6 the project's **impact is less than significant**.

CUMULATIVE TRAFFIC IMPACTS

Two different scenarios were investigated to address cumulative traffic conditions and impacts. In Roseville, the cumulative analysis addressed Year 2020 conditions as identified under the Roseville CIP traffic model. This scenario assumes implementation of circulation system improvements already included in that city's CIP. For locations in Rocklin, the cumulative analysis accounts for future regional traffic growth and development as projected by the Year 2025 City of Rocklin regional travel demand forecasting model.

Year 2020 Cumulative Impacts (City of Roseville)

The City of Roseville evaluates long term traffic impacts based on information developed from the traffic model maintained for the City's 2020 CIP. The City maintains traffic volume forecasts on a weekday p.m. peak hour basis and is able to identify intersection specific improvements assumed to be in place by the year 2020.

Approach. The approach taken to evaluate Saturday conditions in the year 2020 makes use of the city's weekday p.m. peak hour forecasts. Baseline year 2008 and year 2020 weekday peak hour traffic volumes were obtained for the three study intersections in Roseville. The volume of traffic on each intersection approach was identified, and the resulting 2008-2020 growth factor on each approach was calculated. These growth factors were assumed to be applicable for Saturday conditions, and the growth factors were applied to existing Saturday peak hour intersection turning movement traffic volumes to create Year 2020 intersection turning movements.

The development of future year intersection turning movement traffic volumes requires that the turning movements at each intersection "balance". To achieve the balance, inbound traffic volumes must equal the outbound traffic volumes, and the volumes must be distributed among the various left-turn, through, and right-turn movements at each intersection. The "balancing" of future year intersection turning movement traffic volumes was conducted using methods described in the Transportation Research Board's (TRB's) National Cooperative Highway Research Program (NCHRP) Report 255, *Highway Traffic Data for Urbanized Area Project Planning and Design*. The NCHRP 255 method applies the desired peak hour directional volumes to the intersection turning movement volumes, using an iterative process to balance and adjust the resulting forecasts to match the desired peak hour directional volumes.

The Roseville CIP identifies improvements to intersections on Sierra College Blvd within the City of Roseville. At the Douglas Blvd / Sierra College Blvd intersection it is assumed that dual left turn lanes will be developed on both Douglas Blvd approaches and that a separate southbound right turn lane will be installed.

Year 2020 Plus Project Traffic Impacts. The impact of developing Amazing Facts Church has been evaluated under year 2020 conditions by superimposing project traffic onto the baseline Saturday peak hour condition. Figure 8 presents Year 2020 Saturday volumes with and without project. Resulting Levels of Service are shown in Table 10. As indicated, the addition of project

traffic does not result in any location operating at a Level of Service that exceeds the City's minimum standard. Because projected conditions do not exceed adopted standards, the impact of Amazing Facts at these locations is not significant under Year 2020 conditions.

**TABLE 10
CUMULATIVE YEAR 2020 (ROSEVILLE)
SATURDAY INTERSECTION LEVELS OF SERVICE**

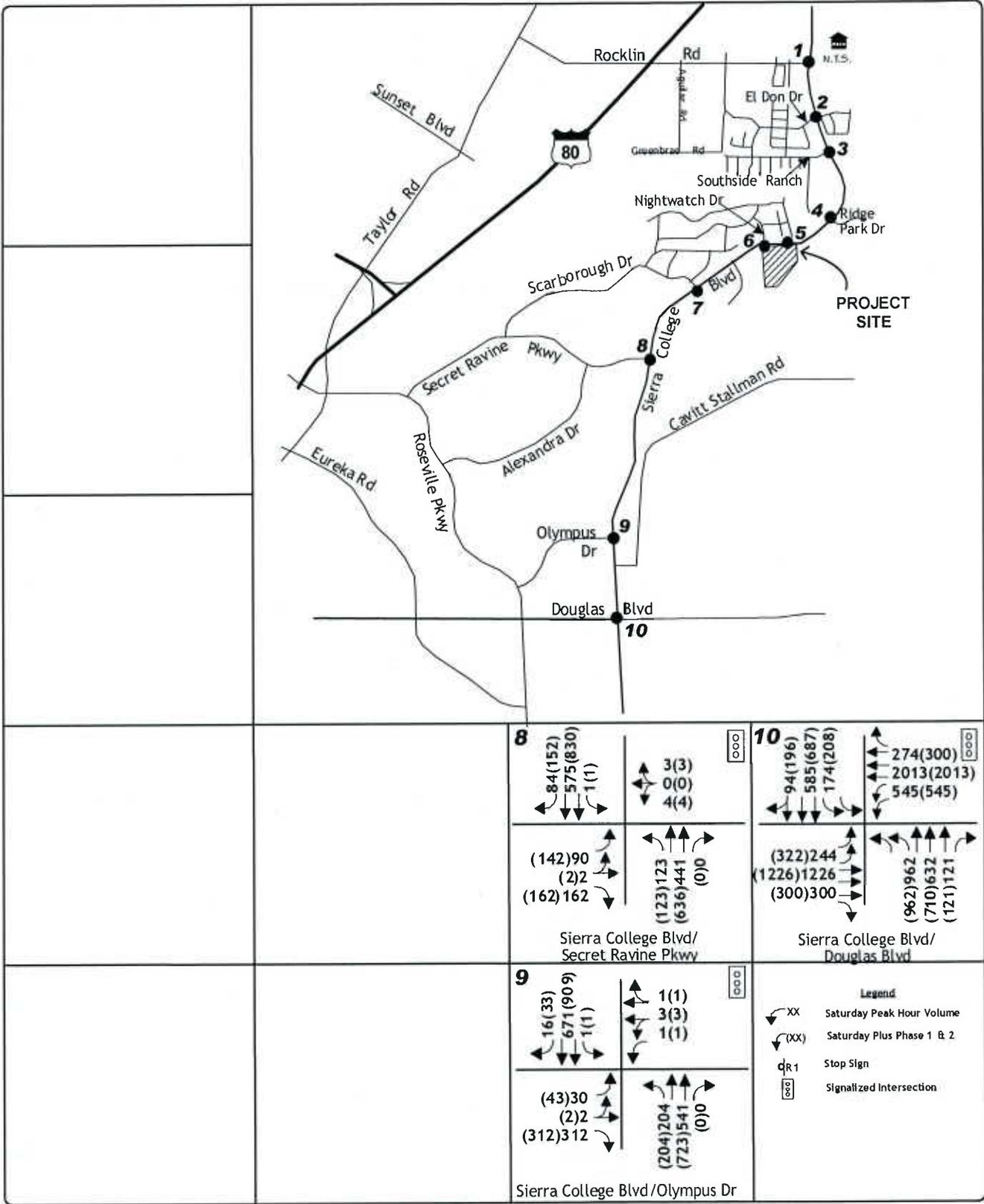
Intersection	Control	No Project		Year 2020 Plus Amazing Facts Church	
		LOS	Volume / Capacity	LOS	Volume / Capacity
Sierra College Blvd / Secret Ravine Parkway	Signal	B	14.8 sec	B	13.7 sec
Sierra College Blvd / Olympus Drive	Signal	B	17.3 sec	B	16.4 sec
Sierra College Blvd / Douglas Blvd	Signal	D	42.9 sec	D	49.6 sec

Year 2025 Cumulative Traffic Conditions

Traffic Volume Forecasts. The City of Rocklin maintains a long term travel demand forecasting model. That model was the basis for long term cumulative Saturday peak hour traffic volume forecasts contained traffic impact studies prepared for projects in the City, including the Draft Rocklin Crossing traffic study. Because the balance of the land in Rocklin south of the Rocklin Road is built out, it is possible to use the growth increment derived from the Rocklin Crossing forecasts to estimate traffic volumes at study area intersections using the NCHRP 255 techniques.

City of Rocklin staff indicated that the Rocklin Crossing traffic study was the best available source of long term traffic volume forecasts when the Amazing Facts traffic study was initiated. Since that time, the Draft Rocklin Crossings study was revised and an EIR was prepared for Rocklin Commons, another major retail center near the I-80 / Sierra College Blvd interchange. Cumulative Saturday traffic volume forecasts from those reports were reviewed to determine the extent to which these other data sources may suggest alternative conditions. Review of this data indicated that in the area of Rocklin Road, the volume of peak hour Saturday traffic on Sierra College Blvd in the Final Rocklin Crossings traffic study and in the Rocklin Commons traffic study was similar to or less than that forecast in the Draft Rocklin Crossings report. Thus, it was conservatively assumed that no additional impacts would be identified based on the use of this newer data.

KDA



CUMULATIVE YEAR 2020 SATURDAY
 SATURDAY TRAFFIC VOLUMES
 AND LANE CONFIGURATIONS

figure 8

As with any regional travel demand forecasting model, assumptions are made for the development of currently vacant lands both inside and outside of local jurisdictions. Information generated by the Sacramento Area Council of Governments (SACOG) is the primary resource for the numerous counties within the Rocklin model's physical limits. Locally, the City of Rocklin provides input as to the level of development to assume within its jurisdiction. While 100% build out of all empty parcels is not expected within the model's year 2025 horizon, development throughout the community is reflected in the model's land uses. In addition, the Rocklin Crossing traffic study identified specific development projects that were assumed to be fully developed. These projects are noted in Table 11.

**TABLE 11
CUMULATIVE PROJECTS**

Cumulative Project	Total Acres	Residential Land Uses (units)	Commercial / Industrial Land Uses (acres)	Population (persons)
Rocklin Crossings	59.0	0	59.0	0
Croftwood Estates Development	83.3	156	0	427
Rocklin 60 Development	56.9	179	0	490
Sierra College Boulevard / I-80 Interchange	N/A	0	0	0
Sierra College Center	9.83	0	9.83	0
Placer Vineyards Specific Plan	5,230	14,132	600	33,000
Placer Ranch Specific Plan	2,213	6,758*	740	18,280
Regional University and Community Specific Plan	1,136	4,387*	45	Unknown
West Roseville Specific Plan	3,162	8,390	177.2	20,810
Morgan's Orchard at Secret Ravine	15.9	68	0	186
Total	11,906.9	34,070	1,572.03	73,193
*Includes university student housing				

Figure 9 presents background long term cumulative background traffic volumes at study intersections.

Future Improvements. The long term plan for Sierra College Blvd is a 6 lane controlled access arterial in the vicinity of Amazing Facts. The South Placer Regional Transportation Authority (SPRTA) fee program is expected to fund a portion of this work, and \$39.6 million in regional fees is slated to fund the widening of Sierra College Boulevard from SR 193 to the Sacramento/Placer County line. However, in the area of Amazing Facts the program specifically excludes the 3rd lane in each direction and instead suggests that this work will be the responsibility of the local jurisdiction and fronting developers.

A conservative approach has been taken with regards to assumed improvements. Because there is no guarantee that right of way will be available to widen Sierra College Blvd in Loomis nor that local agencies and fronting developers will install the improvements that are not funded directly by

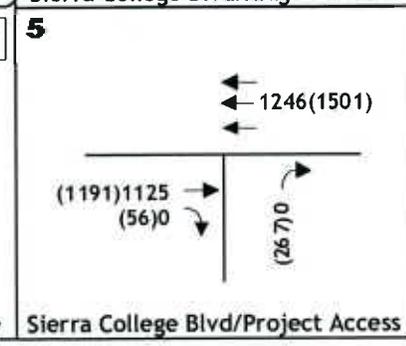
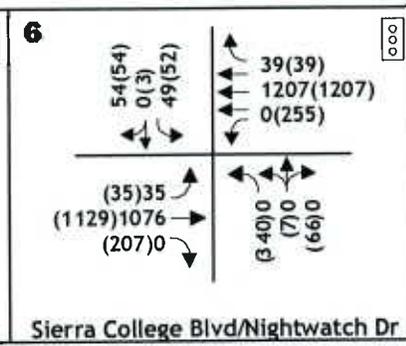
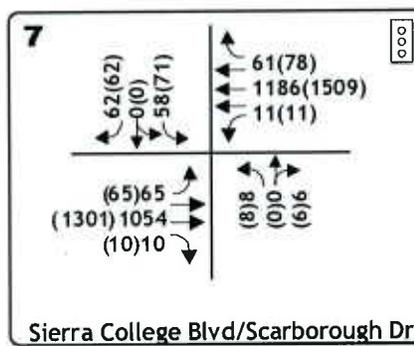
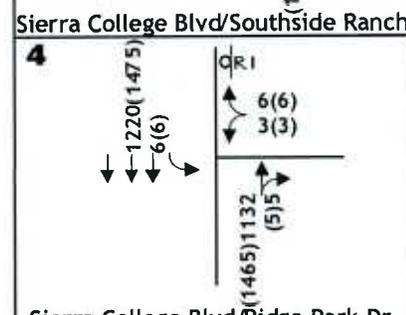
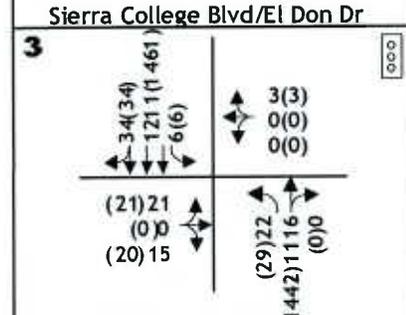
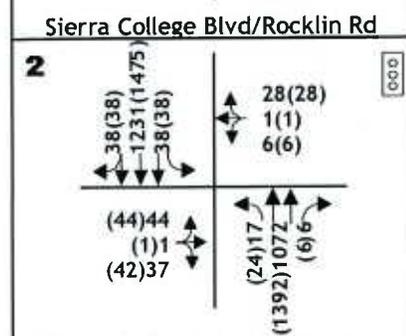
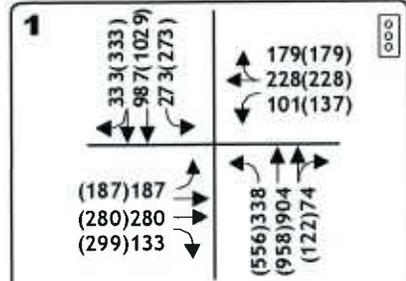
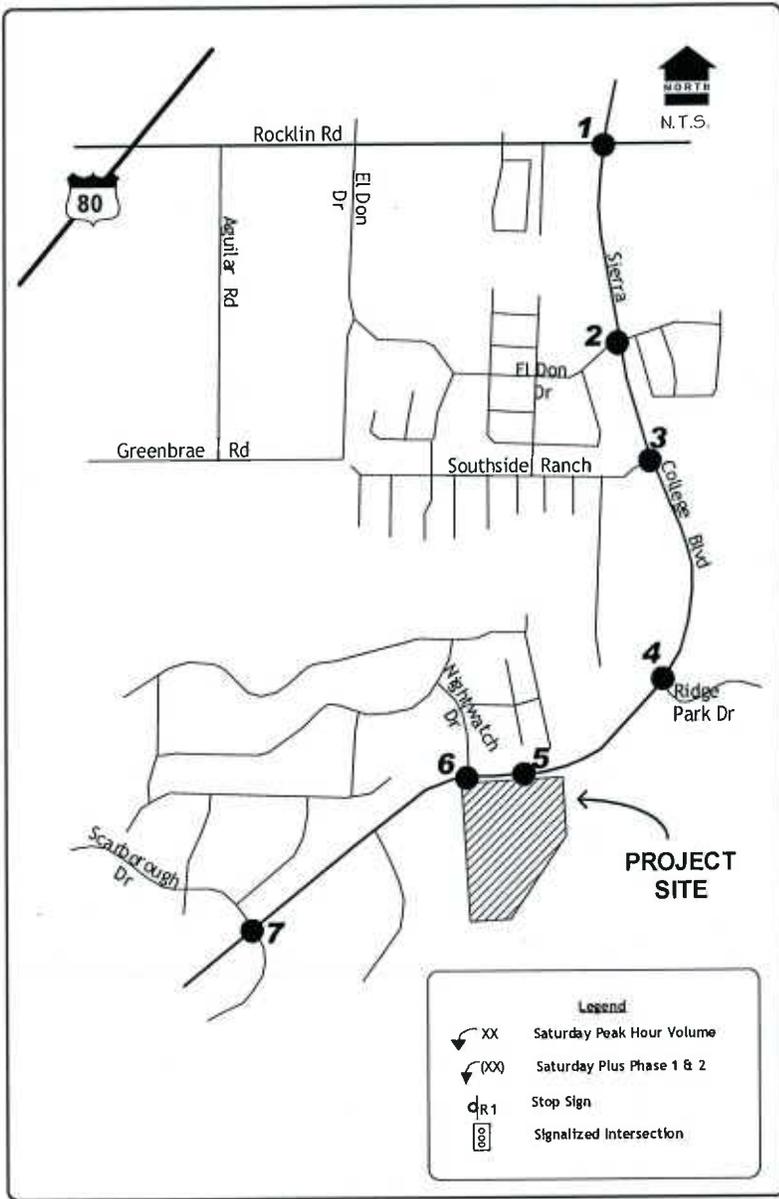
SPRTA fees, it has been assumed that no additional improvements will be installed on Sierra College Blvd beyond those improvements noted under the baseline EPAP condition.

Year 2025 Plus Project Traffic Conditions. Figure 9 also superimposes Amazing Facts traffic (phase 2) onto background year 2025 traffic volumes to create the Year 2025 Plus Project condition. Table 12 summarizes Saturday Levels of Service under Year 2025 conditions. As noted, five locations would be impacted by the project.

**TABLE 12
CUMULATIVE YEAR 2025 SATURDAY INTERSECTION LEVELS OF SERVICE**

Intersection	Control	No Project		Year 2025 Plus Amazing Facts Church	
		LOS	Volume / Capacity	LOS	Volume / Capacity
Sierra College Blvd / Rocklin Rd	Signal	F	1.16	F	1.33
	Mitigated ⁽¹⁾	C	0.72	C	0.76
Sierra College Blvd / El Don Dr	Signal	A	0.47	A	0.58
Sierra College Blvd / Southside Ranch Road	Signal	D	0.81	F	1.05
	Mitigated ⁽²⁾	A	0.42	A	0.54
Sierra College Blvd / Ridge Park Drive WB left+right turn	WB Stop	(A) D	(0.1 sec) 29.9 sec	(A) F	(0.2 sec) 51.7 sec
	Alternative ⁽³⁾			D	33.1 sec
	Alternative ⁽⁴⁾			C	15.1 sec
	Alternative ⁽⁵⁾			D	32.5 sec
	Alternative ⁽⁶⁾			C	20.5 sec
Sierra College Blvd / Access	NB Stop			(F) F	(75.7 sec) 598.0 sec
	Mitigated ⁽³⁾			(A) C	(2.7 sec) 21.7 sec
Sierra College Blvd / Nightwatch Drive	Signal	C	0.79	F	1.21
	Mitigated ⁽²⁾			C-D	0.80
	Mitigated ⁽³⁾			C	0.71
Sierra College Blvd / Scarborough Drive	Signal	A	0.44	A	0.53

⁽¹⁾ Add second northbound left and third northbound through lane. Add third southbound through lane and separate southbound right turn lane. Add second westbound through lane. (fair share / SPRTA)
⁽²⁾ Add second northbound through lane. (SPRTA)
⁽³⁾ Add second and third northbound through lane on Sierra College Blvd. (SPRTA)
⁽⁴⁾ Add second northbound through lane and restrict access to right turns.
⁽⁵⁾ Add second and third northbound lanes and widen Ridge park Drive to separate left and right turns.
⁽⁶⁾ Add second northbound lane and widen Sierra College Blvd to create southbound left turn receiving lane.



CUMULATIVE YEAR 2025 SATURDAY TRAFFIC VOLUMES AND LANE CONFIGURATIONS

KD Anderson & Associates, Inc. Transportation Engineers

The length of delays at the Sierra College Blvd / Ridge Park Drive intersection will increase in the future with and without the traffic generated by Amazing Facts. The Level of Service for motorists waiting at the intersection is projected at LOS D without the project and LOS F with Amazing Facts. However, as the overall Level of Service for all traffic at the intersection will remain LOS A, the impact of Amazing Facts traffic at this location is not significant.

The alternatives for improving the operation of this location are similar to those noted under EPAP conditions.

Sierra College Blvd Widening. Adding a second and third northbound lane through the intersection, as envisioned under the SPRTA program, would reduce delays at the intersection but would not yield LOS C. However, as noted in the discussion of EPAP impacts, the availability of existing right of way for widening the road is unknown.

Access Restrictions. The City of Rocklin's expectation is that turning movements at unsignalized locations on Sierra College Blvd will eventually be limited to right turns in and out only using a raised median on Sierra College Blvd. This improvement would result in LOS C conditions for motorists on Ridge Park Drive when a second northbound lane is also installed on Sierra College Blvd. The second northbound lane is included in SPRTA funding.

Widen Ridge Park Drive. Providing space on Ridge Park Drive for separate left and right turns would reduce delays slightly but would not result in LOS C conditions.

Widen Sierra College Blvd to add a second northbound through lane and Create a Receiving Lane on SB Sierra College Blvd. Widening the existing median area to permit "two-step" left turns from Ridge Park Drive onto southbound Sierra College Blvd while concurrently adding a second northbound through lane would reduce the length of delays at this location and the Level of Service for exiting Ridge Park traffic could be improved to LOS C.

Cumulative Year 2025 Plus Project Impacts / Mitigations

Impact 7: If no improvements are made, the **Sierra College Blvd / Rocklin Road** intersection would operate at LOS F with and without the Amazing Facts project. Because the incremental change in v/c ratio resulting from the project exceeds the City of Rocklin's 0.05 v/c threshold, **project's impact to this location is considered significant.**

Discussion: The extent of intersection improvements needed at this location to deliver conditions meeting the minimum LOS C standard has been considered. While various combinations of new lanes might yield LOS C and the ultimate decision as to intersection geometry rests with the City of Rocklin, at a minimum, the following additional lanes would be needed to achieve LOS C:

- On the northbound Sierra College Blvd approach add a second left turn lane and add a third through lane, for a total of five lanes. The second left turn lane is already identified as Mitigation 1.

- On the southbound Sierra College Blvd approach add a third through lane and a separate right turn lane, for a total of five lanes. The third through lane is included in the SPRTA fee program. The southbound right turn lane is identified as Mitigation 3.
- On westbound Rocklin Road add a second through lane for a total of three lanes (i.e., left turn, through lane and through +right turn lane).

Mitigation 7: Amazing Facts shall contribute its fair share to the cost of adding a third southbound lane by paying SPRTA fees and will contribute its fair share to the cost of adding a westbound through lane. . However, Placer County has no control over the timing of installation of this improvement. Therefore, payment of a fair share fees does not guarantee that this improvement will be constructed in the future. For this reason, the impact to the Sierra College Boulevard/Rocklin Road intersection shall remain **significant and unavoidable**.

Impact 8. Without improvements, the Level of Service at the **Sierra College Blvd / Southside Ranch Road intersection** would reach LOS D without the project and LOS F with Amazing Facts. Because the incremental change in v/c is greater than 0.05, the project's impact to this location is significant.

Discussion: While the long term plan for this area of Sierra College Blvd features three northbound lanes, LOS C can be achieved under Year 2025 Saturday conditions by adding a second northbound through lane, as discussed under EPAP plus project conditions.

Mitigation: Mitigation 4 will also mitigate this impact. With this mitigation the project's **impact is not significant**.

Impact 9: Without improvements, the overall Level of Service at the **Sierra College Blvd / Amazing Facts Access intersection** would be LOS F on Saturday in 2025. This condition exceeds the minimum LOS C standard and is a **significant impact**.

Discussion: Widening Sierra College Blvd to provide three northbound through lanes at the project access is needed to achieve LOS C.

Mitigation 9: Amazing Facts shall widen its Sierra College Blvd frontage to provide the room for three northbound lanes through the access intersection. With implementation of this mitigation measure, the project's **impact is less than significant**.

Impact 10: The **Sierra College Blvd / Nightwatch Drive intersection** is projected to operate at LOS C without the Amazing Facts project, but without improvements would operate at LOS F with Amazing Facts. As this exceeds the minimum LOS C threshold, **the project's impact is significant**.

Discussion: Widening Sierra College Blvd to add a second and third northbound lane through the Nightwatch Drive intersection would result in conditions that satisfy the City of Rocklin's minimum LOS C requirements.

Mitigation 10: Amazing Facts shall widen Sierra College Blvd along its frontage to provide the width needed for three northbound lanes. With implementation of this mitigation measure, the project's **impact is less than significant.**

SAFETY / ACCESS DESIGN EVALUATION

Key issues associated with the safe operation of this project along Sierra College Blvd have been considered.

Evaluation of Key Issues

Sight Distance at Project Access. The available sight distance at the proposed project access was determined through engineering evaluation of the proposed site plan and compared to applicable City of Rocklin (i.e., Caltrans) standards. While current topography makes it impossible to field measure the sight distance that will be available at the site access once Sierra College Blvd frontage improvements are made, it has been determined by the project's engineer that approaching eastbound vehicles will be visible to exiting motorists leaving Amazing Facts at a point beyond the Nightwatch Drive intersection. The available sight distance (i.e., 650 feet) will satisfy Caltrans requirements for the design speed of Sierra College Blvd (i.e., 600 feet at 55 mph). (Refer to Caltrans Highway Design Manual (HDM) Corner Sight distance requirements Table 4.05.1A).

Driveway Throat Depth. The site plan proposes two connections to the Nightwatch Drive extension and one connection to Sierra College Blvd. In each case, the driveway throats will be designed to store waiting vehicles without blocking the path of entering traffic. Review of the project site plan indicates that the throat on the new Sierra College Blvd access will be approximately 175 feet long. This dimension allows room for 7 to 5 exiting vehicles in queue before entering traffic may be blocked.

Queue length is a by-product of Level of Service calculation. Review of the Level of Service calculations made for this location indicates that a 95th percentile queue of 6 vehicles could occur under EPAP plus Phase 2 conditions with two northbound lanes on Sierra College Blvd, while a 95th percentile queue of 5 vehicles is forecast under 2025 plus Phase 2 conditions when Sierra College Blvd is widened to provide 3 northbound lanes. Thus, the site plan is adequate and no changes are needed.

Need for Left Turn Lane into the Project Site from Nightwatch Drive. The site plan offers the opportunity for entering traffic to turn left into the site's parking fields from the Nightwatch Drive extension. If only one inbound lane was available, it is possible that left turning traffic could occasionally be delayed by exiting northbound traffic waiting at the Nightwatch Drive signal. To avoid congestion at this location, the Nightwatch Drive extension has been made wide enough to provide the opportunity for southbound through traffic to continue past left turning vehicles waiting to turn at the more northerly access intersection (i.e., southbound lane is 18 feet wide). No changes to the plan are needed.

Nightwatch Drive Approach Lanes. The Nightwatch Drive extension is planned with northbound two lanes approaching Sierra College Blvd. These lanes extend to the northern parking areas access to minimize peak period congestion. The available distance (i.e., 400 feet in each lane) is adequate to accommodate the peak traffic conditions, and no changes to the plan are needed.

Sierra College Blvd Right Turn Lanes. Before Sierra College Blvd is fully improved to a 6 lane road, the area along the project's frontage should be striped to provide a separated right turn lane into the site. The proposed plan places the right turn lane at a location that will perpetuate a separate right turn lane when the road is striped for three eastbound through lanes. No changes to the plan are needed.

Design Issues

Design of Sierra College Blvd Lane Drop. While the length of the project's frontage is appreciable (i.e, 800 feet), based on information contained in Figure 3B-12 of the California Manual of Uniform Traffic Control Devices (MUTCD), a distance of 1,075 feet is required to accommodate the required "lane end" arrows in the area of a lane drop and to transition back to a single lane. Thus, in order to carry two northbound lanes through the Nightwatch Drive intersection and safely transition to a single northbound lane, it will be necessary to widen a portion of Sierra College Blvd in the area immediately north of the project site. This widening is noted on the proposed plan, and no changes to the plan are needed.

Length of southbound Left Turn Lane on Sierra College Blvd. A left turn lane into the project site will be needed on Sierra College Blvd approaching the Nightwatch Drive intersection. The lane will need to be long enough to accommodate the peak arrival characteristics of a church and should make some provision for deceleration. Caltrans Highway Design Manual (HDM) standards for left turn lanes suggest providing 275 feet of deceleration length prior to a stop at 35 mph, 375 feet to stop at 45 mph and 485 feet to come to a stop from 55 mph, although these design guidelines recognize that lesser distance is needed on sustained uphill grades. Under Caltrans standards these requirements are satisfied by a combination of left turn lane and its bay taper.

The length of queues in the left turn lane is dependent on the schedule of church activities. The anticipated queues under both EPAP Plus Phase 2 and Year 2025 Plus Project conditions. The queues under each condition would be similar. Assuming that the traffic arriving at the church was concentrated into a twenty minute period, the queue could be expected to contain 20 vehicles and could be 500 feet long. Because southbound Sierra College Blvd is on an uphill grade, some deceleration can be assumed in the through lane. Under the proposed design, the 500 foot queue will be accommodated along with deceleration to a stop from 35 mph. Together the turn lane and bay taper are 775 feet long. No changes to the proposed plan are needed.

APPENDIX

KDA

May 19, 2011

Ms. Stephanie Holloway, Associate Civil Engineer
PLACER COUNTY DEPARTMENT OF PUBLIC WORKS
 3091 County Center Drive, Suite 220
 Auburn, CA 95603

RE: AMAZING FACTS CHURCH DEIR: SUPPLEMENTAL TRAFFIC INFORMATION.

Dear Ms. Holloway:

As we have discussed, Placer County has asked for clarification of four (4) issues associated with the traffic impact analysis prepared by KD Anderson & Associates for the Amazing Facts Church project. The information which follows is intended to: (1) address project phasing; (2) address the changes to the area circulation system that have occurred since the traffic study was prepared; (3) clarify the nature of trip generation based on a more detailed description of weekday activities at the site; (4) clarify the traffic impacts associated with Saturday worship services; and, (5) assist with the evaluation of the project's Air Quality and Noise Impacts.

Project Phasing

When the traffic study was prepared the project was expected to be developed in three phases. Phase 1 was to include 1,300 seats. The maximum number of seats for Saturday service was expected to be realized with Phase 2 (i.e., 2,000 seats), although additional building area was planned in Phase 3. The current phasing proposal completes the project in two phases but retains the same number of seats in Phases 1 and 2. Table A identifies the revised trip generation table for the two phase project. Because the Saturday analysis was based on trip generation derived from the number of seats, the change in phasing has no effect on the traffic impact analysis.

**TABLE A
 TRIP GENERATION RATES / FORECASTS BY PHASE**

Land Use	Unit / Quantity	Trip Generation						
		Daily	Saturday Peak Hour			Weekday P.M. Peak Hour		
			Inbound	Outbound	Total	Inbound	Outbound	Total
Church (ITE)	Seats	1.85	43%	57%	0.60	-	-	-
	ksf	-	-	-	-	52%	48%	0.66
Phase 1	1,300 seats	2,405	335	445	780	-	-	-
	118.0 ksf	-	-	-	-	40	38	78
Phase 1+2	2,000 seats	3,700	516	684	1,200	-	-	-
	208.0 ksf	-	-	-	-	71	66	137
Weekday p.m. trip generation rates based on ksf as no "per seat" rate is available ITE Sunday "daily" rate employed for Saturday								

Recent Circulation System Improvements

The traffic impact analysis that is the basis for the DEIR's Transportation Section was initiated in 2007 and finalized after County review and input in 2010. Traffic volume counts made in 2007 are the primary basis for the existing setting. Because these counts are now 4 years old, the need for updated data was considered. The decision to use the available data was made for several reasons. First, while new traffic count data might have been collected, the City of Rocklin's Sierra College Blvd widening project was underway while the study was being reviewed, and the lane closures / detours implemented at that time would have altered local travel patterns. Second, the current economic downturn has resulted in reduced traffic volumes on regional state, county and city facilities. Placer County staff has considered the issue on other projects and has determined that the volume of traffic on many roads has in fact dropped. Because of these factors, the traffic count data included in the traffic study has been judged to continue to represent "current" conditions.

The traffic study / DEIR identify the area circulation system as it existing when the analysis was prepared. However, with the recent completion of the Sierra College widening project, the configuration of some streets and intersections are now different from those identified in the Setting section of the traffic study. For example, the intersection geometry at Sierra College Blvd / Rocklin Road now includes additional southbound lanes, and the two northbound through lanes at the Sierra College Blvd / El Don Street intersection are now fully useable with the widening of the culvert north of the intersection. While the traffic study does not reflect the immediate effect of these improvements, they are reflected in the long term improvements noted under cumulative conditions. These Sierra College Blvd improvements would have the affect of increasing the capacity of each intersection and potentially improving the Level of Service at each location.

The traffic analysis was not revised to reflect the new improvements. Because this construction would improve traffic operating conditions, the impacts and mitigation previously identified in the traffic study represent a "worst case" assessment of the effects of Amazing Facts. No new traffic impacts or additional mitigation measures would be expected if the analysis was revised. By basing the impact analysis on the unimproved condition, the relative need for Amazing Facts "fair share" participation in the cost of both recent and future improvements can be established.

Weekday Trip Generation

Methodology. As we have discussed, the amount of weekday vehicular traffic typically associated with churches is less than that occurring on the day when worship services are held. In this case, Amazing Fact's services are held on Saturdays, but some trips will be generated on weekdays as part of their normal activities, and some additional ancillary events may also occur on Sundays.

The DEIR traffic study identified the number of weekday p.m. peak hour trips typically associated with a church of this size based on ITE rates contained in the 7th and 8th Edition of the Trip Generation Manual, but in order in order to finalize the project's Air Quality analysis an

KDA

estimate of weekday daily trip generation is also needed. Because ITE weekday trip generation rates for churches do not directly account for specific weekday activities, you have asked for a project “pro forma” that could identify the scale and range of on-site activities and could be used to affirm weekday daily and p.m. peak hour trips generation forecasts derived from ITE data.

The project proponents have assembled a “pro forma” (see Attachment 1) for site activities that would be in addition to the trips associated with typical weekday travel by on-site employees and typical Saturday services. The pro forma identifies specific ancillary activities, the estimated number of persons who might be involved and the typical schedule for each activity. By applying representative automobile occupancy rates to expected attendance, it is possible to estimate the daily and peak hour trip generation associated with these ancillary uses.

The project will also generate regular weekday traffic by the employees working on-site. Their trip generation has been estimated using ITE rates for a use that would be similar (i.e., single tenant office building). Regular truck activity is also noted. The total site trip generation is the sum of employee trips and trips associated with the ancillary activities.

Regular Weekday Trip Generation. The day to day trip generation for churches is intended to include all activities, including staff travel, but the range of functions occurring at a church on any day can vary greatly. ITE rates are available on a “per ksf” or “per seat” basis, but the daily results vary greatly. Table 1 identifies ITE trip generation rates for churches, while Table 2 identifies the trips generation forecasts on a daily weekday and p.m. peak hour basis.

Looking at specific uses, the trips generated by the day to day activities of church employees can be considered to be similar to those associated with persons working in a single tenant office building (ITE code 715). Assuming 97 employees (Monday thru Thursday), regular staff activities would generate 503 weekday trips, with 75 trips occurring in the p.m. peak hour. While regular church office functions do not occur on Friday or Sunday, some staff may be on site to oversee other activities on those days. These 5 employees could generate 26 daily trips on those days, with 4 trips in the p.m. peak hour. Deliveries by truck have also been identified. The project proponents suggest that up to 14 truck trips might occur (Monday thru Thursday) with 10% of that traffic in the p.m. peak hour. The total of staff and truck traffic is 78 trips. The difference between these trips and the total suggested by ITE church trip generation rates (i.e., 137 less 78 is 59 trips) would be assumed to be generated by various ancillary uses.

TABLE 1 ITE WEEKDAY TRIP GENERATION RATES					
Use (ITE code)	Unit	Weekday Trip Generation Rates			
		Daily	PM Peak Hour		
			In	Out	Total
Church (560)	Ksf	9.11	52%	48%	0.66
	seat	0.61	n.a.	n.a.	n.a.
Single Tenant Office (715)	Employees	5.19	15%	85%	0.78

KDA

TABLE 2 WEEKDAY TRIP GENERATION FORECASTS BASED ON ITE RATES					
Use (ITE code)	Quantity	Weekday Trip Generation			
		Daily	PM Peak Hour		
			In	Out	Total
Church (560)	208 ksf	1,895	71	66	137
	2,000 seats	1,220	n.a.	n.a.	n.a.
Church staff	97 employees (M-Th)	503	11	65	76
	5 employees (Fri-Sun)	26	0	4	4

Weekday PM Peak Hour Trips Associated with Ancillary Uses. As noted in Attachment 1, project proponents identified twenty ancillary uses that are anticipated to occur at the listed days and times as part of the regular programming at Amazing Facts Church. Assumptions have been made as when travel to and from the site would accompany these activities. As shown, few of these activities would result in trips during weekday p.m. peak hours (i.e., 4:00 p.m. to 6:00 p.m.), as most weekday events occur midday or later in the evening.

The Evangelism Mission Training Center (EMTC) is the primary ancillary activity generating weekday p.m. peak hour trips. For two 4 month long periods each year 40 to 60 students would end classes during the p.m. peak hour. Assuming each student drove individually to and from the site, up to 60 p.m. peak hour trips could be generated in the evening peak hour when students departed. Added to the staff trips (76) and truck trips (2), the total trip generation forecast during the months with 60 student trips during the weekday p.m. peak hour (138 trips) would be very similar to that resulting from ITE rates for the site as a whole (i.e., 137 p.m. trips). Based on this comparison, is it reasonable to conclude that the trips associated with the project’s EMTC are reflected in the information already presented in the DEIR.

Daily Trip Generation. To assist in identifying Air Quality impacts it was necessary to identify the number of trips generated by the site on a weekday, Saturday and Sunday basis. As noted in Attachment 1, the ancillary activities at Amazing Facts occur at various times on these days. To complete this estimate, the number of trips associated with each event was determined based on similar program attendance, average automobile occupancy rate, and because some parents may drop off children for youth activities and return later, the number of trips per attendee.

As noted in Attachment 1, the typical travel for each event was multiplied by the number of times the event occurs each week and by the number of weeks that the event may occur annually. As shown, ancillary activities and trucks could annually generate more than 106,000 vehicle trips occurring on weekdays, with another 72,000 trips occurring on weekends. For the purposes of Air Quality analysis, it is helpful to create annual average weekday and annual average weekend day trip generation estimates. As shown, dividing the total annual weekday trips by 260 annual weekdays yields the equivalent of 409 trips on the “average” weekday. Because no truck traffic

KDA

occurs on Fridays, the estimate for that day is lower (i.e., 399 trips). On weekends, a portion of the trips may be generated on Saturdays when regular worship services are also held and on Sundays when the ancillary uses would be the sole activity. For this analysis it has been assumed that 70% of the weekend trips from ancillary uses occur on Sunday and 30% occur on Saturday. Result trip generation forecasts for ancillary uses are 415 trips on Saturdays and 967 trips on Sundays.

Table 3 compares the average daily trip generation forecasts for the site developed from the pro forma with estimates derived from ITE rates. As shown, ITE rates for churches based on the number of seats and total building square footage suggest that the site could generate 1,220 to 1,895 daily trips on a weekday. In comparison, the sum of average staff trips, truck trips and average anticipated ancillary trip generation projections is 912 trips on Monday through Thursday and 993 trips on Sundays.

TABLE 3 DAILY TRIP GENERATION ESTIMATES							
	Annual Average Daily Trip Generation						
	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
<i>Forecasts from ITE rates</i>							
Total Project (ITE)	1,220 to 1,895					3,700	n.a.
<i>Forecasts from Pro Forma</i>							
Staff trips	503	503	503	503	26	0*	26
Ancillary Uses and trucks	409	409	409	409	399	415	967
Subtotal	912	912	912	912	425		993
Main church service						1,200	
Sabbath Classes						900	
Second Service						1,185	
* staff trips on Saturday included in ITE forecast							

Finally, this information can also be used to consider the extent to which Saturday trip generation forecasts derived from ITE rates can reasonably be assumed to include more than one worship service. Information provided by ITE to describe church trip generation does not indicate whether the data base was created from observations of churches with more than one service on the main day, although the presence of both inbound and outbound travel in the same peak hour suggests that multiple activities are occurring. As indicated, the DEIR traffic analysis suggests the site could generate 3,700 daily trips at full occupancy (i.e., 2,000 seats). In comparison, the sum of ancillary activities (415 trips), trips before and after one worship service (1,200 trips) and trips potentially associated with Sabbath Classes (900 trips) would be 2,515 trips. Compared to

KDA

the total of 3,700 trips, this sum would still leave 1,185 trips that could be assumed to be associated with a second service.

Daily Traffic Volumes on Sierra College Blvd

Daily Traffic volumes have been estimated for Sierra College Blvd for the purpose of noise impact analysis. These forecasts are presented in Table 4 and are based on the traffic volumes identified in the DEIR, the growth rates implied from peak hour Rocklin traffic model data and the directional distribution for Amazing Facts traffic assumed in the DEIR.

TABLE 4 SATURDAY TRAFFIC VOLUMES ON SIERRA COLLEGE BLVD		
Condition	Daily Traffic Volume	
	West of Amazing Facts	East of Amazing Facts
Existing	14,340	14,340
Existing Plus Project Phase 1 and 2 With 2,000 seats	16,190	16,150
Cumulative Year 2025	32,600	32,600
Cumulative Plus Amazing facts	34,450	34,415

Please feel free to contact me if you have any questions or need additional information.

Sincerely,

KD Anderson & Associates, Inc.



Kenneth D. Anderson, P.E.,
President

Attachment

cc: D. Cook, RCH Group

Amazing Facts Ministries, Granite Bay
 Estimated Square Footage & Probable Uses Pro Forma
 estimated daily trip generation (KDA 5/1/2011)
 Plus Estimated Annualized Trip Generation

Area/Phase	Approx Sq./Fl.	Days in use	Estimated Time of use	Estimated # People	use for calc	Est. Auto Occupancy	Weekday Daily Rate (ITE)	Weekday Daily Trips	days per week	weeks per year	annual trips	Weekend Daily Rate (ITE)	Weekend Daily Trips	days per weekend	weeks per year	annual trips	Weekday PM ?	Unit	ITE Code	Weekday PM ITE Rate/Unit	Trips		
Phase 1 - Multi-Use Building + Resource Center / Offices																							
Amazing Facts Offices (includes studio)		M-Th	8am - 6pm	85	85	1.00	5.19	441	4	52	91,759	5.19		1	52	1,349	YES	EMPLOYEE	(715)	0.78	86.3		
		Fr & Sun	8am - 10 pm	5	5	1.00	5.19	26	1	52	1,349	5.19	26										
Church Office Suite		M-Th	8am - 6pm	5	5	1.00	5.19	26	4	52	5,398						YES	EMPLOYEE	(715)	0.78	3.9		
FireSide Chapel		3x/wkly	7pm - 9pm	60	60	1.50		90	3	52	12,480						NO						
Church (Sabbath Classrooms) [1]		Sa	8am - 11am	450	450	1.50		900	1								NO						
Multi-Use Worship & Support Staff		Sa	9am - 1pm	1,300	1,300	2.50	0.61	793				1.85	3405				NO						
Sub Total	106,800				106.80		9.11	973				13.22	1412										
Resource Center / Offices	11,200	M-Th	8am - 6pm	7	7	1.00	5.19	36									YES	EMPLOYEE	(715)	0.78	5.5		
deliveries / shipping - pick-ups - SU trucks		M-Th	8am - 6pm	6	6	1.00		12	4	52	2,496						YES	TRUCKS			1.2		
deliveries / shipping - semi's		M-Th	8am - 6pm	1	1	1.00		2	1	52	104						YES	TRUCKS			0.2		
Sub Total	11,200				11.20		9.11	102				13.22	148										
Phase I Total	118,000																				77.3		
Phase 2 - Future Worship Building																							
	90,000	Sa	9am - 1pm	700	700	2.50	0.61	427				1.85	1295				NO						
Totals	208,000	[2]		[3]	90.00		9.11	820				13.22	1190										
Total weekday trips based on building kef and ITE rates								1,995					2750										
Total Weekday trips based on seats and ITE rates								1,220					3700										
Total weekday trips for employees based on ITE rates								503															
Total Saturday Trips based on ITE rates for building kef								26															
Total Saturday Trips based on ITE rates for # of seats																							
Anticipated Related Activities (Phase 1 and/or 2)																							
		Duration, Day or Frequency		[5]																			
Evangelism Mission Training Center	4 month sess	Mon - Th	8am - 5pm	40-60	60	1.00		120	4	35	16,800		0	0	0		YES	STUDENT			1 60.0		
Week of Prayer Meetings	nightly	Sun - Fri	7pm - 9pm	200-300	300	1.50		400	5	2	4,000		400	1	2		NO						
Christmas Programs	2 x day	Fri - Sun	7pm - 10pm	600-1,200	1,200	2.50		1,920	1	1	1,920		1,920	2	1		NO						
Seasonal Programs	2 x day	Fri - Sun	7pm - 10pm	300-600	600	2.50		960	1	2	1,920		960	1	2		NO						
Prophecy Seminars	nightly	Sat - Fri	7pm - 9pm	300-600	600	2.50		480	5	1	2,400		480	2	1		NO						
Health education programs	2 days	Sat - Sun	3pm - 5pm	100-400	400	1.50		-	-	-	-		533	2	3		NO						
Special weekend seminars	nightly	Fri - Sun	7pm - 9pm	300-600	600	1.50		900	1	10	9,000		900	2	10		NO						
Board meetings	1 day/month	Mon - Th	7pm - 9pm	15-20	20	1.00		40	1	11	440		0	0	0		NO						
Funeral/Memorial Services	1 day/week	Mo - Th	10am - 3pm	100-200	200	2.50		160	1	26	4,160		0	0	0		NO						
Special Events/Banquets	2 x month	Sat - Fri	7pm - 9pm	100-300	300	1.50		400	1	23	9,200		400	1	26		NO						
Community services meetings	any night	Mon - Th	7pm - 9pm	50-75	75	1.50		100	1	30	3,000		0	0	0		NO						
Weddings	weekends	Sat - Sun	3pm - 10pm	200-500	500	1.50		-	-	-	-		667	1	30		NO						
Pastoral counseling	any day	Sat - Th	8am - 9pm	2-5	1	1.00		10	1	52	520		0	0	0		MAYBE						
Pathfinder Club meetings (grades 5-8)	1 day/week	Mon - Th	7pm - 9pm	50-100	100	1.50		267	1	52	13,867		0	0	0		NO				0.2		
Various youth oriented meetings	any day/night	Sat - Th	10am - 6pm	15-50	50	1.00		150	1	52	7,800		0	0	0		MAYBE						
Indoor sports/banquets	2 days/week	Sat - Th	7pm - 9pm	50-100	100	1.50		200	1	52	10,400		200	1	52		NO						
Various small group classes/meetings [6]	1 days/week	Sat - Th	10am - 3pm	15-50	50	1.50		87	1	26	1,733		87	1	26		NO						
Various small group classes/meetings [6]	1 days/week	Sat - Th	7pm - 9pm	15-50	50	1.00		100	1	26	2,600		100	1	26		NO						
Pastoral staff meetings	1 day/week	Wed	1pm - 4pm	5-10	10	1.00		20	1	52	1,040		0	0	0		NO						
Prayer Meeting	1 day/week	Wed	7pm - 8pm	100-200	200	1.50		267	1	52	13,867		0	0	0		NO						

Notes:	106,267	71,853	total	137.3
Average weekday trips added by ancillary activities. Add to Employee trips				
Average Weekend daily trips added by ancillary activities				
average weekday	409	average Sunday	967	traffic study
Average Friday	390	Saturday 30%		
		Sunday 70%		
		Average Saturday	415	
		Sunday School	900	
		Before	516	
		After	684	
		subtotal	2515	
		remainder	1185	

[1] These 450 are also included with the 1,300 (Phase 1) and the 2,000 (Build-out) shown for Worship uses. Assume 1/2 of participants are dropped off and 1/2 drive to site
 [2] All square footage estimates include non-occupied/non-programmed spaces (e.g., mechanical, storage, etc.)
 [3] Number of people do not total - upon completion of Worship Building, Multi-use space will be used full-time to support listed Related Activities
 [4] Listed activities are currently-anticipated uses and may change as the congregation grows.
 [5] It is assumed that programs immediately following regular services will be attended by some percentage of those already present, and that activities with more than 300 attendees each will not be scheduled simultaneously unless adequate parking is available.
 [6] Topics and activities may include such things as healthful living, family life, financial responsibility, cooking classes, and sing-a-longs.
 [7] Total pm peak hour trips include pastoral counseling
 Source: Amazing Facts Ministries / Myhre Group Architects, Inc. / Shearer & Associates, Inc. (Mar. 2011)

ITE code 715 is Single Tenant Office Building