4.2 TRAFFIC AND CIRCULATION

This section summarizes the results of the traffic impact analysis and report prepared by LSA Associates, Inc. (LSA) for the proposed project (May 2008). A technical review of the traffic report was conducted by the traffic engineering firm, DKS Associates, for the City. The analysis presented herein examines the traffic impacts expected to result from the addition of vehicle traffic generated by the proposed project on the existing and existing plus approved project traffic conditions at surrounding intersections and roadway segments. "Approved projects," in this context, are land use and infrastructure projects that have received all discretionary approvals requiring environmental review. Mitigation measures for facilities significantly affected by the project are also identified in the section that follows.

4.2.1 EXISTING SETTING

STUDY AREA

The study area for the traffic analysis was developed in consultation with the City and based on input received on the project's Notice of Preparation. Arterial street intersections that were most likely to be affected by travel to and from the project site were included in the study area. Existing travel patterns in the project area that the project could affect were considered, including intersections located north of the study area within the Town of Loomis. Segments of I-80 and SR-65 were included in the study area at the request of the California Department of Transportation (Caltrans).

Of the 21 study area intersections, 12 are located within 0.5 mile from direct access to an interstate freeway. The City's level of service criteria for intersections located within 0.5 mile from direct access to an interstate freeway is LOS D, while the threshold for other intersections within the City is LOS C (see City of Rocklin General Plan Circulation Element, Policy 13).

Levels of service are analyzed at the following study area intersections for the a.m., p.m., and Saturday peak hours for each development scenario. Intersections within 0.5 mile from a freeway access location (where the LOS D standard would apply) are noted with an asterisk (*). The jurisdiction of intersections located outside of the City of Rocklin is indicated in parentheses after the intersection name.

► Pacific Street/Rocklin Road
► Granite Drive/Rocklin Road*
► I-80 westbound ramp/Rocklin Road*
► I-80 eastbound ramp/Rocklin Road*
► Dominguez Road (Del Mar Avenue)/Pacific Street
► Granite Drive/Dominguez Road
► Sierra College Boulevard/Taylor Road* (Loomis)
► Sierra College Boulevard/Brace Road* (Loomis)
► Sierra College Boulevard/Granite Drive*
► Sierra College Boulevard/I-80 Westbound Ramp*
► Sierra College Boulevard/I-80 Eastbound Ramp*
► Sierra College Boulevard/Dominguez Road* (Future Intersection)
► Sierra College Boulevard/Rocklin Road
► Horseshoe Bar Road/Taylor Road* (Loomis)
► Horseshoe Bar Road/I-80 Westbound Ramp* (Loomis)
► Horseshoe Bar Road/I-80 Eastbound Ramp* (Loomis)
► Barton Road/Brace Road (Loomis)
► Barton Road/Rocklin Road (Loomis)
► Sierra College Boulevard/King Road (Loomis)
► Sierra College Boulevard/English Colony Way (Placer County)
► Taylor Road/King Road (Loomis)

The following roadway segments were included in the study area. Roadway segments located within 0.5 mile of direct access to an interstate freeway, where LOS D is considered satisfactory, are noted with an asterisk (*). Roadway segments not under the City's jurisdiction are specified in parentheses.
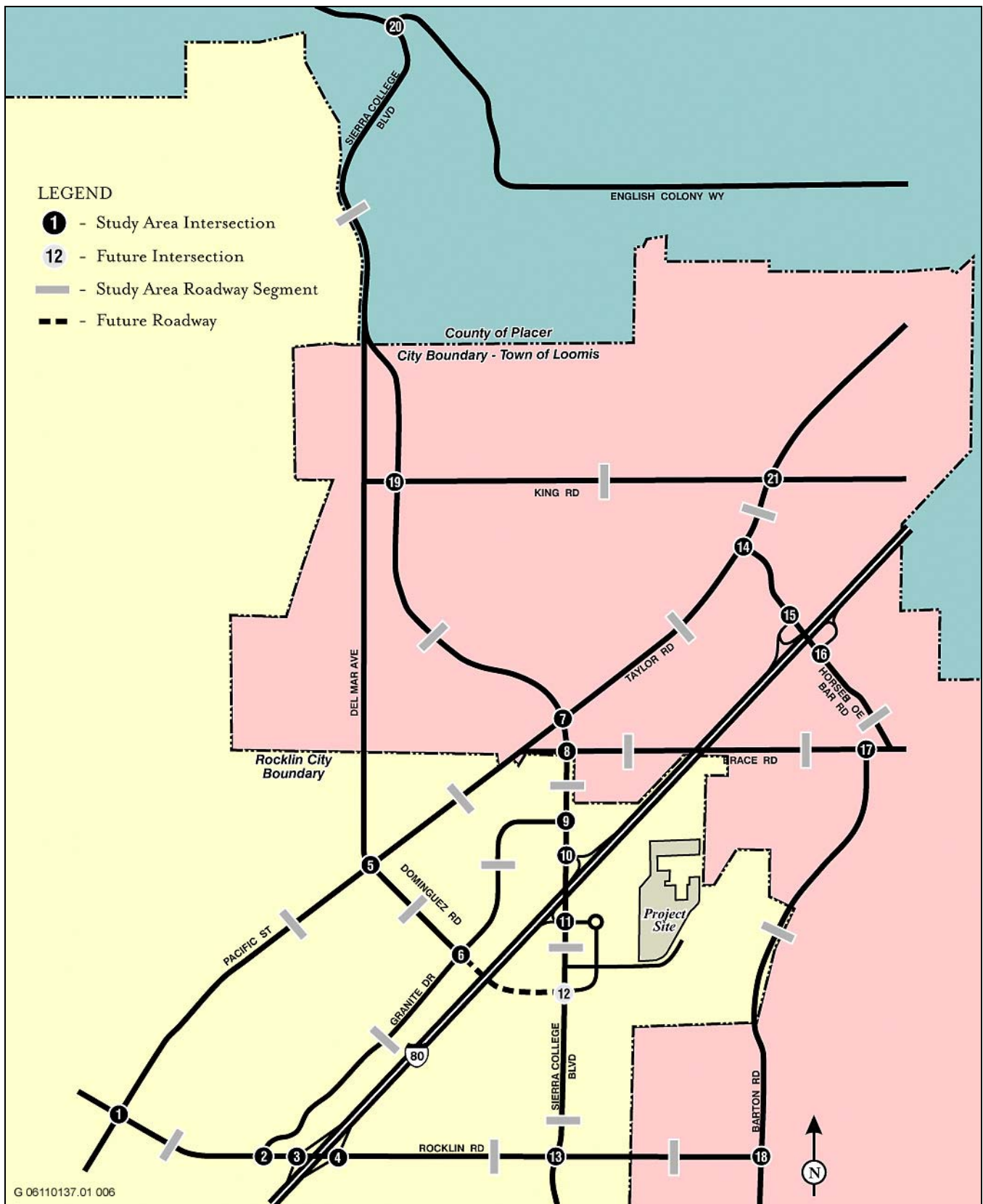
► Taylor Road between King Road and Horseshoe Bar Road (Loomis)
► Taylor Road between Horseshoe Bar Road and Sierra College Boulevard (Loomis)
► Taylor Road between Sierra College Boulevard and Dominguez Road
► Pacific Street between Dominguez Road and Rocklin Road
► Rocklin Road between Pacific Street and Granite Drive *
► Rocklin Road between I-80 and Sierra College Boulevard *
► Rocklin Road between Sierra College Boulevard and Barton Road (Loomis)
► Barton Road between Rocklin Road and Brace Road (Loomis)
► Horseshoe Bar Road between I-80 and Brace Road * (Loomis)
► Brace Road between I-80 and Barton Road (Loomis)
► Brace Road between I-80 and Sierra College Boulevard (Loomis)
► Sierra College Boulevard between English Colony Way and King Road (Placer County)
► Sierra College Boulevard between King Road and Taylor Road (Loomis)
► Sierra College Boulevard between Taylor Road and I-80 *
► Sierra College Boulevard between I-80 and Dominguez Road *
► Sierra College Boulevard between Dominguez Road and Rocklin Road
► Granite Drive between Dominguez Road and Sierra College Boulevard *
► Granite Drive between Dominguez Road and Rocklin Road *
► Dominguez Road between Taylor Road and Granite Drive *
► King Road between Sierra College Boulevard and Taylor Road (Loomis)

In addition to the analysis of daily capacities, an analysis of the a.m. and p.m. peak-hour directional volumes is included for roadway segments to determine if a segment is forecast to operate beyond the LOS C or D threshold. The a.m. and p.m. peak-hour volume/capacity ratios were evaluated based on per-lane capacity of 1,650 vehicles per hour, consistent with Highway Capacity Manual (HCM) methodology. The location of the study intersections and study roadway segments is illustrated in Exhibit 4.2-1.

ROADWAY NETWORK

The existing intersection geometrics and traffic control at study area intersections are illustrated in Exhibit 4.2-2. The roadways that would provide access to the project site are described below:

► **Interstate 80 (I-80).** I-80 is an interstate highway providing inter-regional access in the vicinity of the project site. Throughout the study area, I-80 generally travels in a southwest to northeast direction. Interchanges along I-80 near the project site are provided at Rocklin Road, Sierra College Boulevard, and Horseshoe Bar Road. The closest freeway access for the project site would be provided by the I-80/Sierra College Boulevard interchange.

► **Pacific Street.** Pacific Street is located west of Granite Drive and is a four-lane roadway from the southern City limits to Sierra Meadows Drive and a two-lane roadway north of Sierra Meadows Drive. Pacific Street is classified as an Arterial in the City General Plan Circulation Element and is classified as a Truck Route by the City. This roadway provides travel throughout the entire City limits. Pacific Street becomes Taylor Road east of Sierra College Boulevard.

► **Granite Drive.** Granite Drive is a four-lane southwest-northeast roadway located west of I-80. Granite Drive is classified as an Arterial in the City General Plan Circulation Element. Granite Drive runs from Rocklin Road in the south and terminates at Sierra College Boulevard just northwest of the project site. Granite Drive is classified as a Truck Route from Dominguez Road to Sierra College Boulevard.

LEGEND

1 – Study Area Intersection

12 – Future Intersection

▬ – Study Area Roadway Segment

▬ ▬ – Future Roadway

ENGLISH COLONY WY

County of Placer
City Boundary - Town of Loomis

SIERRA COLLEGE BLVD

KING RD

TAYLOR RD

HORSEB OE BAR RD

DEL MAR AVE

Rocklin City Boundary

BRACE RD

PACIFIC ST

DOMINGUEZ RD

GRANITE DR

Project Site

80

SIERRA COLLEGE BLVD
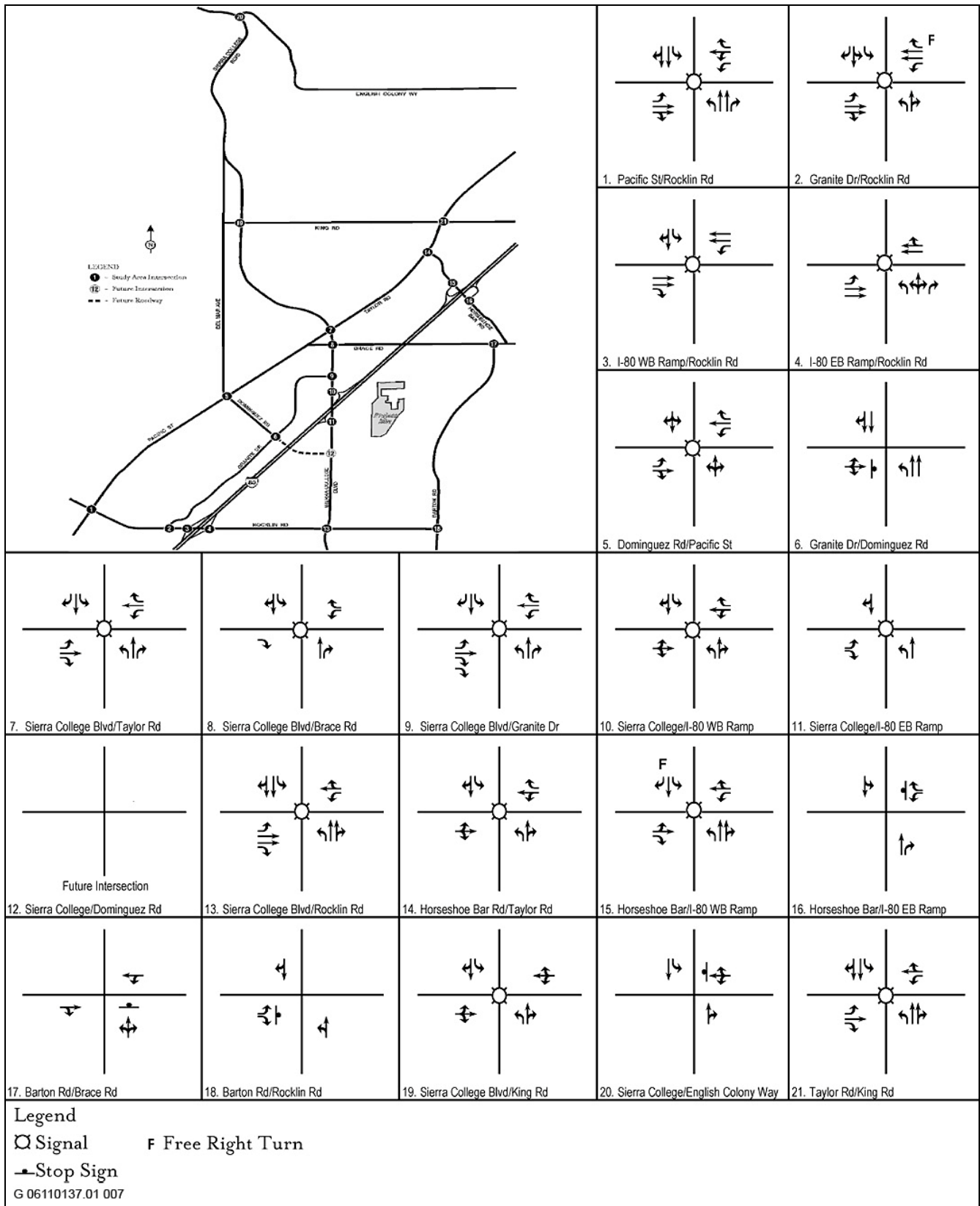
BARTON RD

ROCKLIN RD

N

G 06110137.01 006

Source: LSA 2007

Locations of Study Intersections

Exhibit 4.2-1

Source: LSA 2007

Existing Geometrics and Traffic Control   **Exhibit 4.2-2**

► **Sierra College Boulevard.** Sierra College Boulevard is a north-south roadway located west of the project site. This roadway is classified as an Arterial roadway with an ultimate six-lane cross-section in the City's General Plan Circulation Element. Sierra College Boulevard is designated as a Truck Route by the City. Within the study area, Sierra College Boulevard is a two-lane roadway north of Rocklin Road and a four-lane roadway immediately south of Rocklin Road.

► **Rocklin Road.** Rocklin Road is an east-west roadway located south of the project site. West of Sierra College Boulevard, Rocklin Road is a four-lane roadway. Immediately east of Sierra College Boulevard, there are two eastbound lanes and one westbound travel lane. Farther east, Rocklin Road becomes a two-lane roadway and terminates at Barton Road.

► **Dominguez Road.** Dominguez Road is classified as a Collector roadway by the City's General Plan Circulation Element. North of Pacific Street, Dominguez Road becomes Del Mar Avenue. Dominguez Road/Del Mar Avenue is currently a two-lane undivided roadway. Currently, Dominguez Road terminates at Granite Drive, west of I-80. Dominguez Road is planned to be extended across I-80 to Sierra College Boulevard. The Dominguez Road extension is included in the City's Traffic Impact Fee and Capital Improvement Program.

► **Brace Road.** Brace Road is a two-lane, east-west roadway located north of the project site. This roadway is located within the town of Loomis.

► **Horseshoe Bar Road.** This roadway is located within the town of Loomis, and provides access to I-80. Horseshoe Bar Road is a two-lane roadway oriented northwest to southeast, and located northeast of the project site.

EXISTING TRAFFIC VOLUMES

Traffic counts at the 21 study intersections were collected in October 2006 (a.m. and p.m. peak hours) and September 2006 (Saturday peak hour). The traffic counts are provided in Appendix B (identified as Appendix A within Appendix B). These counts were taken during a nonholiday period when schools were in session and include the traffic generated by Sierra College and all schools within the study area. The existing a.m. and p.m. peak-hour and Saturday peak-hour traffic volumes are illustrated in Exhibits 4.2-3 and 4.2-4.
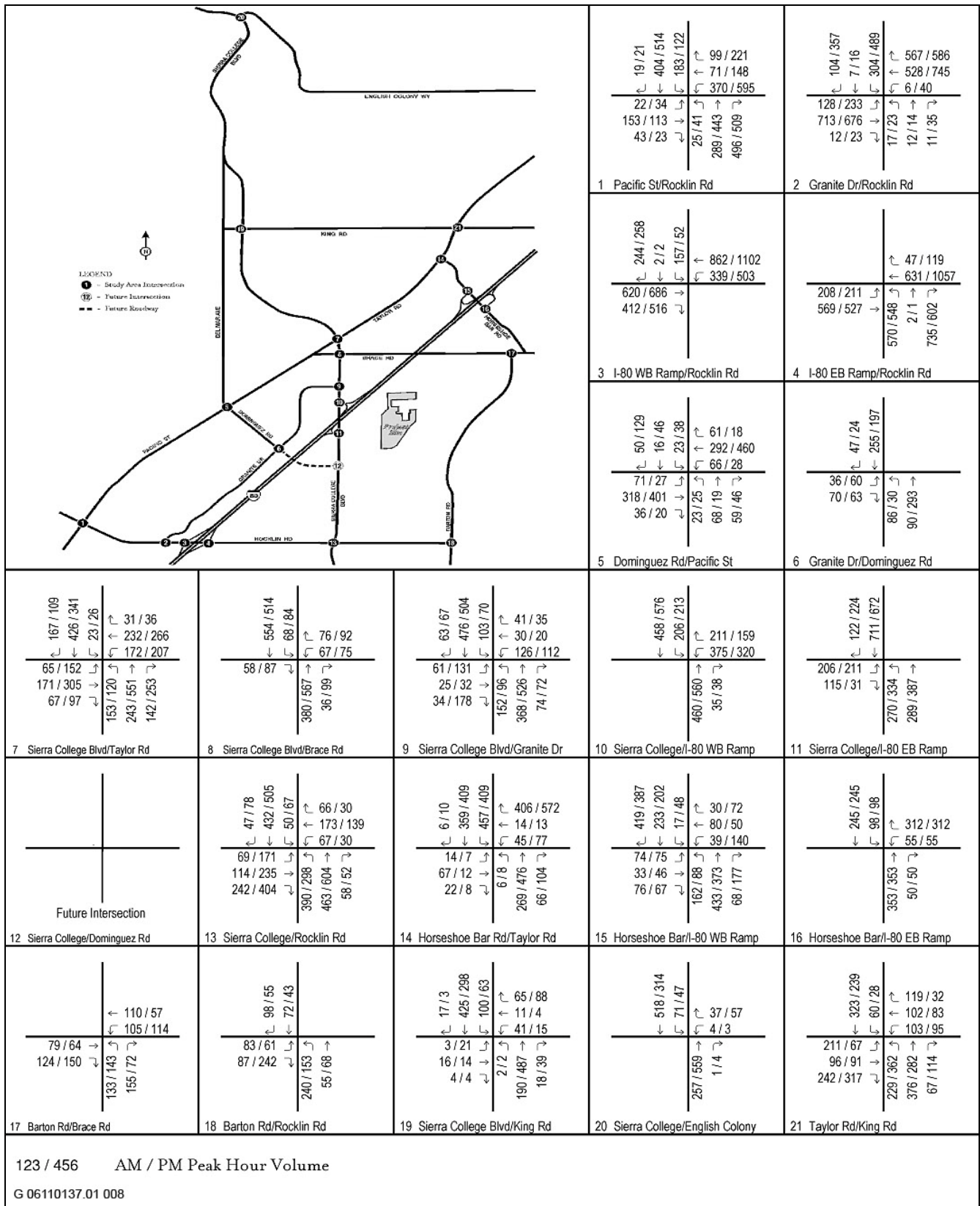
EXISTING LEVELS OF SERVICE

Levels of service at study area intersections and roadway segments were calculated for the existing conditions and are summarized in Tables 4.2-1 and 4.2-2. The existing LOS worksheets are provided in Appendix B (identified as Appendix B within Appendix B).

As shown in Table 4.2-1, the following two intersections in the study area are operating at an unsatisfactory LOS under existing conditions.

► Rocklin Road/Pacific Street
► Rocklin Road/I-80 Westbound Ramps
► Sierra College Boulevard/I-80 eastbound ramp
► Taylor Road/Horseshoe Bar Road

As shown in Table 4.2-2, all but three roadway segments currently operate with satisfactory LOS, per applicable guidelines. The following roadway segments in the study area are currently operating at unsatisfactory LOS:

► Taylor Road between King Road and Horseshoe Bar Road
► Sierra College Boulevard between Brace Road and Granite Road
► Sierra College Boulevard between Dominguez Road and Rocklin Road

123 / 456   AM / PM Peak Hour Volume

G 06110137.01 008

Source: LSA 2007

Existing Peak-Hour Traffic Volumes   **Exhibit 4.2-3**
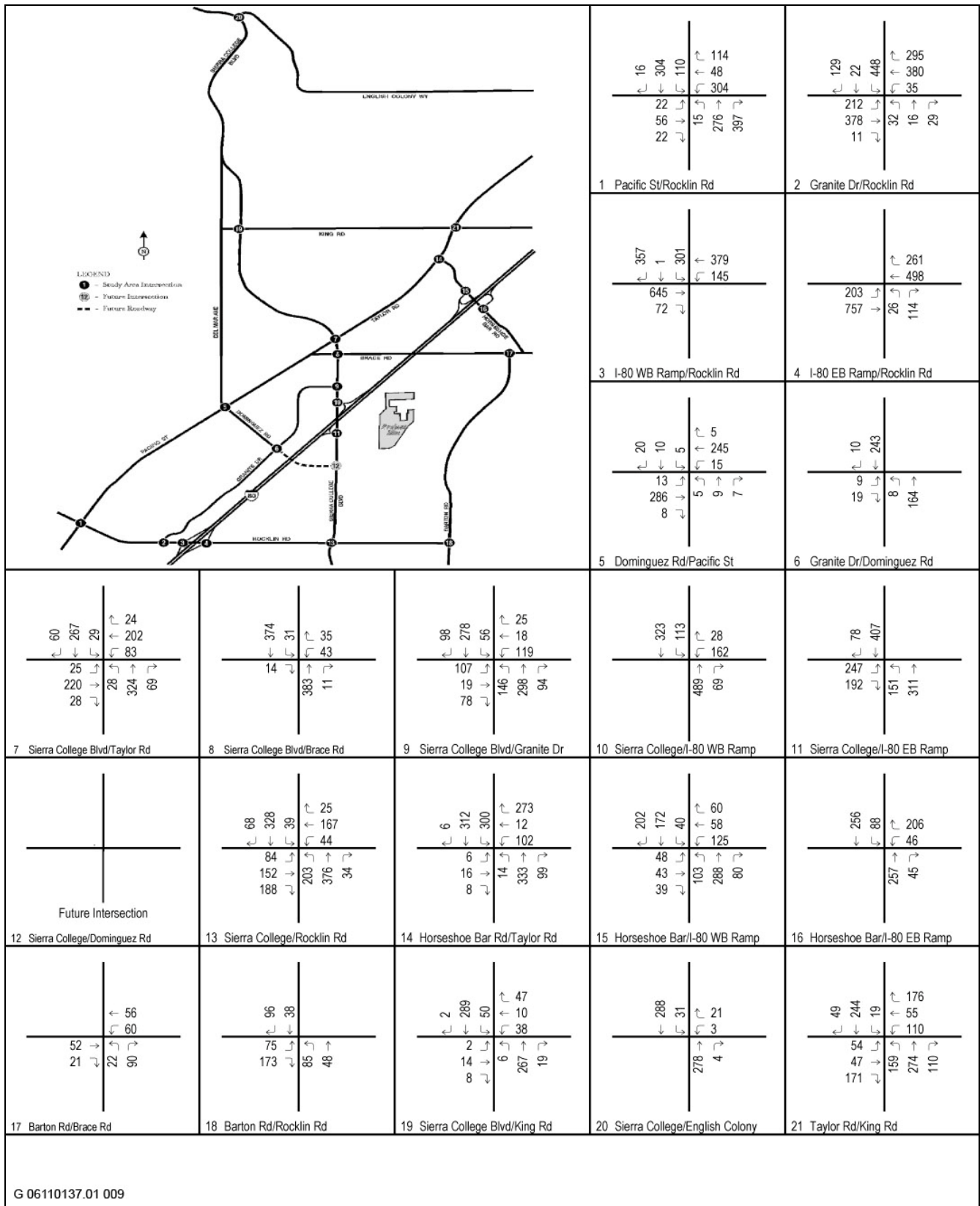
Source: LSA 2007

Existing Saturday Peak-Hour Traffic Volumes   **Exhibit 4.2-4**

Table 4.2-1
Existing Peak Hour Intersection Level of Service Summary

Intersection	Existing Condition					
	AM Peak Hour		PM Peak Hour		Saturday	
	V/C Ratio / Delay	LOS	V/C Ratio / Delay	LOS	V/C Ratio / Delay	LOS
1 Rocklin Road/Pacific Street [1]	0.881	D	0.850	D	0.544	A
2 Rocklin Road/Granite Drive	0.467	A	0.785	C	0.543	A
3 Rocklin Road/I-80 Westbound Ramps	0.767	C	0.966	E	0.618	B
4 Rocklin RoadI-80 Eastbound Ramps	0.829	D	0.877	D	0.501	A
5 Dominguez Road/Pacific Street [1]	0.453	A	0.526	A	0.267	A
6 Dominguez Road/Granite Drive [1]	11.7 sec	B	11.9 sec	B	9.9 sec	A
7 Sierra College Boulevard/Taylor Road (Loomis)	0.737	C	0.873	D	0.508	A
8 Sierra College Boulevard/Brace Road (Loomis)	0.509	A	0.604	B	.0341	A
9 Sierra College Boulevard/Granite Drive	0.625	B	0.644	B	0.461	A
10 Sierra College Boulevard/I-80 Westbound Ramps	0.665	B	0.685	B	0.520	A
11 Sierra College Boulevard/I-80 Eastbound Ramps	1.033	F	1.124	F	0.740	C
12 Sierra College Boulevard/Dominguez Road	-	-	-	-	-	-
13 Sierra College Boulevard/Rocklin Road [1]	0.710	c	0.792	C	0.532	A
14 Taylor Road/Horseshoe Bar Road (Loomis)	0.920	E	1.098	F	0.668	B
15 Horseshoe Bar Road/I-80 Westbound Ramps (Loomis)	0.454	A	0.428	A	0.359	A
16 Horseshoe Bar Road/I-80 Eastbound Ramps (Loomis)	16.4 sec	C	16.0 sec	C	12.1 sec	B
17 Barton Road/Brace Road [1] (Loomis)	16.1 sec	C	15.0 sec	C	9.5 sec	A
18 Barton Road/Rocklin Road [1] (Loomis)	15.6 sec	C	10.9 sec	B	10.2 sec	B
19 Sierra College Boulevard/King Road [1] (Loomis)	0.436	A	0.525	A	0.331	A
20 Sierra College Boulevard/English Colony Way [1] (Placer County)	10.9 sec	B	13.4 sec	B	10.5 sec	B
21 Taylor Road/King Road [1] (Loomis)	0.760	C	0.722	C	0.489	A

Notes: ICU V/C ratio is used for signalized intersections. HCM delay in seconds is used for unsignalized intersections.
[1] LOS C required for these intersections. LOS D acceptable for all other intersections.
Outline indicates exceeds level of service criteria.

Table 4.2-2
Existing Daily Roadway Segment Level of Service Summary

Roadway	Segment	Configuration	Capacity	Weekday			Saturday		
				Volume	V/C	LOS	Volume	V/C	LOS
Taylor Road	King Road and Horseshoe Bar Road [1] (Loomis)	Two-lane Collector	15,000	17,060	1.14	F	11,370	0.76	C
	Horseshoe Bar Road and Sierra College Boulevard[1] (Loomis)	Two-lane Collector	15,000	10,673	0.71	B	3,500	0.23	A
Pacific Street	Sierra College Boulevard and Dominguez Road [1]	Two-lane Collector	15,000	11,578	0.77	C	5,880	0.39	A
	Dominguez Road and Rocklin Road [1]	Four-lane Undivided Arterial	30,000	15,889	0.53	A	6,820	0.23	A
Rocklin Road	Pacific Street and Granite Drive	Four-lane Undivided Arterial	30,000	21,211	0.71	B	11,040	0.37	A
	I-80 and Sierra College Boulevard	Four-lane Undivided Arterial	30,000	9,989	0.33	A	13,090	0.44	A
	Sierra College Boulevard and Barton Road [1] (Loomis)	Two-lane Collector	15,000	5,176	0.35	A	4,060	0.27	A
Barton Road	Rocklin Road and Brace Road [1] (Loomis)	Two-lane Collector	15,000	3,354	0.22	A	2,040	0.14	A
Horseshoe Bar Road	I-80 and Brace Road (Loomis)	Two-lane Collector	15,000	6,101	0.41	A	6,460	0.43	A
Brace Road	I-80 and Barton Road [1] (Loomis)	Two-lane Collector	15,000	4,006	0.27	A	1,940	0.13	A
	I-80 and Sierra College Boulevard [1] (Loomis)	Two-lane Collector	15,000	3,408	0.23	A	560	0.04	A
Sierra College Boulevard	English Colony Way and King Road [1] (Placer County)	Two-lane Collector	15,000	9,600	0.64	B	6,570	0.44	A
	King Road and Taylor Road [1] (Loomis)	Two-lane Collector	15,000	10,560	0.70	B	7,080	0.47	A
	Taylor Road and I-80	Two-lane Collector	15,000	17,566	1.17	F	8,610	0.57	A
	I-80 and Dominguez Road	Two-lane Collector	15,000	13,275	0.88	D	10,400	0.69	B
	Dominguez Road and Rocklin Road [1]	Two-lane Collector	15,000	13,275	0.88	D	10,840	0.72	C
Granite Drive	Dominguez Road and Sierra College Boulevard [1]	Four-lane Undivided Arterial	30,000	6,178	0.21	A	4,350	0.15	A
	Dominguez Road and Rocklin Road [1]	Four-lane Undivided Arterial	30,000	8,258	0.28	A	7,850	0.26	A
Dominguez Road	Taylor Road and Granite Drive [1]	Two-lane Collector	15,000	2,382	0.16	A	510	0.03	A
King Road	Sierra College Boulevard and Taylor Road [1] (Loomis)	Two-lane Collector	15,000	5,610	0.37	A	3,460	0.23	A

Notes:

[1] LOS C required for these segments. LOS D acceptable for all other segments.

Outline indicates exceeds level of service criteria.

EXISTING SIERRA COLLEGE BOULEVARD/I-80 INTERCHANGE RECONSTRUCTION PROJECT

The Sierra College Boulevard/I-80 interchange reconstruction project is underway and it is anticipated that it will be completed prior to operation of the proposed project. The interchange reconstruction project is currently anticipated to be completed in the summer or fall of 2008. Although this interchange reconstruction project is not part of the proposed project, it will affect access to the project site. The Sierra College Boulevard/I-80 interchange project includes the following improvements:

► Reconstruct the I-80 eastbound off-ramp/Sierra College Boulevard intersection approximately 269 feet south of its present location from centerline to centerline. Provide for a separate westbound right turn with direct connector to the eastbound on-ramp.

► Reconstruct the I-80 westbound off-ramp/Sierra College Boulevard intersection approximately 230 feet north of its present location from centerline to centerline.

► Intersections would be signalized and would operate in multi-phases.

► Provide a third northbound through lane on the Sierra College Boulevard segment between the I-80 westbound off-ramp intersection and Granite Drive. With this improvement, the northbound approach at the Sierra College Boulevard/Granite Drive intersection would have one left-turn lane, two through lanes, and one shared through-right turn lane.

► Provide an exclusive eastbound right-turn lane at the I-80 eastbound off-ramp approach to Sierra College Boulevard. With this improvement, the eastbound off-ramp approach at the Sierra College Boulevard/I-80 eastbound ramps intersection would have two left-turn lanes, two through lanes, and one right-turn lane.

► Reconstruct the Sierra College Boulevard overcrossing of I-80 to provide for a new 5-lane overcrossing structure (two southbound lanes and three northbound lanes).

► Widen the inside shoulders on I-80 (both directions of travel) at the new overcrossing to provide 9.8-foot shoulders to the Type 50E Barrier facing the new structure's median columns. This improvement requires shifting the freeway mainline 2.7 feet away from the inside shoulders (both directions of travel) and widening the mainline on the outside for a distance of approximately 1,312 feet.

► Reconstruct both the eastbound and westbound hook on-ramps to I-80 so the ramps would be a free right-turn configuration.

► Construct new eastbound and new westbound Sierra College Boulevard direct connecting on-ramps to I-80. Relocate the park-and-ride lot. (See *Sierra College Boulevard/Interstate 80 Interchange Improvement Project Draft EIS/EA*, pp. v, xxvii, on file with the City.)

Following completion of the interchange reconstruction, two options would be available to access the project's main access road (Black Willow Street) from Sierra College Boulevard. The northernmost connection would be provided from Croftwood Road, which would be restricted to right turns in and out only. The southernmost connection would be provided by a separately-approved loop road that would extend southwest from Croftwood Road to Sierra College Boulevard, ultimately aligning with the future extension of Dominguez Road over I-80.

4.2.2   REGULATORY SETTING

CITY OF ROCKLIN GENERAL PLAN

The Circulation Element of the City of Rocklin General Plan (1991) includes the following relevant goal and policies related to traffic and circulation.

Goal: To provide and maintain a safe and efficient system of streets, highways, and public transportation to meet community needs and promote sound land use.

▶ **Policy 1.** To maintain existing streets in a safe condition and require that new streets be built to City standards.

▶ **Policy 2.** To ensure that streets and highways will be available to serve new development by requiring detailed traffic studies as a part of all major development proposals.

▶ **Policy 6.** To promote pedestrian convenience through development conditions requiring sidewalks, walking paths, or hiking trails that connect residential areas with commercial, shopping, and employment centers.

▶ **Policy 7.** To require landscaping and tree planting along major new streets and highways, and along existing streets as appropriate.

▶ **Policy 8.** To encourage a variety of building sites, building types, and land use treatments along major streets and highways.

▶ **Policy 10.** To promote the use of public transit through development conditions requiring park-and-ride lots, bus turnouts and passenger shelters along major streets.

▶ **Policy 11.** To enforce the transportation system management requirements of the existing ridesharing ordinance.

▶ **Policy 13.** To maintain a minimum traffic level of service "C" for all streets and intersections, except for intersections located within ½ mile from direct access to an interstate freeway where a level of service "D" will be acceptable. Exceptions may be made for peak hour traffic where not all movements exceed the acceptable level of service.

▶ **Policy 21.** To encourage the design of streets that connect neighborhoods for vehicular and pedestrian use and for the efficient movement of service and emergency vehicles.

CITY OF ROCKLIN CAPITAL IMPROVEMENT PROGRAM

The City's Traffic Impact Fee and Capital Improvement Program (CIP) defines the roadway and intersection improvements needed to maintain the Level of Service (LOS) policy adopted in the City's General Plan. (See Rocklin General Plan Circulation Element, Policy 13.) The City regularly monitors traffic on City streets to include in the City's CIP those improvements needed to maintain an acceptable LOS through the use of traffic fees and other financing mechanisms. The City updated its CIP and traffic impact fees in 2005, and extended the horizon year for the CIP from 2020 to 2025.

On May 22, 2007, the Rocklin City Council adopted Resolution No. 2007-126, increasing the Citywide traffic impact fee based on increased construction costs for all developments within the City. In conjunction with this fee increase, the City also updated its CIP. The updated CIP includes the following improvements in the vicinity of the proposed project:

▶ Widen Rocklin Road to 4 lanes from the Loomis Town limits to east of Sierra College Boulevard;

▶ Widen Rocklin Road to 6 lanes (add 2 lanes) from west of Sierra College Boulevard to I-80 eastbound ramps;

▶ Widen Rocklin Road to 6 lanes from I-80 westbound ramps to west of Granite Drive;

▶ Widen Sierra College Boulevard to 6 lanes (add 2 lanes) from Nightwatch Drive to Aguilar Tributary;

► Construct a 2-lane extension with bridge over I-80 on Dominguez Road from Granite Drive to Sierra College Boulevard; and,

► Reconstruct the Rocklin Road/I-80 interchange.

SOUTH PLACER REGIONAL TRANSPORTATION AUTHORITY

In January 2002, the cities of Rocklin, Roseville, and Lincoln; the County of Placer; and, the Placer County Transportation and Planning Agency entered into a Joint Powers Authority (JPA) known as the South Placer Regional Transportation Authority (SPRTA). The JPA was formed for the purpose of implementing a regional transportation and air quality mitigation fee to fund specified regional transportation projects (SPRTA 2007). These improvements include (Raney Planning & Management, Inc. 2006):

► Sierra College Boulevard from SR-193 to the south Placer County line;
► SR-65 Lincoln Bypass;
► Douglas Boulevard/I-80 Interchange;
► Placer Parkway; and,
► Transit Passenger Rail Improvements.

The estimated completion date for the above projects will be established after the JPA board of directors establishes their respective priorities. In general, the improvements are expected to be made during the next several years, but the timing of these roadway and transit system projects is ultimately dependent on the collection of the fees necessary to fund them (Raney Planning & Management, Inc. 2006).

Because Sierra College Boulevard would serve as a primary transportation link to the proposed Rocklin 60 project, the improvements related to this roadway included in the JPA are described below:

> Sierra College Boulevard is a major north-south arterial that provides a link from State Route 193 in Lincoln to Interstate 80 in Rocklin and on to the Sacramento County line. Sierra College Boulevard traverses Lincoln, unincorporated Placer County, Loomis, Rocklin, and Roseville. The improvements to Sierra College Boulevard would consist of widening the roadway to four or six lanes from State Route 193 to the Sacramento County line, excluding improvements to the interchange at Interstate 80, which will be funded by a combination of Rocklin and state funds.

The Sierra College Boulevard segments to be funded or credited by the fee program include (Raney Planning & Management, Inc. 2006):

► Segment 1 - from State Route 193 to the northern city limits of the City of Rocklin. This segment would consist of a 4-lane facility.

► Segment 2a - from the northern city limits of the City of Rocklin to the northern boundary of the Town of Loomis. This facility would also be built to 4 lanes.

► Segment 5 – I-80 to Rocklin Road. This segment would consist of 6 lanes.

► Segment 6 - Rocklin Road to the southern city limits of the City of Rocklin. This segment would consist of 6 lanes.

The creation of SPRTA resulted in the establishment of an impact fee schedule for new development in the participating jurisdictions. In the past, the primary source of funding for regional transportation projects in Placer County has been the State Transportation Improvement Program (STIP), which typically falls short of financing current project needs throughout the county. In addition, several jurisdictions in Placer County currently have some form of development fees for local transportation projects, but the County has not had a mechanism to fund large-scale or multi-jurisdictional projects. Therefore, with the creation of SPRTA and a list of transportation improvements identified in the JPA, as well as the regional transportation impact fee schedule, the necessary

funding for construction of regional improvements (including improvements to Sierra College Boulevard) has been ensured (Raney Planning & Management, Inc. 2006).

4.2.3　IMPACTS AND MITIGATION MEASURES

METHODOLOGY

The traffic impact analysis is based on intersection levels of service for the following scenarios:

- ► Existing
- ► Existing plus Project
- ► Existing plus Approved Projects (Baseline)
- ► Existing plus Approved Projects (Baseline) plus Project

The traffic analysis described below includes the a.m. and p.m. peak hour analysis required by the City. Although typically not required by the City, the traffic analysis evaluates the project's potential impact for a Saturday peak-hour scenario. This analysis was performed to determine whether the proposed project would have impacts during the Saturday peak hour that were more significant than those identified for the weekday a.m. and p.m. peak-hour scenarios. Based on this analysis, there were no instances where traffic impacts during the Saturday peak hour exceeded the traffic impacts identified for the weekday a.m. and p.m. peak-hour scenarios, and as such, any mitigation measures required for the weekday a.m. and p.m. peak hour impacts would also mitigate Saturday peak-hour impacts. Please see Section 6 of this EIR for cumulative (2025) traffic analysis.

Intersection LOS Methodology

Traffix computer software was utilized to determine the levels of service (LOS) at signalized and unsignalized study area intersections based on the Circular 212 "Critical Movement Analysis" (CMA) planning methodology and HCM 2000 Methodology, respectively. This methodology is approved by the City and is consistent with the method used for previous traffic impact analyses prepared for projects in the City.

The CMA methodology compares the amount of traffic an intersection is able to process (capacity) to the level of traffic during peak hours (volume). The resulting volume-to-capacity ratio (v/c) is expressed in terms of LOS, where LOS A represents free-flow activity and LOS F represents overcapacity operation. The CMA methodology provides a planning level assessment of the traffic volume at an intersection and is used by many cities and agencies within California for the purposes of traffic impact analysis. In addition to the City of Rocklin, some of the cities and agencies that utilize the Circular 212 CMA methodology include West Sacramento, Fairfield, Roseville, Union City, San Carlos, the Contra Costa Transportation Authority, and the City/County Associations of Governments of San Mateo County. In addition, a number of agencies throughout the state utilize the Intersection Capacity Utilization (ICU) methodology, which is similar to the Circular 212 CMA methodology but does not take into account the effects of signal phasing on the LOS. Utilization of a methodology that calculates v/c ratio has proven to be an accurate method of disclosing traffic impacts of development projects.

LOS is a qualitative assessment of the quantitative effects of such factors as traffic volume, roadway geometrics, and signal phasing on roadway and intersection operations. LOS criteria for signalized intersections are presented below.

LOS	Description
A	No approach phase is fully utilized by traffic, and no vehicle waits longer than one red indication. Typically, the approach appears quite open, turns are made easily, and nearly all drivers find freedom of operation.
B	This service level represents stable operation, where an occasional approach phase is fully utilized, and a substantial number are nearing full use. Many drivers begin to feel restricted within platoons of vehicles.
C	This level still represents stable operating conditions. Occasionally, drivers may have to wait through more than one red signal indication, and backups may develop behind turning vehicles. Most drivers feel somewhat restricted but not objectionably so.
D	This level encompasses a zone of increasing restriction approaching instability at the intersection. Delays to approaching vehicles may be substantial during short peaks within the peak period; however, enough cycles with lower demand occur to permit periodic clearance of developing queues, thus preventing excessive backups.
E	Capacity occurs at the upper end of this service level. It represents the most vehicles that any particular intersection approach can accommodate. Full utilization of every signal cycle is attained, no matter how great the demand.
F	This level describes forced flow operations at low speeds, where volumes exceed capacity. These conditions usually result from queues of vehicles backing up from a restriction downstream. Speeds are reduced substantially, and stoppages may occur for short or long periods due to the congestion. In the extreme case, speed can drop to zero.

The relationship between LOS and the volume/capacity ratio for signalized intersections is as follows:

Level of Service	Volume to Capacity (CMA Methodology)
A	< 0.600
B	0.610–0.700
C	0.710–0.800
D	0.810–0.900
E	0.910–1.000
F	> 1.000

Because the CMA methodology does not provide an accurate representation of the LOS of an unsignalized intersection, the 2000 Highway Capacity Manual (HCM) methodology has been used to determine intersection levels of service at unsignalized intersections. For the unsignalized HCM methodology, the LOS is presented in terms of total intersection delay (at four-way stop intersections) and approach delay of the major and minor streets (at two-way stop intersections) in seconds per vehicle. The relationship of delay and LOS at unsignalized intersections is summarized below.

Level of Service	Unsignalized Intersection Delay per Vehicle (sec)
A	<10.0
B	>10.0 and <15.0
C	>15.0 and <25.0
D	>25.0 and <35.0
E	>35.0 and <50.0
F	>50.0

The HCM methodology has also been used to determine LOS at the Caltrans controlled signalized I-80/Sierra College Boulevard freeway ramp intersections with Sierra College Boulevard. The HCM method is used by Caltrans for intersections it controls. The HCM analysis at the interchange ramp intersections is provided for

purposes of comparison to the LOS analysis presented in the Caltrans Environmental Document and supporting focused interchange Traffic Study conducted in January 2003 (LSA Associates 2003a).

Roadway Level of Service Methodology

Roadway segment analysis in the project area was also conducted as part of this traffic study. To identify the project's impact on the operating condition of a roadway segment, an LOS ranking scale was used. The LOS is based on average daily traffic (ADT) roadway segment threshold capacities, as presented below.

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

The LOS E capacity shown in the above table represents an approximation of the number of vehicles that the roadway can comfortably carry on a daily basis before it is considered to be at capacity. If the ADT on a roadway segment exceeds the LOS E capacity, then the daily LOS of the roadway is considered to be LOS F.

It is important to note that an ADT capacity must assume several critical characteristics of traffic, including the percentage of daily traffic in the peak hour and the directional split within that peak hour. Actual characteristics of a specific roadway can significantly influence the daily capacity, as described in more detail later in this section. To calculate the daily LOS for each roadway segment, the ADT on each segment was divided by the capacity of the segment (the LOS E capacity as shown in the above table) to determine the daily v/c ratio for each roadway. The v/c ratio was compared to the values in the table below to determine the daily LOS for each roadway segment.

Level of Service	Volume to Capacity Ratio
A	< 0.600
B	0.610–0.700
C	0.710–0.800
D	0.810–0.900
E	0.910–1.000
F	> 1.000

The daily LOS, as described above, is a planning-level threshold that is generally used to determine the overall cross-sections of roadways within a circulation network. While it can provide an indication of whether the existing or forecast volume might result in unsatisfactory operation of the roadway, it does not provide an accurate representation of the actual operation of the roadway, especially during the peak hours (when travel demand is highest). For purposes of this project impact analysis, the daily capacity was first examined to determine whether the roadway might exceed its theoretical daily capacity. If the roadway volume exceeded the daily capacity (v/c greater than 1.00), then the peak-hour v/c ratio was calculated. If the peak-hour capacity is also exceeded, the roadway segment is considered to be operating at an unsatisfactory LOS. Although the roadway segment may seem to be operating with unsatisfactory LOS when the daily volume is examined, it is not considered unsatisfactory LOS if the peak-hour traffic volumes does not exceed the capacity. This is because traffic along a roadway segment will be greatest during the peak commute hours. As a result, if traffic operations

are satisfactory during the peak hour, when traffic volumes are highest, then the segment will also operate at satisfactory LOS during the remaining off-peak hours of the day.

THRESHOLDS OF SIGNIFICANCE

Policy 13 of the City of Rocklin General Plan Circulation Element states that the City strives "to maintain a minimum traffic level of service "C" for all streets and intersections, except for intersections located within ½ mile from direct access to an interstate freeway where a level of service "D" will be acceptable." Policy 13 further provides that "[e]xceptions may be made for peak hour traffic where not all movements exceed the acceptable level of service." Mitigation is required for any intersection or roadway segment where project traffic causes the intersection to deteriorate from satisfactory to unsatisfactory operation.

Based on the City's significance threshold, if an intersection or roadway segment is already operating at an unsatisfactory level of service, an increase of 5 percent (addition of 0.05) to the v/c ratio would constitute a significant project impact. An increase of 0.05 in the v/c ratio would be considered a measurable worsening of the intersection or roadway operations and therefore would constitute a significant project impact. If an unsignalized intersection is already operating at unsatisfactory LOS D (LOS E within 0.5 mile of freeway access), then the addition of more than 5 percent of the total traffic at the intersection would be considered a significant project impact. The City has determined, based on the expert opinions of the City's traffic consultants and the City's traffic engineering staff, that a 5-percent threshold is appropriate in determining that a measurable adverse change to intersection level of service has occurred. This threshold applies even where project traffic will be added to existing or projected conditions that are already unacceptable or are projected to be unacceptable under cumulative conditions even without the project. (Please refer to Section 6 of this EIR for a description of cumulative impacts).

The City does not subscribe to the notion that, where existing conditions or projected cumulative condition are already bad or will be bad even without the project, *any* additional traffic from the project represents a significant impact or a cumulatively considerable contribution to a significant cumulative impact. The City's rejection of this notion reflects the nature of traffic impacts, compared with other categories of environmental impact, which often involve public health or ecological concerns. Worsened traffic congestion might cause irritation or inconvenience to people, but not any adverse effects on public health or ecosystems. Thus, while the addition of relatively small amounts of air pollution in a polluted air basin might worsen the adverse health effects of air pollution, no similar health effects result from additional congestion. Similarly, while the loss of relatively small amounts of the habitat of an endangered or threatened species might cause ecological consequences of note, worsened congestion has no such consequences to biological resources. In fact, "mitigation" for traffic impacts often has its own adverse consequences on biological resources (i.e., road widenings often wipe out habitat areas). In short, the City believes that a "one car" threshold of significance for impacts on already-congested transportation facilities is neither practical nor desirable, from a public policy standpoint. This low threshold approach is not mandated by CEQA or CEQA case law. While the 0.05-threshold, by allowing small amounts of traffic without triggering additional mitigation, might require drivers to endure minor additional delays during peak periods, this purely human inconvenience is not, in the City's view, a "significant effect on the environment."

The Town of Loomis General Plan Circulation Element (2001) includes the following level of service policy:

> In order to minimize congestion, maintain Level of Service C on all roads and intersections within the Town of Loomis. Level of Service D may be allowed in conjunction with development approved within the Town as an exception to this standard, at the intersections of King and Taylor, Horseshoe Bar Road and Taylor, Horseshoe Bar Road and I-80, Sierra College and Brace Road, and Webb and Taylor, when:
>
> 1. The deficiency is substantially caused by "through" traffic, which neither begins nor ends in Loomis, and is primarily generated by non-residents; or
>
> 2. The deficiency will be temporary (less than three years), and a fully-funded plan is in place to provide the improvements needed to remedy the substandard condition.

The Environmental Impact Report prepared to address impacts of the Town of Loomis General Plan further clarifies the thresholds described above by identifying an increase of 5 percent (addition of 0.05) to the v/c ratio for roadway segments as a significant project impact.

The Town of Loomis was contacted to clarify the significance criteria that should be applied to intersections that currently operate in excess of the Town's LOS C threshold. Town staff requested that the same significance criteria be applied to Loomis intersections as applied in the City of Rocklin.

Therefore, consistent with the Town's approach for roadway segments and the City of Rocklin's intersection significance thresholds, if an intersection in the Town of Loomis is already operating at an unsatisfactory level of service, an increase of 5 percent (addition of 0.05) or more to the v/c ratio would constitute a significant project impact.

The California Department of Transportation assumes that project traffic increases that cause the freeway level of service to deteriorate beyond LOS E are significant.

Based on Appendix G of the CEQA Guidelines, the City has determined that a project would result in a significant effect on the environment if it would:

► Cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume-to-capacity ratio on roads, or congestion at intersections);

► Exceed, either individually or cumulatively, a level of service (LOS) standard established by the City, the Town of Loomis, or the California Department of Transportation;

► Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses;

► Result in inadequate emergency access;

► Result in inadequate parking capacity; or,

► Conflict with adopted policies, plans, or program supporting alternative transportation (e.g., bus turnouts, bicycle racks).

PROJECT TRIP GENERATION AND DISTRIBUTION

An estimation of the number of vehicle trips was generated for the site using the trip rates from the Institute of Transportation Engineers (ITE) Trip Generation, 7th Edition, and is presented in Table 4.2-3. As indicated in the table, the project is forecast to generate 1,713 daily trips, 134 a.m. peak-hour trips, 181 p.m. peak-hour trips, and 168 Saturday peak-hour trips.

Project trips were distributed throughout the study area using the City's traffic analysis model. The existing City model is only validated for the p.m. peak hour. Therefore, select zone model assignments for the proposed project during the p.m. peak hour were used to obtain the trip distribution. The regional trip distribution percentages from the traffic model and the resulting weekday peak-hour project trips at each intersection are illustrated in Exhibit 4.2-5. Project trips during the Saturday peak hour are illustrated in Exhibit 4.2-6. It should be noted that the distribution percentages shown in the figures are the generalized distribution for illustration only and do not reflect all project trips that occur within the study area. This interaction between land uses in the study area is reflected in the actual trip assignment volumes.

				AM Peak Hour			PM Peak Hour			Saturday		
Table 4.2-3 **Project Trip Generation**												
Land Use	Size	Unit	ADT	In	Out	Total	In	Out	Total	In	Out	Total
Single-Family Detached Housing	179	DU										
Trip Rate [1]			9.57	0.19	0.56	0.75	0.64	0.37	1.01	0.51	0.43	0.94
Trip Generation			1,713	34	101	134	114	67	181	91	77	168
Total Site Trip Generation			**1,713**	**34**	**101**	**134**	**114**	**67**	**181**	**91**	**77**	**168**

Notes: DU = dwelling unit
[1] Trip rates based on the Institute of Transportation Engineers (ITE) Trip Generation Manual, 7th edition. Land Use Code 210 - Single-Family Detached Housing

EXISTING PLUS PROJECT

Traffic volumes generated by the proposed project were added to the existing traffic volumes and LOS were calculated for the existing plus project scenario. For purposes of making significance determinations, this EIR relies on the existing plus approved projects scenario. Because construction of the project would follow construction of other previously approved projects in the study area, the existing plus project conditions are not the real-world physical condition that the project would affect. However, an existing plus project condition has nevertheless been analyzed for disclosure purposes. The existing plus project weekday and Saturday peak-hour traffic volumes are illustrated in Exhibits 4.2-7 and 4.2-8. The LOS for study area intersections and roadway segments in the existing plus project scenario are shown in Tables 4.2-4 and 4.2-5. The existing plus project LOS worksheets are provided in Appendix B (identified as Appendix C within Appendix B).

As shown in Table 4.2-4, the two intersections that operate at LOS F, the one intersection that would operate at LOS E, and other one intersection that would operate at LOS D in the existing condition would continue to operate with the same LOS with the addition of project traffic. The project would not increase traffic by more than 5% at the intersection of Sierra College Boulevard/I-80 Eastbound Ramp. However, as previously discussed, the City has initiated construction on a project to improve the I-80/Sierra College Boulevard interchange, which would mitigate this unsatisfactory LOS. The Rocklin 60 project would be subject to the City's Traffic Fee and thus would contribute its fair share towards mitigating this impact.

The intersections of Taylor Road/Horseshoe Bar Road and Rocklin Road/I-80 Westbound Ramps are forecast to operate at LOS E in the existing plus project condition. However, the project would add less than 5% to the v/c ratio at this intersection; therefore, the project would not have any significant impacts on study area intersections in the existing plus project condition.

As shown in Table 4.2-5, most of the study area roadway segments are forecast to operate within their daily roadway capacities in the existing plus project condition except for the following four segments:

- ▶ Taylor Road between King Road and Horseshoe Bar Road (Loomis)
- ▶ Sierra College Boulevard between Taylor Road and I-80
- ▶ Sierra College Boulevard between I-80 and Dominguez Road
- ▶ Sierra College Boulevard between Dominguez Road and Rocklin Road

A directional peak-hour roadway segment analysis was prepared for these four segments and is shown in Table 4.2-6. In both a.m. and p.m. peak hours, the four affected roadway segments would operate at LOS A or B. Because the roadway segments would operate with satisfactory LOS during the peak hour of roadway traffic, they are not significantly affected by the project.
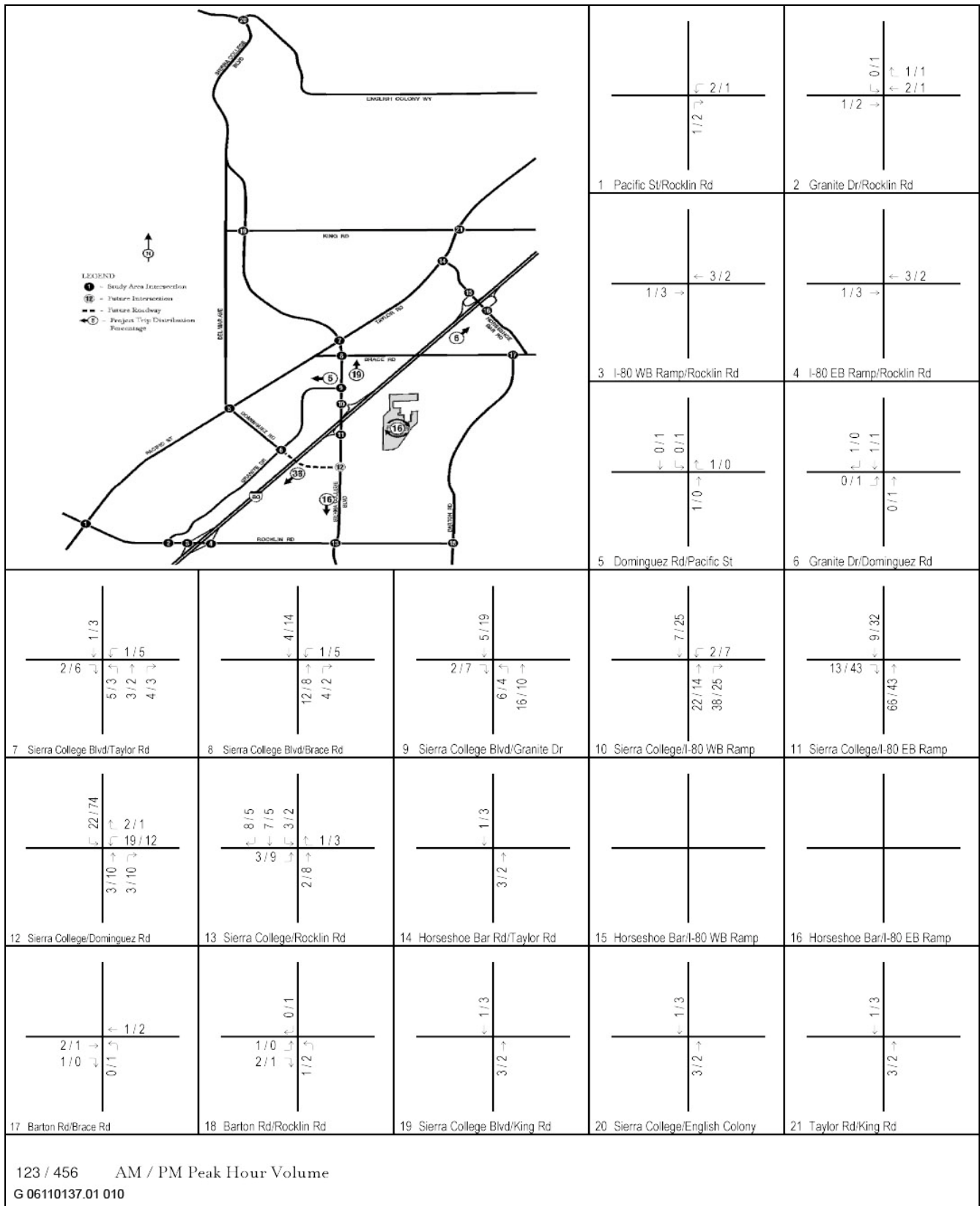
Project Trip Distribution and Peak-Hour Project Trips   **Exhibit 4.2-5**
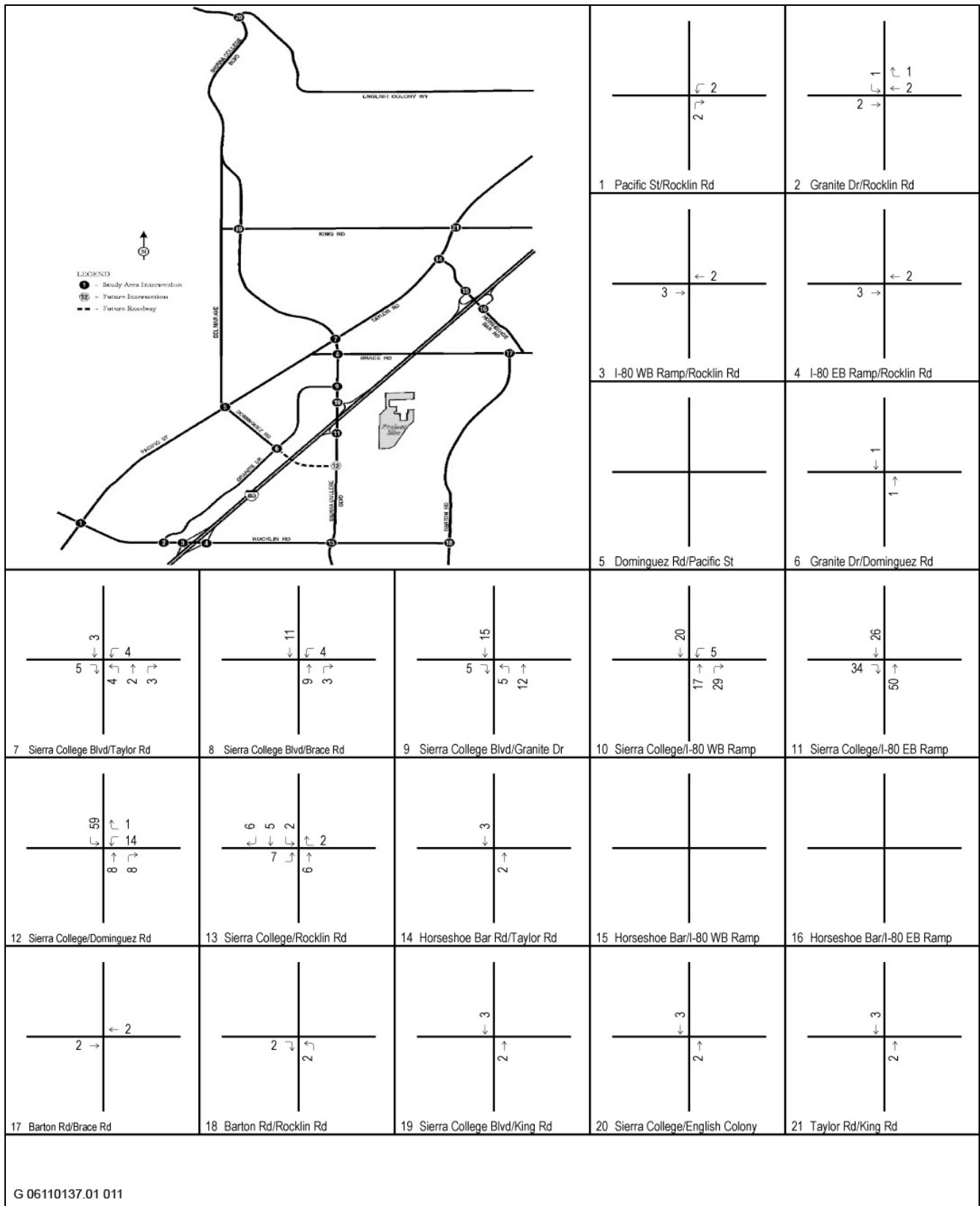
Source: LSA 2007

Source: LSA 2007

Saturday Peak-Hour Project Trips

Exhibit 4.2-6

Existing Plus Project Peak-Hour Traffic Volumes

123 / 456   AM / PM Peak Hour Volume

G 06110137.01 012

Source: LSA 2007

Existing Plus Project Peak-Hour Traffic Volumes   **Exhibit 4.2-7**

Source: LSA 2007

Existing Plus Project Saturday Peak-Hour Traffic Volumes

Exhibit 4.2-8

Table 4.2-4
Existing Plus Project Peak Hour Intersection Level of Service Summary

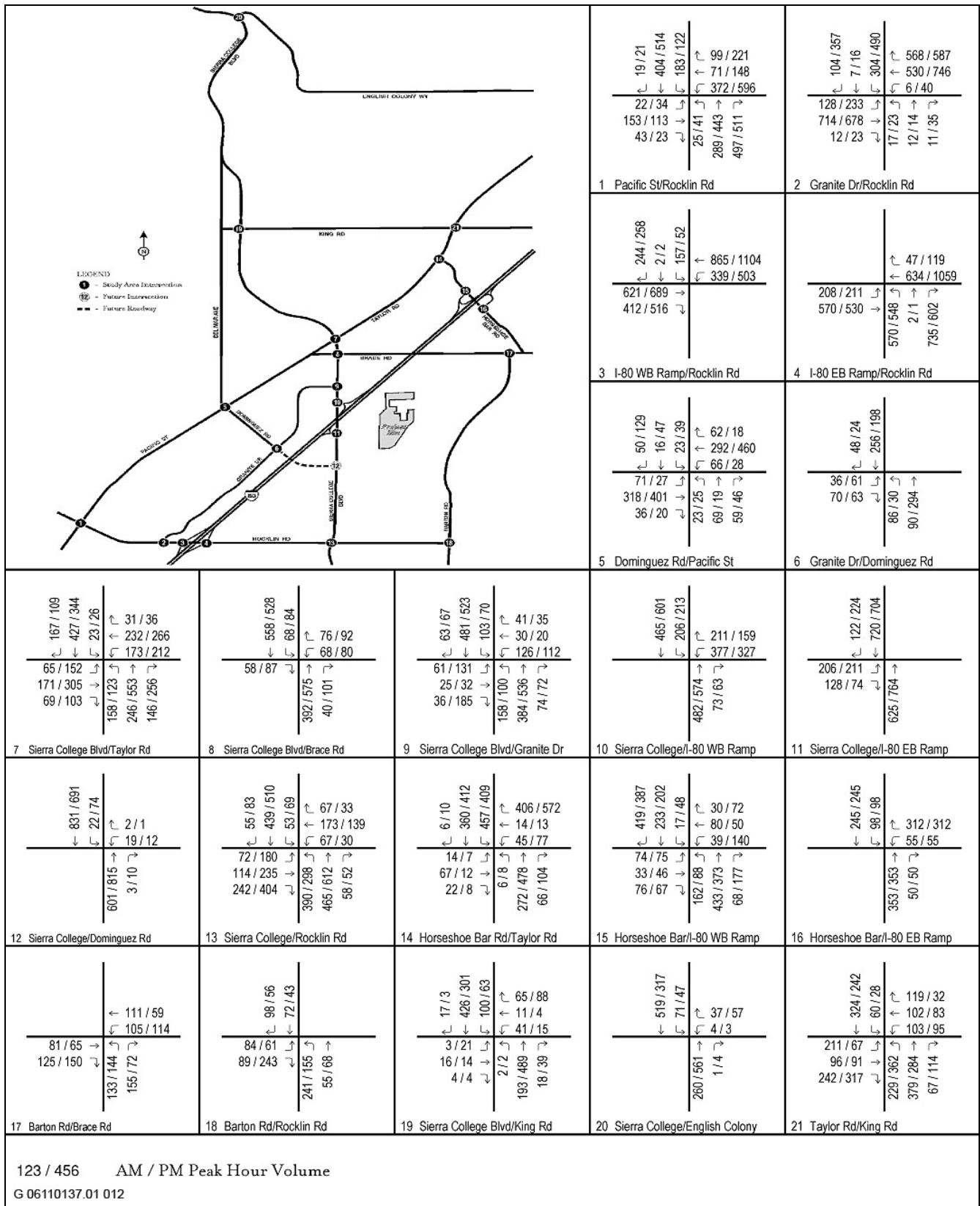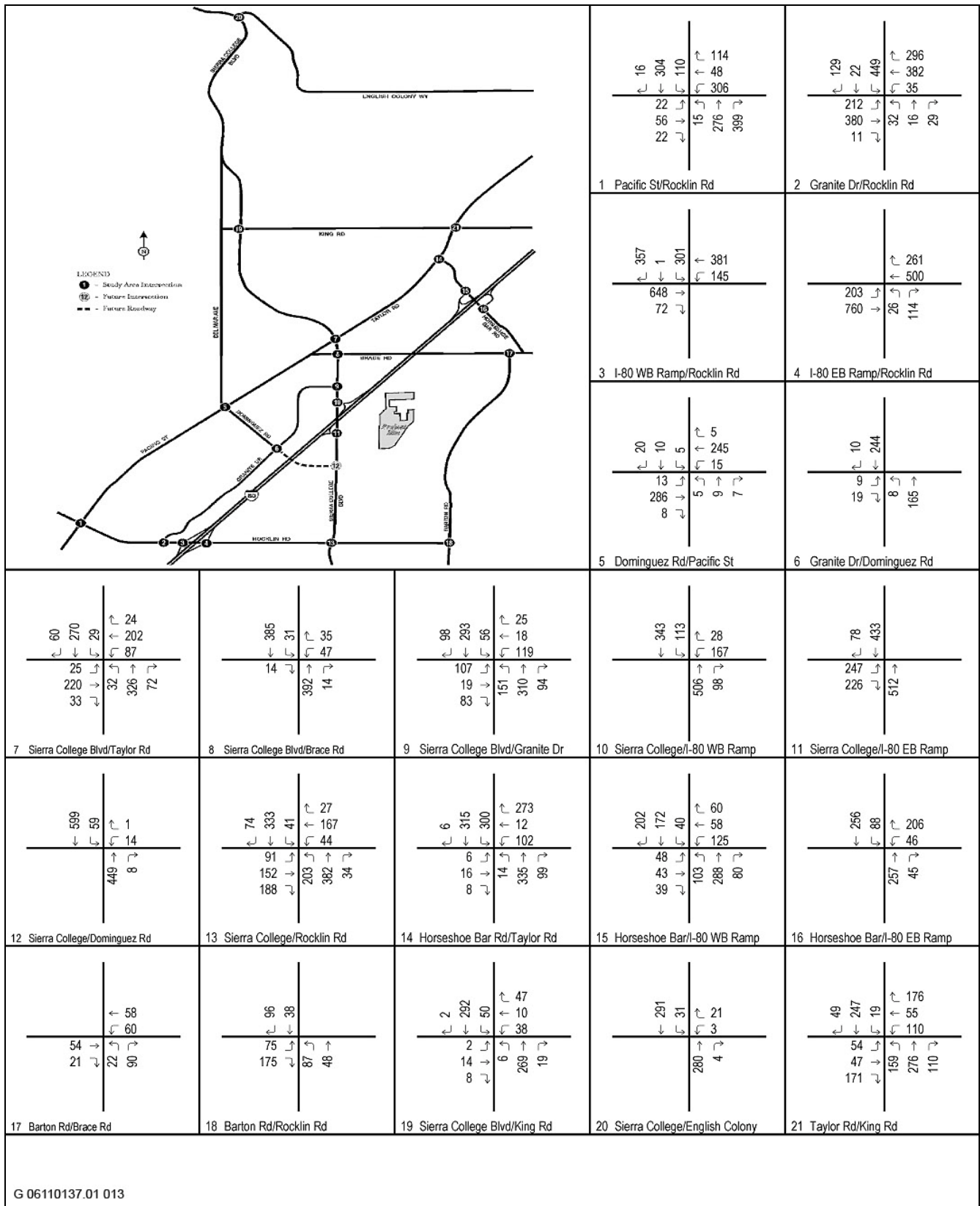|	Existing Condition						Existing Plus Project Condition					
	AM Peak Hour		PM Peak Hour		Saturday		AM Peak Hour		PM Peak Hour		Saturday	
Intersection	V/C Ratio / Delay	LOS	V/C Ratio / Delay	LOS	V/C Ratio / Delay	LOS	V/C Ratio / Delay	LOS	V/C Ratio / Delay	LOS	V/C Ratio / Delay	LOS
1 Rocklin Road/Pacific Street [1]	0.881	D	0.850	D	0.544	A	0.883	D[2]	0.852	D[2]	0.546	A
2 Rocklin Road/Granite Drive	0.467	A	0.785	C	0.543	A	0.467	A	0.785	C	0.544	A
3 Rocklin Road/I-80 Westbound Ramps	0.767	C	0.966	E	0.618	B	0.767	C	0.966	E[2]	0.619	B
4 Rocklin RoadI-80 Eastbound Ramps	0.829	D	0.877	D	0.501	A	0.830	D	0.878	C	0.502	A
5 Dominguez Road/Pacific Street [1]	0.453	A	0.526	A	0.267	A	0.454	A	0.528	A	0.267	A
6 Dominguez Road/Granite Drive [1]	11.7 sec	B	11.9 sec	B	9.9 sec	A	11.7 sec	B	12.0 sec	B	9.9 sec	A
7 Sierra College Boulevard/Taylor Road (Loomis)	0.737	C	0.873	D	0.508	A	7.742	C	0.879	D	0.513	A
8 Sierra College Boulevard/Brace Road (Loomis)	0.509	A	0.604	B	0.341	A	0.513	A	0.614	B	0.351	A
9 Sierra College Boulevard/Granite Drive	0.625	B	0.644	B	0.461	A	0.633	B	0.666	B	0.479	A
10 Sierra College Boulevard/I-80 Westbound Ramps	0.665	B	0.685	B	0.520	A	0.684	B	0.709	C	0.538	B
11 Sierra College Boulevard/I-80 Eastbound Ramps	1.033	F	1.124	F	0.740	C	1.040	F[2]	1.149	F[2]	0.762	C
12 Sierra College Boulevard/Dominguez Road	-	-	-	-	-	-	-	-	-	-	-	-
13 Sierra College Boulevard/Rocklin Road [1]	0.710	C	0.792	C	0.532	A	0.717	C	0.796	C	0.543	A
14 Taylor Road/Horseshoe Bar Road (Loomis)	0.920	E	1.098	F	0.688	B	0.923	E[2]	1.088	F[2]	0.690	B
15 Horseshoe Bar Road/I-80 Westbound Ramps (Loomis)	0.454	A	0.428	A	0.359	A	0.454	A	0.428	A	0.359	A
16 Horseshoe Bar Road/I-80 Eastbound Ramps (Loomis)	16.4 sec	C	16.0 sec	C	12.1 sec	B	16.4 sec	C	16.0 sec	C	12.1 sec	B
17 Barton Road/Brace Road [1] (Loomis)	16.1 sec	C	15.0 sec	C	9.5 sec	A	16.2 sec	C	15.1 sec	C	9.5 sec	A
18 Barton Road/Rocklin Road [1] (Loomis)	15.6 sec	C	10.9 sec	B	10.2 sec	B	15.7 sec	C	10.9 sec	B	10.2 sec	B
19 Sierra College Boulevard/King Road [1] (Loomis)	0.436	A	0.525	A	0.331	A	0.437	A	0.527	A	0.333	A
20 Sierra College Boulevard/English Colony Way [1] (Placer County)	10.9 sec	B	13.4 sec	B	10.5 sec	B	10.9 sec	B	13.5 sec	B	10.5 sec	B
21 Taylor Road/King Road [1] (Loomis)	0.760	C	0.722	C	0.489	A	0.762	C	0.723	C	0.490	A

Notes: ICU V/C ratio is used for signalized intersections. HCM delay in seconds is used for unsignalized intersections.

[1]   LOS C required for these intersections. LOS D acceptable for all other intersections.

[2]   Project impact is less than 5% of total intersection V/C or delay and therefore not a significant impact.

Outline indicates exceeds level of service criteria.

Table 4.2-5
Existing Plus Project - Daily Roadway Segment Level of Service Summary

Roadway	Segment	Configuration	Capacity	Weekday			Saturday		
				Volume	V/C	LOS	Volume	V/C	LOS
Taylor Road	King Road and Horseshoe Bar Road [1] (Loomis)	Two-lane Collector	15,000	17,110	1.14	F	11,420	0.76	C
	Horseshoe Bar Road and Sierra College Boulevard[1] (Loomis)	Two-lane Collector	15,000	10,723	0.71	C	3,560	0.24	A
Pacific Street	Sierra College Boulevard and Dominguez Road [1]	Two-lane Collector	15,000	11,608	0.77	C	5,910	0.39	A
	Dominguez Road and Rocklin Road [1]	Four-lane Undivided Arterial	30,000	15,909	0.53	A	6,840	0.23	A
Rocklin Road	Pacific Street and Granite Drive	Four-lane Undivided Arterial	30,000	21,241	0.71	B	11,070	0.37	A
	I-80 and Sierra College Boulevard	Four-lane Undivided Arterial	30,000	10,029	0.33	A	13,130	0.44	A
	Sierra College Boulevard and Barton Road [1] (Loomis)	Two-lane Collector	15,000	5,226	0.35	A	4,120	0.27	A
Barton Road	Rocklin Road and Brace Road [1] (Loomis)	Two-lane Collector	15,000	3,364	0.22	A	2,060	0.14	A
Horseshoe Bar Road	I-80 and Brace Road (Loomis)	Two-lane Collector	15,000	6,101	0.41	A	6,460	0.43	A
Brace Road	I-80 and Barton Road [1] (Loomis)	Two-lane Collector	15,000	4,036	0.27	A	1,980	0.13	A
	I-80 and Sierra College Boulevard [1] (Loomis)	Two-lane Collector	15,000	3,408	0.23	A	560	0.04	A
Sierra College Boulevard	English Colony Way and King Road [1] (Placer County)	Two-lane Collector	15,000	9,650	0.64	B	6,620	0.44	A
	King Road and Taylor Road [1] (Loomis)	Two-lane Collector	15,000	10,720	0.71	C	7,220	0.48	A
	Taylor Road and I-80	Two-lane Collector	15,000	17,906	1.19	F	8,900	0.59	A
	I-80 and Dominguez Road	Two-lane Collector	15,000	13,825	0.92	E	11,040	0.74	C
	Dominguez Road and Rocklin Road [1]	Two-lane Collector	15,000	13,435	0.90	D	10,980	0.73	C
Granite Drive	Dominguez Road and Sierra College Boulevard [1]	Four-lane Undivided Arterial	30,000	6,188	0.21	A	4,360	0.15	A
	Dominguez Road and Rocklin Road [1]	Four-lane Undivided Arterial	30,000	8,278	0.28	A	7,860	0.26	A
Dominguez Road	Taylor Road and Granite Drive [1]	Two-lane Collector	15,000	2,382	0.16	A	510	0.03	A
King Road	Sierra College Boulevard and Taylor Road [1] (Loomis)	Two-lane Collector	15,000	5,610	0.37	A	3,460	0.23	A

Notes:

[1] LOS C required for these segments. LOS D acceptable for all other segments.

Outline indicates exceeds level of service criteria.

Table 4.2-6
Existing Plus Project Peak Hour Roadway Segment Level of Service Summary

Roadway	Segment	Capacity	Existing			Existing + Project		
			Volume	V/C	LOS	Volume	V/C	LOS
Taylor Road	King Road and Horseshoe Bar Road (Loomis)							
	A.M. Peak Hour Northbound	1,650	426	0.26	A	427	0.26	A
	A.M. Peak Hour Southbound	1,650	706	0.43	A	709	0.43	A
	Total A.M. Peak Hour	3,300	1,132	0.34	A	1,136	0.34	A
	P.M Peak Hour Northbound	1,650	494	0.30	A	497	0.30	A
	P.M Peak Hour Southbound	1,650	588	0.36	A	590	0.36	A
	Total P.M. Peak Hour	3,300	1,082	0.33	A	1,087	0.33	A
Sierra College Boulevard	Taylor Road and I-80							
	A.M. Peak Hour Northbound	1,650	594	0.36	A	643	0.39	A
	A.M. Peak Hour Southbound	1,650	636	0.39	A	616	0.37	A
	Total A.M. Peak Hour	3,300	1,230	0.37	A	1,259	0.38	A
	P.M Peak Hour Northbound	1,650	794	0.48	A	820	0.50	A
	P.M Peak Hour Southbound	1,650	694	0.42	A	708	0.43	A
	Total P.M. Peak Hour	3,300	1,488	0.45	A	1,528	0.46	A
Sierra College Boulevard	I-80 and Dominguez Road							
	A.M. Peak Hour Northbound	1,650	833	0.50	A	850	0.52	A
	A.M. Peak Hour Southbound	1,650	598	0.36	A	604	0.37	A
	Total A.M. Peak Hour	3,300	1,431	0.43	A	1,454	0.44	A
	P.M Peak Hour Northbound	1,650	896	0.54	A	928	0.56	A
	P.M Peak Hour Southbound	1,650	805	0.49	A	825	0.50	A
	Total P.M. Peak Hour	3,300	1,701	0.52	A	1,753	0.53	A
Sierra College Boulevard	Dominguez Road and Rocklin Road							
	A.M. Peak Hour Northbound	1,650	831	0.50	A	853	0.52	A
	A.M. Peak Hour Southbound	1,650	911	0.55	A	913	0.55	A
	Total A.M. Peak Hour	3,300	1,742	0.53	A	1,766	0.54	A
	P.M Peak Hour Northbound	1,650	939	0.57	A	944	0.57	A
	P.M Peak Hour Southbound	1,650	954	0.58	A	962	0.58	A
	Total P.M. Peak Hour	3,300	1,893	0.57	A	1,906	0.58	A

Note: Sierra College Boulevard expansion to four lanes south of I-80 is an approved project.

EXISTING PLUS APPROVED PROJECTS (BASELINE)

Existing plus Approved Projects (Baseline) Traffic Volumes

To identify traffic conditions that could be expected at the time of project opening, an existing plus approved projects (baseline) scenario was developed. The City provided a list of approved projects in the vicinity of the project. The approved projects include interchange improvements at I-80 and Sierra College Boulevard, as the

interchange improvements have been approved, are fully funded and are under construction. The approved projects do not include the proposed Dominguez Road extension. The approved projects list is provided in Appendix B (identified as Appendix D within Appendix B). Traffic volumes for approved projects were determined by applying the trip generation rates from the ITE Trip Generation, 7th Edition, to the approved land uses. Vehicle trips from approved projects were distributed to the study area intersections based on the location of the approved projects in relation to other land uses and local and regional transportation networks. The locations of the approved projects and trip distribution are illustrated in Exhibit 4.2-9. The approved projects and their respective trip generation are shown in Table 4.2-7. This scenario also takes into account roadway improvements that are funded and have environmental approval. As a result, the funded improvements at the I-80/Sierra College Boulevard interchange are included in the short-term geometrics, as illustrated in Exhibit 4.2-10.

EXISTING PLUS APPROVED PROJECTS (BASELINE) LEVELS OF SERVICE

Traffic from the approved projects was added to the existing traffic counts and LOS were calculated for the existing plus approved projects scenario. Existing plus approved projects weekday peak-hour and Saturday traffic volumes are illustrated in Exhibits 4.2-11 and 4.2-12. The LOS for study area intersections and roadway segments in the existing plus approved projects scenario are shown in Tables 4.2-8 and 4.2-9. The existing plus approved projects LOS worksheets are provided in Appendix B (identified as Appendix E within Appendix B).

As shown in Table 4.2-8, the following six intersections are operating at an unsatisfactory LOS in the existing plus approved projects condition:

► Rocklin Road/Pacific Street
► Rocklin Road/Granite Drive
► Rocklin Road/I-80 westbound ramps
► Rocklin Road/I-80 eastbound ramps
► Sierra College Boulevard/Rocklin Road
► Taylor Road/Horseshoe Bar Road (Loomis)

As shown in Table 4.2-9, most of the study area roadway segments are forecast to operate within their daily roadway capacities except for the following three segments:

► Taylor Road between King Road and Horseshoe Bar Road (Loomis)
► Sierra College Boulevard between Taylor Road and I-80
► Sierra College Boulevard between Dominguez Road and Rocklin Road

These segments would exceed the threshold of daily capacity in the existing plus approved projects (baseline) scenario. However, in both a.m. and p.m. peak hours, all affected segments are forecast to operate with satisfactory v/c ratios.

EXISTING PLUS APPROVED PROJECTS (BASELINE) PLUS PROJECT

Traffic volumes generated by the proposed project were added to the existing plus approved projects (baseline) traffic volumes and LOS were calculated for the existing plus approved projects (baseline) plus project scenario. The existing plus approved projects (baseline) plus project weekday and Saturday peak-hour traffic volumes are illustrated in Exhibits 4.2-13 and 4.2-14. The LOS for study area intersections and roadway segments in the existing plus approved projects plus project scenario are shown in Tables 4.2-10 and 4.2-11. The existing plus approved projects plus project LOS worksheets are provided in Appendix B (identified as Appendix F within Appendix B).
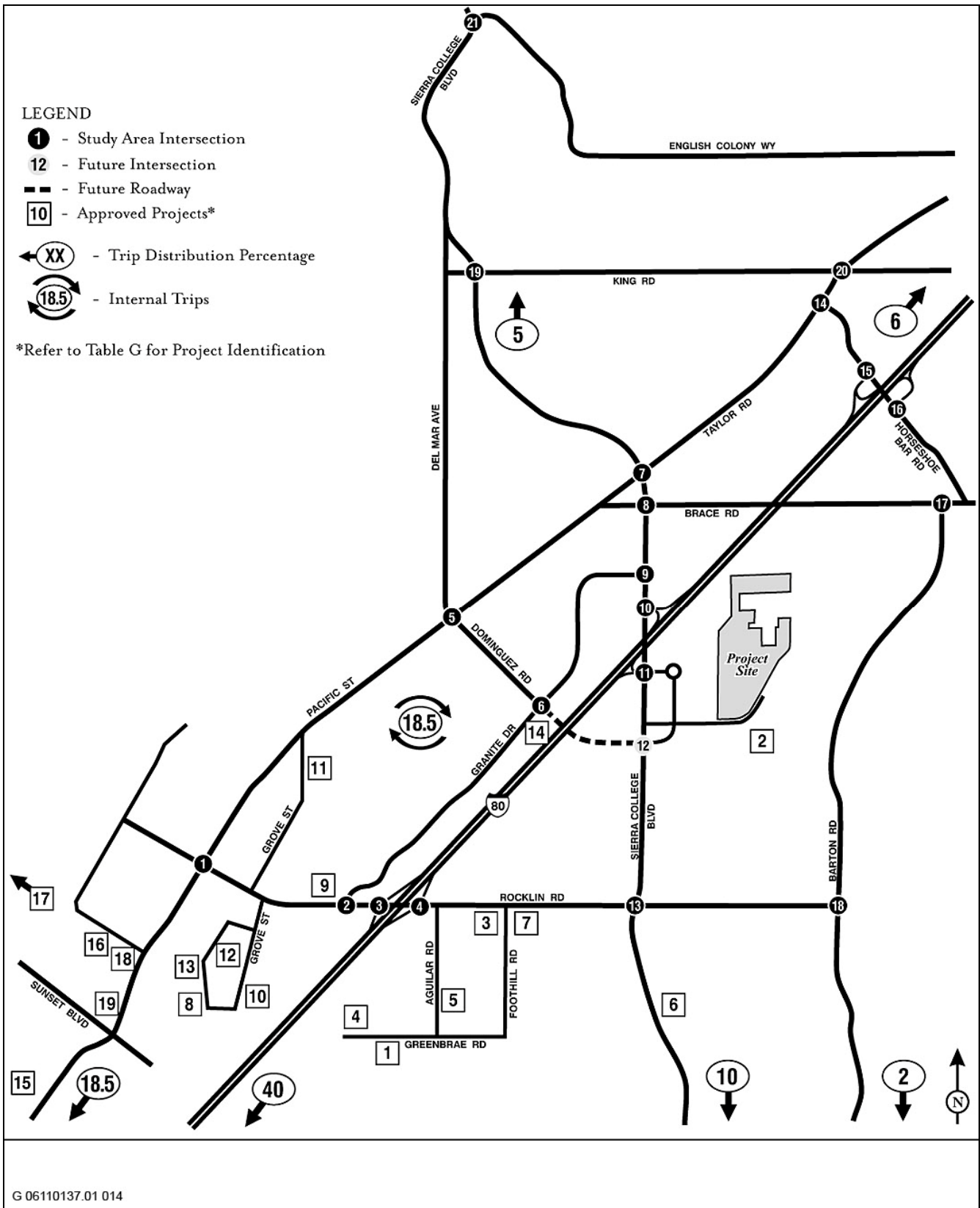
Location of Approved Projects

Exhibit 4.2-9

Source: LSA 2007

Rocklin 60 Project DEIR
City of Rocklin
4.2-27
EDAW
Traffic and Circulation

Table 4.2-7
Trip Generation of Approved Projects

No.	Project No.	Description	Landuse (ITE Code)	Size	AM Peak Hour			PM Peak Hour			Saturday Peak Hour		
					In	Out	Total	In	Out	Total	In	Out	Total
2	1	Granite Lake Estates	Single Family Detached Housing (210)	119 du	23	70	93	79	46	125	60	51	112
19	2	Croftwood, Unit 1	Single Family Detached Housing (210)	156 du	30	89	119	101	59	160	79	67	147
22	3	Rocklin Sierra Plaza	Shopping Center (820)	31.60 ksf	78	30	108	140	153	293	82	75	157
29	4	Bender Insurance Office Building	Bender Insurance Office Building	14.75 ksf	10	31	41	60	35	95	3	3	6
37	5	Bramblewood Estates	Single Family Detached Housing (210)	2 du	3	8	11	2	1	3	1	1	2
38	6	Sunrise Assisted Living	Sunrise Assisted Living	48 ksf	6	3	9	7	7	14	12	14	26
43	7	Rocklin Executive Office Park	Office Park (710)	21 ksf	27	27	54	51	51	102	5	4	9
2	8	Villages	Single Family Detached Housing (210)	65 du	14	41	55	46	27	73	33	28	61
56	9	Granite Business Center	General Office Building (710)	16.60 ksf	39	6	45	17	80	97	4	3	7
59	10	Rocklin Mobile Home Park Addition	Mobile Home Park (240)	21 du	4	14	18	9	5	14	6	5	11
60	11	Holy Cross Lutheran Church	Church (560)	40.63 ksf	16	13	29	14	13	27	102	42	144
65	12	Winding Lane Estates	Single Family Detached Housing (210)	26 du	7	21	28	20	12	32	13	11	24
69	13	Samoylovich Estates	Single Family Detached Housing (210)	4 du	7	5	12	3	3	6	2	2	4
76	14	Granite Drive Retail/Office	Office (710)	22 ksf	14	42	56	65	38	103	5	4	9
51	15	Rocklin 94	Residential Condominium (230)	94 du	8	41	49	38	19	57	24	20	44
3	16	Colish Subdivision	Single Family Detached Housing (210)	8 du	4	11	15	7	4	11	4	3	8
7	17	Community Covenant Church	Church (560)	11.78 ksf	1	0	1	1	0	1	30	12	42
28	18	Rocklin Retail Center	Shopping Center (820)	19.5 ksf	36	23	59	102	111	213	50	47	97
37	19	Pacific Center Retail Center	Shopping Center (820)	32.2 ksf	48	31	79	142	154	296	83	77	160
		Total			375	506	881	904	818	1,722	598	470	1,068
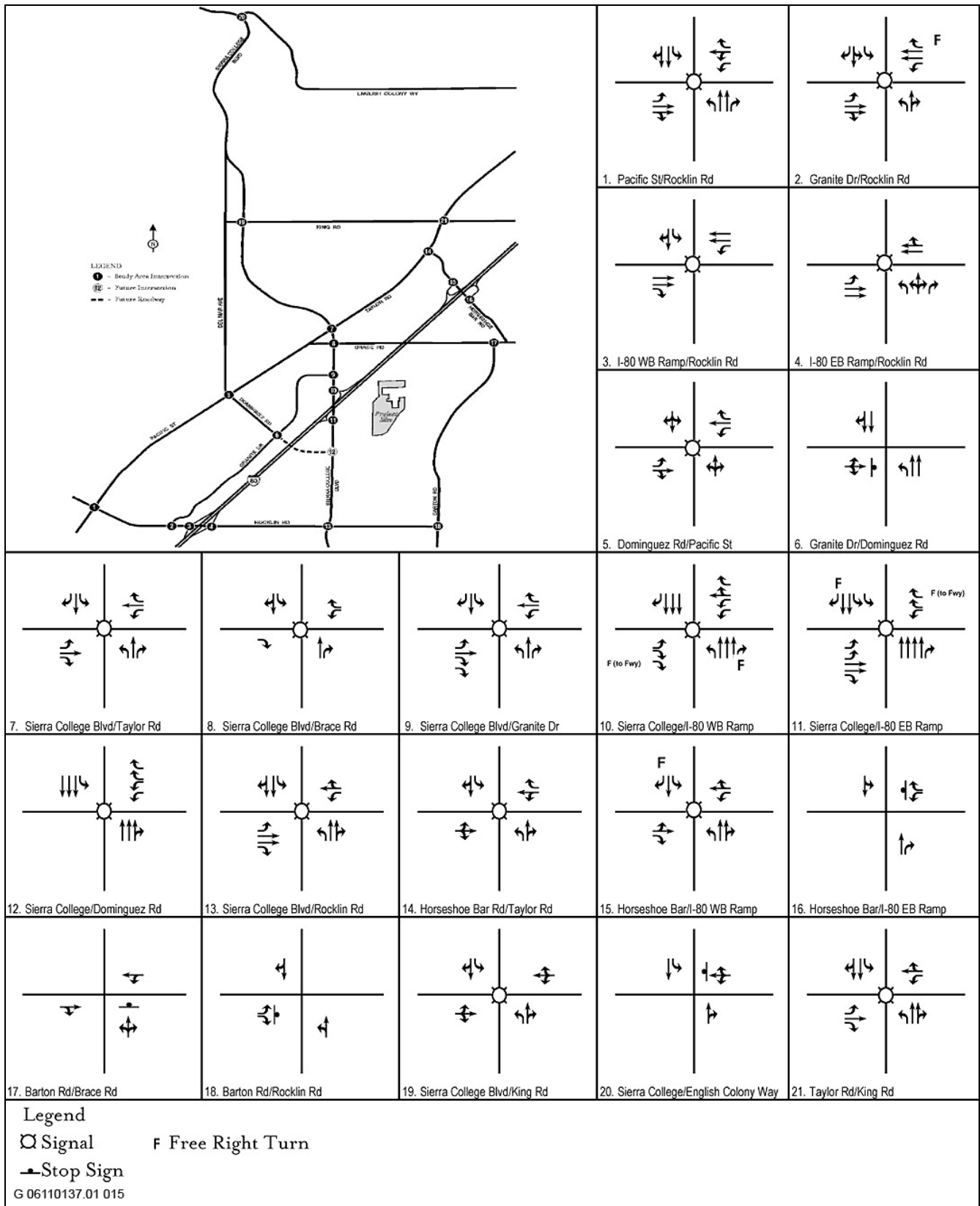
Source: LSA 2007

Short-Term Geometrics and Traffic Control

Exhibit 4.2-10
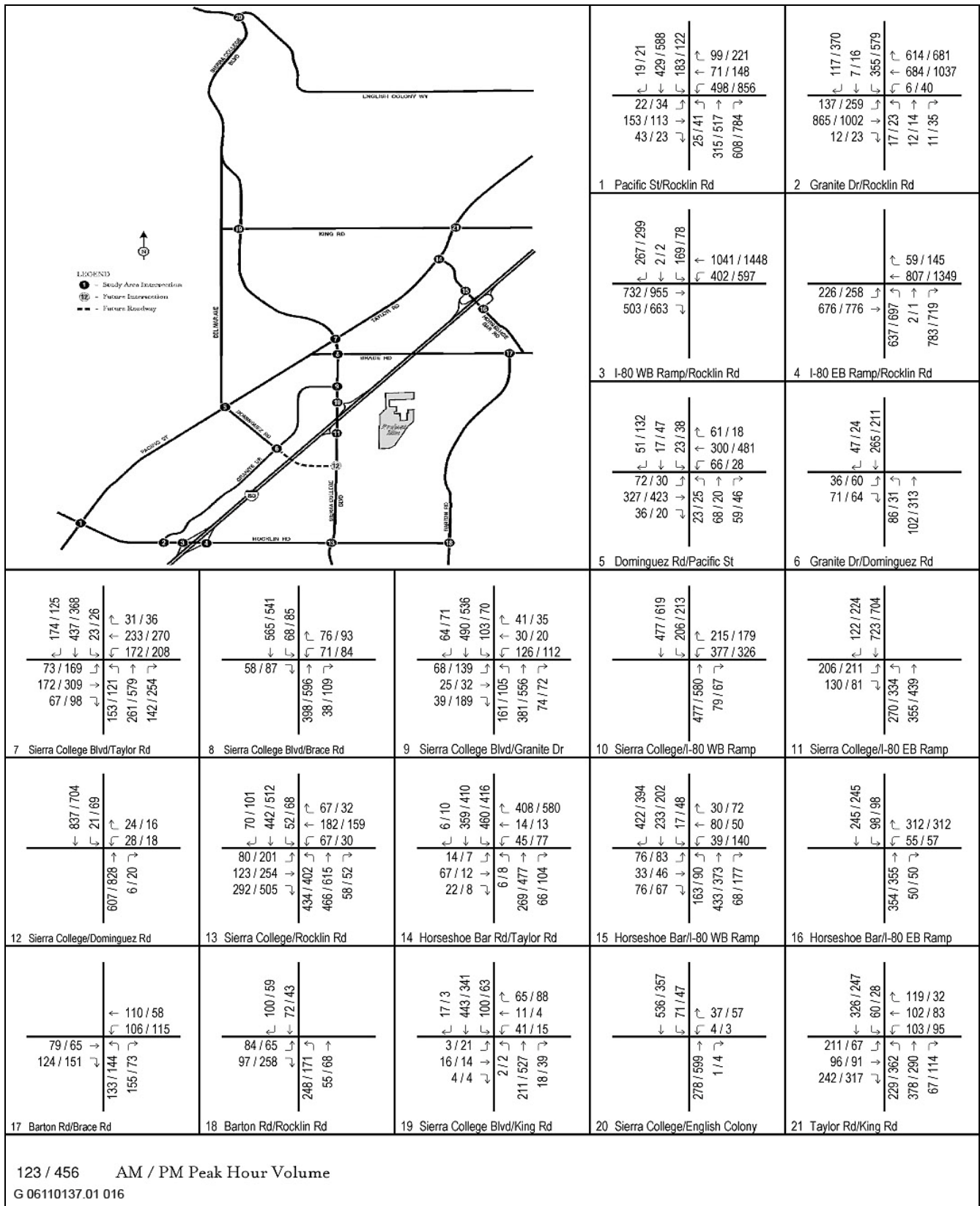
Existing Plus Approved Projects (Baseline) Peak-Hour Traffic Volumes　　　　**Exhibit 4.2-11**

Existing Plus Approved Projects (Baseline) Saturday Peak-Hour Traffic Volumes   **Exhibit 4.2-12**

Source: LSA 2007

Table 4.2-8
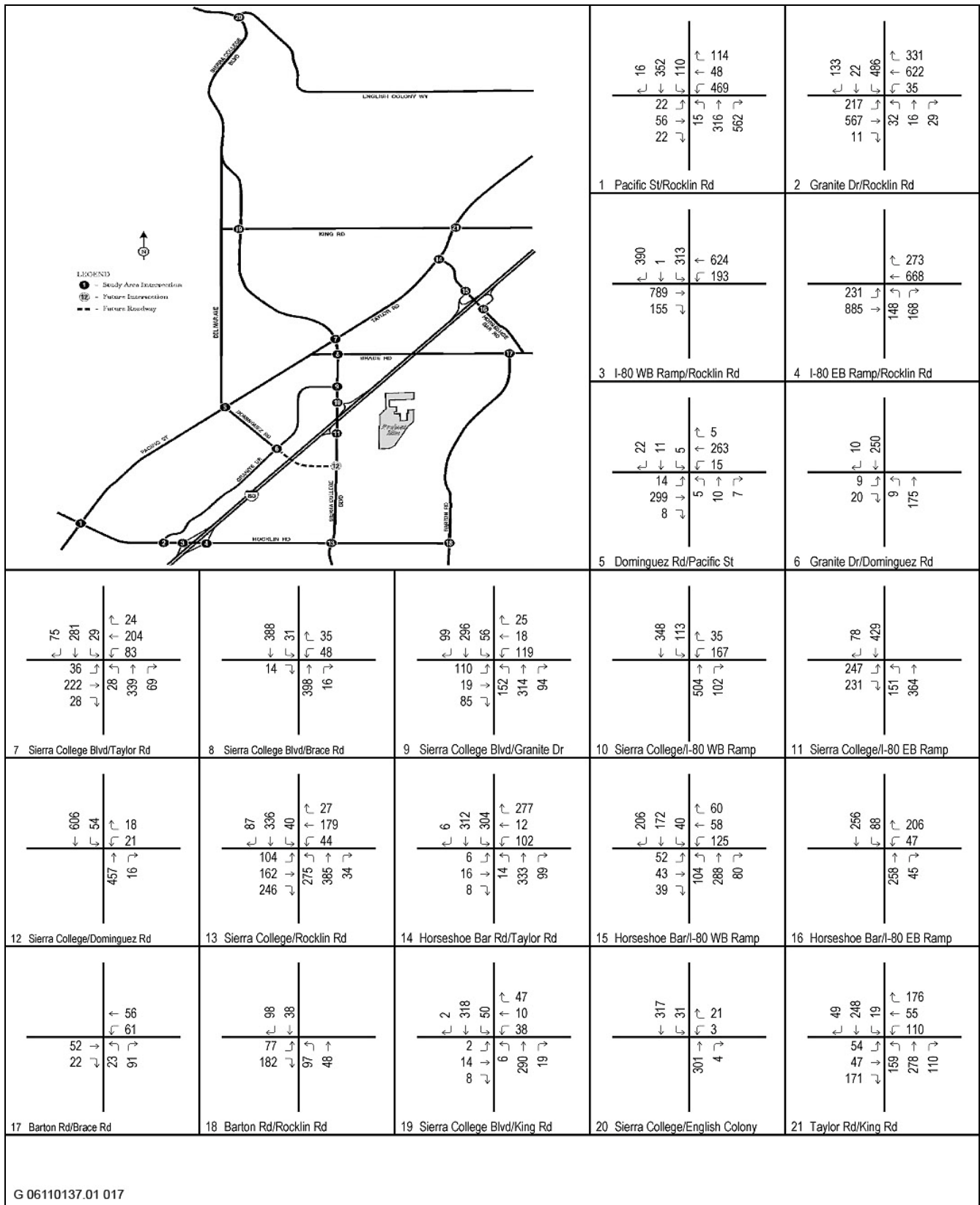**Existing Plus Approved Projects (Baseline) Condition Intersection Level of Service Summary**

| Intersection | Existing Plus Approved Condition | | | | | |
| | AM Peak Hour | | PM Peak Hour | | Saturday | |
	V/C Ratio / Delay	LOS	V/C Ratio / Delay	LOS	V/C Ratio / Delay	LOS
1 Rocklin Road/Pacific Street [1]	1.039	F	1.174	F	0.732	C
2 Rocklin Road/Granite Drive	0.558	A	0.929	E	0.656	A
3 Rocklin Road/I-80 Westbound Ramps	0.903	E	1.179	F	0.733	C
4 Rocklin Road/I-80 Eastbound Ramps	0.953	E	1.095	F	0.635	A
5 Dominguez Road/Pacific Street [1]	0.460	A	0.546	A	0.279	A
6 Dominguez Road/Granite Drive [1]	11.8 sec	B	12.2 sec	B	9.9 sec	A
7 Sierra College Boulevard/Taylor Road (Loomis)	0.746	C	0.900	D	0.521	A
8 Sierra College Boulevard/Brace Road (Loomis)	0.520	A	0.633	B	0.356	A
9 Sierra College Boulevard/Granite Drive	0.643	B	0.682	B	0.483	A
10 Sierra College Boulevard/I-80 Westbound Ramps	0.329	A	0. 300	A	0.208	A
11 Sierra College Boulevard/I-80 Eastbound Ramps	0.388	A	0.365	A	0.374	A
12 Sierra College Boulevard/Dominguez Road	-	-	-	-	-	-
13 Sierra College Boulevard/Rocklin Road [1]	0.793	C	0.962	E	0.626	B
14 Taylor Road/Horseshoe Bar Road (Loomis)	0.924	E	1.109	E	0.694	B
15 Horseshoe Bar Road/I-80 Westbound Ramps (Loomis)	0.456	A	0.434	A	0.363	A
16 Horseshoe Bar Road/I-80 Eastbound Ramps (Loomis)	16.4 sec	C	16.1 sec	C	12.2 sec	B
17 Barton Road/Brace Road [1] (Loomis)	16.2 sec	C	15.2 sec	C	9.5 sec	A
18 Barton Road/Rocklin Road [1] (Loomis)	15.9 sec	C	11.2 sec	B	10.3 sec	B
19 Sierra College Boulevard/King Road [1] (Loomis)	0.450	A	0.555	A	0.349	A
20 Sierra College Boulevard/English Colony Way [1] (Placer County)	11.1 sec	B	14.0 sec	B	10.7 sec	B
21 Taylor Road/King Road [1] (Loomis)	0.761	C	0.725	C	0.409	A

Notes: ICU V/C ratio is used for signalized intersections. HCM delay in seconds is used for unsignalized intersections.
[1] LOS C required for these intersections. LOS D acceptable for all other intersections.
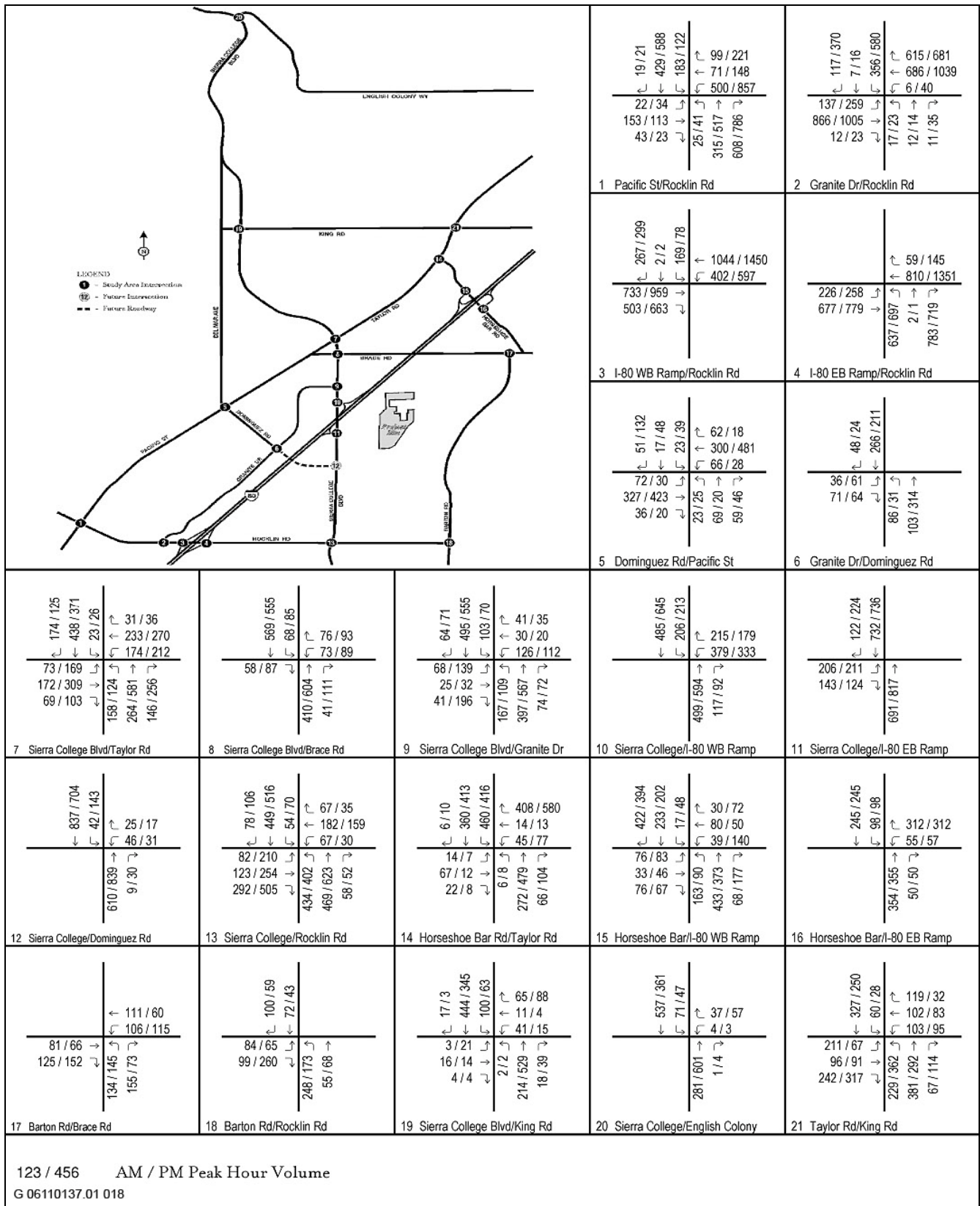Outline indicates exceeds level of service criteria.

Table 4.2-9
Existing Plus Approved Projects (Baseline) – Daily Roadway Segment Level of Service Summary

Roadway	Segment	Configuration	Capacity	Weekday			Saturday		
				Volume	V/C	LOS	Volume	V/C	LOS
Taylor Road	King Road and Horseshoe Bar Road [1] (Loomis)	Two-lane Collector	15,000	17,150	1.14	F	11,410	0.76	C
	Horseshoe Bar Road and Sierra College Boulevard[1] (Loomis)	Two-lane Collector	15,000	10,973	0.73	C	3,710	0.25	A
Pacific Street	Sierra College Boulevard and Dominguez Road [1]	Two-lane Collector	15,000	11,868	0.79	C	6,100	0.41	A
	Dominguez Road and Rocklin Road [1]	Four-lane Undivided Arterial	30,000	19,459	0.65	B	9,080	0.30	A
Rocklin Road	Pacific Street and Granite Drive	Four-lane Undivided Arterial	30,000	25,371	0.85	D	13,310	0.44	A
	I-80 and Sierra College Boulevard	Four-lane Undivided Arterial	30,000	14,599	0.49	A	16,120	0.54	A
	Sierra College Boulevard and Barton Road [1] (Loomis)	Two-lane Collector	15,000	6,646	0.44	A	5,090	0.34	A
Barton Road	Rocklin Road and Brace Road [1] (Loomis)	Two-lane Collector	15,000	3,514	0.23	A	2,130	0.14	A
Horseshoe Bar Road	I-80 and Brace Road (Loomis)	Two-lane Collector	15,000	6,141	0.41	A	6,490	0.43	A
Brace Road	I-80 and Barton Road [1] (Loomis)	Two-lane Collector	15,000	4,046	0.27	A	1,960	0.13	A
	I-80 and Sierra College Boulevard [1] (Loomis)	Two-lane Collector	15,000	3,408	0.23	A	560	0.04	A
Sierra College Boulevard	English Colony Way and King Road [1] (Placer County)	Two-lane Collector	15,000	10,430	0.70	B	7,090	0.47	A
	King Road and Taylor Road [1] (Loomis)	Two-lane Collector	15,000	11,250	0.75	C	7,450	0.50	A
	Taylor Road and I-80	Two-lane Collector	15,000	18,296	1.22	F	9,010	0.60	B
	I-80 and Dominguez Road	Four-lane Undivided Arterial	30,000	14,105	0.47	A	11,210	0.37	A
	Dominguez Road and Rocklin Road [1]	Two-lane Collector	15,000	14,745	0.98	E	11,840	0.79	C
Granite Drive	Dominguez Road and Sierra College Boulevard [1]	Four-lane Undivided Arterial	30,000	6,328	0.21	A	4,430	0.15	A
	Dominguez Road and Rocklin Road [1]	Four-lane Undivided Arterial	30,000	8,458	0.28	A	7,960	0.27	A
Dominguez Road	Taylor Road and Granite Drive [1]	Two-lane Collector	15,000	2,422	0.16	A	530	0.04	A
King Road	Sierra College Boulevard and Taylor Road [1] (Loomis)	Two-lane Collector	15,000	5,610	0.37	A	3,460	0.23	A

Notes:
[1] LOS C required for these segments. LOS D acceptable for all other segments.
Outline indicates exceeds level of service criteria.

Map legend:
- ● — Study Area Intersection
- ⑫ — Future Intersection
- - - - — Future Roadway

1 Pacific St/Rocklin Rd

19 / 21
429 / 588
183 / 122
↰ 99 / 221
← 71 / 148
↳ 500 / 857
22 / 34 ↳
153 / 113 →
43 / 23 ↴
25 / 41
315 / 517
608 / 786

2 Granite Dr/Rocklin Rd

117 / 370
7 / 16
356 / 580
↰ 615 / 681
← 686 / 1039
↳ 6 / 40
137 / 259
866 / 1005 →
12 / 23
17 / 23
12 / 14
11 / 35

3 I-80 WB Ramp/Rocklin Rd

267 / 299
2 / 2
169 / 78
← 1044 / 1450
↳ 402 / 597
733 / 959 →
503 / 663 ↴

4 I-80 EB Ramp/Rocklin Rd

↰ 59 / 145
← 810 / 1351
226 / 258 ↳
677 / 779 →
2 / 1
637 / 697
783 / 719

5 Dominguez Rd/Pacific St

51 / 132
17 / 48
23 / 39
↰ 62 / 18
← 300 / 481
↳ 66 / 28
72 / 30 ↳
327 / 423 →
36 / 20 ↴
23 / 25
69 / 20
59 / 46

6 Granite Dr/Dominguez Rd

48 / 24
266 / 211
36 / 61 ↳
71 / 64 ↴
86 / 31
103 / 314

7 Sierra College Blvd/Taylor Rd

174 / 125
438 / 371
23 / 26
↰ 31 / 36
← 233 / 270
↳ 174 / 212
73 / 169 ↳
172 / 309 →
69 / 103 ↴
158 / 124
264 / 581
146 / 256

8 Sierra College Blvd/Brace Rd

569 / 555
68 / 85
↰ 76 / 93
↳ 73 / 89
58 / 87 ↴
410 / 604
41 / 111

9 Sierra College Blvd/Granite Dr

64 / 71
495 / 555
103 / 70
↰ 41 / 35
← 30 / 20
↳ 126 / 112
68 / 139 ↳
25 / 32 →
41 / 196 ↴
167 / 109
397 / 567
74 / 72

10 Sierra College/I-80 WB Ramp

485 / 645
206 / 213
↰ 215 / 179
↳ 379 / 333
499 / 594
117 / 92

11 Sierra College/I-80 EB Ramp

122 / 224
732 / 736
206 / 211 ↳
143 / 124 ↴
691 / 817

12 Sierra College/Dominguez Rd

837 / 704
42 / 143
↰ 25 / 17
↳ 46 / 31
610 / 839
9 / 30

13 Sierra College/Rocklin Rd

78 / 106
449 / 516
54 / 70
↰ 67 / 35
← 182 / 159
↳ 67 / 30
82 / 210 ↳
123 / 254 →
292 / 505 ↴
434 / 402
469 / 623
58 / 52

14 Horseshoe Bar Rd/Taylor Rd

6 / 10
360 / 413
460 / 416
↰ 408 / 580
← 14 / 13
↳ 45 / 77
14 / 7 ↳
67 / 12 →
22 / 8 ↴
6 / 8
272 / 479
66 / 104

15 Horseshoe Bar/I-80 WB Ramp

422 / 394
233 / 202
17 / 48
↰ 30 / 72
← 80 / 50
↳ 39 / 140
76 / 83 ↳
33 / 46 →
76 / 67 ↴
163 / 90
433 / 373
68 / 177

16 Horseshoe Bar/I-80 EB Ramp

245 / 245
98 / 98
↰ 312 / 312
↳ 55 / 57
354 / 355
50 / 50

17 Barton Rd/Brace Rd

← 111 / 60
↳ 106 / 115
81 / 66 →
125 / 152 ↴
134 / 145
155 / 73

18 Barton Rd/Rocklin Rd

100 / 59
72 / 43
84 / 65 ↳
99 / 260 ↴
248 / 173
55 / 68

19 Sierra College Blvd/King Rd

17 / 3
444 / 345
100 / 63
↰ 65 / 88
← 11 / 4
↳ 41 / 15
3 / 21 ↳
16 / 14 →
4 / 4 ↴
2 / 2
214 / 529
18 / 39

20 Sierra College/English Colony

537 / 361
71 / 47
↰ 37 / 57
↳ 4 / 3
281 / 601
1 / 4

21 Taylor Rd/King Rd

327 / 250
60 / 28
↰ 119 / 32
← 102 / 83
↳ 103 / 95
211 / 67 ↳
96 / 91 →
242 / 317 ↴
229 / 362
381 / 292
67 / 114

123 / 456   AM / PM Peak Hour Volume
G 06110137.01 018

Source: LSA 2007

Existing Plus Approved Projects (Baseline) Plus Project Peak-Hour Traffic Volumes   Exhibit 4.2-13
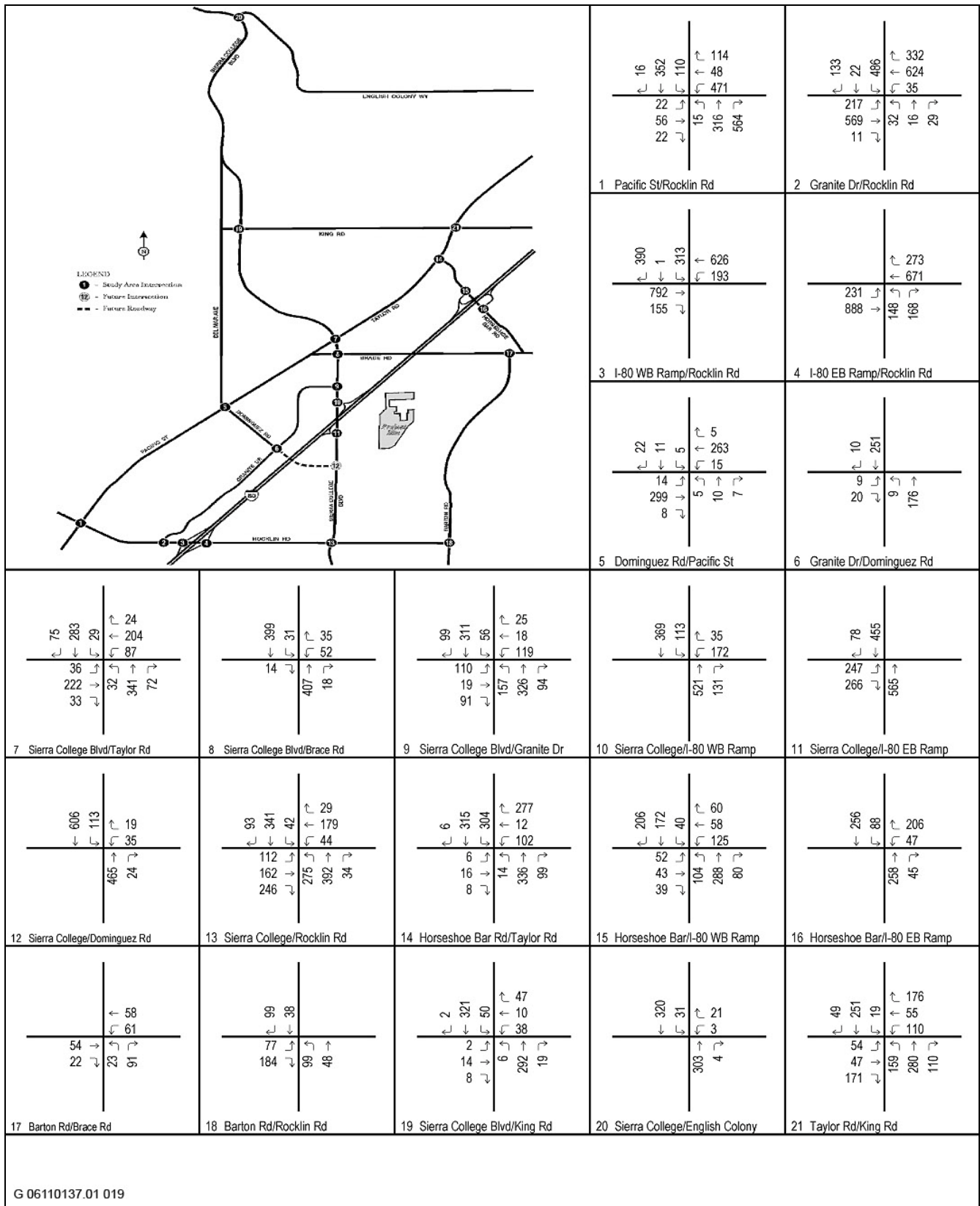
Existing Plus Approved Projects (Baseline) Plus Project Saturday Peak-Hour Traffic Volumes **Exhibit 4.2-14**

IMPACTS AND MITIGATION MEASURES

IMPACT 4.2-1 **Intersections.** *The addition of project-related traffic to baseline traffic volumes would degrade traffic operations at five intersections that currently operate unacceptably primarily during p.m. peak hours. These intersections already operate unacceptably and the project's contribution would represent less than a 5 percent increase in the volume/capacity ratio. Therefore, this impact would be considered **less than significant**.*

The addition of project-related traffic to baseline traffic volumes would degrade traffic operations at the following six intersections:

► Rocklin Road/Pacific Street
► Rocklin Road/Granite Drive
► Rocklin Road/I-80 Westbound Ramps
► Rocklin Road/I-80 Eastbound Ramps
► Sierra College Boulevard/Rocklin Road
► Taylor Road/Horseshoe Bar Road (Loomis)

However, as identified in Table 4.2-10, the v/c ratio at these intersections would not be increased by more than 5 percent (0.05) and the LOS would not change one full letter grade with the addition of project traffic. As a result, this impact would be considered **less than significant**.

Mitigation Measure 4.2-1: Intersections.

No mitigation is necessary.

IMPACT 4.2-2 **Roadway Segments.** *The proposed project would cause three roadway segments to exceed the threshold of daily capacity. However, in both the a.m. and p.m. peak hours, the traffic on all three roadway segments is forecast to operate with satisfactory volume/capacity ratios in both peak hours with project conditions. Therefore, the project's impacts on roadway segments would be considered **less than significant**.*

As shown in Table 4.2-11, most of the study area roadway segments are forecast to operate within their daily roadway capacities except for the following three roadway segments:

► Taylor Road between King Road and Horseshoe Bar Road (Loomis)
► Sierra College Boulevard between Taylor Road and I-80
► Sierra College Boulevard between Dominguez Road and Rocklin Road

These segments would exceed the threshold of daily capacity in the existing plus approved projects (baseline) plus project scenario. However, in both the a.m. and p.m. peak hours, the traffic on the three roadway segments is forecast to operate with satisfactory v/c ratios in both peak hours with project conditions, as shown in Table 4.2-12. Therefore, the project's impacts on roadway segments would be considered **less than significant**.

Mitigation Measure 4.2-2: Roadway Segments.

No mitigation is necessary.

Table 4.2-10
Existing Plus Approved Projects (Baseline) Plus Project Condition Intersection Level of Service Summary

| Intersection | Existing Plus Approved Condition | | | | | | Existing Plus Approved Plus Project Condition | | | | | |
| | AM Peak Hour | | PM Peak Hour | | Saturday | | AM Peak Hour | | PM Peak Hour | | Saturday | |
	V/C Ratio / Delay	LOS	V/C Ratio / Delay	LOS	V/C Ratio / Delay	LOS	V/C Ratio / Delay	LOS	V/C Ratio / Delay	LOS	V/C Ratio / Delay	LOS
1 Rocklin Road/Pacific Street [1]	1.039	F	1.174	F	0.732	C	1.040	F [2]	1.176	F [2]	0.735	C
2 Rocklin Road/Granite Drive	0.558	A	0.929	E	0.656	A	0.559	A	0.929	E [2]	0.657	B
3 Rocklin Road/I-80 Westbound Ramps	0.903	E	1.179	F	0.733	C	0.903	E [2]	1.179	F [2]	0.734	C
4 Rocklin RoadI-80 Eastbound Ramps	0.953	E	1.095	F	0.635	A	0.954	E [2]	1.096	F [2]	0.636	B
5 Dominguez Road/Pacific Street [1]	0.460	A	0.546	A	0.279	A	0.461	A	0.548	A	0.279	A
6 Dominguez Road/Granite Drive [1]	11.8 sec	B	12.2 sec	B	9.9 sec	A	11.9 sec	B	12.2 sec	B	9.9 sec	A
7 Sierra College Boulevard/Taylor Road (Loomis)	0.746	C	0.900	D	0.521	A	0.753	C	0.904	D	0.526	A
8 Sierra College Boulevard/Brace Road (Loomis)	0.520	A	0.633	B	0.356	A	0.525	A	0.643	B	0.365	A
9 Sierra College Boulevard/Granite Drive	0.643	B	0.682	B	0.483	A	0.652	B	0.703	C	0.501	A
10 Sierra College Boulevard/I-80 Westbound Ramps	0.329	A	0.300	A	0.208	A	0.330	A	0.304	A	0.214	A
11 Sierra College Boulevard/I-80 Eastbound Ramps	0.388	A	0.365	A	0.374	A	0.402	A	0.384	A	0.414	A
12 Sierra College Boulevard/Dominguez Road	-	-	-	-	-	-	-	-	-	-	-	-
13 Sierra College Boulevard/Rocklin Road [1]	0.793	C	0.962	E	0.626	B	0.799	C	0.966	E [2]	0.638	B
14 Taylor Road/Horseshoe Bar Road (Loomis)	0.924	E	1.109	F	0.694	B	0.926	E [2]	1.111	F [2]	0.696	B
15 Horseshoe Bar Road/I-80 Westbound Ramps (Loomis)	0.456	A	0.434	A	0.363	A	0.456	A	0.434	A	0.363	A
16 Horseshoe Bar Road/I-80 Eastbound Ramps (Loomis)	16.4 sec	C	16.1 sec	C	12.2 sec	B	16.4 sec	C	16.1 sec	C	12.2 sec	B
17 Barton Road/Brace Road [1] (Loomis)	16.2 sec	C	15.2 sec	C	9.5 sec	A	16.4 sec	C	15.3 sec	C	9.5 sec	A
18 Barton Road/Rocklin Road [1] (Loomis)	15.9 sec	C	11.2 sec	B	10.3 sec	B	15.8 sec	C	11.2 sec	B	10.4 sec	B
19 Sierra College Boulevard/King Road [1] (Loomis)	0.450	A	0.555	A	0.349	A	0.451	A	0.556	A	0.350	A
20 Sierra College Boulevard/English Colony Way [1] (Placer County)	11.1 sec	B	14.0 sec	B	10.7 sec	B	11.2 sec	B	14.1 sec	B	10.7 sec	B
21 Taylor Road/King Road [1] (Loomis)	0.761	C	0.725	C	0.409	A	0.764	C	0.726	C	0.492	A

Notes: ICU V/C ratio is used for signalized intersections. HCM delay in seconds is used for unsignalized intersections.

[1] LOS C required for these intersections. LOS D acceptable for all other intersections.

[2] Project impact is less than 5% of total intersection V/C or delay and therefore not a significant impact.

Outline indicates exceeds level of service criteria.

Table 4.2-11
Existing Plus Approved Projects (Baseline) Plus Project – Daily Roadway Segment Level of Service Summary

Roadway	Segment	Configuration	Capacity	Weekday			Saturday		
				Volume	V/C	LOS	Volume	V/C	LOS
Taylor Road	King Road and Horseshoe Bar Road [1] (Loomis)	Two-lane Collector	15,000	17,200	1.15	F	11,460	0.76	C
	Horseshoe Bar Road and Sierra College Boulevard[1] (Loomis)	Two-lane Collector	15,000	11,023	0.73	C	3,770	0.25	A
Pacific Street	Sierra College Boulevard and Dominguez Road [1]	Two-lane Collector	15,000	11,898	0.79	C	6,130	0.41	A
	Dominguez Road and Rocklin Road [1]	Four-lane Undivided Arterial	30,000	19,479	0.65	B	9,100	0.30	A
Rocklin Road	Pacific Street and Granite Drive	Four-lane Undivided Arterial	30,000	25,401	0.85	D	13,340	0.44	A
	I-80 and Sierra College Boulevard	Four-lane Undivided Arterial	30,000	14,639	0.49	A	16,160	0.54	A
	Sierra College Boulevard and Barton Road [1] (Loomis)	Two-lane Collector	15,000	6,696	0.45	A	5,150	0.34	A
Barton Road	Rocklin Road and Brace Road [1] (Loomis)	Two-lane Collector	15,000	3,524	0.23	A	2,150	0.14	A
Horseshoe Bar Road	I-80 and Brace Road (Loomis)	Two-lane Collector	15,000	6,141	0.41	A	6,490	0.43	A
Brace Road	I-80 and Barton Road [1] (Loomis)	Two-lane Collector	15,000	4,076	0.27	A	2,000	0.13	A
	I-80 and Sierra College Boulevard [1] (Loomis)	Two-lane Collector	15,000	3,408	0.23	A	560	0.04	A
Sierra College Boulevard	English Colony Way and King Road [1] (Placer County)	Two-lane Collector	15,000	10,480	0.70	B	7,140	0.48	A
	King Road and Taylor Road [1] (Loomis)	Two-lane Collector	15,000	11,410	0.76	C	7,590	0.51	A
	Taylor Road and I-80	Two-lane Collector	15,000	18,636	1.24	F	9,300	0.62	B
	I-80 and Dominguez Road	Four-lane Undivided Arterial	30,000	14,655	0.49	A	11,850	0.40	A
	Dominguez Road and Rocklin Road [1]	Two-lane Collector	15,000	14,905	0.99	E	11,980	0.80	C
Granite Drive	Dominguez Road and Sierra College Boulevard [1]	Four-lane Undivided Arterial	30,000	6,338	0.21	A	4,440	0.15	A
	Dominguez Road and Rocklin Road [1]	Four-lane Undivided Arterial	30,000	8,478	0.28	A	7,970	0.27	A
Dominguez Road	Taylor Road and Granite Drive [1]	Two-lane Collector	15,000	2,422	0.16	A	530	0.04	A
King Road	Sierra College Boulevard and Taylor Road [1] (Loomis)	Two-lane Collector	15,000	5,610	0.37	A	3,460	0.23	A

Notes:
[1] LOS C required for these segments. LOS D acceptable for all other segments.
Outline indicates exceeds level of service criteria.

Table 4.2-12
Existing Plus Approved Projects (Baseline) plus Project Peak Hour
Roadway Segment Level of Service Summary

Roadway	Segment	Capacity	Existing			Existing + Project		
			Volume	V/C	LOS	Volume	V/C	LOS
Taylor Road	King Road and Horseshoe Bar Road (Loomis)							
	A.M. Peak Hour Northbound	1,650	426	0.26	A	427	0.26	A
	A.M. Peak Hour Southbound	1,650	708	0.43	A	711	0.43	A
	Total A.M. Peak Hour	3,300	1,134	0.34	A	1,138	0.34	A
	P.M Peak Hour Northbound	1,650	495	0.30	A	498	0.30	A
	P.M Peak Hour Southbound	1,650	589	0.36	A	591	0.36	A
	Total P.M. Peak Hour	3,300	1,084	0.33	A	1,089	0.33	A
Sierra College Boulevard	Taylor Road and I-80							
	A.M. Peak Hour Northbound	1,650	655	0.40	A	662	0.40	A
	A.M. Peak Hour Southbound	1,650	616	0.37	A	638	0.39	A
	Total A.M. Peak Hour	3,300	1,271	0.39	A	1,300	0.39	A
	P.M Peak Hour Northbound	1,650	837	0.51	A	863	0.52	A
	P.M Peak Hour Southbound	1,650	733	0.44	A	748	0.45	A
	Total P.M. Peak Hour	3,300	1,570	0.48	A	1,611	0.49	A
Sierra College Boulevard	Dominguez Road and Rocklin Road							
	A.M. Peak Hour Northbound	1,650	865	0.52	A	879	0.53	A
	A.M. Peak Hour Southbound	1,650	958	0.58	A	961	0.58	A
	Total A.M. Peak Hour	3,300	1,823	0.55	A	1,840	0.56	A
	P.M Peak Hour Northbound	1,650	1,047	0.63	B	1,051	0.64	B
	P.M Peak Hour Southbound	1,650	1,069	0.65	B	1,077	0.65	B
	Total P.M. Peak Hour	3,300	2,116	0.64	B	2,128	0.64	B

[1] Sierra College Boulevard expansion to four lanes south of I-80 is an approved project.

IMPACT 4.2-3 **Right Turns from Croftwood Road.** *Northbound vehicles exiting from "Croftwood Road" would be required to cross two lanes of traffic. Sufficient gaps in the traffic stream would occur along Sierra College Boulevard to allow right turns from "Croftwood Road" to the northbound through lanes. Therefore, this impact would be considered **less than significant**.*

The primary access to the project site would be provided from "Croftwood Road," which is being constructed as part of the approved Croftwood Subdivision project. Croftwood Road will connect with Sierra College Boulevard west of the project site. Due to the improvements to the I-80/Sierra College Boulevard interchange, the access onto Sierra College Boulevard from Croftwood Road will be limited to right turns in and out only. Northbound Sierra College Boulevard at the Croftwood Road intersection is made up of five lanes. The number 1, 2, and 3 lanes provide northbound through-movement. The number 4 lane provides northbound movement through the I-80 eastbound off-ramp intersection and becomes a "trap" lane onto the I-80 eastbound on-ramp. The number 5

lane would be a right-turn-only lane into the adjacent approved Rocklin Crossings project at the Signalized I-80 eastbound off-ramp driveway.

Because of the width of Sierra College Boulevard at Croftwood Road, outbound vehicles from the project site could have difficulty turning onto the northbound Sierra College Boulevard through lanes, as those vehicles would need to cross both the right-turn lane into the adjacent approved Rocklin Crossings project and the freeway trap lane. To determine whether vehicles would be restricted from turning out of Croftwood Road into the through lanes by heavy northbound through traffic, an operational analysis of this location was prepared using Synchro 7. Synchro allows the user to model the expected traffic operations of a corridor, rather than just a single intersection.

The Croftwood Road intersection with Sierra College Boulevard was modeled along with the two adjacent signalized intersections to determine whether adequate gaps would be caused by the traffic signals to allow egress from the roadway. The unsignalized operations analysis is provided in Appendix B (identified as Appendix I within Appendix B). The unsignalized LOS worksheets indicate the proportion of time that the westbound right-turn movement is not blocked by vehicles traveling northbound on Sierra College Boulevard as well as the capacity of the right-turn movement considering the total conflicting flow rate. In both the a.m. and p.m. peak hour, the capacity of the right-turn movement exceeds the demand for right turns (890 capacity vs. 193 demand during the a.m. peak hour, and 785 capacity vs. 394 demand during the p.m. peak hour). According to the calculations, the westbound right turn would be unblocked 82 percent of the time during the a.m. peak hour and 72 percent of the time during the p.m. peak hour. As a result, sufficient gaps in the traffic stream would occur along Sierra College Boulevard to allow right turns from Croftwood Road to the northbound through lanes and a substantial increase in traffic hazards at this intersection would not occur. Therefore, this impact would be considered **less than significant**.

Mitigation Measure 4.2-3: Right Turns from Croftwood Road.

No mitigation is necessary.

IMPACT 4.2-4   Bicycle/Pedestrian Circulation Policy Consistency. *The proposed project would include design components that are intended to allow safe pedestrian/bicycle access and movement to and through the site consistent with City policies. Therefore, this impact would be considered less than significant.*

Policy 6 of the Circulation Element of the City of Rocklin General Plan (1991) requires projects to promote pedestrian convenience through development conditions requiring sidewalks, walking paths, or hiking trails that connect residential areas with commercial, shopping, and employment centers. The project design is intended to allow safe access and movement to, from and within the site for pedestrians, bicyclists and automobiles. This would be accomplished through the use of sidewalks, bike paths and crosswalks to separate pedestrians/bicyclists from automobile traffic. To provide access to the approved Rocklin Crossings commercial development to the west, a pedestrian/bicycle access point would be provided along the Rocklin 60 project site's western boundary. These project components would be consistent with Policy 6 of the Circulation Element. Therefore, the proposed project would not be expected to conflict with adopted policies, plans, or programs supporting alternative transportation and this impact would be **less than significant**.

Mitigation Measure 4.2-4: Bicycle/Pedestrian Circulation Policy Consistency.

No mitigation is necessary.