Chapter 4 Alternatives Considered

4.1 Introduction

The formation of alternatives for analysis in this Draft EIR/EA involved the review of prior studies and additional analysis (Project Study Report). The Project Study Report (PSR) developed and screened a broad range of alternatives, some of which are carried forward through this environmental analysis. The purpose of the alternatives analysis in this document is to describe a range of reasonable alternatives to the project that could feasibly attain most of the objectives of the Proposed Project, and to evaluate the comparative merits of the alternatives (CEQA *Guidelines*, Section 15126.6[a]). NEPA requires a brief discussion of alternatives as required by § 102 (2) (E) of the Act, which in turn requires analysis of alternative to recommended course of action in any proposal which involves unresolved conflicts concerning alternative uses of available resources. (43 USC § 4332 (2) (E), 40 CFR § 1508.9 (b))

Section 15126.6 (b) of the CEQA *Guidelines* requires consideration of alternatives that could reduce to a less-than-significant level or eliminate any significant adverse environmental impacts of the Proposed Project, including alternatives that may be more costly or could otherwise impede the Proposed Project's objectives. The range of alternatives evaluated in an EIR is governed by a "rule of reason", which requires the evaluation of alternatives "necessary to permit a reasoned choice". Alternatives considered must include those that offer substantial environmental advantages over the Proposed Project and may be feasibly accomplished in a successful manner considering economic, environmental, social, technological, and legal factors.

4.2 Alternatives Included In The Draft EIR/EA

This EIR/EA evaluates three alternatives: (1) Alternative A: No Project/Action Alternative, (2) Alternative B: "Modified-Trumpet" Style, similar to Type F-5 interchange (hereafter referred to as the "Flyover" Alternative), and (3) Type L1 Compact Diamond interchange (hereafter referred to as the "Diamond Interchange). Alternative A assumes that no interchange is constructed to provide access to the Rancheria. Additionally, Alternative A would result in no commercial development (i.e., hotel and casino) on the Rancheria. Details regarding the two development alternatives are provided below.

The proposed Shingle Springs Rancheria Interchange would be located to the south of the existing Rancheria, and would be approximately midway between the Shingle Springs Road

Interchange and the Greenstone Road Interchange. A connection to the Rancheria from Route 50 will be provided across the 5-acre (2.3 Ha) parcel immediately south of the Rancheria. Common features between interchange alternatives, besides general location, are (1) eastbound auxiliary lane, and (2) grade separation of Artesia Road. These common features are described as follows:

Eastbound Auxiliary Lane: The traffic operations analysis for this project indicated level of service (LOS) "F" for the eastbound off-ramp diverge movement for year 2025 traffic (PM peak hour); the constraint for this movement is not the off-ramp volume, but rather the volume of mainline traffic vs. available freeway capacity. The existing median in this area is 69.8 feet (21.3 m), which could accommodate up to an additional four mainline lanes (two in each direction), although no additional lanes are programmed at this time. An analysis for this movement assuming one additional eastbound lane shows a Year 2025 eastbound off-ramp diverge LOS "D" for the PM peak hour; consequently, an eastbound auxiliary lane is proposed between Shingle Springs Drive and the Shingle Springs Rancheria Interchange, which will improve the ramp diverge LOS. This auxiliary lane will be constructed by widening Route 50 into the median to create a third lane directly adjacent to the existing eastbound lanes. Once this additional lane is provided, existing No. 1 mainline traffic will be shifted to this "additional lane", which will allow the outside eastbound, or "slow-lane", to be used as the auxiliary lane for the new interchange. The total length of the new auxiliary lane is approximately 0.9 miles (1.6 Km) from Shingle Springs Drive to the new interchange.

Grade Separation of Artesia Road: Artesia Road, a private road providing access to 2 residences located between the Rancheria and the freeway, will be maintained with this project; a grade separation will be constructed between the interchange access road and Artesia Road, with the latter crossing over the interchange access road. This grade separation will allow continuous traffic flow to and from the Rancheria and will preclude a future connection of Artesia Road to the interchange. The reconstructed portion of Artesia Road also will be widened to 27.9 feet (8.53 m) to provide paved shoulders. The reconstructed portion of Artesia Road will be entirely on property owned by the project proponent; no additional easements will be required.

4.2.1 Alternative B – "Flyover" Alternative

The design of this alternative provides access north of Route 50 only; access south of Route 50 would be precluded. Although the accommodation of access and operations is similar to a trumpet-style (Type L-11) local interchange, the general layout is more similar to a Type F-5 interchange. This interchange provides diagonal ramps for westbound movements, and direct connector ramps for eastbound movements (**Figure 2-1**). Architectural renderings of this interchange design for the eastbound and westbound traveler are presented in **Figures 4-1**

and **4-2**. Additional information regarding the design alternatives can be found in the Project Study Report (Caltrans, 2001) produced by Caltrans for the proposed interchange project. This document is available during normal business hours at the Caltrans District 3 Office at 2800 Gateway Oaks Drive, Suite 100 Sacramento, CA. The Project Study Report is hereby incorporated into this Alternative discussion by reference.

Westbound off-ramp: The westbound off-ramp is a single lane diagonal ramp. The ramp will begin east of the proposed overcrossing and extend for approximately 1,394 feet (425 m) with one 11.8 foot (3.6 m) travel lane and 3.9 foot (1.2 m) and 7.9 foot (2.4 m) shoulders on the left and right sides, respectively. Earthwork, along with a retaining wall, will be required between the ramp and westbound Route 50. As the off-ramp approaches the Rancheria, it will curve in a northerly direction with a 180 foot (55 m) curve, and travel up to the undercrossing structure at Artesia Road. The off-ramp will maintain one 11.8 foot (3.6 m) travel lane and the 3.9 foot (1.2 m) and 7.9 foot (2.4 m) shoulders throughout.

Westbound on-ramp: The westbound on-ramp is a single lane diagonal ramp, with a standard merge to Route 50. Beginning at the Artesia Road undercrossing, the access road will consist of one travel lane 11.8 foot (3.6 m) wide with a 3.9 foot (1.2 m) and 7.9 foot (2.4 m) shoulder on the left and right sides, respectively. As the roadway approaches the Caltrans right-of-way, significant earthwork will be required. A 1:1 slope (or flatter) will be used to assure that slope stability is maintained. The westbound on-ramp will continue approximately 984 feet (300 m) from the 5-acre (2.3 Ha) parcel to its connection to Route 50. No structures, other than the undercrossing of Artesia Road, are proposed for the westbound on-ramp.

Eastbound off-ramp: The eastbound off-ramp will consist of three components: (1) beginning off-ramp, (2) fly-over structure, and (3) access road. The beginning of the eastbound off-ramp starts approximately 984 feet (300 m) west of the proposed fly-over structure. This section of the off-ramp would consist of one 11.8 feet (3.6 m) wide travel lane with 7.9 feet (2.4 m) and 3.9 feet (1.2 m) shoulders on the right and left sides, respectively. To accommodate the ramp, the existing hillside will be excavated and a tie-back wall constructed for stability purposes.

The “fly-over” overcrossing structure taking eastbound travelers over Route 50 will be supported by three columns. Columns will be located south of the eastbound lanes, within the median of Route 50 and north of the westbound lanes. The structure will consist of one 11.8 foot (3.6 m) travel lane, a 7.9 foot (2.4 m) shoulder on the right side and a 9.8 foot (3.0 m) shoulder on the left side (left side shoulder width increased for sight distance). The overcrossing structure will be designed to accommodate an ultimate 8 lanes on Route 50. The fly-over structure will continue into the 5-acre (2.3 Ha) parcel for approximately 295 feet (90 m) where it will meet existing grade.

See Figure 4-1

See Figure 4-2

A connector will extend for approximately 459 feet (140 m) from the end of the overcrossing to the Rancheria. The roadway will consist of one travel lane approximately 11.8 feet (3.6 m) wide with a 3.9 foot (1.2 m) left shoulder and 7.9 foot (2.4 m) right shoulder. An undercrossing will be constructed at Artesia Road to carry traffic into the Rancheria.

Eastbound on-ramp: The eastbound on-ramp is a diagonal ramp with direct connector undercrossing of Route 50. As is the case with the eastbound off-ramp, the eastbound on-ramp consists of three components: (1) access road, (2) Route 50 undercrossing, and (3) interchange on-ramp. The Rancheria connection begins at the Artesia Road undercrossing and continues as a one lane facility (with 3.9 foot (1.2 m) and 7.9 foot (2.4 m) shoulders) for approximately 918 feet (280 m) where it transitions into the Route 50 undercrossing. This undercrossing will be approximately 49.9 feet (15.2 m) wide and will accommodate the continuation of one-travel lane with shoulders both sides below the Westbound and Eastbound lanes of Route 50. The interchange on-ramp will extend from the Route 50 undercrossing for a distance of approximately 1,312 feet (400 m) to the Route 50 eastbound lanes. Earthwork will be required on the interchange on-ramp using a 1:2 slope (or flatter) to assure slope stability. The ramp will be designed with a standard merge to Route 50.

4.2.2 Alternative C – "Diamond" Alternative

This alternative is a modified Type L-1 compact diamond interchange with a two-lane overcrossing over Route 50, single lane ramps and signalized ramp intersections. On the north side of Route 50, the Overcrossing roadway widens to a four-lane roadway leading from Route 50 to the Rancheria. The connection includes an undercrossing of Artesia Road. The eastbound auxiliary lane on Route 50 will also be required as part of this project. Detailed geometrics are included in **Figure 2-2**. Architectural renderings of this interchange design for the eastbound and westbound traveler are presented in **Figures 4-3** and **4-4**.

Westbound off-ramp: The westbound off-ramp ramp is a single lane ramp, 11.8 feet (3.6 m) wide with 3.9 foot (1.2 m) and 7.9 foot (2.4 m) shoulders on the left and right sides respectively, extending for approximately 1,355 feet (413 m) to the ramp intersection. Because of the existing mainline grade and proposed overcrossing profile, the ramp grade will be 9.0%, uphill in the direction of travel. Because of the elevated profile, this ramp requires either extensive embankments or structure, as detailed below.

Westbound On-Ramp: The eastbound off-ramp ramp is a single lane ramp, 11.8 feet (3.6 m) wide with 3.9 foot (1.2 m) and 7.9 foot (2.4 m) shoulders on the left and right sides respectively, with a standard merge to Route 50, extending for approximately 1,230 feet (375 m) to the ramp intersection. This ramp would involve a short section of significant cut.

See Figure 4-3

See Figure 4-4

Eastbound off-ramp: The eastbound off-ramp ramp is a single lane ramp, 11.8 feet (3.6 m) wide with 3.9 foot (1.2 m) and 7.9 feet (2.4 m) shoulders on the left and right sides respectively, extending for approximately 1,050 feet (320 m) to the ramp intersection. The ramp will involve a substantial cut, along with a retaining wall, to avoid right of way impacts south of Route 50.

Eastbound On-Ramp: The eastbound on-ramp is a single lane ramp, 11.8 foot (3.6 m) wide with 3.9 foot (1.2 m) and 7.9 foot (2.4 m) shoulders on the left and right sides respectively, with a standard merge to Route 50, extending for approximately 1,345 feet (410 m) to the ramp intersection. Because of the existing mainline grade and proposed overcrossing profile, the ramp grade will be 8.9%, downhill in the direction of travel. Because of the elevated profile, this ramp requires either extensive embankments or structure, as detailed below.

Route 50 Overcrossing: The overcrossing consists of two 11.8 foot (3.6 m) lanes, one in each direction, with 7.9 foot (2.4 m) shoulders and Type 736 concrete barrier on each side. The two-lane structure will be 42.3 feet (12.9 m) wide, 220 feet (67 m) in length and consists of two spans with the center column located on the centerline of Route 50. The overcrossing would accommodate ultimate widening of Route 50 to eight lanes, as identified in the Transportation Concept Report. After crossing Route 50 and the westbound ramps, the structure continues as a four-lane structure as described below. A connection will be provided from the overcrossing to the Rancheria, widening from two lanes to four lanes north of the Westbound ramp terminal and continues to the Rancheria property. The first 335 foot (102 m) of the connection will be a viaduct to minimize grading impacts. The viaduct will be 74 feet (22.5 m) wide, 335 feet (102 m) long consisting of 4 spans.

Ramp Embankments/Structures: Alternative C ramps would be elevated using viaduct-type structures to minimize the amount of retaining walls and earthwork. For example, the eastbound off-ramp has an additional length of 256 feet (78 m) of structure, the EB on-ramp has 787 feet (240 m) of structure, the Westbound (WB) off-ramp requires 550 (167.5 m) of structure while the WB on-ramp requires 171 feet (52 m) of structure. A large retaining wall will be required along the south side of the eastbound off-ramp to support the slope cut.

4.3 Alternatives Eliminated From Consideration

CEQA Guidelines Section 15126.6 (c) states that the "EIR should …identify any alternatives that were considered by the lead agency but were rejected as infeasible during the scoping process and briefly explain the reasons underlying the lead agency's determination." This section of the Guidelines go on to state "among the factors that may be used to eliminate alternatives from detailed consideration in an EIR are: i) failure to meet most of the basic project objectives, (ii) infeasibility, or (iii) inability to avoid significant environmental impacts."

Four alternatives were considered and eliminated from the analysis. These alternatives included: (1) Diamond Interchange requiring additional right-of-way to the south of Highway 50, (2) Diamond Interchange Alternative with Highway 50 undercrossing, (3) Frontage Road Alternative, and (4) Alternative Location. The alternatives considered, but rejected, are briefly discussed below along with the reasons for rejection.

4.3.1 Diamond Interchange With Additional Right-Of-Way South Of Highway 50

This alternative would have resulted in the same basic design as the diamond interchange addressed in detail within this Draft EIR/EA. However, one basic difference is that the two eastbound ramps would have been located further south necessitating the acquisition of additional ROW to the south of Highway 50. This design was originally conceived to reduce the size of the retaining wall on the south side of the Highway. In order for this alternative to be constructed, the eastbound off-ramp would have required a considerable amount of rock removal, followed by the installment of a smaller retaining wall that would have encroached beyond the existing Caltrans ROW. The eastbound on-ramp would have had an elevated profile with extensive embankments when compared with the two build alternatives carried throughout this document. Additionally, in order for this design alternative to obtain vertical clearance over Route 50, slope fill would have extended beyond the existing ROW. Given that the Alternative C of this Draft EIR/EA assumes a diamond interchange design that does not require additional ROW, this additional ROW alternative is eliminated from consideration.

4.3.2 Compact Diamond Interchange Alternative With Undercrossing of Highway 50

This alternative would have resulted in the construction of an undercrossing under Highway 50 for the eastbound off-ramp and westbound on-ramp. The construction of an undercrossing would have required extensive excavation with very tall retaining walls (i.e. 65 feet (20 m) or greater in height), including the acquisition of ROW for grading limits. This alternative was reviewed and rejected due to the extensive excavation required. Additionally, Alternative C of this Draft EIR/EA assumes a diamond interchange design that does not require additional ROW. Therefore, this alternative is eliminated from consideration.

4.3.3 Frontage Road Alternative

Prior to evaluating direct interchange access to Highway 50, an evaluation was made as to feasibility of access to the Rancheria by extending frontage roads from two nearby adjacent

interchange exits. Connection to Greenstone Road via Grassy Run Road (public portion only) could be made through construction of a one-mile long roadway, requiring acquisition of five privately-owned, occupied residential parcels. However, these parcels are members of the Grassy Run Homeowners' Association, who have voiced objections over the economic development of Rancheria, and condemnation most likely would be required for acquisition. The Tribe was not interested in making people move from their homes against their wishes. In addition, the tribe is not in a legal position to condemn property, and the County of El Dorado has previously expressed opposition to economic development of the Rancheria, and presumably would not participate in condemnation for frontage road access.

Access to the interchange at Shingle Springs Drive faces similar challenges. An access road north of Highway 50 would require acquisition of 11-12 properties, which is not feasible due to similar condemnation issues. An access road south of Highway 50 would require acquisition from the Sacramento-Placerville Transportation Corridor Joint powers Authority (SPTC-JPA) right of way, which would create a discontinuity in a potential future resource. Additionally, it is likely that the railroad right of way would be determined to be a historic resource.

4.3.4 Alternative Location for the Interchange

A public comment on the NOP was received that expressed a desire to have the interchange relocated to areas more "appropriate to its high intense level of traffic impacts". An alternative location for the interchange does not meet the purpose and need to construct an interchange that will provide access to the existing Rancheria so that free and open access can be provided. Therefore, this alternative is eliminated from consideration.