

CHAPTER 6.0 CUMULATIVE IMPACTS

This section includes a detailed analysis of the cumulative impacts that would be anticipated with the proposed project with a specific focus on the project's cumulative traffic impacts. In addition, this section includes a detailed discussion of the proposed project's growth-inducing impacts, the project's significant and irreversible commitment of resources, and the project's effect on global climate change.

This draft environmental impact report (Draft EIR) provides an analysis of overall cumulative impacts of the project taken together with other past, present and probable future projects producing related impacts, as required by Section 15130 of the California Environmental Quality Act Guidelines (State CEQA Guidelines). The goal of such an exercise is twofold: first, to determine whether the overall long-term impacts of all such projects would be "cumulatively considerable" (and thus significant) incremental contribution to any such cumulatively significant impacts. (See State CEQA Guidelines Section 15130[a]-[b], Section 15355[b], Section 15064[h], Section 15065[c]; *Communities for a Better Environment v. California Resources Agency* [2002] 103 Cal.App.4th 98, 120.) In other words, the required analysis intends to first create a broad context in which to assess the project's incremental contribution to anticipated cumulative impacts, viewed on a geographic scale well beyond the project site itself, and then to determine whether the project's incremental contribution to any significant cumulative impacts from all projects is itself significant (i.e., "cumulatively considerable" in CEQA parlance).

Pursuant to Section 15130 of the State CEQA Guidelines, "(t)he discussion of cumulative impacts shall reflect the severity of the impacts and their likelihood of occurrence, but the discussion need not provide as great detail as is provided for the effects attributable to the project alone. The discussion should be guided by the standards of practicality and reasonableness, and should focus on the cumulative impacts to which the identified other projects contribute rather than the attributes of other projects which do not contribute to the cumulative impact." The proposed project is considered to have a significant cumulative effect if:

1. The cumulative effects of development without the project are not significant and the project's additional impact is substantial enough, when added to the cumulative effects, to result in a significant impact; or
2. The cumulative effects of development without the project are already significant and the project contributes measurably to the effect. The term "measurably" is subject to interpretation. The standards used herein to determine measurability are that either the impact must be noticeable to a reasonable person, or must exceed an established threshold of significance.

Mitigation measures are developed to reduce the project's contribution to cumulative effects to a less-than significant level or otherwise to the degree it is feasible to do so. The State CEQA Guidelines

acknowledge that sometimes the only feasible method for mitigating or avoiding significant cumulative effects is to adopt ordinances or regulations that apply to all projects that contribute to the cumulative effect.

The State CEQA Guidelines Section 15130(b)(1) provide two approaches to analyzing cumulative impacts. The first is the list approach, which requires a listing of past, present, and reasonably anticipated future projects producing related or cumulative impacts. The second is the summary approach wherein the relevant projections contained in an adopted general plan or related planning document that is designed to evaluate regional or area wide conditions are summarized. For this Draft EIR, both the list and the plan approach have been combined to generate the most reliable future projections possible. A list approach is used to define specific projects that are currently proposed, but are not necessarily considered within an approved planning document. The plan approach is used to consider development consistent with an adopted plan.

Cumulative Development Assumptions

The Rocklin General Plan is intended to provide a long-term guide for the orderly growth and development of the City of Rocklin. In describing the potential effects of this long-term growth, the general plan identified two population growth trajectories. These included a moderate growth scenario and a high growth scenario. Both of these scenarios projected population growth out to 2010. For the moderate growth scenario, the 2010 population was estimated to be approximately 36,200 people. For the high growth scenario, the 2010 population was estimated to be approximately 48,600 people. The City's existing population exceeded the high growth scenario projection by 2,310 people in 2006. Current population in the City is estimated to be 51,080 (Department of Finance 2007).

In order to identify the long-term cumulative growth anticipated in the region, the high growth scenario population projections identified in the general plan were supplemented with projections developed by the California Department of Finance for the County. Based on these projections, the County's estimated 2006 population of 322,428 is estimated to increase by 8% to 349,113 by 2010 and by approximately 41% to 456,040 by 2020. For all resource issues with the exception of traffic, the cumulative growth baseline was based on these population growth estimates for the year 2020, which include City growth. The Rocklin General Plan provides population growth trajectories for future years between the existing and build-out conditions. These growth trajectories are guidelines to show population growth within the City. While projected population growth in the City of Rocklin in 2010 (based on growth trajectories) was exceeded in 2006, this does not mean that the Rocklin General Plan build-out population estimates have been exceeded. The date 2006 refers to the existing conditions (when the intersections were counted). The future turning-movement volumes are calculated by adding growth from 2006 to 2025 to the existing counts. The growth between 2006 and 2025 is a portion of total growth between the base model 2001 and future model 2025. The cumulative growth assumptions used in the traffic analysis are described further in the traffic section below.

The area cumulatively affected by the individual project impacts varies depending upon the resource issue being evaluated. For example, nuisance impacts associated with dust generation during construction would be limited to areas directly surrounding the project site while the project's generation of air emissions would contribute cumulatively to the entire air basin.

The Rocklin Crossings project includes the construction of a regional shopping center on approximately 55.1 acres at the southeast corner of the Interstate-80 and Sierra College Boulevard. The property is proposed to be subdivided into 18 parcels. A variety of retail uses are proposed for the center, including major tenants, smaller retail tenants and restaurants. Preliminary plans call for approximately 21 buildings totaling a maximum of 543,500 sq. feet with approximately 2,463 parking stalls.

The proposed Rocklin 60 project includes the development of 179 single-family residential units on approximately 57 acres located east of the proposed project adjacent to the proposed Rocklin Crossings project.

The Croftwood Estates project is located southeast of the proposed project site to the east of I-80. The Croftwood Estates project was approved by the City of Rocklin and is planned to develop 106 single family homes and 50 custom lots.

The Sierra College Boulevard/Interstate 80 interchange project is designed to improve vehicle movement and circulation at this intersection in anticipation of future urban development in the immediate area. The City of Rocklin is the lead agency for implementation of improvements to this interchange and construction is currently occurring, with completion expected in April 2009

The Clover Valley project includes the development of 558 single-family residential lots and a 5-acre commercial site on approximately 622 acres located northwest of the proposed project site.

The Granite Marketplace (Lowe's) project includes the development of approximately 138,684 square feet of retail space on approximately 12 acres located east of the project site across Sierra College Boulevard.

Placer Vineyards Specific Plan encompasses approximately 5,230 acres located in the southwest corner of Placer County, bounded on the north by Baseline Road, on the south by the Sacramento-Placer County line, on the west by the Sutter-Placer County line, and on the east by Dry Creek and Walerga Road. As approved by the Placer County Board of Supervisors in July 2007, the Placer Vineyards Specific Plan is a mixed-use master planned community that includes residential, employment, commercial, open space, recreational, and public/quasi-public land uses. Placer Vineyards Specific Plan envisions construction of 14,132 homes in a range of housing types, styles, and densities. At build out, projected to occur over a twenty year time frame, Placer Vineyards would have a population of approximately 33,000 people, 434 acres of employment centers, 166 acres of retail commercial centers, and 920 acres of new parks and open space.

The Placer Ranch Specific Plan area encompasses approximately 2,213 acres located north and adjacent to the City of Roseville and West Roseville Specific Plan area, approximately one mile west of the SR 65/Sunset Boulevard interchange, and bisected by Fiddymment Road. The proposed Placer Ranch Specific Plan includes a mixture of industrial, commercial, office and professional, educational, and residential land uses. The Placer Ranch Specific Plan is envisioned to develop 4,618 residential units and includes land that would be developed with a California State University campus sized to accommodate between 15,000 and 25,000 full time students at build out.

The Regional University and Community Specific Plan area encompasses approximately 1,136 acres located north of Baseline Road, east of Brewer Road, and west of the future extension of Watt Avenue. The Regional University and Community Specific Plan, approved by the Placer County Board of Supervisors in December 2008, includes two primary components: a University campus (600 acres) and an adjoining community (536 acres). The Regional University is planned to accommodate approximately 6,000 students, along with 800 professors and staff, and to offer both undergraduate and graduate degrees. In addition to the institutional facilities on campus, the campus would include approximately 1,155 residential units for students and faculty, as well as retirement housing. The preliminary University program includes a full range of academic, administrative, athletic, and performing arts facilities; faculty and staff housing; student housing; and a retirement village. In addition, a portion of the campus is planned for a potential private high school that could accommodate 1,200 students and accompanying staff and faculty. The proposed Community would involve mixed-use development with a variety of residential, commercial, employment, open space, parks, and public uses. The Community would include 3,232 residential units of varying densities, commercial, open space, and recreation areas.

The West Roseville Specific Plan area, located in the northwestern-most portion of the City of Roseville, encompasses 3,162 acres and is adjacent to and east of the Placer Vineyards Specific Plan located in Placer County. The approved West Roseville Specific Plan land use plan identifies a blend of residential, service, employment, open space, and public uses and envisions housing approximately 20,810 residents and providing jobs for 3,726 employees.

The Morgan's Orchard at Secret Ravine project would develop 15.9 acres located at the southwest corner of I-80 and Penryn Parkway east of the Town of Loomis. This project would construct 68 residential lots sized to contain only the building footprint of its respective dwelling unit, thereby allowing the remainder of the land to be held as common open space. All residential lots would be developed with detached housing units.

Summary of Currently Planned And Proposed Projects

Table 6-1 provides a summary of the projects considered in the cumulative analysis. As described above and shown in Table 6-1, substantial development and growth is anticipated to occur throughout the vicinity and region.

Air Quality

For evaluation of cumulative impacts, the cumulative setting would depend on the pollutant being evaluated. For regional pollutants, such as ozone, the cumulative setting extends over the entire Sacramento Valley Air Basin. For pollutants with localized impacts, the cumulative context would include the area in the immediate vicinity of the project site. To evaluate the cumulative impacts of a temporary activity, such as construction, the cumulative context includes the vicinity of the project site over the duration of the activity. These evaluation areas represent the worst-case range in which project-generated impacts could contribute to potential cumulative impacts to air quality.

Table 6-1: Cumulative Projects

Cumulative Projects	Total Acres	Residential Uses (units)	Commercial/Industrial Uses (acres)	Population (Persons)
Rocklin Commons	39.16	0	39.16	0
Rocklin Crossings	55.1	0	55.1	0
Rocklin 60	59.9	179	0	490
Croftwood Estates Development	83.3	156	0	427
Clover Valley	622	558	5	
Granite Marketplace (Lowe's)	12	0	12	
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	14,130	600	33,000
Placer Ranch Specific Plan	2,213	6,758*	740	18,280
Regional University and Community Specific Plan	1,136	4,287*	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	12,639	34,526	1,683	73,193

* Includes university student housing

Commercial/Industrial uses acreage is calculated from the building's footprint square footage converted to acres

CI-1: Cumulative Regional Air Quality Emissions. *The proposed project would increase criteria air pollutant and precursor emissions in the region for long-term operational conditions above significance thresholds. Because feasible mitigation measures are not available to reduce these emissions below the significance thresholds, this impact would be considered a significant and unavoidable impact.*

All new development within the Sacramento Valley Air Basin that results in an increase in air pollutant emissions above those assumed in regional air plans contributes to cumulative air quality impacts. The increase is considered significant if the project requires a change in existing land use designation (e.g., plan amendment, rezone) and associated emissions (i.e., ROG and NO_x) are greater than buildout of the site under the existing approved land use designations.

Based on the modeling conducted, project operations would result in worst-case maximum unmitigated daily emissions of approximately 91.58 lb/day of ROG, 121.10 lb/day of NO_x, 133.40 lb/day of PM₁₀, and 849.28 lb/day of CO. Daily unmitigated operational emissions would exceed PCAPCD's significance thresholds of 82 lb/day for ROG, NO_x, and PM₁₀, or 550 lb/day for CO during the winter and NO_x, PM₁₀, and CO during the summer periods. These threshold exceedances would represent a substantial contribution of pollutants to the regional air basin.

Mitigation Measure

CI-1: Implement Mitigation Measures AQ-1 and AQ-2

AQ-1: Short-Term Construction-Generated Criteria Air Pollutant and Precursor Emissions.

In accordance with the PCAPCD, the applicant shall comply with all applicable rules and regulations in addition to implementation of the following recommended mitigation measures during construction of the proposed project.

- The applicant shall submit to the City Engineer and the PCAPCD and receive approval of a Construction Emission / Dust Control Plan prior to groundbreaking. This plan must address how the project meets the minimum requirements of sections 300 and 400 of Rule 228-Fugitive Dust.
- The applicant shall suspend all grading operations when fugitive dust emissions exceed District Rule 228-Fugitive Dust limitations.
- Fugitive dust emissions shall not exceed 40% opacity and not go beyond the property boundary at any time. If lime or other drying agents are utilized to dry out wet grading areas, the project applicant shall ensure such agents are controlled as to not exceed District Rule 228-Fugitive Dust limitations.
- The project applicant shall ensure that construction equipment exhaust emissions shall not exceed Rule 202-Visible Emission limitations.
- The project applicant shall ensure compliance with all of PCAPCD's dust minimization requirements.
- Water shall be applied to control fugitive dust, as needed, to prevent impacts offsite. Operational water trucks shall be onsite to control fugitive dust. Construction vehicles leaving the site shall be cleaned to prevent dust, silt, mud, and dirt from being released or tracked off-site.
- PCAPCD-approved chemical soil stabilizers, vegetative mats, or other appropriate best management practices, in accordance with manufacturers' specifications, shall be applied to all-inactive construction areas (previously graded areas which remain inactive for 96 hours).
- Soil binders shall be spread on unpaved roads and employee/equipment parking areas, and streets shall be washed (e.g., wet broom) if silt is carried over to adjacent public thoroughfares.
- Open burning of any kind shall be prohibited.
- Idling time shall be minimized to five minutes or less for all diesel-fueled equipment.
- ARB-certified diesel fuel shall be used for all diesel-powered equipment.
- The project applicant, or the prime contractor, shall submit to the District a comprehensive inventory (i.e., make, model, year, emission rating) of all the heavy-duty off-road equipment (50 horsepower or greater) that will be used an aggregate of 40 or more hours for the construction project prior to groundbreaking. The project applicant shall provide the District with the anticipated construction timeline including start date, name, and phone number of the project manager and onsite foreman prior to groundbreaking. The project applicant shall provide a plan for approval by the District demonstrating that the heavy-duty (> 50 horsepower) off-road vehicles to be used in the construction project, including owned, leased, and subcontractor vehicles, will achieve a project-wide fleet-average 20 percent NO_x reduction and 45 percent particulate reduction compared to the most recent ARB fleet average. Acceptable options for reducing emissions may include use of late model engines, low-emission diesel products,

alternative fuels, engine retrofit technology, after-treatment products, and/or other options as they become available. Contractors can access the Sacramento Metropolitan Air Quality Management District's web site to determine if their off-road fleet meets the requirements listed in this measure. <http://www.airquality.org/ceqa/index.shtml#construction>. The contractor can provide the calculation spreadsheets to the District in electronic format for review and project compliance.

AQ-2: Long-Term Operational (Regional) Criteria Air Pollutant and Precursor Emissions.

The City shall require that emission control measures be incorporated into project design and operation. Such measures may include, but are not limited to, the following items:

- The project applicant shall provide transit enhancing infrastructure that includes transit shelters, benches, street lighting, route signs and displays, and/or bus turnouts/bulbs, where determined to be feasible in consultation with City staff and Placer County Transit Agency staff.
- The project applicant shall provide bicycle enhancing infrastructure that includes secure bicycle parking.
- The project applicant, where determined to be feasible in consultation with City staff, shall incorporate measures such as: provide electric maintenance equipment, use solar, low-emissions, or central water heaters, increase wall and attic insulation beyond Title 24 requirements, and orient buildings to take advantage of solar heating and natural cooling, use passive solar designs, energy efficient windows (double pane and/or Low-E), highly reflective roofing materials, cool paving (high albedo pavement) and parking lot tree shading above that required by code, install photovoltaic cells, programmable thermostats for all heating and cooling systems, awnings or other shading mechanisms for windows and walkways, utilize day lighting systems such as skylights, light shelves, interior transom windows.
- Parking lot design shall include clearly marked pedestrian pathways between transit facilities and building entrances included in the design.
- The project applicant shall require that all diesel engines be shut off when not in use for longer than 5 minutes on the premises to reduce idling emissions.

Level of Significance after Mitigation

Due to the size of the project and number of vehicle trips generated, it is not anticipated that implementation of the mitigation measures identified above would reduce emissions to below the applicable thresholds; however, these measures would likely substantially lessen the level of emissions. In addition, because of existing nonattainment conditions of the project area for ozone and PM₁₀, project implementation could still contribute substantially to an existing or projected violation of ambient air quality standards following implementation of the identified mitigation measures. Therefore, the project's contribution to this cumulative impact would be considered *significant and unavoidable* and thus cumulatively considerable.

Cumulative Toxic Air Contaminant Emissions.

The cumulative developments in the region would individually contribute to localized cumulative toxic air contaminant emission concentrations. However, because toxic air contaminants disperse with distance, the concentration of emissions in excess of established significance thresholds would not typically occur unless high emission sources are concentrated in a relatively small development area with sensitive receptors within close proximity. As identified in Section 4.2 Air Quality, the proposed project would not generate toxic air contaminants that would result in a significant impact. Because other cumulative developments in the region are not located directly adjacent to the proposed project, the combined emissions from the proposed project and other cumulative developments would not be expected to exceed established significance thresholds for sensitive receptors in the local area, and the cumulative impact would be less than significant. As such, any contribution of the project to the *less-than-significant* cumulative toxic air contaminant impact would *not be cumulatively considerable*.

Biological Resources

For evaluation of biological resource cumulative impacts, the cumulative setting extends over the lower Sierra foothill region of western Placer County. The project site is located in the Sierra Nevada foothills at the northwest corner of Interstate 80 and Sierra College Boulevard in the City of Rocklin. Therefore, the evaluation area was limited to the lower Sierra foothill region of western Placer County as it represents the worst-case range in which project-generated impacts could contribute to potential cumulative impacts to biological resources. Due to the size and nature of the project, it is unlikely that the project could cause or contribute to impacts to biological resources outside of the lower Sierra foothill region of western Placer County.

CI-2: Cumulative Biological Resource Impacts. *The project would contribute to the cumulative loss of biological resources in the region. This would be considered a **significant and unavoidable** impact.*

The proposed project would result in significant impacts related to the loss of wetlands, the loss of native oaks and heritage trees, and the disturbance of raptors and migratory birds. With the exception of the short-term loss of native oaks and heritage trees, these impacts would be reduced to a *less-than-significant* level with the implementation of mitigation measures identified in Section 4.3, Biological Resources of this EIR. These mitigation measures would either compensate for the loss of sensitive biological resources by replacing lost resources or by actually avoiding the potential disturbance. California has lost over 90 percent of its wetlands and riparian habitats, and oak woodlands are also rapidly disappearing. The City of Rocklin General Plan EIR concluded that implementation of general plan policies, the existing tree protection ordinances, and ongoing wetlands preservation practices, would not be adequate to reduce the loss of vegetation and wildlife habitat associated with cumulative development. Because the cumulative biological impacts of development are identified in the General Plan EIR as significant and unavoidable, and the project would contribute measurably to this change, the project's contribution to these biological resource impacts would be considered cumulatively considerable and thus *significant and unavoidable*.

Mitigation Measure

CI-2: Cumulative Biological Resource Impacts.

Implement the mitigation measures identified in Section 4.3, Biological Resources.

Level of Significance after Mitigation

The proposed project would result in a *significant and unavoidable* cumulative biological resource impact.

Global Climate Change

For evaluation of global climate change cumulative impacts, the cumulative setting extends over the earth. No project alone would cause any noticeable incremental change to the global climate. Therefore, the cumulative context for this issue (global climate) comprises anthropogenic (i.e., man-made) GHG emission sources across the entire globe.

The California Environmental Quality Act (CEQA) requires that lead agencies consider the reasonably foreseeable adverse environmental effects of projects they are considering for approval. Emissions of greenhouse gases (GHGs) have the potential to adversely affect the environment because such emissions contribute, on a cumulative basis, to global climate change. In turn, global climate change has the potential to cause sea level rise, which can inundate low-lying areas; to affect rain and snow fall, leading to changes in water supply; to affect habitat, leading to adverse effects on biological resources, etc.

However, legislation and executive orders on the subject of climate change in California have established a statewide context for GHG emissions, and an enforceable statewide cap on GHG emissions. Given the nature of environmental consequences from GHGs and global climate change, CEQA requires the evaluation of the cumulative impacts of GHGs. Even relatively small (on a global basis) additions need to be considered, and small contributions to this cumulative impact (from which significant effects are occurring and are expected to worsen over time) may be potentially considerable (and therefore, significant). Thus, the City of Rocklin has concluded that GHG emissions require consideration under CEQA.

In June of 2008, the Office of Planning and Research (OPR) issued a technical advisory concerning CEQA and climate change. The technical advisory is provided by the OPR as a service to CEQA practitioners. OPR publishes technical guidance from time to time on issues that broadly affect the practice of CEQA and land use planning. The following section has been prepared in accordance with this technical advisory. On April 13, 2009, OPR submitted to the California Natural Resources Agency its proposed set of CEQA Guidelines revisions addressing “the mitigation of greenhouse gas emissions or the effects of greenhouse gas emissions, . . . including, but not limited to, effects associated with transportation or energy consumption,” as contemplated by Public Resources Code section 21083.05, enacted pursuant to 2007 legislation commonly known as Senate Bill 97 (Chapter 185, Statutes of 2007). The Natural Resources Agency’s final adoption of the ultimate version of the new CEQA Guidelines language must occur prior to January 1, 2010. (*Id.*, subd. (a), (b).)

Existing Setting

Global climate change is the observed increase in the average temperature of the Earth's atmosphere and oceans along with other significant changes in climate (such as precipitation or wind) that last for an extended period of time. The term "global climate change" is often used interchangeably with the term "global warming," but "global climate change" is preferred to "global warming" because it helps convey that there are other changes in addition to rising temperatures. The effects of global climate change are already present - disappearing glaciers, shrinking snow pack, droughts, coastal erosion, bigger and more regular storms, and more extreme heat waves. Arctic sea ice declined in 2006 by the largest amount ever, losing an area roughly the size of Texas and California combined.

Greenhouse gases play an important role in regulating the surface temperature of the Earth. GHGs allow light to penetrate, and prevent heat from escaping. As a result, radiation that otherwise would reflect back into space is retained, resulting in a warming of the atmosphere. The Earth's atmosphere acts like a greenhouse, warming the planet similar to a greenhouse warming the air inside its glass walls. Therefore, this phenomenon is known as the greenhouse effect. The naturally occurring greenhouse effect is necessary to keep our planet at a comfortable temperature; however, an excess of greenhouse gas results in global climate change.

The increased consumption of fossil fuels (coal, gasoline, etc.) has substantially increased atmospheric levels of greenhouse gases. As atmospheric concentrations of greenhouse gases rise, so do temperatures. Over time this rise in temperatures would result in climate change. Theories concerning climate change and global warming existed as early as the late 1800s. By the late 1900s, that understanding of the earth's atmosphere had advanced to the point where many climate scientists began to accept that the earth's climate is changing. Many climate scientists agree that some warming has occurred over the past century and will continue through this century (California Climate Action Team, 2008).

The specific climatic mechanisms, duration, and severity of climate change effects, however, are not fully understood. A variety of mechanisms and complex feedback loops interact to establish the average global temperature. A change in ocean temperature, for example, may alter circulating ocean currents, which may change ocean temperatures (as seen in El Niño and La Niña events).

Global surface temperatures have risen by $0.74^{\circ}\text{C} \pm 0.18^{\circ}\text{C}$ over the last 100 years (1906 to 2005). The rate of warming over the last 50 years is almost double that over the last 100 years.¹ The prevailing scientific opinion on climate change is that most of the warming observed over the last 50 years is attributable to human activities. The increased amounts of carbon dioxide (CO₂) and other GHGs are the primary causes of the human-induced component of warming.

GHGs are present in the atmosphere naturally, are released by natural sources, or are formed from secondary reactions taking place in the atmosphere. The gases that are widely seen as the principal contributors to human-induced global climate change are:²

¹ Intergovernmental Panel on Climate Change (IPCC), 2007. *Climate Change 2007: The Physical Science Basis. Contribution of Working Group I to the Fourth Assessment Report of the IPCC.*

² The greenhouse gases listed are consistent with the definition in Assembly Bill (AB) 32 (Government Code 38505), as discussed later in this section.

1. Carbon dioxide (CO₂)
2. Methane (CH₄)
3. Nitrous oxide (N₂O)
4. Hydrofluorocarbons (HFCs)
5. Perfluorocarbons (PFCs)
6. Sulfur Hexafluoride (SF₆)

While manmade GHGs include naturally-occurring GHGs such as CO₂, methane, and N₂O, some gases, like HFCs, PFCs, and SF₆ are completely new to the atmosphere. Certain other gases, such as water vapor, are short-lived in the atmosphere. Others remain in the atmosphere for significant periods of time, contributing to climate change in the long term. These primary GHG contributors are discussed further below:

Carbon dioxide (CO₂) is an odorless, colorless gas, which has both natural and anthropogenic sources. Natural sources include the following: decomposition of dead organic matter; respiration of bacteria, plants, animals, and fungus; evaporation from oceans; and volcanic outgassing. Anthropogenic sources of carbon dioxide are from burning coal, oil, natural gas, and wood. Concentrations of carbon dioxide were 379 parts per million (ppm) in 2005, which is an increase of 1.4 ppm per year since 1960. In California, the most common GHG is CO₂, which constitutes approximately 84 percent of all GHG emissions. CO₂ emissions in California are mainly associated with in-state fossil fuel combustion and with fossil fuel combustion in out-of-state power plants supplying electricity to California. Other activities that produce CO₂ emissions include mineral production, waste combustion, and land use changes that reduce vegetation.

Methane (CH₄) is a flammable gas and is the main component of natural gas. When one molecule of methane is burned in the presence of oxygen, one molecule of carbon dioxide and two molecules of water are released. There are no adverse health effects from methane. A natural source of methane is from the anaerobic decay of organic matter. Geologic deposits, known as natural gas fields, also contain methane, which is extracted for fuel. Other sources are from landfills, fermentation of manure, and cattle.

Nitrous oxide (N₂O) is a colorless greenhouse gas produced by microbial processes in soil and water, including reactions in fertilizer containing nitrogen. Anthropogenic sources include vehicle emissions, fossil-fuel fired power plants, nylon production, nitric acid production, etc. Nitrous oxide is produced by microbial processes in soil and water, including those reactions that occur in fertilizer containing nitrogen. In addition to agricultural sources, some industrial processes (fossil fuel-fired power plants, nylon production, nitric acid production, and vehicle emissions) also contribute to its atmospheric load.

Hydrofluorocarbons (HFCs), Perfluorocarbons (PFCs), and Sulfur Hexafluoride (SF₆) are potent greenhouse gases, and some persist in the environment for thousands of years. HFCs are synthetic man-made chemicals that are primarily used as substitutes (for example, in automobile air conditioners, refrigerants, etc.) for ozone-depleting substances regulated under the Montreal

Protocol.¹ Sulfur hexafluoride (SF₆) is an inorganic, odorless, colorless, nontoxic, nonflammable gas. Sulfur hexafluoride is used for insulation in electric power transmission and distribution equipment, in the magnesium industry, in semiconductor manufacturing, and as a tracer gas for leak detection. It has the highest GWP (Global Warming Potential) of any gas evaluated, 23,900. PFCs and SF₆ are emitted from various industrial processes, including aluminum smelting, semiconductor manufacturing, electric power transmission and distribution, and magnesium casting. There is no aluminum or magnesium production in California; however, the rapid growth in the semiconductor industry, which is active in California, leads to greater use of PFCs.(Refer to Table 6-2).

Table 6-2: Green House Gases Lifetimes

Greenhouse Gas	Atmospheric Lifetime (Years)	Global Warming Potential (100 Year Time Horizon)
Carbon Dioxide (CO ₂)	50-200	1
Methane (CH ₄)	12 ± 3	21
Nitrous Oxide (N ₂ O)	120	310

Source: Intergovernmental Panel on Climate Change, 2001

Greenhouse gases in the atmosphere provide hospitable surface temperatures necessary to sustain life on earth. Human activities, however, such as the burning of fossil fuels, have contributed increasing concentrations of heat-trapping GHGs into the atmosphere. Over the past 200 years the global concentration of CO₂ has substantially increased, and it is widely accepted that anthropogenic sources of GHGs are contributing to global climate change (California Attorney General, 2008).

The specific climatic mechanisms, duration, and severity of effects, however, are not fully understood. A variety of mechanisms and complex feedback loops interact to establish the average global temperature. A change in ocean temperature, for example, may alter circulating ocean currents, which may change ocean temperatures (as seen in el Niño and la Niña events).

Worldwide, U.S. & California Emissions of GHG

Worldwide emissions of GHGs in 2004 were 27 billion metric tons of CO₂e per year, excluding emissions/removals caused by removal of vegetation and forestry. (Note that sinks, or GHG removal processes, plays an important role in the GHG inventory as forest and other vegetative land uses such as agriculture and rain forest absorb carbon).² Global estimates are based on country inventories developed as part of programs of the United Nations Framework Convention on Climate Change (UNFCCC).

¹ The Montreal Protocol is an international treaty that was approved on January 1, 1989, and was designated to protect the ozone layer by phasing out the production of several groups of halogenated hydrocarbons believed to be responsible for ozone depletion.

² Combined total of Annex I and Non-Annex I Country CO₂e emissions. United Nations Framework Convention on Climate Change (UNFCCC), 2007. *Greenhouse Gas Inventory Data*. Information available at http://unfccc.int/ghg_data/ghg_data_unfccc/time_series_annex_i/items/3814.php and http://maindb.unfccc.int/library/view_pdf.pl?url=http://unfccc.int/resource/docs/2005/sbi/eng/18a02.pdf.

In 2004, the United States emitted about 7.3 billion metric tons of CO₂e or about 25 tons/year/person. Of the four major sectors nationwide – residential, commercial, industrial and transportation – transportation accounts for the highest amount of GHG emissions (approximately 35 to 40 percent); these emissions are entirely generated from direct fossil fuel combustion. Between 1990 and 2006, total U.S. GHG emissions rose approximately 14.7 percent.¹

California is a substantial contributor of GHG emissions as it is the second largest contributor in the U.S. This large number is due primarily to the sheer size of California compared to other States. By contrast, California has the fourth lowest per-capita carbon dioxide emission rate from fossil fuel combustion in the country, due to the success of its energy efficiency and renewable energy programs and commitments that have lowered the State's GHG emissions rate of growth by more than half of what it would have been otherwise.²

According to ARB emission inventory estimates, California emitted approximately 480 million metric tons³ of CO₂e emissions in 2004.⁴ The ARB estimates that transportation is the source of approximately 38 percent of the State's GHG emissions in 2004, followed by electricity generation (both in-State and out-of-State) at 23 percent, and industrial sources at 20 percent. The remaining sources of GHG emissions are residential and commercial activities at 9 percent, agriculture at 6 percent, high global warming potential gases accounting for 3 percent, and recycling and waste at 1 percent.⁵

Effects Of Global Climate Change In California

The impacts from global warming are widespread and potentially devastating. The latest projections, based on state-of-the art climate models, indicate that temperatures in California are expected to rise 3 to 10.5°F by the end of the century.⁶ This is significantly higher than what the Intergovernmental Panel on Climate Change (IPCC) Panel predicted in 1995 (1.8°-6.3°F, or 1.0°-3.5°C), mostly because scientists expect a reduced cooling effect from tiny particles (aerosols) in the atmosphere. Secondary impacts to the natural environment in California may include:

- a. **Sea Level Rise:** Over the past 100 years, sea levels along California's coasts and estuaries have risen about seven inches.⁷ While estimates vary, sea level is expected to rise an additional 22 to 35 inches by the year 2100.⁸ Although these projections are on a global scale, the rate of sea level rise along California's coast is relatively consistent with the worldwide average rate

¹ U.S. Environmental Protection Agency (EPA). 2008. The U.S. Greenhouse Gas Emissions and Sinks: Fast Facts. http://www.epa.gov/climatechange/emissions/downloads/2008_GHG_Fast_Facts.pdf.

² California Energy Commission (CEC), 2007. Inventory of California Greenhouse Gas Emissions and Sinks: 1990 to 2004 - Final Staff Report, publication # CEC-600-2006-013-SF, Sacramento, CA, December 22, 2006; and January 23, 2007 update to that report.

³ A metric ton is equivalent to approximately 1.1 tons.

⁴ California Air Resources Board, Greenhouse Gas Inventory Data - 1990 to 2004. <http://www.arb.ca.gov/cc/inventory/data/data.htm>. Accessed November 2008.

⁵ California Air Resources Board (ARB), 2008. <http://www.climatechange.ca.gov/inventory/index.html>. September.

⁶ California Climate Change Center, 2006. *Our Changing Climate. Assessing the Risks to California*. July.

⁷ Ibid.

⁸ California Climate Change Center, 2006. *Our Changing Climate. Assessing the Risks to California*. CEC-500-2006-077. July.

observed over the past century. Therefore, it is reasonable to assume that changes in worldwide sea level rise will also be experienced along California's coast.¹ Sea level rise could inundate coastal areas with salt water, accelerate coastal erosion, threaten vital levees and inland water systems, and disrupt wetlands and natural habitats. In particular, saltwater intrusion would threaten the quality and reliability of the state's major fresh water supply that is pumped from the southern edge of the Sacramento/San Joaquin River Delta into the system of aqueducts which carry it to Southern California.

- b. **Severe Heat:** Extreme-heat conditions, such as heat waves and very high temperatures, could last longer and become more frequent. As temperatures rise from global warming, the frequency and severity of heat waves will grow—as will the potential for bad air days. The risk of illness and death due to dehydration, heart attack, and stroke, will increase as a result. Those most likely to suffer are children, the elderly, and other vulnerable populations.
- c. **Air Quality:** An increase in heat-related human deaths, infectious diseases, and a higher risk of respiratory problems caused by deteriorating air quality. Global warming increases the frequency, duration, and intensity of conditions conducive to the formation of smog. Most vulnerable are the elderly and those whose health is already compromised (such as children with asthma).
- d. **Losses to the Sierra Snow Pack:** The Sierra Nevada snowpack, which accounts for a significant amount of the surface water storage in California, could decline by 70 percent to as much as 90 percent over the next 100 years.² Higher temperatures diminish snowfall and cause the snow that does fall to melt earlier. This reduces the amount of water stored in the Sierra snow pack, which accounts for approximately half of the surface water stored in the State. Reductions and early melting of the snow pack will aggravate the State's already overstretched water resources and cause increased flooding.
- e. **Severity of Storms:** Potential increases in the severity of winter storms can affect peak stream flows and increase flooding along waterways and low-lying areas. These heavy runoffs remove natural minerals which are important to local ecosystems. Increased storm intensity and frequency could affect the ability of flood-control facilities, including levees, to handle storm events.
- f. **Damage to Agriculture:** Changes in growing season conditions could affect California's agriculture, causing variations in crop quality and yield. By reducing the State's natural water storage capacity, raising temperatures, increasing salt water intrusion in agricultural regions, causing flooding, and increasing the risk of pest infestations and other calamities, global warming poses a serious threat to California's \$68 billion agricultural industry. In fact, during the period 1951 to 2000, the growing season lengthened by about a day per decade, this increased crops' exposure to heat ("degree days"). Such changes threaten many of the State's most valuable crops, including stone fruits, grapes, tomatoes and lettuce. Global warming also threatens livestock. The 2006 summer heat wave killed thousands of dairy cows in California's Central Valley and caused a decrease in milk production in surviving animals.
- g. **Habitat Modification and Destruction:** Distribution of plant and wildlife species could change due to changes in temperature, competition from colonizing species, change in hydrologic

¹ California, State of. Department of Water Resources, 2006. *Progress on Incorporating Climate Change into Management of California's Water Resources*. July.

² California Climate Change Center, 2006. *Our Changing Climate. Assessing the Risks to California*. July.

cycles, and other climate-related effects. While it is difficult to generalize what impacts the changing climate has on the State's varied ecosystems, it already is clear that rising temperatures, altered water supplies, and other environmental variations make some habitats less hospitable for sensitive plants and animals. For example, some local populations of the threatened checkerspot butterfly already have disappeared due to changes in the weather (Stanford Report, May 14, 2004). A similar fate could await other species, such as trout and salmon, which favor cold water and are extremely sensitive to slight changes in temperature. Further, marine algae blooms, associated in part with increases in ocean temperatures, have proliferated in the past eight years and may help explain the alarming increase in beachings and mass die-offs of whales, dolphins, and other ocean mammals that the federal government has documented over the last quarter century. In California alone, more than 14,000 seals, sea lions and dolphins have landed sick or dead along the shoreline in the last decade.

- h. **Higher Risk of Wildfires:** Pest infestation and increasing temperatures make forests more vulnerable to fires. Wildfires are a major environmental hazard that have historically cost California more than \$800 million each year and contribute to "bad air days" throughout the state. As global warming accelerates, so will these wildfires, and the damage to health and property that they cause. By century's end, the State may have as many as 55 percent more large wildfires.
- i. **Increase Demand for Electricity:** Rising temperatures lead to increased demand for electricity and pressure on the State's supply system.
- j. **Financial Cost to Californians:** Apart from the potentially devastating impacts that climate change will have on California's natural resources, public health, and its economy, global warming already places a tremendous strain on the State finances. The State must pay for programs to re-build levees that protect agricultural lands against salt water infiltration; to study and respond to the impacts of a reduced Sierra snow pack on California's water supply; to protect wildlife and habitats from climate-related degradation; to respond to coastal erosion; to prepare for the increased risk of wildfires; to respond to the increased health risks associated with rising temperatures and declining air quality, and more.

These changes in California's climate and ecosystems are occurring at a time when California's population is expected to increase from 34 million to 59 million by the year 2040 (California Energy Commission, 2005). As such, the numbers of people potentially affected by climate change as well as the amount of anthropogenic GHG emissions expected under a "business as usual" scenario are expected to increase. Similar changes as those noted above for California would also occur in other parts of the world with regional variations in resources affected and vulnerability to adverse side effects.

State-wide temperature increases due to fossil-fuel consumption are correlated to the severity of the natural environmental impacts as noted in Table 6-3.

Table 6-3 Climate Change Scenarios for California

IPCC Emissions Scenarios	Summary of Projected Global Warming Impacts (2070-2099, as compared to 1961-1990)	State-wide Temperature Rise
<p>Higher Emissions: Rapid, fossil-fuel intensive growth</p>	<ul style="list-style-type: none"> ● 90% loss in Sierra snow pack ● 22-30 inches of sea level rise ● 3-4 times as many heatwave days in major urban centers ● 2.5 times the number critically dry years ● 4-6 times as many heat-related deaths in major urban centers ● 20% increase in electricity demand ● Increase in days meteorologically conducive to ozone formation 	<p>Higher Warming Range: 8-10.4 °F</p>
<p>Medium-High Emissions: Primarily fossil-fuel dependent growth with some green technology</p>	<ul style="list-style-type: none"> ● 70- 80 % loss in Sierra snow pack ● 14-22 inches of sea level rise ● 2.5-4 times as many heatwave days in major urban centers ● 2-6 times as many heat-related deaths for major urban centers ● 75-85% increase in days meteorologically conducive to ozone formation ● 2-2.5 times the number critically dry years ● 11% increase in electricity demand ● 30% decrease in forest yields (pine) ● 55% increase in the expected risk of large wildfires 	<p>Medium Warming Range: 5.5- 7.9 °F</p>
<p>Lower Emissions: Shift to service & information economy with lots of green technology</p>	<ul style="list-style-type: none"> ● 30-60 % loss in Sierra snow pack ● 6-14 inches of sea level rise ● 2-2.5 times as many heatwave days in major urban centers ● 2-3 times as many heat-related deaths for major urban centers ● 25-35% increase in days meteorologically conducive to ozone formation ● Up to 1-1.5 times the number critically dry years ● 3-6 % increase in electricity demand ● 7-14% decrease in forest yields (pine) ● 10-35% increase in the risk of large wildfires 	<p>Lower Warming Range: 3.0-5.4 °F</p>

Source: Cayan, D., Luers, A., Hanemann, M., Franco, G. and Croes, B. 2006.

Regulatory Setting

A variety of governmental agencies have initiated programs directed towards the regulatory environment. These include the United Nations Agreements, and recent California State Legislation and regulations that specifically address greenhouse gas emissions and global climate change. At the time of writing, there are no known applicable regulations setting ambient air quality emissions standards for greenhouse gases.

Federal Plans, Policies, Regulations, and Laws

The U.S. Environmental Protection Agency (EPA) is the federal agency responsible for implementing the Federal Clean Air Act (CAA). The U.S. Supreme Court ruled on April 2, 2007 that CO₂ is an air pollutant as defined under the CAA, and that EPA has the authority to regulate emissions of GHGs. Although EPA announced on April 17, 2005 that it intended to regulate GHGs under the Clean Air Act, there are no proposed or adopted federal regulations or policies regarding GHG emissions applicable to the proposed project at the time of writing.

State Plans, Policies, Regulations, and Laws

ARB is the agency responsible for coordination and oversight of state and local air pollution control programs in California and for implementing the California Clean Air Act (CCAA), which was adopted in 1988.

Various statewide and local initiatives to reduce the state's contribution to GHG emissions have raised awareness that, even though the various contributors to and consequences of global climate change are not yet fully understood, global climate change is under way, and there is a real potential for severe adverse environmental, social, and economic effects in the long term. Because every nation emits GHGs and therefore makes an incremental cumulative contribution to global climate change, cooperation on a global scale will be required to reduce the rate of GHG emissions to a level that can help to slow or stop the human-caused increase in average global temperatures and associated changes in climatic conditions.

California Code of Regulations Title 24 Part 6: California's Energy Efficiency Standards for Residential and Nonresidential Buildings, were established in 1978 and are updated periodically to allow incorporation of new energy efficiency technologies and methods. The latest amendments require new homes to use half the energy they used a decade ago. Electricity production by fossil fuels results in GHG emissions. Energy efficient buildings require less electricity. Increased energy efficiency, therefore, results in decreased greenhouse gas emissions.

Assembly Bill 1493: In 2002, Governor Gray Davis signed Assembly Bill (AB) 1493. AB 1493 requires that the California Air Resources Board (ARB) develop and adopt, by January 1, 2005, regulations that achieve "the maximum feasible reduction of greenhouse gases emitted by passenger vehicles and light-duty trucks and other vehicles determined by the ARB to be vehicles whose primary use is noncommercial personal transportation in the state."

To meet the requirements of AB 1493, in 2004 ARB approved amendments to the California Code of Regulations (CCR) adding GHG emissions standards to California's existing standards for motor vehicle emissions. Amendments to CCR Title 13, Sections 1900 and 1961 (13 CCR §§ 1900, 1961), and adoption of Section 1961.1 (13 CCR § 1961.1) require automobile manufacturers to meet fleet-

average GHG emissions limits for all passenger cars, light-duty trucks within various weight criteria, and medium-duty passenger vehicle weight classes (i.e., any medium-duty vehicle with a gross vehicle weight rating less than 10,000 pounds that is designed primarily for the transportation of persons), beginning with the 2009 model year. Emissions limits are reduced further in each model year through 2016. For passenger cars and light-duty trucks with a loaded vehicle weight (LVW) of 3,750 pounds or less, the GHG emission limits for the 2016 model year are approximately 37% lower than the limits for the first year of the regulations, the 2009 model year. For light-duty trucks with LVW of 3,751 pounds to gross vehicle weight (GVW) of 8,500 pounds, as well as medium-duty passenger vehicles, GHG emissions would be reduced approximately 24% between 2009 and 2016.

In December 2004, a group of car dealerships, automobile manufacturers, and trade groups representing automobile manufacturers filed suit against ARB to prevent enforcement of 13 CCR Sections 1900 and 1961 as amended by AB 1493 and 13 CCR 1961.1 (*Central Valley Chrysler-Jeep et al. v. Catherine E. Witherspoon, in Her Official Capacity as Executive Director of the California Air Resources Board, et al.*). The suit in the U.S. District Court for the Eastern District of California contended that California's implementation of regulations that, in effect, regulate vehicle fuel economy violates various federal laws, regulations, and policies.

In January 2007, the judge hearing the case accepted a request from the State Attorney General's office that the trial be postponed until a decision is reached by the U.S. Supreme Court on a separate case addressing GHGs. In the Supreme Court case, *Massachusetts, et al., v. Environmental Protection Agency, et al.*, the primary issue in question was whether the CAA provides authority for EPA to regulate CO₂ emissions. EPA contended that the CAA does not authorize regulation of CO₂ emissions, whereas Massachusetts and 10 other states, including California, sued EPA to begin regulating CO₂. As mentioned above, the U.S. Supreme Court ruled on April 2, 2007, that GHGs are "air pollutants" as defined under the CAA and EPA is granted authority to regulate CO₂ (*Massachusetts v. U.S. Environmental Protection Agency* [2007] 549 U.S. 05-1120).

On December 12, 2007, the Court found that if California receives appropriate authorization from EPA (the last remaining factor in enforcing the standard), these regulations would be consistent with and have the force of federal law, thus, rejecting the automakers' claim.

This authorization to implement more stringent standards in California was requested in the form of Clean Air Act Section 209 Subsection (b) waiver in 2005. Since that time, the EPA failed to act on granting California authorization to implement the standards. Governor Schwarzenegger and Attorney General Edmund Brown filed suit against the EPA for the delay.

In December 2007, EPA Administrator Stephen Johnson denied California's request for the waiver to implement AB 1493. Johnson cited the need for a national approach to reducing GHG emissions, the lack of a "need to meet compelling and extraordinary conditions", and the emissions reductions that would be achieved through the Energy Independence and Security Act of 2007 as the reasoning for the denial (Office of the White House 2009). The state of California filed suit against EPA for its decision to deny the CAA waiver. The 2008 change in the federal administration has resulted in EPA reexamining its position for denial of California's CAA waiver. On January 26, 2009, the President issued an Executive Memorandum directing the EPA to reassess its decision to deny the waiver and

to initiate any appropriate action.¹ EPA issued a Federal Register notice on February 12, 2009 to solicit comments on the reconsideration of the waiver request; comments were accepted through April 2009.

Executive Order S-3-05: Executive Order S-3-05, which was signed by Governor Schwarzenegger in 2005, proclaims that California is vulnerable to the impacts of climate change. The order declares that increased temperatures could reduce the Sierra's snow pack, further exacerbating California air quality problems, and potentially cause a rise in sea levels. To combat those concerns, the Executive Order established total greenhouse emission targets. Specifically, emissions are to be reduced to the 2000 level by 2010, the 1990 level by 2020, and to 80% below the 1990 level by 2050.

The Executive Order directed the Secretary of the California Environmental Protection Agency (CalEPA) to coordinate a multi-agency effort to reduce greenhouse gas emissions to the target levels. The Secretary will also submit biannual reports to the governor and state legislature describing: (1) progress made toward reaching the emission targets; (2) impacts of global warming on California's resources; and (3) mitigation and adaptation plans to combat these impacts. To comply with the Executive Order, the Secretary of the CalEPA created a Climate Act Team (CAT) made up of members from various state agencies and commission. CAT released its first report in March 2006. The report proposed to achieve the targets by building on voluntary actions of California businesses, local government and community actions, as well as through state incentive and regulatory programs.

Assembly Bill 32, The California Climate Solutions Act of 2006: In September 2006, the Global Warming Solutions Act of 2006 (AB 32) was signed into law by Governor Arnold Schwarzenegger. It was the first legislation cutting global warming pollution in the United States. AB 32 requires that statewide greenhouse gas emissions are reduced to 1990 levels by the year 2020, resulting in roughly a 28% reduction under business as usual estimates. This reduction will be accomplished through an enforceable statewide cap on greenhouse gas emissions that will be phased in starting in 2012. To effectively implement the cap, AB 32 directs ARB to develop and implement regulations to reduce statewide greenhouse gas emissions from stationary sources. AB 32 specifies that regulations adopted in response to AB 1493 should be used to address greenhouse gas emissions from vehicles. However, AB 32 also includes language stating that if the AB 1493 regulations cannot be implemented, then ARB should develop new regulations to control vehicle greenhouse gas emissions under the authorization of AB 32.

AB 32 requires that the California Air Resources Board (ARB) adopt a quantified cap on greenhouse emissions representing 1990 emissions levels and disclose how it arrives at the cap; institute a schedule to meet the emissions cap; and develop tracking, reporting, and enforcement mechanisms to ensure that the state achieves reductions in greenhouse gas emissions necessary to meet the cap. AB 32 also includes guidance to institute emissions reductions in an economically efficient manner and conditions to ensure that businesses and consumers are not unfairly affected by the reductions.

AB32 does not explicitly apply to emissions from land development, though emissions associated with land development projects are closely connected to the utilities, transportation and commercial

¹ Obama, President Barack. 2009. Memorandum for the Administrator of the Environmental Protection Agency. State of California Request for Waiver Under 42 U.S.C. 7543(b), the Clean Air Act. January 26.

end-use sectors. Further, because AB32 imposes a statewide emissions cap, land development-related emissions will ultimately factor into considerations of greenhouse gas emissions in the state.

On December 11, 2008, ARB adopted its *Climate Change Scoping Plan* (Scoping Plan), which functions as a roadmap of ARB's plans to achieve GHG reductions in California required by AB 32 through subsequently enacted regulations (ARB 2008b). The Scoping Plan contains the main strategies California will implement to reduce CO₂e emissions by 174 MMT, or approximately 28%, from the state's projected 2020 emissions level of 596 MMT of CO₂e under a business-as-usual scenario. The Scoping Plan also breaks down the amount of GHG emissions reductions ARB recommends for each emissions sector of the state's GHG inventory. The Scoping Plan calls for the largest reductions in GHG emissions to be achieved by implementing the following measures and standards:

- improved emissions standards for light-duty vehicles (estimated reductions of 31.7 MMT CO₂e),
- the Low-Carbon Fuel Standard (15.0 MMT CO₂e),
- energy efficiency measures in buildings and appliances and the widespread development of combined heat and power systems (26.3 MMT CO₂e), and
- a renewable portfolio standard for electricity production (21.3 MMT CO₂e).

ARB has not yet determined what amount of GHG emissions reductions it recommends from local government land use decisions; however, the Scoping Plan does state that successful implementation of the plan relies on local governments' land use planning and urban growth decisions, because local governments have primary authority to plan, zone, approve, and permit land development to accommodate population growth and the changing needs of their jurisdictions. ARB further acknowledges that decisions on how land is used will have large effects on the GHG emissions that will result from the transportation, housing, industry, forestry, water, agriculture, electricity, and natural gas emission sectors.

With regard to local land use planning, the Scoping Plan expects a reduction of approximately 5.0 MMT CO₂e from local land use changes associated with implementation of SB 375. Also noteworthy is the fact that the Scoping Plan does not include any direct discussion about GHG emissions generated by construction activity.

Executive Order S-1-07: Executive Order S-1-07, which was signed by Governor Schwarzenegger in 2007, proclaims that the transportation sector is the main source of GHG emissions in California, at over 40% of statewide emissions. It establishes a goal that the carbon intensity of transportation fuels sold in California should be reduced by a minimum of 10 percent by 2020. This order also directed ARB to determine if this Low Carbon Fuel Standard could be adopted as a discrete early action measure after meeting the mandates in AB 32.

Senate Bill 97: SB 97, signed August 2007 (Chapter 185, Statutes of 2007; Public Resources Code Sections 21083.05 and 21097), acknowledges that climate change is a prominent environmental issue that requires analysis under CEQA. This bill directs the Governor's Office of Planning and Research (OPR), which is part of the state Resources Agency, to prepare, develop, and transmit to ARB guidelines for the feasible mitigation of GHG emissions (or the effects of GHG emissions), as

required by CEQA, by July 1, 2009. The Resources Agency is required to certify and adopt those guidelines by January 1, 2010. OPR transmitted the proposed CEQA Guideline amendments to the Natural Resources Agency in April 2009.

SB 97 also removes, both retroactively and prospectively, the legitimacy of litigation alleging inadequate CEQA analysis of effects of GHG emissions in the environmental review of projects funded by the Highway Safety, Traffic Reduction, Air Quality and Port Security Bond Act of 2006 or the Disaster Preparedness and Flood Protection Bond Act of 2006 (Proposition 1B or 1E). This provision will be repealed by operation of law on January 1, 2010; at that time, any such projects that remain unapproved will no longer be protected against litigation claims of failure to adequately address climate change issues. In the future, this bill will only protect a handful of public agencies from CEQA challenges on certain types of projects, and only for a few years' time.

In June 2008, OPR published a technical advisory recommending that CEQA lead agencies make a good-faith effort to estimate the quantity of GHG emissions that would be generated by a proposed project. Specifically, based on available information, CEQA lead agencies should estimate the emissions associated with project-related vehicular traffic, energy consumption, and water usage and construction activities to determine whether project-level or cumulative impacts could occur, and should mitigate the impacts where feasible (OPR 2008).

Senate Bills 1078 and 107 and Executive Order S-14-08: SB 1078 (Chapter 516, Statutes of 2002) requires retail sellers of electricity, including investor-owned utilities and community choice aggregators, to provide at least 20% of their supply from renewable sources by 2017. SB 107 (Chapter 464, Statutes of 2006) changed the target date to 2010. In November 2008 Governor Schwarzenegger signed Executive Order S-14-08, which expands the state's Renewable Energy Standard to 33% renewable power by 2020. Governor Schwarzenegger plans to propose legislative language that will codify the new higher standard (Office of the Governor 2008). During 2007 PG&E, the electric utility that serves most of Placer County, procured enough renewable energy to meet 13.1% of its electric supply. PG&E is on pace to reach the 20% target by 2010 (PG&E).

Senate Bill 375: SB 375, signed in September 2008 (Chapter 728, Statutes of 2008), aligns regional transportation planning efforts, regional GHG reduction targets, and land use and housing allocation. SB 375 requires metropolitan planning organizations (MPOs) to adopt a sustainable communities strategy (SCS) or alternative planning strategy (APS) that will prescribe land use allocation in that MPOs regional transportation plan. ARB, in consultation with MPOs, will provide each affected region with reduction targets for GHGs emitted by passenger cars and light trucks in the region for the years 2020 and 2035. These reduction targets will be updated every 8 years but can be updated every 4 years if advancements in emissions technologies affect the reduction strategies to achieve the targets. ARB is also charged with reviewing each MPO's SCS or APS for consistency with its assigned targets. If MPOs do not meet the GHG reduction targets, transportation projects will not be eligible for funding programmed after January 1, 2012.

This law also extends the minimum time period for the regional housing needs allocation cycle from 5 years to 8 years for local governments located within an MPO that meets certain requirements. City or county land use policies (including general plans) are not required to be consistent with the regional transportation plan (and associated SCS or APS). However, new provisions of CEQA would incentivize (through streamlining and other provisions) qualified projects that are consistent with an

approved SCS or APS, categorized as “transit priority projects.” SB 375 applies to the Sacramento Area Council of Governments (SACOG), the MPO responsible for transportation planning in the region where the proposed project is located.

Senate Bill 1368: SB 1368 is the companion bill of AB 32 and was signed by Governor Schwarzenegger in September 2006. SB 1368 requires the California Public Utilities Commission (PUC) to establish a greenhouse gas emission performance standard for base load generation from investor owned utilities by February 1, 2007. The California Energy Commission (CEC) has recently established a similar standard for local publicly owned utilities.

These standards cannot exceed the greenhouse gas emission rate from a base load combined-cycle natural gas fired plant. The legislation further requires that all electricity provided to California, including imported electricity, must be generated from plants that meet the standards set by the PUC and CEC.

Attributing Greenhouse Gas Emissions and Land Use Linkages

Land use decisions and development projects are not recorded as an independent emissions sector in the state’s GHG inventory. Rather, land use development projects draw from multiple emissions sectors (e.g., transportation, electricity, and waste). In other words, direct and indirect GHG emissions which are generated on-site or off-site, respectively, can be attributed to the operation of a land use development project. The people who would reside in and the visitors to a development would drive vehicles and generate GHGs that are accounted for in the transportation sector. Electricity consumed at buildings within a project site would indirectly cause GHGs to be emitted at a utility provider. These stationary-source GHG emissions associated with the operation of a utility would be closely controlled and regulated under AB 32 and SB 1368.

Transportation-related GHG emissions are a function of three parameters: vehicle efficiency, fuels, and vehicle miles traveled (VMT). AB 1493 and Executive Order S-1-07 address vehicle efficiency and the carbon content of fuels, but not VMT. Since 1990, VMT per capita in California has been increasing at a faster rate than the state’s population. Consequently, GHG emissions from increased VMT have outpaced the emissions reductions associated with improved vehicle emissions controls. SB 375, through its linkages of land use and transportation funding, addresses the need and provides incentive for VMT reductions.

State of California Energy Action Plan

California Energy Commission (CEC), the California Power Authority (CPA), and the California Public Utilities Commission (CPUC) have adopted an “Energy Action Plan” (EAP) that sets forth a commitment to achieve joint goals for California’s energy future through specific actions. The second EAP (EAP II)¹ describes a coordinated implementation plan for state energy policies that have been expressed through the Governor’s Orders, public positions, instructions to agencies, legislative direction and other energy related policies. (CEC et al.) The overarching goal of the EAP II is for

¹ http://www.energy.ca.gov/energy_action_plan/2005-09-21_EAP2_FINAL.PDF

California's energy to be adequate, technologically advanced, affordable, and environmentally-sound. One of the key actions identified by the EAP II with respect to renewable energy and GHG emission reductions is to implement a cost-effective program to achieve the 3,000 megawatts (MW) goal of the Governor's "Million Solar Roof's initiative." Another key action identified by the EAP is to establish a program to encourage solar hot water heating.

The California Solar Initiative (CSI): California has set a goal to create 3,000 MW of new solar produced electricity by 2017. This Initiative is administered by the CPUC. On March 2, 2006, the CPUC opened a proceeding to develop rules and procedures for the Initiative and to continue considering policies for the development of cost-effective, clean, and reliable distributed generation of energy. On August 21, 2006, the Governor signed Senate Bill 1 (SB 1), which directs the Energy Commission to implement the Solar Initiative program within certain budget limits and specific requirements. CPUC rulemaking is currently in progress to reconcile its decisions with SB 1. Current incentives under the Initiative provide upfront, capacity-based payment for new solar systems. This incentive system changed in 2007, however, into performance-based payments.¹

Title 24 Update: Title 24 is revised on a three-year cycle. The most recent update was in 2008 and will be in effect as of August 1, 2009. It is widely recognized that Updates for the Title 24 Building standards will be an effective method by which the State may reduce GHG emissions. For example, the EAP II (described above) directs the CEC to adopt new building standards for implementation in 2008 that include cost-effective demand response technologies and the integration of photovoltaic systems.² (CEC, 2008) Similarly, Executive Order 2-3-05, the Climate Action Initiative, identifies Title 24 Building Standards as an explicit strategy in a menu of actions that will be necessary to meet the goals of the Climate Action Initiative.

Regional and Local Plans, Policies, Regulations, and Ordinances

The City of Rocklin is a member of SACOG, which covers a six-county area. SACOG adopted a metropolitan transportation plan (MTP) for 2035 to provide a regional vision for all modes of surface transportation and a guide for regional transportation investments. The MTP uses federal and state funds for programs designed to meet goals such as clean air; for designing communities to encourage local pedestrian, bicycle, and transit travel; and for improvements to main routes that serve longer distance travel around the region (specifically freeways, rail lines, and major roadways and streets that serve regional traffic).

In December 2004 the SACOG Board of Directors adopted the Preferred Blueprint Scenario, a bold vision for growth through the year 2050 that promotes compact, mixed-use development and more transit choices as an alternative to low-density development. As part of the MTP, the Preferred Blueprint Scenario provides an example of how land use and transportation choices might be integrated within the region, built upon the principles of smart growth. These principles include promoting a wide range of housing products, reinvesting in already developed areas, protecting natural resource areas from urbanization, and providing alternative transportation choices. To a large

¹ Go Solar California, The California Solar Initiative.<http://www.gosolarcalifornia.ca.gov/csi/index.html> (as of September 23, 2008).

² Update to the Building Energy Efficiency Standards, 2008 Standards Background and Objectives <http://www.energy.ca.gov/title24/2008standards/background.html> (as of September 23, 2008).

degree, local governments in the Sacramento region are using Blueprint smart-growth principles in built projects, plans, and general plans.

Thresholds of Significance

Under CEQA, an environmental impact report must identify and focus on the significant environmental effects of a project. Significant effect on the environment means a substantial, or potentially substantial, adverse change in the environment (Pub. Resources Code, § 21068). CEQA further states that the CEQA Guidelines shall specify certain criteria that require a finding that a project may have a significant effect on the environment. However, as of the writing of the Rocklin Commons Project EIR, the agencies with jurisdiction over air quality regulation and GHG emissions such as the ARB and the Placer County Air Pollution Control District (PCAPCD) have not established regulations, guidance, methodologies, significance thresholds, standards or analysis protocols for the assessment of greenhouse gas emissions and climate change. Thus, a standardized, California-wide methodology to establish an appropriate baseline, such as a project-level (regional GHG emissions) inventory, to evaluate the significance of GHG emission changes has not yet been established. This places the burden for establishing a methodology, and determining significance standards, on local lead agencies, such as the City of Rocklin. Given the challenges associated with determining a project-specific significance criteria for GHG emissions when the issue must be viewed on a global scale, and the regulatory agencies best suited for developing the methodology to do so have not yet established any criteria, a quantified significance threshold is not proposed by the City for the Rocklin Commons Project.

Given the challenges associated with determining a project-specific significance criteria for GHG emissions when the issue must be viewed on a global scale, and the regulatory agencies best suited for developing the methodology to do so have not yet established any criteria, a quantified significance threshold is not proposed by the City for the Rocklin Commons Project.

To meet GHG emission targets of AB 32, California would need to generate in the future less GHG emissions than current levels. It is recognized, however, that for most projects there is no simple metric available to determine if a single project would substantially increase or decrease overall GHG emission levels or conflict with the goals of AB 32. Although it is possible to generally estimate a project's incremental contribution of CO₂ into the atmosphere, it is typically not possible to determine whether or how an individual project's relatively small incremental contribution might translate into physical effects on the environment. Given the complex interactions between various global and regional-scale physical, chemical, atmospheric, terrestrial, and aquatic systems that result in the physical expressions of global climate change, it is impossible to discern whether the presence or absence of CO₂ emitted by the project would result in any altered conditions.

However, the State of California has established GHG reduction targets and has determined that GHG emissions as they relate to global climate change are a source of adverse environmental impacts in California that should be addressed under CEQA. Although AB 32 did not amend CEQA, it identifies the myriad environmental problems in California caused by global warming (Health and Safety Code, Section 38501[a]). SB 97, however, did amend CEQA by directing OPR to prepare revisions to the State CEQA Guidelines addressing the mitigation of GHGs or their consequences. As an interim step toward development of required guidelines, in June of 2008, OPR published a technical advisory,

entitled “CEQA and Climate Change: Addressing Climate Change Through California Environmental Quality Act (CEQA) Review.” OPR recommends that the lead agencies under CEQA make a good-faith effort, based on available information, to estimate the quantity of GHG emissions that would be generated by a proposed project, including the emissions associated with vehicular traffic, energy consumption, water usage, and construction activities, to determine whether the impacts have the potential to result in a project or cumulative impact and to mitigate the impacts where feasible (OPR 2008).

In that document, OPR acknowledged that “perhaps the most difficult part of the climate change analysis will be the determination of significance,” and noted that “OPR has asked ARB technical staff to recommend a method for setting thresholds which will encourage consistency and uniformity in the CEQA analysis of GHG emissions throughout the state.” ARB has not yet completed this task at the time of writing.

AB 32 requires ARB, the State agency charged with regulating statewide air quality, to adopt rules and regulations that by 2020 would achieve a reduction in greenhouse gas emissions equivalent to the statewide inventory levels of 1990. On or before June 30, 2007, ARB was required to publish a list of discrete greenhouse gas emission reduction measures that can be implemented. On April 20, 2007, ARB published its proposed early actions (ARB 2007a), which include discrete early action measures, additional greenhouse gas reduction strategies, and criteria and toxic control measures.

The California Environmental Protection Agency (CalEPA) Climate Action Team (CAT) developed a report that “proposes a path to achieve the Governor’s targets [established in Executive Order S-3-05] that will build on voluntary actions of California businesses, local government and community actions, and State incentive and regulatory programs” (CAT 2006) needed to reduce activities that contribute to global climate change. The report indicates that the strategies will reduce California’s emissions to the levels proposed in Executive Order S-3-05. The basis for these greenhouse gas reduction goals that California has adopted into law is provided in the IPCC climate models that predict the climate stabilizing at approximately 2 degrees Celsius rise in average temperatures long-term.

Given this information, AB 32, Executive Order S-3-05, and the CAT report all indicate that development projects need to reduce greenhouse gas emissions to the target levels by adopting the reduction measures in order to find that the project’s incremental contribution to global climate change impacts are not significant. If the project is not consistent with those strategies that the Lead Agency deems feasible, then a project could potentially be deemed to have a significant impact on global climate change. Notably, it is generally agreed that the application of mitigation measures directed towards reducing air quality degradation, energy savings and reduction on the dependency of vehicular usage will lessen the contribution of greenhouse gas emissions and ultimately slow down the consequences associated with global climate changes.

For the purposes of this EIR, the City has decided to quantify total GHG emissions from the proposed project and compare the proposed project to the currently available set of strategies from the CAT and OPR. This EIR considers the GHG emissions from the project would be significant, if implementation of the project would be inconsistent with strategies to help the State attain the goals identified in AB 32.

Analysis Methodology

Emissions Analysis Methodology

The methodology used in this DEIR to analyze the project's potential effect on global climate change includes a calculation of GHG emissions. The purpose of calculating the emissions is for informational and comparative purposes, as there is no adopted quantified emissions threshold for either a project level or cumulative level of impact. The GHG emissions methodology presented below includes construction emissions in terms of CO₂, and annual CO₂e GHG emissions from increased energy consumption, water usage, solid waste disposal, as well as estimated GHG emissions from vehicular traffic that would result from implementation of the proposed project. In the case of the proposed project, CO₂ emissions associated with project construction and operation were modeled using URBEMIS 2007 version 9.2.4, a widely-used model in regional air quality analysis. Greenhouse gas emissions related to electricity consumption were calculated based on data provided by the Energy Information Administration. Water-related energy use consumes 19 percent of California's electricity every year.¹ Energy use and related GHG emissions are based on water supply and conveyance, water treatment, water distribution, and wastewater treatment. To determine the net GHG emissions from solid waste disposal, the CO₂e emissions from CH₄ generation, carbon storage (treated as negative emissions), and transportation CO₂ emissions were considered.

All vehicle-related CO₂e emissions from project operation may not necessarily be "new" emissions. To a large degree, a commercial project relocates GHG emissions from one part of a market shed to another; similarly, a residential project does not create people (emitters), but accommodates them as they move from one location to another. In this sense, commercial and residential development projects occur in response to increased demand from the growing economy and population and are not in themselves creators of economic and population growth. Emissions of GHGs are, however, influenced by the location and design of projects, to the extent that they can influence travel to and from the projects, and to the degree the projects are designed to maximize energy efficiency.

No accepted technically sound methodology exists that would allow the City to determine how many vehicle trips, or vehicle miles traveled (VMT), associated with the project, as determined through the traffic models used in Chapter 4.8 of this Draft EIR, are truly "new" trips, as opposed to trips coming to and from the project site instead of traveling to and from some other site or sites, or "new" VMT. This analysis considers all vehicle-related trips as "new" trips and includes an estimate of GHG emissions from this source. The City believes that the approach taken herein is a reasonably conservative approach and is a reasonable approach to evaluating the project's potential to emit GHGs.

The methodology used in this DEIR to analyze the project's potential effect on global warming includes a calculation of GHG emissions. The purpose of calculating the emissions is for informational and comparative purposes, as there is no adopted quantifiable emissions threshold for either a project level or cumulative level of impact. Absent any adopted regulatory standard or other regulatory guidance, the City has determined that the project's potential for creating an impact on global warming should be based, at least in part, on a comparative analysis of the project against the emission reduction strategies contained in the California Climate Action Team's Report to the

¹ California, State of, 2005. California Energy Commission. California's Water-Energy Relationship. November.

Governor and OPR's published technical advisory entitled "CEQA and Climate Change: Addressing Climate Change Through California Environmental Quality Act (CEQA) Review." If it is determined that the proposed project is compatible or consistent with the applicable Climate Action Team (CAT) and Office of Planning and Research (OPR) strategies, the project's cumulative impact on global climate change is considered less than significant.

Impacts and Mitigation Measures

GCC-1: *Cumulative Contribution to Climate Change Impacts.* *The proposed project would generate GHG emissions during project construction and operation. The vast majority of GHG emissions associated with the project are attributable to the combustion of fossil fuels, primarily through the use of motor vehicles, but also from indirect sources (i.e., electricity-generating power plants). Implementation of City policies and mitigation measures would reduce GHG emissions from construction and operation of the project. The City has determined that through the implementation of these existing regulations, mitigation measures, and compliance with City policies and ordinances, the proposed project would either not be subject to or be in substantial compliance with the early emission reduction strategies contained in the California Climate Action Team's (CAT's) Report to the Governor and Executive Order S-3-05 and the recommendations from OPR.. Therefore, the City considers the project's climate change impacts to be less than cumulatively considerable, and therefore, less than significant.*

An analysis of the Rocklin Common's three most important GHG emissions (CO₂, CH₄, and N₂O) is presented below. The emissions of the individual gases were estimated and then converted to their CO₂ equivalents (CO₂e) using the individually determined global warming potential (GWP) of each gas. Thus, total GHG emissions = total CO₂ emissions + total CO₂e emissions from CH₄ and N₂O.

Implementation of the Rocklin Commons project would generate greenhouse gases through the construction and operation of new commercial uses. GHG emissions from the project would specifically arise from project construction and from sources associated with project operation, including direct sources such as motor vehicles, natural gas consumption, solid waste handling/treatment, and indirect sources such as electricity generation.

Average annual uses of electricity and natural gas for commercial land uses combined with vehicle trips per day are estimated for the proposed project in Table 6-4.

Table 6-4: Project Specific Analysis

Project Parameters	
	2012
Vehicles (trips/day)	15,414
Electricity used (MWh/year)	11,000
(mscf/year)	18.0
Solid Waste (tonnes/year)	1,500

MWh = Megawatt hour
mscf = million standard cubic feet

Emission Source	Emissions (tonnes per year)				Percent of Total
	CO ₂	CH ₄	N ₂ O	CO ₂ e	
Vehicles (1)	13,000	1.1	2	13,600	70.1%
Electricity Production	3,000	0.033	0.018	3,010	15.5%
Natural Gas Combustion ⁽¹⁾	980	0.019	0.018	990	5.1%
Solid Waste	--	--	--	1,800	9.3%
Other Area Sources ⁽²⁾	1	--	--	1	0.0%
Total Annual Emissions	17,000	1.2	2	19,400	100.0%

Note: Numbers in table may not appear to add up correctly due to rounding of all numbers to two significant digits.

(1) CO₂ emissions for Vehicles and Natural Gas from URBEMIS 2007 outputs, if available.

(2) Includes CO₂ emissions for landscaping equipment from URBEMIS 2007 outputs.

Source: LSA Associates, 2009.

Construction GHG Emissions

Construction activities, such as site grading, utility engines, on-site heavy-duty construction vehicles, equipment hauling materials to and from the site, asphalt paving, and motor vehicles transporting the construction crew will produce combustion emissions from various sources. During construction of the project, GHGs would be emitted through the operation of construction equipment and from worker and builder supply vendor vehicles, each of which typically uses fossil-based fuels to operate. The combustion of fossil-based fuels creates GHGs such as CO₂, CH₄, and N₂O. Furthermore, CH₄ is emitted during the fueling of heavy equipment. Exhaust emissions from on-site construction activities would vary daily as construction activity levels change.

Using the URBEMIS 2007 model, it is estimated that the CO₂ emissions associated with construction activities for the proposed project would total approximately 1,044 tons of CO₂. The project would be required to implement the construction exhaust control measures listed in Mitigation Measure AQ-1 of Section 4.2, Air Quality. This measure would reduce GHG emissions during the construction period.

Operational GHG Emissions

Rocklin Commons would generate GHG during its operation, principally from motor vehicle use, electricity and natural gas consumption, water use, and solid waste disposal. In total, the proposed project would be anticipated to increase greenhouse gas emissions (CO₂e) attributable to mobile sources by 19,400 metric tons per year.

Motor Vehicle GHG Emissions: The largest source of GHG emissions associated with the proposed project would be on-and-off site motor vehicle use. CO₂ emissions, the primary greenhouse gas from mobile sources, are directly related to the quantity of fuel consumed. CO₂ emissions during operation of the project at buildout were estimated using URBEMIS2007. Total CO₂ emissions related to the operation of motor vehicles would be 13,600 metric tons per year. Combustion of fossil fuels also generates CH₄ and N₂O.

Electricity and Natural Gas GHG Emissions: The proposed project would use electricity for its commercial/retail components which would contribute to GHG emissions. The generation of electricity through the combustion of fossil fuels typically yields CO₂ and, to a much smaller extent, CH₄ and N₂O. CO₂ emissions during operation of the project at buildout were estimated using URBEMIS2007. Total CO₂e emissions related to electricity and natural gas is 4,000 metric tons per year.

Solid Waste GHG Emissions: Solid waste generated by the project would contribute to State's GHG emissions. Treatment and disposal of solid waste produces significant amounts of CH₄. In addition to CH₄, solid waste disposal sites also produce biogenic CO₂ and non-methane volatile organic compounds (NMVOCs) as well as smaller amounts of N₂O, nitrogen oxides (NO_x) and carbon monoxide (CO). CH₄ produced at solid waste sites contributes approximately 3 to 4 percent to the annual global anthropogenic GHG emissions (IPCC, 2001).

Waste management practices in California have changed significantly over the last decade. State mandated waste minimization and recycling/reuse policies have been introduced to reduce the amount of waste disposed of in landfills, and alternative waste management practices to solid waste disposal on land have been implemented to reduce the environmental impacts of waste management. Landfill gas recovery has become more common as a measure to reduce CH₄ emissions from solid waste disposal sites. Using average solid waste generation rates for commercial-retail establishments reported by the California Integrated Waste Management Board and emission factors from EPA, the proposed project would generate approximately 1,800 metric tons of CO₂e emissions per year.

Other Greenhouse Gas Emissions: At present, there is a federal ban on CFCs; therefore, it is assumed the project will not generate emissions of CFCs. The project may emit a small amount of HFC emissions from leakage and service of refrigeration and air conditioning equipment and from disposal at the end of the life of the equipment. However, the details regarding refrigerants to be used in the project and the capacity of these are unknown at this time. PFCs and sulfur hexafluoride are typically used in industrial applications, none of which would be used by the project. Therefore, it is not anticipated that the project would contribute significant emissions of these additional greenhouse gases.

As mentioned earlier, worldwide emissions of GHGs in 2004 were 27 billion metric tons of CO₂e per year. According to ARB emission inventory estimates, California emitted approximately 480 million metric tons¹ of CO₂e emissions in 2004.² In 2004, the U.S. contributed the most GHG emissions (35 percent of global emissions), or approximately 7.3 billion metric tons of CO₂e. Comparing the project GHG emissions of 19,400 metric tons per year to the global emissions of 27 billion metric tons per year yields an exceedingly small percentage, about 0.00007 percent of the total emissions. While the project's incremental contribution is very small, it is anticipated that the project emissions will still contribute to the global inventory of greenhouse gas emissions.

As discussed above, through Executive Order S- 3-05 the Governor announced GHG emission reduction targets of GHG emissions to 2000 levels by 2010; GHG emissions to 1990 levels by 2020; GHG emissions to 80 percent below 1990 levels by 2050. (CA 2005.)

The California Environmental Protection Agency Climate Action Team's report, developed to achieve a path to the Governor's targets, indicates that the strategies will reduce California's emissions to the levels proposed in Executive Order S-3-05. The strategies that apply to the project are contained in Table 6-5. These strategies are broad in their scope and address a wide range of industries and greenhouse gas emission sources. Therefore, many of the strategies are not applicable to the development and operation of commercial land uses. Also, for those strategies that are applicable, specific regulations or detailed guidance regarding their implementation is typically not available. Thus, the project's compliance with these measures was evaluated by the City qualitatively with the understanding that exact compliance can only be determined once specifically applicable regulations are adopted. The analysis included in this table focuses on the ability of the project to substantially comply with the applicable strategies. As shown in the table, the project substantially complies with the measures to bring California to the emission reduction targets.

¹ A metric ton is equivalent to approximately 1.1 tons.

² California Air Resources Board, Greenhouse Gas Inventory Data - 1990 to 2004.
<http://www.arb.ca.gov/cc/inventory/data/data.htm>. Accessed November 2008.

Table 6-5: Project Compliance with Greenhouse Gas Emission Reduction Strategies

Strategy and Description	Project Compliance
California Air Resources Board	
<p>Vehicle Climate Change Standards AB 1493 (Pavley) required the State to develop and adopt regulations that achieve the maximum feasible and cost-effective reduction of climate change emissions emitted by passenger vehicles and light duty trucks. Regulations were adopted by the ARB in September 2004.</p>	<p>Not Applicable This measure applies to passenger vehicles and light duty trucks. The project does not manufacture, sale or purchase these vehicles. Vehicles that access the site would be required to be in compliance with applicable State and federal regulations.</p>
<p>Other Light Duty Vehicle Technology New standards would be adopted to phase in beginning in the 2017 model year</p>	<p>Not Applicable The project does not manufacture, sale or purchase light duty vehicles. Light duty trucks that access the site would be required to be in compliance with applicable State and federal regulations.</p>
<p>Diesel Anti-Idling In July 2004, the ARB adopted a measure to limit diesel-fueled commercial motor vehicle idling.</p>	<p>Compliant The proposed project would be required to comply with ARB limits on diesel-fueled commercial motor vehicle idling.</p>
<p>Hydrofluorocarbon Reduction (1) Ban retail sale of HFC in small cans. (2) Require that only low GWP refrigerants be used in new vehicular systems. (3) Adopt specifications for new commercial refrigeration. (4) Add refrigerant leak-tightness to the pass criteria for vehicular inspection and maintenance programs. (5) Enforce federal ban on releasing HFCs.</p>	<p>Compliant The proposed project would be required to comply with the specific strategies applicable to retail uses once they are adopted. For example, the retail sale of HFC's in small cans would be prohibited at the retail stores within the project site. However, the majority of these strategies would not be applicable to the proposed project.</p>
<p>Transportation Refrigeration Units (TRUs), Off-Road Electrification, Port Electrification Strategies to reduce emissions from TRUs, increase off-road electrification, and increase use of shore-side/port electrification.</p>	<p>Compliant The proposed project would be required to comply with mitigation measures AQ-1 and AQ-2 that limit idling times to five minutes or less for construction activities and operational activities, respectively.</p>
<p>Manure Management Strategies to reduce volatile organic compounds from confined animal facilities.</p>	<p>Not Applicable</p>
<p>Alternative Fuels: Biodiesel Blends ARB would develop regulations to require the use of 1 to 4 percent</p>	<p>Not Applicable The proposed project does not include any fuel-dispensing facilities at this time. However, if a fuel-dispensing facility is proposed on the site in the</p>

Strategy and Description	Project Compliance
biodiesel displacement of California diesel fuel.	future, it would be required to comply with ARB regulations regarding the inclusion of alternative fuels.
<p>Alternative Fuels: Ethanol Increased use of ethanol fuel.</p>	<p>Not Applicable The proposed project does not include any fuel-dispensing facilities at this time. However, if a fuel-dispensing facility is proposed on the site in the future, it would be required to comply with ARB regulations regarding the inclusion of alternative fuels.</p>
<p>Heavy-Duty Vehicle Emission Reduction Measures Increased efficiency in the design of heavy-duty vehicles and an education program for the heavy-duty vehicle sector.</p>	<p>Not Applicable The proposed project would not include any activities associated with the design of vehicles and would not include heavy-duty vehicle education programs.</p>
<p>Reduced Venting and Leaks in Oil and Gas Systems Rule considered for adoption by the Air Pollution Control Districts for improved management practices.</p>	<p>Not Applicable</p>
<p>Hydrogen Highway The California Hydrogen Highway Network (CA H2 Net) is a State initiative to promote the use of hydrogen as a means of diversifying the sources of transportation energy.</p>	<p>Not Applicable</p>
<p>Achieve 50 Percent Statewide Recycling Goal Achieving the State's 50 percent waste diversion mandate as established by the Integrated Waste Management Act of 1989, (AB 939, Sher, Chapter 1095, Statutes of 1989), will reduce climate change emissions associated with energy-intensive material extraction and production as well as methane emission from landfills. A diversion rate of 48 percent has been achieved on a statewide basis. Therefore, a 2 percent additional reduction is needed.</p>	<p>Compliant The City of Rocklin diverts over 50% of the solid waste generated within the City from landfill disposal, consistent with the requirements of AB 939. The majority of this diversion takes place at the Western Regional Materials Recovery Facility (MRF) in Placer County. The MRF recovers recyclable materials such as glass, metals, paper, plastics, wood waste and other compostable materials. Solid waste generated from the proposed project would be delivered to the MRF. Therefore the proposed project would be consistent with this strategy.</p>

Strategy and Description	Project Compliance
<p>Landfill Methane Capture Install direct gas use or electricity projects at landfills to capture and use emitted methane.</p>	Not Applicable
<p>Department of Forestry</p>	
<p>Urban Forestry A new statewide goal of planting 5 million trees in urban areas by 2020 would be achieved through the expansion of local urban forestry programs.</p>	<p>Compliant The site's Landscaping Plan would be required to comply with the City's parking lot shade requirements, which would require extensive tree planting on the site. In addition, the City has adopted an Urban Forest Plan with specific strategies for expanding tree canopy within the City. The City's Urban Forest Plan has shown that development in the City that is consistent with City General Plan policies has resulted in an increase of tree canopy cover from 11% in 1952 to 18% in 2003 (a 63% increase). The Urban Forest Plan provides a framework for the City to maintain its existing tree canopy cover and to increase it to a greater extent as development continues.</p>
<p>Reforestation Projects Reforestation projects focus on restoring native tree cover on lands that were previously forested and are now covered with other vegetative types.</p>	Not Applicable
<p>Department of Water Resources</p>	
<p>Water Use Efficiency Approximately 19 percent of all electricity, 30 percent of all natural gas, and 88 million gallons of diesel are used to convey, treat, distribute and use water and wastewater. Increasing the efficiency of water transport and reducing water use would reduce greenhouse gas emissions.</p>	<p>Compliant The project's landscape plan will be required by the City to include an automatic irrigation system, and the use of drip system irrigation will be encouraged as applicable. The project's landscape plan is also required by the City to be certified by the landscape architect as meeting the requirements of the Water Conservation in Landscaping Act (Government Code Section 65591, et. seq.).</p>
<p>Energy Commission (CEC)</p>	
<p>Building Energy Efficiency Standards in Place and in Progress Public Resources Code 25402 authorizes the CEC to adopt and periodically update its building energy efficiency standards (that apply to newly constructed buildings and additions to and alterations to</p>	<p>Compliant Construction and operation of all of the proposed buildings on the site would be required to comply with the energy efficiency standards included in Title 24 of the California Code of Regulations. Title 24 identifies</p>

Strategy and Description	Project Compliance
existing buildings).	specific energy efficiency requirements for building construction and systems operations that are intended to ensure efficient energy usage over the long-term life of the building.
<p>Appliance Energy Efficiency Standards in Place and in Progress Public Resources Code 25402 authorizes the Energy Commission to adopt and periodically update its appliance energy efficiency standards (that apply to devices and equipment using energy that are sold or offered for sale in California).</p>	<p>Compliant The appliances sold at the project site would be required to comply with all applicable Energy Commission requirements related to energy efficiency.</p>
<p>Cement Manufacturing Cost-effective reductions to reduce energy consumption and to lower carbon dioxide emissions in the cement industry.</p>	Not Applicable
<p>Municipal Utility Strategies Includes energy efficiency programs, renewable portfolio standard, combined heat and power, and transitioning away from carbon-intensive generation.</p>	Not Applicable
<p>Alternative Fuels: Non-Petroleum Fuels Increasing the use of non-petroleum fuels in California’s transportation sector, as recommended in the CEC’s 2003 and 2005 Integrated Energy Policy Reports.</p>	Not Applicable
Business Transportation and Housing	
<p>Smart Land Use and Intelligent Transportation Systems (ITS) Smart land use strategies encourage jobs/housing proximity, promote transit-oriented development, and encourage high-density residential/commercial development along transit corridors. ITS is the application of advanced technology systems and management strategies to improve operational efficiency of transportation systems and movement of people, goods, and services. Governor Schwarzenegger is finalizing a comprehensive 10-year strategic growth plan with the intent of developing ways to promote, through State investments, incentives and technical assistance, land use,</p>	<p>Compliant The proposed project would be required to comply with applicable City of Rocklin General Plan policies that encourage smart land use development. These policies include the following: Circulation Element, Policy 3 – “To require bike lanes in the design and construction of major new street and highway improvements, and to establish bike lanes on those City streets wide enough to accommodate bicycles safely.” The City of Rocklin Bikeway System Map includes a proposed Class II bikeway on Sierra College Boulevard. The proposed project would not affect the ability to implement this bikeway and would</p>

Strategy and Description	Project Compliance
<p>and technology strategies that provide for a prosperous economy, social equity, and a quality environment.</p> <p>Smart land use, demand management, ITS, and value pricing are critical elements in this plan for improving mobility and transportation efficiency. Specific strategies include promoting jobs/housing proximity and transit-oriented development; encouraging high-density residential/commercial development along transit/rail corridor; valuing and congestion pricing; implementing intelligent transportation systems, traveler information/traffic control, and incident management; accelerating the development of broadband infrastructure; and comprehensive, integrated, multimodal/intermodal transportation planning.</p>	<p>not conflict with this policy.</p> <p>Circulation Element, 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.” The project would be subject to a mitigation measure that promotes transit enhancing infrastructure that includes transit shelters, benches, street lighting, route signs and displays, and/or bus turnouts/bulbs. Therefore, the project would be consistent with this policy. See Mitigation Measure AQ-2 in Section 4.2, Air Quality.</p> <p>In addition, the proposed project locates high density retail uses adjacent to a major transportation corridor, which would encourage pass-by trips (drivers accessing the site while in route to another location rather than initiating a new trip to the site). A project with high pass-by trips minimizes the creation of new trips, which reduces GHG emissions from vehicles.</p> <p>Also, the project includes multiple commercial services, including grocery, restaurant, building material and general retail services, provided in a single shopping center. Such variation in commercial services allows for more efficient shopping practices and fewer vehicle trips.</p>
<p>Measures to Improve Transportation Energy Efficiency</p> <p>Builds on current efforts to provide a framework for expanded and new initiatives, including incentives, tools, and information that advance cleaner transportation and reduce climate change emissions.</p>	<p>Compliant</p> <p>The proposed project would be required to implement fuel conservation measures that would encourage the use of public transportation, bicycle use and pedestrian access. See Mitigation Measure AQ-2 in Section 4.2, Air Quality.</p>
<p>Department of Food and Agriculture</p>	
<p>Enteric Fermentation</p> <p>Cattle emit methane from digestion processes. Changes in diet could result in a reduction in emissions.</p>	<p>Not Applicable</p>
<p>State and Consumer Services Agency</p>	
<p>Green Buildings Initiative</p> <p>Green Building Executive Order, S-20-04 (CA 2004), sets a goal of reducing energy use in public and private buildings by 20 percent by</p>	<p>Compliant</p> <p>As discussed above, the project will comply with Title 24 energy efficient building design measures that are intended to minimize building energy</p>

Strategy and Description	Project Compliance
the year 2015, as compared with 2003 levels. The Executive Order and related action plan spell out specific actions State agencies are to take with State-owned and -leased buildings. The order and plan also discuss various strategies and incentives to encourage private building owners and operators to achieve the 20 percent target.	demands.
Public Utilities Commission (PUC)	
Accelerated Renewable Portfolio Standard The Governor has set a goal of achieving 33 percent renewables in the State’s resource mix by 2020. The joint PUC/Energy Commission September 2005 Energy Action Plan II (EAP II) adopts the 33 percent goal.	Not Applicable
Investor-Owned Utility This strategy includes energy efficiency programs, combined heat and power initiative, and electricity sector carbon policy for investor owned utility.	Not Applicable

Note: As noted in the Project Description chapter, the overall size of the shopping center would be a maximum of 415,000 square feet. Although the applicant currently does not have any identified major tenants, the project is designed for two major tenants. Some project feature and design items noted in this table are inherent to the overall project design, such as sidewalks and pedestrian walkways in the parking areas, and these features would benefit future tenant spaces. Due to a lack of tenant identity, it is not known at this time what other tenant-specific project features and design items would also be included.

Source: Summarized from CAT 2006. MBA 2006.

In June 2008, the OPR published a technical advisory entitled “CEQA and Climate Change: Addressing Climate Change Through California Environmental Quality Act (CEQA) Review.” As a part of this document, OPR included examples of recommended measures that lead agencies may wish to consider to reduce GHG emissions. The recommendations from OPR are contained in Table 6-6. As with the CAT strategies identified above, the OPR recommendations are broad in their scope and address a wide range of industries and GHG emission sources. Therefore, most of the recommendations are not applicable to the development and operation of any single residential project, but rather as general development policies. The project’s compliance with these measures was evaluated by the City qualitatively with the understanding that exact compliance can only be determined once specifically applicable regulations are adopted. The analysis included in the table below focuses on the ability of the project to substantially comply with the applicable strategies.

Table 6-6: Project Compliance with OPR Greenhouse Gas Emission Reduction Recommendations

Recommendation and Description	Project Compliance
LAND USE AND TRANSPORTATION	
Implement land use strategies to encourage jobs/housing proximity, promote transit-oriented development, and encourage high density development along transportation corridors. Encourage compact, mixed-use projects, forming urban villages designed to maximize affordable housing and encourage walking, bicycling and the use of public transit systems,	Compliant This measure is more applicable as a general development policy than as a project-specific measure; however, the project is considered to be high density development along transportation corridors (I-80 and Sierra College Boulevard). The project includes sidewalks and pedestrian walkways that would encourage walking or bicycling trips and mitigation measure AQ-2 promotes alternative modes of transportation, including bicycling and public transit systems.
Encourage infill, redevelopment, and higher density development, whether in incorporated or unincorporated settings.	Compliant The project could be considered as infill development since it is the development of vacant land between existing and/or approved development and it is planned growth within the City’s General Plan boundaries.
Encourage new developments to integrate housing, civic and retail amenities (jobs, schools, parks, shopping opportunities) to help reduce VMT resulting from discretionary automobile trips.	Substantially compliant to the extent applicable. Although the project does not include any non-retail uses, the project does include sidewalks and pedestrian walkways that would encourage walking or bicycling trips. In addition, mitigation measure AQ-2 promotes alternative modes of transportation, including bicycling and public transit systems.
Apply advanced technology systems and management strategies to improve operational efficiency of	Not Applicable

Recommendation and Description	Project Compliance
transportation systems and movement of people, goods and services.	This measure is more applicable as a general development policy rather than as a project-specific measure.
Incorporate features into project design that would accommodate the supply of frequent, reliable and convenient public transit.	Compliant Mitigation measure AQ-2 promotes alternative modes of transportation, including bicycle and public transit systems. In addition, the project includes sidewalks and pedestrian walkways that would facilitate access to a major shopping center and a major transportation corridor (Sierra College Boulevard) that are likely to provide access to convenient public transit should it be determined by the local public transit provider that public transit access and facilities are not needed within the commercial project.
Implement street improvements that are designed to relieve pressure on a region's most congested roadways and intersections.	Not Applicable This measure is more applicable as a general development policy rather than as a project-specific measure; however, the project will be subject to payment of the City of Rocklin's traffic impact mitigation (TIM) fee so that the project contributes its fair share to the cost of citywide transportation/circulation improvements
Limit idling time for commercial vehicles, including delivery and construction vehicles.	Compliant Mitigation measure AQ-1 requires construction vehicles to limit their idling times to five minutes for all diesel-fueled equipment, and mitigation measure AQ-2 requires diesel engines to be shut off when not in use for longer than 5 minutes on the premises to reduce idling emissions.
URBAN FORESTRY	
Plant trees and vegetation near structures to shade buildings and reduce energy requirements for heating/cooling.	Compliant The project design includes extensive landscaping and mitigation measure AQ-2 requires the project to use tree shading above that required by code, as determined feasible by the City. Mitigation Measure BIO-3 requires the transplanting or replanting of the trees that must be cut down in order to accommodate the new development associated with the project.
Preserve or replace onsite trees (that are removed due to development) as a means of providing carbon storage.	Compliant The City has adopted an Urban Forest Plan with

Recommendation and Description	Project Compliance
	<p>specific strategies for expanding tree canopy within the City. The City's Urban Forest Plan has shown that development in the City that is consistent with City General Plan policies has resulted in an increase of tree canopy cover from 11% in 1952 to 18% in 2003 (a 63% increase). The Urban Forest Plan provides a framework for the City to maintain its existing tree canopy cover and to increase it to a greater extent as development continues. In addition, Mitigation Measure BIO-3 would assist with increasing tree cover of the proposed project site.</p>
GREEN BUILDINGS	
<p>Encourage public and private construction of LEED (Leadership in Energy and Environmental Design) certified (or equivalent) buildings.</p>	<p>Compliant</p> <p>The construction and operation of all of the proposed buildings on the site would be required to comply with the energy efficiency standards included in Title 24 of the California Code of Regulations. Title 24 identifies specific energy efficiency requirements for building construction and systems operations that are intended to ensure efficient energy usage over the long-term life of the building.</p> <p>In addition, Mitigation Measure AQ-2 also requires use of solar, low-emissions, or central or tankless water heaters, increase wall and attic insulation beyond Title 24 requirements, orientation of buildings to take advantage of passive solar heating and natural cooling, energy efficient windows, tree shading above that required by code, installation of photovoltaic cells, programmable thermostats for all heating and cooling systems, awnings or other shading mechanisms for windows and walkways, and the use of day lighting systems such as skylights, light shelves, and interior transom windows, as determined feasible by the City.</p>
ENERGY CONSERVATION POLICIES AND ACTIONS	
<p>Recognize and promote energy savings measures beyond Title 24 requirements for residential and commercial projects.</p>	<p>Compliant</p> <p>The construction and operation of all of the proposed buildings on the site would be required to comply with the energy efficiency standards included in Title 24 of the California Code of Regulations. Title 24 identifies specific energy efficiency requirements for building construction and systems operations that are intended to ensure efficient energy usage over the long-term life of the building.</p>

Recommendation and Description	Project Compliance
	<p>In addition, Mitigation Measure AQ-2 also requires use of solar, low-emissions, or central or tankless water heaters, increase wall and attic insulation beyond Title 24 requirements, orientation of buildings to take advantage of passive solar heating and natural cooling, energy efficient windows, tree shading above that required by code, installation of photovoltaic cells, programmable thermostats for all heating and cooling systems, awnings or other shading mechanisms for windows and walkways, and the use of day lighting systems such as skylights, light shelves, and interior transom windows, as determined feasible by the City.</p>
<p>Where feasible, include in new buildings facilities to support the use of low/zero carbon fueled vehicles, such as the charging of electric vehicles from green electricity sources.</p>	<p>Compliant</p> <p>The evolution of electric vehicle technology is such that electric vehicles are able to be charged on a typical household 110 volt current, which would be available with the proposed commercial project.</p>
<p>Educate the public, schools, other jurisdictions, professional associations, business and industry about reducing GHG emissions.</p>	<p>Not Applicable</p> <p>This measure is more applicable as a general development policy rather than as a project specific measure.</p>
<p>Replace traffic lights, street lights, and other electrical uses to energy efficient bulbs and appliances.</p>	<p>Not Applicable</p> <p>This measure is applicable as a general development policy rather than as a project-specific measure; however, the City previously initiated a project to replace signal lights with LEDs, and all new traffic signals come standard with LED bulbs. In addition, the City has undertaken numerous efforts to increase energy efficiency in its buildings and facilities, as noted below in the listing of “Citywide Programs and Policies Contributing to Reduction of Greenhouse Gas Emissions.”</p>
<p>Purchase Energy Star equipment and appliances for public agency use.</p>	<p>Not Applicable</p> <p>This measure is more applicable to the development and operation of public buildings and facilities; however, the City has undertaken numerous efforts to increase energy efficiency in their buildings and facilities, as noted below in the listing of “Citywide Programs and Policies Contributing to Reduction of Greenhouse Gas Emissions.”</p>
<p>Incorporate on-site renewable energy production, including installation of photovoltaic cells or other solar options.</p>	<p>Compliant</p>

Recommendation and Description	Project Compliance
	Mitigation Measure AQ-2 requires use of solar, low-emissions, or central or tankless water heaters, increase wall and attic insulation beyond Title 24 requirements, orientation of buildings to take advantage of passive solar heating and natural cooling, energy efficient windows, tree shading above that required by code, installation of photovoltaic cells, programmable thermostats for all heating and cooling systems, awnings or other shading mechanisms for windows and walkways, and the use of day lighting systems such as skylights, light shelves, and interior transom windows, as determined feasible by the City.
Execute an Energy Savings Performance Contract with a private entity to retrofit public buildings. This type of contract allows the private entity to fund all energy improvements in exchange for a share of the energy savings over time.	Not Applicable This measure is applicable to the development and operation of public buildings and facilities; however, the City has undertaken numerous efforts to increase energy efficiency in their buildings and facilities, as noted below in the listing of "Citywide Programs and Policies Contributing to Reduction of Greenhouse Gas Emissions."
Design, build, and operate schools that meet the Collaborative for High Performance Schools (CHPS) best practices.	Not Applicable This measure is applicable to the local school districts that are responsible for the design, construction and operation of school facilities.
Retrofit municipal water and wastewater management systems with energy efficient motors, pumps, and other equipment, and recover wastewater treatment methane for energy production.	Not Applicable This measure is applicable to the water and wastewater service providers to the City of Rocklin (the City does not provide its own water or wastewater service).
Convert landfill gas into energy sources for use in fueling vehicles, operating equipment, and heating buildings.	Not Applicable This measure is applicable to the landfill operator to the City of Rocklin (the City does not provide its own landfill service).
Purchase government vehicles and buses that use alternative fuels or technology, such as electric hybrids, biodiesel and ethanol. Where feasible, require fleet vehicles to be low emission vehicles. Promote the use of these vehicles in the general community.	Compliant The City's Fleet Division is taking steps to reduce the City's carbon foot print by installing diesel oxidation catalysts on the its diesel powered vehicles and equipment. The Fleet Division is also purchasing alternative fueled vehicles that will use E85, has implemented procedures to reduce engine idling time, and is considering the introduction of hybrid vehicles into the fleet. In addition, the City has adopted a

Recommendation and Description	Project Compliance
	Neighborhood Electric Vehicle (NEV) Transportation Master Plan which identifies roadways that will accommodate NEVs.
Offer government incentives to private businesses developing buildings with energy and water efficient features and recycled materials. The incentives can include expedited plan checks and reduced permit fees.	Not Applicable This measure is more applicable as a general development policy rather than as a project-specific measure; however, the City is a member of Build-It-Green, a non-profit organization focused on providing education and information to individuals and developers of residential projects on ways they can utilize green technology and products to reduce energy usage, save resources, and build a healthier indoor environment.
Offer rebates and low-interest loans to residents that make energy-savings improvements on their homes.	Not Applicable This measure is more applicable as a general development policy rather than as a project-specific measure.
Create bicycle lanes and walking paths directed to the location of schools, parks and other destination points.	Compliant The project includes sidewalks and a pedestrian walkway that connect the proposed commercial project with adjacent land use and would encourage walking or bicycling trips.
PROGRAMS TO REDUCE VEHICLE MILES TRAVELED	
Offer government employees financial incentives to carpool, use public transportation, or use other modes of travel for daily commutes.	Not Applicable This measure is more applicable as a general development policy for government employees rather than as a project-specific measure applicable to a private development proposal.
Encourage large businesses to develop commute trip reduction plans that encourage employees who commute alone to consider alternative transportation modes.	Not Applicable This measure is more applicable as a general development policy than as a project-specific measure.
Develop shuttle systems around business district parking garages to reduce congestion and create shorter commutes.	Not Applicable This measure is more applicable as a general development policy rather than as a project-specific measure.
Create an online ridesharing program that matches potential carpoolers immediately through email.	Not Applicable This measure is more applicable as a general

Recommendation and Description	Project Compliance
	development policy rather than as a project-specific measure.
Develop a Safe Routes to School program that allows and promotes bicycling and walking to school.	Not Applicable This measure is more applicable as a general development policy rather than as a project-specific measure; however, the City participates in the Safe Routes to School program and has implemented four improvement projects since 1994.
PROGRAMS TO REDUCE SOLID WASTE	
Create incentives to increase recycling and reduce generation of solid waste by residential users.	Not Applicable This measure is more applicable as a general development policy rather than as a project-specific measure; however, the City is an active partner in the Placer County Materials Recovery Facility (MRF) that supports recycling of household and business waste. The MRF diverts over 50% of the solid waste generated within the City from landfill disposal, consistent with the requirements of AB 939.
Implement a Construction and Demolition Waste Recycling Ordinance to reduce the solid waste created by new development.	Not Applicable This measure is more applicable as a general development policy rather than as a project-specific measure; however, the City is an active partner in the Placer County Materials Recovery Facility (MRF) that supports recycling of household and business waste. The MRF diverts over 50% of the solid waste generated within the City from landfill disposal, consistent with the requirements of AB 939.
Add residential/commercial food waste collection to existing greenwaste collection programs.	Not Applicable This measure is more applicable as a general development policy rather than as a project-specific measure.

Source: Summarized from Attachment 3 of June 19, 2008 OPR Technical Advisory on CEQA and Climate Change.

In addition to the project's compliance with the applicable CAT strategies and OPR recommendations noted in the above tables, it should be recognize that the City also has existing programs in place, and others that are planned, that reduce and minimize greenhouse gas emissions, consistent with the intent of AB32. The following citywide programs and policies contribute to the reduction of GHG emissions:

- Participation in Pacific Gas and Electric's (PG&E) Climate Smart Program – the City agreed to a fixed increase to its monthly PG&E bill to offset the carbon emissions caused by energy used in City facilities.
- The City passed a resolution supporting the Partnership for Prosperity Clean Technology Initiative to attract clean technology companies.
- The City is a member of the U.S. Green Building Council, a non-profit organization dedicated to sustainable building design and construction.
- The City is working towards "Leadership in Energy and Environmental Design" (LEED) certification on its Administration and Police Station buildings, with efforts including changes in cleaning practices, cleaning materials and supplies, energy efficiency and indoor environmental quality.
- The City is a member of Build-It-Green, a non-profit organization focused on providing education and information to individuals and developers of residential projects on ways they can utilize green technology and products to reduce energy usage, save resources, and build a healthier indoor environment.
- Training for the City's Chief Building Official and Building Inspection Services Manager on green building project certifications and the requirements on how to build green. The City's Chief Building Official is also a member of the steering committee for the region's Build-It Green Agency Council.
- The City is participating in implementing a universal residential solar program with neighboring jurisdictions to address residential solar programs, develop a standardized fee, and create consistent information resources on green building practices for use on websites. The City will also be hosting a workshop for permit technicians to educate on green building practices and programs and to provide training.
- The City constructed solar carports at its police station facility, which generate nearly 40% of the annual electricity required to operate the facility.
- The City hosted a free, two-hour "Solar Saturday" workshop to provide information and education to residents on residential solar technology, and will be hosting a similar workshop for developers.
- In 1998, the City's Public Works Department initiated a project to replace traffic signal lights (incandescent bulbs) with Light Emitting Diodes (LEDs). This project was completed in 2001 and all new traffic signal lights come standard with LED bulbs.
- In 1998, the City Council approved a plan to reduce water use in city street landscaping by removing turf and replacing it with drought-tolerant plants. The Public Works Department is continuing its program to reduce water use through turf removal/plant replacement, and requiring developers to plant drought-tolerant plants and install drip irrigation along streetscapes in new projects.
- The City requires development project's landscape plans to include an automatic irrigation system, and the use of drip irrigation is encouraged. Project landscape plans are also required to

be certified by the landscape architect as meeting the requirements of the Water Conservation in Landscaping Act (Government Code Section 68591, et. seq.)

- The City utilizes untreated water for irrigation purposes in some locations.
- The City created a centrally-located park-and-ride lot that is separate and apart from the Caltrans park-and-ride facility program.
- The City has adopted a Neighborhood Electric Vehicle (NEV) Transportation Master Plan which identifies roadways that will accommodate NEVs.
- The City's Fleet Division is taking steps to reduce the City's carbon footprint by installing diesel oxidation catalysts on its diesel-powered vehicles and equipment. The Fleet Division is also purchasing alternative fueled vehicles that will use E85, has implemented measures to reduce idling time, and is considering the introduction of hybrid vehicles into the fleet.
- The City is an active partner in the Placer County Materials Recovery Facility (MRF) that supports recycling of household and business waste. The MRF diverts over 50% of the solid waste generated within the City from landfill disposal, consistent with the requirements of AB 939.
- The City has adopted an Urban Forest Management Plan with specific strategies for expanding tree canopy within the City. The Plan has shown that development in the City that is consistent with the City's General Plan policies and tree replacement mitigation requirements has resulted in an increase of tree canopy cover from 11% in 1952 to 18% in 2003 (a 63% increase). The Plan provides a framework for the City to maintain its existing tree canopy cover and to increase it to a greater extent as development continues.
- Through the development planning process, the City has set aside a significant portion (approximately 19.4%) of city land area as open space and park land. As a part of this effort, the City purchased significantly sized properties that were designated for development and re-classified them as parks and open space.
- In 1998, the City instituted a voluntary holiday furlough program that allows City employees (except essential service personnel) to have the opportunity to take time off between the Christmas and New Year's Day holidays. More than 90% of City staff takes advantage of this opportunity, allowing for energy savings by not having to power City facilities.
- The City is working with the California Energy Commission in the Motherlode Program which allows for replacement of HVAC and lighting equipment that are not energy efficient.
- The City is incorporating increased indirect lighting into new facility construction projects and encourages employees to reduce energy usage in facilities.
- The City's facility maintenance operations use recycled paper products in restrooms and maintenance activities throughout city facilities. In addition, products used for cleaning facilities are "green-seal certified", meaning that they are environmentally friendly.
- Some city facilities are utilizing an HVAC energy efficiency management system.
- Some city facilities utilize sensor-activated faucets, toilets and paper towel dispensers.
- The City will be implementing preferred parking for carpoolers and alternative fuel vehicles at its Administration building.

- The City has an Oak Tree Preservation and Mitigation Ordinance
- The City has a parking lot shade tree requirement as part of its Zoning Ordinance.
- The City requires electric vehicle recharging stations on appropriate development projects.
- The City has conducted native oak tree reforestation and restoration projects in city parks, open space, and along creek channels.
- The City has implemented an environmental purchasing plan with the objectives of instituting practices that reduce waste by increasing product efficiency and effectiveness, purchasing products that minimize environmental impacts, toxics, pollution, and hazards to worker and community safety to the greatest extent practical, and, when practical, purchasing products that include recycled content, are durable and long-lasting, conserve energy and water, use agricultural fibers and residues, reduce greenhouse gas emissions, use unbleached or chlorine free manufacturing processes, are lead-free and mercury-free, and use wood from sustainable harvested forests.

Given the significant adverse environmental effects linked to GCC induced by GHGs, the cumulative emission of GHGs is considered a significant cumulative global impact. The challenge in assessing the significance of an individual project's contribution to global GHG emissions and associated global climate change impacts, however, is to determine whether an individual project's GHG emissions result in a cumulatively considerable incremental contribution to a significant cumulative impact. Operation-related activities would result in Rocklin Commons generating emissions of greenhouse gases (GHGs). However, the overall percentage contribution of project GHG emissions is minimal, when combined with other significant development projects in the City of Rocklin and the greater Placer County region.

The project's compliance with the applicable CAT strategies and OPR recommendations and implementation of the City policies identified above would reduce GHG emissions from construction and operation of the project, as would the energy conservation standards discussed in Chapter 4.5. To further reduce the project's contribution to global GHG, the project applicant shall implement Mitigation Measure GCC-1.

Mitigation Measure GCC-1 Global Climate Change

The project applicant shall implement the mitigation measures identified in Section 4.2, Air Quality, in order to reduce GHG emissions as follows:

AQ-1: Short-Term Construction-Generated Criteria Air Pollutant and Precursor Emissions.

In accordance with the PCAPCD, the applicant shall comply with all applicable rules and regulations in addition to implementation of the following recommended mitigation measures during construction of the proposed project.

- The applicant shall submit to the City Engineer and the PCAPCD and receive approval of a Construction Emission / Dust Control Plan prior to groundbreaking. This plan must address how the project meets the minimum requirements of sections 300 and 400 of Rule 228-Fugitive Dust.

- The applicant shall suspend all grading operations when fugitive dust emissions exceed District Rule 228-Fugitive Dust limitations.
- Fugitive dust emissions shall not exceed 40% opacity and not go beyond the property boundary at any time. If lime or other drying agents are utilized to dry out wet grading areas, the project applicant shall ensure such agents are controlled as to not exceed District Rule 228-Fugitive Dust limitations.
- The project applicant shall ensure that construction equipment exhaust emissions shall not exceed Rule 202-Visible Emission limitations.
- The project applicant shall ensure compliance with all of PCAPCD's dust minimization requirements.
- Water shall be applied to control fugitive dust, as needed, to prevent impacts offsite. Operational water trucks shall be onsite to control fugitive dust. Construction vehicles leaving the site shall be cleaned to prevent dust, silt, mud, and dirt from being released or tracked off-site.
- PCAPCD-approved chemical soil stabilizers, vegetative mats, or other appropriate best management practices, in accordance with manufacturers' specifications, shall be applied to all-inactive construction areas (previously graded areas which remain inactive for 96 hours).
- Soil binders shall be spread on unpaved roads and employee/equipment parking areas, and streets shall be washed (e.g., wet broom) if silt is carried over to adjacent public thoroughfares.
- Open burning of any kind shall be prohibited.
- Idling time shall be minimized to five minutes or less for all diesel-fueled equipment.
- ARB-certified diesel fuel shall be used for all diesel-powered equipment.
- The project applicant, or the prime contractor, shall submit to the District a comprehensive inventory (i.e., make, model, year, emission rating) of all the heavy-duty off-road equipment (50 horsepower or greater) that will be used an aggregate of 40 or more hours for the construction project prior to groundbreaking. The project applicant shall provide the District with the anticipated construction timeline including start date, name, and phone number of the project manager and onsite foreman prior to groundbreaking. The project applicant shall provide a plan for approval by the District demonstrating that the heavy-duty (> 50 horsepower) off-road vehicles to be used in the construction project, including owned, leased, and subcontractor vehicles, will achieve a project-wide fleet-average 20 percent NO_x reduction and 45 percent particulate reduction compared to the most recent ARB fleet average. Acceptable options for reducing emissions may include use of late model engines, low-emission diesel products, alternative fuels, engine retrofit technology, after-treatment products, and/or other options as they become available. Contractors can access the Sacramento Metropolitan Air Quality Management District's web site to determine if their off-road fleet meets the requirements listed in this measure. <http://www.airquality.org/ceqa/index.shtml#construction>. The contractor can provide the calculation spreadsheets to the District in electronic format for review and project compliance.

AQ-2: Long-Term Operational (Regional) Criteria Air Pollutant and Precursor Emissions.

The City shall require that emission control measures be incorporated into project design and operation. Such measures may include, but are not limited to, the following items:

- The project applicant shall provide transit enhancing infrastructure that includes transit shelters, benches, street lighting, route signs and displays, and/or bus turnouts/bulbs, where determined to be feasible in consultation with City staff and Placer County Transit Agency staff.
- The project applicant shall provide bicycle enhancing infrastructure that includes secure bicycle parking.
- The project applicant, where determined to be feasible in consultation with City staff, shall incorporate measures such as: provide electric maintenance equipment, use solar, low-emissions, or central water heaters, increase wall and attic insulation beyond Title 24 requirements, and orient buildings to take advantage of solar heating and natural cooling, use passive solar designs, energy efficient windows (double pane and/or Low-E), highly reflective roofing materials, cool paving (high albedo pavement) and parking lot tree shading above that required by code, install photovoltaic cells, programmable thermostats for all heating and cooling systems, awnings or other shading mechanisms for windows and walkways, utilize day lighting systems such as skylights, light shelves, interior transom windows.
- Parking lot design shall include clearly marked pedestrian pathways between transit facilities and building entrances included in the design.
- The project applicant shall require that all diesel engines be shut off when not in use for longer than 5 minutes on the premises to reduce idling emissions.

Furthermore, the City has determined that in addition to the mitigation measures and efforts described above, the following mitigation measures would be appropriate for the proposed project and shall be required with project implementation.

1. All dock and delivery areas shall be posted with signs informing truck drivers of the California Air Resources Board regulations including the following:
 - Truck drivers shall turn off engines when not in use.
 - All diesel delivery trucks servicing the project shall not idle more than five minutes, consistent with mitigation measure AQ-2.
 - Restrict idling emissions by using auxiliary power units and electrification of the docking areas if provided by the operator.
2. Auxiliary power shall be provided for TRUs, as feasible, at all docking facilities to minimize emissions from these units while on the project site.
3. Restroom sinks within individual buildings on the site shall use sensor-activated, low-flow faucets. The low-flow faucets, because they regulate flow, reduce water usage by 84 percent, while the sensors, which regulate the amount of time the faucets flow, save approximately 20 percent in water usage over similar, manually operated systems.

Level of Significance after Mitigation

As the preceding discussion suggests, the vast majority of GHG emissions associated with the project are attributable to the combustion of fossil fuels, either in motor vehicles or in electricity-generating

power plants. It is the City's observation that there is nothing inherent in a retail project, even a regional retail project that undermines efforts to comply with AB 32 and Executive Order S-3-05. Rather, the project's GHG emissions described above reflect the facts (i) that the human beings who will work and shop there will drive motor vehicles using petroleum-derived fuels, and (ii) that the electricity supplied to the buildings is often generated by power plants using fossil fuels such as natural gas, oil, or coal. As the preceding analysis also demonstrates, land use decisions will have limited beneficial or negative effects on climate change as long as vehicles and power plants continue to consume fossil fuels. The State, it is clear, must make significant strides in changing the make-up of transportation fuels and power plant fuels if it is to achieve compliance with AB 32. Should such strides be made, projects such as Rocklin Commons – with shoppers and employees driving in clean cars, and electricity generated by clean power plants – may someday contribute few, if any, GHG emissions. There are regulatory efforts underway at the state level related to transportation fuels, vehicle emission standards, and renewable energy sources, all of which would be expected to have GHG reduction benefits. Pursuant to Senate Bill 375, enacted into law in 2008, GHG emissions from cars and light-duty trucks are to be addressed at the regional level in California through the drafting of Sustainable Communities Strategies, to be added to a future Regional Transportation Plan adopted by the Sacramento Area Council of Governments (SACOG). The City of Rocklin, along with the rest of the cities and counties in SACOG region will have a regional GHG reduction target for passenger cars and light trucks for 2020 and 2035. These targets will be met by establishing development patterns and a corresponding transportation network, along with other transportation measures and policies that would reduce GHG emissions, primarily through reducing vehicle miles traveled. Nearly 70% of the project's operational emissions are associated with the anticipated use of vehicles by project customers and employees. Reducing vehicle use for commercial projects depends not just on the project location, land use, and design, but the broader land use and transportation planning context. Any project's emissions will depend on the mix and density of land uses in the project vicinity, the type and design of transportation facilities, and other factors beyond the control of individual proposed projects. State legislation for reducing GHG emissions through reducing vehicle miles traveled establishes a regional context. For many reasons, it is more appropriate for local jurisdictions to consider GHG reduction strategies at the general plan or regional level, rather than on a project-by-project basis.

The discussion on climate change related impacts in this section quantifies GHG emissions of the project and qualitatively analyzes various mitigation measures and City policies designed to reduce GHG gases to the extent feasible. The implementation of the above stated mitigation measures and compliance with City policies would reduce the emission of greenhouse gases attributable to the project through vehicle emission reductions, vehicular trip reductions, HFC emission reductions, recycling programs, increases in building and appliance energy efficiencies, and decreased water use. With the implementation of these mitigation measures and compliance with City policies, the proposed project would be substantially consistent with the emission reduction strategies contained in the California Climate Action Team's Report to the Governor, the emission reduction strategies contained in the California Governor's Office of Planning and Research (OPR) technical advisory entitled "CEQA and Climate Change: Addressing Climate Change Through California Environmental Quality Act (CEQA) Review, and Executive Order S-3-05.

With the project's compliance with the applicable CAT strategies, OPR recommendations and City policies and implementation of above mitigation measures, the project's incremental contribution to any impact relating to global climate change would be *less than cumulatively considerable*;

therefore, the project's climate change impacts would be considered *less-than-significant*. No additional mitigation, beyond the measures described above, are necessary.

Hydrology and Water Quality

For evaluation of hydrology and water quality cumulative impacts, the cumulative setting extends through the Sacramento River Hydrological Region. The proposed project site is located within the northern portion of the Sacramento River Hydrological Region, as defined by the California Department of Water Resources (DWR). The Sacramento River Hydrological Region covers approximately 17.4 million acres (27,200 square miles). Geographically, the region extends south from the Modoc Plateau and Cascade Range at the Oregon border, to the Sacramento-San Joaquin Delta. The Sacramento Valley, which forms the core of the region, is bounded to the east by the crest of the Sierra Nevada and southern Cascades and to the west by the crest of the Coast Range and Klamath Mountains. Other significant features include Mount Shasta and Lassen Peak in the southern Cascades; Sutter Buttes in the south central portion of the valley; and the Sacramento River, which is the longest river system in the State of California with major tributaries being the Pit, Feather, Yuba, Bear, and American Rivers (DWR 2003). The evaluation area for cumulative impacts was limited to the Sacramento River Hydrological Region as it represents the worst-case range in which project-generated impacts could contribute to potential cumulative impacts to hydrology or water quality. Due to the size and nature of the project, it is unlikely that the project would result in runoff or changes in hydrology that could cause or contribute to impacts to hydrology or water quality outside of this hydrological region.

Cumulative flooding impacts could occur if cumulative development projects contribute substantially to additional storm water runoff, resulting in increased erosion or flood hazards. However, individual development projects would be required to control storm water discharge, consistent with the storm water management requirements of the City of Rocklin and other local jurisdictions. Therefore, development of the projects, identified above, for the cumulative scenario is not anticipated to result in significant flooding, and any cumulative impacts would be *less-than-significant*. As such, any contribution of the project to the *less-than-significant* cumulative flooding impacts would *not be cumulatively considerable*.

Cumulative development could degrade surface water quality in the region and the proposed project could contribute to this degradation. However, individual development projects would be required to manage discharge water quality consistent with National Pollutant Discharge Elimination System (NPDES) permit requirements. With the implementation of these permit requirements, development of the projects, identified above, for the cumulative scenario is not anticipated to result in significant water quality impacts and any cumulative impacts would be *less-than-significant*. The proposed project would be required to implement detailed mitigation measures to minimize the project's potential impacts on surface water quality, including specific NPDES permit requirements. With the implementation of these mitigation measures, the project would not be anticipated to substantially contribute to local water quality degradation. Therefore, any contribution of the project to the *less-than-significant* cumulative hydrology and water quality impacts would *not be cumulatively considerable*.

Energy

For evaluation of energy cumulative impacts, the cumulative setting extends through the Placer County and more specifically western Placer County. The proposed project site is located within western Placer County and within Pacific Gas & Electric Company (PG&E) service area, and would increase energy consumption within this area. The evaluation area for cumulative impacts was limited to western Placer County as it represents the worst-case range in which project-generated impacts could contribute to potential cumulative impacts to energy.

The proposed project would increase energy demand during both project construction and operation. Increased energy demands associated with the development of new energy resources and expanded energy production have the ability to contribute to environmental impacts on a national and international level. However, due to their relatively small scale, the region's cumulative energy demands would not be expected to substantially alter national energy development or generation activities. Because new development within California is required to comply with the energy efficiency standards outlined in Title 24 of the California Code of Regulations, the cumulative effects of development in the western Placer County region would not be expected to cause the inefficient, wasteful or unnecessary consumption of energy. Thus, development of the projects, identified above, for the cumulative scenario is not anticipated to result in significant energy impacts and any cumulative impacts would be *less-than-significant*. Based on compliance with the City of Rocklin General Plan and required compliance with Title 24 regulations, the proposed project would not be expected to cause the inefficient, wasteful or unnecessary consumption of energy. Thus, any contribution of the project to the *less-than-significant* cumulative energy impacts would *not be cumulatively considerable*.

Noise

For evaluation of noise levels the cumulative context would include the area in the immediate vicinity of the project site. To evaluate the cumulative impacts of a temporary activity, such as construction, the cumulative context includes the vicinity of the project site over the duration of the activity. The evaluation area for cumulative impacts was limited to the immediate vicinity of the project site as it represents the area which would be directly affected by construction noise; thus the worst-case range in which project-generated impacts could contribute to potential cumulative impacts to noise. A larger area was not chosen because noise sources located distant from one another typically do not have additive effects.

Because daytime construction is required under the City's construction noise guidelines, it can be reasonably assumed that related projects in the City would include such restrictions. Hence, cumulative noise impacts associated with construction noise sources would be expected to be *less-than-significant*. Further, construction noise is localized. Thus, if construction activities occur simultaneously, they would likely not result in cumulative impacts unless sites are being developed in close proximity to one another and expose sensitive receptors to significant noise levels at the same time. Rocklin Commons is not being developed within close proximity to sensitive receptors; therefore, any contribution of the project to the *less-than-significant* cumulative construction noise impacts would *not be cumulatively considerable*.

Likewise, due to the localized nature of noise, other cumulative development in the region would not be expected to combine with the project's operational noise effects to cumulatively increase noise in the local area. Thus, the cumulative operational noise impacts would be considered *less-than-significant* and any contribution of the project to the *less-than-significant* cumulative operations noise impacts would *not be cumulatively considerable*.

Cumulative development would be expected to increase traffic volumes, and associated noise levels, on local roadways. Mitigation for this impact would be developed primarily as new development proceeds, resulting in the construction of noise walls, berms, etc. With the implementation of these measures, noise impacts of other cumulative development would be reduced to a *less-than-significant* level. As described in Section 4.7, Noise, implementation of the proposed project would slightly (less than 2 dBA, which is barely perceptible) increase noise levels along project-area roadways. This impact was concluded to be less than significant. Because the proposed project would not be expected to contribute substantially to traffic noise levels on local roads, any contribution of the project to the *less-than-significant* cumulative traffic noise impacts would *not be cumulatively considerable*.

Transportation And Circulation

For evaluation of traffic and circulation, the cumulative context would include the area defined in the City of Rocklin General Plan traffic model in a future year. The model forecasts traffic for future conditions based on General Plan build-out land uses within the City of Rocklin and takes into account the anticipated traffic growth based on new development in the region (including Lincoln, Roseville, Penryn, Loomis, Rocklin, and unincorporated Placer County). The evaluation area for cumulative impacts was limited to this area as it represents the worst-case range in which project-generated traffic could contribute to potential cumulative impacts to traffic and circulation. Due to the size and nature of the project, it is unlikely that the project would result in traffic or changes in circulation that would cause or contribute to impacts outside of this area.

Traffic volume data for 2025 conditions was developed using forecasts from the City traffic model. The traffic model is based on the land use and circulation system shown in the City's General Plan. The interchange improvements at Sierra College Boulevard/I-80 are already under construction and will be completed in the spring of 2009 and thus well in advance of to the opening of Rocklin Commons. The analysis examines the traffic impacts expected to result from the addition of vehicle traffic generated by the proposed project on the cumulative traffic conditions at surrounding intersections and roadway segments. This analysis also recommends mitigation measures based on the project's effects under the cumulative scenarios.

Traffic volume data for 2025 conditions were developed using forecasts from the City traffic model. The traffic model is based on the land use and circulation system shown in the City's General Plan. The assumptions for the land use and circulation system included in the traffic model are consistent with the Land Use and Circulation elements of the City's General Plan. Funding for these future circulation improvements will come from several sources such as anticipated fee programs and/or development exactions that are needed for land uses proposed in the General Plan, City CIP program, City development fees, SPRTA program, and other applicable funding programs. The 2025 projected volume for this analysis is based on the City of Rocklin General Plan and Town of Loomis General Plan and includes assumptions about 2025 levels of build out under each General Plan. The future

2025 analysis is based on traffic volumes that were generated based on the General Plan traffic model. This method does not assume full buildout of all of the land uses identified in the General Plan's land use map. Instead, base-year and future-year p.m. peak-hour arterial segment volumes were forecast using the City's model, which is considered a more accurate source of information about 2025 conditions, as it reflects demographic and market assumptions superimposed on land use plans. The General Plan traffic model takes into account the anticipated traffic growth based on new development in the region (including Lincoln, Roseville, Penryn, Loomis, Rocklin, and unincorporated Placer County). Thus, with respect to the recently approved projects located in the City of Rocklin such as the Lowes, Clover Valley, Whitney Ranch, these projects have been accounted for in the traffic modeling as part of the cumulative analysis.

The General Plan traffic model is a detailed version (within Rocklin and surrounding areas) of the Placer County Travel Demand Model. The City retains a traffic consultant (DKS Associates, Inc.), which maintains a traffic model for the region (including Town of Loomis). This traffic model is validated (verified for accuracy of the forecasted volumes) for a base year (2001) and a future year (2025) for p.m. peak hour only. These base year and future year models were obtained from the City's traffic consultant. Base year and future year p.m. peak-hour arterial segment volumes were forecast using the City's model. The base year and future models are only used to obtain the growth increment between 2001 and 2025. This growth is then added to the existing (2006) turning movement counts to generate the future 2025 turning movement volumes. Turn movements for the p.m. peak hour were post-processed according to the methodology described below.

Intersection Turning Movements

The base-year scenario in the City's traffic model is 2001 and the future-year scenario is 2025. The following describes the methodology used to post-process traffic model volumes to develop a.m. and p.m. peak-hour intersection turn volumes for 2025 conditions:

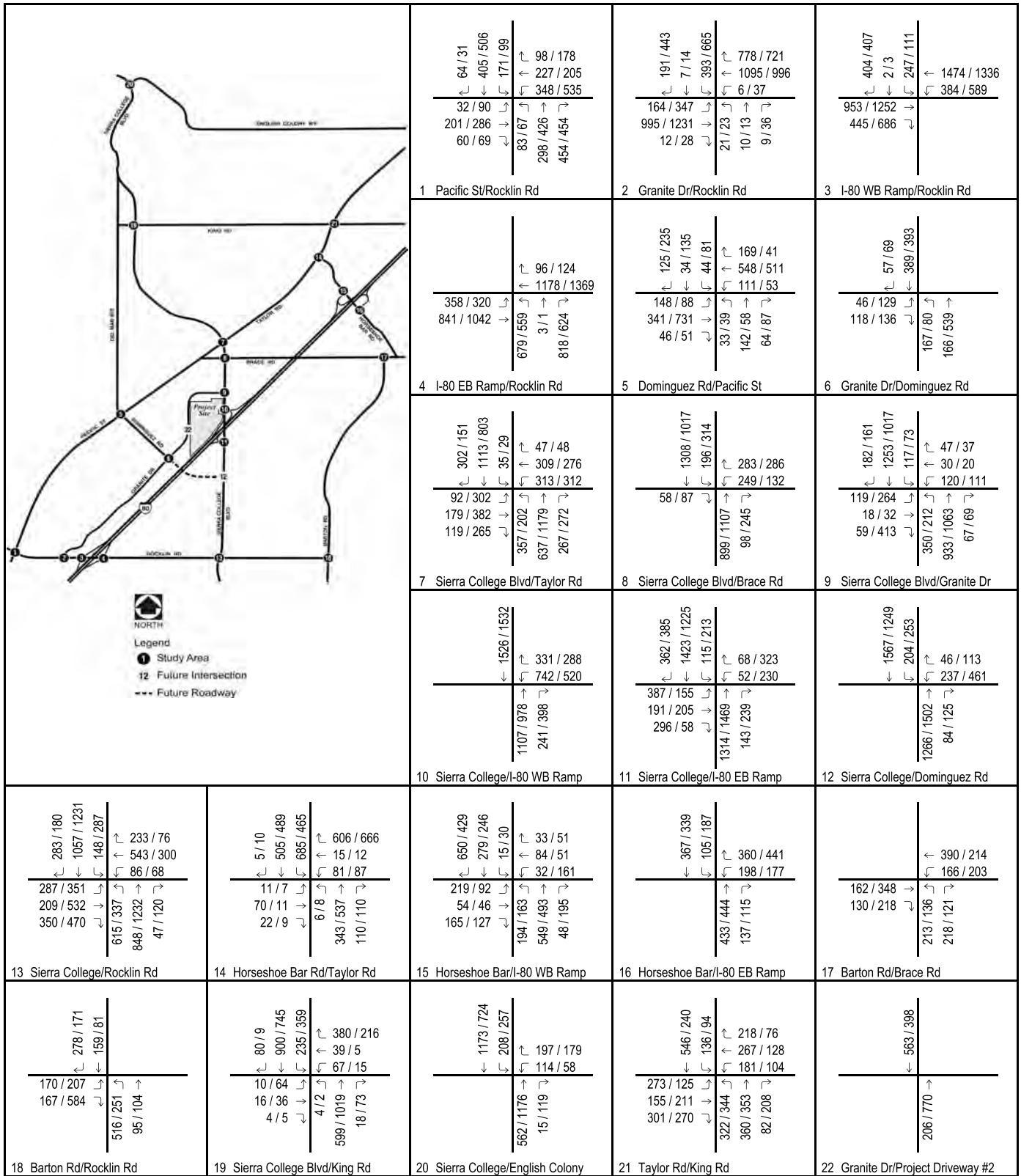
1. The difference between the modeled 2001 and 2025 peak-hour directional arterial traffic volumes (for each intersection approach and departure) was identified from loaded highway network plots. This difference defines growth in traffic over the 24-year period. The incremental growth in peak-period approach and departure volumes between 2001 and 2025 was factored to develop the incremental change in peak-hour volumes.
2. The forecast growth in approach (toward the intersection) and departure (away from the intersection) volumes at an intersection from 2006 (existing) to future year 2025 was added to the existing approach and departure volumes, resulting in post-processed forecast year 2025 approach and departure volumes. Volume development worksheets summarizing the steps are included in Appendix G.
3. Forecast year 2025 turn volumes were developed using existing turn volumes and the future approach and departure volumes, based on the methodologies contained in the National Cooperative Highway Research Program Report (NCHRP) 255: *Highway Traffic Data for Urbanized Area Project Planning and Design* (Transportation Research Board, December 1982). NCHRP 255 worksheets are included in Appendix G.

The City's current traffic model is not validated (verified for the accuracy of forecasted volumes) for the a.m. peak hour and does not have forecasting capability for the Saturday peak hour. To validate

the 2025 model a.m. peak-hour traffic volumes, the existing a.m. peak-hour traffic volumes were compared to the existing p.m. peak-hour traffic volumes, and ratios between existing a.m. and p.m. peak volume were calculated. In order to maintain the peak directionality these ratios were then applied to the 2025 a.m. peak model numbers. These adjusted 2025 a.m. peak directional arterial traffic volumes were then used in the methodology described above in Step 1 to obtain the growth in traffic during the a.m. peak hour. Similarly, to develop future intersection turn movements for the Saturday peak hours, the ratios of the existing p.m. peak to Saturday peak hours were used. These ratios were applied to the post-processed year 2025 no project p.m. peak-hour traffic volumes to determine the 2025 no project Saturday peak-hour traffic volumes. Project trips were then manually added to the study area intersections to determine the 2025 plus project traffic volumes. Year 2025 traffic volumes were forecast for two roadway networks. The network used for project impact analysis assumes that Dominguez Road terminates at Granite Drive, as in the existing condition, and is referred to as “without Dominguez Road.” The alternative network assumes that Dominguez Road is extended east to Sierra College Boulevard. This alternative network is referred to as “with Dominguez Road” and is intended to provide a sensitivity analysis of the effects of extending Dominguez Road. The Dominguez Road extension is in the City’s Traffic Impact Fee and CIP and is included in the City’s current General Plan, although no schedule exists for construction of the new segment. The analysis of these two roadway networks is provided below with the identification of the project’s cumulative impacts depending upon which network is assumed.

2025 No Project Without Dominguez Road

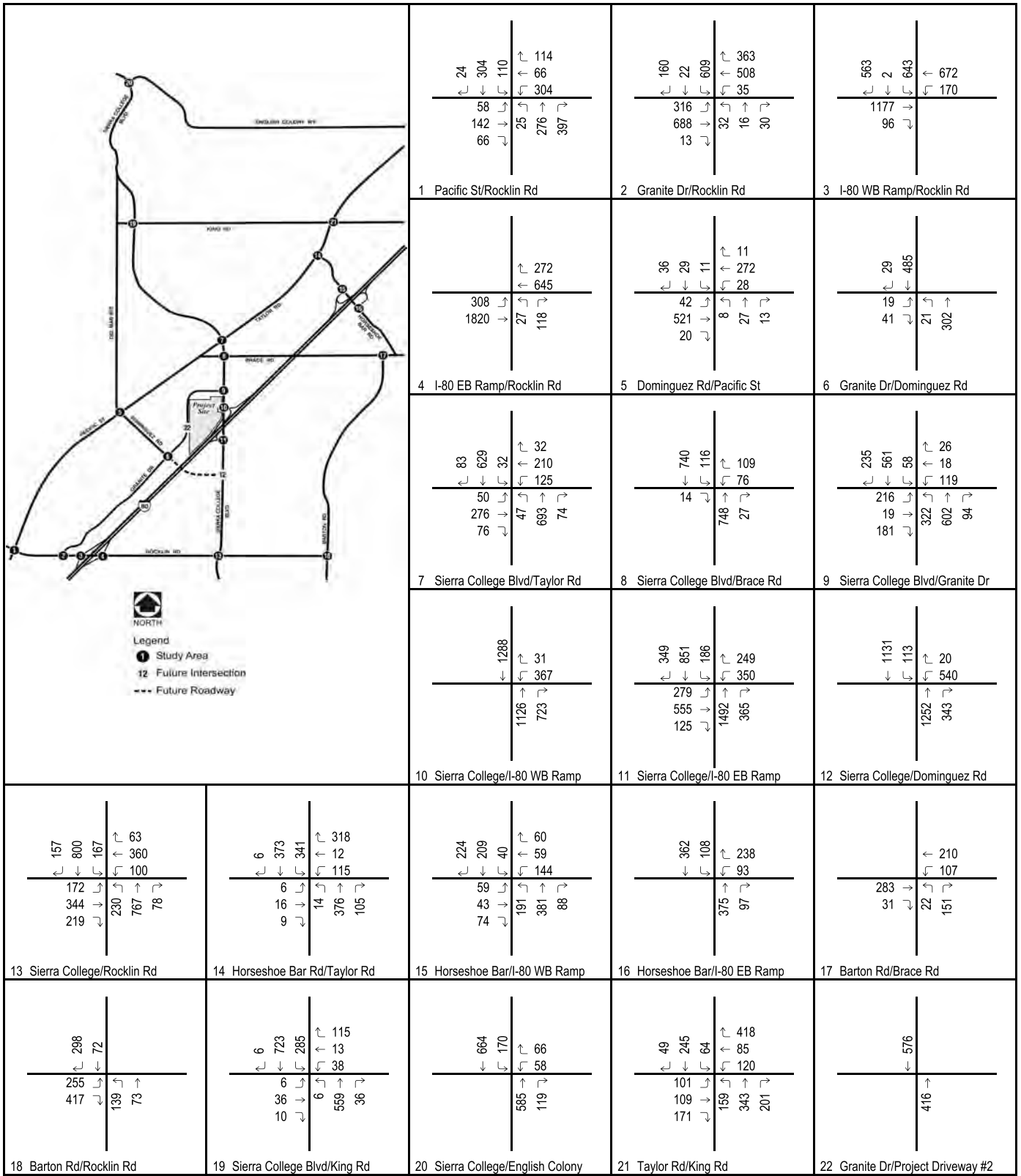
Weekday and Saturday peak-hour forecast traffic volumes for the 2025 no project Without Dominguez Road scenario are shown in Figures 6-1 and 6-2. The LOS for study area intersections and roadway segments are shown in Tables 6-7 and 6-8. The 2025 no project Without Dominguez Road traffic volume development and LOS worksheets are provided in Appendix E. All 2025 LOS include the roadway improvements assumed in the baseline condition as well as implementation of the City’s General Plan roadway system, as documented in the City General Plan Circulation Element. Consistent with the City’s General Plan, Town of Loomis General Plan and Horseshoe Bar/Penryn Community Plans, the traffic analysis for the cumulative conditions (2025) assumes that Sierra College Boulevard would be widened to a four-lane arterial between English Colony Way and just north of Taylor Road and to a six-lane arterial between just north of Taylor Road and El Don Drive. The LOS also includes the following improvements to Sierra College Boulevard which is planned to be widened as part of the Sierra College Widening Project. Widening is proposed in two segments to the north and south of the Sierra College Boulevard/I-80 Interchange project. The project extends from Aguilar Tributary in the south to the Sierra College Boulevard/Interstate 80 interchange and from Granite Drive to Taylor Road in the north. A portion of the project, from Granite Drive to Taylor Road, is located within the Town of Loomis. In addition, on the south segment, the improvements will be completed in two phases; the first phase will involve the widening from two to four or five lanes, and the second phase completion of the roadway to 6 lanes. The 2025 intersection geometrics and traffic control are shown in Figure 6-3.



LSA

FIGURE 6-1

Rocklin Commons
Year 2025 No Project Peak Hour Traffic Volumes - Without Dominguez Road



LSA

FIGURE 6-2

Rocklin Commons

Year 2025 No Project Saturday Peak Hour Traffic Volumes - Without Dominguez Road

Table 6-7: 2025 No Project Without Dominguez Road Condition Peak Hour Intersection Level of Service Summary

Intersection		Control Type	2025 No Project without Dominguez Road 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	Signalized	0.771	C	0.820	D	0.590	A
2	Rocklin Road/Granite Drive	Signalized	0.692	B	0.972	E	0.700	C
3	Rocklin Road/I-80 Westbound Ramps	Signalized	26.6 sec	C	48.2 sec	D	31.9 sec	C
4	Rocklin Road/I-80 Eastbound Ramps	Signalized	50.4 sec	D	41.0 sec	D	16.6 sec	B
5	Dominguez Road/Pacific Street ¹	Signalized	0.599	A	0.778	C	0.430	A
6	Dominguez Road/Granite Drive ¹	Unsignalized	13.3 sec	B	19.0 sec	C	11.7 sec	B
7	Sierra College Boulevard/Taylor Road ¹ (Loomis)	Signalized	1.022	F	0.955	E	0.567	A
8	Sierra College Boulevard/Brace Road ¹ (Loomis)	Signalized	0.586	A	0.737	C	0.339	A
9	Sierra College Boulevard/Granite Drive	Signalized	0.723	C	0.686	B	0.603	A
10	Sierra College Boulevard/I-80 Westbound Ramps	Signalized	11.7 sec	B	10.6 sec	B	6.4 sec	A
11	Sierra College Boulevard/I-80 Eastbound Ramps	Signalized	14.3 sec	B	19.0 sec	B	24.1 sec	C
12	Sierra College Boulevard/Dominguez Road	-	0.550	A	0.736	C	0.661	B
13	Sierra College Boulevard/Rocklin Road ¹	Signalized	0.899	D	0.802	D	0.509	A
14	Horseshoe Bar Road/Taylor Road ¹ (Loomis)	Signalized	0.972	E	0.975	E	0.713	C
15	Horseshoe Bar Road/I-80 Westbound Ramps ¹ (Loomis)	Signalized	22.8 sec	C	21.5 sec	C	22.6 sec	C
16	Horseshoe Bar Road/I-80 Eastbound Ramps ¹² (Loomis)	Unsignalized	33.4 sec	D	47.9 sec	E	16.7 sec	C
17	Barton Road/Brace Road ¹² (Loomis)	Unsignalized	103.2 sec	F	63.4 sec	F	12.4 sec	B

Intersection		Control Type	2025 No Project without Dominguez Road Condition					
			AM Peak Hour		PM Peak Hour		Saturday	
			V/C Ratio / Delay	LOS	V/C Ratio / Delay	LOS	V/C Ratio / Delay	LOS
18	Barton Road/Rocklin Road ¹² (Loomis)	Unsignalized	367.8 sec	F	22.2 sec	C	17.7 sec	C
19	Sierra College Boulevard/King Road ¹ (Loomis)	Signalized	0.729	C	0.846	D	0.529	A
20	Sierra College Boulevard/English Colony Way ^{1&2} (Placer County)	Unsignalized	332.2 sec	F	769.9 sec	F	38.7 sec	E
21	Taylor Road/King Road ¹ (Loomis)	Signalized	0.984	E	0.609	B	0.684	B
22	Granite Drive/Project Driveway #2	-	-	-	-	-	-	-

Notes:

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

LOS C required for these intersections. LOS D acceptable for all other intersections.

¹ Peak Hour volumes meet Signal Warrant #3 of the MUTCD

² Exceeds level of service criteria

Table 6-8: 2025 No Project Without Dominguez Road Daily Roadway Segment Level of Service Summary

Roadway	Segment	Capacity	Capacity Configuration	Volume	V/C	LOS
Taylor Road	King Road and Horseshoe Bar Road ¹ (Loomis)	15,000	Two-lane Collector	19,444	1.30	F
	Horseshoe Bar Road and Sierra College Boulevard ¹ (Loomis)	15,000	Two-lane Collector	14,108	0.94	E
	Sierra College Boulevard and City Limits ¹ (Loomis)	15,000	Two-lane Collector	17,954	1.20	F
Pacific Street	City Limits and Dominguez Road ¹	30,000	Four-lane Undivided Arterial	18,014	0.60	B
	Dominguez Road and Rocklin Road ¹	30,000	Four-lane Undivided Arterial	22,579	0.75	C
Rocklin Road	Pacific Street and Granite Drive	30,000	Four-lane Undivided Arterial	37,854	1.26	F
	I-80 and Sierra College Boulevard	30,000	Four-lane Undivided Arterial	18,089	0.60	B
	Sierra College Boulevard and Barton Road ¹ (Loomis)	30,000	Four-lane Undivided Arterial	14,634	0.49	A
Barton Road	Rocklin Road and Brace Road ¹ (Loomis)	15,000	Two-lane Collector	7,066	0.47	A
Horseshoe Bar Road	I-80 and Brace Road ¹ (Loomis)	15,000	Two-lane Collector	9,788	0.65	B
Brace Road	I-80 and Barton Road ¹ (Loomis)	15,000	Two-lane Collector	9,654	0.64	B
	I-80 and Sierra College Boulevard ¹ (Loomis)	15,000	Two-lane Collector	7,846	0.52	A
Sierra College Boulevard	English Colony Way and King Road ¹ (Placer County)	30,000	Four-lane Undivided Arterial	27,005	0.90	E
	King Road and Taylor Road ¹ (Loomis)	30,000	Four-lane Undivided Arterial	22,616	0.75	C
	Taylor Road and I-80	50,525	Six-lane Arterial	32,455	0.64	B
	I-80 and Dominguez Road	50,525	Six-lane Arterial	31,944	0.63	B

Roadway	Segment	Capacity	Capacity Configuration	Volume	V/C	LOS
	Dominguez Road and Rocklin Road ¹	50,525	Six-lane Arterial	33,802	0.67	B
Granite Drive	Dominguez Road and Sierra College Boulevard ¹	30,000	Four-lane Undivided Arterial	17,659	0.59	A
	Dominguez Road and Rocklin Road ¹	30,000	Four-lane Undivided Arterial	7,403	0.25	A
Dominguez Road	Taylor Road and Granite Drive ¹	15,000	Two-lane Collector	5,221	0.35	A
King Road	Sierra College Boulevard and Taylor Road ¹ (Loomis)	15,000	Two-lane Collector	7,056	0.47	A

Notes:

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



Exceeds level of service criteria



Roadway Improvements consistent with City of Rocklin General Plan, Town of Loomis General Plan, and the Horseshoe Bar/Penryn Community Plan

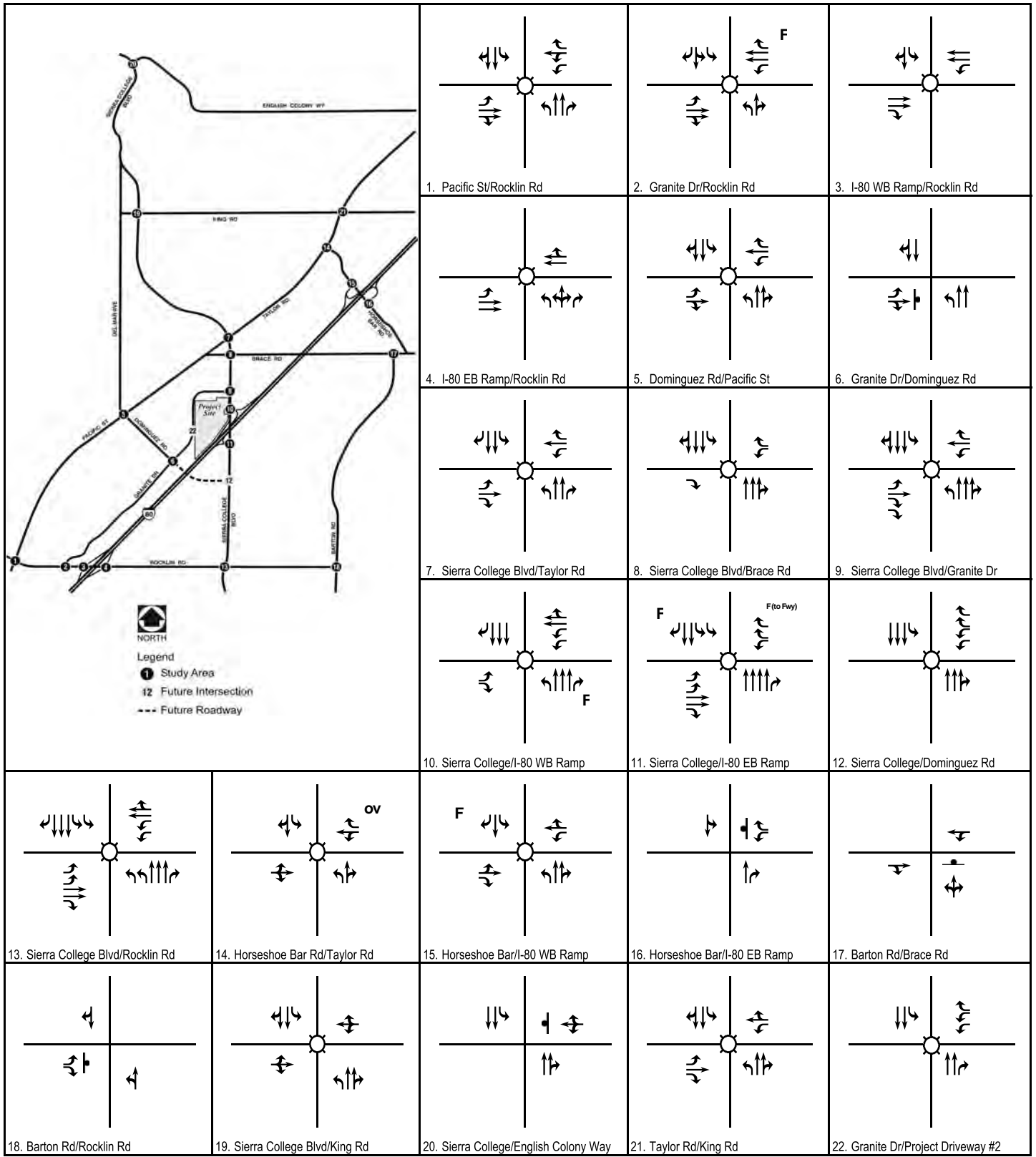


FIGURE 6-3

LSA

- Legend
- Signal
- Stop Sign
- Free Right Turn
- ov Overlap Signal Phase

Rocklin Commons
Year 2025 Geometrics and Traffic Control

As shown in previous Table 6-7, the following 11 intersections are forecast to operate at unsatisfactory LOS in the 2025 No Project Without Dominguez Road condition:

- Rocklin Road/Pacific Street
- Rocklin Road/Granite Drive
- Sierra College Boulevard/Taylor Road (Loomis)
- Sierra College Boulevard/Rocklin Road
- Horseshoe Bar Road/Taylor Road (Loomis)
- Horseshoe Bar Road/I-80 eastbound ramps (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 results of the roadway analysis, as shown in Table 6-8, indicate that most of the study area roadway segments are forecast to operate within their daily roadway capacities, with the exception of the following five segments:

- 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 City Limits (Loomis)
- Rocklin Road between Pacific Street and Granite Drive
- Sierra College Boulevard between English Colony Way and King Road (Placer County)

Peak hour analysis for the roadway segments listed above will be conducted after the addition of project traffic.

2025 Plus Project Without Dominguez Road

Traffic volumes generated by the proposed project were added to the 2025 no project traffic volumes, and LOS were calculated for the 2025 plus project scenario. Weekday and Saturday peak-hour forecast traffic volumes for the 2025 plus project Without Dominguez Road scenario are shown in Figures 6-4 and 6-5. The LOS for study area intersections and roadway segments in the 2025 plus project Without Dominguez Road scenario are shown in Tables 6-9 and 6-10. The 2025 plus project Without Dominguez Road LOS worksheets are provided in Appendix E.

As shown in Table 6-9, the following five intersections operate at unsatisfactory LOS and are significantly impacted (over 5 percent increase with project traffic) in the 2025 plus project Without Dominguez Road scenario:

- Rocklin Road/Granite Drive
- Sierra College Boulevard/Taylor Road (Loomis)
- Horseshoe Bar Road/Taylor Road (Loomis)
- Barton Road/Rocklin Road (Loomis)
- Sierra College Boulevard/English Colony Way (Placer County)

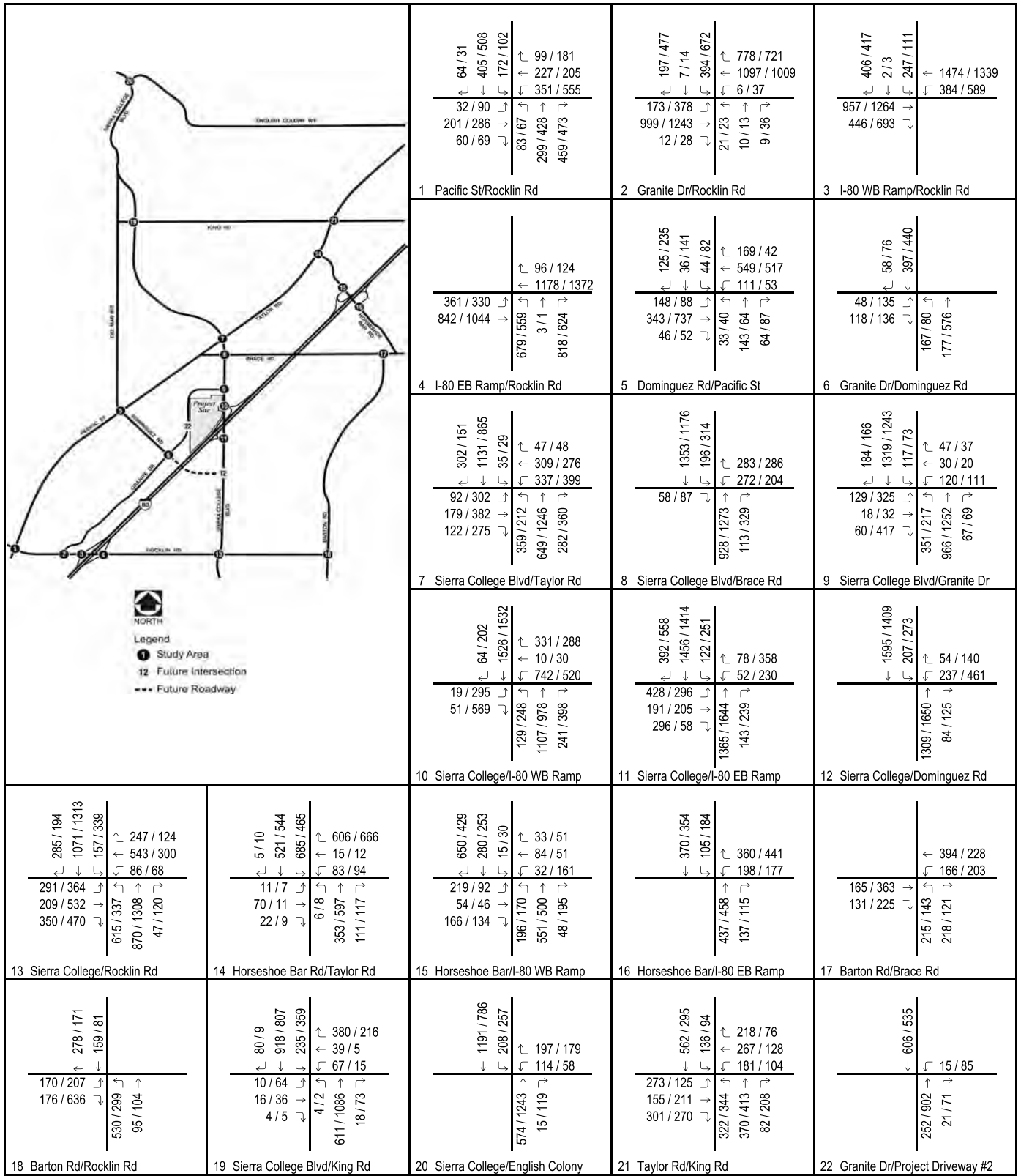
As shown in Table 6-10, the results of the roadway segment analysis indicate that the following five roadway segments that were forecast to operate with unsatisfactory LOS in the without project scenario would continue to operate with unsatisfactory LOS in the 2025 plus project Without Dominguez Road scenario:

- 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 City Limits (Loomis)
- Rocklin Road between Pacific Street and Granite Drive
- Sierra College Boulevard between English Colony Way and King Road (Placer County)

A peak-hour segment analysis was prepared for these five roadway segments and is shown in Table 6-11. As shown in Table 6-11, the segments along Taylor Road, Rocklin Road and Sierra College Boulevard would operate with satisfactory LOS during the a.m. and p.m. peak hours. As a result, the project would not create a significant impact on these roadway segments.

Impacts And Mitigation – 2025 without Dominguez Road Scenario

Although the intersections of Rocklin Road/Pacific Street, Sierra College Boulevard/Rocklin Road, Horseshoe Bar Road/I-80 eastbound ramps, Barton Road/Brace Road, Sierra College Boulevard/King Road, and Taylor Road/King Road operate unsatisfactorily in the 2025 plus project Without Dominguez Road scenario, the project would not increase the v/c ratio by 0.05 or more in case of signalized intersections and would not add more than 5 percent of the total traffic at an unsignalized intersection. As a result, the project contribution of traffic at these intersections is not considered a significant impact.

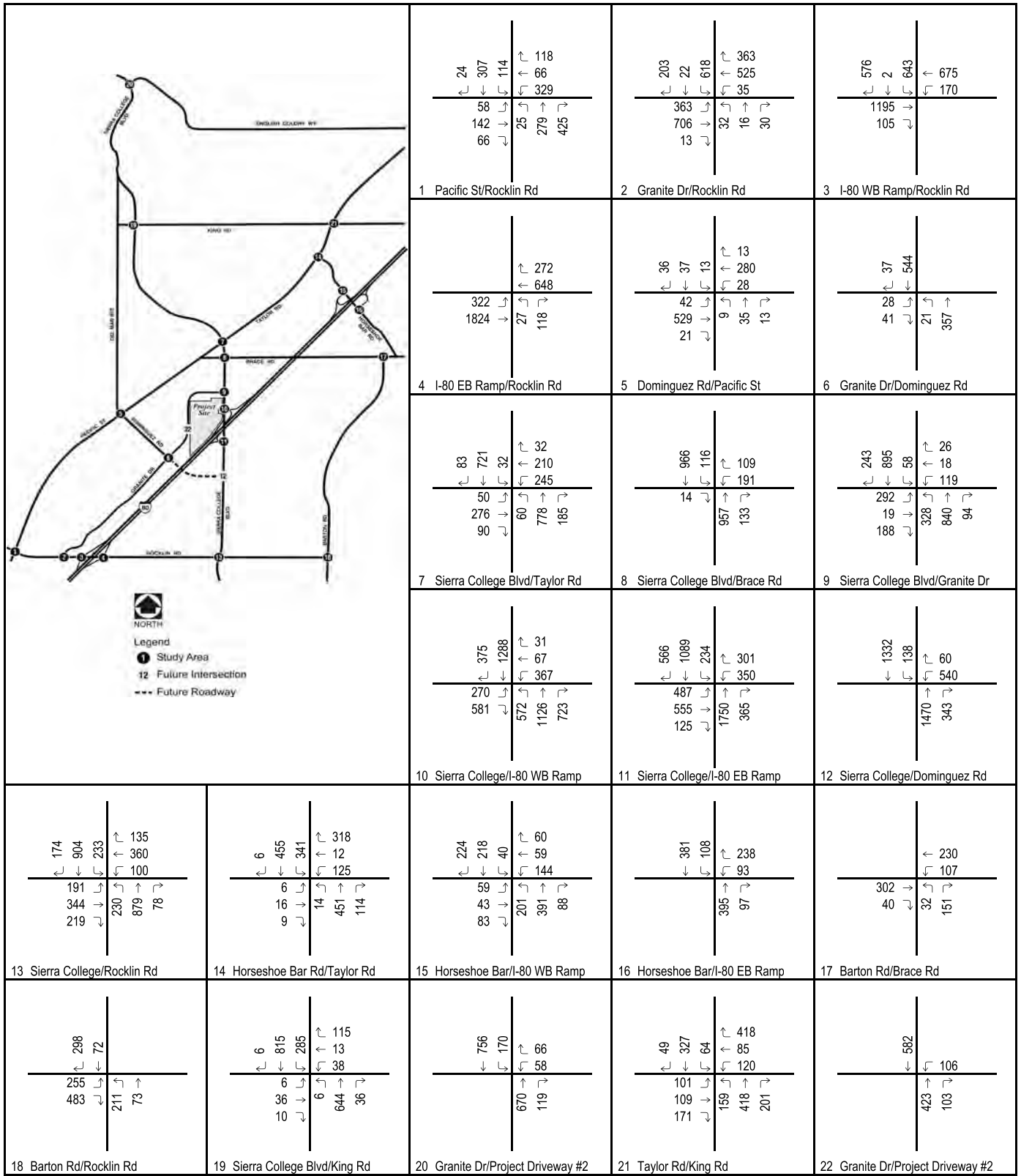


LSA

FIGURE 6-4

Rocklin Commons

Year 2025 Plus Project Peak Hour Traffic Volumes - Without Dominguez Road



LSA

FIGURE 6-5

Rocklin Commons
Year 2025 Plus Project Saturday Peak Hour Traffic Volumes - Without Dominguez Road

Table 6-9: 2025 Plus Project Without Dominguez Road Condition Peak Hour Intersection Level of Service Summary

Intersection		Control Type	2025 No Project without Dominguez Road Condition						2025 Plus Project without Dominguez Road 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	Signalized	0.771	C	0.820	D	0.590	A	0.777	C	0.844	D ²	0.623	B
2	Rocklin Road/Granite Drive	Signalized	0.692	B	0.972	E	0.700	C	0.700	C	1.024	F	0.744	C
3	Rocklin Road/I-80 Westbound Ramps	Signalized	26.6 sec	C	48.2 sec	D	31.9 sec	C	26.7 sec	C	50.0 sec	D	32.3 sec	C
4	Rocklin Road/I-80 Eastbound Ramps	Signalized	50.4 sec	D	41.0 sec	D	16.6 sec	B	50.7 sec	D	42.0 sec	D	16.7 sec	B
5	Dominguez Road/Pacific Street ¹	Signalized	0.599	A	0.778	C	0.430	A	0.600	A	0.784	C	0.438	A
6	Dominguez Road/Granite Drive ¹	Unsignalized	13.3 sec	B	19.0 sec	C	11.7 sec	B	13.6 sec	B	22.3 sec	C	13.0 sec	B
7	Sierra College Boulevard/Taylor Road ¹ (Loomis)	Signalized	1.022	F	0.955	E	0.567	A	1.048	F ²	1.042	F	0.685	B
8	Sierra College Boulevard/Brace Road ¹ (Loomis)	Signalized	0.586	A	0.737	C	0.339	A	0.613	B	0.799	C	0.480	A
9	Sierra College Boulevard/Granite Drive	Signalized	0.723	C	0.686	B	0.603	A	0.748	C	0.763	C	0.746	C
10	Sierra College Boulevard/I-80 Westbound Ramps	Signalized	11.7 sec	B	10.6 sec	B	6.4 sec	A	12.2 sec	B	50.0 sec	D	48.5 sec	D
11	Sierra College Boulevard/I-80 Eastbound Ramps	Signalized	14.3 sec	B	19.0 sec	B	24.1 sec	C	15.4 sec	B	25.2 sec	C	31.2 sec	C
12	Sierra College Boulevard/Dominguez Road	-	0.550	A	0.736	C	0.661	B	0.563	A	0.785	C	0.729	C
13	Sierra College Boulevard/Rocklin Road ¹	Signalized	0.899	D	0.802	D	0.509	A	0.909	E ²	0.822	D ²	0.568	A

Intersection		Control Type	2025 No Project without Dominguez Road Condition						2025 Plus Project without Dominguez Road 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
14	Horseshoe Bar Road/Taylor Road ¹ (Loomis)	Signalized	0.972	E	0.975	E	0.713	C	0.982	E ²	1.023	F	0.781	D
15	Horseshoe Bar Road/I-80 Westbound Ramps ¹ (Loomis)	Signalized	22.8 sec	C	21.5 sec	C	22.6 sec	C	22.8 sec	C	21.5 sec	C	22.6 sec	C
16	Horseshoe Bar Road/I-80 Eastbound Ramps ¹³ (Loomis)	Unsignalized	33.4 sec	D	47.9 sec	E	16.7 sec	C	34.1 sec	D ²	51.4 sec	F ²	17.4 sec	C
17	Barton Road/Brace Road ¹³ (Loomis)	Unsignalized	103.2 sec	F	63.4 sec	F	12.4 sec	B	109.5 sec	F ²	81.0 sec	F ²	13.4 sec	B
18	Barton Road/Rocklin Road ¹³ (Loomis)	Unsignalized	367.8 sec	F	22.2 sec	C	17.7 sec	C	407.3 sec	F	28.6 sec	D	24.5 sec	C
19	Sierra College Boulevard/King Road ¹ (Loomis)	Signalized	0.729	C	0.846	D	0.529	A	0.734	C	0.869	D ²	0.559	A
20	Sierra College Boulevard/English Colony Way ¹³ (Placer County)	Unsignalized	332.2 sec	F	769.9 sec	F	38.7 sec	E	354.0 sec	F ²	987.2 sec	F	55.1 sec	F
21	Taylor Road/King Road ¹ (Loomis)	Signalized	0.984	E	0.609	B	0.684	B	0.990	E ²	0.629	B	0.711	C
22	Granite Drive/Project Driveway #2	-	-	-	-	-	-	-	0.218	A	0.349	A	0.245	A

Notes:

ICU critical 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.

³ Peak Hour volumes meet Signal Warrant #3 of the MUTCD

* Delay exceeds 1000 seconds

Exceeds level of service criteria (Shade) = Significant Impact

Table 6-10: 2025 Without Dominguez Road Daily Roadway Segment Level of Service Summary

Roadway	Segment	Capacity	Capacity Configuration	2025 No Project			2025 Plus Project		
				Volume	V/C	LOS	Volume	V/C	LOS
Taylor Road	King Road and Horseshoe Bar Road ¹ (Loomis)	15,000	Two-lane Collector	19,444	1.30	F	20,594	1.37	F
	Horseshoe Bar Road and Sierra College Boulevard ¹ (Loomis)	15,000	Two-lane Collector	14,108	0.94	E	15,598	1.04	F
	Sierra College Boulevard and City Limits ¹ (Loomis)	15,000	Two-lane Collector	17,954	1.20	F	18,154	1.21	F
Pacific Street	City Limits and Dominguez Road ¹	30,000	Four-lane Undivided Arterial	18,014	0.60	B	18,154	0.61	B
	Dominguez Road and Rocklin Road ¹	30,000	Four-lane Undivided Arterial	22,579	0.75	C	22,699	0.76	C
Rocklin Road	Pacific Street and Granite Drive	30,000	Four-lane Undivided Arterial	37,854	1.26	F	38,144	1.27	F
	I-80 and Sierra College Boulevard	30,000	Four-lane Undivided Arterial	18,089	0.60	B	18,249	0.61	B
	Sierra College Boulevard and Barton Road ¹ (Loomis)	30,000	Four-lane Undivided Arterial	14,634	0.49	A	15,634	0.52	A
Barton Road	Rocklin Road and Brace Road ¹ (Loomis)	15,000	Two-lane Collector	7,066	0.47	A	7,136	0.48	A
Horseshoe Bar Road	I-80 and Brace Road ¹ (Loomis)	15,000	Two-lane Collector	9,788	0.65	B	10,078	0.67	B
Brace Road	I-80 and Barton Road ¹ (Loomis)	15,000	Two-lane Collector	9,654	0.64	B	10,084	0.67	B
	I-80 and Sierra College Boulevard ¹ (Loomis)	15,000	Two-lane Collector	7,846	0.52	A	9,466	0.63	B
Sierra College Boulevard	English Colony Way and King Road ¹ (Placer County)	30,000	Four-lane Undivided Arterial	27,005	0.90	E	28,295	0.94	E
	King Road and Taylor Road ¹ (Loomis)	30,000	Four-lane Undivided Arterial	22,616	0.75	C	23,906	0.80	C
	Taylor Road and I-80	50,525	Six-lane Arterial	32,455	0.64	B	37,265	0.74	C

Roadway	Segment	Capacity	Capacity Configuration	2025 No Project			2025 Plus Project		
				Volume	V/C	LOS	Volume	V/C	LOS
	I-80 and Dominguez Road	50,525	Six-lane Arterial	31,944	0.63	B	35,539	0.70	B
	Dominguez Road and Rocklin Road ¹	50,525	Six-lane Arterial	33,802	0.67	B	36,767	0.73	C
Granite Drive	Dominguez Road and Sierra College Boulevard ¹	30,000	Four-lane Undivided Arterial	17,659	0.59	A	18,519	0.62	B
	Dominguez Road and Rocklin Road ¹	30,000	Four-lane Undivided Arterial	7,403	0.25	A	8,183	0.27	A
Dominguez Road	Taylor Road and Granite Drive ¹	15,000	Two-lane Collector	5,221	0.35	A	5,356	0.36	A
King Road	Sierra College Boulevard and Taylor Road ¹ (Loomis)	15,000	Two-lane Collector	7,056	0.47	A	7,056	0.47	A

Notes:

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



Exceeds level of service criteria



Roadway Improvements consistent with City of Rocklin General Plan, Town of Loomis General Plan, and the Horseshoe Bar/Penryn Community Plan

Table 6-11: 2025 Without Dominguez Road Peak Hour Roadway Segment Level of Service Summary

Roadway	Segment	Capacity	2025 No Project			2025 Plus Project		
			Volume	V/C	LOS	Volume	V/C	LOS
Taylor Road	King Rd and Horseshoe Bar Rd (Loomis)							
	A.M. Peak Hour Northbound	1,650	960	0.58	A	970	0.59	A
	A.M. Peak Hour Southbound	1,650	1,195	0.72	C	1,211	0.73	C
	Total A.M. Peak Hour	3,300	2,155	0.65	B	2,181	0.66	B
	P.M Peak Hour Northbound	1,650	1,210	0.73	C	1,270	0.77	C
	P.M Peak Hour Southbound	1,650	964	0.58	A	1,019	0.62	B
	Total P.M. Peak Hour	3,300	2,174	0.66	B	2,289	0.69	B
	SAT Peak Hour Northbound	1,650	703	0.43	A	778	0.47	A
	SAT Peak Hour Southbound	1,650	720	0.44	A	802	0.49	A
	Total SAT Peak Hour	3,300	1,423	0.43	A	1,580	0.48	A
Taylor Road	Horseshoe Bar Rd and Sierra College Blvd (Loomis)							
	A.M. Peak Hour Northbound	1,650	481	0.29	A	496	0.30	A
	A.M. Peak Hour Southbound	1,650	669	0.41	A	693	0.42	A
	Total A.M. Peak Hour	3,300	1,150	0.35	A	1,189	0.36	A
	P.M Peak Hour Northbound	1,650	683	0.41	A	771	0.47	A
	P.M Peak Hour Southbound	1,650	636	0.39	A	717	0.43	A
	Total P.M. Peak Hour	3,300	1,319	0.40	A	1,488	0.45	A
	SAT Peak Hour Northbound	1,650	495	0.30	A	579	0.35	A
	SAT Peak Hour Southbound	1,650	497	0.30	A	589	0.36	A
	Total SAT Peak Hour	3,300	992	0.30	A	1,168	0.35	A
Taylor Road	Sierra College Blvd and City Limits (Loomis)							
	A.M. Peak Hour Northbound	1,650	390	0.24	A	393	0.24	A
	A.M. Peak Hour Southbound	1,650	968	0.59	A	970	0.59	A
	Total A.M. Peak Hour	3,300	1,358	0.41	A	1,363	0.41	A
	P.M Peak Hour Northbound	1,650	949	0.58	A	959	0.58	A
	P.M Peak Hour Southbound	1,650	629	0.38	A	639	0.39	A
	Total P.M. Peak Hour	3,300	1,578	0.48	A	1,598	0.48	A
	SAT Peak Hour Northbound	1,650	402	0.24	A	416	0.25	A
	SAT Peak Hour Southbound	1,650	340	0.21	A	353	0.21	A
	Total SAT Peak Hour	3,300	742	0.22	A	769	0.23	A
Rocklin Road	Pacific St and Granite Dr							

Roadway	Segment	Capacity	2025 No Project			2025 Plus Project		
			Volume	V/C	LOS	Volume	V/C	LOS
	A.M. Peak Hour Eastbound	3,300	1,171	0.35	A	1,184	0.36	A
	A.M. Peak Hour Westbound	3,300	1,307	0.40	A	1,315	0.40	A
	Total A.M. Peak Hour	6,600	2,478	0.38	A	2,499	0.38	A
	P.M Peak Hour Eastbound	3,300	1,606	0.49	A	1,649	0.50	A
	P.M Peak Hour Westbound	3,300	1,462	0.44	A	1,509	0.46	A
	Total P.M. Peak Hour	6,600	3,068	0.46	A	3,158	0.48	A
	SAT Peak Hour Eastbound	3,300	1,017	0.31	A	1,082	0.33	A
	SAT Peak Hour Westbound	3,300	700	0.21	A	760	0.23	A
	Total SAT Peak Hour	6,600	1,717	0.26	A	1,842	0.28	A
Sierra College Boulevard	English Colony Way and King Rd (Placer County)							
	A.M. Peak Hour Northbound	3,300	989	0.30	A	1,001	0.30	A
	A.M. Peak Hour Southbound	3,300	1,287	0.39	A	1,305	0.40	A
	Total A.M. Peak Hour	6,600	2,276	0.34	A	2,306	0.35	A
	P.M Peak Hour Northbound	3,300	1,299	0.39	A	1,366	0.41	A
	P.M Peak Hour Southbound	3,300	1,113	0.34	A	1,175	0.36	A
	Total P.M. Peak Hour	6,600	2,412	0.37	A	2,541	0.39	A
	SAT Peak Hour Northbound	3,300	704	0.21	A	789	0.24	A
	SAT Peak Hour Southbound	3,300	1,014	0.31	A	1,106	0.34	A
	Total SAT Peak Hour	6,600	1,718	0.26	A	1,895	0.29	A

The proposed mitigations for the 2025 plus project Without Dominguez Road scenario are shown in Figure 6-6. Per Town of Loomis¹ and Horseshoe Bar/Penryn Community Plan, Sierra College Boulevard is planned to be widened to a four-lane arterial between Taylor Road and State Route 193 (SR-193). In addition, the Town of Loomis has a proposed signal installation at the intersection of Barton Road/Rocklin Road for the near future.

CI-3: Rocklin Road/Granite Drive without Dominguez Road. *The addition of project-related traffic to baseline 2025 No project traffic volumes would degrade traffic operations at the already-deficient intersection, which is operating at LOS E during the p.m. peak hour in the 2025 no project Without Dominguez Road scenario. Because this intersection already operates unacceptably and the project's contribution would be greater than 5 percent, this impact would be considered **potentially significant**.*

¹ Brian Fragio, Town of Loomis. Personal communication, January 17, 2007.

Mitigation Measure CI-3 Rocklin Road/Granite Drive without Dominguez Road.

Implement Mitigation Measure TC-1.

Level Of Significance after Mitigation

With the implementation of the identified mitigation measure, the project's direct incremental impact would be mitigated (v/c reduced from 1.024 to 0.951) and this impact would be considered *less-than-significant*.

CI-4: Sierra College Boulevard/Taylor Road (Loomis) without Dominguez Road. *The addition of project-related traffic to baseline 2025 No project traffic volumes would degrade traffic operations at the already-deficient Sierra College Boulevard/Taylor Road (Loomis) intersection, which is operating at LOS E during the p.m. peak hour in 2025 no project Without Dominguez Road scenario. Because this intersection already operates unacceptably and the project's contribution would be greater than 5 percent, this impact would be considered potentially significant.*

Mitigation Measure CI-4: Improvements to Sierra College Boulevard/Taylor Road (Loomis) without Dominguez Road.

Implement Mitigation Measure TC-2.

Level of Significance after Mitigation

In correspondence with the City, the Town of Loomis has preliminarily indicated a willingness to cooperate with the City in implementing improvements at this intersection, but has stopped short of agreeing to the specific improvements described above, which reflect the best professional judgment of the City and its traffic engineering consultants. The City is hopeful, though not certain, that Loomis will ultimately agree to install these improvements (though at the expense of the project applicant).

With the implementation of the identified mitigation measure, the project's direct incremental impact would be mitigated (1.042 v/c reduced to 0.929 in the p.m.), and this impact would be considered *less-than-significant*. Because the Town of Loomis controls what occurs at the intersection, however, the City conservatively concludes that, at the time of action by its City Council, the impact would be treated as *significant and unavoidable*, given that the City has no control over Loomis and thus cannot take for granted that the improvements contemplated by the mitigation will be constructed. Furthermore, although Mitigation Measure CI-4 requires the applicant to try to enter into an agreement with Loomis by which the applicant will be responsible for the improvements, the City has no way to ensure that Loomis will cooperate with the applicant pursuant to that measure. An agreement requires two cooperating parties, and the City cannot force Loomis to cooperate if it chooses not to do so. For these reasons, consistent with CEQA Guidelines section 15091, subdivision (a)(2), the City concludes that Loomis can and should cooperate with the City in implementing the mitigation. With such action by Loomis, the impact of the project would be rendered less than significant, though at present, as noted above, the City considers the impact *significant and unavoidable*.

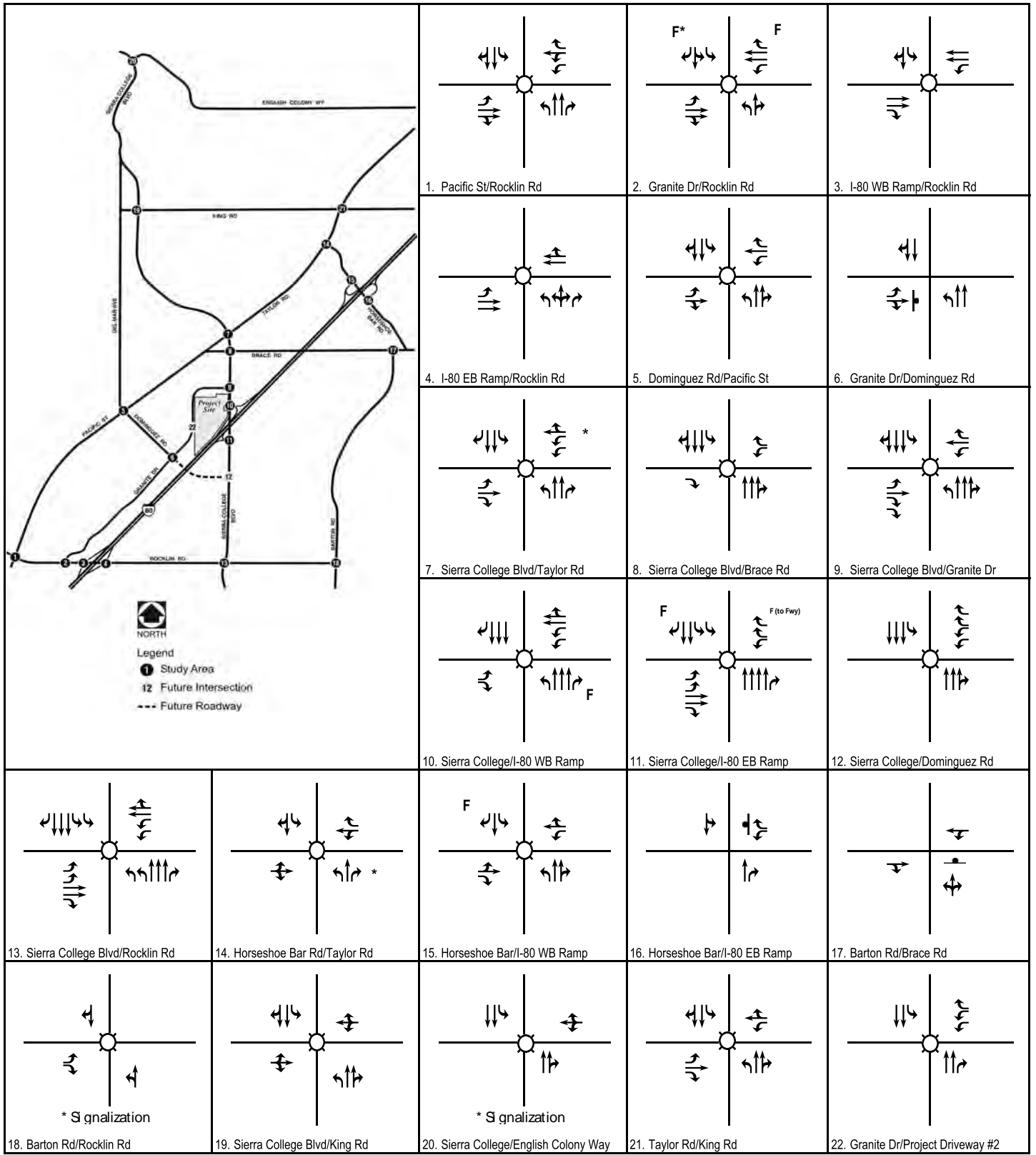


FIGURE 6-6

LSA

Legend

○ Signal

— Stop Sign

F Free Right Turn

* Proposed Mitigation

Rocklin Commons

Year 2025 Plus Project Without Dominguez Road - Mitigation

CI-5: Horseshoe Bar Road/Taylor Road (Loomis) without Dominguez Road. *The addition of project-related traffic to baseline 2025 No project traffic volumes would degrade traffic operations at the already-deficient Horseshoe Bar Road/Taylor Road (Loomis) intersection which is operating at LOS E with a volume to capacity ratio of 0.975 during the p.m. peak hour and from an acceptable LOS C during the Saturday peak hour to LOS D in the 2025 without Dominguez with project condition. Therefore, the project's impacts on this intersection would be considered **potentially significant**.*

Mitigation Measure CI-5 Horseshoe Bar Road/Taylor Road (Loomis) without Dominguez Road.

Implement Mitigation Measure TC-6.

Level of Significance after Mitigation

The identified mitigation would formalize an exclusive right turn lane increasing capacity that does occasionally occur at this time without the striping. The northbound right-turn lane can be accommodated within the existing improvements. On Taylor Road northbound there is a 27 foot curb lane that accommodates a through lane and some on-street parking. Approaching Horseshoe Bar Road, the parking could be restricted for about 100 feet before the intersection and a "Right Turn Only" lane striped. Parking for about three vehicles will be displaced. With the implementation of the identified mitigation measure, the intersection would operate at LOS E with a volume to capacity ratio of 0.938 (lower than without project conditions) in the p.m. peak hour and LOS B in the Saturday peak hour and this impact would be considered *less-than-significant*. Because the Town of Loomis controls what occurs at the intersection, however, the City conservatively concludes that, at the time of action by its City Council, the impact would be treated as *significant and unavoidable*, given that the City has no control over Loomis and thus cannot take for granted that the improvements contemplated by the mitigation will be constructed. Furthermore, although Mitigation Measure CI-5 requires the applicant to try to enter into an agreement with Loomis by which the applicant will be responsible for the improvements, the City has no way to ensure that Loomis will cooperate with the applicant pursuant to that measure. An agreement requires two cooperating parties, and the City cannot force Loomis to cooperate if it chooses not to do so. For these reasons, consistent with CEQA Guidelines section 15091, subdivision (a)(2), the City concludes that Loomis can and should cooperate with the City in implementing the mitigation. With such action by Loomis, the impact of the project would be rendered less than significant, though at present, as noted above, the City considers the impact *significant and unavoidable*.

CI-6: Barton Road/Rocklin Road (Loomis) without Dominguez Road. *The addition of project-related traffic to baseline 2025 No project traffic volumes would degrade traffic operations at the already-deficient Barton Road/Rocklin Road (Loomis) intersection, which is operating at LOS E during the a.m. peak hour and from an acceptable LOS C during the p.m. peak hour to LOS D in the 2025 without Dominguez with project condition. Therefore, the project's impacts on this intersection would be considered **potentially significant**.*

Mitigation Measure CI-6: Improvements to Barton Road/Rocklin Road (Loomis) without Dominguez Road.

The project applicant shall pay its fair share toward the signalization of this intersection. In order to implement this measure, the project applicant shall attempt, in good faith, to enter into an agreement with the Town of Loomis by which the applicant shall provide to the Town of Loomis with funding in an amount equal to the agreed upon estimated fair-share cost of the improvements.

Level of Significance after Mitigation

Although the City and its traffic consultants have taken the Town of Loomis General Plan, the Loomis Capital Improvement Program, and other expressions of Loomis transportation policy into account in formulating the recommended mitigation measure and the specific improvements contemplated therein, which reflect the best professional judgment of the City and its traffic engineering consultants, the City is not certain the Loomis will be satisfied with all aspects of these suggestions. The City is hopeful, though not certain, that Loomis will ultimately agree to install these improvements.

With the implementation of the identified mitigation measure, the project's direct incremental impact would be mitigated to LOS A in the a.m. peak hour and LOS C in the p.m. peak hour. The intersection is forecast to meet the peak-hour traffic signal warrant in the cumulative without Dominguez Road extension scenario. The intersection would continue to meet the peak hour traffic signal warrant with the addition of project traffic. Thus, this impact would be considered *less-than-significant*. Because the Town of Loomis controls what occurs at the intersection, however, the City conservatively concludes that, at the time of action by its City Council, the impact would be treated as *significant and unavoidable*, given that the City has no control over Loomis and thus cannot take for granted that the improvements contemplated by the mitigation will be constructed. Furthermore, although Mitigation Measure CI-6 requires the applicant to try to enter into an agreement with Loomis by which the applicant will make fair share payments to the Town of Loomis, the City has no way to ensure that Loomis will cooperate with the applicant pursuant to that measure. An agreement requires two cooperating parties, and the City cannot force Loomis to cooperate if it chooses not to do so. For these reasons, consistent with CEQA Guidelines section 15091, subdivision (a)(2), the City concludes that Loomis can and should cooperate with the City in implementing the mitigation. With such action by Loomis, the impact of the project would be rendered less than significant, though at present, as noted above, the City considers the impact *significant and unavoidable*.

CI-7: Sierra College Boulevard/English Colony Way (Placer County) without Dominguez Road. *The addition of project-related traffic to baseline 2025 No project traffic volumes would degrade traffic operations at the already-deficient Sierra College Boulevard/English Colony Way (Placer County) intersection, which is operating at LOS F during the p.m. peak hour and LOS E during the Saturday peak hour in the 2025 without Dominguez Road with project scenario. Because this intersection already operates unacceptably and the project's contribution would be greater than 5 percent, this impact would be considered **potentially significant**.*

Mitigation Measure CI-7: Improvements to Sierra College Boulevard/English Colony Way (Placer County) without Dominguez Road.

The project applicant shall pay its fair share toward the signalization of this intersection. In order to implement this measure, the project applicant shall attempt, in good faith, to enter into an agreement with the Placer County by which the applicant shall provide to the Placer County with funding in an amount equal to the agreed upon estimated fair-share cost of the improvements.

Level of Significance after Mitigation

With the implementation of the identified mitigation measure, the project's direct incremental impact would be mitigated to LOS D in the p.m. peak hour and LOS A in the Saturday peak hour. For an unsignalized intersection the critical delay experienced by traffic on the stop controlled leg of the intersection is reported and used in the calculation of the LOS. The proposed mitigation (signalization) considerably reduces the delay experienced by traffic on the stop controlled leg of the intersection. Hence the intersection LOS changes from E to LOS A with the project improvement. The intersection is forecast to meet the peak-hour traffic signal warrant in the cumulative without Dominguez Road extension scenario. The intersection would continue to meet the peak hour traffic signal warrant with the addition of project traffic. Thus, this impact would be considered *less-than-significant*. Because Placer County controls what occurs at the intersection, however, the City conservatively concludes that, at the time of action by its City Council, the impact would be treated as *significant and unavoidable*, given that the City has no control over County and thus cannot take for granted that the improvements contemplated by the mitigation will be constructed. Furthermore, although Mitigation Measure CI-7 requires the applicant to try to enter into an agreement with the County by which the applicant will make fair share payments to Placer County, the City has no way to ensure that the County will cooperate with the applicant pursuant to that measure. An agreement requires two cooperating parties, and the City cannot force the County to cooperate if it chooses not to do so. For these reasons, consistent with CEQA Guidelines section 15091, subdivision (a)(2), the City concludes that the County can and should cooperate with the City in implementing the mitigation. With such action by the County, the impact of the project would be rendered less than significant, though at present, as noted above, the City considers the impact *significant and unavoidable*.

With Dominguez Road Analysis

In the cumulative traffic analysis, the network used assumes that Dominguez Road terminates at Granite Drive, as in the existing condition, and is referred to as "without Dominguez Road." A separate analysis utilizes an alternative version of the network which assumes that Dominguez Road is extended east to Sierra College Boulevard. This alternative network is referred to as "with Dominguez Road" and is intended to provide an analysis of the effects of extending Dominguez Road. Notably, the Dominguez Road extension is in the City's Traffic Impact Fee and Capital Improvement Program and is included in the City's current General Plan. No schedule exists, however, for construction of the new segment. The analysis of these two roadway networks is provided in this chapter with the identification of separate impacts depending upon which network is assumed.

An analysis of forecast year 2025 traffic volumes was prepared assuming that Dominguez Road is extended east to Sierra College Boulevard. At the direction of the City, signalization of the

intersection of Dominguez Road/Granite Drive is assumed to be a part of the Dominguez Road extension project which extends Dominguez Road east to Sierra College Boulevard.

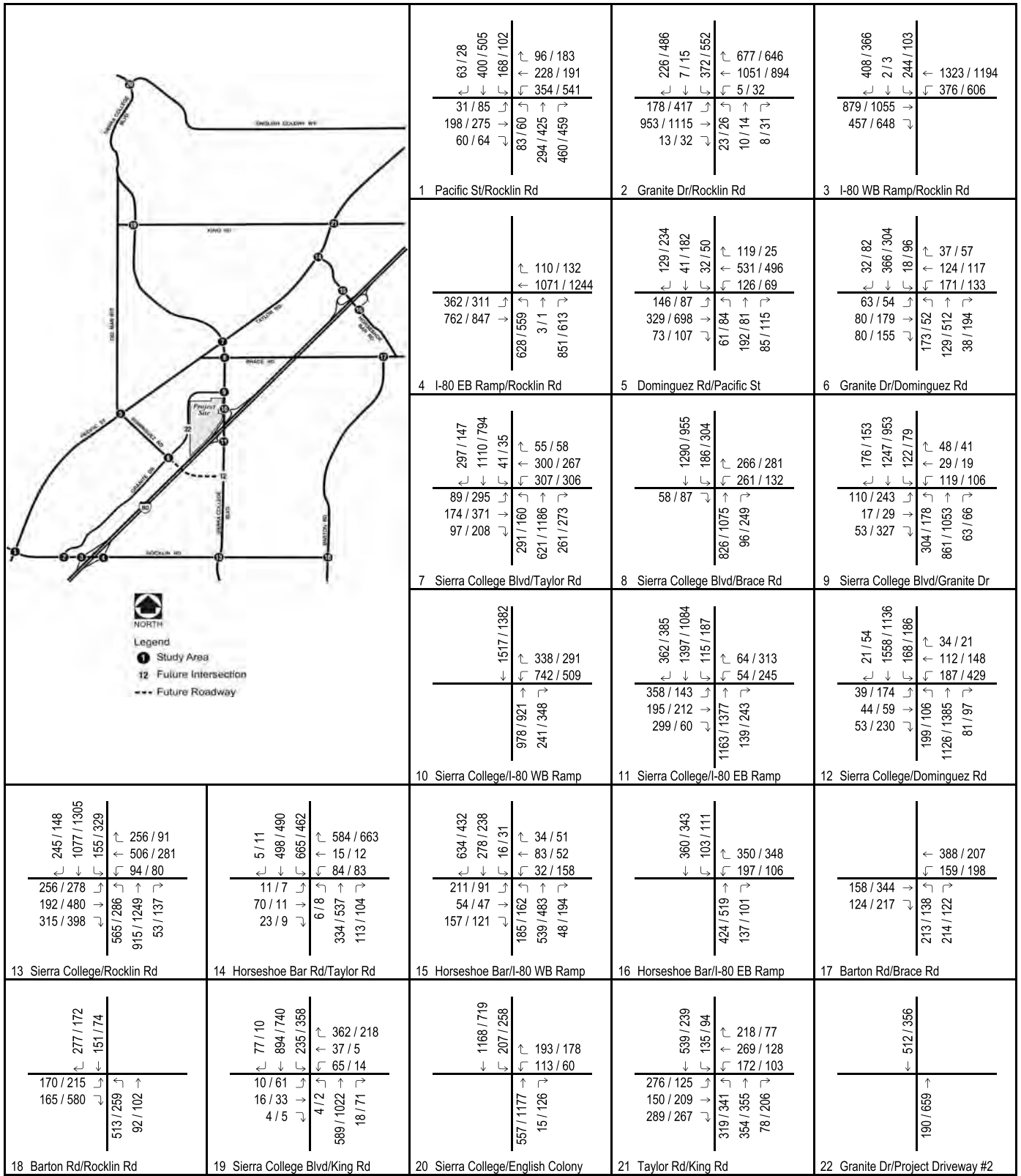
2025 No Project with Dominguez Road. Weekday and Saturday peak-hour forecast traffic volumes for the 2025 no project with Dominguez Road scenario are shown in Figures 6-7 and 6-8. The LOS for study area intersections and roadway segments are shown in Tables 6-12 and 6-13. The 2025 no project with Dominguez Road traffic volume development and LOS worksheets are provided in Appendix E.

As shown in Table 6-12, the following 12 intersections are forecast to operate at unsatisfactory LOS in the 2025 no project with Dominguez Road condition:

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

As shown in Table 6-13, the results of the roadway segment analysis indicate that most of the study area roadway segments are forecast to operate within their daily roadway capacities except for the following five segments:

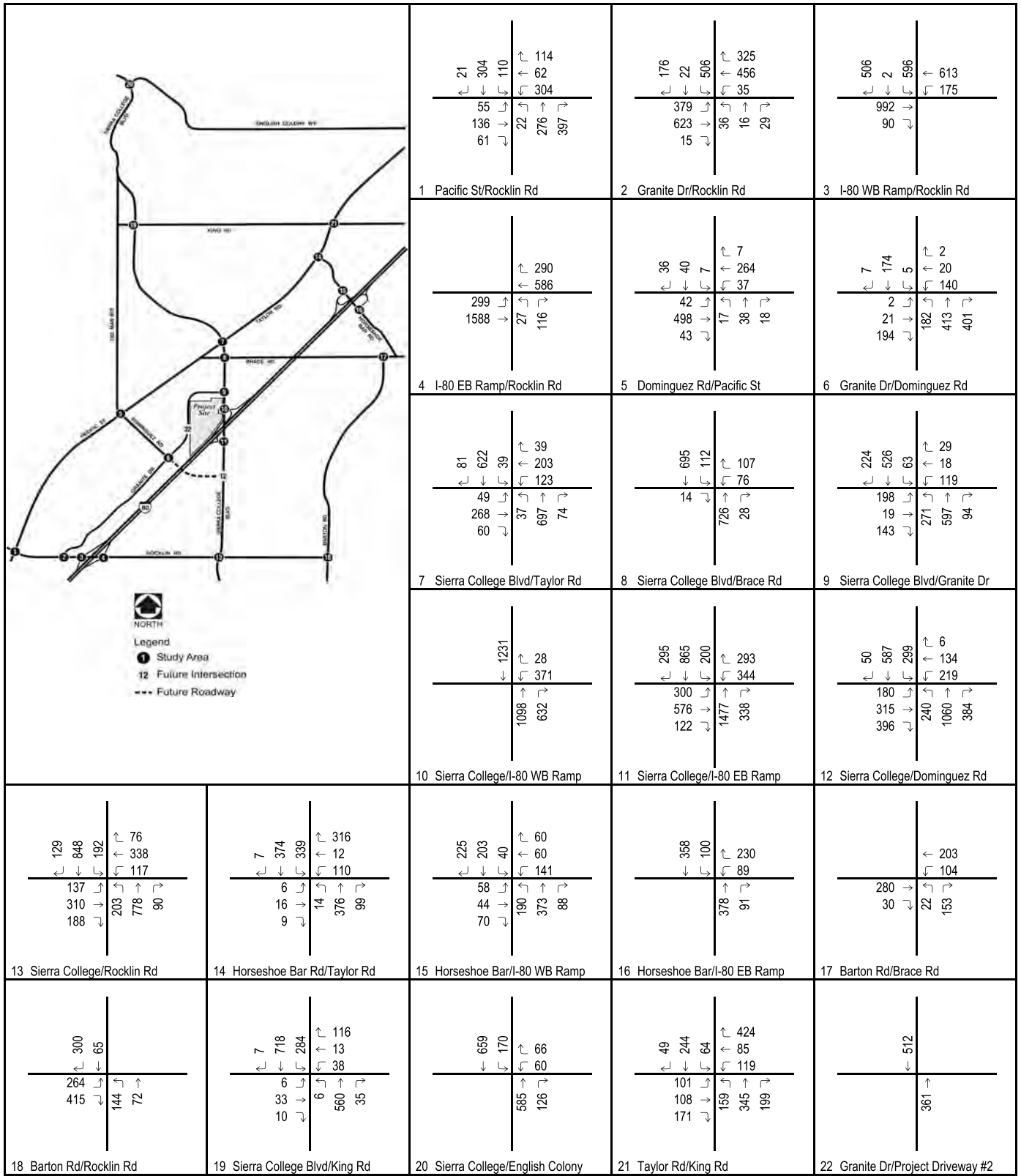
- Taylor Road between King Road and Horseshoe Bar Road (the Town of Loomis)
- Taylor Road between Horseshoe Bar Road and Sierra College Boulevard (Loomis)
- Taylor Road between Sierra College Boulevard and City Limits (Loomis)
- Rocklin Road between Pacific Street and Granite Drive
- Sierra College Boulevard between English Colony Way and King Road (Placer County)



LSA

FIGURE 6-7

Rocklin Commons
Year 2025 No Project Peak Hour Traffic Volumes - With Dominguez Road



LSA

FIGURE 6-8

Rocklin Commons
Year 2025 No Project Saturday Peak Hour Traffic Volumes - With Dominguez Road

Table 6-12: 2025 No Project With Dominguez Road Condition Peak Hour Intersection Level of Service Summary

Intersection		Control Type	2025 No Project with Dominguez Road Condition					
			AM Peak Hour V/C Ratio / Delay	LOS	PM Peak Hour V/C Ratio / Delay	LOS	Saturday V/C Ratio / Delay	LOS
1	Rocklin Road/Pacific Street ¹	Signalized	0.775	C	0.817	D	0.585	A
2	Rocklin Road/Granite Drive	Signalized	0.693	B	1.015	F	0.685	B
3	Rocklin Road/I-80 Westbound Ramps	Signalized	26.2 sec	C	42.7 sec	D	28.1 sec	C
4	Rocklin Road/I-80 Eastbound Ramps	Signalized	46.3 sec	D	36.7 sec	D	15.2 sec	B
5	Dominguez Road/Pacific Street ¹	Signalized	0.608	B	0.836	D	0.444	A
6	Dominguez Road/Granite Drive ¹²	Signalized	0.511	A	0.596	A	0.553	A
7	Sierra College Boulevard/Taylor Road ¹ (Loomis)	Signalized	0.965	E	0.949	E	0.566	A
8	Sierra College Boulevard/Brace Road ¹ (Loomis)	Signalized	0.570	A	0.720	C	0.330	A
9	Sierra College Boulevard/Granite Drive	Signalized	0.674	B	0.605	B	0.544	A
10	Sierra College Boulevard/I-80 Westbound Ramps	Signalized	11.7 sec	B	9.5 sec	A	6.2 sec	A
11	Sierra College Boulevard/I-80 Eastbound Ramps	Signalized	13.1 sec	B	15.3 sec	B	22.1 sec	C
12	Sierra College Boulevard/Dominguez Road	-	0.571	A	0.810	D	0.872	D
13	Sierra College Boulevard/Rocklin Road ¹	Signalized	0.867	D	0.756	C	0.492	A
14	Horseshoe Bar Road/Taylor Road ¹ (Loomis)	Signalized	0.956	E	0.968	E	0.703	C
15	Horseshoe Bar Road/I-80 Westbound Ramps ¹ (Loomis)	Signalized	22.7 sec	C	21.5 sec	C	22.6 sec	C
16	Horseshoe Bar Road/I-80 Eastbound Ramps ¹² (Loomis)	Unsignalized	31.3 sec	D	40.3 sec	E	16.1 sec	C
17	Barton Road/Brace Road ¹² (Loomis)	Unsignalized	90.6 sec	F	59.8 sec	F	12.3 sec	B

Intersection		Control Type	2025 No Project with Dominguez Road Condition					
			AM Peak Hour		PM Peak Hour		Saturday	
			V/C Ratio / Delay	LOS	V/C Ratio / Delay	LOS	V/C Ratio / Delay	LOS
18	Barton Road/Rocklin Road ¹² (Loomis)	Unsignalized	346.4 sec	F	23.1 sec	C	18.1 sec	C
19	Sierra College Boulevard/King Road ¹ (Loomis)	Signalized	0.711	C	0.844	D	0.529	A
20	Sierra College Boulevard/English Colony Way ¹² (Placer County)	Unsignalized	315.4 sec	F	816.6 sec	F	40.3 sec	E
21	Taylor Road/King Road ¹ (Loomis)	Signalized	0.983	E	0.604	B	0.688	B
22	Granite Drive/Project Driveway #2	-	-	-	-	-	-	-

Notes:

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

LOS C required for these intersections. LOS D

¹ acceptable for all other intersections.

² Peak Hour volumes meet Signal Warrant #3 of the

MUTCD

* Delay exceeds 1000 seconds

Exceeds level of service criteria

Table 6-13: 2025 No Project With Dominguez Road Daily Roadway Segment Level of Service Summary

Roadway	Segment	Capacity	Capacity Configuration	Volume	V/C	LOS
Taylor Road	King Road and Horseshoe Bar Road ¹ (Loomis)	15,000	Two-lane Collector	19,377	1.29	F
	Horseshoe Bar Road and Sierra College Boulevard ¹ (Loomis)	15,000	Two-lane Collector	14,089	0.94	E
	Sierra College Boulevard and City Limits ¹ (Loomis)	15,000	Two-lane Collector	16,764	1.12	F
Pacific Street	City Limits and Dominguez Road ¹	30,000	Four-lane Undivided Arterial	16,824	0.56	A
	Dominguez Road and Rocklin Road ¹	30,000	Four-lane Undivided Arterial	22,767	0.76	C
Rocklin Road	Pacific Street and Granite Drive	30,000	Four-lane Undivided Arterial	38,004	1.27	F
	I-80 and Sierra College Boulevard	30,000	Four-lane Undivided Arterial	14,373	0.48	A
	Sierra College Boulevard and Barton Road ¹ (Loomis)	30,000	Four-lane Undivided Arterial	14,765	0.49	A
Barton Road	Rocklin Road and Brace Road ¹ (Loomis)	15,000	Two-lane Collector	7,049	0.47	A
Horseshoe Bar Road	I-80 and Brace Road ¹ (Loomis)	15,000	Two-lane Collector	9,795	0.65	B
Brace Road	I-80 and Barton Road ¹ (Loomis)	15,000	Two-lane Collector	9,523	0.63	B
	I-80 and Sierra College Boulevard ¹ (Loomis)	15,000	Two-lane Collector	7,704	0.51	A
Sierra College Boulevard	English Colony Way and King Road ¹ (Placer County)	30,000	Four-lane Undivided Arterial	26,983	0.90	D
	King Road and Taylor Road ¹ (Loomis)	30,000	Four-lane Undivided Arterial	22,657	0.76	C
	Taylor Road and I-80	50,525	Six-lane Arterial	31,529	0.62	B
	I-80 and Dominguez Road	50,525	Six-lane Arterial	31,126	0.62	B
	Dominguez Road and Rocklin Road ¹	50,525	Six-lane Arterial	35,336	0.70	B

Roadway	Segment	Capacity	Capacity Configuration	Volume	V/C	LOS
Granite Drive	Dominguez Road and Sierra College Boulevard ¹	30,000	Four-lane Undivided Arterial	8,909	0.30	A
	Dominguez Road and Rocklin Road ¹	30,000	Four-lane Undivided Arterial	13,376	0.45	A
Dominguez Road	Taylor Road and Granite Drive ¹	15,000	Two-lane Collector	7,565	0.50	A
King Road	Sierra College Boulevard and Taylor Road ¹ (Loomis)	15,000	Two-lane Collector	7,005	0.47	A

Notes:

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

Exceeds level of service criteria

Roadway Improvements consistent with City of Rocklin General Plan, Town of Loomis General Plan, and the Horseshoe Bar/Penryn Community Plan

Peak hour analysis for the roadway segments listed above will be conducted after the addition of project traffic.

2025 Plus Project with Dominguez Road. Traffic volumes generated by the proposed project were added to the 2025 no project traffic volumes, and LOS were calculated for the 2025 plus project with Dominguez Road scenario. Weekday and Saturday peak-hour forecast traffic volumes for the 2025 plus project with Dominguez Road scenario are shown in Figures 6-9 through 6-11. The LOS for study area intersections and roadway segments in the 2025 plus project with Dominguez Road scenario are shown in Tables 6-14 and 6-15. The 2025 plus project with Dominguez Road LOS worksheets are provided in Appendix J.

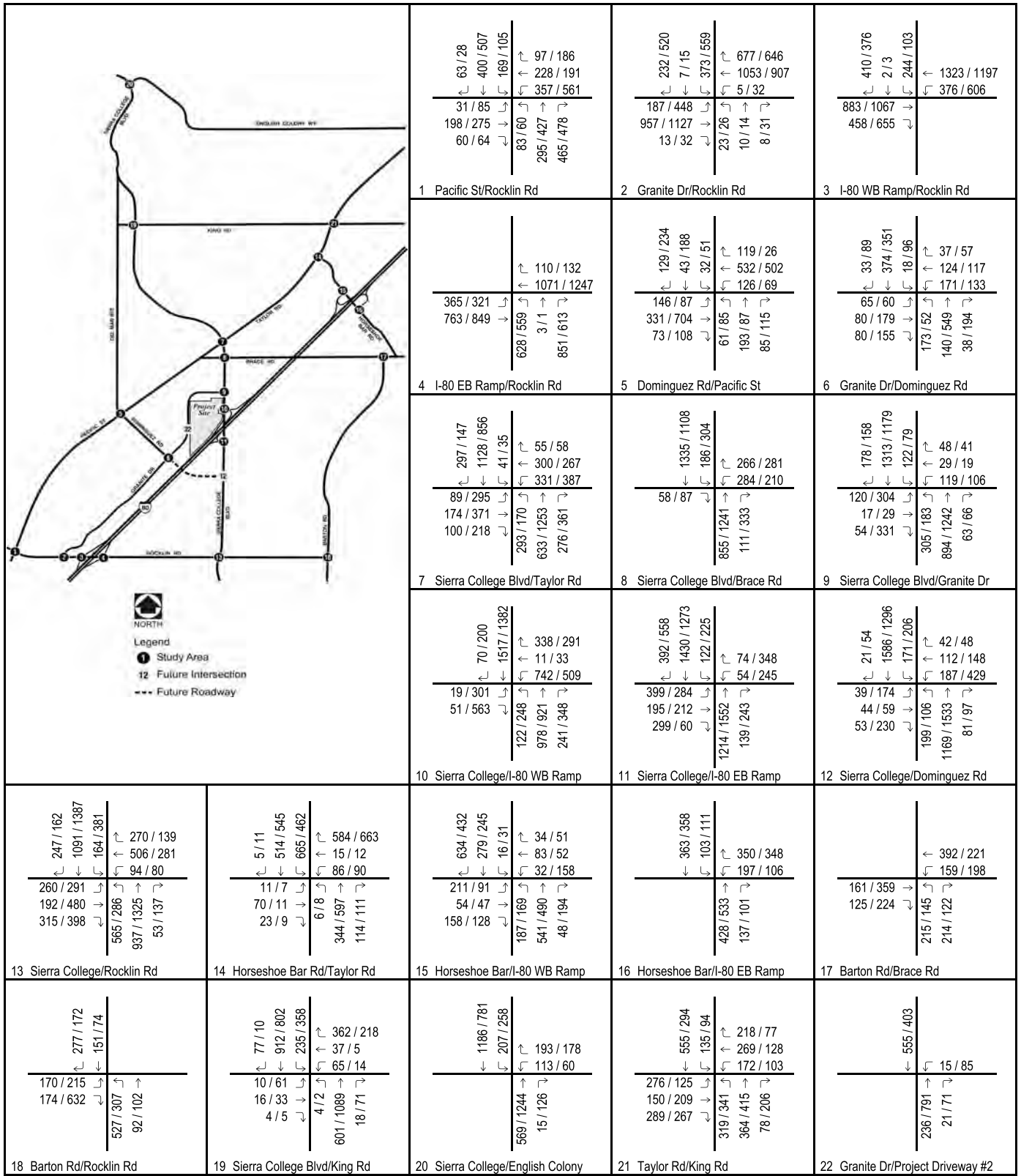
As shown in Table 6-14, the following six intersections are forecast to operate at unsatisfactory LOS and are significantly impacted (over 5 percent increase with project traffic) in the 2025 plus project with Dominguez Road scenario:

- Rocklin Road/Granite Drive
- Sierra College Boulevard/Taylor Road (Loomis)
- Sierra College Boulevard/Dominguez Road
- Horseshoe Bar Road/Taylor Road (Loomis)
- Barton Road/Rocklin Road (Loomis)
- Sierra College Boulevard/English Colony Way (Placer County)

As shown in Table 6-15, the results of the roadway segment analysis indicate that the following five roadway segments that were forecast to operate with unsatisfactory LOS in the without project scenario would continue to operate with unsatisfactory LOS in the 2025 plus project with Dominguez Road scenario:

- 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 City Limits (Loomis)
- Rocklin Road between Pacific Street and Granite Drive
- Sierra College Boulevard between English Colony Way and King Road (Placer County)

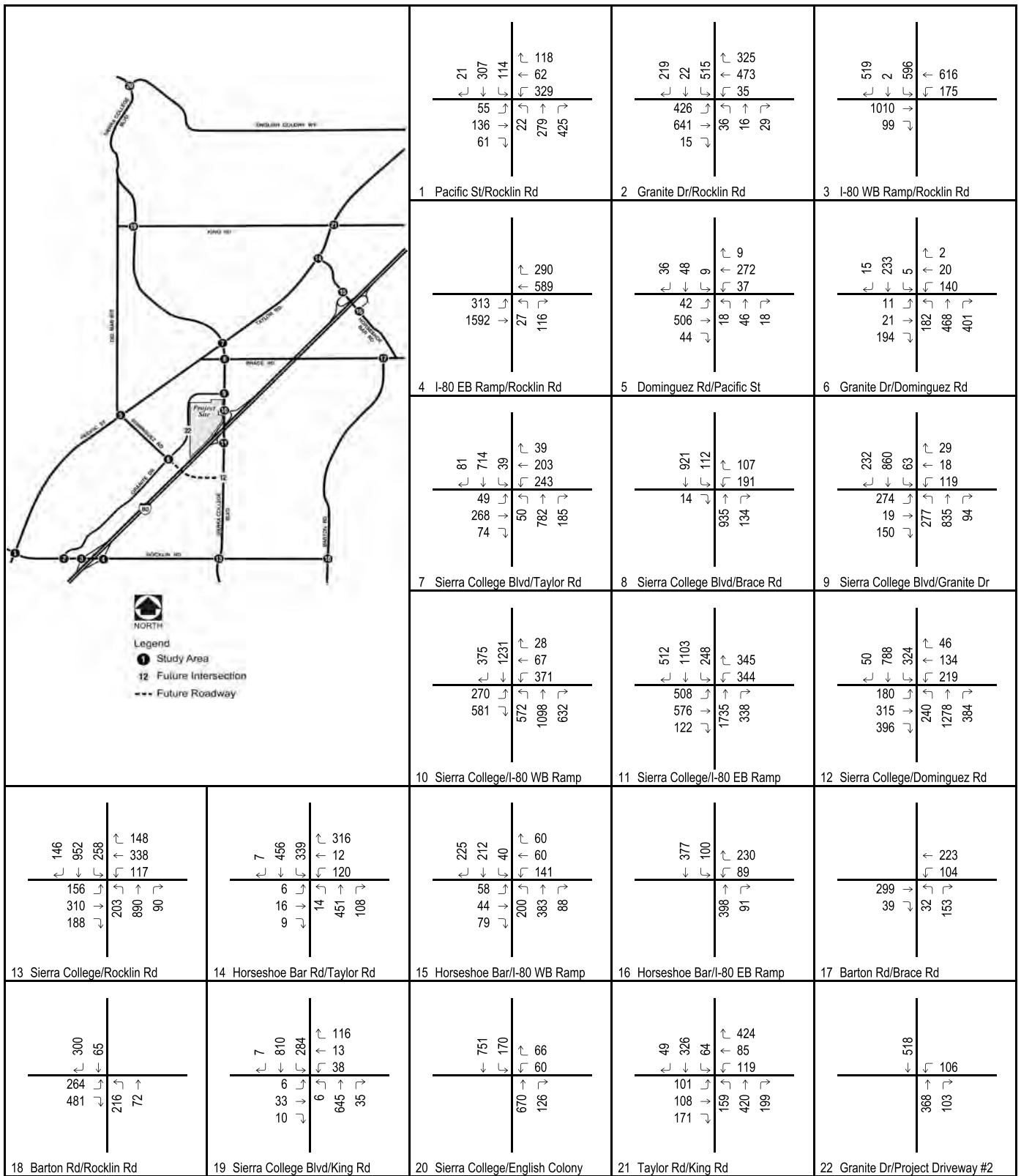
A peak-hour segment analysis was prepared for these five roadway segments and is shown in Table 6-16. As shown in Table 6-16, the segments along Taylor Road, Rocklin Road and Sierra College Boulevard would operate with satisfactory LOS during the a.m. and p.m. peak hours. As a result, the project would not create a significant impact on these roadway segments.



LSA

FIGURE 6-9

Rocklin Commons
Year 2025 Plus Project Peak Hour Traffic Volumes - With Dominguez Road



LSA

FIGURE 6-10

Rocklin Crossings
Year 2025 Plus Project Saturday Peak Hour Traffic Volumes - With Dominguez Road

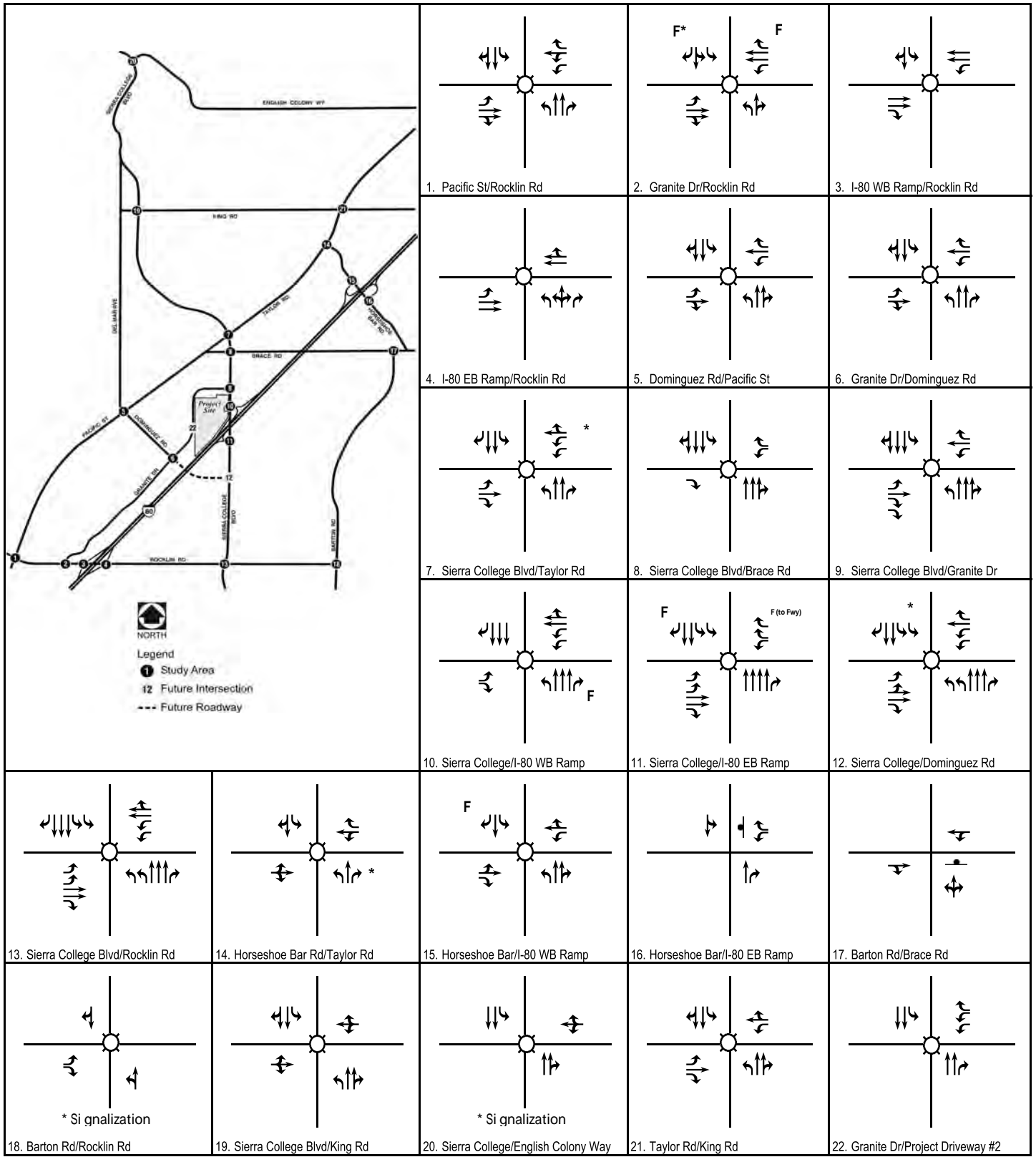


FIGURE 6-11

LSA
 Legend
 ○ Signal
 — Stop Sign
 F Free Right Turn
 * Proposed Mitigation

Rocklin Commons
 Year 2025 Plus Project With Dominguez Road - Mitigation

Table 6-14: 2025 Plus Project With Dominguez Road Condition Peak Hour Intersection Level of Service Summary

Intersection		Control Type	2025 No Project with Dominguez Road Condition						2025 Plus Project with Dominguez Road 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	Signalized	0.775	C	0.817	D	0.585	A	0.781	C	0.841	D ²	0.618	B
2	Rocklin Road/Granite Drive	Signalized	0.693	B	1.015	F	0.685	B	0.704	C	1.067	F	0.729	C
3	Rocklin Road/I-80 Westbound Ramps	Signalized	26.2 sec	C	42.7 sec	D	28.1 sec	C	26.3 sec	C	44.2 sec	D	28.3 sec	C
4	Rocklin Road/I-80 Eastbound Ramps	Signalized	46.3 sec	D	36.7 sec	D	15.2 sec	B	46.6 sec	D	37.6 sec	D	15.2 sec	B
5	Dominguez Road/Pacific Street ¹	Signalized	0.608	B	0.836	D	0.444	A	0.609	B	0.842	D ²	0.454	A
6	Dominguez Road/Granite Drive ¹³	Signalized	0.511	A	0.596	A	0.553	A	0.515	A	0.609	B	0.553	A
7	Sierra College Boulevard/Taylor Road ¹ (Loomis)	Signalized	0.965	E	0.949	E	0.566	A	0.991	E ²	1.032	F	0.684	B
8	Sierra College Boulevard/Brace Road ¹ (Loomis)	Signalized	0.570	A	0.720	C	0.330	A	0.596	A	0.790	C	0.473	A
9	Sierra College Boulevard/Granite Drive	Signalized	0.674	B	0.605	B	0.544	A	0.705	C	0.708	C	0.687	B
10	Sierra College Boulevard/I-80 Westbound Ramps	Signalized	11.7 sec	B	9.5 sec	A	6.2 sec	A	12.3 sec	B	53.5 sec	D	46.5 sec	D

Intersection		Control Type	2025 No Project with Dominguez Road Condition						2025 Plus Project with Dominguez Road 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
11	Sierra College Boulevard/I-80 Eastbound Ramps	Signalized	13.1 sec	B	15.3 sec	B	22.1 sec	C	13.1 sec	B	26.2 sec	C	28.4 sec	C
12	Sierra College Boulevard/Dominguez Road	-	0.571	A	0.810	D	0.872	D	0.577	A	0.860	D	0.921	E
13	Sierra College Boulevard/Rocklin Road ¹	Signalized	0.867	D	0.756	C	0.492	A	0.877	D ²	0.795	C	0.558	A
14	Horseshoe Bar Road/Taylor Road ¹ (Loomis)	Signalized	0.956	E	0.968	E	0.703	C	0.966	E ²	1.017	F	0.772	C
15	Horseshoe Bar Road/I-80 Westbound Ramps ¹ (Loomis)	Signalized	22.7 sec	C	21.5 sec	C	22.6 sec	C	22.7 sec	C	21.5 sec	C	22.6 sec	C
16	Horseshoe Bar Road/I-80 Eastbound Ramps ¹³ (Loomis)	Unsignalized	31.3 sec	D	40.3 sec	E	16.1 sec	C	31.9 sec	D ²	43.9 sec	E ²	16.8 sec	C
17	Barton Road/Brace Road ¹³ (Loomis)	Unsignalized	90.6 sec	F	59.8 sec	F	12.3 sec	B	96.2 sec	F ²	76.1 sec	F ²	13.3 sec	B
18	Barton Road/Rocklin Road ¹³ (Loomis)	Unsignalized	346.4 sec	F	23.1 sec	C	18.1 sec	C	383.6 sec	F	30.6 sec	D	26.0 sec	D
19	Sierra College Boulevard/King Road ¹ (Loomis)	Signalized	0.711	C	0.844	D	0.529	A	0.715	C	0.867	D ²	0.559	A

Intersection		Control Type	2025 No Project with Dominguez Road Condition						2025 Plus Project with Dominguez Road 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
20	Sierra College Boulevard/English Colony Way ¹³ (Placer County)	Unsignalized	315.4 sec	F	816.6 sec	F	40.3 sec	E	336.6 sec	F ²	*	F	58.1 sec	F
21	Taylor Road/King Road ¹ (Loomis)	Signalized	0.983	E	0.604	B	0.688	B	0.989	E ²	0.624	B	0.715	C
22	Granite Drive/Project Driveway #2	-	-	-	-	-	-	-	0.201	A	0.310	A	0.223	A

Notes:

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

LOS C required for these intersections.

¹ 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.

Peak Hour volumes meet Signal Warrant

³ #3 of the MUTCD Delay exceeds 1000 seconds

* seconds



Exceeds level of service criteria



(Shade) = Significant Impact

Table 6-15: 2025 With Dominguez Road Daily Roadway Segment Level of Service Summary

Roadway	Segment	Capacity	Capacity Configuration	2025 No Project			2025 Plus Project		
				Volume	V/C	LOS	Volume	V/C	LOS
Taylor Road	King Road and Horseshoe Bar Road ¹ (Loomis)	15,000	Two-lane Collector	19,377	1.29	F	20,527	1.37	F
	Horseshoe Bar Road and Sierra College Boulevard ¹ (Loomis)	15,000	Two-lane Collector	14,089	0.94	E	15,579	1.04	F
	Sierra College Boulevard and City Limits ¹ (Loomis)	15,000	Two-lane Collector	16,764	1.12	F	16,964	1.13	F
Pacific Street	City Limits and Dominguez Road ¹	30,000	Four-lane Undivided Arterial	16,824	0.56	A	16,964	0.57	A
	Dominguez Road and Rocklin Road ¹	30,000	Four-lane Undivided Arterial	22,767	0.76	C	22,887	0.76	C
Rocklin Road	Pacific Street and Granite Drive	30,000	Four-lane Undivided Arterial	38,004	1.27	F	38,294	1.28	F
	I-80 and Sierra College Boulevard	30,000	Four-lane Undivided Arterial	14,373	0.48	A	14,533	0.48	A
	Sierra College Boulevard and Barton Road ¹ (Loomis)	30,000	Four-lane Undivided Arterial	14,765	0.49	A	15,765	0.53	A
Barton Road	Rocklin Road and Brace Road ¹ (Loomis)	15,000	Two-lane Collector	7,049	0.47	A	7,119	0.47	A
Horseshoe Bar Road	I-80 and Brace Road ¹ (Loomis)	15,000	Two-lane Collector	9,795	0.65	B	10,085	0.67	B
Brace Road	I-80 and Barton Road ¹ (Loomis)	15,000	Two-lane Collector	9,523	0.63	B	9,953	0.66	B
	I-80 and Sierra College Boulevard ¹ (Loomis)	15,000	Two-lane Collector	7,704	0.51	A	9,324	0.62	B
Sierra College Boulevard	English Colony Way and King Road ¹ (Placer County)	30,000	Four-lane Undivided Arterial	26,983	0.90	D	28,273	0.94	E
	King Road and Taylor Road ¹ (Loomis)	30,000	Four-lane Undivided Arterial	22,657	0.76	C	23,947	0.80	C

Roadway	Segment	Capacity	Capacity Configuration	2025 No Project			2025 Plus Project		
				Volume	V/C	LOS	Volume	V/C	LOS
	Taylor Road and I-80	50,525	Six-lane Arterial	31,529	0.62	B	36,339	0.72	C
	I-80 and Dominguez Road	50,525	Six-lane Arterial	31,126	0.62	B	34,721	0.69	B
	Dominguez Road and Rocklin Road ¹	50,525	Six-lane Arterial	35,336	0.70	B	38,301	0.76	C
Granite Drive	Dominguez Road and Sierra College Boulevard ¹	30,000	Four-lane Undivided Arterial	8,909	0.30	A	9,769	0.33	A
	Dominguez Road and Rocklin Road ¹	30,000	Four-lane Undivided Arterial	13,376	0.45	A	14,156	0.47	A
Dominguez Road	Taylor Road and Granite Drive ¹	15,000	Two-lane Collector	7,565	0.50	A	7,700	0.51	A
King Road	Sierra College Boulevard and Taylor Road ¹ (Loomis)	15,000	Two-lane Collector	7,005	0.47	A	7,005	0.47	A

Notes:

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

Exceeds level of service criteria

Roadway Improvements consistent with City of Rocklin General Plan, Town of Loomis General Plan, and the Horseshoe Bar/Penryn Community Plan

Table 6-16: 2025 With Dominguez Road Peak Hour Roadway Segment Level of Service Summary

Roadway	Segment	Capacity	2025 No Project			2025 Plus Project		
			Volume	V/C	LOS	Volume	V/C	LOS
Taylor Road	King Rd and Horseshoe Bar Rd (Loomis)							
	A.M. Peak Hour Northbound	1,650	929	0.56	A	939	0.57	A
	A.M. Peak Hour Southbound	1,650	1,168	0.71	C	1,184	0.72	C
	Total A.M. Peak Hour	3,300	2,097	0.64	B	2,123	0.64	B
	P.M Peak Hour Northbound	1,650	1,207	0.73	C	1,267	0.77	C
	P.M Peak Hour Southbound	1,650	963	0.58	A	1,018	0.62	B
	Total P.M. Peak Hour	3,300	2,170	0.66	B	2,285	0.69	B
	SAT Peak Hour Northbound	1,650	703	0.43	A	778	0.47	A
	SAT Peak Hour Southbound	1,650	720	0.44	A	802	0.49	A
	Total SAT Peak Hour	3,300	1,423	0.43	A	1,580	0.48	A
Taylor Road	Horseshoe Bar Rd and Sierra College Blvd (Loomis)							
	A.M. Peak Hour Northbound	1,650	476	0.29	A	491	0.30	A
	A.M. Peak Hour Southbound	1,650	662	0.40	A	686	0.42	A
	Total A.M. Peak Hour	3,300	1,138	0.34	A	1,177	0.36	A
	P.M Peak Hour Northbound	1,650	679	0.41	A	767	0.46	A
	P.M Peak Hour Southbound	1,650	631	0.38	A	712	0.43	A
	Total P.M. Peak Hour	3,300	1,310	0.40	A	1,479	0.45	A
	SAT Peak Hour Northbound	1,650	489	0.30	A	573	0.35	A
	SAT Peak Hour Southbound	1,650	493	0.30	A	585	0.35	A
	Total SAT Peak Hour	3,300	982	0.30	A	1,158	0.35	A
Taylor Road	Sierra College Blvd and City Limits (Loomis)							
	A.M. Peak Hour Northbound	1,650	360	0.22	A	363	0.22	A
	A.M. Peak Hour Southbound	1,650	888	0.54	A	890	0.54	A
	Total A.M. Peak Hour	3,300	1,248	0.38	A	1,253	0.38	A
	P.M Peak Hour Northbound	1,650	874	0.53	A	884	0.54	A
	P.M Peak Hour Southbound	1,650	574	0.35	A	584	0.35	A
	Total P.M. Peak Hour	3,300	1,448	0.44	A	1,468	0.44	A
	SAT Peak Hour Northbound	1,650	377	0.23	A	391	0.24	A
	SAT Peak Hour Southbound	1,650	321	0.19	A	334	0.20	A
	Total SAT Peak Hour	3,300	698	0.21	A	725	0.22	A
Rocklin Road	Pacific St and Granite Dr							

Roadway	Segment	Capacity	2025 No Project			2025 Plus Project		
			Volume	V/C	LOS	Volume	V/C	LOS
	A.M. Peak Hour Eastbound	3,300	1,144	0.35	A	1,157	0.35	A
	A.M. Peak Hour Westbound	3,300	1,300	0.39	A	1,308	0.40	A
	Total A.M. Peak Hour	6,600	2,444	0.37	A	2,465	0.37	A
	P.M Peak Hour Eastbound	3,300	1,564	0.47	A	1,607	0.49	A
	P.M Peak Hour Westbound	3,300	1,406	0.43	A	1,453	0.44	A
	Total P.M. Peak Hour	6,600	2,970	0.45	A	3,060	0.46	A
	SAT Peak Hour Eastbound	3,300	1,017	0.31	A	1,082	0.33	A
	SAT Peak Hour Westbound	3,300	668	0.20	A	728	0.22	A
	Total SAT Peak Hour	6,600	1,685	0.26	A	1,810	0.27	A
Sierra College Boulevard	English Colony Way and King Rd (Placer County)							
	A.M. Peak Hour Northbound	3,300	961	0.29	A	973	0.29	A
	A.M. Peak Hour Southbound	3,300	1,281	0.39	A	1,299	0.39	A
	Total A.M. Peak Hour	6,600	2,242	0.34	A	2,272	0.34	A
	P.M Peak Hour Northbound	3,300	1,303	0.39	A	1,370	0.42	A
	P.M Peak Hour Southbound	3,300	1,108	0.34	A	1,170	0.35	A
	Total P.M. Peak Hour	6,600	2,411	0.37	A	2,540	0.38	A
	SAT Peak Hour Northbound	3,300	711	0.22	A	796	0.24	A
	SAT Peak Hour Southbound	3,300	1,009	0.31	A	1,101	0.33	A
	Total SAT Peak Hour	6,600	1,720	0.26	A	1,897	0.29	A

Impacts And Mitigation – 2025 with Dominguez Road Scenario

Although the intersections of Rocklin Road/Pacific Street, Dominguez Road/Pacific Street, Sierra College Boulevard/Rocklin Road, Barton Road/Brace Road, Sierra College Boulevard/King Road, and Taylor Road/King Road operate unsatisfactorily, in the 2025 plus project with Dominguez Road scenario the project would not increase the v/c ratio by 0.05 or more in case of signalized intersections and would not add more than 5 percent of the total traffic at an unsignalized intersection. As a result, the project contribution of traffic at these intersections is not considered a significant impact.

The proposed mitigations for the 2025 plus project with Dominguez Road scenario are shown in previous Figure 6-11. Per the Town of Loomis¹ and Horseshoe Bar/Penryn Community Plans, Sierra College Boulevard is planned to be widened to a four-lane arterial between Taylor Road and SR-193. In addition, the Town of Loomis has a proposed signal installation at the intersection of Barton Road/Rocklin Road for the near future.

¹ Brian Fragio, Town of Loomis. Personal communication, January 17, 2007.

CI-8: Rocklin Road/Granite Drive with Dominguez Road. *The addition of project-related traffic to baseline 2025 No project traffic volumes would degrade traffic operations at the already-deficient intersection, which is operating at LOS F during the p.m. peak hour in the 2025 no project With Dominguez Road scenario. Because this intersection already operates unacceptably and the project's contribution would be greater than 5 percent, this impact would be considered **potentially significant**.*

Mitigation Measure CI-8 Rocklin Road/Granite Drive with Dominguez Road.

Implement Mitigation Measure TC-1.

Level Of Significance after Mitigation

With the implementation of the identified mitigation measure, the project's incremental contribution to this cumulative impact would be mitigated (v/c reduced from 1.067 to 0.917) and this impact would be considered *less-than-significant*.

CI-9: Sierra College Boulevard/Taylor Road (Loomis) with Dominguez Road. *The addition of project-related traffic to baseline 2025 No project traffic volumes would degrade traffic operations at the already-deficient Sierra College Boulevard/Taylor Road (Loomis) intersection, which is operating at LOS E during the p.m. peak hour in 2025 no project With Dominguez Road scenario. Because this intersection already operates unacceptably and the project's contribution would be greater than 5 percent, this impact would be considered **potentially significant**.*

Mitigation Measure CI-9: Improvements to Sierra College Boulevard/Taylor Road (Loomis) with Dominguez Road.

Implement Mitigation Measure TC-2.

Level of Significance after Mitigation

In correspondence with the City, the Town of Loomis has preliminarily indicated a willingness to cooperate with the City in implementing improvements at this intersection, but has stopped short of agreeing to the specific improvements described above, which reflect the best professional judgment of the City and its traffic engineering consultants. The City is hopeful, though not certain, that Loomis will ultimately agree to install these improvements (though at the expense of the project applicant).

With the implementation of the identified mitigation measure, the project's incremental contribution to this cumulative impact would be mitigated (1.032 v/c reduced to 0.932 in the p.m.), and this impact would be considered *less-than-significant*. Because the Town of Loomis controls what occurs at the intersection, however, the City conservatively concludes that, at the time of action by its City Council, the impact would be treated as *significant and unavoidable*, given that the City has no control over Loomis and thus cannot take for granted that the improvements contemplated by the mitigation will be constructed. Furthermore, although Mitigation Measure CI-9 requires the applicant to try to enter into an agreement with Loomis by which the applicant will be responsible for the

improvements, the City has no way to ensure that Loomis will cooperate with the applicant pursuant to that measure. An agreement requires two cooperating parties, and the City cannot force Loomis to cooperate if it chooses not to do so. For these reasons, consistent with CEQA Guidelines section 15091, subdivision (a)(2), the City concludes that Loomis can and should cooperate with the City in implementing the mitigation. With such action by Loomis, the impact of the project would be rendered less than significant, though at present, as noted above, the City considers the impact *significant and unavoidable*.

CI-10: Sierra College Boulevard/Dominguez Road with Dominguez Road. *The addition of project-related traffic to baseline 2025 No project traffic volumes would degrade traffic operations at intersection, which is operating at LOS D during the Saturday peak hour to LOS E in the 2025 with Dominguez with project condition. Therefore, the project's impacts on this intersection would be considered **potentially significant**.*

The proposed extension of Dominguez Road will create a deficiency during the Saturday peak hour at this intersection in the 2025 no project with Dominguez scenario. The proposed intersection striping will not be sufficient to accommodate project traffic in the 2025 with Dominguez Road scenario. However, if the currently proposed lane configuration were restriped to accommodate dual southbound left-turn lanes and two southbound through lanes at the time of its construction, then the intersection would operate at a satisfactory LOS.

Mitigation Measure CI-10 Sierra College Boulevard/Dominguez Road with Dominguez Road.

The project applicant shall be responsible for restriping the currently proposed lane configuration at Dominguez Road to accommodate dual southbound left-turn lanes and two southbound through lanes at the time of its construction. This configuration can exist in the same right-of-way currently planned for this intersection.

Level of Significance after Mitigation

With the implementation of the identified mitigation measure, the project's impact would be mitigated to LOS D. Under City criteria, LOS D is acceptable at an intersection within 0.5 miles of a freeway access location (Sierra College Boulevard/I-80 interchange)] and this impact would be considered *less-than-significant*.

CI-11: Horseshoe Bar Road/Taylor Road (Loomis) with Dominguez Road. *The addition of project-related traffic to baseline 2025 No project traffic volumes traffic volumes would degrade traffic operations at the already-deficient Horseshoe Bar Road/Taylor Road (Loomis) intersection which is operating at LOS E with a volume to capacity ratio of 0.968 during the p.m. peak hour in the 2025 with Dominguez with project condition. Because this intersection already operates unacceptably and the project's contribution would be greater than 5 percent, this impact would be considered **potentially significant**.*

Mitigation Measure CI-11 Horseshoe Bar Road/Taylor Road (Loomis) with Dominguez Road.

Implement Mitigation Measure TC-6.

Level of Significance after Mitigation

The identified mitigation would formalize an exclusive right turn lane increasing capacity that does occasionally occur at this time without the striping. The northbound right-turn lane can be accommodated within the existing improvements. On Taylor Road northbound there is a 27 foot curb lane that accommodates a through lane and some on-street parking. Approaching Horseshoe Bar Road the parking could be restricted for about 100 feet before the intersection and a “Right Turn Only” lane striped. Parking for two to three vehicles will be displaced. The loss of these two to three parking spaces can be offset by the availability of offsite parking at the existing public parking lot for the train station which is in the proximity of these existing parking spaces along Taylor Road. With the implementation of the identified mitigation measure, the intersection would operate at LOS E with a volume to capacity ratio of 0.936 (lower than without project conditions) in the p.m. peak hour and this impact would be considered *less-than-significant*. Because the Town of Loomis controls what occurs at the intersection, however, the City conservatively concludes that, at the time of action by its City Council, the impact would be treated as *significant and unavoidable*, given that the City has no control over Loomis and thus cannot take for granted that the improvements contemplated by the mitigation will be constructed. Furthermore, although Mitigation Measure TC-7 requires the applicant to try to enter into an agreement with Loomis by which the applicant will be responsible for the improvements, the City has no way to ensure that Loomis will cooperate with the applicant pursuant to that measure. An agreement requires two cooperating parties, and the City cannot force Loomis to cooperate if it chooses not to do so. For these reasons, consistent with CEQA Guidelines section 15091, subdivision (a)(2), the City concludes that Loomis can and should cooperate with the City in implementing the mitigation. With such action by Loomis, the impact of the project would be rendered less than significant, though at present, as noted above, the City considers the impact *significant and unavoidable*.

CI-12: Barton Road/Rocklin Road (Loomis) with Dominguez Road. *The addition of project-related traffic to baseline 2025 No project traffic volumes would degrade traffic operations at the already-deficient Barton Road/Rocklin Road (Loomis) intersection, which is operating at LOS F during the a.m. peak hour and from an acceptable LOS C during the p.m. and Saturday peak hour to LOS D in the 2025 with Dominguez with project condition. Therefore, the project’s impacts on this intersection would be considered **potentially significant**.*

Mitigation Measure CI-12: Improvements to Barton Road/Rocklin Road (Loomis) with Dominguez Road.

Implement Mitigation Measure CI-6.

Level of Significance after Mitigation

Although the City and its traffic consultants have taken the Town of Loomis General Plan, the Loomis Capital Improvement Program, and other expressions of Loomis transportation policy into account in formulating the recommended mitigation measure and the specific improvements contemplated therein, which reflect the best professional judgment of the City and its traffic engineering consultants, the City is not certain the Loomis will be satisfied with all aspects of these suggestions. The City is hopeful, though not certain, that Loomis will ultimately agree to install these improvements.

The intersection is forecast to meet the peak-hour traffic signal warrant in the cumulative with Dominguez Road extension scenario and would continue to meet the peak hour traffic signal warrant with the addition of project traffic. With the implementation of the identified mitigation measure, the project's direct incremental impact would be mitigated, and the intersection would operate at LOS A in the a.m. and Saturday peak hour and LOS C in the p.m. peak hour. Thus, this impact would be considered *less-than-significant*. Because the Town of Loomis controls what occurs at the intersection, however, the City conservatively concludes that, at the time of action by its City Council, the impact would be treated as *significant and unavoidable*, given that the City has no control over Loomis and thus cannot take for granted that the improvements contemplated by the mitigation will be constructed. Furthermore, although Mitigation Measure CI-6 requires the applicant to try to enter into an agreement with Loomis by which the applicant will make fair share payments to the Town of Loomis, the City has no way to ensure that Loomis will cooperate with the applicant pursuant to that measure. An agreement requires two cooperating parties, and the City cannot force Loomis to cooperate if it chooses not to do so. For these reasons, consistent with CEQA Guidelines section 15091, subdivision (a)(2), the City concludes that Loomis can and should cooperate with the City in implementing the mitigation. With such action by Loomis, the impact of the project would be rendered less than significant, though at present, as noted above, the City considers the impact *significant and unavoidable*.

CI-13: Sierra College Boulevard/English Colony Way (Placer County) with Dominguez Road.

*The addition of project-related traffic to baseline 2025 No project traffic volumes would degrade traffic operations at the already-deficient Sierra College Boulevard/English Colony Way (Placer County) intersection, which is operating at LOS F during the p.m. peak hour and LOS E during the Saturday peak hour in the 2025 with Dominguez Road with project scenario. Because this intersection already operates unacceptably and the project's contribution would be greater than 5 percent, this impact would be considered **potentially significant**.*

Mitigation Measure CI-13: Improvements to Sierra College Boulevard/English Colony Way (Placer County) with Dominguez Road.

Implement Mitigation Measure CI-7.

Level of Significance after Mitigation

With the implementation of the identified mitigation measure, the project's incremental contribution to this cumulative impact would be mitigated to LOS D in the p.m. peak hour and LOS A in the Saturday peak hour. The intersection is forecast to meet the peak-hour traffic signal warrant in the cumulative with Dominguez Road extension scenario. The intersection would continue to meet the peak hour traffic signal warrant with the addition of project traffic. Thus, this impact would be considered *less-than-significant*. Because the Placer County controls what occurs at the intersection, however, the City conservatively concludes that, at the time of action by its City Council, the impact would be treated as *significant and unavoidable*, given that the City has no control over County and thus cannot take for granted that the improvements contemplated by the mitigation will be constructed. Furthermore, although Mitigation Measure CI-7 requires the applicant to try to enter into an agreement with the County by which the applicant will make fair share payments to the Placer County, the City has no way to ensure that the County will cooperate with the applicant pursuant to

that measure. An agreement requires two cooperating parties, and the City cannot force the County to cooperate if it chooses not to do so. For these reasons, consistent with CEQA Guidelines section 15091, subdivision (a)(2), the City concludes that the County can and should cooperate with the City in implementing the mitigation. With such action by the County, the impact of the project would be rendered less than significant, though at present, as noted above, the City considers the impact *significant and unavoidable*.

Freeway Mainline Analysis

Year 2025 Freeway Segment Traffic Volumes. The following describes in detail the methodology employed to determine the a.m. and p.m. peak hour freeway segment traffic volumes for year 2025 without project conditions:

1. The difference between model volumes for baseline (2000) and future year (2025) without project peak hour freeway segment volumes was calculated. This difference defines the growth in traffic over the 25-year period.
2. The incremental growth in freeway segment volumes between baseline (2000) and future year (2025) was factored to reflect the forecast growth between existing (2006) and 2025. For this purpose, linear growth between the 2000 base condition and the forecast 2025 condition was assumed. Since the increment between 2006 and 2025 is 19 years of the 25-year time span, a factor of 0.76 (i.e., 19/25) was used.
3. The forecast growth in freeway segment volumes was added to the existing 2006 freeway segment volumes, resulting in post-processed forecast year 2025 without project a.m. and p.m. peak hour freeway segment volumes.

Project traffic was added to the year 2025 without project a.m. and p.m. peak hour freeway segment volumes to develop year 2025 with project a.m. and p.m. peak hour freeway segment volumes.

CI-14: Freeway Mainlines. *The freeway mainlines would operate acceptably during the cumulative scenario with the addition of project traffic. Therefore, the project's cumulative impacts on the freeway mainlines would be considered less- than-significant.*

In order to assess the operation of the highway system in the vicinity of the project in 2025 Without and With Project conditions, the I-80 freeway mainline between the Horseshoe Bar Road and Atlantic Avenue interchanges and the SR-65 mainline between the I-80 junction and Blue Oaks Boulevard were analyzed for both Without and With Dominguez Road extension scenarios. The Caltrans I-80 freeway improvement project¹ between Riverside Avenue/Auburn Boulevard and SR-65 proposes to increase freeway capacity by adding HOV lane and auxiliary lanes by 2009. Since the proposed freeway improvement project has CEQA clearance and funding, the improvements are used in the baseline conditions. Therefore, the I-80 freeway mainline between Atlantic Avenue and SR-65 was

¹ Freeway Improvement Project on Interstate 80 from 1.1 km west of the Sacramento/Placer County line to 1.56 km east of the Route 65 connector in Placer County, April 2003, Caltrans, <http://www.dot.ca.gov/dist3/projects/SacPla80/index.htm> referenced March 2008.

analyzed as a future eight-lane (mainline) freeway, and the freeway mainline segment between SR-65 and Horseshoe Bar Road interchange was analyzed as six-lane freeway. As shown in Table 6-17, all freeway mainline segments along I-80 are projected to operate at LOS D or better in 2025 (for both Without and With Dominguez Road extension scenarios) with the future eight-lane freeway for the segment between Atlantic Avenue and SR-65. Also, all freeway segments along SR-65 are projected to operate at LOS D or better in 2025. Therefore, the project's cumulative impacts on the freeway mainlines would be considered *less-than-significant*. The HCS worksheets are provided in Appendix E.

Mitigation Measure

No mitigation is necessary for impacts considered *less-than-significant*.

Impacts Of Traffic Mitigation Measures

The CEQA Guidelines section 15126.4, subdivision (a)(1)(D), requires that if a mitigation measure incorporated into a project may have significant adverse effects on the environment, then the Draft EIR must analyze such impacts as an integral part of the whole project. CEQA Guidelines section 15126.4, subdivision (a)(1)(D), states:

If a mitigation measure would cause one or more significant effects in addition to those that would be caused by the project as proposed, the effects of the mitigation measure shall be discussed but in less detail than the significant effects of the project as proposed.

Although the City has not identified any *significant* impacts associated with proposed mitigation measures, the City has nevertheless included below a summary of potential impacts of mitigation measures that require the project applicant to construct physical improvements. Furthermore, while not specifically required by CEQA, a summary of potential impacts of mitigation measures is provided for those impacts that merely require the payment of fees. The CEQA Guidelines clearly recognize the use of fee payment as mitigation for a project's otherwise "cumulatively considerable" incremental contribution to significant cumulative impacts. If a project is required to fund its fair share of a mitigation measure designed to alleviate the cumulative impact, a project's contribution to that impact is considered less than cumulatively considerable. (CEQA Guidelines, § 15130, subd. (a)(3); *Save Our Peninsula Committee v. Monterey County Bd. of Supervisors* (2001) 87 Cal.App.4th 99, 140.) Where an agency has an existing program by which mitigation measures such as traffic improvements can be funded on a fair-share basis through the collection of fees, an EIR's discussion of traffic mitigation is adequate if it explains how the fee program will address the impact. (*Save Our Peninsula Committee*, 87 Cal.App.4th at p. 141).

In general, therefore, an EIR need not specifically analyze the impacts of the proposed improvements identified in a mitigation measure where the mitigation measure requires only that the project applicant to pay a traffic impact fee in an amount that constitutes the project's fair share contribution to the construction of improvements necessitated in part by the project impacts. In such instances, the identified improvements are not a "part" of the project (in "whole" or otherwise), but represent a separate, independent project that will someday benefit the project. CEQA does not require a lead agency, in preparing an EIR for a discrete development project, "to consider a mitigation measure

Table 6-17: Freeway Segment Level of Service Summary

Roadway Segment		Number of Lanes	Baseline											
			Existing Plus Approved						Existing Plus Approved Plus Project					
			AM			PM			AM			PM		
			Volume	Density	LOS	Volume	Density	LOS	Volume	Density	LOS	Volume	Density	LOS
I-80 EB	Atlantic Street to Taylor Road	3	4010	21.9	C	6844	>45	F	4027	22.0	C	6905	>45	F
	Taylor Road to RTE 65	3	4157	22.8	C	6456	>45	F	4175	22.9	C	6525	>45	F
	RTE 65 to Rocklin Road	3	3238	17.6	B	5088	29.5	D	3268	17.8	B	5200	30.5	D
	Rocklin Road to Sierra College Boulevard	3	2643	14.4	B	4996	28.7	D	2674	14.6	B	5109	29.6	D
	Sierra College Boulevard to Horseshoe Bar Road	3	2547	13.9	B	4745	26.7	D	2556	13.9	B	4779	27.0	D
RTE 65 NB	I-80 to Harding Boulevard	2	3799	39.1	E	4144	>45	F	3811	39.4	E	4187	>45	F
	Harding Boulevard to Blue Oaks Boulevard	2	3612	35.2	E	3910	41.9	E	3617	35.3	E	3927	42.3	E
I-80 WB	Atlantic Street to Taylor Road	3	6267	44.5	E	5236	30.8	D	6275	44.7	E	5290	31.3	D
	Taylor Road to RTE 65	3	5527	33.7	D	4964	28.4	D	5538	33.9	D	5037	29	D
	RTE 65 to Rocklin Road	3	4298	23.7	C	3939	21.5	C	4316	23.8	C	4057	22.2	C
	Rocklin Road to Sierra College Boulevard	3	4526	25.2	C	3549	19.3	C	4545	25.3	C	3676	20.0	C
	Sierra College Boulevard to Horseshoe Bar Road	3	4369	24.1	C	3311	18.0	C	4374	24.2	C	3348	18.2	C
RTE 65 SB	I-80 to Harding Boulevard	2	3515	33.5	D	3324	30.5	D	3521	33.6	D	3369	31.1	D
	Harding Boulevard to Blue Oaks Boulevard	2	3344	30.8	D	3124	27.8	D	3347	30.8	D	3142	28.0	D
Roadway Segment		Number of Lanes	Without Dominguez Road Extension											
			2025 No Project						2025 With Project					
			AM			PM			AM			PM		
			Volume	Density	LOS	Volume	Density	LOS	Volume	Density	LOS	Volume	Density	LOS
I-80 EB	Atlantic Street to Taylor Road	4	5384	22.1	C	7419	33.6	D	5401	22.2	C	6751	34.2	D
	Taylor Road to RTE 65	4	5320	21.8	C	6809	29.2	D	5338	21.9	C	6349	29.6	D
	RTE 65 to Rocklin Road	3	3995	21.9	C	5052	28.2	D	4025	22.0	C	4915	29.1	D
	Rocklin Road to Sierra College Boulevard	3	3623	19.7	C	5039	28.1	D	3654	19.9	C	4823	29.0	D
	Sierra College Boulevard to Horseshoe Bar Road	3	3313	18.1	C	5110	29.3	D	3322	18.1	C	4696	29.6	D
RTE 65 NB	I-80 to Harding Boulevard	3	4708	28.0	D	5010	30.3	D	4719	28.1	D	4077	30.7	D
	Harding Boulevard to Blue Oaks Boulevard	3	4360	26.2	D	4825	28.9	D	4364	25.4	C	3883	29.0	D
I-80 WB	Atlantic Street to Taylor Road	4	6538	27.9	D	6764	29	D	6546	28.0	D	5166	29.3	D
	Taylor Road to RTE 65	4	5605	23.1	C	6236	25.8	C	5616	23.2	C	4870	26.2	D
	RTE 65 to Rocklin Road	3	4091	22.4	C	4852	26.6	D	4109	22.5	C	3787	27.5	D
	Rocklin Road to Sierra College Boulevard	3	4613	25.8	C	4412	23.6	C	4632	25.9	C	3384	24.4	C

Roadway		Segment	Number of Lanes	With Dominguez Road Extension											
				2025 No Project						2025 With Project					
				AM			PM			AM			PM		
				Volume	Density	LOS	Volume	Density	LOS	Volume	Density	LOS	Volume	Density	LOS
		Sierra College Boulevard to Horseshoe Bar Road	3	4641	26.0	C	4026	21.8	C	4647	26.0	D	3260	22.0	C
RTE 65 SB		I-80 to Harding Boulevard	3	4301	24.9	C	4170	23.7	C	4308	25.0	C	3259	24.0	C
		Harding Boulevard to Blue Oaks Boulevard	3	4297	26.0	D	4023	23.9	C	4299	24.9	C	3098	23.1	C
I-80 EB		Atlantic Street to Taylor Road	4	5395	22.2	C	7398	34.0	D	5411	22.2	C	7459	34.5	D
		Taylor Road to RTE 65	4	5320	21.8	C	6770	29.4	D	5339	21.9	C	6839	29.8	D
		RTE 65 to Rocklin Road	3	3992	21.8	C	4951	28.3	D	4022	22.0	C	5063	29.2	D
		Rocklin Road to Sierra College Boulevard	3	3648	19.9	C	4947	28.3	D	3679	20.1	C	5060	29.2	D
		Sierra College Boulevard to Horseshoe Bar Road	3	3316	18.1	C	5075	29.3	D	3325	18.1	C	5110	29.6	D
RTE 65 NB		I-80 to Harding Boulevard	3	4712	28.0	D	4949	30.1	D	4724	28.1	D	4992	30.5	D
		Harding Boulevard to Blue Oaks Boulevard	3	4345	25.2	C	4802	28.8	D	4350	25.3	C	4819	29.0	D
I-80 WB		Atlantic Street to Taylor Road	4	6522	27.8	D	6758	29.3	D	6530	27.9	D	6812	29.6	D
		Taylor Road to RTE 65	4	5598	23.1	C	6200	26.0	D	5609	23.1	C	6273	27.4	D
		RTE 65 to Rocklin Road	3	4090	22.4	C	4736	26.7	D	4108	22.5	C	4854	27.5	D
		Rocklin Road to Sierra College Boulevard	3	4607	25.7	C	4263	23.5	C	4625	25.9	C	4390	24.3	C
		Sierra College Boulevard to Horseshoe Bar Road	3	4640	26.0	C	4000	21.9	C	4645	26.0	D	4036	22.1	C
RTE 65 SB		I-80 to Harding Boulevard	3	4297	24.9	C	4122	23.7	C	4304	25.0	C	4167	24.0	C
		Harding Boulevard to Blue Oaks Boulevard	3	4300	24.9	C	3997	22.9	C	4303	24.9	C	4015	23.0	C

Note:

Exceeds level of service criteria

which itself may constitute a project at least as complex, ambitious, and costly as project itself.” (*Concerned Citizens of South Central Los Angeles v. Los Angeles Unified School District* (2d Dist. 1994) 24 Cal.App.4th 826, 842.) Where a project is only conditioned on the payment of the traffic impact fee, and not on the construction of the improvement itself, an EIR is not required to analyze the impacts of the proposed improvements.

CI-15: Improvements Required by Mitigation Measure CI-4 Sierra College Boulevard/Taylor Road (Loomis) without Dominguez Road and Mitigation Measure CI-9: Sierra College Boulevard/Taylor Road (Loomis) with Dominguez Road. *All required improvements set forth in Mitigation Measure TC-2 may be accomplished within the limits of existing paved surfaces. In the westbound direction there is enough width available to accommodate the second left turn lane. No physical widening is required for these improvements. It is anticipated that all potential deleterious environmental effects to natural or cultural resources would have already been experienced (and presumably mitigated) with the construction of the existing intersection and no new significant impacts would result from the identified intersection restriping plan. Any impacts associated with the improvements called for under Mitigation Measure TC-3 would be less-than-significant.*

CI-16: Improvements Required by Mitigation Measure CI-5 Horseshoe Bar Road/Taylor Road (Loomis) without Dominguez Road and Mitigation Measure CI-11 Horseshoe Bar Road/Taylor Road (Loomis) with Dominguez Road. *All required improvements set forth in Mitigation Measure TC-6 may be accomplished within the limits of existing paved surfaces or within the existing improvements. On Taylor Road northbound there is a 27 foot curb lane that accommodates a through lane and some on-street parking. Approaching Horseshoe Bar Road the parking could be restricted for 100 feet before the intersection and a “Right Turn Only” lane striped. These improvements can all be constructed within the existing right-of-way. No physical widening is required for these improvements. Parking for two to three vehicles will be removed. The loss of these two to three parking spaces can be offset by the availability of offsite parking at the existing public parking lot for the train station which is in the proximity (within a few feet) of these existing parking spaces along Taylor Road. It is anticipated that all potential deleterious environmental effects to natural or cultural resources would have already been experienced (and presumably mitigated) with the construction of the existing intersection and no new significant impacts would result from the identified intersection restriping plan. Any impacts associated with the improvements called for under Mitigation Measure TC-7 would be less-than-significant.*

CI-17: Improvements Required by Mitigation Measure CI-6 Barton Road/Rocklin Road (Loomis) without Dominguez Road and Mitigation Measure CI-12 Barton Road/Rocklin Road (Loomis) with Dominguez Road. *Mitigation Measures CI-6 and CI-12 that require the project applicant shall pay its fair share toward the signalization of this intersection. This improvement can be constructed within the existing right-of-way and within the limits of existing paved surfaces. It is anticipated that all potential deleterious environmental effects to natural or cultural resources would have already been experienced (and presumably mitigated) with the construction of the existing intersection and no new*

significant impacts would result from the identified intersection signalization. Any impacts associated with the improvement called for under Mitigation Measures CI-6 and CI-12 would be less-than-significant.

CI-18: Improvements Required by Mitigation Measure CI-7 Sierra College Boulevard/English Colony Way (Placer County) without Dominguez Road and Mitigation Measure CI-13 Sierra College Boulevard/English Colony Way (Placer County) with Dominguez Road. *Mitigation Measures CI-7 and CI-13 require that the project applicant shall pay its fair share toward the signalization of this intersection. This improvement can be constructed within the existing right-of-way and within the limits of existing paved surfaces. It is anticipated that all potential deleterious environmental effects to natural or cultural resources would have already been experienced (and presumably mitigated) with the construction of the existing intersection and no new significant impacts would result from the identified intersection signalization. Any impacts associated with the improvement called for under Mitigation Measures CI-7 and CI-13 would be less-than-significant.*

CI-19: Improvements Required by Mitigation Measure CI-10 Sierra College Boulevard/Dominguez Road with Dominguez Road. *If the currently proposed lane configuration at the intersection of Sierra College Boulevard/Dominguez Road were restriped to accommodate dual southbound left-turn lanes and two southbound through lanes at the time of its construction, then the intersection would operate at a satisfactory LOS. This configuration can exist in the same right-of-way currently planned for this intersection. No additional physical widening is required for these improvements. It is anticipated that all potential deleterious environmental effects to natural or cultural resources would have already been experienced (and presumably mitigated) with the construction of the intersection and no new significant impacts would result from the identified intersection restriping plan. Any impacts associated with the improvements called for under Mitigation Measure CI-10 would be less-than-significant.*

Utilities

The evaluation of cumulative context for utilities and public services extends throughout the service areas. For wastewater, the cumulative context includes the South Placer Municipal Utility District (SPMUD) service area, which provides wastewater service to the City of Rocklin. For water supply, the cumulative context includes the Placer County Water Agency (PCWA) service area, which is divided into five zones that provide treated and raw water to Colfax, Auburn, Loomis, Rocklin, Lincoln, small portion of Roseville, unincorporated areas of western Placer County, and a small community in Martis Valley near Truckee. The evaluation areas for cumulative impacts to water and wastewater were limited to these service areas as they represent the worst-case range in which project-generated demand could contribute to potential cumulative impacts to utilities. Due to the size and nature of the project, it is unlikely that the project would result in water or wastewater capacity demand that would cause or contribute to impacts outside of this area.

Cumulative development would increase the demands on utilities and public services. However, the adequacy of the existing and planned utility infrastructure and public services capabilities to meet a

new project's needs is a key component of the City's project review process. Based on this review process, future development projects that exceed the capacity of the available utility infrastructure and public service capabilities would be required to provide the necessary improvements to ensure significant utility and public service impacts do not occur.

The proposed project is not anticipated to contribute significantly to the cumulative demand for utilities and public services. The Placer County Water Agency, which has adequate capacity and distribution capabilities to service the project site will provide municipal water service. The wastewater collection and treatment requirements of the project would be provided through a connection to the existing wastewater trunk lines in Granite Drive. (RSC Engineering pers. comm. with Richard Stein, South Placer Municipal Utility District Engineer, 2008)The electrical supply would be provided by existing power lines at the site that tap into the PG&E power grid. The demand for police, fire protection and emergency medical services, would increase with project implementation; however, the applicant/developer would be required to coordinate closely with local service providers to ensure adequate security and fire prevention measures are implemented at the site. Thus, the proposed project would result in *less-than-significant* cumulative utility and public service impacts.

The cumulative impacts associated with diverting American River water from the permanent American River Pump Station project were addressed in the 1999 Final EIR for the Water Forum Agreement (WFA) (EDAW/SWRI 1999). The WFA is an agreement between multiple stakeholders in the Sacramento metropolitan area and lower foothill regions, including numerous water providers such as PCWA. After seven years of meetings, sub-committee negotiations, and small group operations, the Water Forum members established a working agreement that provides water quality and reliability for all participants. The WFA's co-equal goals were to (1) provide a reliable and safe supply for the region's economic health and planned development through to the year 2030, and (2) preserve the fishery, wildlife, recreational, and aesthetic values of the Lower American River.

From these co-equal goals, the Water Forum signatories determined seven major elements that must be implemented during the next 30 years if the agreement is to be successful. As a signatory of the WFA, PCWA is actively participating in all seven elements. The elements specific to reliability of water supplies include:

- Increased Surface Water Diversions;
- Actions to Meet Customers' Needs While Reducing Diversion Impacts in Drier Years, Water Conservation;
- Groundwater Management; and
- The Water Forum Successor Effort.

Because the final EIR for the Water Forum was not challenged in court, the certified document constitutes a legally satisfactory analysis of all the issues addressed therein, including cumulative water supply impacts (see Public Resources Code Section 21167.2). The findings of the FEIR and the accompanying Water Forum Action Plan outlined a program whereby water delivery could be supplied to Water Forum Agreement stakeholders, including PCWA, through 2030, provided that the permanent pumping diversion facilities on the Sacramento River and at Auburn are constructed. The

document identified and thoroughly evaluated potential impacts on water supplies resulting from implementation of the Water Forum Agreement, including impacts on both the federal Central Valley Project (CVP) run by the United States Bureau of Reclamation and the State Water Project (SWP) operated by the California Department of Water Resources.

Notably, the water demand created by the project, which is estimated to be approximately 105 acre feet per year (AFY), would represent a tiny fraction of 1% of the total Water Forum Agreement delivery agreements, and thus would cause only a virtually negligible fraction of the cumulative impacts assessed in the Water Forum Agreement EIR. (For the sake of context, the American River Pump Station itself – which is only one of many large diversions contemplated by the WFA – involves 35,500 AFY.)

As described in that EIR, implementation of the Water Forum Agreement would result in several significant environmental impacts, most of which would be reduced to a less-than-significant level through implementation of mitigation. These include impacts on groundwater, water quality, fisheries resources and aquatic habitat, flood control, hydropower supply, vegetation and wildlife, recreation, land use and growth inducement, aesthetics, cultural resources, and soils and geology. Impacts that would remain significant or potentially significant after implementation of mitigation (i.e., significant and unavoidable) include:

- impacts on water quality in the Sacramento River and the Sacramento–San Joaquin Delta;
- impacts on Folsom Reservoir’s warmwater fisheries;
- impacts on fall-run Chinook salmon, and flow and temperature impacts on splittail (February–May);
- a decrease in deliveries to SWP customers;
- a decrease in deliveries to CVP customers;
- reduced rafting and boating opportunities on the lower American River;
- reduced Folsom Reservoir boating opportunities;
- reduced availability of Folsom Reservoir swimming beaches;
- land use and growth-inducing impacts in the water service study area; and
- effects of varying water levels on cultural resources in Folsom Reservoir.

The mitigation measures applied to these resource areas would partially reduce the impacts, but would not reduce them to a less-than-significant level. The Water Forum Agreement EIR determined that even after mitigation is applied to these resource areas, the level of significance after mitigation would remain significant and unavoidable. Even so, however, the contributions of the Rocklin Crossings to these significant cumulative impacts are less than cumulatively considerable, as these contributory incremental effects are, for all practical purposes, completely negligible and undetectable in light of the scale of both the Water Forum and the water bodies and storage and conveyance facilities at issue.

Climate Change And Potential Impacts On California Water Resources Of Significance To Placer County

From a Statewide perspective, global climate change could affect California's environmental resources through potential, though uncertain, changes related to future air temperatures and precipitation and their resulting impacts on water temperatures, reservoir operations, stream runoff, and sea levels Sacramento Metropolitan (SACMET-2001) traffic model developed by the Sacramento Area Council of Governments (SACOG). These changes in hydrological systems could threaten California's economy, public health, and environment (California Energy Commission 2003). The types of potential climate effects that could occur on California's water resources include:

- **Water Supply.** Several recent studies have shown that existing water supply systems are sensitive to climate change (Wood 1997). Potential impacts of climate change on water supply and availability could directly and indirectly affect a wide range of institutional, economic, and societal factors (Gleick 1997). Much uncertainty remains, however, with respect to the overall impact of global climate change on future water supplies. For example, models that predict drier conditions (i.e., parallel climate model [PCM]) suggest decreased reservoir inflows and storage and decreased river flows, relative to current conditions. By comparison, models that predict wetter conditions (i.e., HadCM2) project increased reservoir inflows and storage, and increased river flows (Brekke 2004). Both projections are equally probable based on which model is chosen for the analyses (Ibid.). Much uncertainty also exists with respect to how climate change will affect future demand of water supply (DWR 2006). Still, changes in water supply are expected to occur and many regional studies have shown that large changes in the reliability of water yields from reservoirs could result from only small changes in inflows (Kiparsky and Gleick 2003; see also Cayan et al. 2006a).
- **Surface Water Quality.** Global climate change could affect surface water quality as well. Water quality is affected by several variables, including the physical characteristics of the watershed, water temperature, and runoff rate and timing. A combination of a reduction in precipitation, the shift in volume and timing of runoff flows, and the increased temperature in lakes and rivers could affect a number of natural processes that eliminate pollutants in water bodies. For example, the overall decrease in stream flows could potentially concentrate pollutants and prevent the flushing of contaminants from point sources. The increased storm flows could tax urban water systems and cause greater flushing of pollutants to the Sacramento-San Joaquin Delta and coastal regions (Kiparsky and Gleick 2003). Still, considerable work remains to determine the potential effect of global climate change to water quality.
- **Groundwater.** Little work has been done on the effects of climate change on specific groundwater basins, groundwater quality or groundwater recharge characteristics (Kiparsky and Gleick 2003). Changes in rainfall and changes in the timing of the groundwater recharge season would result in changes in recharge. Warmer temperatures could increase the period where water on the ground by reducing soil freeze. Conversely, warmer temperatures could lead to higher evaporation or shorter rainfall seasons, which could mean that soil deficits would persist for longer time periods, shortening recharge seasons. Warmer, wetter winters would increase the amount of runoff available for groundwater recharge. This additional winter runoff, however, would be occurring at a time when some basins, particularly in Northern California, are being recharged at their maximum capacity. Reductions in spring runoff and higher evapotranspiration, on the other hand, could reduce the amount of water available for recharge. However, the extent to which climate will change and the impact of that change on groundwater are both unknown. A

reduced snowpack, coupled with increased rainfall, could require a change in the operating procedures for California's existing dams and conveyance facilities (Kiparsky and Gleick 2003).

- **Fisheries and Aquatic Resources.** In California, the timing and amounts of water released from reservoirs and diverted from streams are constrained by their effects on various native fish, especially those that are listed under the federal and state endangered species acts as threatened or endangered. Several potential hydrological changes associated with global climate change could influence the ecology of aquatic life in California and have several negative effects on cold-water fish (Department of Water Resources [hereafter "DWR"] 2006). For example, if climate change raises air temperature by just a few degrees Celsius, this change could be enough to raise the water temperatures above the tolerance of salmon and trout in many streams, favoring instead non-native fishes such as sunfish and carp (DWR 2006). Unsuitable summer temperatures would be particularly problematic for many of the threatened and endangered fish that spend summers in cold-water streams, either as adults, juveniles, or both (DWR 2006). In short, climate change could significantly affect threatened and endangered fish in California. It could also cause non-threatened and non-endangered fish to reach the point where they become designated as such (DWR 2006).
- **Sea Levels.** Global climate change could cause thermal expansion of ocean waters and melting of ice from land surfaces, which in turn could cause sea levels to rise. Among the risks of sea level rise would be threats to levee integrity and tidal marshes and increased salinity in the Delta region (Kiparsky and Gleick 2003). The increased intrusion of salinity from the ocean could degrade freshwater supplies pumped from the Delta, which could require increased freshwater releases from upstream reservoirs to maintain compliance with water quality standards (DWR 2006).
- **Flood Control.** It is difficult to assess implications of climate change for flood frequency, in large part because of the absence of detailed regional precipitation information from climate models and because human settlement patterns and water-management choices can substantially influence overall flood risk (Kiparsky and Gleick 2003). Still, increased amounts of winter runoff could be accompanied by increases in flood event severity and warrant additional dedication of wet season storage space for flood control as opposed to supply conservation. This need to manage water storage facilities to handle increased runoff could in turn lead to more frequent water shortages during high water demand periods (Brekke 2004). It is recognized that these impacts would result in increased challenges for reservoir management and balancing the competing concerns of flood protection and water supply (DWR 2006).
- **Sudden Climate Change.** Most global climate models project that anthropogenic climate change will be a continuous and fairly gradual process through the end of this century (DWR 2006). California is expected to be able to adapt to the water supply challenges posed by climate change, even at some of the warmer and dryer projections for change. Sudden and unexpected changes in climate, however, could leave water managers unprepared and could, in extreme situations, have significant implications for California and its water supplies. For example, there is speculation that some of the recent droughts that occurred in California and the western United States could have been due, at least in part, to oscillating oceanic conditions resulting from climatic changes. The exact causes of these events are, however, unknown, and evidence suggests such events have occurred during at least the past 2000 years. (DWR 2006).

Because considerable uncertainty remains with respect to the overall impact of global climate change on future water supply in California, it is unknown to what degree global climate change will impact

future Placer County water supply and availability. However, based on consideration of the recent regional and local climate change studies, and based on an assessment of water supply for the project, it is reasonably expected that the impacts of global climate change on water supply for urban projects in Placer County would be **less than significant**.