Chapter 7 Cumulative Impacts

7.1 Introduction

The CEQA Guidelines' (*Guidelines* Section 15130(b)) definition of cumulative impacts mirrors the NEPA definition (40 CFR § 1508.7). "Cumulative impacts" refers to the effects of two or more projects that, when combined, are considerable or compound other environmental effects. The California Environmental Quality Act requires that discussions of cumulative impacts reflect the severity of the impacts and their likelihood of occurrence. The CEQA *Guidelines* state that the cumulative impacts discussion does not need to provide as much detail as is provided in the analysis of project-only impacts and should be guided by the standards of practicality and reasonableness.

In addition, Section 15130(b) of the CEQA *Guidelines* identifies that the following three elements are necessary for an adequate cumulative analysis:

- Either a list of past, present, and reasonably anticipated future projects producing related or cumulative impacts, including those projects outside the control of the agency (i.e., the list approach); or a summary of projections contained in an adopted general plan or related planning document designed to evaluate regional or area-wide conditions (i.e., the plan approach). Any such planning document shall be referenced and made available to the public at a location specified by the Lead Agency.

- A summary of expected environmental effects to be produced by those projects. The summary shall include specific reference to additional information stating where that information is available.

- A reasonable analysis of the cumulative impacts of the relevant projects. An Environmental Impact Report (EIR) shall examine reasonable options for mitigating or avoiding any significant cumulative effects of a Proposed Project.

Although the CEQA *Guidelines* only require the use of one method of cumulative analysis (i.e., the list approach or the plan approach), the cumulative analysis in this EIR/EA uses both methods.

7.2 Cumulative Setting

For the purposes of this EIR/EA, the cumulative setting is based on development anticipated under the 1996 El Dorado County General Plan. The cumulative setting also included

consideration of approved and proposed undeveloped projects in the project area. The following projects, which are currently undergoing construction, have been recently approved, or are pending approval, could be expected to affect the number of vehicle trips produced on a local basis. These projects are summarized below.

7.2.1 Shingle Springs Rancheria Hotel And Casino Project

A hotel and casino development has been proposed on the existing Shingle Springs Rancheria. This development has been evaluated under the *Shingle Springs Rancheria Hotel and Casino Environmental Assessment* (AES, 2001) developed for the National Indian Gaming Commission (NIGC). The hotel and casino would be situated on land within the Rancheria that is designated commercial or development reserve. The hotel and casino complex would be constructed on 43.9 acres within the Rancheria boundaries. The plan includes the development of a 250-room, 5-level hotel and a 238,500 square foot casino complex. The environmental effects of the hotel/casino complex have been fully addressed and considered in this separate EA. On-Rancheria impacts mitigated to a less-than-significant level within the EA include water resources, groundwater and surface water quality, air quality, biological resources, water supply, law enforcement, fire protection, and noise. The NIGC has issued a Finding of No Significant Impact (FONSI) for the hotel and casino project.

7.2.2 Highway 50 Improvements

Past, present and future improvements to the Highway 50 transportation corridor have the potential to affect vehicle trips and land use in the project area. Caltrans is constructing High Occupancy Vehicle (HOV) lanes on Highway 50 between Sunrise Boulevard (east of the City of Sacramento) and El Dorado Hills. The environmental document for this project was approved on April 19, 1999. The project is expected to be open for traffic in the spring of 2003 (SACOG, 2001). Although there are currently discussions to provide HOV lanes or six standard lanes in the project area, within this analysis it is assumed that Highway 50 will remain a 4-lane facility in the project area, as improvement to six lanes is considered speculative at this stage. Environmental Consequences of the approved HOV lanes on Highway 50, west of the project area, are included in the discussion of SACOG approved projects provided below.

7.2.3 El Dorado County General Plan

The 1996 El Dorado County General Plan is a 20-year policy guide for the growth and development of the County of El Dorado. The General Plan acts as the overall guiding policy

document for land uses in the County and is the principal tool for evaluating public and private projects. The County's goals and policies with regard to land use are contained in the Land Use Element of the General Plan. State law mandates the Land Use Element. Specifically, California Government Code Section 65302(a) requires the preparation of a land use element which designates the proposed general distribution and general location and extent of the uses of the land for housing, business, industry, and open space, including agriculture, natural resources, recreation, and enjoyment of scenic beauty, education, public buildings and grounds, solid and liquid waste disposal facilities, and other categories of public and private land use. The 1996 El Dorado County General Plan is currently being revised. Revisions to the land use designations in the project area could affect development patterns in the project area. The land use maps developed to date for the revised General Plan however, do not include any substantial changes in the land use designations within the project area.

Environmental consequences may occur as the result of changes to the El Dorado County General Plan. Changes to the General Plan, or the approval of projects inconsistent with the General Plan, may result in inconsistent growth within the County resulting in loss of open space, transportation and public service impacts, water quality, air quality, socio-economic and other impacts. Environmental consequences may also occur as the result of the buildout of planned developments contained in the General Plan; these impacts are currently being evaluated in an EIR developed for the General Plan by the El Dorado County Planning Department.

7.2.4 SACOG

SACOG's Metropolitan Transportation Plan (MTP) includes a range of transportation projects within the Sacramento Metropolitan Area. Projects that are proposed in the MTP include HOV lanes on Highway 50 extended from El Dorado Hills Boulevard to Shingle Springs Road and interchange improvements to Highway 50 in Placerville. These projects will provide improved transportation conditions in western El Dorado County.

Environmental consequences that may occur as the result of these projects are likely to consist of air quality, noise, visual, socio-economic, water quality and growth-inducing impacts. Whether roadway improvements result from growth or cause growth is currently debated. Improvements in roadways can reduce travel time to metropolitan areas, inducing residential development further from employment centers. However, the type of improvements that SACOG has proposed along Highway 50 in western El Dorado County are not anticipated to induce significant growth in El Dorado County. HOV lanes in

particular are designed to raise the number of occupants of vehicles by encouraging carpooling. Increasing the number of vehicle occupants has the potential to significantly reduce the number of cars on roadways and therefore can improve congestion and lower environmental impacts such as pollutant emissions and noise. Further, the developments proposed by SACOG consist of improvements to existing roadways (no new roadways or intersections are proposed), thus limiting the magnitude of the resulting environmental impacts. All SACOG projects are subject to environmental review; significant environmental impacts that may occur as the result of these projects must be mitigated whenever feasible.

7.3 Summary Of Cumulative Impacts

The following is a summary of cumulative impacts related to the Proposed Project by environmental topic as described in Chapter 5.0, Environmental Setting, Impacts, and Mitigation Measures. See Chapter 5.0 for detailed discussions of specific cumulative impacts.

7.3.1 Geology And Soils

Both the Flyover Interchange Design Alternative and Diamond Interchange Design Alternative would result in the excavation of serpentinite. The serpentinite impact is related to air quality emissions (asbestos). Westbound on-ramp and eastbound off-ramp construction would likely encounter serpentinite (at the west end of the interchange project site) if the road cut slopes on either side of the highway require ripping, grading, drilling or excavation. The implementation of Mitigation 5.5-2, identified in Chapter 5.0, will assure that excavation of serpentinite on the project site will not significantly add to the cumulative release of asbestos containing materials. Other development in the project area associated with buildout of the General Plan may result in significant impacts to geology and soils (including excavation of serpentinite, erosion, and exposure of people to geologic hazards), however, no cumulative geologic, soils, or seismic impacts are anticipated to occur as a result of the proposed interchange project.

7.3.2 Transportation/Circulation

Both the Flyover Interchange Design Alternative and Diamond Interchange Design Alternative would result in impacts to cumulative traffic conditions. These impacts are summarized below.

Development of either interchange alternative would create new merge/diverge lanes along US-50 at newly created interchange ramps, thereby increasing peak hour congestion along

US-50 between East Shingle Springs Road and Greenstone Road. The westbound off-ramp is found to operate acceptably at Level of Service (LOS) D for all peak hour scenarios, whereas both on-ramps are projected to operate acceptably at LOS E or better. Therefore, these are considered as less-than-significant impacts, as the threshold for determining a significant impact is LOS F. However, the eastbound off-ramp would operate unacceptably at LOS F for cumulative conditions during both the weekday PM peak hour and Saturday peak hour. This is considered a significant impact. To provide acceptable level of service for the ramp diverge area of the eastbound off-ramp, it would be necessary to provide an eastbound auxiliary lane between the eastbound East Shingle Springs Drive on-ramp and the eastbound off-ramp to the Rancheria. The provision of this auxiliary lane would result in acceptable LOS D or better operation for the eastbound off-ramp during all three peak hour scenarios during the cumulative year. Thus, the provision of this auxiliary lane would reduce the impact of the eastbound off-ramp to a less-than-significant impact.

Development of either interchange alternative would increase peak hour congestion along US-50 between East Shingle Springs Road and Greenstone Road. The freeway is projected to operate acceptably at LOS E or better for both east and west of the proposed interchange along both directions during AM and Saturday peak hour conditions. During the PM peak hour, the freeway is projected to operate acceptably at LOS E or better both east and west of the proposed interchange along the westbound direction, and east of the proposed interchange along the eastbound direction. Therefore, these are considered less-than-significant impacts. However, the freeway is projected to operate unacceptably at LOS F west of the proposed interchange along the eastbound direction during the PM peak hour. Therefore, this is considered a significant impact. The provision of the eastbound auxiliary lane between the eastbound East Shingle Springs Drive on-ramp and the eastbound off-ramp to the Rancheria would result in an acceptable LOS D or better operation. Therefore, the provision of this auxiliary lane would reduce the impact of the freeway LOS west of the proposed interchange along the eastbound direction during the PM peak hour to a less-than-significant impact.

Development of the Diamond Interchange Design Alternative would create two new intersections within the newly created interchange, each of which would experience delays under cumulative conditions. The eastbound ramp intersection would operate at an unacceptable level of service (LOS F) as an unsignalized intersection. Therefore, it is recommended that the two newly created intersections be signalized, and the two signals be coordinated to assure that queues would not develop which would block the westbound ramp intersection. This would provide an LOS of B or better. Therefore, this is considered a less-than-significant impact.

Development of either interchange alternative would create two new on-ramps, which would increase congestion along US-50 during periods when on-ramps experience high volumes, thus warranting ramp metering. Ramp metering at the proposed on-ramps would operate without the queue exceeding the storage length if metering rates of 600 vehicles per hour (vph) for the westbound on-ramp and 285 vph for the eastbound on-ramp are implemented. This would result in a less-than significant impact.

Development of either interchange alternative would add traffic to local roadways within El Dorado County. The Proposed Project was found to not significantly impact any of the local roadways and highways (including SR-49 and SR-193, but excluding US-50) for cumulative conditions on an average weekday. Therefore, this is considered a less-than-significant impact. Additionally, the Proposed Project was found to not significantly impact US-50 within El Dorado County east of El Dorado Hills Boulevard. Therefore, this is considered a less-than-significant impact.

7.3.3 Air Quality

Computer simulation models have been used to estimate project-related carbon monoxide (CO) concentrations under cumulative conditions. Under 2025 Cumulative Plus Project Conditions, the highest 1-hour value is 2.5 parts per million (ppm) and the highest 8-hour value is 1.8 ppm. These concentrations are estimated both northeast of and south of the new interchange. Both the 1-hour value and the 8-hour value under 2025 Cumulative Plus Project Conditions are below the CO air quality standards of 35 ppm and 9 ppm respectively. Since CO concentrations under the 2025 Cumulative Plus Project Conditions are lower than the CO air quality standards, the impact is considered less than significant. Other development in the project area associated with buildout of the General Plan may result in significant impacts to air quality. Impacts such as increased emissions from vehicles and wood burning stoves or fireplaces are likely to increase as development of residential and commercial designated land occurs. However, due to limited air quality impact of the proposed interchange project, it will not result in a significant cumulative impact to air quality.

7.3.4 Noise and Vibration

Both the Flyover Interchange Design Alternative and Diamond Interchange Design Alternative would result in increase in traffic noise levels under cumulative conditions. At two receiver locations, the predicted future cumulative traffic noise levels exceed the Noise Abatement Criteria, which is set at 52 dBA Leq interior or 65 dBA Leq exterior. However, the predicted changes in traffic noise levels at those locations due to the project are about 1 dBA as compared to future No Project/Action conditions, which is less than the 12 dBA

threshold for a substantial increase. Therefore, the Flyover Interchange Design Alternative and the Diamond Interchange Design Alternative are expected to result in a less than significant noise impact. No mitigation is required. However, the Caltrans Protocol requires an analysis of potential noise abatement measures. The analysis revealed that it would not be feasible to provide noise barriers along the Highway 50 right of way for receivers 6 and 7. Therefore no barrier is required.

Other currently planned or approved improvement projects along Highway 50 in the project area are not expected to increase noise and vibration. Other development in the project area associated with buildout of the General Plan may result in significant impacts to noise and vibration due to increased traffic or the development of commercial or residential projects in close proximity to Highway 50 or other roadways. These projects could expose people and structures to significant levels of noise and vibration. However, the limited nature of the proposed interchange project's noise and vibration impacts are not expect to add significantly to other project's impacts. Therefore, no cumulative impacts are expected to result from the proposed interchange project.

7.3.5 Biological Resources

There are no significant cumulative impacts to biological resources. Subsequent projects in the region will be subject to environmental review; any significant effects that may be found to result from other projects will require mitigation to minimize impacts to biological resources. No significant impacts to biological resources resulting from the proposed interchange have been identified. Therefore, the proposed interchange project will not add to cumulative impacts to biological resources.

7.3.6 Visual Resources

The roadway network surrounding the project site is assumed to remain the same for cumulative conditions as currently exist for existing conditions. There are no programmed improvements for Highway 50 for cumulative conditions; therefore, a 4-lane facility is assumed for cumulative conditions in the vicinity of the project site. As development has occurred in El Dorado County, the County has approved commercial developments right up to the right-of-way of Highway 50. Thus, development of commercial or residential land, as designated by the El Dorado County General Plan, may result in significant visual impacts. However, no significant visual impacts resulting from the proposed interchange project have been identified. Therefore, the Flyover Interchange Design Alternative and the Diamond Interchange Design Alternative will not add to altered cumulative conditions for visual resources along the highway.

7.3.7 Socioeconomics

The interchange alternatives will not contribute to significant cumulative effects associated with the displacement of persons or housing. There is only one house that will be affected. This house is currently owned and occupied by Tribal members. This project, considered together with cumulative growth projected in the El Dorado County General Plan, will not result in cumulative displacement of people or housing. The same is true for the socioeconomic character of the surrounding area. The proposed interchange will not prevent people from accessing their properties. Since there are no transportation related cumulative development projects to consider for the project area, no cumulative effects will be experienced. The increased traffic along the roadway network, resulting from cumulative growth, will not prevent the use of adjacent property. Lastly, the proposed interchange will not result in a cumulative effect to minority and/or low-income populations, as no populations in the area are expected to experience adverse impacts as a result of the project. Therefore, the Flyover Interchange Design Alternative and Diamond Interchange Design Alternative are not expected to result in a significant cumulative socioeconomic impact.

7.3.8 Cultural Resources

Construction of the proposed interchange, together with cumulative development projected in the El Dorado County General Plan, may lead to the cumulative loss of undiscovered artifacts. The project will not contribute to the cumulative loss of historic resources. The Flyover Interchange Design Alternative and the Diamond Interchange Design Alternative may contribute to the cumulative loss of previously undiscovered artifacts. Implementation of Mitigation 5.10-1 (See Section 5.10) would reduce the cumulative impact to a less than significant level. Development of commercial or residential land, as designated by the El Dorado County General Plan, may result in the loss of cultural resources. However, because the proposed interchange project, as mitigated, will not result in a significant impact to cultural resources, the project will not result in a significant cultural resource impact.

7.3.9 Hazardous Materials

There are no significant cumulative impacts related to hazardous materials. Subsequent projects in the region will be subject to environmental review; any significant effects that may be found to result from other projects will require mitigation to minimize impacts with regards to hazardous materials. No significant impacts to biological resources resulting from the proposed interchange have been identified. Therefore, the proposed interchange project will not add to cumulative impacts concerning hazardous materials.

7.3.10 Water Quality

The only project specific water quality impact identified is related to an increase in impervious surfaces, which will result in an increase in total runoff volumes. The water quality impact is related to an increase in total runoff volumes. The implementation of Best Management Practices (BMPs) will assure that the Flyover Interchange Design Alternative and the Diamond Interchange Design Alternative will not significantly add to the cumulative addition of roadway contaminates impacting water quality. Other development in the project area associated with buildout of the El Dorado County General Plan, or development of Highway 50 improvements may result in significant impacts to water quality. However, no significant impacts to water quality resulting from the proposed interchange have been identified. Therefore, no cumulative water quality impacts are anticipated to occur as a result of the proposed interchange project.

7.3.11 Drainage

The only project specific drainage impact identified is related to an increase in impervious surfaces, which will result in an increase in flows into culverts. The implementation of Mitigation 5.13-2 and 5.13-3 will assure that the Flyover Interchange Design Alternative and the Diamond Interchange Design Alternative will not significantly add to the cumulative impact of flows upon culverts. Other development in the project area associated with buildout of the El Dorado County General Plan, or development of Highway 50 improvements may result in significant increases in impervious surfaces and runoff flows. However, no significant impacts to drainage resulting from the proposed interchange have been identified. Therefore, no cumulative drainage impacts are anticipated to occur as a result of the proposed interchange project.